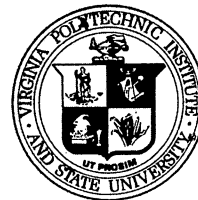


Virginia Polytechnic Institute and State University  
Development and Application of an Energy Flow Model  
to Analyze Impacts of Navigation Changes on the  
Kanawha River in West Virginia

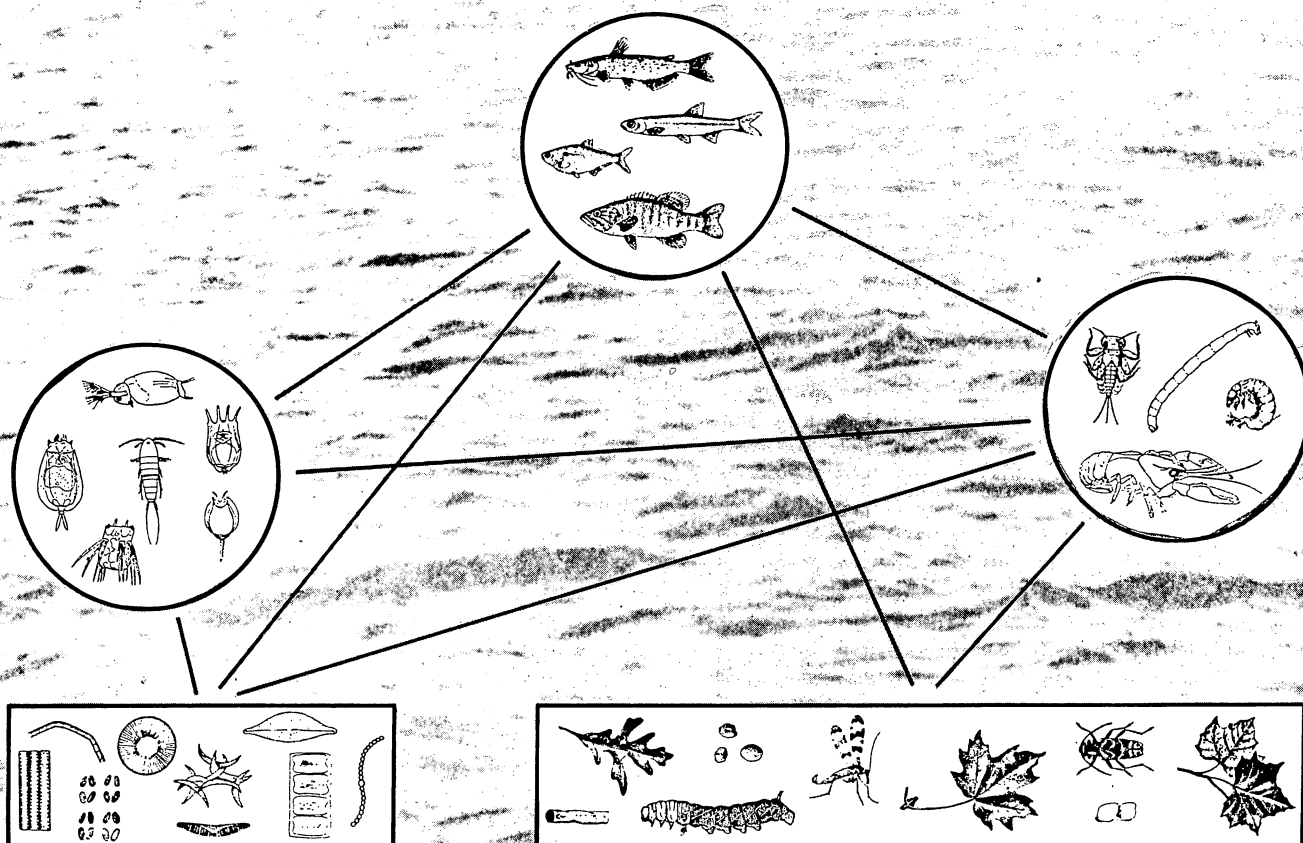
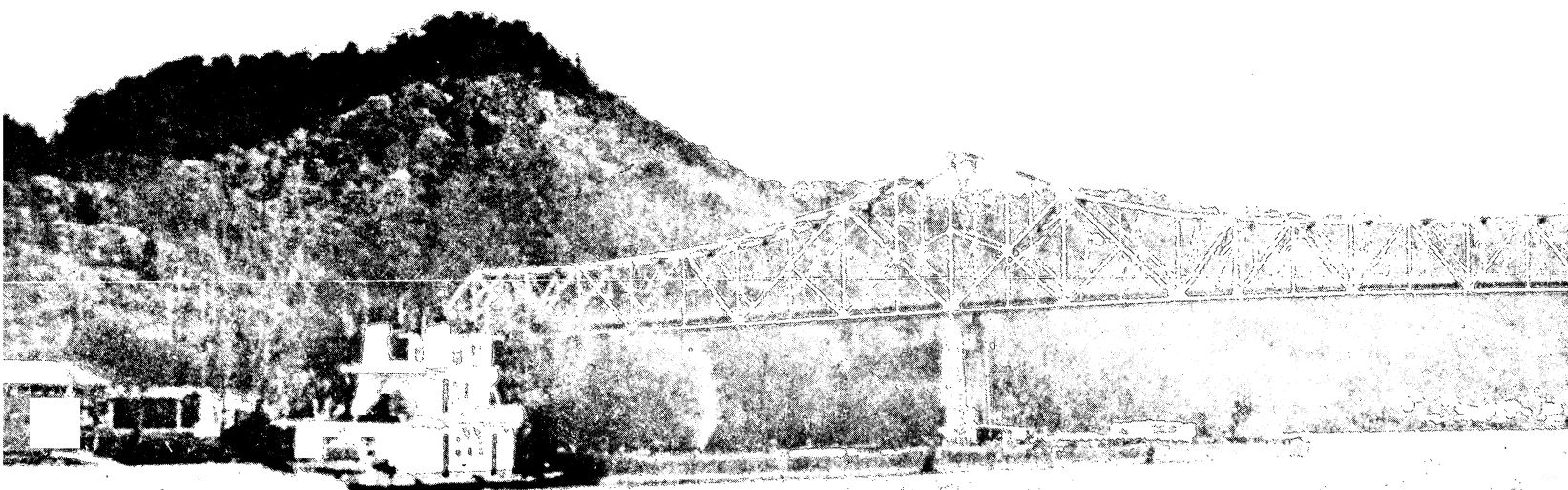


Appendix A — Data Tables

August 1985



US Army Corps  
of Engineers  
Huntington District



## APPENDIX A

### DATA TABLES

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### APPENDIX A

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**Table A0.1.1. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on October 18-19, 1982. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.**

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 18.0 |      |       |      |
|      | 0.0   | 16.0 | 185  | 60    | 8.9  |
|      | 0.5   | 15.8 | 185  | 35    | 9.1  |
|      | 1.0   | 15.8 | 185  | 17    | 8.9  |
|      | 2.0   | 15.8 | 185  | 5.8   | 8.8  |
|      | 3.0   | 15.8 | 185  |       |      |
| LW   | Air   | 23.0 |      |       |      |
|      | 0.0   | 19.0 | 235  | 57    | 7.5  |
|      | 0.5   | 18.8 | 235  | 28    | 7.3  |
|      | 1.0   | 18.5 | 235  | 17    | 7.3  |
|      | 2.0   | 18.2 | 235  | 5.0   | 7.4  |
|      | 3.0   | 18.0 | 235  |       | 7.3  |
|      | 5.0   | 17.8 | 235  |       | 7.4  |
|      | 7.0   | 17.8 | 235  |       | 7.3  |

Table A0.1.2. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on November 18-19, 1982. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 16.8 |      |       |      |
|      | 0.0   | 10.0 | 130  | 60    | 11.6 |
|      | 0.5   | 9.5  | 140  | 28    | 11.6 |
|      | 1.0   | 9.5  | 140  | 8.0   | 11.5 |
|      | 2.0   | 9.3  | 140  | 1.1   | 11.5 |
|      | 3.0   | 9.3  | 140  | 0.2   |      |
|      | 4.0   | 9.0  | 160  |       |      |
| LW   | Air   | 11.8 |      |       |      |
|      | 0.0   | 9.8  | 240  | 87    | 10.2 |
|      | 0.5   | 9.8  | 240  | 50    | 10.2 |
|      | 1.0   | 9.8  | 240  | 23    | 10.1 |
|      | 2.0   | 9.8  | 245  | 6.0   | 10.1 |
|      | 3.0   | 9.5  | 250  | 1.7   | 10.1 |
|      | 4.0   | 9.5  | 250  | 0.5   | 10.1 |
|      | 6.0   | 9.5  | 250  |       | 10.1 |
|      | 8.0   | 9.5  | 250  |       | 10.1 |

Table A0.1.3. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on December 16-17, 1982. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 2.0  |      |       |      |
|      | 0.0   | 4.3  | 160  | 74    | 13.1 |
|      | 0.5   | 4.3  | 165  | 12    |      |
|      | 1.0   | 4.3  | 165  | 1.0   |      |
|      | 2.0   | 4.3  | 165  |       |      |
| LW   | Air   | 5.0  |      |       |      |
|      | 0.0   | 6.8  | 185  | 76    | 11.2 |
|      | 0.5   | 6.8  | 210  | 48    | 11.4 |
|      | 1.0   | 6.8  | 210  | 22    | 11.3 |
|      | 2.0   | 6.8  | 210  | 6.8   | 11.6 |
|      | 3.0   | 6.8  | 215  | 2.4   | 11.5 |
|      | 4.0   | 6.8  | 215  | 0.9   |      |
|      | 5.0   | 6.8  | 215  |       | 11.2 |
|      | 6.0   | 6.8  | 220  |       |      |
|      | 7.0   | 6.8  | 220  |       | 11.8 |
|      | 9.0   | 6.8  | 220  |       | 11.4 |

Table A0.1.4. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on January 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp  | Cond | Light | D.O. |
|------|-------|-------|------|-------|------|
| UW   | Air   | -10.0 |      |       |      |
|      | 0.0   | 2.5   | 260  | 84    | 13.2 |
|      | 0.5   | 2.5   | 265  | 46    | 13.2 |
|      | 1.0   | 2.5   | 270  | 26    | 13.5 |
|      | 2.0   | 2.5   | 275  | 14    | 13.4 |
|      | 3.0   | 2.5   | 280  | 8.0   |      |
| LW   | Air   | -12.0 |      |       |      |
|      | 0.0   | 2.5   | 225  | 96    | 12.0 |
|      | 0.5   | 2.7   | 230  | 94    | 12.1 |
|      | 1.0   | 2.7   | 232  | 87    | 12.1 |
|      | 2.0   | 2.7   | 232  | 36    | 11.9 |
|      | 3.0   | 2.7   | 235  | 19    | 11.9 |
|      | 4.0   | 2.7   | 235  | 9.0   |      |
|      | 5.0   | 2.9   | 235  | 4.4   | 12.1 |
|      | 6.0   | 2.9   | 235  | 2.2   |      |
|      | 7.0   | 2.9   | 238  | 1.0   | 12.0 |
|      | 9.0   | 2.9   | 240  |       | 12.3 |

Table A0.1.5. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on February 17-18, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 6.0  |      |       |      |
|      | 0.0   | 4.0  | 170  | 64    | 13.5 |
|      | 0.5   |      |      | 10    |      |
|      | 1.0   |      |      | 2.6   |      |
|      | 1.5   |      |      | 0.8   |      |
| LW   | Air   | 3.0  |      |       |      |
|      | 0.0   | 3.5  | 180  | 97    | 13.1 |
|      | 0.5   | 3.5  | 180  | 42    | 13.2 |
|      | 1.0   | 3.5  | 185  | 18    | 13.1 |
|      | 2.0   | 3.5  | 185  | 3.5   | 13.2 |
|      | 3.0   | 3.5  | 185  | 0.04  | 13.1 |
|      | 5.0   | 3.7  | 185  |       | 13.2 |
|      | 7.0   | 3.7  | 190  |       | 13.2 |
|      | 9.0   | 3.7  | 190  |       | 13.1 |

Table A0.1.6. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on March 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 3.5  |      |       |      |
|      | 0.0   | 6.5  | 130  | 100   | 13.0 |
|      | 0.5   |      |      | 89    |      |
| LW   | Air   | 11.5 |      |       |      |
|      | 0.0   | 6.5  | 130  | 100   | 12.5 |
|      | 0.5   | 7.0  | 125  | 8.4   |      |
|      | 1.0   | 7.0  | 125  | 0.9   |      |
|      | 2.0   | 7.0  | 130  |       |      |
|      | 3.0   | 7.0  | 130  |       |      |
|      | 5.0   | 7.0  | 135  |       |      |
|      | 7.0   | 7.0  | 135  |       |      |
|      | 9.0   | 7.0  | 135  |       | 12.4 |

Table A0.1.7. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on April 21-22, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 10.5 |      |       |      |
|      | 0.0   | 8.0  | 150  | 100   | 12.8 |
|      | 0.5   | 8.0  | 150  | 28    | 12.7 |
|      | 1.0   | 8.0  | 155  | 9.2   | 12.8 |
|      | 2.0   | 8.0  | 155  | 1.4   | 12.9 |
| LW   | Air   | 21.0 |      |       |      |
|      | 0.0   | 10.5 | 180  | 100   | 12.1 |
|      | 0.5   | 10.0 | 180  | 36    | 12.2 |
|      | 1.0   | 9.0  | 185  | 18    | 12.2 |
|      | 2.0   | 9.0  | 185  | 7.4   | 12.3 |
|      | 3.0   | 9.0  | 185  | 0.6   | 12.2 |
|      | 5.0   | 8.5  | 190  |       |      |
|      | 7.0   | 8.5  | 190  |       |      |
|      | 9.0   | 8.5  | 190  |       | 12.2 |

Table A0.1.8. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on May 19-20, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 15.0 |      |       |      |
|      | 0.0   | 14.0 | 60   | 100   | 10.3 |
|      | 0.5   | 14.0 | 60   | 22    |      |
|      | 1.0   | 14.0 | 60   | 6.8   |      |
|      | 2.0   | 14.0 | 70   | 1.3   |      |
|      | 3.0   | 14.0 | 100  | 0.1   | 10.2 |
|      |       |      |      |       |      |
| LW   | Air   | 24.0 |      |       |      |
|      | 0.0   | 16.0 | 120  | 100   | 9.8  |
|      | 0.5   | 16.0 | 120  | 28    | 9.8  |
|      | 1.0   | 15.0 | 110  | 7.8   | 9.7  |
|      | 2.0   | 15.0 | 120  | 1.7   | 9.7  |
|      | 3.0   | 15.0 | 110  | 0.2   | 9.8  |
|      | 5.0   | 14.5 | 110  |       | 9.5  |
|      | 7.0   | 14.5 | 120  |       | 9.7  |
|      | 9.0   | 14.5 | 110  |       | 9.8  |



**Table A0.1.9. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on June 22-23, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.**

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 25.0 |      |       |      |
|      | 0.0   | 22.5 | 95   | 100   | 8.6  |
|      | 0.5   | 22.0 | 95   | 11    | 8.6  |
|      | 1.0   | 22.0 | 100  | 8.6   | 8.6  |
|      | 2.0   | 22.0 | 100  | 0.6   | 8.7  |
|      | 3.0   | 22.0 | 100  |       | 8.5  |
| LW   | Air   | 30.5 |      |       |      |
|      | 0.0   | 24.5 | 115  | 100   | 7.9  |
|      | 0.5   | 24.5 | 115  | 8.8   | 7.9  |
|      | 1.0   | 22.5 | 120  | 0.6   | 7.8  |
|      | 2.0   | 22.0 | 120  |       | 7.9  |
|      | 3.0   | 22.0 | 120  |       | 7.8  |
|      | 5.0   | 22.0 | 120  |       | 7.8  |
|      | 7.0   | 22.0 | 120  |       | 7.8  |

Table A0.1.10. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on July 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 35.5 |      |       |      |
|      | 0.0   | 29   | 220  |       | 7.8  |
|      | 0.5   | 28   | 220  |       | 7.7  |
|      | 1.0   | 28   | 225  |       | 7.7  |
|      | 2.0   | 28   | 230  |       | 7.7  |
|      | 3.0   | 28   | 240  |       |      |
| LW   | Air   | 31.0 |      |       |      |
|      | 0.0   | 29.0 | 200  |       | 9.2  |
|      | 0.5   | 28.5 | 230  |       | 9.1  |
|      | 1.0   | 28.5 | 230  |       | 9.2  |
|      | 2.0   | 28.5 | 230  |       | 8.9  |
|      | 3.0   | 28.5 | 230  |       | 8.3  |
|      | 5.0   | 28.0 | 230  |       | 7.5  |
|      | 7.0   | 27.5 | 240  |       | 6.9  |
|      | 9.0   | 27.5 | 240  |       |      |

Table A0.1.11. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on August 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 28.5 |      |       |      |
|      | 0.0   | 28.5 | 220  | 77    | 7.7  |
|      | 0.5   | 28.5 | 230  | 38    | 7.7  |
|      | 1.0   | 28.0 | 230  | 17    | 7.7  |
|      | 2.0   | 28.0 | 230  | 4.7   | 7.7  |
|      | 3.0   | 28.0 | 230  | 1.4   |      |
| LW   | Air   | 31.5 |      |       |      |
|      | 0.0   | 29.0 | 360  | 90    | 5.2  |
|      | 0.5   | 29.0 | 360  | 43    | 5.3  |
|      | 1.0   | 28.7 | 360  | 20    | 5.2  |
|      | 2.0   | 28.5 | 360  | 4.2   | 5.2  |
|      | 3.0   | 28.5 | 360  | 0.7   | 5.1  |
|      | 5.0   | 28.5 | 360  |       |      |
|      | 7.0   | 28.5 | 360  |       |      |
|      | 9.0   | 28.5 | 360  |       | 5.0  |

Table A0.1.12. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on August 25, 1983 UG = Upper Gallipolis. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UG   | Air   | 35.0 |      |       |      |
|      | 0.0   | 29.0 | 290  | 86    |      |
|      | 0.5   | 29.0 | 300  | 12    |      |
|      | 1.0   | 29.0 | 290  | 11    |      |
|      | 2.0   | 29.0 | 280  | 1.5   |      |
|      | 3.0   | 29.0 | 290  | 0.1   |      |
|      | 4.0   | 28.5 | 310  |       |      |
|      |       |      |      |       |      |

Table A0.1.13. Vertical profiles (depth, m) of temperature (Temp, °C), conductivity (Cond, mmhos/cm), per cent incident light (Light, %), and dissolved oxygen (DO, mgO<sub>2</sub>/l) on September 14-15, 1983. UW = Upper Winfield; LW = Lower Winfield. Blank = Not Sampled.

| Site | Depth | Temp | Cond | Light | D.O. |
|------|-------|------|------|-------|------|
| UW   | Air   | 22.5 |      |       |      |
|      | 0.0   | 25.5 | 200  | 45    | 8.6  |
|      | 0.5   | 25.5 | 200  | 15    | 8.4  |
|      | 1.0   | 25.5 | 200  | 6.1   | 8.4  |
|      | 2.0   | 25.5 | 210  | 1.0   |      |
|      | 3.0   | 25.5 | 210  | 0.1   |      |
| LW   | Air   | 21.0 |      |       |      |
|      | 0.0   | 25.0 | 270  | 83    | 6.1  |
|      | 0.5   | 25.5 | 270  | 37    | 6.2  |
|      | 1.0   | 25.5 | 260  | 19    | 6.1  |
|      | 2.0   | 25.5 | 280  | 4.6   | 6.1  |
|      | 3.0   | 25.5 | 300  | 1.2   | 6.1  |
|      | 5.0   | 25.5 | 300  | 0.01  | 6.0  |
|      | 7.0   | 25.5 | 300  |       | 6.0  |
|      | 10.0  | 25.5 | 300  |       | 6.0  |

Table A0.2.1. Physical and chemical properties of the Kanawha River in the Winfield Pool, October 18-19, 1982. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 3m; LW Bot = 7m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO  | Alk  | pH |
|------|-------|------|------|-------|-----|------|----|
| UW   | Top   |      | 15.8 | 17    | 9.0 | 28.9 |    |
|      | Bot   |      | 15.8 | <1    | 9.0 | 28.9 |    |
| LW   | Top   | 235  | 18.5 | 17    | 7.2 | 24.8 |    |
|      | Bot   | 235  | 17.8 | <1    | 7.3 | 25.4 |    |

Table A0.2.2. Physical and chemical properties of the Kanawha River in the Winfield Pool, November 18-19, 1982. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 3.5m; LW Bot = 8m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO   | Alk  | pH |
|------|-------|------|------|-------|------|------|----|
| UW   | Top   | 140  | 9.5  | 28.0  | 11.6 | 37.4 |    |
|      | Bot   | 160  | 9.0  | <1    |      | 36.9 |    |
| LW   | Top   | 240  | 9.8  | 23    | 10.1 | 47.7 |    |
|      | Bot   | 250  | 9.5  | <1    | 10.1 | 45.6 |    |

Table A0.2.3. Physical and chemical properties of the Kanawha River in the Winfield Pool, December 16-17, 1982. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 5m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO   | Alk  | pH |
|------|-------|------|------|-------|------|------|----|
| UW   | Top   | 165  | 4.3  | 1.0   | 13.1 | 34.0 |    |
|      | Bot   | 165  | 4.3  | <1    |      | 11.0 |    |
| LW   | Top   | 210  | 6.8  | 48    | 11.3 | 27.1 |    |
|      | Bot   | 220  | 6.8  | <1    | 11.4 |      |    |



Table A0.2.4. Physical and chemical properties of the Kanawha River in the Winfield Pool, January 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 2m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO   | Alk  | pH |
|------|-------|------|------|-------|------|------|----|
| UW   | Top   | 270  | 2.5  | 26    | 13.5 | 47.3 |    |
|      | Bot   | 275  | 2.5  | 14    | 13.4 | 46.2 |    |
| LW   | Top   | 232  | 2.7  | 87    | 12.1 | 44.7 |    |
|      | Bot   | 240  | 2.9  | <1    | 12.3 | 34.7 |    |

Table A0.2.5. Physical and chemical properties of the Kanawha River in the Winfield Pool, February 17-18, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 4m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO   | Alk  | pH |
|------|-------|------|------|-------|------|------|----|
| UW   | Top   | 170  | 4.0  | 2.6   | 13.5 |      |    |
|      | Bot   |      |      |       |      |      |    |
| LW   | Top   | 185  | 3.5  | 18.0  | 13.1 | 29.0 |    |
|      | Bot   | 190  | 3.7  | <1    | 13.1 | 29.0 |    |

Table A0.2.6. Physical and chemical properties of the Kanawha River in the Winfield Pool, March 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 5m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO   | Alk | pH |
|------|-------|------|------|-------|------|-----|----|
| UW   | Top   | 130  | 6.5  | <89   | 13.0 | 29  |    |
|      | Bot   |      |      | <1    |      |     |    |
| LW   | Top   | 125  | 7.0  | <1    | 12.5 | 26  |    |
|      | Bot   | 135  | 7.0  | <1    | 12.4 | 24  |    |

Table A0.2.7. Physical and chemical properties of the Kanawha River in the Winfield Pool, April 21-22, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 2m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO   | Alk | pH  |
|------|-------|------|------|-------|------|-----|-----|
| UW   | Top   | 155  | 8.0  | 9.2   | 12.8 | 30  | 6.3 |
|      | Bot   | 155  | 8.0  | 1.4   | 12.9 | 31  | 6.3 |
| LW   | Top   | 185  | 9.0  | 18    | 12.3 | 28  | 6.3 |
|      | Bot   | 190  | 8.5  | <1    | 12.3 | 28  | 6.4 |

Table A0.2.8. Physical and chemical properties of the Kanawha River in the Winfield Pool, May 19-20, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 3m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO   | Alk  | pH  |
|------|-------|------|------|-------|------|------|-----|
| UW   | Top   | 60   | 14   | 6.8   | 10.3 | 29.9 | 6.1 |
|      | Bot   | 100  | 14   | <1    | 10.2 | 21.9 | 6.2 |
| LW   | Top   | 110  | 15.0 | 7.8   | 9.7  | 27.6 | 6.0 |
|      | Bot   | 110  | 14.5 | <1    | 9.8  | 25.3 | 6.0 |

Table A0.2.9. Physical and chemical properties of the Kanawha River in the Winfield Pool, June 22-23, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 3m; LW Bot = 7m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO  | Alk  | pH  |
|------|-------|------|------|-------|-----|------|-----|
| UW   | Top   | 100  | 22.0 | 8.6   | 8.6 | 36.8 | 6.7 |
|      | Bot   | 100  | 22.0 | <1    | 8.5 | 38.0 | 6.0 |
| LW   | Top   | 120  | 22.5 | <1    | 7.8 |      |     |
|      | Bot   | 120  | 22.0 | <1    | 7.8 | 36.8 | 6.2 |

Table A0.2.10. Physical and chemical properties of the Kanawha River in the Winfield Pool, July 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 3m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO  | Alk  | pH  |
|------|-------|------|------|-------|-----|------|-----|
| UW   | Top   | 225  | 28.0 |       | 7.7 | 75.6 | 7.2 |
|      | Bot   | 240  | 28.0 |       | 7.7 | 77.4 | 6.9 |
| LW   | Top   | 230  | 28.5 |       | 9.2 | 68.0 | 6.8 |
|      | Bot   | 240  | 27.5 |       | 6.9 |      | 7.1 |

Table A0.2.11. Physical and chemical properties of the Kanawha River in the Winfield Pool, August 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 3m; LW Bot = 9m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO  | Alk | pH  |
|------|-------|------|------|-------|-----|-----|-----|
| UW   | Top   | 230  | 28.0 | 17.2  | 7.7 | 45  | 7.3 |
|      | Bot   | 230  | 28.0 | 1.4   |     | 45  | 7.3 |
| LW   | Top   | 360  | 28.7 | 20.0  | 5.2 | 40  | 6.9 |
|      | Bot   | 360  | 28.5 | <1    | 5.1 | 40  | 6.9 |



Table A0.2.12. Physical and chemical properties of the Kanawha River in the Winfield Pool, September 14-15, 1983. UW = Upper Winfield; LW = Lower Winfield. Top = 1 m; UW Bot = 2m; LW Bot = 10m. Cond = Specific conductance, umhos/cm; Temp = temperature, °C; Light = % of incident light intensity; DO = dissolved oxygen, mg/l; Alk = alkalinity, mg/l CaCO<sub>3</sub>. Blank = not sampled.

| Site | Depth | Cond | Temp | Light | DO  | Alk | pH  |
|------|-------|------|------|-------|-----|-----|-----|
| UW   | Top   | 200  | 25.5 | 6.1   | 8.4 | 37  | 6.5 |
|      | Bot   | 210  | 25.5 | 1.0   |     | 42  | 6.5 |
| LW   | Top   | 260  | 25.5 | 18.6  | 6.1 | 40  | 6.3 |
|      | Bot   | 300  | 25.5 | <1    | 6.0 | 42  | 6.3 |

Table A1.1.1. Terrestrial inputs, February 16-18, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    |                                    | 1.8                     |                                      |
| UW   | LD   | 2    |                                    | 0.1                     |                                      |
| UW   | LD   | 3    |                                    | 0.0                     |                                      |
| UW   | RD   | 1    |                                    | 2.5                     |                                      |
| UW   | RD   | 2    |                                    | 0.6                     |                                      |
| UW   | RD   | 3    |                                    | 0.0                     |                                      |
| LW   | LD   | 1    |                                    | 0.2                     |                                      |
| LW   | LD   | 2    |                                    | 0.5                     |                                      |
| LW   | LD   | 3    |                                    | 0.7                     |                                      |
| LW   | RD   | 1    |                                    | 1.3                     |                                      |
| LW   | RD   | 2    |                                    | 0.5                     |                                      |
|      |      | Mean |                                    | 0.7                     |                                      |

Table A1.1.2. Terrestrial inputs, March 23-25, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    |                                    | 0.8                     |                                      |
| UW   | LD   | 2    |                                    | 2.1                     |                                      |
| UW   | LD   | 3    |                                    | 4.1                     |                                      |
| UW   | RD   | 1    |                                    | MS                      |                                      |
| UW   | RD   | 2    |                                    | MS                      |                                      |
| UW   | RD   | 3    |                                    | MS                      |                                      |
| LW   | LD   | 1    |                                    | 1.1                     |                                      |
| LW   | LD   | 2    |                                    | 0.5                     |                                      |
| LW   | LD   | 3    |                                    | 1.5                     |                                      |
| LW   | RD   | 1    |                                    | 1.5                     |                                      |
| LW   | RD   | 2    |                                    | 0.0                     |                                      |
|      |      | Mean |                                    | 1.5                     |                                      |

Table A1.1.3. Terrestrial inputs, April 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    | 1.6                                | 10.5                    | 1.92                                 |
| UW   | LD   | 2    | 0.2                                | 1.4                     | 1.27                                 |
| UW   | LD   | 3    | 0.4                                | 0.0                     | 2.95                                 |
| UW   | LD   | 4    | 0.0                                |                         | 3.63                                 |
| UW   | RD   | 1    | 1.2                                | MS                      | 1.99                                 |
| UW   | RD   | 2    | 0.8                                | MS                      | 3.00                                 |
| UW   | RD   | 3    | 1.2                                | MS                      | 2.94                                 |
| UW   | RD   | 4    | 2.4                                |                         | 2.45                                 |
| LW   | LD   | 1    | 0.2                                | 1.2                     | 7.48                                 |
| LW   | LD   | 2    | 0.0                                | MS                      | MS                                   |
| LW   | LD   | 3    | MS                                 | MS                      | MS                                   |
| LW   | LD   | 4    | MS                                 |                         | MS                                   |
| LW   | RD   | 1    | 0.0                                | 0.7                     | 9.57                                 |
| LW   | RD   | 2    | 0.0                                | 0.0                     | 8.52                                 |
| LW   | RD   | 3    | 0.0                                |                         | 3.60                                 |
| LW   | RD   | 4    | 0.0                                |                         | 3.62                                 |
|      |      | Mean | 0.6                                | 2.3                     | 4.07                                 |

Table A1.1.4. Terrestrial inputs, May 18-19, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    | 3.6                                | 1.9                     | 0.83                                 |
| UW   | LD   | 2    | 6.0                                | 0.6                     | 1.03                                 |
| UW   | LD   | 3    | 10.4                               | 0.0                     | 1.33                                 |
| UW   | LD   | 4    | 5.2                                |                         | MS                                   |
| UW   | RD   | 1    | 2.8                                | 2.5                     | MS                                   |
| UW   | RD   | 2    | 0.4                                | 2.8                     | MS                                   |
| UW   | RD   | 3    | 2.0                                | MS                      | MS                                   |
| UW   | RD   | 4    | MS                                 |                         | 0.36                                 |
| LW   | LD   | 1    | 1.6                                | MS                      | 4.15                                 |
| LW   | LD   | 2    | MS                                 | MS                      | 0.78                                 |
| LW   | LD   | 3    | MS                                 | MS                      | 4.57                                 |
| LW   | LD   | 4    | MS                                 | MS                      | MS                                   |
| LW   | RD   | 1    | 2.4                                | 0.0                     | 8.76                                 |
| LW   | RD   | 2    | 0.8                                | 0.0                     | 2.71                                 |
| LW   | RD   | 3    | 0.8                                |                         | 3.80                                 |
| LW   | RD   | 4    | 2.0                                |                         | 8.24                                 |
|      |      | Mean | 3.2                                | 1.1                     | 3.32                                 |

Table A1.1.5. Terrestrial inputs, June 14, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    | 3.2                                |                         | 6.17                                 |
| UW   | LD   | 2    | 1.2                                |                         | 1.28                                 |
| UW   | LD   | 3    | 1.2                                |                         | 0.70                                 |
| UW   | LD   | 4    | 0.0                                |                         | 2.65                                 |
| LW   | RD   | 1    | 12.8                               |                         | 5.48                                 |
| LW   | RD   | 2    | 11.6                               |                         | 4.81                                 |
| LW   | RD   | 3    | 10.4                               |                         | 1.67                                 |
| LW   | RD   | 4    | 14.0                               |                         | 3.93                                 |
|      |      | Mean | 6.8                                |                         | 3.34                                 |

Table A1.1.6. Terrestrial inputs, July 19, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    | 2.8                                |                         | 1.39                                 |
| UW   | LD   | 2    | 0.8                                |                         | 2.94                                 |
| UW   | LD   | 3    | 11.6                               |                         | 4.16                                 |
| UW   | LD   | 4    | 4.4                                |                         | 4.62                                 |
| UW   | LD   | 5    | 5.2                                |                         | 3.23                                 |
| UW   | LD   | 6    | 0.4                                |                         | 2.60                                 |
| UW   | LD   | 7    | 2.0                                |                         | 4.66                                 |
| UW   | LD   | 8    | 5.6                                |                         | 4.64                                 |
| LW   | RD   | 1    | 0.4                                |                         | 4.97                                 |
| LW   | RD   | 2    | 9.6                                |                         | 4.17                                 |
| LW   | RD   | 3    | 0.8                                |                         | 6.91                                 |
| LW   | RD   | 4    | 0.4                                |                         | 4.81                                 |
| LW   | RD   | 5    | 1.2                                |                         | 3.71                                 |
| LW   | RD   | 6    | 0.8                                |                         | 4.72                                 |
| LW   | RD   | 7    | 2.0                                |                         | 4.02                                 |
| LW   | RD   | 8    | 1.2                                |                         | 3.96                                 |
|      |      | Mean | 3.1                                |                         | 4.09                                 |

Table A1.1.7. Terrestrial inputs, August 22, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    | 21.2                               |                         | 4.35                                 |
| UW   | LD   | 2    | 26.8                               |                         | 2.84                                 |
| UW   | LD   | 3    | 18.4                               |                         | 0.33                                 |
| UW   | LD   | 4    | 22.0                               |                         | 2.47                                 |
| UW   | LD   | 5    | 25.2                               |                         | 3.03                                 |
| UW   | LD   | 6    | 24.0                               |                         | 0.94                                 |
| UW   | LD   | 7    | 18.0                               |                         | 2.85                                 |
| UW   | LD   | 8    | 28.8                               |                         | 1.49                                 |
| LW   | RD   | 1    | MS                                 |                         | 5.23                                 |
| LW   | RD   | 2    | 32.4                               |                         | 3.97                                 |
| LW   | RD   | 3    | 20.4                               |                         | 4.47                                 |
| LW   | RD   | 4    | 25.6                               |                         | 1.84                                 |
| LW   | RD   | 5    | 23.6                               |                         | 5.34                                 |
| LW   | RD   | 6    | MS                                 |                         | 1.90                                 |
| LW   | RD   | 7    | 28.0                               |                         | 5.63                                 |
| LW   | RD   | 8    | 58.0                               |                         | 3.13                                 |
|      |      | Mean | 26.6                               |                         | 3.11                                 |



**Table A1.1.8. Terrestrial inputs, September 11, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.**

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    | 53.2                               |                         |                                      |
| UW   | LD   | 2    | 102.8                              |                         |                                      |
| UW   | LD   | 3    | 108.4                              |                         |                                      |
| UW   | LD   | 4    | 60.8                               |                         |                                      |
| UW   | LD   | 5    | 32.8                               |                         |                                      |
| UW   | LD   | 6    | 23.6                               |                         |                                      |
| UW   | LD   | 7    | 33.2                               |                         |                                      |
| UW   | LD   | 8    | 25.6                               |                         |                                      |
| LW   | RD   | 1    | 65.6                               |                         | 3.06                                 |
| LW   | RD   | 2    | 51.6                               |                         | 3.47                                 |
| LW   | RD   | 3    | 86.0                               |                         | 2.35                                 |
| LW   | RD   | 4    | 55.2                               |                         | 1.34                                 |
| LW   | RD   | 5    | 28.4                               |                         | 4.04                                 |
| LW   | RD   | 6    | 23.2                               |                         | 3.45                                 |
| LW   | RD   | 7    | 18.4                               |                         | 5.26                                 |
| LW   | RD   | 8    | 39.6                               |                         | 2.93                                 |
|      |      | Mean | 50.5                               |                         | 3.24                                 |

Table A1.1.9. Terrestrial inputs, October 12-13, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| UW   | LD   | 1    | 91.2                               | 37.2                    |                                      |
| UW   | LD   | 2    | 70.4                               | 28.5                    |                                      |
| UW   | LD   | 3    | 46.4                               | 19.8                    |                                      |
| UW   | LD   | 4    | 64.8                               |                         |                                      |
| UW   | LD   | 5    | MS                                 |                         |                                      |
| UW   | LD   | 6    | MS                                 |                         |                                      |
| UW   | LD   | 7    | MS                                 |                         |                                      |
| UW   | LD   | 8    | MS                                 |                         |                                      |
| LW   | RD   | 1    | 156.0                              |                         | 7.83                                 |
| LW   | RD   | 2    | 178.4                              | 32.1                    | 7.01                                 |
| LW   | RD   | 3    | 152.4                              | 37.7                    | 3.43                                 |
| LW   | RD   | 4    | 115.6                              |                         | 2.17                                 |
| LW   | RD   | 5    | 176.8                              |                         | 5.82                                 |
| LW   | RD   | 6    | 108.4                              |                         | 5.85                                 |
| LW   | RD   | 7    | 114.8                              |                         | 9.42                                 |
| LW   | RD   | 8    | 150.4                              |                         | 4.33                                 |
|      |      | Mean | 118.8                              | 31.1                    | 5.73                                 |

Table A1.1.10. Terrestrial inputs, November 18, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| LW   | RD   | 1    | 183.2                              | 28.1                    | 2.00                                 |
| LW   | RD   | 2    | 98.8                               | 22.4                    | 0.48                                 |
| LW   | RD   | 3    | 122.4                              |                         | 0.52                                 |
| LW   | RD   | 4    | 174.8                              |                         | 2.74                                 |
| LW   | RD   | 5    | 163.6                              |                         | 0.86                                 |
| LW   | RD   | 6    | 105.2                              |                         | 2.15                                 |
| LW   | RD   | 7    | 95.2                               |                         | 0.87                                 |
| LW   | RD   | 8    | 198.8                              |                         | 1.82                                 |
|      |      | Mean | 142.7                              | 25.3                    | 1.43                                 |

Table A1.1.11. Terrestrial inputs, December 16, 1983. UW = Upper Winfield; LW = Lower Winfield; LD = Left Descending; RD = Right Descending; MS = Missing Sample; Blank = Not Sampled.

| Site | Bank | Rep  | Leaf Fall<br>(gDW/m <sup>2</sup> ) | Leaf Blow-In<br>(gDW/m) | Insect Fall<br>(gDW/m <sup>2</sup> ) |
|------|------|------|------------------------------------|-------------------------|--------------------------------------|
| LW   | RD   | 1    | 19.6                               |                         |                                      |
| LW   | RD   | 2    | 18.4                               | 5.5                     |                                      |
| LW   | RD   | 3    | 15.2                               | 7.3                     |                                      |
| LW   | RD   | 4    | 24.0                               |                         |                                      |
| LW   | RD   | 5    | 20.4                               |                         |                                      |
| LW   | RD   | 6    | 26.8                               |                         |                                      |
| LW   | RD   | 7    | 15.2                               |                         |                                      |
| LW   | RD   | 8    | 12.0                               |                         |                                      |
|      |      | Mean | 18.9                               | 6.4                     |                                      |

Table A2.1.1. Composition of bottom sediment (percent organic).  
 UW = Upper Winfield; LW = Lower Winfield.

| Site | Date  |          | Replicates |    |    |    |    | Mean |
|------|-------|----------|------------|----|----|----|----|------|
| UW   | Jan.  | 21, 1983 | 5          | 18 | 4  | 12 | 12 | 10   |
| LW   | Jan.  | 20, 1983 | 6          | 3  | 4  | 4  | 4  | 4    |
| UW   | Feb.  | 18, 1983 | 10         | 11 | 19 | 10 | 12 | 12   |
| LW   | Feb.  | 17, 1983 | 6          | 13 | 12 | 10 | 12 | 11   |
| UW   | Mar.  | 25, 1983 | 16         | 5  | 6  | 6  | 5  | 8    |
| LW   | Mar.  | 24, 1983 | 5          | 16 | 11 | 37 | 31 | 20   |
| UW   | Apr.  | 21, 1983 | 4          | 2  | 3  | 2  | 4  | 3    |
| LW   | Apr.  | 22, 1983 | 10         | 3  | 4  | 4  | 7  | 6    |
| UW   | May   | 19, 1983 |            |    |    |    |    |      |
| LW   | May   | 20, 1983 | 22         | 2  | 7  | 5  | 10 | 9    |
| UW   | June  | 22, 1983 | 15         | 17 | 20 | 17 | 30 | 20   |
| LW   | June  | 23, 1983 | 23         | 17 | 15 | 4  | 10 | 14   |
| UW   | July  | 20, 1983 | 5          | 8  | 7  | 7  | 3  | 6    |
| LW   | July  | 21, 1983 | 33         | 11 | 24 | 3  | 1  | 14   |
| UW   | Aug.  | 24, 1983 | 4          | 3  | 9  | 5  | 4  | 5    |
| LW   | Aug.  | 25, 1983 | 42         | 21 | 5  | 12 | 9  | 18   |
| UW   | Sept. | 14, 1983 | 3          | 3  | 4  | 3  | 14 | 5    |
| LW   | Sept. | 15, 1983 | 22         | 2  | 4  | 9  | 3  | 8    |
| UW   | Oct.  | 11, 1983 | 4          | 4  | 13 | 10 | 10 | 8    |
| LW   | Oct.  | 12, 1983 | 5          | 21 | 33 | 20 | 8  | 17   |
| UW   | Nov.  | 17, 1983 | 8          | 7  | 5  | 11 | 8  | 8    |
| LW   | Nov.  | 18, 1983 | 9          | 10 | 24 | 28 | 5  | 15   |
| UW   | Dec.  | 15, 1983 | 3          | 4  | 7  | 4  | 4  | 4    |
| LW   | Dec.  | 16, 1983 | 2          | 3  | 2  | 25 | 3  | 7    |

Table A3.1.1. Concentration of organic seston (gAFDW/l) at Upper Winfield on October 19, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00007    | 0.00002 | 0.00001 | 0.00003 | 0.00003   |
|       | F     | 0.00007    | 0.00005 | 0.00008 | 0.00007 | 0.00002   |
|       | VF    | 0.00002    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | UF    | 0.00121    | 0.00133 | 0.00124 | 0.00126 | 0.00006   |
|       | TOTAL | 0.00140    | 0.00143 | 0.00138 | 0.00141 | 0.00003   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | F     | 0.00006    | 0.00007 | 0.00007 | 0.00007 | 0.00001   |
|       | VF    | 0.00003    | 0.00003 | 0.00002 | 0.00003 | 0.00001   |
|       | UF    | 0.00115    | 0.00185 | 0.00132 | 0.00144 | 0.00037   |
|       | TOTAL | 0.00126    | 0.00198 | 0.00143 | 0.00156 | 0.00038   |

**Table A3.1.2. Concentration of organic seston (gAFDW/l) at Lower Winfield on October 18, 1982. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00003    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00004    | 0.00001 | 0.00001 | 0.00002 | 0.00002   |
|       | VF    | 0.00003    | 0.00001 | 0.00001 | 0.00002 | 0.00001   |
|       | UF    | 0.00135    | 0.00174 | 0.00123 | 0.00144 | 0.00026   |
|       | TOTAL | 0.00148    | 0.00178 | 0.00127 | 0.00151 | 0.00026   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001   |
|       | F     | 0.00006    | 0.00006 | 0.00005 | 0.00006 | 0.00001   |
|       | VF    | 0.00002    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | UF    | 0.00146    | 0.00163 | 0.00245 | 0.00185 | 0.00053   |
|       | TOTAL | 0.00157    | 0.00174 | 0.00257 | 0.00196 | 0.00053   |

Table A3.1.3. Concentration of organic seston (gAFDW/l) at Upper Winfield on November 19, 1982. Blank = not sampled

| Depth | Size  | Replicates |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|-----------|
| TOP   | L     |            |         | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00002    |         | 0.00003 | 0.00002   |
|       | VF    | 0.00003    | 0.00001 | 0.00001 | 0.00002   |
|       | UF    | 0.00185    | 0.00160 | 0.00163 | 0.00169   |
|       | TOTAL |            |         | 0.00168 | 0.00168   |
| BOT   | L     | 0.00001    | 0.00001 |         | 0.00001   |
|       | ML    |            |         | 0.00001 | 0.00001   |
|       | S     |            | 0.00007 | 0.00004 | 0.00005   |
|       | F     | 0.00006    | 0.00005 | 0.00006 | 0.00006   |
|       | VF    | 0.00001    | 0.00000 | 0.00001 | 0.00001   |
|       | UF    |            | 0.00000 | 0.00202 | 0.00101   |
|       | TOTAL |            |         |         | 0.00143   |



**Table A3.1.4. Concentration of organic seston (gAFDW/l) at Lower Winfield on November 18, 1982. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00118    | 0.00137 | 0.00113 | 0.00123 | 0.00013   |
|       | TOTAL | 0.00119    | 0.00138 | 0.00114 | 0.00123 | 0.00013   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00006    | 0.00001 | 0.00001 | 0.00003 | 0.00003   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00134    | 0.00150 | 0.00166 | 0.00150 | 0.00016   |
|       | TOTAL | 0.00141    | 0.00152 | 0.00168 | 0.00154 | 0.00013   |

Table A3.1.5. Concentration of organic seston (gAFDW/l) at <sup>Upper</sup> Lower Winfield on December 17, 1982. Blank = not sampled

| Depth | Size | Replicates |         |         | Mean    | Std. Dev. |
|-------|------|------------|---------|---------|---------|-----------|
| TOP   | L    | 0.00026    | 0.00010 | 0.00031 | 0.00022 | 0.00011   |
|       | ML   | 0.00302    | 0.00055 | 0.00000 | 0.00119 | 0.00161   |
|       | S    |            |         | 0.00298 | 0.00298 |           |
|       | F    | 0.00158    | 0.00186 | 0.00193 | 0.00179 | 0.00018   |
|       | VF   | 0.00020    | 0.00019 | 0.00025 | 0.00022 | 0.00003   |
|       | UF   | 0.00508    | 0.00508 | 0.00492 | 0.00503 | 0.00009   |
| TOTAL |      |            |         | 0.01038 | 0.01038 |           |

Table A3.1.6. Concentration of organic seston (gAFDW/l) at Lower Winfield on December 16, 1982. Blank = not sampled

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00000 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00000 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00122    | 0.00158 | 0.00106 | 0.00129 | 0.00027   |
|       | TOTAL | 0.00123    | 0.00159 | 0.00107 | 0.00129 | 0.00027   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00000 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00107    | 0.00124 | 0.00110 | 0.00114 | 0.00009   |
|       | TOTAL | 0.00108    | 0.00125 | 0.00111 | 0.00115 | 0.00009   |

Table A3.1.7. Concentration of organic seston (gAFDW/l) at Upper Winfield on January 21, 1983. Blank = not sampled

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001   |
|       | F     | 0.00003    | 0.00003 | 0.00002 | 0.00003 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00095    | 0.00089 | 0.00092 | 0.00092 | 0.00003   |
|       | TOTAL | 0.00100    | 0.00095 | 0.00098 | 0.00097 | 0.00002   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | F     | 0.00003    | 0.00003 | 0.00005 | 0.00004 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00091    | 0.00094 | 0.00082 | 0.00089 | 0.00006   |
|       | TOTAL | 0.00098    | 0.00099 | 0.00090 | 0.00096 | 0.00005   |

**Table A3.1.8. Concentration of organic seston (gAFDW/l) at Lower Winfield on January 20, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00100    | 0.00083 | 0.00080 | 0.00088 | 0.00011   |
|       | TOTAL | 0.00101    | 0.00083 | 0.00081 | 0.00088 | 0.00011   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00091    | 0.00086 | 0.00089 | 0.00089 | 0.00003   |
|       | TOTAL | 0.00092    | 0.00086 | 0.00089 | 0.00089 | 0.00003   |

Table A3.1.9. Concentration of organic seston (gAFDW/l) at Upper Winfield on February 18, 1983. Blank = not sampled

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00004    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | S     |            | 0.00007 | 0.00007 | 0.00007 | 0.00001   |
|       | F     | 0.00014    | 0.00013 | 0.00068 | 0.00031 | 0.00031   |
|       | VF    | 0.00004    | 0.00004 | 0.00004 | 0.00004 | 0.00001   |
|       | UF    | 0.00000    | 0.00209 | 0.00217 | 0.00142 | 0.00123   |
|       | TOTAL |            | 0.00236 | 0.00299 | 0.00267 | 0.00045   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00003    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | S     | 0.00008    | 0.00007 | 0.00007 | 0.00007 | 0.00001   |
|       | F     | 0.00016    | 0.00014 | 0.00013 | 0.00015 | 0.00002   |
|       | VF    | 0.00003    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | UF    | 0.00229    | 0.00244 | 0.00230 | 0.00234 | 0.00009   |
|       | TOTAL | 0.00259    | 0.00271 | 0.00258 | 0.00263 | 0.00007   |

Table A3.1.10. Concentration of organic seston (gAFDW/l) at Lower Winfield on February 17, 1983. Blank = not sampled

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001   |
|       | F     | 0.00003    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00115    | 0.00140 | 0.00111 | 0.00122 | 0.00016   |
|       | TOTAL | 0.00121    | 0.00145 | 0.00117 | 0.00127 | 0.00015   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00002    | 0.00002 | 0.00004 | 0.00003 | 0.00001   |
|       | S     | 0.00004    | 0.00016 | 0.00003 | 0.00008 | 0.00008   |
|       | F     | 0.00003    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00193    | 0.00190 | 0.00152 | 0.00178 | 0.00023   |
|       | TOTAL | 0.00203    | 0.00213 | 0.00164 | 0.00193 | 0.00026   |

Table A3.1.11. Concentration of organic seston (gAFDW/l) at Upper Winfield on March 25, 1983. Blank = not sampled

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00002    | 0.00002 | 0.00001 | 0.00002 | 0.00001   |
|       | ML    |            | 0.00008 | 0.00006 | 0.00007 | 0.00001   |
|       | S     | 0.00023    | 0.00018 | 0.00025 | 0.00022 | 0.00003   |
|       | F     | 0.00014    | 0.00011 | 0.00010 | 0.00011 | 0.00002   |
|       | VF    | 0.00002    | 0.00012 | 0.00002 | 0.00007 | 0.00006   |
|       | UF    | 0.00190    | 0.00185 | 0.00180 | 0.00185 | 0.00005   |
|       | TOTAL |            | 0.00248 | 0.00226 | 0.00237 | 0.00016   |
| BOT   | L     | 0.00006    | 0.00003 | 0.00010 | 0.00006 | 0.00004   |
|       | ML    | 0.00020    | 0.00012 | 0.00015 | 0.00016 | 0.00004   |
|       | S     | 0.00025    | 0.00025 | 0.00016 | 0.00022 | 0.00005   |
|       | F     | 0.00010    | 0.00011 | 0.00017 | 0.00013 | 0.00004   |
|       | VF    | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | UF    | 0.00173    | 0.00178 | 0.00177 | 0.00176 | 0.00003   |
|       | TOTAL | 0.00237    | 0.00229 | 0.00237 | 0.00235 | 0.00004   |



**Table A3.1.12. Concentration of organic seston (gAFDW/l) at Lower Winfield on March 24, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00002    | 0.00004 | 0.00003 | 0.00003 | 0.00001   |
|       | ML    | 0.00041    | 0.00040 | 0.00018 | 0.00033 | 0.00013   |
|       | S     | 0.00067    | 0.00114 | 0.00064 | 0.00082 | 0.00028   |
|       | F     | 0.00123    | 0.00107 | 0.00123 | 0.00118 | 0.00009   |
|       | VF    | 0.00027    | 0.00019 | 0.00017 | 0.00021 | 0.00005   |
|       | UF    | 0.00480    | 0.00510 | 0.00503 | 0.00498 | 0.00016   |
|       | TOTAL | 0.00740    | 0.00794 | 0.00729 | 0.00754 | 0.00035   |

**Table A3.1.13. Concentration of organic seston (gAFDW/l) at Upper Winfield on April 22, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001   |
|       | ML    | 0.00003    | 0.00003 | 0.00002 | 0.00003 | 0.00001   |
|       | S     | 0.00004    | 0.00005 | 0.00005 | 0.00004 | 0.00001   |
|       | F     | 0.00007    | 0.00009 | 0.00008 | 0.00008 | 0.00001   |
|       | VF    | 0.00004    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | UF    | 0.00131    | 0.00182 | 0.00167 | 0.00160 | 0.00026   |
|       | TOTAL | 0.00150    | 0.00202 | 0.00187 | 0.00180 | 0.00027   |
| BOT   | L     | 0.00002    | 0.00003 | 0.00005 | 0.00003 | 0.00001   |
|       | ML    | 0.00006    |         | 0.00008 | 0.00007 | 0.00002   |
|       | S     | 0.00005    | 0.00004 | 0.00005 | 0.00005 | 0.00001   |
|       | F     | 0.00009    | 0.00009 | 0.00008 | 0.00009 | 0.00001   |
|       | VF    | 0.00003    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | UF    | 0.00155    | 0.00159 | 0.00159 | 0.00158 | 0.00002   |
|       | TOTAL | 0.00180    |         | 0.00189 | 0.00184 | 0.00006   |

**Table A3.1.14. Concentration of organic seston (gAFDW/l) at Lower Winfield on April 21, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00003    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | VF    |            | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    |            | 0.00159 | 0.00156 | 0.00158 | 0.00002   |
|       | TOTAL |            | 0.00164 | 0.00161 | 0.00163 | 0.00002   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00003 | 0.00003 | 0.00002 | 0.00001   |
|       | F     | 0.00008    | 0.00012 | 0.00011 | 0.00010 | 0.00002   |
|       | VF    | 0.00001    | 0.00002 | 0.00001 | 0.00002 | 0.00001   |
|       | UF    | 0.00137    | 0.00161 | 0.00192 | 0.00163 | 0.00027   |
|       | TOTAL | 0.00149    | 0.00179 | 0.00208 | 0.00179 | 0.00029   |

**Table A3.1.15. Concentration of organic seston (gAFDW/l) at Upper Winfield on May 19, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00003    | 0.00005 | 0.00005 | 0.00004 | 0.00001   |
|       | ML    | 0.00014    | 0.00007 | 0.00013 | 0.00012 | 0.00004   |
|       | S     | 0.00025    | 0.00019 | 0.00023 | 0.00022 | 0.00003   |
|       | F     | 0.00046    | 0.00055 | 0.00060 | 0.00054 | 0.00007   |
|       | VF    | 0.00014    | 0.00011 | 0.00012 | 0.00012 | 0.00002   |
|       | UF    | 0.00246    | 0.00256 | 0.00256 | 0.00253 | 0.00006   |
|       | TOTAL | 0.00349    | 0.00353 | 0.00369 | 0.00357 | 0.00011   |
| BOT   | L     | 0.00001    | 0.00008 | 0.00002 | 0.00004 | 0.00004   |
|       | ML    | 0.00012    | 0.00019 | 0.00016 | 0.00016 | 0.00003   |
|       | S     | 0.00026    | 0.00026 | 0.00025 | 0.00026 | 0.00001   |
|       | F     | 0.00055    | 0.00058 | 0.00056 | 0.00056 | 0.00002   |
|       | VF    | 0.00013    | 0.00013 | 0.00012 | 0.00013 | 0.00001   |
|       | UF    | 0.00258    | 0.00096 | 0.00244 | 0.00199 | 0.00090   |
|       | TOTAL | 0.00365    | 0.00219 | 0.00355 | 0.00313 | 0.00082   |

**Table A3.1.16. Concentration of organic seston (gAFDW/l) at Lower Winfield on May 20, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | S     | 0.00010    | 0.00010 | 0.00010 | 0.00010 | 0.00001   |
|       | F     | 0.00023    | 0.00017 | 0.00030 | 0.00023 | 0.00006   |
|       | VF    | 0.00007    | 0.00007 | 0.00008 | 0.00007 | 0.00001   |
|       | UF    | 0.00192    | 0.00230 | 0.00222 | 0.00215 | 0.00020   |
|       | TOTAL | 0.00235    | 0.00265 | 0.00271 | 0.00257 | 0.00020   |
| BOT   | L     | 0.00024    | 0.00002 | 0.00018 | 0.00015 | 0.00011   |
|       | ML    | 0.00067    | 0.00041 | 0.00061 | 0.00056 | 0.00014   |
|       | S     | 0.00063    | 0.00050 | 0.00076 | 0.00063 | 0.00013   |
|       | F     | 0.00140    | 0.00119 | 0.00157 | 0.00139 | 0.00019   |
|       | VF    | 0.00151    | 0.00084 | 0.00159 | 0.00131 | 0.00041   |
|       | UF    | 0.00460    | 0.00488 | 0.00524 | 0.00491 | 0.00032   |
|       | TOTAL | 0.00905    | 0.00785 | 0.00995 | 0.00895 | 0.00106   |

Table A3.1.17. Concentration of organic seston (gAFDW/l) at Upper Winfield on June 22, 1983. Blank = not sampled

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00000    | 0.00002 | 0.00002 | 0.00001 | 0.00001   |
|       | ML    | 0.00002    | 0.00003 | 0.00005 | 0.00004 | 0.00001   |
|       | S     | 0.00004    | 0.00007 | 0.00004 | 0.00005 | 0.00001   |
|       | F     | 0.00016    | 0.00009 | 0.00008 | 0.00011 | 0.00004   |
|       | VF    | 0.00004    | 0.00004 | 0.00003 | 0.00004 | 0.00001   |
|       | UF    | 0.00272    | 0.00278 | 0.00222 | 0.00257 | 0.00031   |
|       | TOTAL | 0.00298    | 0.00303 | 0.00244 | 0.00282 | 0.00032   |
| BOT   | L     | 0.00002    | 0.00003 | 0.00002 | 0.00002 | 0.00001   |
|       | ML    | 0.00003    | 0.00004 | 0.00012 | 0.00006 | 0.00005   |
|       | S     | 0.00004    | 0.00010 | 0.00006 | 0.00007 | 0.00003   |
|       | F     | 0.00012    | 0.00008 | 0.00005 | 0.00008 | 0.00004   |
|       | VF    | 0.00004    | 0.00005 | 0.00003 | 0.00004 | 0.00001   |
|       | UF    | 0.00268    | 0.00254 | 0.00262 | 0.00261 | 0.00007   |
|       | TOTAL | 0.00294    | 0.00282 | 0.00290 | 0.00289 | 0.00006   |

**Table A3.1.18. Concentration of organic seston (gAFDW/l) at Lower Winfield on June 23, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | F     |            | 0.00005 | 0.00005 | 0.00005 | 0.00001   |
|       | VF    |            | 0.00003 | 0.00004 | 0.00003 | 0.00001   |
|       | UF    | 0.00345    | 0.00325 | 0.00265 | 0.00312 | 0.00042   |
|       | TOTAL |            | 0.00336 | 0.00278 | 0.00307 | 0.00041   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00004    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | F     | 0.00006    | 0.00005 | 0.00005 | 0.00005 | 0.00001   |
|       | VF    | 0.00004    | 0.00004 | 0.00003 | 0.00004 | 0.00001   |
|       | UF    | 0.00327    | 0.00375 | 0.00325 | 0.00342 | 0.00028   |
|       | TOTAL | 0.00344    | 0.00389 | 0.00337 | 0.00356 | 0.00028   |

Table A3.1.19. Concentration of organic seston (gAFDW/l) at Upper Winfield on July 20, 1983. Blank = not sampled

| Depth | Size  | Replicates |          |          | Mean     | Std. Dev. |
|-------|-------|------------|----------|----------|----------|-----------|
| TOP   | L     | 0.000001   | 0.01036  | 0.000001 | 0.00345  | 0.00598   |
|       | ML    | 0.000001   | 0.000001 | 0.000001 | 0.000001 | 0.000001  |
|       | S     | 0.000001   | 0.000001 | 0.000002 | 0.000001 | 0.000001  |
|       | F     | 0.000003   | 0.000004 | 0.000004 | 0.000004 | 0.000001  |
|       | VF    | 0.000001   | 0.000001 | 0.000001 | 0.000001 | 0.000001  |
|       | UF    | 0.00153    | 0.00192  | 0.00187  | 0.00177  | 0.00021   |
|       | TOTAL | 0.00160    | 0.01235  | 0.00194  | 0.00530  | 0.00611   |
| BOT   | L     | 0.000001   | 0.000001 | 0.000001 | 0.000001 | 0.000001  |
|       | ML    | 0.000001   | 0.000001 | 0.000001 | 0.000001 | 0.000001  |
|       | S     | 0.000002   | 0.000002 | 0.000002 | 0.000002 | 0.000001  |
|       | F     | 0.000005   | 0.000006 | 0.000005 | 0.000005 | 0.000001  |
|       | VF    | 0.000001   | 0.000001 | 0.000002 | 0.000001 | 0.000001  |
|       | UF    | 0.00198    | 0.00183  | 0.00180  | 0.00187  | 0.00009   |
|       | TOTAL | 0.00207    | 0.00193  | 0.00190  | 0.00197  | 0.00009   |



**Table A3.1.20. Concentration of organic seston (gAFDW/l) at Lower Winfield on July 21, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00006    | 0.00007 | 0.00005 | 0.00006 | 0.00001   |
|       | F     | 0.00009    | 0.00007 | 0.00008 | 0.00008 | 0.00001   |
|       | VF    | 0.00006    | 0.00005 | 0.00005 | 0.00005 | 0.00001   |
|       | UF    | 0.00274    | 0.00269 | 0.00230 | 0.00258 | 0.00024   |
|       | TOTAL | 0.00295    | 0.00289 | 0.00250 | 0.00278 | 0.00025   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00004    | 0.00004 | 0.00003 | 0.00003 | 0.00001   |
|       | F     | 0.00005    | 0.00005 | 0.00005 | 0.00005 | 0.00001   |
|       | VF    | 0.00002    | 0.00002 | 0.00003 | 0.00002 | 0.00001   |
|       | UF    | 0.00343    | 0.00329 | 0.00417 | 0.00363 | 0.00048   |
|       | TOTAL | 0.00355    | 0.00341 | 0.00429 | 0.00375 | 0.00047   |

**Table A3.1.21. Concentration of organic seston (gAFDW/l) at Upper Winfield on August 24, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00002 | 0.00003 | 0.00002 | 0.00001   |
|       | F     | 0.00009    | 0.00008 | 0.00009 | 0.00009 | 0.00001   |
|       | VF    | 0.00004    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | UF    | 0.00169    | 0.00214 | 0.00180 | 0.00188 | 0.00024   |
|       | TOTAL | 0.00184    | 0.00228 | 0.00196 | 0.00203 | 0.00022   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00005    | 0.00005 | 0.00006 | 0.00005 | 0.00001   |
|       | VF    | 0.00004    | 0.00004 | 0.00003 | 0.00003 | 0.00001   |
|       | UF    | 0.00257    | 0.00283 | 0.00227 | 0.00256 | 0.00028   |
|       | TOTAL | 0.00268    | 0.00293 | 0.00238 | 0.00266 | 0.00028   |

**Table A3.1.22. Concentration of organic seston (gAFDW/l) at Lower Winfield on August 25, 1983. Blank = not sampled**

| <b>Depth</b> | <b>Size</b>  | <b>Replicates</b> |                |                | <b>Mean</b>    | <b>Std. Dev.</b> |
|--------------|--------------|-------------------|----------------|----------------|----------------|------------------|
| <b>TOP</b>   | <b>L</b>     | <b>0.00001</b>    | <b>0.00001</b> | <b>0.00000</b> | <b>0.00001</b> | <b>0.00001</b>   |
|              | <b>ML</b>    | <b>0.00001</b>    | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b>   |
|              | <b>S</b>     | <b>0.00001</b>    | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b>   |
|              | <b>F</b>     | <b>0.00003</b>    | <b>0.00003</b> | <b>0.00002</b> | <b>0.00003</b> | <b>0.00001</b>   |
|              | <b>VF</b>    | <b>0.00002</b>    | <b>0.00002</b> | <b>0.00001</b> | <b>0.00002</b> | <b>0.00001</b>   |
|              | <b>UF</b>    | <b>0.00125</b>    | <b>0.00092</b> | <b>0.00193</b> | <b>0.00137</b> | <b>0.00052</b>   |
|              | <b>TOTAL</b> | <b>0.00131</b>    | <b>0.00098</b> | <b>0.00198</b> | <b>0.00143</b> | <b>0.00051</b>   |
| <b>BOT</b>   | <b>L</b>     | <b>0.00000</b>    | <b>0.00001</b> | <b>0.00000</b> | <b>0.00001</b> | <b>0.00001</b>   |
|              | <b>ML</b>    | <b>0.00001</b>    | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b>   |
|              | <b>S</b>     | <b>0.00001</b>    | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b> | <b>0.00001</b>   |
|              | <b>F</b>     | <b>0.00003</b>    | <b>0.00004</b> | <b>0.00003</b> | <b>0.00003</b> | <b>0.00001</b>   |
|              | <b>VF</b>    | <b>0.00747</b>    | <b>0.00002</b> | <b>0.00002</b> | <b>0.00250</b> | <b>0.00430</b>   |
|              | <b>UF</b>    | <b>0.00093</b>    | <b>0.00037</b> | <b>0.00073</b> | <b>0.00068</b> | <b>0.00028</b>   |
|              | <b>TOTAL</b> | <b>0.00844</b>    | <b>0.00045</b> | <b>0.00079</b> | <b>0.00323</b> | <b>0.00452</b>   |

Table A3.1.23. Concentration of organic seston (gAFDW/l) at Upper Winfield on September 14, 1983. Blank = not sampled

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | F     | 0.00009    | 0.00011 | 0.00009 | 0.00010 | 0.00001   |
|       | VF    | 0.00004    | 0.00004 | 0.00004 | 0.00004 | 0.00001   |
|       | UF    | 0.00264    | 0.00270 | 0.00408 | 0.00314 | 0.00081   |
|       | TOTAL | 0.00280    | 0.00287 | 0.00425 | 0.00331 | 0.00081   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | F     | 0.00010    | 0.00006 | 0.00009 | 0.00008 | 0.00002   |
|       | VF    | 0.00004    | 0.00003 | 0.00004 | 0.00004 | 0.00001   |
|       | UF    | 0.00286    | 0.00280 | 0.00310 | 0.00292 | 0.00016   |
|       | TOTAL | 0.00302    | 0.00291 | 0.00326 | 0.00306 | 0.00018   |

**Table A3.1.24. Concentration of organic seston (gAFDW/l) at Lower Winfield on September 15, 1983. Blank = not sampled**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00015    | 0.00018 | 0.00014 | 0.00015 | 0.00002   |
|       | F     | 0.00003    | 0.00003 | 0.00004 | 0.00003 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00163    | 0.00116 | 0.00115 | 0.00131 | 0.00027   |
|       | TOTAL | 0.00182    | 0.00138 | 0.00134 | 0.00152 | 0.00027   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00003 | 0.00001 | 0.00002 | 0.00001   |
|       | S     | 0.00015    | 0.00014 | 0.00013 | 0.00014 | 0.00001   |
|       | F     | 0.00004    | 0.00005 | 0.00003 | 0.00004 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00177    | 0.00172 | 0.00148 | 0.00166 | 0.00016   |
|       | TOTAL | 0.00197    | 0.00195 | 0.00167 | 0.00186 | 0.00017   |

Table A3.2.1. Percent (%) by weight of organic seston in total seston at Upper Winfield on October 19, 1982.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |       | Mean | Std. Dev. |
|-------|------------|------------|------|-------|------|-----------|
| TOP   | L          | 100.0      | 96.8 | 100.0 | 98.9 | 1.9       |
|       | ML         | 45.2       | 67.9 | 88.7  | 67.3 | 21.8      |
|       | S          | 73.6       | 24.0 | 23.4  | 40.3 | 28.9      |
|       | F          | 19.6       | 11.8 | 18.2  | 16.5 | 4.1       |
|       | VF         | 21.8       | 20.2 | 20.4  | 20.8 | 0.8       |
|       | UF         | 14.1       | 14.1 | 14.7  | 14.3 | 0.3       |
|       | TOTAL      | 45.7       | 39.1 | 44.2  | 43.0 | 3.4       |
| BOT   | L          | 57.6       | 86.7 | 87.1  | 77.1 | 16.9      |
|       | ML         | 62.7       | 55.3 | 57.1  | 58.4 | 3.9       |
|       | S          | 23.7       | 36.5 | 42.8  | 34.3 | 9.7       |
|       | F          | 19.5       | 20.1 | 19.5  | 19.7 | 0.4       |
|       | VF         | 24.7       | 17.2 | 19.2  | 20.4 | 3.9       |
|       | UF         | 13.9       | 21.1 | 14.9  | 16.7 | 3.9       |
|       | TOTAL      | 33.7       | 39.5 | 40.1  | 37.8 | 3.5       |

Table A3.2.2. Percent (%) by weight of organic seston in total seston at Lower Winfield on October 18, 1982.  
Blank = not sampled.

| Depth | Size Class | Replicates |       |       | Mean | Std. Dev. |
|-------|------------|------------|-------|-------|------|-----------|
| TOP   | L          | 87.8       | 64.3  | 75.0  | 75.7 | 11.8      |
|       | ML         | 63.8       | 44.7  | 91.1  | 66.5 | 23.3      |
|       | S          | 50.6       | 44.4  | 95.8  | 63.6 | 28.1      |
|       | F          | 38.8       | 49.8  | 49.5  | 46.0 | 6.3       |
|       | VF         | 23.9       | 26.8  | 38.8  | 29.8 | 7.9       |
|       | UF         | 15.3       | 17.5  | 13.1  | 15.3 | 2.2       |
|       | TOTAL      | 46.7       | 41.3  | 60.6  | 49.5 | 10.0      |
| BOT   | L          | 89.8       | 100.0 | 100.0 | 96.6 | 5.9       |
|       | ML         | 71.6       | 26.0  | 51.5  | 49.7 | 22.9      |
|       | S          | 46.7       | 31.5  | 49.3  | 42.5 | 9.6       |
|       | F          | 18.0       | 17.9  | 16.9  | 17.6 | 0.6       |
|       | VF         | 15.4       | 14.4  | 16.5  | 15.4 | 1.1       |
|       | UF         | 10.2       | 71.2  | 18.2  | 33.2 | 33.2      |
|       | TOTAL      | 42.0       | 43.5  | 42.1  | 42.5 | 0.9       |

Table A3.2.3. Percent (%) by weight of organic seston in total seston at Upper Winfield on November 19, 1982.  
Blank = not sampled.

| Depth | Size Class | Replicates |      | Mean | Std. Dev. |      |
|-------|------------|------------|------|------|-----------|------|
| TOP   | L          | .          | 60.7 | 60.7 |           |      |
|       | ML         | 45.7       | 46.3 | 34.6 | 42.2      | 6.6  |
|       | S          | 25.3       | 24.9 | 26.7 | 25.6      | 0.9  |
|       | F          | 21.8       | .    | 25.4 | 23.6      | 2.6  |
|       | VF         | 19.4       | 22.4 | 24.5 | 22.1      | 2.6  |
|       | UF         | 19.4       | 17.9 | 18.2 | 18.5      | 0.8  |
|       | TOTAL      |            | 31.7 | 31.7 |           |      |
| BOT   | L          | 66.4       | 32.2 | .    | 49.3      | 24.2 |
|       | ML         | .          | 41.8 | 41.8 |           |      |
|       | S          | .          | 17.1 | 22.0 | 19.5      | 3.5  |
|       | F          | 14.3       | 15.0 | 17.0 | 15.4      | 1.4  |
|       | VF         | 17.6       | 0.0  | 19.5 | 12.4      | 10.8 |
|       | UF         |            | 0.0  | 17.7 | 8.9       | 12.5 |
|       | TOTAL      |            |      |      |           |      |



Table A3.2.4. Percent (%) by weight of organic seston in total seston at Lower Winfield on November 18, 1982.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 100.0      | 67.1 | 71.8 | 79.6 | 17.8      |
|       | ML         | 55.6       | 0.5  | 54.2 | 36.8 | 31.4      |
|       | S          | 59.2       | 50.9 | 50.5 | 53.5 | 4.9       |
|       | F          | 35.2       | 37.2 | 35.0 | 35.8 | 1.2       |
|       | VF         | 22.8       | 26.6 | 26.4 | 25.3 | 2.1       |
|       | UF         | 17.2       | 21.3 | 19.4 | 19.3 | 2.0       |
|       | TOTAL      | 48.3       | 33.9 | 42.9 | 41.7 | 7.3       |
| BOT   | L          | 28.8       | 27.8 | 86.5 | 47.7 | 33.6      |
|       | ML         | 23.2       | 13.8 | 73.1 | 36.7 | 31.9      |
|       | S          | 23.2       | 20.4 | 47.5 | 30.3 | 14.9      |
|       | F          | 64.6       | 16.0 | 17.4 | 32.6 | 27.6      |
|       | VF         | 18.7       | 12.0 | 17.5 | 16.1 | 3.6       |
|       | UF         | 32.2       | 22.7 | 24.6 | 26.5 | 5.0       |
|       | TOTAL      | 31.8       | 18.8 | 44.4 | 31.7 | 12.8      |

Table A3.2.5. Percent (%) by weight of organic seston in total seston at Upper Winfield on December 17, 1982.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 52.5       | 50.3 | 24.2 | 42.3 | 15.7      |
|       | ML         | 41.8       | 25.3 | 0.0  | 22.4 | 21.0      |
|       | S          |            | .    | 19.9 | 19.9 |           |
|       | F          | 11.8       | 12.8 | 14.4 | 13.0 | 1.3       |
|       | VF         | 13.3       | 14.8 | 26.5 | 18.2 | 7.2       |
|       | UF         | 16.1       | 17.0 | 15.4 | 16.2 | 0.8       |
|       | TOTAL      |            |      | 16.7 | 16.7 |           |

Table A3.2.6. Percent (%) by weight of organic seston in total seston at Lower Winfield on December 16, 1982.  
Blank = not sampled.

| Depth | Size Class | Replicates |       |      | Mean | Std. Dev. |
|-------|------------|------------|-------|------|------|-----------|
| TOP   | L          | 68.2       | 100.0 | 0.0  | 56.1 | 51.1      |
|       | ML         | 61.6       | 100.0 | 82.7 | 81.4 | 19.2      |
|       | S          | 46.4       | 64.0  | 0.0  | 36.8 | 33.1      |
|       | F          | 17.7       | 0.0   | 19.7 | 12.5 | 10.8      |
|       | VF         | 14.8       | 17.2  | 16.7 | 16.2 | 1.2       |
|       | UF         | 19.3       | 23.5  | 16.9 | 19.9 | 3.3       |
|       | TOTAL      | 38.0       | 50.8  | 22.7 | 37.1 | 14.1      |
| BOT   | L          | 76.7       | 0.0   | 0.0  | 25.6 | 44.3      |
|       | ML         | 0.0        | 77.2  | 66.2 | 47.8 | 41.7      |
|       | S          | 60.6       | 53.8  | 30.6 | 48.3 | 15.8      |
|       | F          | 21.9       | 20.2  | 18.9 | 20.4 | 1.5       |
|       | VF         | 18.2       | 17.2  | 19.5 | 18.3 | 1.2       |
|       | UF         | 17.8       | 19.5  | 18.8 | 18.7 | 0.8       |
|       | TOTAL      | 32.5       | 31.3  | 25.7 | 29.8 | 3.7       |

Table A3.2.7. Percent (%) by weight of organic seston in total seston at Upper Winfield on January 21, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 50.7       | 64.7 | 61.1 | 58.8 | 7.3       |
|       | ML         | 47.4       | 13.7 | 42.0 | 34.4 | 18.1      |
|       | S          | 36.6       | 30.3 | 31.1 | 32.7 | 3.5       |
|       | F          | 22.2       | 22.0 | 19.9 | 21.4 | 1.3       |
|       | VF         | 28.9       | 37.0 | 21.6 | 29.2 | 7.7       |
|       | UF         | 24.8       | 0.0  | 26.6 | 17.1 | 14.8      |
|       | TOTAL      | 35.1       | 27.9 | 33.7 | 32.2 | 3.8       |
| BOT   | L          | 32.4       | 52.8 | 31.7 | 39.0 | 12.0      |
|       | ML         | 38.4       | 48.0 | 35.0 | 40.5 | 6.8       |
|       | S          | 100.0      | 32.2 | 26.7 | 53.0 | 40.8      |
|       | F          | 17.7       | 22.1 | 19.9 | 19.9 | 2.2       |
|       | VF         | 20.5       | 21.8 | 20.4 | 20.9 | 0.8       |
|       | UF         | 31.3       | 28.4 | 0.0  | 19.9 | 17.3      |
|       | TOTAL      | 40.1       | 34.2 | 22.3 | 32.2 | 9.1       |

Table A3.2.8. Percent (%) by weight of organic seston in total seston at Lower Winfield on January 20, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 62.7       | 6.4  | 87.7 | 52.3 | 41.6      |
|       | ML         | 69.0       | 44.6 | 45.8 | 53.1 | 13.7      |
|       | S          | 42.1       | 38.7 | 45.8 | 42.2 | 3.6       |
|       | F          | 27.2       | 30.2 | 32.7 | 30.0 | 2.8       |
|       | VF         | 25.1       | 23.7 | 24.0 | 24.3 | 0.7       |
|       | UF         | 18.4       | 15.8 | 19.8 | 18.0 | 2.1       |
|       | TOTAL      | 40.8       | 26.6 | 42.6 | 36.7 | 8.8       |
| BOT   | L          | 48.3       | 6.4  | 65.7 | 40.1 | 30.5      |
|       | ML         | 54.7       | 55.5 | 48.3 | 52.8 | 4.0       |
|       | S          | 48.6       | 43.4 | 44.0 | 45.3 | 2.8       |
|       | F          | 24.1       | 22.8 | 24.3 | 23.7 | 0.8       |
|       | VF         | 20.4       | 24.7 | 21.9 | 22.3 | 2.2       |
|       | UF         | 24.0       | 23.2 | 23.9 | 23.7 | 0.4       |
|       | TOTAL      | 36.7       | 29.3 | 38.0 | 34.7 | 4.7       |

**Table A3.2.9. Percent (%) by weight of organic seston in total seston at Upper Winfield on February 18, 1983.  
Blank = not sampled.**

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 24.4       | 28.8 | 27.4 | 26.9 | 2.3       |
|       | ML         | 32.4       | 31.2 | 31.8 | 31.8 | 0.6       |
|       | S          |            | 26.6 | 26.7 | 26.7 | 0.1       |
|       | F          | 17.1       | 17.6 | 78.5 | 37.7 | 35.3      |
|       | VF         | 16.5       | 15.9 | 15.5 | 16.0 | 0.5       |
|       | UF         | 0.0        | 16.4 | 16.7 | 11.0 | 9.5       |
|       | TOTAL      |            | 22.8 | 32.8 | 27.8 | 7.1       |
| BOT   | L          | 16.0       | 13.8 | 45.4 | 25.1 | 17.6      |
|       | ML         | 27.0       | 23.6 | 32.0 | 27.5 | 4.2       |
|       | S          | 25.4       | 27.4 | 24.1 | 25.6 | 1.7       |
|       | F          | 16.6       | 17.0 | 16.7 | 16.8 | 0.2       |
|       | VF         | 15.8       | 14.5 | 14.7 | 15.0 | 0.7       |
|       | UF         | 14.3       | 15.8 | 13.7 | 14.6 | 1.1       |
|       | TOTAL      | 19.2       | 18.7 | 24.4 | 20.8 | 3.2       |

Table A3.2.10. Percent (%) by weight of organic seston in total seston at Lower Winfield on February 17, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 56.6       | 44.0 | 51.9 | 50.8 | 6.4       |
|       | ML         | 44.7       | 47.8 | 44.0 | 45.5 | 2.0       |
|       | S          | 28.0       | 30.7 | 25.2 | 27.9 | 2.8       |
|       | F          | 19.1       | 18.5 | 17.1 | 18.3 | 1.0       |
|       | VF         | 13.2       | 14.8 | 20.1 | 16.0 | 3.6       |
|       | UF         | 15.8       | 18.4 | 13.3 | 15.8 | 2.6       |
|       | TOTAL      | 29.6       | 29.0 | 28.6 | 29.1 | 0.5       |
| BOT   | L          | 26.1       | 42.5 | 58.8 | 42.5 | 16.3      |
|       | ML         | 35.4       | 33.9 | 23.4 | 30.9 | 6.6       |
|       | S          | 20.9       | 87.1 | 20.3 | 42.8 | 38.4      |
|       | F          | 16.7       | 17.3 | 17.0 | 17.0 | 0.3       |
|       | VF         | 25.4       | 18.6 | 23.5 | 22.5 | 3.5       |
|       | UF         | 17.4       | 16.2 | 13.8 | 15.8 | 1.8       |
|       | TOTAL      | 23.6       | 35.9 | 26.1 | 28.6 | 6.5       |

**Table A3.2.11. Percent (%) by weight of organic seston in total seston at Upper Winfield on March 25, 1983.**  
**Blank = not sampled.**

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 33.2       | 54.6 | 57.9 | 48.5 | 13.4      |
|       | ML         | .          | 24.0 | 35.4 | 29.7 |           |
|       | S          | 15.4       | 16.8 | 15.8 | 16.0 | 0.7       |
|       | F          | 15.3       | 19.7 | 16.5 | 17.2 | 2.3       |
|       | VF         | 19.2       | 20.6 | 22.2 | 20.6 | 1.2       |
|       | UF         | 11.2       | 11.6 | 10.7 | 11.2 | 0.5       |
|       | TOTAL      |            | 24.0 | 25.8 | 24.9 | 1.3       |
| BOT   | L          | 34.3       | 34.5 | 65.6 | 44.8 | 18.0      |
|       | ML         | 19.2       | 10.1 | 0.4  | 13.2 | 5.1       |
|       | S          | 14.2       | 15.6 | 13.9 | 14.6 | 0.9       |
|       | F          | 16.6       | 13.3 | 15.3 | 15.1 | 1.6       |
|       | VF         | 19.2       | 14.1 | 19.5 | 17.6 | 3.0       |
|       | UF         | 13.1       | 12.3 | 13.3 | 12.9 | 0.5       |
|       | TOTAL      | 19.4       | 16.7 | 23.0 | 19.7 | 3.2       |



Table A3.2.12. Percent (%) by weight of organic seston in total seston at Lower Winfield on March 24, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 15.2       | 38.7 | 30.1 | 28.0 | 11.9      |
|       | ML         | 18.8       | 39.2 | 35.2 | 31.1 | 10.8      |
|       | S          | 18.2       | 13.3 | 19.7 | 17.1 | 3.4       |
|       | F          | 11.7       | 10.9 | 11.3 | 11.3 | 0.4       |
|       | VF         | 17.7       | 16.8 | 17.7 | 17.4 | 0.5       |
|       | UF         | 12.3       | 13.2 | 12.1 | 12.5 | 0.6       |
| TOTAL |            | 15.7       | 22.0 | 21.0 | 19.6 | 3.4       |

Table A3.2.13. Percent (%) by weight of organic seston in total seston at Upper Winfield on April 22, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 51.6       | 57.6 | 55.9 | 55.0 | 3.1       |
|       | ML         | 46.3       | 48.4 | 35.0 | 43.2 | 7.2       |
|       | S          | 23.2       | 24.3 | 21.7 | 23.1 | 1.3       |
|       | F          | 16.2       | 18.7 | 17.0 | 17.3 | 1.3       |
|       | VF         | 18.4       | 16.3 | 17.2 | 17.3 | 1.0       |
|       | UF         | 13.8       | 18.0 | 17.8 | 16.5 | 2.4       |
|       | TOTAL      | 28.2       | 30.6 | 27.4 | 28.7 | 1.6       |
| BOT   | L          | 55.9       | 66.8 | 67.7 | 63.5 | 6.6       |
|       | ML         | 45.4       | .    | 50.1 | 47.8 | 3.3       |
|       | S          | 15.7       | 12.8 | 15.5 | 14.7 | 1.6       |
|       | F          | 16.0       | 15.8 | 17.8 | 16.5 | 1.1       |
|       | VF         | 18.6       | 17.7 | 19.1 | 18.4 | 0.7       |
|       | UF         | 16.8       | 17.2 | 15.9 | 16.6 | 0.7       |
|       | TOTAL      | 28.1       |      | 31.0 | 29.5 | 2.1       |

Table A3.2.14. Percent (%) by weight of organic seston in total seston at Lower Winfield on April 21, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 29.7       | 58.1 | 63.2 | 50.3 | 18.0      |
|       | ML         | 44.0       | 47.6 | 44.6 | 45.4 | 1.9       |
|       | S          | 45.6       | 39.6 | 42.9 | 42.7 | 3.0       |
|       | F          | 23.8       | 22.1 | 23.7 | 23.2 | 1.0       |
|       | VF         | .          | 18.0 | 17.5 | 17.8 | 0.4       |
|       | UF         | .          | 15.0 | 16.6 | 15.8 | 1.2       |
|       | TOTAL      |            | 33.4 | 34.8 | 34.1 | 1.0       |
| BOT   | L          | 70.7       | 65.5 | 42.7 | 59.6 | 14.9      |
|       | ML         | 59.4       | 59.6 | 54.0 | 57.7 | 3.1       |
|       | S          | 35.5       | 36.7 | 27.9 | 33.4 | 4.8       |
|       | F          | 19.1       | 15.6 | 18.2 | 17.6 | 1.8       |
|       | VF         | 16.2       | 23.2 | 21.9 | 20.5 | 3.7       |
|       | UF         | 11.6       | 11.9 | 15.0 | 12.8 | 1.9       |
|       | TOTAL      | 35.4       | 35.4 | 30.0 | 33.6 | 3.1       |

Table A3.2.15. Percent (%) by weight of organic seston in total seston at Upper Winfield on May 19, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 41.4       | 63.2 | 39.6 | 48.1 | 13.2      |
|       | ML         | 40.9       | 19.3 | 43.8 | 34.7 | 13.4      |
|       | S          | 29.0       | 30.2 | 28.9 | 29.4 | 0.8       |
|       | F          | 16.0       | 16.1 | 15.9 | 16.0 | 0.1       |
|       | VF         | 15.3       | 16.2 | 17.2 | 16.2 | 0.9       |
|       | UF         | 13.0       | 13.1 | 13.4 | 13.2 | 0.2       |
|       | TOTAL      | 25.9       | 26.4 | 26.5 | 26.2 | 0.3       |
| BOT   | L          | 14.7       | 57.7 | 32.9 | 35.1 | 21.6      |
|       | ML         | 23.3       | 25.8 | 26.2 | 25.1 | 1.6       |
|       | S          | 29.4       | 28.9 | 25.7 | 28.0 | 2.0       |
|       | F          | 15.0       | 15.6 | 16.3 | 15.6 | 0.7       |
|       | VF         | 16.1       | 15.8 | 14.1 | 15.3 | 1.1       |
|       | UF         | 14.5       | 5.5  | 15.8 | 11.9 | 5.6       |
|       | TOTAL      | 18.8       | 24.9 | 21.8 | 21.9 | 3.0       |

**Table A3.2.16. Percent (%) by weight of organic seston in total seston at Lower Winfield on May 20, 1983.  
Blank = not sampled.**

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 37.2       | 4.0  | 9.4  | 16.9 | 17.8      |
|       | ML         | 51.5       | 11.3 | 30.3 | 31.0 | 20.1      |
|       | S          | 36.1       | 34.3 | 36.7 | 35.7 | 1.2       |
|       | F          | 19.6       | 19.4 | 19.0 | 19.4 | 0.3       |
|       | VF         | 16.5       | 16.3 | 16.7 | 16.5 | 0.2       |
|       | UF         | 11.7       | 14.3 | 12.9 | 13.0 | 1.3       |
|       | TOTAL      | 28.8       | 16.6 | 20.8 | 22.1 | 6.2       |
| BOT   | L          | 53.9       | 4.7  | 47.4 | 35.3 | 26.8      |
|       | ML         | 59.8       | 49.7 | 66.7 | 58.7 | 8.5       |
|       | S          | 46.9       | 45.5 | 61.0 | 51.1 | 8.6       |
|       | F          | 21.7       | 24.3 | 24.7 | 23.6 | 1.6       |
|       | VF         | 14.8       | 11.3 | 13.9 | 13.4 | 1.8       |
|       | UF         | 11.0       | 13.2 | 13.0 | 12.4 | 1.3       |
|       | TOTAL      | 34.7       | 24.8 | 37.8 | 32.4 | 6.8       |

Table A3.2.17. Percent (%) by weight of organic seston in total seston at Upper Winfield on June 22, 1983.  
Blank = not sampled.

| Depth | Size Class |      | Replicates |      | Mean | Std. Dev. |
|-------|------------|------|------------|------|------|-----------|
| TOP   | L          | 0.0  | 39.1       | 36.2 | 25.1 | 21.8      |
|       | ML         | 50.2 | 40.8       | 26.8 | 39.3 | 11.8      |
|       | S          | 24.4 | 24.8       | 19.1 | 22.8 | 3.2       |
|       | F          | 22.6 | 20.6       | 22.3 | 21.8 | 1.1       |
|       | VF         | 18.1 | 21.3       | 19.1 | 19.5 | 1.6       |
|       | UF         | 11.2 | 11.5       | 9.5  | 10.7 | 1.0       |
|       | TOTAL      | 21.1 | 26.3       | 22.2 | 23.2 | 2.8       |
| BOT   | L          | 64.9 | 33.3       | 39.8 | 46.0 | 16.7      |
|       | ML         | 50.0 | 35.4       | 27.7 | 37.7 | 11.3      |
|       | S          | 19.4 | 20.8       | 18.7 | 19.6 | 1.1       |
|       | F          | 23.0 | 24.5       | 18.1 | 21.9 | 3.3       |
|       | VF         | 20.9 | 21.1       | 18.5 | 20.2 | 1.5       |
|       | UF         | 13.8 | 12.8       | 14.5 | 13.7 | 0.9       |
|       | TOTAL      | 32.0 | 24.7       | 22.9 | 26.5 | 4.8       |

Table A3.2.18. Percent (%) by weight of organic seston in total seston at Lower Winfield on June 23, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 15.6       | 57.3 | 59.2 | 44.0 | 24.7      |
|       | ML         | 36.4       | 27.0 | 38.3 | 33.9 | 6.1       |
|       | S          | 28.9       | 28.8 | 30.1 | 29.3 | 0.7       |
|       | F          | .          | 25.2 | 28.7 | 27.0 | 2.5       |
|       | VF         | .          | 19.1 | 21.3 | 20.2 | 1.5       |
|       | UF         | 9.8        | 9.6  | 7.9  | 9.1  | 1.0       |
|       | TOTAL      |            | 27.8 | 30.9 | 29.4 | 2.2       |
| BOT   | L          | 24.7       | 36.4 | 16.0 | 25.7 | 10.2      |
|       | ML         | 21.1       | 28.4 | 16.7 | 22.0 | 5.9       |
|       | S          | 27.1       | 29.9 | 23.1 | 26.7 | 3.4       |
|       | F          | 22.4       | 23.4 | 21.3 | 22.4 | 1.0       |
|       | VF         | 17.6       | 19.1 | 17.6 | 18.1 | 0.8       |
|       | UF         | 9.7        | 9.7  | 8.2  | 9.2  | 0.9       |
|       | TOTAL      | 20.4       | 24.5 | 17.1 | 20.7 | 3.7       |

Table A3.2.19. Percent (%) by weight of organic seston in total seston at Upper Winfield on July 20, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 76.8       | 15.3 | 39.1 | 43.7 | 31.0      |
|       | ML         | 76.0       | 57.8 | 52.6 | 62.1 | 12.3      |
|       | S          | 46.9       | 51.7 | 40.0 | 46.2 | 5.9       |
|       | F          | 26.5       | 26.4 | 26.2 | 26.4 | 0.2       |
|       | VF         | 27.2       | 35.2 | 31.3 | 31.2 | 4.0       |
|       | UF         | 25.8       | 28.5 | 28.5 | 27.6 | 1.5       |
|       | TOTAL      | 46.6       | 35.8 | 36.3 | 39.6 | 6.1       |
| BOT   | L          | 23.6       | 45.9 | 18.8 | 29.4 | 14.4      |
|       | ML         | 51.8       | 75.0 | 33.7 | 53.5 | 20.7      |
|       | S          | 28.9       | 35.8 | 31.6 | 32.1 | 3.5       |
|       | F          | 22.2       | 21.5 | 23.0 | 22.2 | 0.7       |
|       | VF         | 28.1       | 23.4 | 23.1 | 24.9 | 2.8       |
|       | UF         | 25.7       | 26.3 | 25.7 | 25.9 | 0.3       |
|       | TOTAL      | 30.1       | 38.0 | 26.0 | 31.3 | 6.1       |



Table A3.2.20. Percent (%) by weight of organic seston in total seston at Lower Winfield on July 21, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |       | Mean | Std. Dev. |
|-------|------------|------------|------|-------|------|-----------|
| TOP   | L          | 100.0      | 75.5 | 66.1  | 80.5 | 17.5      |
|       | ML         | 96.7       | 66.3 | 100.0 | 87.7 | 18.6      |
|       | S          | 73.2       | 78.9 | 84.5  | 78.8 | 5.6       |
|       | F          | 69.5       | 76.9 | 79.5  | 75.3 | 5.2       |
|       | VF         | 71.6       | 78.6 | 71.6  | 73.9 | 4.0       |
|       | UF         | 37.0       | 39.1 | 30.9  | 35.7 | 4.2       |
|       | TOTAL      | 74.7       | 69.2 | 72.1  | 72.0 | 2.7       |
| BOT   | L          | 100.0      | 71.7 | 71.9  | 81.2 | 16.3      |
|       | ML         | 29.4       | 50.5 | 54.4  | 44.8 | 13.4      |
|       | S          | 21.7       | 45.2 | 41.7  | 36.2 | 12.7      |
|       | F          | 19.0       | 25.6 | 23.3  | 22.6 | 3.3       |
|       | VF         | 18.9       | 21.1 | 22.6  | 20.9 | 1.9       |
|       | UF         | 16.8       | 15.6 | 20.1  | 17.5 | 2.3       |
|       | TOTAL      | 34.3       | 38.3 | 39.0  | 37.2 | 2.5       |

Table A3.2.21. Percent (%) by weight of organic seston in total seston at Upper Winfield on August 24, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 34.5       | 66.2 | 48.8 | 49.8 | 15.9      |
|       | ML         | 13.3       | 33.3 | 51.3 | 32.6 | 19.0      |
|       | S          | 26.2       | 31.0 | 32.7 | 30.0 | 3.4       |
|       | F          | 18.9       | 17.6 | 18.9 | 18.5 | 0.7       |
|       | VF         | 24.1       | 20.9 | 21.2 | 22.0 | 1.8       |
|       | UF         | 25.3       | 27.6 | 26.7 | 26.5 | 1.1       |
|       | TOTAL      | 23.7       | 32.8 | 33.2 | 29.9 | 5.4       |
| BOT   | L          | 2.2        | 23.6 | 59.2 | 28.3 | 28.8      |
|       | ML         | 71.3       | 61.5 | 12.5 | 48.4 | 31.5      |
|       | S          | 48.4       | 24.3 | 31.7 | 34.8 | 12.3      |
|       | F          | 18.8       | 17.0 | 18.2 | 18.0 | 0.9       |
|       | VF         | 22.1       | 21.2 | 21.1 | 21.5 | 0.6       |
|       | UF         | 31.0       | 32.8 | 29.7 | 31.2 | 1.6       |
|       | TOTAL      | 32.3       | 30.1 | 28.7 | 30.4 | 1.8       |

Table A3.2.22. Percent (%) by weight of organic seston in total seston at Lower Winfield on August 25, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |       |      | Mean | Std. Dev. |
|-------|------------|------------|-------|------|------|-----------|
| TOP   | L          | 16.7       | 23.8  | 0.0  | 13.5 | 12.2      |
|       | ML         | 58.8       | 44.4  | 33.3 | 45.5 | 12.8      |
|       | S          | 68.5       | 48.9  | 42.9 | 53.4 | 13.4      |
|       | F          | 44.2       | 37.9  | 28.0 | 36.7 | 8.2       |
|       | VF         | 43.3       | 41.6  | 31.1 | 38.6 | 6.6       |
|       | UF         | 17.2       | 13.2  | 17.8 | 16.0 | 2.5       |
|       | TOTAL      | 41.4       | 35.0  | 25.5 | 34.0 | 8.0       |
| BOT   | L          | 0.0        | 100.0 | 0.0  | 33.3 | 57.7      |
|       | ML         | 66.2       | 42.7  | 64.4 | 57.8 | 13.1      |
|       | S          | 33.7       | 53.6  | 35.2 | 40.8 | 11.1      |
|       | F          | 27.0       | 26.4  | 28.7 | 27.4 | 1.2       |
|       | VF         | 100.0      | 29.4  | 29.3 | 52.9 | 40.8      |
|       | UF         | 12.5       | 4.8   | 8.0  | 8.4  | 3.8       |
|       | TOTAL      | 39.9       | 42.8  | 27.6 | 36.8 | 8.1       |

Table A3.2.23. Percent (%) by weight of organic seston in total seston at Upper Winfield on September 14, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 11.1       | 27.5 | 48.6 | 29.0 | 18.8      |
|       | ML         | 54.1       | 28.7 | 33.1 | 38.6 | 13.6      |
|       | S          | 35.6       | 31.2 | 28.4 | 31.7 | 3.7       |
|       | F          | 20.0       | 19.7 | 19.8 | 19.8 | 0.2       |
|       | VF         | 18.7       | 19.7 | 19.3 | 19.3 | 0.5       |
|       | UF         | 24.9       | 26.5 | 21.7 | 24.3 | 2.4       |
|       | TOTAL      | 27.4       | 25.5 | 28.5 | 27.1 | 1.5       |
| BOT   | L          | 33.3       | 19.3 | 8.7  | 20.4 | 12.4      |
|       | ML         | 9.4        | 44.9 | 31.5 | 28.6 | 18.0      |
|       | S          | 27.8       | 39.7 | 27.6 | 31.7 | 6.9       |
|       | F          | 20.2       | 19.2 | 20.4 | 19.9 | 0.7       |
|       | VF         | 19.8       | 20.0 | 20.4 | 20.1 | 0.3       |
|       | UF         | 23.8       | 22.8 | 24.4 | 23.7 | 0.8       |
|       | TOTAL      | 22.4       | 27.6 | 22.2 | 24.1 | 3.1       |

Table A3.2.24. Percent (%) by weight of organic seston in total seston at Lower Winfield on September 15, 1983.  
Blank = not sampled.

| Depth | Size Class | Replicates |      |      | Mean | Std. Dev. |
|-------|------------|------------|------|------|------|-----------|
| TOP   | L          | 25.0       | 15.6 | 14.3 | 18.3 | 5.8       |
|       | ML         | 50.9       | 62.5 | 49.4 | 54.3 | 7.2       |
|       | S          | 40.8       | 42.7 | 39.1 | 40.9 | 1.8       |
|       | F          | 30.9       | 37.8 | 37.3 | 35.3 | 3.8       |
|       | VF         | 31.0       | 26.7 | 29.0 | 28.9 | 2.2       |
|       | UF         | 16.7       | 16.2 | 14.3 | 15.8 | 1.3       |
|       | TOTAL      | 32.6       | 33.6 | 30.6 | 32.2 | 1.5       |
| BOT   | L          | 2.9        | 22.9 | 16.2 | 14.0 | 10.2      |
|       | ML         | 45.6       | 48.5 | 48.9 | 47.7 | 1.8       |
|       | S          | 34.3       | 34.8 | 39.2 | 36.1 | 2.7       |
|       | F          | 35.0       | 34.3 | 38.7 | 36.0 | 2.4       |
|       | VF         | 26.5       | 26.8 | 26.1 | 26.5 | 0.3       |
|       | UF         | 15.9       | 16.8 | 14.8 | 15.8 | 1.0       |
|       | TOTAL      | 26.7       | 30.7 | 30.7 | 29.3 | 2.3       |

Table A3.3.1. Concentration of total seston (gDW/l) at Upper Winfield on October 19, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00003    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | S     | 0.00010    | 0.00007 | 0.00006 | 0.00008 | 0.00002   |
|       | F     | 0.00037    | 0.00039 | 0.00042 | 0.00040 | 0.00002   |
|       | VF    | 0.00010    | 0.00014 | 0.00015 | 0.00013 | 0.00002   |
|       | UF    | 0.00859    | 0.00944 | 0.00847 | 0.00883 | 0.00053   |
|       | TOTAL | 0.00920    | 0.01005 | 0.00912 | 0.00946 | 0.00051   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00005    | 0.00006 | 0.00004 | 0.00005 | 0.00001   |
|       | F     | 0.00033    | 0.00036 | 0.00034 | 0.00034 | 0.00002   |
|       | VF    | 0.00011    | 0.00015 | 0.00012 | 0.00013 | 0.00002   |
|       | UF    | 0.00823    | 0.00877 | 0.00887 | 0.00862 | 0.00035   |
|       | TOTAL | 0.00873    | 0.00936 | 0.00937 | 0.00916 | 0.00037   |

**Table A3.3.2. Concentration of total seston (gDW/l) at Lower Winfield on October 18, 1982. Blank = not sampled.**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00005    | 0.00001 | 0.00001 | 0.00002 | 0.00002   |
|       | S     | 0.00004    | 0.00001 | 0.00001 | 0.00002 | 0.00002   |
|       | F     | 0.00010    | 0.00003 | 0.00002 | 0.00005 | 0.00005   |
|       | VF    | 0.00011    | 0.00005 | 0.00003 | 0.00006 | 0.00004   |
|       | UF    | 0.00885    | 0.00992 | 0.00937 | 0.00938 | 0.00054   |
|       | TOTAL | 0.00916    | 0.01002 | 0.00943 | 0.00954 | 0.00044   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | S     | 0.00002    | 0.00003 | 0.00003 | 0.00003 | 0.00001   |
|       | F     | 0.00032    | 0.00033 | 0.00032 | 0.00032 | 0.00001   |
|       | VF    | 0.00015    | 0.00020 | 0.00018 | 0.00018 | 0.00003   |
|       | UF    | 0.01435    | 0.00230 | 0.01344 | 0.01003 | 0.00671   |
|       | TOTAL | 0.01486    | 0.00288 | 0.01400 | 0.01058 | 0.00668   |

Table A3.3.3. Concentration of total seston (gdW/l) at Upper Winfield on November 19, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     |            |         | 0.00001 | 0.00001 |           |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00006    | 0.00004 | 0.00004 | 0.00005 | 0.00001   |
|       | F     | 0.00009    |         | 0.00011 | 0.00010 | 0.00001   |
|       | VF    | 0.00014    | 0.00005 | 0.00004 | 0.00008 | 0.00006   |
|       | UF    | 0.00951    | 0.00892 | 0.00895 | 0.00913 | 0.00033   |
|       | TOTAL |            |         | 0.00915 | 0.00915 |           |
| BOT   | L     | 0.00001    | 0.00001 |         | 0.00001 | 0.00001   |
|       | ML    |            |         | 0.00002 | 0.00002 |           |
|       | S     |            | 0.00042 | 0.00016 | 0.00029 | 0.00018   |
|       | F     | 0.00042    | 0.00034 | 0.00035 | 0.00037 | 0.00004   |
|       | VF    | 0.00006    | 0.00006 | 0.00006 | 0.00006 | 0.00001   |
|       | UF    |            | 0.01006 | 0.01140 | 0.01073 | 0.00095   |
|       | TOTAL |            |         |         |         |           |



**Table A3.3.4. Concentration of total seston (gDW/l) at Lower Winfield on November 18, 1982. Blank = not sampled.**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00010 | 0.00001 | 0.00003 | 0.00006   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00002    | 0.00001 | 0.00001 | 0.00002 | 0.00001   |
|       | UF    | 0.00685    | 0.00643 | 0.00582 | 0.00637 | 0.00052   |
|       | TOTAL | 0.00688    | 0.00655 | 0.00584 | 0.00643 | 0.00053   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00003 | 0.00001 | 0.00001 | 0.00002   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00009    | 0.00008 | 0.00005 | 0.00008 | 0.00002   |
|       | VF    | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | UF    | 0.00418    | 0.00660 | 0.00676 | 0.00585 | 0.00145   |
|       | TOTAL | 0.00431    | 0.00676 | 0.00684 | 0.00597 | 0.00144   |

Table A3.3.5. Concentration of total seston (gDW/l) at Upper Winfield on December 17, 1982. Blank = not sampled.

| Depth | Size | Replicates |         |         | Mean    | Std. Dev. |
|-------|------|------------|---------|---------|---------|-----------|
| TOP   | L    | 0.00050    | 0.00020 | 0.00127 | 0.00066 | 0.00055   |
|       | ML   | 0.00723    | 0.00216 | 0.00390 | 0.00443 | 0.00258   |
|       | S    |            |         | 0.01494 | 0.01494 |           |
|       | F    | 0.01337    | 0.01450 | 0.01339 | 0.01376 | 0.00065   |
|       | VF   | 0.00153    | 0.00132 | 0.00094 | 0.00126 | 0.00030   |
|       | UF   | 0.03160    | 0.02984 | 0.03192 | 0.03112 | 0.00112   |
| TOTAL |      |            |         | 0.06636 | 0.06636 |           |

Table A3.3.6. Concentration of total seston (gDW/l) at Lower Winfield on December 16, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00000 | 0.00001 | 0.00001   |
|       | F     | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | VF    | 0.00002    | 0.00002 | 0.00003 | 0.00002 | 0.00001   |
|       | UF    | 0.00633    | 0.00672 | 0.00624 | 0.00643 | 0.00025   |
|       | TOTAL | 0.00638    | 0.00676 | 0.00629 | 0.00648 | 0.00025   |
| BOT   | L     | 0.00001    | 0.00000 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00000    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00002 | 0.00003 | 0.00002 | 0.00001   |
|       | VF    | 0.00003    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | UF    | 0.00600    | 0.00635 | 0.00586 | 0.00607 | 0.00025   |
|       | TOTAL | 0.00605    | 0.00639 | 0.00591 | 0.00612 | 0.00025   |

Table A3.3.7. Concentration of total seston (gDW/l) at Upper Winfield on January 21, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00003 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00003 | 0.00006 | 0.00004 | 0.00002   |
|       | F     | 0.00015    | 0.00014 | 0.00009 | 0.00013 | 0.00003   |
|       | VF    | 0.00002    | 0.00002 | 0.00007 | 0.00004 | 0.00003   |
|       | UF    | 0.00382    | 0.00000 | 0.00346 | 0.00243 | 0.00211   |
|       | TOTAL | 0.00402    | 0.00023 | 0.00370 | 0.00265 | 0.00210   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00004 | 0.00009 | 0.00005 | 0.00004   |
|       | F     | 0.00019    | 0.00015 | 0.00024 | 0.00019 | 0.00004   |
|       | VF    | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | UF    | 0.00291    | 0.00331 | 0.00000 | 0.00207 | 0.00181   |
|       | TOTAL | 0.00315    | 0.00352 | 0.00036 | 0.00235 | 0.00173   |

Table A3.3.8. Concentration of total seston (gdW/l) at Lower Winfield on January 20, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00543    | 0.00527 | 0.00404 | 0.00491 | 0.00076   |
|       | TOTAL | 0.00545    | 0.00529 | 0.00406 | 0.00493 | 0.00076   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | UF    | 0.00379    | 0.00371 | 0.00373 | 0.00374 | 0.00004   |
|       | TOTAL | 0.00381    | 0.00373 | 0.00374 | 0.00376 | 0.00004   |

Table A3.3.9. Concentration of total seston (gDW/l) at Upper Winfield on February 18, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00002    | 0.00002 | 0.00001 | 0.00002 | 0.00001   |
|       | ML    | 0.00012    | 0.00009 | 0.00010 | 0.00010 | 0.00001   |
|       | S     |            | 0.00025 | 0.00025 | 0.00025 | 0.00001   |
|       | F     | 0.00081    | 0.00073 | 0.00086 | 0.00080 | 0.00006   |
|       | VF    | 0.00022    | 0.00024 | 0.00024 | 0.00023 | 0.00001   |
|       | UF    | 0.01294    | 0.01275 | 0.01301 | 0.01290 | 0.00013   |
|       | TOTAL |            | 0.01408 | 0.01448 | 0.01428 | 0.00028   |
| BOT   | L     | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001   |
|       | ML    | 0.00010    | 0.00014 | 0.00010 | 0.00011 | 0.00002   |
|       | S     | 0.00030    | 0.00026 | 0.00030 | 0.00029 | 0.00002   |
|       | F     | 0.00099    | 0.00081 | 0.00080 | 0.00086 | 0.00011   |
|       | VF    | 0.00021    | 0.00019 | 0.00023 | 0.00021 | 0.00002   |
|       | UF    | 0.01601    | 0.01543 | 0.01683 | 0.01609 | 0.00070   |
|       | TOTAL | 0.01764    | 0.01683 | 0.01827 | 0.01758 | 0.00072   |

**Table A3.3.10. Concentration of total seston (gdW/l) at Lower Winfield on February 17, 1983. Blank = not sampled.**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00003    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | S     | 0.00005    | 0.00004 | 0.00006 | 0.00005 | 0.00001   |
|       | F     | 0.00014    | 0.00012 | 0.00014 | 0.00013 | 0.00001   |
|       | VF    | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | UF    | 0.00729    | 0.00761 | 0.00837 | 0.00776 | 0.00055   |
|       | TOTAL | 0.00753    | 0.00781 | 0.00862 | 0.00799 | 0.00056   |
| BOT   | L     | 0.00005    | 0.00001 | 0.00002 | 0.00003 | 0.00002   |
|       | ML    | 0.00005    | 0.00006 | 0.00018 | 0.00010 | 0.00007   |
|       | S     | 0.00019    | 0.00019 | 0.00012 | 0.00017 | 0.00004   |
|       | F     | 0.00018    | 0.00020 | 0.00019 | 0.00019 | 0.00001   |
|       | VF    | 0.00002    | 0.00002 | 0.00001 | 0.00002 | 0.00001   |
|       | UF    | 0.01111    | 0.01170 | 0.01101 | 0.01127 | 0.00037   |
|       | TOTAL | 0.01160    | 0.01217 | 0.01154 | 0.01177 | 0.00035   |

Table A3.3.11. Concentration of total seston (gdW/l) at Upper Winfield on March 25, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00007    | 0.00004 | 0.00002 | 0.00004 | 0.00003   |
|       | ML    |            | 0.00032 | 0.00018 | 0.00025 | 0.00010   |
|       | S     | 0.00146    | 0.00109 | 0.00158 | 0.00138 | 0.00025   |
|       | F     | 0.00091    | 0.00054 | 0.00059 | 0.00068 | 0.00020   |
|       | VF    | 0.00009    | 0.00058 | 0.00008 | 0.00033 | 0.00029   |
|       | UF    | 0.01693    | 0.01592 | 0.01683 | 0.01656 | 0.00055   |
|       | TOTAL |            | 0.01909 | 0.01936 | 0.01222 | 0.00019   |
| BOT   | L     | 0.00019    | 0.00008 | 0.00015 | 0.00014 | 0.00006   |
|       | ML    | 0.00106    | 0.00117 | 0.00148 | 0.00124 | 0.00022   |
|       | S     | 0.00177    | 0.00161 | 0.00112 | 0.00150 | 0.00034   |
|       | F     | 0.00062    | 0.00080 | 0.00113 | 0.00085 | 0.00026   |
|       | VF    | 0.00012    | 0.00010 | 0.00010 | 0.00011 | 0.00001   |
|       | UF    | 0.01320    | 0.01446 | 0.01327 | 0.01364 | 0.00071   |
|       | TOTAL | 0.01696    | 0.01821 | 0.01725 | 0.01748 | 0.00065   |



Table A3.3.12. Concentration of total seston (gDW/l) at Lower Winfield on March 24, 1983. Blank = not sampled.

| Depth | Size | Replicates |         |         | Mean    | Std. Dev. |
|-------|------|------------|---------|---------|---------|-----------|
| TOP   | L    | 0.00014    | 0.00011 | 0.00010 | 0.00012 | 0.00002   |
|       | ML   | 0.00219    | 0.00103 | 0.00051 | 0.00124 | 0.00086   |
|       | S    | 0.00370    | 0.00855 | 0.00327 | 0.00517 | 0.00294   |
|       | F    | 0.01049    | 0.00983 | 0.01093 | 0.01042 | 0.00056   |
|       | VF   | 0.00152    | 0.00112 | 0.00096 | 0.00120 | 0.00029   |
|       | UF   | 0.03900    | 0.03873 | 0.04160 | 0.03978 | 0.00158   |
| TOTAL |      | 0.05703    | 0.05937 | 0.05736 | 0.05792 | 0.00127   |

Table A3.3.13. Concentration of total seston (gDW/l) at Upper Winfield on April 22, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00002    | 0.00002 | 0.00003 | 0.00002 | 0.00001   |
|       | ML    | 0.00006    | 0.00007 | 0.00006 | 0.00006 | 0.00001   |
|       | S     | 0.00016    | 0.00020 | 0.00021 | 0.00019 | 0.00003   |
|       | F     | 0.00045    | 0.00047 | 0.00048 | 0.00047 | 0.00002   |
|       | VF    | 0.00022    | 0.00016 | 0.00017 | 0.00019 | 0.00003   |
|       | UF    | 0.00951    | 0.01010 | 0.00937 | 0.00966 | 0.00039   |
|       | TOTAL | 0.01042    | 0.01101 | 0.01032 | 0.01059 | 0.00037   |
| BOT   | L     | 0.00004    | 0.00004 | 0.00007 | 0.00005 | 0.00002   |
|       | ML    | 0.00013    |         | 0.00017 | 0.00015 | 0.00003   |
|       | S     | 0.00029    | 0.00035 | 0.00034 | 0.00033 | 0.00003   |
|       | F     | 0.00059    | 0.00054 | 0.00045 | 0.00053 | 0.00007   |
|       | VF    | 0.00016    | 0.00015 | 0.00015 | 0.00015 | 0.00001   |
|       | UF    | 0.00925    | 0.00926 | 0.01003 | 0.00951 | 0.00045   |
|       | TOTAL | 0.01045    |         | 0.01121 | 0.01083 | 0.00054   |

Table A3.3.14. Concentration of total seston (gDW/l) at Lower Winfield on April 21, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00002 | 0.00001 | 0.00002 | 0.00001   |
|       | F     | 0.00012    | 0.00014 | 0.00014 | 0.00013 | 0.00001   |
|       | VF    |            | 0.00005 | 0.00006 | 0.00005 | 0.00001   |
|       | UF    |            | 0.01061 | 0.00939 | 0.01000 | 0.00086   |
|       | TOTAL |            | 0.01083 | 0.00961 | 0.01022 | 0.00086   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | S     | 0.00004    | 0.00009 | 0.00010 | 0.00007 | 0.00003   |
|       | F     | 0.00043    | 0.00077 | 0.00058 | 0.00059 | 0.00017   |
|       | VF    | 0.00009    | 0.00009 | 0.00007 | 0.00008 | 0.00001   |
|       | UF    | 0.01178    | 0.01355 | 0.01276 | 0.01270 | 0.00089   |
|       | TOTAL | 0.01236    | 0.01452 | 0.01354 | 0.01347 | 0.00108   |

Table A3.3.15. Concentration of total seston (gdW/l) at Upper Winfield on May 19, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00008    | 0.00008 | 0.00013 | 0.00010 | 0.00003   |
|       | ML    | 0.00035    | 0.00038 | 0.00030 | 0.00034 | 0.00004   |
|       | S     | 0.00087    | 0.00062 | 0.00079 | 0.00076 | 0.00013   |
|       | F     | 0.00285    | 0.00344 | 0.00377 | 0.00335 | 0.00046   |
|       | VF    | 0.00092    | 0.00067 | 0.00071 | 0.00077 | 0.00013   |
|       | UF    | 0.01896    | 0.01958 | 0.01910 | 0.01921 | 0.00033   |
|       | TOTAL | 0.02404    | 0.02476 | 0.02480 | 0.02453 | 0.00043   |
| BOT   | L     | 0.00008    | 0.00013 | 0.00005 | 0.00009 | 0.00004   |
|       | ML    | 0.00051    | 0.00073 | 0.00063 | 0.00062 | 0.00011   |
|       | S     | 0.00089    | 0.00089 | 0.00098 | 0.00092 | 0.00006   |
|       | F     | 0.00365    | 0.00371 | 0.00342 | 0.00359 | 0.00015   |
|       | VF    | 0.00081    | 0.00082 | 0.00086 | 0.00083 | 0.00003   |
|       | UF    | 0.01780    | 0.01752 | 0.01544 | 0.01692 | 0.00129   |
|       | TOTAL | 0.02374    | 0.02379 | 0.02138 | 0.02297 | 0.00138   |

Table A3.3.16. Concentration of total seston (gDW/l) at Lower Winfield on May 20, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00002    | 0.00002 | 0.00001 | 0.00002 | 0.00001   |
|       | ML    | 0.00004    | 0.00011 | 0.00007 | 0.00007 | 0.00003   |
|       | S     | 0.00028    | 0.00029 | 0.00026 | 0.00028 | 0.00002   |
|       | F     | 0.00117    | 0.00089 | 0.00157 | 0.00121 | 0.00034   |
|       | VF    | 0.00042    | 0.00042 | 0.00045 | 0.00043 | 0.00002   |
|       | UF    | 0.01636    | 0.01610 | 0.01722 | 0.01656 | 0.00059   |
|       | TOTAL | 0.01829    | 0.01783 | 0.01958 | 0.01857 | 0.00091   |
| BOT   | L     | 0.00045    | 0.00043 | 0.00038 | 0.00042 | 0.00003   |
|       | ML    | 0.00112    | 0.00082 | 0.00092 | 0.00095 | 0.00015   |
|       | S     | 0.00136    | 0.00111 | 0.00125 | 0.00124 | 0.00012   |
|       | F     | 0.00644    | 0.00491 | 0.00636 | 0.00590 | 0.00086   |
|       | VF    | 0.01018    | 0.00744 | 0.01140 | 0.00967 | 0.00203   |
|       | UF    | 0.04200    | 0.03692 | 0.04020 | 0.03971 | 0.00258   |
|       | TOTAL | 0.06154    | 0.05163 | 0.06050 | 0.05789 | 0.00545   |

Table A3.3.17. Concentration of total seston (gDW/l) at Upper Winfield on June 22, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00006 | 0.00006 | 0.00004 | 0.00003   |
|       | ML    | 0.00005    | 0.00007 | 0.00019 | 0.00010 | 0.00007   |
|       | S     | 0.00017    | 0.00026 | 0.00022 | 0.00022 | 0.00005   |
|       | F     | 0.00071    | 0.00045 | 0.00035 | 0.00050 | 0.00019   |
|       | VF    | 0.00021    | 0.00018 | 0.00017 | 0.00018 | 0.00002   |
|       | UF    | 0.02430    | 0.02426 | 0.02326 | 0.02394 | 0.00059   |
|       | TOTAL | 0.02545    | 0.02528 | 0.02424 | 0.02499 | 0.00065   |
| BOT   | L     | 0.00003    | 0.00008 | 0.00005 | 0.00005 | 0.00002   |
|       | ML    | 0.00006    | 0.00010 | 0.00042 | 0.00019 | 0.00019   |
|       | S     | 0.00021    | 0.00046 | 0.00033 | 0.00033 | 0.00013   |
|       | F     | 0.00053    | 0.00031 | 0.00029 | 0.00038 | 0.00013   |
|       | VF    | 0.00021    | 0.00022 | 0.00016 | 0.00020 | 0.00003   |
|       | UF    | 0.01936    | 0.01992 | 0.01808 | 0.01912 | 0.00094   |
|       | TOTAL | 0.02040    | 0.02109 | 0.01932 | 0.02027 | 0.00089   |

Table A3.3.18. Concentration of total seston (gdW/l) at Lower Winfield on June 23, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | ML    | 0.00004    | 0.00003 | 0.00004 | 0.00003 | 0.00001   |
|       | S     | 0.00005    | 0.00006 | 0.00007 | 0.00006 | 0.00001   |
|       | F     |            | 0.00018 | 0.00017 | 0.00017 | 0.00001   |
|       | VF    |            | 0.00015 | 0.00018 | 0.00017 | 0.00002   |
|       | UF    | 0.03530    | 0.03383 | 0.03355 | 0.03423 | 0.00094   |
|       | TOTAL |            | 0.03427 | 0.03402 | 0.03415 | 0.00018   |
| BOT   | L     | 0.00006    | 0.00002 | 0.00002 | 0.00003 | 0.00002   |
|       | ML    | 0.00004    | 0.00005 | 0.00004 | 0.00005 | 0.00001   |
|       | S     | 0.00014    | 0.00010 | 0.00012 | 0.00012 | 0.00002   |
|       | F     | 0.00027    | 0.00022 | 0.00022 | 0.00023 | 0.00003   |
|       | VF    | 0.00023    | 0.00020 | 0.00019 | 0.00021 | 0.00002   |
|       | UF    | 0.03390    | 0.03850 | 0.03967 | 0.03736 | 0.00305   |
|       | TOTAL | 0.03464    | 0.03908 | 0.04026 | 0.03799 | 0.00296   |

Table A3.3.19. Concentration of total seston (gDW/l) at Upper Winfield on July 20, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.06764 | 0.00001 | 0.02255 | 0.03905   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00003 | 0.00004 | 0.00003 | 0.00001   |
|       | F     | 0.00013    | 0.00014 | 0.00014 | 0.00014 | 0.00001   |
|       | VF    | 0.00004    | 0.00004 | 0.00005 | 0.00004 | 0.00001   |
|       | UF    | 0.00593    | 0.00673 | 0.00656 | 0.00641 | 0.00042   |
|       | TOTAL | 0.00613    | 0.07459 | 0.00680 | 0.02918 | 0.03933   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00003 | 0.00002 | 0.00001   |
|       | S     | 0.00008    | 0.00004 | 0.00007 | 0.00007 | 0.00002   |
|       | F     | 0.00022    | 0.00028 | 0.00021 | 0.00024 | 0.00004   |
|       | VF    | 0.00004    | 0.00006 | 0.00007 | 0.00005 | 0.00002   |
|       | UF    | 0.00769    | 0.00698 | 0.00700 | 0.00722 | 0.00040   |
|       | TOTAL | 0.00805    | 0.00737 | 0.00739 | 0.00760 | 0.00039   |



Table A3.3.20. Concentration of total seston (gDW/l) at Lower Winfield on July 21, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00008    | 0.00008 | 0.00007 | 0.00008 | 0.00001   |
|       | F     | 0.00012    | 0.00009 | 0.00010 | 0.00011 | 0.00002   |
|       | VF    | 0.00008    | 0.00007 | 0.00007 | 0.00007 | 0.00001   |
|       | UF    | 0.00740    | 0.00687 | 0.00743 | 0.00723 | 0.00032   |
|       | TOTAL | 0.00769    | 0.00713 | 0.00768 | 0.00750 | 0.00032   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00005    | 0.00002 | 0.00002 | 0.00003 | 0.00001   |
|       | S     | 0.00016    | 0.00008 | 0.00007 | 0.00011 | 0.00005   |
|       | F     | 0.00027    | 0.00019 | 0.00020 | 0.00022 | 0.00004   |
|       | VF    | 0.00010    | 0.00010 | 0.00013 | 0.00011 | 0.00001   |
|       | UF    | 0.02037    | 0.02103 | 0.02071 | 0.02070 | 0.00033   |
|       | TOTAL | 0.02096    | 0.02143 | 0.02114 | 0.02118 | 0.00024   |

Table A3.3.21. Concentration of total seston (gDW/l) at Upper Winfield on August 24, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00006    | 0.00002 | 0.00002 | 0.00003 | 0.00002   |
|       | S     | 0.00007    | 0.00006 | 0.00008 | 0.00007 | 0.00001   |
|       | F     | 0.00048    | 0.00044 | 0.00049 | 0.00047 | 0.00003   |
|       | VF    | 0.00015    | 0.00015 | 0.00014 | 0.00014 | 0.00001   |
|       | UF    | 0.00666    | 0.00777 | 0.00674 | 0.00706 | 0.00062   |
|       | TOTAL | 0.00744    | 0.00844 | 0.00747 | 0.00778 | 0.00057   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001   |
|       | S     | 0.00003    | 0.00003 | 0.00004 | 0.00003 | 0.00001   |
|       | F     | 0.00025    | 0.00029 | 0.00032 | 0.00029 | 0.00004   |
|       | VF    | 0.00017    | 0.00018 | 0.00012 | 0.00016 | 0.00003   |
|       | UF    | 0.00830    | 0.00861 | 0.00766 | 0.00819 | 0.00049   |
|       | TOTAL | 0.00876    | 0.00914 | 0.00817 | 0.00869 | 0.00049   |

Table A3.3.22. Concentration of total seston (gDW/l) at Lower Winfield on August 25, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | F     | 0.00007    | 0.00008 | 0.00009 | 0.00008 | 0.00001   |
|       | VF    | 0.00004    | 0.00005 | 0.00004 | 0.00004 | 0.00001   |
|       | UF    | 0.00731    | 0.00699 | 0.01087 | 0.00839 | 0.00215   |
|       | TOTAL | 0.00744    | 0.00714 | 0.01102 | 0.00853 | 0.00216   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | S     | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001   |
|       | F     | 0.00010    | 0.00014 | 0.00009 | 0.00011 | 0.00003   |
|       | VF    | 0.00006    | 0.00005 | 0.00007 | 0.00006 | 0.00001   |
|       | UF    | 0.00748    | 0.00776 | 0.00913 | 0.00812 | 0.00088   |
|       | TOTAL | 0.00767    | 0.00798 | 0.00932 | 0.00833 | 0.00088   |

Table A3.3.23. Concentration of total seston (gDW/l) at Upper Winfield on September 14, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00002 | 0.00002 | 0.00001 | 0.00001   |
|       | S     | 0.00005    | 0.00004 | 0.00007 | 0.00005 | 0.00001   |
|       | F     | 0.00047    | 0.00055 | 0.00047 | 0.00049 | 0.00005   |
|       | VF    | 0.00023    | 0.00021 | 0.00022 | 0.00022 | 0.00001   |
|       | UF    | 0.01062    | 0.01020 | 0.01882 | 0.01321 | 0.00486   |
|       | TOTAL | 0.01139    | 0.01102 | 0.01961 | 0.01401 | 0.00486   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001   |
|       | S     | 0.00005    | 0.00003 | 0.00007 | 0.00005 | 0.00002   |
|       | F     | 0.00048    | 0.00029 | 0.00044 | 0.00040 | 0.00010   |
|       | VF    | 0.00023    | 0.00015 | 0.00020 | 0.00019 | 0.00004   |
|       | UF    | 0.01204    | 0.01228 | 0.01270 | 0.01234 | 0.00033   |
|       | TOTAL | 0.01281    | 0.01278 | 0.01344 | 0.01301 | 0.00037   |

**Table A3.3.24. Concentration of total seston (gDW/l) at Lower Winfield on September 15, 1983. Blank = not sampled.**

| Depth | Size  | Replicates |         |         | Mean    | Std. Dev. |
|-------|-------|------------|---------|---------|---------|-----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00001 | 0.00003 | 0.00002 | 0.00001   |
|       | S     | 0.00036    | 0.00041 | 0.00035 | 0.00037 | 0.00004   |
|       | F     | 0.00011    | 0.00008 | 0.00010 | 0.00009 | 0.00002   |
|       | VF    | 0.00004    | 0.00003 | 0.00004 | 0.00004 | 0.00001   |
|       | UF    | 0.00973    | 0.00715 | 0.00801 | 0.00830 | 0.00132   |
|       | TOTAL | 0.01025    | 0.00768 | 0.00853 | 0.00882 | 0.00131   |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001   |
|       | ML    | 0.00001    | 0.00006 | 0.00002 | 0.00003 | 0.00002   |
|       | S     | 0.00042    | 0.00040 | 0.00034 | 0.00039 | 0.00005   |
|       | F     | 0.00011    | 0.00014 | 0.00009 | 0.00011 | 0.00003   |
|       | VF    | 0.00004    | 0.00004 | 0.00003 | 0.00004 | 0.00001   |
|       | UF    | 0.01116    | 0.01027 | 0.00999 | 0.01047 | 0.00061   |
|       | TOTAL | 0.01175    | 0.01091 | 0.01047 | 0.01105 | 0.00065   |

Table A3.4.1. Concentration of inorganic seston (gAsh/l) at Upper Winfield on October 19, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00000    | 0.00001 | 0.00000 | 0.00001 | 0.00001  |
|       | ML    | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00003    | 0.00006 | 0.00005 | 0.00004 | 0.00002  |
|       | F     | 0.00030    | 0.00035 | 0.00035 | 0.00033 | 0.00003  |
|       | VF    | 0.00008    | 0.00011 | 0.00012 | 0.00010 | 0.00002  |
|       | UF    | 0.00738    | 0.00810 | 0.00723 | 0.00757 | 0.00047  |
|       | TOTAL | 0.00780    | 0.00862 | 0.00774 | 0.00805 | 0.00049  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00004    | 0.00004 | 0.00002 | 0.00003 | 0.00001  |
|       | F     | 0.00027    | 0.00029 | 0.00027 | 0.00028 | 0.00001  |
|       | VF    | 0.00008    | 0.00013 | 0.00010 | 0.00010 | 0.00002  |
|       | UF    | 0.00708    | 0.00692 | 0.00755 | 0.00718 | 0.00033  |
|       | TOTAL | 0.00747    | 0.00738 | 0.00794 | 0.00760 | 0.00030  |

Table A3.4.2. Concentration of inorganic seston (gAsh/l) at Lower Winfield on October 18, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00006    | 0.00001 | 0.00001 | 0.00003 | 0.00003  |
|       | VF    | 0.00009    | 0.00004 | 0.00002 | 0.00005 | 0.00004  |
|       | UF    | 0.00749    | 0.00818 | 0.00814 | 0.00794 | 0.00039  |
|       | TOTAL | 0.00768    | 0.00225 | 0.00817 | 0.00803 | 0.00031  |
| BOT   | L     | 0.00001    | 0.00000 | 0.00000 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00002 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001  |
|       | F     | 0.00026    | 0.00027 | 0.00027 | 0.00027 | 0.00001  |
|       | VF    | 0.00013    | 0.00017 | 0.00015 | 0.00015 | 0.00002  |
|       | UF    | 0.01289    | 0.00066 | 0.01099 | 0.00818 | 0.00658  |
|       | TOTAL | 0.01330    | 0.00114 | 0.01143 | 0.00862 | 0.00655  |

Table A3.4.3. Concentration of inorganic seston (gAsh/l) at Upper Winfield on November 19, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|----------|
| TOP   | L     |            |         | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00005    | 0.00003 | 0.00003 | 0.00001  |
|       | F     | 0.00007    |         | 0.00008 | 0.00001  |
|       | VF    | 0.00012    | 0.00004 | 0.00003 | 0.00006  |
|       | UF    | 0.00766    | 0.00732 | 0.00732 | 0.00743  |
|       | TOTAL |            |         | 0.00747 | 0.00747  |
| BOT   | L     | 0.00001    | 0.00001 |         | 0.00001  |
|       | ML    |            |         | 0.00001 | 0.00001  |
|       | S     |            | 0.00035 | 0.00012 | 0.00024  |
|       | F     | 0.00036    | 0.00029 | 0.00029 | 0.00031  |
|       | VF    | 0.00005    | 0.00006 | 0.00004 | 0.00005  |
|       | UF    |            | 0.01018 | 0.00938 | 0.00978  |
|       | TOTAL |            |         |         | 0.00056  |



Table A3.4.4. Concentration of inorganic seston (gAsh/l) at Lower Winfield on November 18, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00000    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00010 | 0.00001 | 0.00003 | 0.00006  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | VF    | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | UF    | 0.00567    | 0.00506 | 0.00469 | 0.00514 | 0.00049  |
|       | TOTAL | 0.00569    | 0.00517 | 0.00471 | 0.00519 | 0.00049  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00003 | 0.00001 | 0.00001 | 0.00002  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00003    | 0.00007 | 0.00004 | 0.00005 | 0.00002  |
|       | VF    | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001  |
|       | UF    | 0.00283    | 0.00510 | 0.00510 | 0.00434 | 0.00131  |
|       | TOTAL | 0.00290    | 0.00523 | 0.00517 | 0.00443 | 0.00133  |

Table A3.4.5. Concentration of inorganic seston (gAsh/l) at Upper Winfield on December 17, 1982. Blank = not sampled.

| Depth | Size | Replicates |         |         | Mean    | Std.Dev. |
|-------|------|------------|---------|---------|---------|----------|
| TOP   | L    | 0.00024    | 0.00010 | 0.00096 | 0.00043 | 0.00046  |
|       | ML   | 0.00421    | 0.00162 | 0.00398 | 0.00327 | 0.00144  |
|       | S    |            |         | 0.01196 | 0.01196 |          |
|       | F    | 0.01179    | 0.01264 | 0.01147 | 0.01197 | 0.00061  |
|       | VF   | 0.00133    | 0.00113 | 0.00069 | 0.00105 | 0.00033  |
|       | UF   | 0.02652    | 0.02476 | 0.02700 | 0.02609 | 0.00118  |
| TOTAL |      |            |         | 0.05606 | 0.05606 |          |

Table A3.4.6. Concentration of inorganic seston (gAsh/l) at Lower Winfield on December 16, 1982. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00000 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00000 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00000 | 0.00001 | 0.00001  |
|       | F     | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001  |
|       | VF    | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001  |
|       | UF    | 0.00511    | 0.00514 | 0.00519 | 0.00515 | 0.00004  |
|       | TOTAL | 0.00515    | 0.00518 | 0.00523 | 0.00519 | 0.00004  |
| BOT   | L     | 0.00001    | 0.00000 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00000    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00001    | 0.00001 | 0.00002 | 0.00002 | 0.00001  |
|       | VF    | 0.00003    | 0.00002 | 0.00001 | 0.00002 | 0.00001  |
|       | UF    | 0.00493    | 0.00511 | 0.00476 | 0.00493 | 0.00018  |
|       | TOTAL | 0.00497    | 0.00514 | 0.00481 | 0.00497 | 0.00017  |

Table A3.4.7. Concentration of inorganic seston (gAsh/l) at Upper Winfield on January 21, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00003 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00002 | 0.00004 | 0.00003 | 0.00002  |
|       | F     | 0.00011    | 0.00011 | 0.00008 | 0.00010 | 0.00002  |
|       | VF    | 0.00001    | 0.00001 | 0.00005 | 0.00003 | 0.00002  |
|       | UF    | 0.00288    | 0.00000 | 0.00254 | 0.00181 | 0.00157  |
|       | TOTAL | 0.00302    | 0.00017 | 0.00272 | 0.00197 | 0.00157  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00000    | 0.00002 | 0.00006 | 0.00003 | 0.00003  |
|       | F     | 0.00015    | 0.00012 | 0.00019 | 0.00015 | 0.00004  |
|       | VF    | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001  |
|       | UF    | 0.00200    | 0.00237 | 0.00000 | 0.00146 | 0.00127  |
|       | TOTAL | 0.00218    | 0.00253 | 0.00028 | 0.00167 | 0.00121  |

Table A3.4.8. Concentration of inorganic seston (gAsh/l) at Lower Winfield on January 20, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | UF    | 0.00443    | 0.00444 | 0.00324 | 0.00404 | 0.00069  |
|       | TOTAL | 0.00444    | 0.00445 | 0.00325 | 0.00405 | 0.00069  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | UF    | 0.00288    | 0.00285 | 0.00284 | 0.00285 | 0.00002  |
|       | TOTAL | 0.00289    | 0.00287 | 0.00285 | 0.00287 | 0.00002  |

Table A3.4.9. Concentration of inorganic seston (gAsh/l) at Upper Winfield on February 18, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00008    | 0.00006 | 0.00007 | 0.00007 | 0.00001  |
|       | S     |            | 0.00018 | 0.00019 | 0.00018 | 0.00001  |
|       | F     | 0.00067    | 0.00060 | 0.00019 | 0.00049 | 0.00026  |
|       | VF    | 0.00019    | 0.00020 | 0.00020 | 0.00020 | 0.00001  |
|       | UF    | 0.01381    | 0.01066 | 0.01084 | 0.01177 | 0.00177  |
|       | TOTAL |            | 0.01172 | 0.01149 | 0.01161 | 0.00016  |
| BOT   | L     | 0.00002    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00007    | 0.00010 | 0.00007 | 0.00008 | 0.00002  |
|       | S     | 0.00023    | 0.00019 | 0.00023 | 0.00021 | 0.00002  |
|       | F     | 0.00082    | 0.00067 | 0.00067 | 0.00072 | 0.00009  |
|       | VF    | 0.00018    | 0.00016 | 0.00019 | 0.00018 | 0.00002  |
|       | UF    | 0.01373    | 0.01299 | 0.01453 | 0.01375 | 0.00077  |
|       | TOTAL | 0.01505    | 0.01412 | 0.01569 | 0.01495 | 0.00079  |

Table A3.4.10. Concentration of inorganic seston (gAsh/l) at Lower Winfield on February 17, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00004    | 0.00003 | 0.00005 | 0.00004 | 0.00001  |
|       | F     | 0.00011    | 0.00010 | 0.00011 | 0.00011 | 0.00001  |
|       | VF    | 0.00001    | 0.00002 | 0.00002 | 0.00002 | 0.00001  |
|       | UF    | 0.00614    | 0.00621 | 0.00726 | 0.00654 | 0.00063  |
|       | TOTAL | 0.00632    | 0.00637 | 0.00745 | 0.00671 | 0.00064  |
| BOT   | L     | 0.00004    | 0.00001 | 0.00001 | 0.00002 | 0.00002  |
|       | ML    | 0.00003    | 0.00004 | 0.00014 | 0.00007 | 0.00006  |
|       | S     | 0.00015    | 0.00002 | 0.00010 | 0.00009 | 0.00006  |
|       | F     | 0.00015    | 0.00016 | 0.00016 | 0.00016 | 0.00001  |
|       | VF    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | UF    | 0.00918    | 0.00980 | 0.00949 | 0.00949 | 0.00031  |
|       | TOTAL | 0.00956    | 0.01005 | 0.00991 | 0.00984 | 0.00025  |

Table A3.4.11. Concentration of inorganic seston (gAsh/l) at Upper Winfield on March 25, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00005    | 0.00002 | 0.00001 | 0.00003 | 0.00002  |
|       | ML    |            | 0.00025 | 0.00012 | 0.00018 | 0.00009  |
|       | S     | 0.00124    | 0.00091 | 0.00133 | 0.00116 | 0.00022  |
|       | F     | 0.00077    | 0.00043 | 0.00049 | 0.00056 | 0.00018  |
|       | VF    | 0.00007    | 0.00046 | 0.00006 | 0.00026 | 0.00023  |
|       | UF    | 0.01503    | 0.01408 | 0.01503 | 0.01471 | 0.00055  |
|       | TOTAL |            | 0.01661 | 0.01710 | 0.01685 | 0.00035  |
| BOT   | L     | 0.00012    | 0.00005 | 0.00005 | 0.00007 | 0.00004  |
|       | ML    | 0.00086    | 0.00106 | 0.00132 | 0.00108 | 0.00023  |
|       | S     | 0.00152    | 0.00136 | 0.00097 | 0.00128 | 0.00029  |
|       | F     | 0.00052    | 0.00069 | 0.00096 | 0.00072 | 0.00022  |
|       | VF    | 0.00009    | 0.00008 | 0.00008 | 0.00009 | 0.00001  |
|       | UF    | 0.01147    | 0.01268 | 0.01150 | 0.01188 | 0.00069  |
|       | TOTAL | 0.01459    | 0.01592 | 0.01488 | 0.01513 | 0.00070  |



Table A3.4.12. Concentration of inorganic seston (gAsh/l) at Lower Winfield on March 24, 1983. Blank = not sampled.

| Depth | Size | Replicates |         |         | Mean    | Std.Dev. |
|-------|------|------------|---------|---------|---------|----------|
| TOP   | L    | 0.00012    | 0.00007 | 0.00007 | 0.00009 | 0.00003  |
|       | ML   | 0.00178    | 0.00063 | 0.00033 | 0.00091 | 0.00076  |
|       | S    | 0.00303    | 0.00742 | 0.00262 | 0.00436 | 0.00266  |
|       | F    | 0.00926    | 0.00876 | 0.00970 | 0.00924 | 0.00047  |
|       | VF   | 0.00125    | 0.00093 | 0.00079 | 0.00099 | 0.00024  |
|       | UF   | 0.03420    | 0.03363 | 0.03657 | 0.03480 | 0.00156  |
| TOTAL |      | 0.04963    | 0.05143 | 0.05008 | 0.05038 | 0.00094  |

Table A3.4.13. Concentration of inorganic seston (gAsh/l) at Upper Winfield on April 22, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00003    | 0.00003 | 0.00004 | 0.00003 | 0.00001  |
|       | S     | 0.00012    | 0.00015 | 0.00016 | 0.00014 | 0.00002  |
|       | F     | 0.00038    | 0.00038 | 0.00040 | 0.00039 | 0.00001  |
|       | VF    | 0.00018    | 0.00014 | 0.00014 | 0.00015 | 0.00003  |
|       | UF    | 0.00820    | 0.00828 | 0.00770 | 0.00806 | 0.00031  |
|       | TOTAL | 0.00892    | 0.00899 | 0.00846 | 0.00879 | 0.00029  |
| BOT   | L     | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001  |
|       | ML    | 0.00007    |         | 0.00008 | 0.00008 | 0.00001  |
|       | S     | 0.00024    | 0.00031 | 0.00029 | 0.00028 | 0.00003  |
|       | F     | 0.00050    | 0.00045 | 0.00037 | 0.00044 | 0.00006  |
|       | VF    | 0.00013    | 0.00012 | 0.00012 | 0.00012 | 0.00001  |
|       | UF    | 0.00770    | 0.00767 | 0.00844 | 0.00794 | 0.00044  |
|       | TOTAL | 0.00865    |         | 0.00933 | 0.00899 | 0.00048  |

Table A3.4.14. Concentration of inorganic seston (gAsh/l) at Lower Winfield on April 21, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00009    | 0.00011 | 0.00011 | 0.00010 | 0.00001  |
|       | VF    |            | 0.00004 | 0.00005 | 0.00004 | 0.00001  |
|       | UF    |            | 0.00902 | 0.00783 | 0.00843 | 0.00084  |
|       | TOTAL |            | 0.00919 | 0.00800 | 0.00859 | 0.00084  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00003    | 0.00005 | 0.00007 | 0.00005 | 0.00002  |
|       | F     | 0.00035    | 0.00065 | 0.00047 | 0.00049 | 0.00015  |
|       | VF    | 0.00007    | 0.00007 | 0.00005 | 0.00007 | 0.00001  |
|       | UF    | 0.01041    | 0.01194 | 0.01085 | 0.01107 | 0.00079  |
|       | TOTAL | 0.01086    | 0.01272 | 0.01146 | 0.01168 | 0.00095  |

Table A3.4.15. Concentration of inorganic seston (gAsh/l) at Upper Winfield on May 19, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00005    | 0.00003 | 0.00008 | 0.00005 | 0.00003  |
|       | ML    | 0.00021    | 0.00031 | 0.00017 | 0.00023 | 0.00007  |
|       | S     | 0.00062    | 0.00043 | 0.00056 | 0.00054 | 0.00010  |
|       | F     | 0.00240    | 0.00289 | 0.00317 | 0.00282 | 0.00039  |
|       | VF    | 0.00078    | 0.00056 | 0.00059 | 0.00064 | 0.00012  |
|       | UF    | 0.01650    | 0.01702 | 0.01654 | 0.01669 | 0.00029  |
|       | TOTAL | 0.02055    | 0.02123 | 0.02111 | 0.02096 | 0.00037  |
| BOT   | L     | 0.00007    | 0.00006 | 0.00004 | 0.00005 | 0.00002  |
|       | ML    | 0.00039    | 0.00054 | 0.00046 | 0.00046 | 0.00007  |
|       | S     | 0.00063    | 0.00063 | 0.00073 | 0.00066 | 0.00006  |
|       | F     | 0.00310    | 0.00313 | 0.00286 | 0.00303 | 0.00015  |
|       | VF    | 0.00068    | 0.00069 | 0.00074 | 0.00070 | 0.00003  |
|       | UF    | 0.01522    | 0.01656 | 0.01300 | 0.01493 | 0.00180  |
|       | TOTAL | 0.02009    | 0.02160 | 0.01783 | 0.01984 | 0.00190  |

Table A3.4.16. Concentration of inorganic seston (gAsh/l) at Lower Winfield on May 20, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00002 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00002    | 0.00010 | 0.00005 | 0.00005 | 0.00004  |
|       | S     | 0.00018    | 0.00019 | 0.00016 | 0.00018 | 0.00001  |
|       | F     | 0.00094    | 0.00072 | 0.00127 | 0.00098 | 0.00028  |
|       | VF    | 0.00035    | 0.00035 | 0.00038 | 0.00036 | 0.00001  |
|       | UF    | 0.01444    | 0.01380 | 0.01500 | 0.01441 | 0.00060  |
|       | TOTAL | 0.01594    | 0.01518 | 0.01687 | 0.01600 | 0.00085  |
| BOT   | L     | 0.00021    | 0.00041 | 0.00020 | 0.00027 | 0.00012  |
|       | ML    | 0.00045    | 0.00041 | 0.00031 | 0.00039 | 0.00008  |
|       | S     | 0.00072    | 0.00060 | 0.00049 | 0.00060 | 0.00012  |
|       | F     | 0.00504    | 0.00372 | 0.00479 | 0.00452 | 0.00070  |
|       | VF    | 0.00867    | 0.00660 | 0.00981 | 0.00836 | 0.00163  |
|       | UF    | 0.03740    | 0.03204 | 0.03496 | 0.03480 | 0.00268  |
|       | TOTAL | 0.05249    | 0.04378 | 0.05055 | 0.04894 | 0.00457  |

Table A3.4.17. Concentration of inorganic seston (gAsh/l) at Upper Winfield on June 22, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00003 | 0.00004 | 0.00003 | 0.00001  |
|       | ML    | 0.00002    | 0.00004 | 0.00014 | 0.00007 | 0.00006  |
|       | S     | 0.00013    | 0.00020 | 0.00018 | 0.00017 | 0.00004  |
|       | F     | 0.00055    | 0.00035 | 0.00027 | 0.00039 | 0.00014  |
|       | VF    | 0.00017    | 0.00014 | 0.00014 | 0.00015 | 0.00002  |
|       | UF    | 0.02158    | 0.02148 | 0.02104 | 0.02137 | 0.00029  |
|       | TOTAL | 0.02246    | 0.02225 | 0.02180 | 0.02217 | 0.00034  |
| BOT   | L     | 0.00001    | 0.00005 | 0.00003 | 0.00003 | 0.00002  |
|       | ML    | 0.00003    | 0.00007 | 0.00030 | 0.00013 | 0.00015  |
|       | S     | 0.00017    | 0.00037 | 0.00027 | 0.00027 | 0.00010  |
|       | F     | 0.00041    | 0.00023 | 0.00024 | 0.00029 | 0.00010  |
|       | VF    | 0.00017    | 0.00017 | 0.00013 | 0.00016 | 0.00002  |
|       | UF    | 0.01668    | 0.01738 | 0.01546 | 0.01651 | 0.00097  |
|       | TOTAL | 0.01746    | 0.01827 | 0.01642 | 0.01739 | 0.00093  |

Table A3.4.18. Concentration of inorganic seston (gAsh/l) at Lower Winfield on June 23, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00002    | 0.00002 | 0.00002 | 0.00002 | 0.00001  |
|       | S     | 0.00004    | 0.00004 | 0.00005 | 0.00004 | 0.00001  |
|       | F     |            | 0.00014 | 0.00012 | 0.00013 | 0.00001  |
|       | VF    |            | 0.00013 | 0.00014 | 0.00013 | 0.00001  |
|       | UF    | 0.03185    | 0.03057 | 0.03090 | 0.03111 | 0.00066  |
|       | TOTAL |            | 0.03091 | 0.03124 | 0.03107 | 0.00024  |
| BOT   | L     | 0.00004    | 0.00001 | 0.00002 | 0.00002 | 0.00002  |
|       | ML    | 0.00004    | 0.00004 | 0.00004 | 0.00004 | 0.00001  |
|       | S     | 0.00010    | 0.00007 | 0.00009 | 0.00009 | 0.00002  |
|       | F     | 0.00021    | 0.00017 | 0.00017 | 0.00018 | 0.00002  |
|       | VF    | 0.00019    | 0.00016 | 0.00015 | 0.00017 | 0.00002  |
|       | UF    | 0.03063    | 0.03475 | 0.03642 | 0.03393 | 0.00298  |
|       | TOTAL | 0.03120    | 0.03519 | 0.03689 | 0.03443 | 0.00292  |

Table A3.4.19. Concentration of inorganic seston (gAsh/l) at Upper Winfield on July 20, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.05729 | 0.00001 | 0.01910 | 0.03307  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00003 | 0.00002 | 0.00001  |
|       | F     | 0.00009    | 0.00010 | 0.00010 | 0.00010 | 0.00001  |
|       | VF    | 0.00003    | 0.00002 | 0.00003 | 0.00003 | 0.00001  |
|       | UF    | 0.00440    | 0.00481 | 0.00469 | 0.00463 | 0.00021  |
|       | TOTAL | 0.00454    | 0.06224 | 0.00486 | 0.02388 | 0.03322  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001  |
|       | S     | 0.00006    | 0.00003 | 0.00005 | 0.00004 | 0.00002  |
|       | F     | 0.00017    | 0.00022 | 0.00016 | 0.00018 | 0.00003  |
|       | VF    | 0.00003    | 0.00004 | 0.00005 | 0.00004 | 0.00001  |
|       | UF    | 0.00571    | 0.00514 | 0.00520 | 0.00535 | 0.00031  |
|       | TOTAL | 0.00598    | 0.00544 | 0.00549 | 0.00564 | 0.00030  |



Table A3.4.20. Concentration of inorganic seston (gAsh/l) at Lower Winfield on July 21, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00000    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00000 | 0.00001 | 0.00001  |
|       | S     | 0.00002    | 0.00002 | 0.00001 | 0.00002 | 0.00001  |
|       | F     | 0.00004    | 0.00002 | 0.00002 | 0.00003 | 0.00001  |
|       | VF    | 0.00002    | 0.00001 | 0.00002 | 0.00002 | 0.00001  |
|       | UF    | 0.00466    | 0.00419 | 0.00513 | 0.00466 | 0.00047  |
|       | TOTAL | 0.00474    | 0.00424 | 0.00519 | 0.00472 | 0.00047  |
| BOT   | L     | 0.00000    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00003    | 0.00001 | 0.00001 | 0.00002 | 0.00001  |
|       | S     | 0.00013    | 0.00005 | 0.00004 | 0.00007 | 0.00005  |
|       | F     | 0.00021    | 0.00014 | 0.00015 | 0.00017 | 0.00004  |
|       | VF    | 0.00008    | 0.00008 | 0.00010 | 0.00009 | 0.00001  |
|       | UF    | 0.01694    | 0.01774 | 0.01654 | 0.01708 | 0.00061  |
|       | TOTAL | 0.01740    | 0.01802 | 0.01685 | 0.01742 | 0.00059  |

Table A3.4.21. Concentration of inorganic seston (gAsh/l) at Upper Winfield on August 24, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00005    | 0.00001 | 0.00001 | 0.00003 | 0.00002  |
|       | S     | 0.00005    | 0.00004 | 0.00005 | 0.00005 | 0.00001  |
|       | F     | 0.00039    | 0.00036 | 0.00039 | 0.00038 | 0.00002  |
|       | VF    | 0.00012    | 0.00012 | 0.00011 | 0.00011 | 0.00001  |
|       | UF    | 0.00497    | 0.00563 | 0.00494 | 0.00518 | 0.00039  |
|       | TOTAL | 0.00559    | 0.00616 | 0.00551 | 0.00575 | 0.00035  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00002 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00003 | 0.00003 | 0.00002 | 0.00001  |
|       | F     | 0.00020    | 0.00024 | 0.00026 | 0.00024 | 0.00003  |
|       | VF    | 0.00013    | 0.00014 | 0.00010 | 0.00012 | 0.00002  |
|       | UF    | 0.00573    | 0.00579 | 0.00539 | 0.00563 | 0.00022  |
|       | TOTAL | 0.00608    | 0.00620 | 0.00579 | 0.00603 | 0.00021  |

**Table A3.4.22. Concentration of inorganic seston (gAsh/l) at Lower Winfield on August 25, 1983. Blank = not sampled.**

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00004    | 0.00005 | 0.00006 | 0.00005 | 0.00001  |
|       | VF    | 0.00002    | 0.00003 | 0.00003 | 0.00003 | 0.00001  |
|       | UF    | 0.00605    | 0.00607 | 0.00893 | 0.00702 | 0.00166  |
|       | TOTAL | 0.00612    | 0.00616 | 0.00904 | 0.00711 | 0.00168  |
| BOT   | L     | 0.00001    | 0.00000 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | F     | 0.00007    | 0.00010 | 0.00006 | 0.00008 | 0.00002  |
|       | VF    | 0.00000    | 0.00004 | 0.00005 | 0.00003 | 0.00003  |
|       | UF    | 0.00655    | 0.00739 | 0.00840 | 0.00744 | 0.00093  |
|       | TOTAL | 0.00664    | 0.00754 | 0.00853 | 0.00757 | 0.00095  |

Table A3.4.23. Concentration of inorganic seston (gAsh/l) at Upper Winfield on September 14, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00003    | 0.00003 | 0.00005 | 0.00004 | 0.00001  |
|       | F     | 0.00037    | 0.00044 | 0.00038 | 0.00040 | 0.00004  |
|       | VF    | 0.00019    | 0.00017 | 0.00018 | 0.00018 | 0.00001  |
|       | UF    | 0.00798    | 0.00750 | 0.01474 | 0.01007 | 0.00405  |
|       | TOTAL | 0.00859    | 0.00815 | 0.01536 | 0.01070 | 0.00404  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00004    | 0.00002 | 0.00005 | 0.00004 | 0.00001  |
|       | F     | 0.00038    | 0.00023 | 0.00035 | 0.00032 | 0.00008  |
|       | VF    | 0.00018    | 0.00012 | 0.00016 | 0.00016 | 0.00003  |
|       | UF    | 0.00918    | 0.00948 | 0.00960 | 0.00942 | 0.00022  |
|       | TOTAL | 0.00979    | 0.00987 | 0.01018 | 0.00995 | 0.00020  |

Table A3.4.24. Concentration of inorganic seston (gAsh/l) at Lower Winfield on September 15, 1983. Blank = not sampled.

| Depth | Size  | Replicates |         |         | Mean    | Std.Dev. |
|-------|-------|------------|---------|---------|---------|----------|
| TOP   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | S     | 0.00021    | 0.00024 | 0.00021 | 0.00022 | 0.00001  |
|       | F     | 0.00007    | 0.00005 | 0.00006 | 0.00006 | 0.00001  |
|       | VF    | 0.00003    | 0.00002 | 0.00003 | 0.00002 | 0.00001  |
|       | UF    | 0.00811    | 0.00599 | 0.00687 | 0.00699 | 0.00107  |
|       | TOTAL | 0.00843    | 0.00630 | 0.00718 | 0.00730 | 0.00107  |
| BOT   | L     | 0.00001    | 0.00001 | 0.00001 | 0.00001 | 0.00001  |
|       | ML    | 0.00001    | 0.00003 | 0.00001 | 0.00002 | 0.00001  |
|       | S     | 0.00028    | 0.00026 | 0.00020 | 0.00025 | 0.00004  |
|       | F     | 0.00007    | 0.00010 | 0.00005 | 0.00007 | 0.00002  |
|       | VF    | 0.00003    | 0.00003 | 0.00002 | 0.00003 | 0.00001  |
|       | UF    | 0.00939    | 0.00855 | 0.00851 | 0.00881 | 0.00050  |
|       | TOTAL | 0.00978    | 0.00897 | 0.00881 | 0.00918 | 0.00052  |

Table A4.1.1. Seston composition (percent area), Upper  
Winfield, October 19, 1982.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 80.0    | 0.0         | 20.0     |
|       | ML         | 96.5    | 0.0         | 3.5      |
|       | S          | 54.8    | 41.7        | 3.5      |
|       | F          | 98.0    | 1.6         | 0.4      |
|       | VF         | 80.4    | 18.6        | 0.9      |
|       | UF         | 98.9    | 0.4         | 0.7      |
|       | Total      | 89.0    | 8.8         | 2.2      |
| Bot   | L          | 87.8    | 1.2         | 11.0     |
|       | ML         | 91.3    | 6.4         | 2.2      |
|       | S          | 89.3    | 10.1        | 0.6      |
|       | F          | 99.7    | 0.0         | 0.3      |
|       | VF         | 89.4    | 10.2        | 0.4      |
|       | UF         | 99.0    | 0.0         | 1.0      |
|       | Total      | 98.5    | 0.0         | 1.5      |

**Table A4.1.2. Seston composition (percent area), Lower Winfield, October 18, 1982.**

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 39.8    | 59.9        | 0.3      |
|       | ML         | 69.9    | 29.9        | 0.2      |
|       | S          | 59.2    | 39.1        | 1.6      |
|       | F          | 56.3    | 0.0         | 43.7     |
|       | VF         | 52.7    | 0.0         | 47.3     |
|       | UF         | 89.8    | 0.0         | 10.1     |
|       | Total      | 88.4    | 4.9         | 6.7      |
| Bot   | L          | 71.6    | 28.3        | 0.1      |
|       | ML         | 58.6    | 41.0        | 0.3      |
|       | S          | 86.2    | 13.4        | 0.4      |
|       | F          | 57.1    | 42.4        | 0.4      |
|       | VF         | 88.5    | 11.0        | 0.5      |
|       | UF         | 99.1    | 0.0         | 0.9      |
|       | Total      | 76.3    | 23.3        | 0.4      |

**Table A4.1.3. Seston composition (percent area), Upper  
Winfield, November 19, 1982**

| Depth | Size Class | Trypton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 20.9    | 0.0         | 79.1     |
|       | ML         | 27.4    | 69.5        | 3.1      |
|       | S          | 96.4    | 3.5         | 0.1      |
|       | F          | 85.2    | 14.5        | 0.3      |
|       | VF         | 99.2    | 0.0         | 0.8      |
|       | UF         | 98.4    | 0.0         | 1.6      |
|       | Total      | 87.2    | 11.0        | 1.8      |
| Bot   | L          | 99.0    | 0.0         | 1.0      |
|       | ML         | 99.9    | 0.0         | 0.1      |
|       | S          | 90.7    | 9.1         | 0.2      |
|       | F          | 96.0    | 3.8         | 0.2      |
|       | VF         | 95.7    | 4.0         | 0.4      |
|       | UF         | 86.7    | 0.0         | 13.3     |
|       | Total      | 94.8    | 4.8         | 0.4      |



Table A4.1.4. Seston composition (percent area), Lower Winfield, November 18, 1982.

| Depth | Size Class | Trypton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 75.3    | 0.0         | 24.7     |
|       | ML         | 83.7    | 0.0         | 16.3     |
|       | S          | 74.1    | 0.0         | 25.9     |
|       | F          | 87.0    | 11.7        | 1.3      |
|       | VF         | 57.2    | 36.3        | 6.5      |
|       | UF         | 97.0    | 0.0         | 3.0      |
|       | Total      | 76.9    | 14.9        | 8.1      |
| Bot   | L          | 79.2    | 0.0         | 20.8     |
|       | ML         | 62.7    | 8.6         | 28.7     |
|       | S          | 99.3    | 0.0         | 0.7      |
|       | F          | 99.1    | 0.7         | 0.2      |
|       | VF         | 83.7    | 15.3        | 0.9      |
|       | UF         | 97.0    | 0.0         | 3.0      |
|       | Total      | 96.0    | 2.1         | 1.9      |

Table A4.1.5. Seston composition (percent area), Upper  
Winfield, December 17, 1982.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          |         |             |          |
|       | ML         |         |             |          |
|       | S          |         |             |          |
|       | F          |         |             |          |
|       | VF         |         |             |          |
|       | UF         |         |             |          |
|       | Total      |         |             |          |
| Bot   | L          | 98.8    | 0.0         | 1.2      |
|       | ML         | 99.1    | 0.0         | 0.9      |
|       | S          | 94.1    | 5.3         | 0.5      |
|       | F          | 67.9    | 31.8        | 0.4      |
|       | VF         | 91.2    | 8.3         | 0.5      |
|       | UF         | 91.6    | 0.0         | 8.3      |
|       | Total      | 87.4    | 11.8        | 0.8      |

Table A4.1.6. Seston composition (percent area), Lower Winfield, December 16, 1982.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 99.8    | 0.0         | 0.2      |
|       | ML         | 71.0    | 0.0         | 29.0     |
|       | S          | 70.4    | 0.0         | 29.6     |
|       | F          | 77.1    | 22.2        | 0.7      |
|       | VF         | 98.8    | 0.8         | 0.4      |
|       | UF         | 97.9    | 0.0         | 2.1      |
|       | Total      | 95.0    | 2.8         | 2.1      |
| Bot   | L          | 53.1    | 0.0         | 46.9     |
|       | ML         | 47.5    | 0.0         | 52.5     |
|       | S          | 96.0    | 3.7         | 0.3      |
|       | F          | 78.5    | 21.0        | 0.6      |
|       | VF         | 85.6    | 12.9        | 1.4      |
|       | UF         | 95.7    | 0.0         | 4.3      |
|       | Total      | 86.2    | 9.6         | 4.2      |

Table A4.1.7. Seston composition (percent area), Upper  
Winfield, January 21, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 86.6    | 0.0         | 13.4     |
|       | ML         | 98.8    | 0.0         | 1.2      |
|       | S          | 33.0    | 61.1        | 5.9      |
|       | F          | 92.7    | 4.4         | 2.9      |
|       | VF         | 43.8    | 54.7        | 1.5      |
|       | UF         | 39.2    | 0.0         | 60.8     |
|       | Total      | 71.8    | 24.4        | 3.8      |
| Bot   | L          | 71.8    | 0.0         | 28.2     |
|       | ML         | 93.7    | 0.0         | 6.3      |
|       | S          | 82.6    | 16.2        | 1.2      |
|       | F          | 70.0    | 28.4        | 1.6      |
|       | VF         | 67.9    | 26.4        | 5.8      |
|       | UF         | 80.8    | 0.0         | 19.2     |
|       | Total      | 77.6    | 18.2        | 4.2      |

Table A4.1.8. Seston composition (percent area), Lower Winfield, January 20, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 77.3    | 0.0         | 22.7     |
|       | ML         | 80.1    | 0.0         | 19.9     |
|       | S          | 79.7    | 17.3        | 3.0      |
|       | F          | 77.6    | 18.9        | 3.5      |
|       | VF         | 78.6    | 19.0        | 2.5      |
|       | UF         | 62.5    | 6.1         | 31.4     |
|       | Total      | 77.7    | 14.8        | 7.4      |
| Bot   | L          | 96.2    | 0.0         | 3.8      |
|       | ML         | 62.4    | 0.0         | 37.6     |
|       | S          | 80.3    | 9.7         | 10.0     |
|       | F          | 70.1    | 26.3        | 3.6      |
|       | VF         | 60.0    | 34.3        | 5.8      |
|       | UF         | 41.5    | 0.4         | 58.1     |
|       | Total      | 70.5    | 20.4        | 9.1      |

Table A4.1.9. Seston composition (percent area), Upper  
Winfield, February 18, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 78.8    | 0.0         | 21.2     |
|       | ML         | 46.9    | 0.0         | 53.1     |
|       | S          | 91.4    | 0.0         | 8.6      |
|       | F          | 96.1    | 0.0         | 3.9      |
|       | VF         | 67.3    | 0.0         | 32.7     |
|       | UF         | 86.0    | 0.0         | 14.0     |
|       | Total      | 82.9    | 0.0         | 17.1     |
| Bot   | L          | 46.8    | 0.0         | 53.2     |
|       | ML         | 79.6    | 0.0         | 20.4     |
|       | S          | 48.6    | 0.0         | 51.4     |
|       | F          | 87.8    | 0.0         | 12.2     |
|       | VF         | 67.7    | 0.0         | 32.3     |
|       | UF         | 94.6    | 0.0         | 5.4      |
|       | Total      | 76.7    | 0.0         | 23.3     |

Table A4.1.10. Seston composition (percent area), Lower Winfield, February 17, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 38.0    | 0.0         | 62.0     |
|       | ML         | 78.6    | 0.0         | 21.4     |
|       | S          | 78.0    | 0.0         | 22.0     |
|       | F          | 74.1    | 0.0         | 25.9     |
|       | VF         | 79.5    | 0.0         | 20.5     |
|       | UF         | 82.2    | 0.0         | 17.8     |
|       | Total      | 76.1    | 0.0         | 23.9     |
| Bot   | L          | 43.0    | 0.0         | 57.0     |
|       | ML         | 57.2    | 12.7        | 30.1     |
|       | S          | 64.6    | 0.0         | 35.4     |
|       | F          | 69.4    | 25.8        | 4.8      |
|       | VF         | 85.1    | 0.0         | 14.9     |
|       | UF         | 89.2    | 0.0         | 10.7     |
|       | Total      | 73.9    | 13.4        | 12.7     |

**Table A4.1.11. Seston composition (percent area), Upper Winfield, March 25, 1983.**

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 72.9    | 25.0        | 2.1      |
|       | ML         | 99.3    | 0.0         | 0.7      |
|       | S          | 91.4    | 8.0         | 0.6      |
|       | F          | 95.9    | 3.3         | 0.7      |
|       | VF         | 97.5    | 0.0         | 2.5      |
|       | UF         | 95.1    | 0.0         | 4.9      |
|       | Total      | 93.6    | 5.1         | 1.3      |
| Bot   | L          | 38.4    | 18.9        | 42.6     |
|       | ML         | 95.1    | 0.0         | 4.9      |
|       | S          | 97.8    | 0.7         | 1.5      |
|       | F          | 96.0    | 0.0         | 4.0      |
|       | VF         | 89.1    | 0.0         | 10.9     |
|       | UF         | 91.9    | 0.0         | 8.1      |
|       | Total      | 93.8    | 1.0         | 5.3      |



Table A4.1.12. Seston composition (percent area), Lower Winfield, March 24, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 83.5    | 0.0         | 16.5     |
|       | ML         | 69.5    | 0.0         | 30.5     |
|       | S          | 97.8    | 0.0         | 2.2      |
|       | F          | 92.1    | 2.4         | 5.5      |
|       | VF         | 91.4    | 0.0         | 8.6      |
|       | UF         | 88.5    | 0.0         | 11.5     |
|       | Total      | 92.6    | 0.7         | 6.7      |
| Bot   | L          |         |             |          |
|       | ML         |         |             |          |
|       | S          |         |             |          |
|       | F          |         |             |          |
|       | VF         |         |             |          |
|       | UF         |         |             |          |
|       | Total      |         |             |          |

Table A4.1.13. Seston composition (percent area), Upper Winfield, April 21, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 25.8    | 0.0         | 74.2     |
|       | ML         | 37.0    | 0.4         | 44.7     |
|       | S          | 84.5    | 0.0         | 15.5     |
|       | F          | 94.1    | 0.0         | 5.9      |
|       | VF         | 85.6    | 0.0         | 14.4     |
|       | UF         | 81.0    | 0.0         | 19.0     |
|       | Total      | 84.5    | 0.0         | 15.5     |
| Bot   | L          | 29.1    | 0.0         | 70.9     |
|       | ML         | 51.2    | 0.0         | 48.7     |
|       | S          | 96.5    | 0.0         | 3.5      |
|       | F          | 97.1    | 0.0         | 2.9      |
|       | VF         | 94.2    | 0.0         | 5.8      |
|       | UF         | 81.9    | 0.0         | 18.1     |
|       | Total      | 93.4    | 0.0         | 6.6      |

Table A4.1.14. Seston composition (percent area), Lower Winfield, April 22, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 66.4    | 0.0         | 33.6     |
|       | ML         | 82.5    | 0.0         | 17.5     |
|       | S          | 92.0    | 4.3         | 3.7      |
|       | F          | 79.1    | 16.5        | 4.4      |
|       | VF         | 92.8    | 0.0         | 7.2      |
|       | UF         | 75.5    | 0.0         | 24.5     |
|       | Total      | 83.8    | 7.8         | 8.4      |
| Bot   | L          | 82.7    | 0.0         | 17.3     |
|       | ML         | 53.6    | 9.8         | 36.6     |
|       | S          | 88.9    | 0.0         | 11.1     |
|       | F          | 94.9    | 0.0         | 5.1      |
|       | VF         | 95.4    | 0.0         | 4.6      |
|       | UF         | 86.1    | 0.0         | 13.9     |
|       | Total      | 90.5    | 0.4         | 9.1      |

**Table A4.1.15. Seston composition (percent area), Upper Winfield, May 19, 1983.**

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 83.1    | 8.3         | 8.6      |
|       | ML         | 80.3    | 0.0         | 19.7     |
|       | S          | 87.3    | 2.3         | 10.5     |
|       | F          | 94.3    | 0.0         | 5.7      |
|       | VF         | 96.9    | 0.0         | 3.1      |
|       | UF         | 94.2    | 0.0         | 5.8      |
|       | Total      | 91.5    | 1.8         | 6.7      |
| Bot   | L          | 71.9    | 0.0         | 28.1     |
|       | ML         | 82.8    | 0.0         | 17.2     |
|       | S          | 86.8    | 9.7         | 3.5      |
|       | F          | 95.1    | 1.3         | 3.6      |
|       | VF         | 94.9    | 0.0         | 5.1      |
|       | UF         | 73.5    | 13.7        | 12.8     |
|       | Total      | 87.9    | 5.4         | 6.7      |

Table A4.1.16. Seston composition (percent area), Lower Winfield, May 20, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 37.9    | 57.5        | 19.6     |
|       | ML         | 75.6    | 0.0         | 24.4     |
|       | S          | 56.1    | 41.1        | 2.8      |
|       | F          | 80.3    | 9.8         | 9.9      |
|       | VF         | 73.6    | 16.4        | 10.1     |
|       | UF         | 94.3    | 0.0         | 5.7      |
|       | Total      | 71.3    | 20.6        | 8.1      |
| Bot   | L          | 72.2    | 0.0         | 27.8     |
|       | ML         | 78.7    | 0.0         | 21.3     |
|       | S          | 86.3    | 0.0         | 13.7     |
|       | F          | 71.5    | 10.8        | 17.7     |
|       | VF         | 86.5    | 6.4         | 7.1      |
|       | UF         | 90.6    | 0.0         | 9.4      |
|       | Total      | 12.1    | 84.5        | 3.4      |

Table A4.1.17. Seston composition (percent area), Upper Winfield, June 22, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 25.5    | 67.6        | 6.9      |
|       | ML         | 77.7    | 12.8        | 9.5      |
|       | S          | 74.0    | 21.7        | 4.3      |
|       | F          | 80.1    | 12.5        | 7.3      |
|       | VF         | 91.7    | 0.0         | 8.3      |
|       | UF         | 98.3    | 0.0         | 1.7      |
|       | Total      | 75.6    | 18.9        | 5.5      |
| Bot   | L          | 46.7    | 34.3        | 19.0     |
|       | ML         | 77.6    | 15.4        | 6.9      |
|       | S          | 67.5    | 23.7        | 8.8      |
|       | F          | 84.9    | 9.1         | 6.1      |
|       | VF         | 90.6    | 0.0         | 9.4      |
|       | UF         | 97.4    | 0.0         | 2.6      |
|       | Total      | 86.4    | 7.8         | 5.8      |

Table A4.1.18. Seston composition (percent area), Lower Winfield, June 23, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 33.4    | 0.0         | 66.6     |
|       | ML         | 80.9    | 1.5         | 17.6     |
|       | S          | 63.5    | 24.8        | 11.6     |
|       | F          | 53.1    | 35.1        | 11.8     |
|       | VF         | 91.1    | 5.5         | 3.4      |
|       | UF         | 99.0    | 0.0         | 1.0      |
|       | Total      | 86.9    | 7.6         | 5.6      |
| Bot   | L          | 39.9    | 49.3        | 10.7     |
|       | ML         | 88.8    | 0.0         | 11.2     |
|       | S          | 92.8    | 3.6         | 3.6      |
|       | F          | 95.5    | 3.7         | 0.8      |
|       | VF         | 76.5    | 0.0         | 23.5     |
|       | UF         | 99.3    | 0.0         | 0.7      |
|       | Total      | 92.3    | 5.2         | 2.5      |

**Table A4.1.19. Seston composition (percent area), Upper Winfield, July 20, 1983.**

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 85.0    | 7.9         | 7.1      |
|       | ML         | 58.4    | 2.0         | 39.5     |
|       | S          | 70.6    | 21.6        | 7.9      |
|       | F          | 90.1    | 4.7         | 5.3      |
|       | VF         | 89.9    | 4.4         | 5.7      |
|       | UF         |         |             |          |
|       | Total      | 81.6    | 9.9         | 8.4      |
| Bot   | L          | 68.5    | 0.0         | 31.5     |
|       | ML         | 62.7    | 27.2        | 10.1     |
|       | S          | 88.5    | 1.8         | 9.7      |
|       | F          | 79.0    | 15.4        | 5.6      |
|       | VF         | 90.8    | 2.3         | 6.9      |
|       | UF         | 85.7    | 0.0         | 14.3     |
|       | Total      | 82.5    | 7.9         | 9.5      |



Table A4.1.20. Seston composition (percent area), Lower Winfield, July 21, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 77.4    | 0.0         | 22.6     |
|       | ML         | 99.5    | 0.0         | 0.5      |
|       | S          | 94.8    | 0.0         | 5.2      |
|       | F          | 97.9    | 0.0         | 2.1      |
|       | VF         | 98.8    | 0.0         | 1.2      |
|       | UF         | 86.1    | 0.0         | 13.9     |
|       | Total      | 98.2    | 0.0         | 1.8      |
| Bot   | L          | 93.6    | 0.0         | 6.4      |
|       | ML         | 97.2    | 0.0         | 2.8      |
|       | S          | 74.4    | 23.9        | 1.8      |
|       | F          | 95.3    | 0.0         | 4.7      |
|       | VF         | 98.1    | 0.0         | 1.9      |
|       | UF         | 85.3    | 0.0         | 14.7     |
|       | Total      | 91.5    | 4.4         | 4.1      |

**Table A4.1.21. Seston composition (percent area), Upper Winfield, August 25, 1983.**

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 73.0    | 0.0         | 27.0     |
|       | ML         | 67.0    | 0.0         | 33.0     |
|       | S          | 78.9    | 0.0         | 21.1     |
|       | F          | 85.9    | 0.0         | 14.1     |
|       | VF         | 83.9    | 0.0         | 16.1     |
|       | UF         | 45.9    | 0.0         | 54.1     |
|       | Total      | 75.0    | 0.0         | 25.0     |
| Bot   | L          | 73.0    | 0.0         | 27.0     |
|       | ML         | 90.2    | 0.0         | 9.8      |
|       | S          | 83.0    | 7.2         | 9.8      |
|       | F          | 55.3    | 0.0         | 44.7     |
|       | VF         | 86.6    | 0.0         | 13.4     |
|       | UF         | 81.2    | 0.0         | 18.8     |
|       | Total      | 80.8    | 2.4         | 16.7     |

**Table A4.1.22. Seston composition (percent area), Lower Winfield, August 25, 1983.**

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 74.6    | 0.0         | 25.4     |
|       | ML         | 53.2    | 0.2         | 46.5     |
|       | S          | 83.3    | 8.8         | 7.9      |
|       | F          | 92.2    | 4.3         | 3.5      |
|       | VF         | 79.5    | 14.5        | 6.0      |
|       | UF         | 96.7    | 0.0         | 3.3      |
|       | Total      | 89.1    | 4.9         | 6.0      |
| Bot   | L          | 89.1    | 0.0         | 10.9     |
|       | ML         | 90.7    | 3.0         | 6.3      |
|       | S          | 76.7    | 0.0         | 23.3     |
|       | F          | 77.4    | 17.5        | 5.1      |
|       | VF         | 72.4    | 0.0         | 7.6      |
|       | UF         | 89.0    | 0.0         | 11.0     |
|       | Total      | 85.7    | 6.1         | 8.2      |

**Table A4.1.23. Seston composition (percent area), Upper Winfield, September 14, 1983.**

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 40.6    | 0.0         | 59.4     |
|       | ML         | 38.3    | 0.0         | 61.7     |
|       | S          | 82.3    | 0.0         | 17.7     |
|       | F          | 97.3    | 0.0         | 2.7      |
|       | VF         | 89.9    | 0.0         | 10.1     |
|       | UF         | 67.1    | 0.0         | 32.9     |
|       | Total      | 88.6    | 0.0         | 11.4     |
| Bot   | L          | 17.9    | 0.0         | 82.1     |
|       | ML         | 36.6    | 0.0         | 63.4     |
|       | S          | 85.1    | 0.0         | 14.9     |
|       | F          | 79.8    | 0.0         | 20.2     |
|       | VF         | 71.8    | 0.0         | 28.2     |
|       | UF         | 77.9    | 0.0         | 22.1     |
|       | Total      | 68.3    | 0.0         | 31.7     |

Table A4.1.24. Seston composition (percent area), Lower Winfield, September 15, 1983.

| Depth | Size Class | Tripton | Plankton    |          |
|-------|------------|---------|-------------|----------|
|       |            |         | Phyto-/Zoo- | Bacteria |
| Top   | L          | 40.0    | 0.0         | 60.0     |
|       | ML         | 74.5    | 0.0         | 25.5     |
|       | S          | 61.7    | 27.0        | 11.3     |
|       | F          | 45.5    | 48.1        | 6.4      |
|       | VF         | 62.1    | 25.7        | 12.3     |
|       | UF         | 90.3    | 0.0         | 9.7      |
|       | Total      | 60.0    | 26.2        | 13.9     |
| Bot   | L          | 52.4    | 0.0         | 47.6     |
|       | ML         | 68.2    | 0.0         | 31.8     |
|       | S          | 60.5    | 36.5        | 3.0      |
|       | F          | 86.8    | 8.0         | 5.2      |
|       | VF         | 64.0    | 24.8        | 11.2     |
|       | UF         | 92.7    | 0.0         | 7.3      |
|       | Total      | 73.6    | 18.8        | 7.6      |

Table A4.2.1. Bacterial densities (number/ml) in seston size classes, Upper Winfield, Top (1m). Blank = Not Sampled.

| Month | L                    | ML                   | S                    | F                    | VF                   | L-VF                 | UF                    | % UF  |
|-------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|-------|
| Oct   | 56.40                | 69.50                | 1.23x10 <sup>2</sup> | 1.23x10 <sup>2</sup> | 1.21x10 <sup>2</sup> | 5.57x10 <sup>2</sup> | 1.50x10 <sup>5</sup>  | 99.6  |
| Nov   | 15.10                | 6.37                 | 10.10                | 42.50                | 61.60                | 126.67               | 1.59x10 <sup>5</sup>  | 100.0 |
| Dec   | 7.24x10 <sup>2</sup> | 3.31x10 <sup>3</sup> | 4.53x10 <sup>3</sup> | 1.10x10 <sup>4</sup> | 1.68x10 <sup>3</sup> | 2.12x10 <sup>4</sup> | 2.94x10 <sup>5</sup>  | 92.8  |
| Jan   | 51.90                | 53.90                | 73.70                | 13.90                | 20.60                | 214.00               | 11.46x10 <sup>5</sup> | 100.0 |
| Feb   | 2.35x10 <sup>2</sup> | 1.96x10 <sup>2</sup> | 3.33x10 <sup>2</sup> | 5.19x10 <sup>2</sup> | 3.98x10 <sup>2</sup> | 1.68x10 <sup>3</sup> | 20.77x10 <sup>5</sup> | 99.9  |
| Mar   | 1.50x10 <sup>2</sup> | 3.78x10 <sup>2</sup> | 3.91x10 <sup>2</sup> | 1.16x10 <sup>3</sup> | 7.82x10 <sup>2</sup> | 2.86x10 <sup>3</sup> | 21.90x10 <sup>5</sup> | 100.0 |
| Apr   | 3.46x10 <sup>2</sup> | 2.46x10 <sup>2</sup> | 5.23x10 <sup>2</sup> | 2.85x10 <sup>2</sup> | 1.12x10 <sup>3</sup> | 2.52x10 <sup>3</sup> | 5.62x10 <sup>5</sup>  | 99.6  |
| May   | 3.41x10 <sup>2</sup> | 6.30x10 <sup>2</sup> | 1.22x10 <sup>3</sup> | 1.57x10 <sup>3</sup> | 1.61x10 <sup>3</sup> | 5.37x10 <sup>3</sup> | 9.68x10 <sup>5</sup>  | 99.5  |
| Jun   | 1.36x10 <sup>2</sup> | 3.73x10 <sup>2</sup> | 9.03x10 <sup>2</sup> | 9.62x10 <sup>2</sup> | 5.98x10 <sup>2</sup> | 2.97x10 <sup>3</sup> | 7.66x10 <sup>5</sup>  | 99.6  |
| Jul   | 48.40                | 57.60                | 1.10x10 <sup>2</sup> | 97.50                | 1.07x10 <sup>2</sup> | 4.21x10 <sup>2</sup> |                       |       |
| Aug   | 3.13x10 <sup>2</sup> | 6.80x10 <sup>2</sup> | 5.18x10 <sup>2</sup> | 1.85x10 <sup>3</sup> | 1.35x10 <sup>3</sup> | 4.71x10 <sup>3</sup> | 27.57x10 <sup>5</sup> | 99.9  |
| Sep   | 6.46x10 <sup>2</sup> | 8.31x10 <sup>2</sup> | 1.03x10 <sup>3</sup> | 1.89x10 <sup>3</sup> | 5.68x10 <sup>2</sup> | 4.79x10 <sup>3</sup> | 22.57x10 <sup>5</sup> | 99.7  |

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Table A4.2.2. Bacterial densities (number/ml) in seston size classes, Upper Winfield, Bottom (See Table IV.4.1 for depths). Blank = Not Sampled.

| Month | L                    | ML                   | S                    | F                    | VF                   | L-VF                 | UF                    | % UF  |
|-------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|-------|
| Oct   | 91.00                | 15.50                | 46.80                | 1.36x10 <sup>2</sup> | 1.21x10 <sup>2</sup> | 4.10x10 <sup>2</sup> | 0.80x10 <sup>5</sup>  | 99.5  |
| Nov   | 1.04                 | 4.05                 | 30.70                | 1.19x10 <sup>2</sup> | 40.20                | 1.95x10 <sup>2</sup> | 5.86x10 <sup>5</sup>  | 100.0 |
| Dec   |                      |                      |                      |                      |                      |                      |                       |       |
| Jan   | 51.90                | 71.80                | 66.00                | 1.19x10 <sup>2</sup> | 76.90                | 3.86x10 <sup>2</sup> | 6.32x10 <sup>5</sup>  | 100.0 |
| Feb   | 3.24x10 <sup>2</sup> | 5.93x10 <sup>2</sup> | 5.64x10 <sup>2</sup> | 5.03x10 <sup>2</sup> | 2.97x10 <sup>3</sup> | 2.28x10 <sup>2</sup> | 12.73x10 <sup>5</sup> | 99.9  |
| Mar   | 55.00                | 3.26x10 <sup>2</sup> | 3.42x10 <sup>2</sup> | 1.87x10 <sup>3</sup> | 2.45x10 <sup>2</sup> | 2.84x10 <sup>3</sup> | 16.71x10 <sup>5</sup> | 99.9  |
| Apr   | 1.87x10 <sup>2</sup> | 7.92x10 <sup>2</sup> | 4.00x10 <sup>2</sup> | 3.23x10 <sup>2</sup> | 2.79x10 <sup>2</sup> | 1.98x10 <sup>3</sup> | 10.80x10 <sup>5</sup> | 99.8  |
| May   | 2.32x10 <sup>2</sup> | 2.27x10 <sup>3</sup> | 3.21x10 <sup>3</sup> | 1.00x10 <sup>4</sup> | 2.86x10 <sup>3</sup> | 1.86x10 <sup>4</sup> | 19.59x10 <sup>5</sup> | 99.1  |
| Jun   | 1.02x10 <sup>2</sup> | 4.10x10 <sup>2</sup> | 5.33x10 <sup>2</sup> | 6.36x10 <sup>2</sup> | 8.72x10 <sup>2</sup> | 2.55x10 <sup>2</sup> | 13.50x10 <sup>5</sup> | 99.8  |
| Jul   | 67.20                | 58.00                | 1.17x10 <sup>2</sup> | 2.06x10 <sup>2</sup> | 1.95x10 <sup>2</sup> | 6.43x10 <sup>2</sup> | 9.17x10 <sup>5</sup>  | 99.9  |
| Aug   | 1.83x10 <sup>2</sup> | 93.60                | 2.51x10 <sup>2</sup> | 3.11x10 <sup>3</sup> | 4.87x10 <sup>2</sup> | 4.12x10 <sup>3</sup> | 12.85x10 <sup>5</sup> | 100.0 |
| Sep   | 9.84x10 <sup>2</sup> | 1.33x10 <sup>3</sup> | 9.39x10 <sup>2</sup> | 1.89x10 <sup>3</sup> | 3.28x10 <sup>3</sup> | 6.44x10 <sup>3</sup> | 17.23x10 <sup>5</sup> | 99.6  |

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Table A4.2.3. Bacterial densities (number/ml) in seston size classes, Lower Winfield, Top (1m).

| Month | L                    | ML                   | S                    | F                    | VF                   | L-VF                 | UF                    | % UF  |
|-------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|-------|
| Oct   | 31.00                | 25.00                | 1.15x10 <sup>2</sup> | 3.47x10 <sup>2</sup> | 3.22x10 <sup>2</sup> | 8.40x10 <sup>2</sup> | 7.33x10 <sup>5</sup>  | 99.9  |
| Nov   | 2.02                 | 7.78                 | 19.90                | 3.17                 | 13.60                | 46.47                | 6.73x10 <sup>5</sup>  | 100.0 |
| Dec   | 0.88                 | 3.33                 | 5.34                 | 5.13                 | 8.78                 | 23.46                | 2.14x10 <sup>5</sup>  | 100.0 |
| Jan   | 22.60                | 20.80                | 12.80                | 29.00                | 75.70                | 160.90               | 13.59x10 <sup>5</sup> | 100.0 |
| Feb   | 25.90                | 19.50                | 43.20                | 62.50                | 29.10                | 180.20               | 8.11x10 <sup>5</sup>  | 100.0 |
| Mar   | 1.07x10 <sup>3</sup> | 8.59x10 <sup>2</sup> | 1.51x10 <sup>3</sup> | 1.82x10 <sup>4</sup> | 6.60x10 <sup>2</sup> | 2.23x10 <sup>4</sup> | 7.46x10 <sup>5</sup>  | 97.0  |
| Apr   | 44.20                | 51.50                | 44.70                | 2.00x10 <sup>2</sup> | 59.20                | 4.00x10 <sup>2</sup> | 13.04x10 <sup>5</sup> | 99.9  |
| May   | 2.68x10 <sup>2</sup> | 1.25x10 <sup>3</sup> | 1.38x10 <sup>3</sup> | 8.23x10 <sup>2</sup> | 9.39x10 <sup>2</sup> | 4.66x10 <sup>3</sup> | 10.22x10 <sup>5</sup> | 99.5  |
| Jun   | 1.19x10 <sup>2</sup> | 1.60x10 <sup>2</sup> | 5.27x10 <sup>2</sup> | 4.42x10 <sup>2</sup> | 2.60x10 <sup>2</sup> | 1.51x10 <sup>2</sup> | 9.52x10 <sup>5</sup>  | 99.8  |
| Jul   | 30.80                | 43.80                | 57.70                | 29.30                | 25.60                | 187.20               | 3.65x10 <sup>5</sup>  | 100.0 |
| Aug   | 2.30x10 <sup>2</sup> | 59.00                | 3.39x10 <sup>2</sup> | 5.44x10 <sup>2</sup> | 5.14x10 <sup>2</sup> | 1.69x10 <sup>3</sup> | 18.34x10 <sup>5</sup> | 99.9  |
| Sep   | 2.95x10 <sup>2</sup> | 2.24x10 <sup>2</sup> | 5.57x10 <sup>2</sup> | 5.01x10 <sup>2</sup> | 3.33x10 <sup>2</sup> | 1.91x10 <sup>3</sup> | 8.82x10 <sup>5</sup>  | 99.8  |

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Table A4.2.4. Bacterial densities (number/ml) in seston size classes, Lower Winfield, Bottom (See Table IV.4.1 for depths). Blank = Not Sampled.

| Month | L                    | ML                   | S                    | F                    | VF                   | L-VF                 | UF                    | % UF  |
|-------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|-------|
| Oct   | 6.90                 | 12.00                | 22.80                | 70.50                | 99.40                | 211.60               | 0.56x10 <sup>5</sup>  | 100.0 |
| Nov   | 11.60                | 8.75                 | 9.17                 | 13.50                | 13.20                | 56.22                | 2.29x10 <sup>5</sup>  | 100.0 |
| Dec   | 6.05                 | 4.38                 | 3.89                 | 4.44                 | 9.70                 | 28.46                | 1.33x10 <sup>5</sup>  | 100.0 |
| Jan   | 27.00                | 18.60                | 11.00                | 14.20                | 11.20                | 82.00                | 11.00x10 <sup>5</sup> | 100.0 |
| Feb   | 19.60                | 35.00                | 59.30                | 1.40x10 <sup>2</sup> | 53.20                | 2.77x10 <sup>2</sup> | 14.52x10 <sup>5</sup> | 100.0 |
| Mar   |                      |                      |                      |                      |                      |                      |                       |       |
| Apr   | 46.80                | 73.50                | 2.02x10 <sup>2</sup> | 4.49x10 <sup>2</sup> | 88.30                | 8.60x10 <sup>2</sup> | 2.01x10 <sup>5</sup>  | 100.0 |
| May   | 2.98x10 <sup>3</sup> | 4.64x10 <sup>3</sup> | 1.38x10 <sup>4</sup> | 1.82x10 <sup>4</sup> | 1.13x10 <sup>4</sup> | 5.09x10 <sup>4</sup> | 13.62x10 <sup>5</sup> | 99.6  |
| Jun   | 1.72x10 <sup>2</sup> | 3.01x10 <sup>2</sup> | 4.10x10 <sup>2</sup> | 5.54x10 <sup>2</sup> | 5.64x10 <sup>2</sup> | 2.00x10 <sup>3</sup> | 7.46x10 <sup>5</sup>  | 99.7  |
| Jul   | 28.60                | 42.50                | 29.10                | 70.50                | 72.40                | 243.10               | 7.86x10 <sup>5</sup>  | 100.0 |
| Aug   | 1.31x10 <sup>2</sup> | 2.46x10 <sup>2</sup> | 1.70x10 <sup>2</sup> | 99.20                | 2.43x10 <sup>2</sup> | 8.89x10 <sup>2</sup> | 19.70x10 <sup>5</sup> | 99.9  |
| Sep   | 2.00x10 <sup>2</sup> | 4.56x10 <sup>2</sup> | 1.90x10 <sup>3</sup> | 7.48x10 <sup>2</sup> | 4.09x10 <sup>2</sup> | 3.73x10 <sup>3</sup> | 10.41x10 <sup>5</sup> | 99.6  |

Table A5.1.1. List of algae collected in the Winfield Pool of the Kanawha River. Abbreviations are those used in the tables of data found elsewhere in this report.

| ABBREVIATION  | FULL TAXONOMIC NAME                               |
|---------------|---------------------------------------------------|
| CHLOROPHYCEAE |                                                   |
| Actin H       | Actinastrum Hantzschii Lagerheim                  |
| Actin H f     | A. Hantzschii v. fluviatile Schroeder             |
| Ankis f       | Ankistrodesmus Falcatus (Corda) Ralfs             |
| Ankyr j       | Ankyra judayi G.M. Smith                          |
| Cart spp      | Carteria spp.                                     |
| Chaet sp      | Chaetophora sp.                                   |
| Chlamy spp    | Chlamydomonas spp.                                |
| Chloro spp    | Chlorogonium spp.                                 |
| Closts l      | Closteriopsis longissima Lemmermann               |
| Clostm sp     | Closterium sp.                                    |
| Coela m       | Coelastrum microporum Nagila                      |
| Cosma sp      | Cosmarium sp.                                     |
| Cruci f       | Crucigenia Fenestrata Schmidle                    |
| Cruci r       | C. rectangularis (A. Braun) Gay                   |
| Dicty E       | Dictyosphaerium Ehrenbergianum Nag.               |
| Dicty p       | D. pulchellum Wood                                |
| Errer b       | Errerella bornhemiensis Conrad                    |
| Eudor e       | Eudorina elegans Ehrenberg                        |
| Franc D       | Franceia Driescheri (Lemm.) G.M. Sm.              |
| Gloeot l      | Gloeotaenium loitelsbergerianum Hansgirg          |
| Golenk r      | Golenkinia radiata (Chodat) Wille                 |
| Gonium p      | Gonium pectorale Mueller                          |
| Lagerh q      | Lagerheimia quadriseta (Lemm.) G.M. Sm.           |
| Lobom r       | Lobomonas rostrata Hazen                          |
| Mastig sp     | Mastigosphaera sp.                                |
| Micrac p      | Micractinium pusillum Fresenius                   |
| Micrac q      | M. quadrisetum (Lemm.) G.M. Sm.                   |
| Mauge sp      | Mougeotia sp.                                     |
| Nephro A      | Nephrocytium Agardhianum Nag.                     |
| Oocyst B      | Oocystis Borgei Snow                              |
| Oocyst p      | O. parva West + West                              |
| Pando m       | Pandorina morum Bory                              |
| Pedia d c     | Pediastrum duplex v. clathratum (A. Braun) Lagerh |
| Pedia s       | P. simplex (Meyen) Lemm.                          |
| Plankt g      | Planktosphaeria gelatinosa G.M. Sm.               |
| Platyd c      | Platydorina caudata Kofoid                        |
| Pleod i       | Pleodorina illinoisensis Kofoid                   |
| Polyed s      | Polyedriopsis spinalosa Schmidle                  |
| Rhizoc h      | Rhizoclonium hieroglyphicum (C.A. Agardh)         |
| Roya sp       | Roya sp.                                          |
| Scened a      | Scenedesmus (Kirchner) Chool.                     |

|            |                                                                       |
|------------|-----------------------------------------------------------------------|
| Scened a b | <i>S. armatus</i> v. <i>bicaudatus</i><br>(Guglielmetti-Printz) Chad. |
| Scened Be  | <i>S. Bernardi</i> G.M. Sm.                                           |
| Scened bi  | <i>S. Bijuga</i> (Turpin) Lagerh.                                     |
| Scened de  | <i>S. denticulatus</i> Lagerh.                                        |
| Scened di  | <i>S. dimorphus</i> (Turp.) Kutzing                                   |
| Scened l   | <i>S. longus</i> Meyen                                                |
| Scened o   | <i>S. opoliensis</i> P. Richter                                       |
| Scened q   | <i>S. quadricauda</i> (Turp.) Brebisson                               |
| Schro s    | <i>Schroederia setigera</i> (Schroeder) Lemm.                         |
| Selen W    | <i>Selenastrum Westii</i> G.M. Sm.                                    |
| Sphaer s   | <i>Sphaerocystis schroeteri</i> Chod.                                 |
| Spirog sp  | <i>Spirogyra</i> sp.                                                  |
| Staur spp  | <i>Staurastrum</i> spp.                                               |
| Staur p    | <i>S. paradoxum</i> Meyen                                             |
| Sticho b   | <i>Stichococcus bacillaris</i> Nag.                                   |
| Stigeo sp  | <i>Stigeoclonium</i> sp.                                              |
| Tetrae c   | <i>Tetraedron caudatum</i> (Corda) Hansg.                             |
| Tetrae m   | <i>T. minimum</i> (A. Braun) Hansg.                                   |
| Tetrae t   | <i>T. trigonum</i> (Nag.) Hansg.                                      |
| Tetras h   | <i>Tetrastrum heterocanthum</i> (Nordstedt) Chad.                     |
| Tetras s   | <i>T. staurageniaeforme</i> (Schr.) Lemm.                             |
| Traub s    | <i>Traubaria setigerum</i> (Archer) G.M. Sm.                          |

#### EUGLENOPHYCEAE

|          |                          |
|----------|--------------------------|
| Eugl spp | <i>Euglena</i> spp.      |
| Lepoc sp | <i>Lepocinclis</i> sp.   |
| Trach sp | <i>Trachelomonas</i> sp. |

#### CHRYSTOPHYCEAE

|           |                                            |
|-----------|--------------------------------------------|
| Chrysa r  | <i>Chrysamoeba radians</i> Klebs           |
| Dinob b   | <i>Dinobryon bavaricum</i> Imhof           |
| Dinob c   | <i>D. cylindricum</i> Imhof ex. Ahlstrom   |
| Dinob d   | <i>D. divergens</i> Imhof                  |
| Hyalom    | <i>Hyalobryon mucicola</i> (Lemm.) Pascher |
| Mallo spp | <i>Mallomonas</i> spp.                     |
| Ochro sp  | <i>Ochromonas</i> sp.                      |

#### BACILLARIOPHYCEAE

|           |                                                        |
|-----------|--------------------------------------------------------|
| Achn c    | <i>Achnanthes coarctata</i> (Breb. in W. Smith) Grunow |
| Achn l    | <i>A. lanceolata</i> Breb ex. Kutz.                    |
| Achn m    | <i>A. minutissima</i> Kutz.                            |
| Ampho spp | <i>Amphora</i> spp.                                    |
| Aster f   | <i>Asterionella formosa</i> Hassal                     |
| Atth      | <i>Attheya zachariasii</i> Brun.                       |
| Bacil p   | <i>Bacillaria paradoxa</i> Gmelin                      |
| Carp c    | <i>Carpatogramma crucicula</i> (Grun. ex. Cleve) Ross  |
| Cocco pe  | <i>Cocconeis pediculus</i> Ehr.                        |
| Cocco pl  | <i>C. placenta</i> Ehr.                                |
| Cyclo sp  | <i>Cyclotella</i> sp.                                  |
| Cyclo m   | <i>Cyclotella meneghiniana</i> Kutz.                   |

|           |                                                     |
|-----------|-----------------------------------------------------|
| Cymb a    | Cymbella affinis Kutz.                              |
| Cymb me   | C. mexicana (Ehr.) Cl.                              |
| Cymb mi   | C. minuta Hilse ex. Rabenhorst                      |
| Cymb t    | C. tumida (Breb ex. Kutz.) Van Huerck               |
| Diat v    | Diatoma vulgare Bory                                |
| Eun i     | Eunotia incisa W. Sm. ex. Greger                    |
| Eun p m   | E. pectinalis v. minor (Kutz.) Rabh.                |
| Frag c    | Fragilaria crotenensis Kitton                       |
| Frag v    | F. vaucheria (Kutz.) Peters                         |
| Frust r a | Frustulia rhomboides v. amphipleuroides (Grun.) Cl. |
| Gomphs h  | Gomphoneis herculeana (Ehr.) Cl.                    |
| Gompha i  | Gomphonema instabilis Hohn + Hellerman              |
| Gompha o  | G. olivaceum (Lyngbye) Kutz.                        |
| Gompha p  | G. parrulum Kutz.                                   |
| Gompha t  | G. tenellum Kutz.                                   |
| Gyro sp   | Gyrosigma sp.                                       |
| Hall a    | Hannaea arcus (Ehr.) Patrick                        |
| Melos d   | Melosira distans (Ehr.) Kutz.                       |
| Melos g   | M. granulata (Ehr.) Ralfs                           |
| Melos g a | M. granulata v. angustissima O. Muller              |
| Melos v   | M. varians Ag.                                      |
| Merid c   | Meridion circulare (Grev.) Ag.                      |
| Navic spp | Navicula spp.                                       |
| Navic a   | N. auriculata Hustedt                               |
| Navic c   | N. cryptocephala Kutz.                              |
| Navic d   | N. decussis Oestrup                                 |
| Navic mi  | N. minima Grun.                                     |
| Navic mu  | N. mutica Kutz.                                     |
| Navic t   | N. tripunctata (O.F. Muller) Bory                   |
| Navic v   | N. viridula (Kutz.) Kutz.                           |
| Nitz spp  | Nitzschia spp.                                      |
| Nitz a    | N. apiculata (Greg.) Grun.                          |
| Nitz f    | N. filiformis (W. Sm.) Hust.                        |
| Nitz p    | N. palea (Kutz.) W. Sm.                             |
| Nitz s t  | N. sinuata v. tabellaria Grun.                      |
| Pinn g    | Pinnularia gibba Ehr.                               |
| Rhizos e  | Rhizosolenia eriensis H.L. Smith                    |
| Rhoic c   | Rhoicosphenia curvata (Kutz.) Grun. ex. Rath.       |
| Skelet p  | Skeletonema potamos (Weber) Hasle                   |
| Steph spp | Stephanodiscus spp.                                 |
| Surir spp | Surirella spp.                                      |
| Surir o   | S. ovata Kutz.                                      |
| Syn spp   | Synedra spp.                                        |
| Syn u     | S. ulna (Nitzsche) Ehr.                             |
| Syn u r   | S. ulna V. ramesi (Herib.) Hust.                    |
| Tab f     | Tabellaria flocculosa (Roth) Kutz.                  |

#### DINOPHYCEAE

|          |                 |
|----------|-----------------|
| Gymno sp | Symnodinium sp. |
|----------|-----------------|

#### CRYPTOPHYCEAE

|           |                   |
|-----------|-------------------|
| Chroom m  | Chroomonas minuta |
| Crypto sp | Cryptomonas sp.   |
| Crypto o  | C. ovata Ehr.     |

#### CYANOPHYCEAE

|            |                                            |
|------------|--------------------------------------------|
| agmen t    | Agmenellum tenuissima Lemm.                |
| Anab spp   | Anabaena spp.                              |
| Chamae sp  | Chamaesiphon sp.                           |
| Chrooc l d | Chroococcus limneticus v. distans G.M. Sm. |
| Dactyl r   | Dactylococcopsis raphidioides Hansg.       |
| Marss e    | Marssoniella elegans Lemm.                 |
| Oscil spp  | Oscillatoria spp.                          |
| Oscil c    | O. chlorina Kutz.                          |
| Oscil g    | O. geminata Meneghini                      |
| Oscil t    | O. tenuis Ag.                              |
| Phorm spp  | Phormidium spp.                            |
| Phorm a    | P. angustissimum West + West               |
| Phorm f    | P. fragile Gomont                          |
| Raphid c   | Raphidiopsis curvata Fritsch + Rich        |
| Spirul s   | Spirulina subsalsa Oersted                 |

#### UNKNOWN

|         |                  |
|---------|------------------|
| Phytofl | Phytoflagellates |
|---------|------------------|

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Table A5.2.1. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, October 19, 1982. Top = 1m; Bot = 3m; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Ankis f                  | 1             | 2   |            |         |
| Chlamy spp               | 1             | 0   |            |         |
| Coela m                  | 6             | 0   |            |         |
| Cosma sp                 | 0             | 1   |            |         |
| Cruci f                  | 10            | 6   |            |         |
| Cruci r                  | 0             | 3   |            |         |
| Dicty E                  | 6             | 0   |            |         |
| Gonium p                 | 10            | 3   |            |         |
| Scened a b               | 0             | 3   |            |         |
| Scened bi                | 6             | 4   |            |         |
| Scened de                | 3             | 4   |            |         |
| Scened q                 | 10            | 3   |            |         |
| Schro s                  | 2             | 1   |            |         |
| Sticho g                 | 34            | 24  |            |         |
| Stigeo sp                | 0             | 10  |            |         |
| SubTotal                 | 89            | 64  |            |         |
| <b>EUGLENOPHYCEAE</b>    |               |     |            |         |
| Eugl spp                 | 1             | 0   |            |         |
| SubTotal                 | 1             | 0   |            |         |
| <b>CHRYSTOPHYCEAE</b>    |               |     |            |         |
| Dinob d                  | 2             | 3   |            |         |
| Mallo spp                | 1             | 0   |            |         |
| Ochro sp                 | 13            | 18  |            |         |
| SubTotal                 | 16            | 21  |            |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Cyclo m                  | 1             | 1   |            |         |
| Gompha p                 | 1             | 0   |            |         |
| Melos v                  | 1             | 7   |            |         |
| Naviculoid               | 11            | 25  |            |         |
| Surir spp                | 1             | 1   |            |         |
| Syn spp                  | 4             | 1   |            |         |
| SubTotal                 | 19            | 35  |            |         |

| Taxa                 | <u>Phytoplankton</u> |            | <u>Periphyton</u> |         |
|----------------------|----------------------|------------|-------------------|---------|
|                      | Top                  | Bot        | Art Sub           | Nat Sub |
| <b>CRYPTOPHYCEAE</b> |                      |            |                   |         |
| Chroom m             | 10                   | 16         |                   |         |
| Crypto sp            | 4                    | 2          |                   |         |
| SubTotal             | 14                   | 18         |                   |         |
| <b>CYANOPHYCEAE</b>  |                      |            |                   |         |
| Chrooc l d           | 6                    | 0          |                   |         |
| Dactyl r             | 6                    | 10         |                   |         |
| SubTotal             | 12                   | 10         |                   |         |
| <b>TOTAL</b>         | <b>151</b>           | <b>148</b> |                   |         |

Table A5.2.2. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Lower Winfield, October 18, 1982. Top = 1m; Bot = 7m; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | <u>Phytoplankton</u> |           | <u>Periphyton</u> |         |
|--------------------------|----------------------|-----------|-------------------|---------|
|                          | Top                  | Bot       | Art Sub           | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |                      |           |                   |         |
| Ankis f                  | 0                    | 1         |                   |         |
| Chlamy spp               | 3                    | 1         |                   |         |
| Cosma sp                 | 1                    | 0         |                   |         |
| Dicty E                  | 0                    | 3         |                   |         |
| Oocyst B                 | 1                    | 0         |                   |         |
| Oocyst p                 | 0                    | 2         |                   |         |
| Pedia s                  | 6                    | 0         |                   |         |
| Plankt q                 | 5                    | 0         |                   |         |
| Scened de                | 0                    | 7         |                   |         |
| Scened q                 | 9                    | 6         |                   |         |
| Selen W                  | 0                    | 1         |                   |         |
| Staur spp                | 0                    | 1         |                   |         |
| Tetras s                 | 0                    | 1         |                   |         |
| Treub s                  | 0                    | 1         |                   |         |
| SubTotal                 | 25                   | 24        |                   |         |
| <b>BACILLARIOPHYCEAE</b> |                      |           |                   |         |
| Cyclo m                  | 5                    | 8         |                   |         |
| Melos g                  | 10                   | 3         |                   |         |
| Naviculoid               | 1                    | 2         |                   |         |
| Steph spp                | 1                    | 0         |                   |         |
| Syn spp                  | 5                    | 4         |                   |         |
| SubTotal                 | 22                   | 17        |                   |         |
| <b>CRYPTOPHYCEAE</b>     |                      |           |                   |         |
| Chroom m                 | 33                   | 15        |                   |         |
| Crypt sp                 | 12                   | 4         |                   |         |
| SubTotal                 | 45                   | 19        |                   |         |
| <b>CYANOPHYCEAE</b>      |                      |           |                   |         |
| Agmen t                  | 20                   | 10        |                   |         |
| Dactyl r                 | 7                    | 6         |                   |         |
| Phorm a                  | 10                   | 20        |                   |         |
| SubTotal                 | 37                   | 36        |                   |         |
| <b>TOTAL</b>             | <b>129</b>           | <b>96</b> |                   |         |



Table A5.2.3. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, November 19, 1982. Top = 1m; Bot = 3m; Art Sub = glass slide; Nat Sub = stone; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Actin H F                | 0             | 4   | 0          | 0       |
| Chlamy spp               | 3             | 4   | 0          | 0       |
| Dicty E                  | 0             | 5   | 0          | 0       |
| Micrac p                 | 0             | 2   | 0          | 0       |
| Micrac q                 | 4             | 3   | 0          | 0       |
| Oocyst B                 | 0             | 1   | 0          | 0       |
| Scened bi                | 0             | 3   | 0          | 0       |
| Tetrae m                 | 0             | 1   | 0          | 0       |
| SubTotal                 | 7             | 23  | 0          | 0       |
| <b>CHRYSOPHYCEAE</b>     |               |     |            |         |
| Hyalu m                  | 1             | 0   | 0          | 0       |
| SubTotal                 | 1             | 0   | 0          | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Ampho spp                | 0             | 0   | 0          | 10      |
| Bacil p                  | 0             | 0   | 140        | 60      |
| Cocco pe                 | 0             | 1   | 80         | 0       |
| Cyclo m                  | 6             | 4   | 0          | 0       |
| Cymb me                  | 0             | 0   | 40         | 0       |
| Cymb mi                  | 0             | 0   | 40         | 0       |
| Cymb t                   | 1             | 0   | 220        | 60      |
| Diat v                   | 1             | 4   | 20         | 10      |
| Eun i                    | 1             | 0   | 0          | 0       |
| Gompha p                 | 0             | 0   | 100        | 100     |
| Melos v                  | 16            | 25  | 1900       | 1000    |
| Merid C                  | 0             | 0   | 0          | 70      |
| Naviculoid               | 5             | 7   | 3530       | 1960    |
| Nitz spp                 | 0             | 0   | 6380       | 1000    |
| Surir spp                | 1             | 0   | 0          | 0       |
| Syn spp                  | 0             | 3   | 0          | 0       |
| Syn u                    | 0             | 0   | 20         | 0       |
| SubTotal                 | 31            | 44  | 12470      | 4270    |

| Taxa                 | <u>Phytoplankton</u> |            | <u>Periphyton</u> |     |              |     |
|----------------------|----------------------|------------|-------------------|-----|--------------|-----|
|                      | Top                  | Bot        | Art               | Sub | Nat          | Sub |
| <b>CRYPTOPHYCEAE</b> |                      |            |                   |     |              |     |
| Chroom m             | 28                   | 38         | 0                 |     | 0            |     |
| Crypto sp            | 3                    | 2          | 0                 |     | 0            |     |
| Crypto o             | 1                    | 0          | 0                 |     | 0            |     |
| SubTotal             | 32                   | 40         | 0                 |     | 0            |     |
| <b>CYANOPHYCEAE</b>  |                      |            |                   |     |              |     |
| Agmen t              | 0                    | 12         | 0                 |     | 0            |     |
| Dactyl r             | 1                    | 1          | 0                 |     | 0            |     |
| Oscil t              | 0                    | 0          | 0                 |     | 700          |     |
| Phorm f              | 0                    | 0          | 400               |     | 7500         |     |
| SubTotal             | 1                    | 13         | 400               |     | 8200         |     |
| <b>TOTAL</b>         | <b>72</b>            | <b>120</b> | <b>12870</b>      |     | <b>12470</b> |     |

Table A5.2.4. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Lower Winfield, November 18, 1982. Top = 1m; Bot = 8m; Art Sub = glass slide; Nat Sub = wood; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Cart sp                  | 1             | 4   | 0          | 0       |
| Chaet sp                 | 0             | 0   | 0          | 60      |
| Chlamy spp               | 7             | 11  | 0          | 0       |
| Cruci f                  | 6             | 1   | 0          | 0       |
| Lagerh q                 | 1             | 0   | 0          | 0       |
| Scened a                 | 0             | 6   | 0          | 0       |
| Scened de                | 3             | 6   | 0          | 0       |
| Scened q                 | 1             | 0   | 0          | 10      |
| Selen W                  | 1             | 4   | 0          | 0       |
| Stigeo sp                | 0             | 0   | 2000       | 10      |
| SubTotal                 | 20            | 32  | 2000       | 80      |
| <b>EUGLENOPHYCEAE</b>    |               |     |            |         |
| Eugl spp                 | 0             | 1   | 0          | 0       |
| SubTotal                 | 0             | 1   | 0          | 0       |
| <b>CHRYSOPHYCEAE</b>     |               |     |            |         |
| Hyalo m                  | 1             | 1   | 0          | 0       |
| SubTotal                 | 1             | 1   | 0          | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Bacil p                  | 0             | 0   | 100        | 7       |
| Cocco pe                 | 0             | 0   | 0          | 10      |
| Cyclo m                  | 2             | 1   | 0          | 0       |
| Cymb me                  | 0             | 0   | 60         | 0       |
| Cymb t                   | 0             | 0   | 670        | 0       |
| Diat v                   | 1             | 1   | 20         | 7       |
| Frag v                   | 0             | 0   | 150        | 0       |
| Gompha i                 | 0             | 0   | 100        | 0       |
| Gompha p                 | 0             | 0   | 80         | 0       |
| Melos v                  | 0             | 0   | 2400       | 14      |
| Naviculoid               | 1             | 1   | 2500       | 50      |
| Navic d                  | 0             | 0   | 110        | 0       |
| Nitz spp                 | 0             | 0   | 1800       | 0       |
| Nitz F                   | 0             | 0   | 0          | 4       |
| Syn spp                  | 1             | 1   | 0          | 0       |
| SubTotal                 | 5             | 4   | 7990       | 92      |

| Taxa                 | <u>Phytoplankton</u> |           | <u>Periphyton</u> |     |             |     |
|----------------------|----------------------|-----------|-------------------|-----|-------------|-----|
|                      | Top                  | Bot       | Art               | Sub | Nat         | Sub |
| <b>CRYPTOPHYCEAE</b> |                      |           |                   |     |             |     |
| Chroom m             | 10                   | 9         | 0                 |     | 0           |     |
| Crypto sp            | 9                    | 12        | 0                 |     | 0           |     |
| Crypto o             | 3                    | 4         | 0                 |     | 0           |     |
| SubTotal             | 22                   | 25        | 0                 |     | 0           |     |
| <b>CYANOPHYCEAE</b>  |                      |           |                   |     |             |     |
| Dactrl r             | 5                    | 3         | 0                 |     | 0           |     |
| Oscil t              | 0                    | 0         | 0                 |     | 200         |     |
| Phorm a              | 0                    | 0         | 1000              |     | 1000        |     |
| Phorm f              | 0                    | 0         | 300               |     | 5300        |     |
| SubTotal             | 5                    | 3         | 1300              |     | 6500        |     |
| <b>TOTAL</b>         | <b>53</b>            | <b>66</b> | <b>11290</b>      |     | <b>6672</b> |     |

Table A5.2.5. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Gallipolis, November 18, 1982. Top = 1m; Bot = 3m; See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Cart spp                 | 1             | 0   |            |         |
| Chlamy spp               | 5             | 9   |            |         |
| Dicty E                  | 2             | 0   |            |         |
| Gloeot l                 | 0             | 3   |            |         |
| Micrac q                 | 0             | 1   |            |         |
| Oocyst p                 | 0             | 4   |            |         |
| Scened bi                | 0             | 6   |            |         |
| Scened q                 | 0             | 6   |            |         |
| Sphaer s                 | 0             | 1   |            |         |
| Treub s                  | 0             | 1   |            |         |
| SubTotal                 | 8             | 31  |            |         |
| <b>EUGENOPHYCEAE</b>     |               |     |            |         |
| Eugl spp                 | 0             | 1   |            |         |
| Lipoc sp                 | 1             | 1   |            |         |
| SubTotal                 | 1             | 2   |            |         |
| <b>CHRYSTOPHYCEAE</b>    |               |     |            |         |
| Dinob d                  | 1             | 0   |            |         |
| Hyaloc m                 | 1             | 1   |            |         |
| SubTotal                 | 2             | 1   |            |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Cyclo m                  | 1             | 4   |            |         |
| Melos g                  | 1             | 4   |            |         |
| Melos v                  | 1             | 0   |            |         |
| Naviculoid               | 2             | 0   |            |         |
| Surir spp                | 0             | 1   |            |         |
| Syn sp                   | 1             | 0   |            |         |
| SubTotal                 | 6             | 9   |            |         |
| <b>CRYPTOPHYCEAE</b>     |               |     |            |         |
| Chroom m                 | 7             | 12  |            |         |
| Crypto sp                | 3             | 4   |            |         |
| SubTotal                 | 10            | 16  |            |         |

| Taxa                | <u>Phytoplankton</u> |           | <u>Periphyton</u> |         |
|---------------------|----------------------|-----------|-------------------|---------|
|                     | Top                  | Bot       | Art Sub           | Nat Sub |
| <b>CYANOPHYCEAE</b> |                      |           |                   |         |
| Anab spp            | 6                    | 0         |                   |         |
| Dactyl r            | 3                    | 4         |                   |         |
| SubTotal            | 9                    | 4         |                   |         |
| <b>TOTAL</b>        | <b>36</b>            | <b>63</b> |                   |         |

Table A5.2.6. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Upper Winfield, December 17, 1982. Top = 1m; Bot = 4m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |           | Periphyton |         |
|--------------------------|---------------|-----------|------------|---------|
|                          | Top           | Bot       | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |           |            |         |
| Chlamy spp               | 1             | 1         | 0          |         |
| Clostm sp                | 1             | 0         | 0          |         |
| Scened a                 | 3             | 0         | 0          |         |
| SubTotal                 | 5             | 1         | 0          |         |
| <b>EUGLENOPHYCEAE</b>    |               |           |            |         |
| Eugl spp                 | 0             | 1         | 0          |         |
| SubTotal                 | 0             | 1         | 0          |         |
| <b>BACILLARIOPHYCEAE</b> |               |           |            |         |
| Ampho spp                | 1             | 0         | 0          |         |
| Cocco pe                 | 0             | 1         | 1          |         |
| Cymb mi                  | 1             | 0         | 2          |         |
| Cymb t                   | 0             | 1         | 1          |         |
| Diat v                   | 1             | 4         | 1          |         |
| Eun i                    | 0             | 1         | 0          |         |
| Frag v                   | 0             | 0         | 1          |         |
| Frust r a                | 1             | 0         | 0          |         |
| Gompha p                 | 0             | 0         | 16         |         |
| Melos v                  | 7             | 2         | 42         |         |
| Naviculoid               | 20            | 14        | 55         |         |
| Navic d                  | 1             | 0         | 0          |         |
| Nitz spp                 | 0             | 0         | 26         |         |
| Nitz f                   | 1             | 0         | 0          |         |
| Surir spp                | 0             | 1         | 0          |         |
| Syn spp                  | 1             | 0         | 0          |         |
| SubTotal                 | 34            | 24        | 145        |         |
| <b>CRYPTOPHYCEAE</b>     |               |           |            |         |
| Crypto o                 | 2             | 1         | 0          |         |
| SubTotal                 | 2             | 1         | 0          |         |
| <b>CYANOPHYCEAE</b>      |               |           |            |         |
| Anab spp                 | 19            | 0         | 0          |         |
| Dactyl r                 | 2             | 3         | 0          |         |
| Phorm a                  | 30            | 7         | 100        |         |
| SubTotal                 | 51            | 10        | 100        |         |
| <b>TOTAL</b>             | <b>92</b>     | <b>37</b> | <b>245</b> |         |

Table A5.2.7. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Lower Winfield, December 16, 1982. Top = 1m; Bot = 9m; Art Sub = glass slide; Nat Sub = wood; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | <u>Phytoplankton</u> |     | <u>Periphyton</u> |         |
|--------------------------|----------------------|-----|-------------------|---------|
|                          | Top                  | Bot | Art Sub           | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |                      |     |                   |         |
| Chlamy spp               | 1                    | 1   | 0                 | 0       |
| Chloro spp               | 1                    | 1   | 0                 | 0       |
| Dicty E                  | 0                    | 1   | 0                 | 0       |
| Mouge sp                 | 0                    | 0   | 0                 | 5       |
| SubTotal                 | 2                    | 3   | 0                 | 5       |
| <b>EUGLENOPHYCEAE</b>    |                      |     |                   |         |
| Eugl spp                 | 1                    | 1   | 0                 | 0       |
| SubTotal                 | 1                    | 1   | 0                 | 0       |
| <b>CHRYSTOPHYCEAE</b>    |                      |     |                   |         |
| Dinob d                  | 0                    | 1   | 0                 | 0       |
| SubTotal                 | 0                    | 1   | 0                 | 0       |
| <b>BACILLARIOPHYCEAE</b> |                      |     |                   |         |
| Cyclo m                  | 1                    | 0   | 0                 | 0       |
| Cymb mi                  | 0                    | 0   |                   | 9       |
| Cymb t                   | 0                    | 0   | 1                 | 5       |
| Diat v                   | 1                    | 0   | 0                 | 31      |
| Gompha p                 | 0                    | 0   | 0                 | 59      |
| Melos d                  | 0                    | 1   | 0                 | 0       |
| Melos g                  | 4                    | 0   | 0                 | 0       |
| Melos v                  | 0                    | 0   | 1                 | 340     |
| Naviculoid               | 2                    | 0   | 71                | 68      |
| Nitz spp                 | 0                    | 0   | 50                | 35      |
| Nitz f                   | 0                    | 1   | 0                 | 0       |
| Pinn g                   | 0                    | 0   | 2                 | 0       |
| Rhoic c                  | 1                    | 0   | 0                 | 0       |
| Syn spp                  | 1                    | 1   | 0                 | 0       |
| Syn u                    | 0                    | 0   | 0                 | 10      |
| SubTotal                 | 10                   | 3   | 125               | 557     |
| <b>CRYPTOPHYCEAE</b>     |                      |     |                   |         |
| Chroom m                 | 2                    | 1   | 0                 | 0       |
| Crypto sp                | 0                    | 1   | 0                 | 0       |
| SubTotal                 | 2                    | 2   | 0                 | 0       |



| Taxa         | Phytoplankton |     | Periphyton |         |
|--------------|---------------|-----|------------|---------|
|              | Top           | Bot | Art Sub    | Nat Sub |
| CYANOPHYCEAE |               |     |            |         |
| Dactyl r     | 2             | 2   | 0          | 0       |
| Oscil t      | 0             | 0   | 40         | 0       |
| Phorm a      | 40            | 20  | 400        | 200     |
| Phorm f      | 20            | 0   | 480        | 0       |
| SubTotal     | 62            | 22  | 920        | 200     |
| UNKNOWN      |               |     |            |         |
| Phytofl      | 0             | 4   | 0          | 0       |
| SubTotal     | 0             | 4   | 0          | 0       |
| TOTAL        | 77            | 36  | 1045       | 762     |

Table A5.2.8. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Upper Winfield, January 21, 1983. Top = 1m; Bot = 2m; Nat Sub = stone; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Chlamy spp               | 7             | 9   |            | 0       |
| Stigeo sp                | 0             | 8   |            | 0       |
| SubTotal                 | 7             | 17  |            | 0       |
| <b>EUGLENOPHYCEAE</b>    |               |     |            |         |
| Eugl spp                 | 0             | 1   |            | 0       |
| SubTotal                 | 0             | 1   |            | 0       |
| <b>CHRYSOPHYCEAE</b>     |               |     |            |         |
| Hyalos m                 | 0             | 2   |            | 0       |
| SubTotal                 | 0             | 2   |            | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Ampho spp                | 0             | 1   |            | 0       |
| Aster f                  | 3             | 4   |            | 0       |
| Cocconeid pe             | 0             | 0   |            | 70      |
| Cyclotella m             | 0             | 5   |            | 0       |
| Cymbella t               | 0             | 0   |            | 70      |
| Diatoms v                | 14            | 38  |            | 100     |
| Fragilaria c             | 0             | 20  |            | 100     |
| Gomphonema p             | 1             | 1   |            | 0       |
| Gyrodinium sp            | 0             | 0   |            | 200     |
| Melosira v               | 0             | 6   |            | 3600    |
| Naviculoid               | 4             | 7   |            | 920     |
| Nitzschia spp            | 0             | 0   |            | 1300    |
| Stephanodiscus spp       | 0             | 1   |            | 0       |
| Synedra spp              | 1             | 1   |            | 0       |
| Synedra u                | 0             | 0   |            | 70      |
| SubTotal                 | 23            | 84  |            | 6430    |
| <b>CRYPTOPHYCEAE</b>     |               |     |            |         |
| Chroom m                 | 11            | 21  |            | 0       |
| Cryptosporidium sp       | 9             | 6   |            | 0       |
| Cryptosporidium o        | 3             | 3   |            | 0       |
| SubTotal                 | 23            | 30  |            | 0       |

| Taxa                | <u>Phytoplankton</u> |            | <u>Periphyton</u> |               |
|---------------------|----------------------|------------|-------------------|---------------|
|                     | Top                  | Bot        | Art Sub           | Nat Sub       |
| <b>CYANOPHYCEAE</b> |                      |            |                   |               |
| Dactyl r            | 7                    | 1          |                   | 0             |
| Oscil t             | 0                    | 0          |                   | 2000          |
| Phorm a             | 0                    | 0          |                   | 150000        |
| SubTotal            | 7                    | 1          |                   | 152000        |
| <b>TOTAL</b>        | <b>60</b>            | <b>135</b> |                   | <b>158430</b> |

Table A5.2.9. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Lower Winfield, January 20, 1983. Top = 1m; Bot = 9m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |           | Periphyton  |         |
|--------------------------|---------------|-----------|-------------|---------|
|                          | Top           | Bot       | Art Sub     | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |           |             |         |
| Chlamy spp               | 4             | 2         | 0           |         |
| SubTotal                 | 4             | 2         | 0           |         |
| <b>EUGLENOPHYCEAE</b>    |               |           |             |         |
| Eugl spp                 | 1             | 4         | 0           |         |
| Trach sp                 | 1             | 0         | 0           |         |
| SubTotal                 | 2             | 4         | 0           |         |
| <b>CHRYSOPHYCEAE</b>     |               |           |             |         |
| Hyalos m                 | 0             | 1         | 0           |         |
| SubTotal                 | 0             | 1         | 0           |         |
| <b>BACILLARIOPHYCEAE</b> |               |           |             |         |
| Aster f                  | 0             | 1         | 0           |         |
| Cyclo m                  | 3             | 4         | 0           |         |
| Cymb mi                  | 0             | 0         | 170         |         |
| Cymb t                   | 0             | 0         | 20          |         |
| Diat v                   | 0             | 1         | 250         |         |
| Frag. c                  | 1             | 2         | 0           |         |
| Gompha p                 | 0             | 0         | 520         |         |
| Melos v                  | 0             | 0         | 20          |         |
| Merid c                  | 0             | 0         | 78          |         |
| Naviculoid               | 0             | 0         | 140         |         |
| Nitz spp                 | 0             | 0         | 460         |         |
| Syn spp                  | 1             | 0         | 0           |         |
| Syn u                    | 0             | 0         | 20          |         |
| SubTotal                 | 5             | 8         | 1678        |         |
| <b>CRYPTOPHYCEAE</b>     |               |           |             |         |
| Crypto o                 | 1             | 1         | 0           |         |
| SubTotal                 | 1             | 1         | 0           |         |
| <b>CYANOPHYCEAE</b>      |               |           |             |         |
| Dactyl r                 | 4             | 3         | 0           |         |
| Phorm a                  | 0             | 0         | 400         |         |
| SubTotal                 | 4             | 3         | 400         |         |
| <b>TOTAL</b>             | <b>16</b>     | <b>19</b> | <b>2078</b> |         |

Table A5.2.10. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, February 18, 1983. Top = 1m; Bot = 2m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Chlamy spp               | 4             | 3   | 0          |         |
| Roya sp                  | 1             | 1   | 0          |         |
| Scened a                 | 0             | 1   | 0          |         |
| SubTotal                 | 5             | 5   | 0          |         |
| <b>EUGLENOPHYCEAE</b>    |               |     |            |         |
| Eugl spp                 | 1             | 1   | 0          |         |
| SubTotal                 | 1             | 1   | 0          |         |
| <b>CHRYSOPHYCEAE</b>     |               |     |            |         |
| Dinob b                  | 1             | 0   | 0          |         |
| Hyalom                   | 1             | 1   | 0          |         |
| Mallo spp                | 0             | 1   | 0          |         |
| SubTotal                 | 2             | 2   | 0          |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Ampho spp                | 0             | 2   | 0          |         |
| Aster f                  | 1             | 0   | 1          |         |
| Cyclo m                  | 2             | 2   | 0          |         |
| Cymb mi                  | 0             | 0   | 2          |         |
| Cymb t                   | 0             | 1   | 0          |         |
| Diat v                   | 4             | 4   | 1          |         |
| Frag v                   | 0             | 0   | 4          |         |
| Gomphs h                 | 1             | 0   | 0          |         |
| Gompha o                 | 1             | 1   | 12         |         |
| Melos g                  | 5             | 0   | 0          |         |
| Melos v                  | 12            | 4   | 5          |         |
| Merid c                  | 1             | 0   | 0          |         |
| Naviculoid               | 7             | 6   | 27         |         |
| Nitz spp                 | 0             | 0   | 45         |         |
| Rhoic c                  | 1             | 0   | 0          |         |
| Syn spp                  | 4             | 1   | 0          |         |
| Syn u                    | 0             | 0   | 1          |         |
| SubTotal                 | 39            | 21  | 98         |         |

| Taxa                 | <u>Phytoplankton</u> |           | <u>Periphyton</u> |         |
|----------------------|----------------------|-----------|-------------------|---------|
|                      | Top                  | Bot       | Art Sub           | Nat Sub |
| <b>CRYPTOPHYCEAE</b> |                      |           |                   |         |
| Chroom m             | 1                    | 1         | 0                 |         |
| SubTotal             | 1                    | 1         | 0                 |         |
| <b>CYANOPHYCEAE</b>  |                      |           |                   |         |
| Anab spp             | 1                    | 0         | 0                 |         |
| Dactyl r             | 1                    | 1         | 0                 |         |
| Phorm a              | 6                    | 0         | 40                |         |
| Phorm f              | 0                    | 0         | 10                |         |
| SubTotal             | 8                    | 1         | 50                |         |
| <b>TOTAL</b>         | <b>56</b>            | <b>31</b> | <b>148</b>        |         |

Table A5.2.11. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Lower Winfield, February 17, 1983. Top = 1m; Bot = 9m; Art Sub = glass slide; Nat Sub = wood; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Chlamy spp               | 8             | 4   | 0          | 0       |
| Stigeo sp                | 0             | 4   | 0          | 0       |
| SubTotal                 | 8             | 8   | 0          | 0       |
| <b>CHRYSOPHYCEAE</b>     |               |     |            |         |
| Hyalos m                 | 2             | 0   | 0          | 0       |
| SubTotal                 | 2             | 0   | 0          | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Achn c                   | 0             | 0   | 2          | 0       |
| Ampho spp                | 1             | 0   | 0          | 0       |
| Aster f                  | 1             | 2   | 0          | 0       |
| Cocc pe                  | 0             | 0   | 0          | 70      |
| Cyclo m                  | 2             | 1   | 0          | 0       |
| Cymb mi                  | 1             | 1   | 6          | 200     |
| Cymb t                   | 0             | 0   | 2          | 100     |
| Diat v                   | 4             | 3   | 93         | 70      |
| Eun p m                  | 0             | 0   | 0          | 100     |
| Frag v                   | 0             | 0   | 6          | 0       |
| Gomphs f                 | 0             | 1   | 0          | 0       |
| Gompha o                 | 0             | 0   | 10         | 640     |
| Gompha p                 | 0             | 0   | 0          | 100     |
| Melos g                  | 0             | 1   | 0          | 0       |
| Melos v                  | 1             | 13  | 35         | 200     |
| Naviculoid               | 2             | 2   | 74         | 1800    |
| Navic mu                 | 0             | 0   | 0          | 2900    |
| Navic spp                | 0             | 0   | 0          | 300     |
| Nitz spp                 | 0             | 0   | 213        | 1200    |
| Nitz s t                 | 0             | 0   | 0          | 40      |
| Surir o                  | 0             | 0   | 2          | 40      |
| Syn spp                  | 4             | 5   | 0          | 0       |
| Syn u                    | 0             | 0   | 13         | 100     |
| Syn u r                  | 0             | 0   | 0          | 70      |
| SubTotal                 | 16            | 29  | 456        | 7930    |

| Taxa                 | <u>Phytoplankton</u> |           | <u>Periphyton</u> |     |              |     |
|----------------------|----------------------|-----------|-------------------|-----|--------------|-----|
|                      | Top                  | Bot       | Art               | Sub | Nat          | Sub |
| <b>CRYPTOPHYCEAE</b> |                      |           |                   |     |              |     |
| Chroom m             | 2                    | 1         | 0                 |     | 0            |     |
| Crypto sp            | 0                    | 1         | 0                 |     | 0            |     |
| SubTotal             | 2                    | 2         | 0                 |     | 0            |     |
| <b>CYANOPHYCEAE</b>  |                      |           |                   |     |              |     |
| Dactyl r             | 3                    | 1         | 0                 |     | 40           |     |
| Oscil g              | 11                   | 4         | 0                 |     | 0            |     |
| Oscil t              | 0                    | 0         | 0                 |     | 1000         |     |
| Phorm a              | 30                   | 8         | 20                |     | 8000         |     |
| Phorm f              | 0                    | 0         | 200               |     | 0            |     |
| SubTotal             | 44                   | 13        | 220               |     | 9040         |     |
| <b>TOTAL</b>         | <b>72</b>            | <b>52</b> | <b>676</b>        |     | <b>16970</b> |     |



Table A5.2.12. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, March 25, 1983. Top = 1m; Bot = 3m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Actin h                  | 0             | 9   | 0          |         |
| Ankyr j                  | 1             | 0   | 0          |         |
| Chlamy spp               | 26            | 12  | 0          |         |
| Clostm sp                | 0             | 1   | 0          |         |
| Franc D                  | 1             | 1   | 0          |         |
| Gonium p                 | 12            | 6   | 0          |         |
| Scened de                | 9             | 0   | 0          |         |
| Schro s                  | 3             | 1   | 0          |         |
| Staur p                  | 1             | 0   | 0          |         |
| Treub s                  | 1             | 0   | 0          |         |
| SubTotal                 | 54            | 30  | 0          |         |
| <b>CHRYSOPHYCEAE</b>     |               |     |            |         |
| Hyalos m                 | 22            | 10  | 0          |         |
| Ochro sp                 | 0             | 0   | 0.2        |         |
| SubTotal                 | 22            | 10  | 0.2        |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Achn m                   | 0             | 0   | 0.3        |         |
| Aster f                  | 6             | 0   | 0.1        |         |
| Cyclo m                  | 3             | 1   | 0          |         |
| Cymb mi                  | 1             | 0   | 0.1        |         |
| Gompha o                 | 0             | 0   | 0.2        |         |
| Gompha p                 | 0             | 0   | 0.6        |         |
| Gyro sp                  | 0             | 0   | 0.1        |         |
| Hann a                   | 1             | 0   | 0          |         |
| Melos v                  | 20            | 3   | 0.1        |         |
| Merid c                  | 0             | 0   | 0.3        |         |
| Naviculoid               | 10            | 7   | 2.4        |         |
| Navic v                  | 9             | 7   | 2.7        |         |
| Nitz spp                 | 0             | 0   | 5.6        |         |
| Surir o                  | 0             | 0   | 0.1        |         |
| Syn spp                  | 1             | 0   | 0          |         |
| Syn u                    | 0             | 0   | 0.1        |         |
| SubTotal                 | 51            | 18  | 12.7       |         |

| Taxa                 | <u>Phytoplankton</u> |            | <u>Periphyton</u> |         |
|----------------------|----------------------|------------|-------------------|---------|
|                      | Top                  | Bot        | Art Sub           | Nat Sub |
| <b>CRYPTOPHYCEAE</b> |                      |            |                   |         |
| Chroom m             | 6                    | 9          | 0                 |         |
| Crypto o             | 6                    | 6          | 0                 |         |
| SubTotal             | 12                   | 15         | 0                 |         |
| <b>CYANOPHYCEAE</b>  |                      |            |                   |         |
| Anab. spp            | 0                    | 10         | 0                 |         |
| Dactyl r             | 16                   | 28         | 0                 |         |
| Phorm a              | 60                   | 10         | 7.0               |         |
| SubTotal             | 76                   | 48         | 7.0               |         |
| <b>UNKNOWN</b>       |                      |            |                   |         |
| Phytofl              | 0                    | 6          | 0                 |         |
| SubTotal             | 0                    | 6          | 0                 |         |
| <b>TOTAL</b>         | <b>215</b>           | <b>127</b> | <b>134.2</b>      |         |

Table A5.2.13. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Lower Winfield, March 24, 1983. Top = 1m; Bot = 9m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |            | Periphyton  |         |
|--------------------------|---------------|------------|-------------|---------|
|                          | Top           | Bot        | Art Sub     | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |            |             |         |
| Chlamy spp               | 10            | 7          | 0           |         |
| Chloro spp               | 3             | 0          | 0           |         |
| Clostm sp                | 1             | 0          | 0           |         |
| Scened q                 | 6             | 0          | 0           |         |
| Staur spp                | 0             | 1          | 0           |         |
| SubTotal                 | 20            | 8          | 0           |         |
| <b>CHRYSOPHYCEAE</b>     |               |            |             |         |
| Chrysa r                 | 3             | 1          | 0           |         |
| Ochro sp                 | 0             | 0          | 583         |         |
| SubTotal                 | 3             | 1          | 583         |         |
| <b>BACILLARIOPHYCEAE</b> |               |            |             |         |
| Cymb mi                  | 3             | 0          | 20          |         |
| Diat v                   | 1             | 4          | 0           |         |
| Frust r a                | 0             | 1          | 0           |         |
| Gomphs h                 | 0             | 1          | 0           |         |
| Gompha p                 | 0             | 4          | 220         |         |
| Melos v                  | 10            | 42         | 20          |         |
| Naviculoid               | 29            | 20         | 67          |         |
| Navic v                  | 9             | 0          | 0           |         |
| Nitz spp                 | 0             | 0          | 482         |         |
| Surir o                  | 0             | 0          | 7           |         |
| Syn spp                  | 10            | 7          | 0           |         |
| Syn u                    | 0             | 0          | 7           |         |
| SubTotal                 | 62            | 79         | 823         |         |
| <b>CRYPTOPHYCEAE</b>     |               |            |             |         |
| Chroom m                 | 4             | 1          | 0           |         |
| Crypto sp                | 3             | 1          | 0           |         |
| Crypto o                 | 3             | 1          | 0           |         |
| SubTotal                 | 10            | 3          | 0           |         |
| <b>CYANOPHYCEAE</b>      |               |            |             |         |
| Dactyl r                 | 1             | 1          | 0           |         |
| Oscil spp                | 48            | 50         | 0           |         |
| Raphid c                 | 10            | 0          | 0           |         |
| SubTotal                 | 59            | 51         | 0           |         |
| <b>TOTAL</b>             | <b>154</b>    | <b>142</b> | <b>1406</b> |         |

Table A5.2.14. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Gallipolis March 24, 1983. Top = 1m; Bot = 3m; See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |           | Periphyton |         |
|--------------------------|---------------|-----------|------------|---------|
|                          | Top           | Bot       | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |           |            |         |
| Actin H                  | 0             | 3         |            |         |
| Chlamy spp               | 4             | 6         |            |         |
| Scened o                 | 10            | 0         |            |         |
| SubTotal                 | 14            | 9         |            |         |
| <b>CHRYSTOPHYCEAE</b>    |               |           |            |         |
| Chrysa r                 | 15            | 15        |            |         |
| Hyale m                  | 4             | 4         |            |         |
| Mallo spp                | 1             | 0         |            |         |
| SubTotal                 | 20            | 19        |            |         |
| <b>BACILLARIOPHYCEAE</b> |               |           |            |         |
| Aster f                  | 0             | 2         |            |         |
| Cyclo m                  | 2             | 0         |            |         |
| Melos g                  | 4             | 4         |            |         |
| Melos v                  | 3             | 2         |            |         |
| Naviculoid               | 2             | 1         |            |         |
| Navic v                  | 0             | 3         |            |         |
| Syn spp                  | 1             | 0         |            |         |
| SubTotal                 | 12            | 12        |            |         |
| <b>CRYPTOPHYCEAE</b>     |               |           |            |         |
| Chroom m                 | 13            | 6         |            |         |
| Crypto sp                | 4             | 3         |            |         |
| Crypto o                 | 3             | 1         |            |         |
| SubTotal                 | 20            | 10        |            |         |
| <b>CYANOPHYCEAE</b>      |               |           |            |         |
| Dactyl r                 | 14            | 20        |            |         |
| Phorm a                  | 20            | 9         |            |         |
| SubTotal                 | 34            | 29        |            |         |
| <b>UNKNOWN</b>           |               |           |            |         |
| Phytof1                  | 0             | 2         |            |         |
| SubTotal                 | 0             | 2         |            |         |
| <b>TOTAL</b>             | <b>100</b>    | <b>81</b> |            |         |

Table A5.2.15. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, April 21, 1983. Top = 1m; Bot = 2m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |           | Periphyton  |         |
|--------------------------|---------------|-----------|-------------|---------|
|                          | Top           | Bot       | Art Sub     | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |           |             |         |
| Actin H F                | 10            | 3         | 0           |         |
| Chlamy spp               | 18            | 11        | 0           |         |
| Oocyst p                 | 3             | 1         | 0           |         |
| Roya sp.                 | 1             | 0         | 0           |         |
| Schro s                  | 1             | 3         | 0           |         |
| SubTotal                 | 33            | 18        | 0           |         |
| <b>CHRYSOPHYCEAE</b>     |               |           |             |         |
| Hyal m                   | 1             | 5         | 0           |         |
| Ochro sp                 | 0             | 0         | 100         |         |
| SubTotal                 | 1             | 5         | 100         |         |
| <b>BACILLARIOPHYCEAE</b> |               |           |             |         |
| Aster f                  | 4             | 4         | 0           |         |
| Cyclo m                  | 0             | 1         | 0           |         |
| Cymb mi                  | 0             | 0         | 200         |         |
| Gompha o                 | 0             | 0         | 280         |         |
| Gompha p                 | 1             | 0         | 1900        |         |
| Melos v                  | 2             | 0         | 80          |         |
| Naviculoid               | 2             | 4         | 220         |         |
| Navic v                  | 8             | 2         | 1100        |         |
| Nitz spp                 | 0             | 0         | 1600        |         |
| SubTotal                 | 17            | 11        | 5380        |         |
| <b>CHRYPTOPHYCEAE</b>    |               |           |             |         |
| Chroom m                 | 9             | 3         | 0           |         |
| Crypto o                 | 8             | 2         | 0           |         |
| SubTotal                 | 17            | 5         | 0           |         |
| <b>CYANOPHYCEAE</b>      |               |           |             |         |
| Dactyl r                 | 8             | 10        | 0           |         |
| SubTotal                 | 8             | 10        | 0           |         |
| <b>UNKNOWN</b>           |               |           |             |         |
| Phytofl                  | 6             | 2         | 0           |         |
| SubTotal                 | 6             | 2         | 0           |         |
| <b>TOTAL</b>             | <b>82</b>     | <b>51</b> | <b>5480</b> |         |

Table A5.2.16. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Lower Winfield, April 22, 1983. Top = 1m; Bot = 9m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Cart spp                 | 1             | 1   | 0          |         |
| Chlamy spp               | 4             | 4   | 0          |         |
| Eador e                  | 10            | 0   | 0          |         |
| Oocyst p                 | 5             | 3   | 0          |         |
| Scened bi                | 0             | 3   | 0          |         |
| Scened de                | 3             | 0   | 0          |         |
| Schro s                  | 1             | 1   | 0          |         |
| Sticho b                 | 0             | 1   | 0          |         |
| Tetrae t                 | 0             | 1   | 0          |         |
| SubTotal                 | 24            | 14  | 0          |         |
| <b>EUGLENOPHYCEAE</b>    |               |     |            |         |
| Eugl spp                 | 0             | 1   | 0          |         |
| SubTotal                 | 0             | 1   | 0          |         |
| <b>CHRYSTOPHYCEAE</b>    |               |     |            |         |
| Dinob b                  | 1             | 0   | 0          |         |
| Hyalos m                 | 1             | 1   | 0          |         |
| SubTotal                 | 2             | 1   | 0          |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Aster f                  | 2             | 6   | 0          |         |
| Cyclo m                  | 1             | 1   | 0          |         |
| Cymb mi                  | 0             | 0   | 440        |         |
| Gompha o                 | 0             | 0   | 200        |         |
| Gompha p                 | 0             | 0   | 200        |         |
| Melos g                  | 0             | 7   | 0          |         |
| Melos v                  | 10            | 1   | 570        |         |
| Naviculoid               | 9             | 4   | 640        |         |
| Navic v                  | 4             | 4   | 3200       |         |
| Nitz spp                 | 0             | 0   | 2200       |         |
| Surir o                  | 0             | 0   | 30         |         |
| Syn spp                  | 1             | 1   | 0          |         |
| SubTotal                 | 27            | 24  | 7480       |         |

| Taxa                 | Phytoplankton |            | Periphyton  |         |
|----------------------|---------------|------------|-------------|---------|
|                      | Top           | Bot        | Art Sub     | Nat Sub |
| <b>CRYPTOPHYCEAE</b> |               |            |             |         |
| Chroom m             | 3             | 7          | 0           |         |
| Crypto o             | 1             | 3          | 0           |         |
| SubTotal             | 4             | 10         | 0           |         |
| <b>CYANOPHYCEAE</b>  |               |            |             |         |
| Dactyl r             | 1             | 9          | 0           |         |
| Oscil spp            | 0             | 30         | 0           |         |
| Oscil t              | 10            | 0          | 0           |         |
| Phorm a              | 40            | 10         | 0           |         |
| Phorm f              | 0             | 0          | 1000        |         |
| SubTotal             | 51            | 49         | 1000        |         |
| <b>UNKNOWN</b>       |               |            |             |         |
| Phytofl              | 3             | 4          | 0           |         |
| SubTotal             | 3             | 4          | 0           |         |
| <b>TOTAL</b>         | <b>111</b>    | <b>103</b> | <b>8480</b> |         |

Table A5.2.17. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, May 19, 1983. Top = 1m; Bot = 3m; See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | <u>Phytoplankton</u> |     | <u>Periphyton</u> |         |
|--------------------------|----------------------|-----|-------------------|---------|
|                          | Top                  | Bot | Art Sub           | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |                      |     |                   |         |
| Chlamy spp               | 4                    | 14  |                   |         |
| Chloro spp.              | 3                    | 12  |                   |         |
| Dicty E                  | 0                    | 17  |                   |         |
| Gonium p                 | 0                    | 6   |                   |         |
| Mastig sp                | 40                   | 0   |                   |         |
| Oocyst B                 | 1                    | 3   |                   |         |
| Oocyst p                 | 7                    | 12  |                   |         |
| Scened a                 | 0                    | 6   |                   |         |
| Scened q                 | 6                    | 0   |                   |         |
| Tetrae c                 | 1                    | 0   |                   |         |
| SubTotal                 | 62                   | 70  |                   |         |
| <b>CHRYSTOPHYCEAE</b>    |                      |     |                   |         |
| Dinob b                  | 0                    | 3   |                   |         |
| Dinob c                  | 0                    | 7   |                   |         |
| Mallo spp                | 1                    | 0   |                   |         |
| SubTotal                 | 1                    | 10  |                   |         |
| <b>BACILLARIOPHYCEAE</b> |                      |     |                   |         |
| Ampho spp                | 1                    | 1   |                   |         |
| Aster f                  | 6                    | 0   |                   |         |
| Cyclo m                  | 1                    | 6   |                   |         |
| Cymb a                   | 1                    | 0   |                   |         |
| Cymb mi                  | 1                    | 3   |                   |         |
| Diat v                   | 0                    | 9   |                   |         |
| Frag c                   | 0                    | 3   |                   |         |
| Gompha p                 | 0                    | 1   |                   |         |
| Melos v                  | 160                  | 140 |                   |         |
| Naviculoid               | 23                   | 23  |                   |         |
| Navic t                  | 1                    | 0   |                   |         |
| Navic v                  | 0                    | 16  |                   |         |
| Syn spp                  | 9                    | 1   |                   |         |
| SubTotal                 | 203                  | 203 |                   |         |



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| Taxa | <u>Phytoplankton</u> |     | <u>Periphyton</u> |         |
|------|----------------------|-----|-------------------|---------|
|      | Top                  | Bot | Art Sub           | Nat Sub |

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|               |     |     |  |  |
|---------------|-----|-----|--|--|
| CRYPTOPHYCEAE |     |     |  |  |
| Chroom m      | 9   | 10  |  |  |
| Crypto o      | 12  | 4   |  |  |
| SubTotal      | 21  | 14  |  |  |
| CYANOPHYCEAE  |     |     |  |  |
| Dactyl r      | 9   | 9   |  |  |
| SubTotal      | 9   | 9   |  |  |
| TOTAL         | 296 | 306 |  |  |

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Table A5.2.18. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Lower Winfield, May 20, 1983. Top = 1m; Bot = 9m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | <u>Phytoplankton</u> |     | <u>Periphyton</u> |         |
|--------------------------|----------------------|-----|-------------------|---------|
|                          | Top                  | Bot | Art Sub           | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |                      |     |                   |         |
| Actin H F                | 10                   | 0   | 0                 |         |
| Chlamy spp               | 9                    | 9   | 0                 |         |
| Dicty E                  | 10                   | 40  | 0                 |         |
| Oocyst p                 | 9                    | 10  | 0                 |         |
| Pando m                  | 0                    | 10  | 0                 |         |
| Scened de                | 6                    | 0   | 0                 |         |
| Scened q                 | 0                    | 3   | 0                 |         |
| SubTotal                 | 44                   | 72  | 0                 |         |
| <b>CHRYSOPHYCEAE</b>     |                      |     |                   |         |
| Dinob b                  | 10                   | 4   | 0                 |         |
| Dinob c                  | 20                   | 1   | 0                 |         |
| Hyalos m                 | 7                    | 1   | 0                 |         |
| SubTotal                 | 37                   | 6   | 0                 |         |
| <b>BACILLARIOPHYCEAE</b> |                      |     |                   |         |
| Achn l                   | 0                    | 0   | 230               |         |
| Ampho spp                | 1                    | 0   | 10                |         |
| Aster f                  | 10                   | 1   | 0                 |         |
| Cocc pl                  | 0                    | 0   | 20                |         |
| Cyclo m                  | 6                    | 3   | 0                 |         |
| Cymb mi                  | 1                    | 0   | 160               |         |
| Cymb t                   | 0                    | 0   | 20                |         |
| Diat v                   | 1                    | 0   | 0                 |         |
| Eun i                    | 0                    | 0   | 20                |         |
| Frag c                   | 1                    | 3   | 0                 |         |
| Frag v                   | 0                    | 0   | 10                |         |
| Gompha p                 | 0                    | 0   | 720               |         |
| Melos v                  | 120                  | 210 | 700               |         |
| Merid c                  | 0                    | 0   | 40                |         |
| Naviculoid               | 3                    | 6   | 340               |         |
| Navic v                  | 6                    | 7   | 70                |         |
| Nitz spp                 | 0                    | 0   | 600               |         |
| Nitz a                   | 0                    | 1   | 0                 |         |
| Surir o                  | 1                    | 0   | 0                 |         |
| Syn spp                  | 4                    | 4   | 0                 |         |
| Syn u                    | 0                    | 0   | 20                |         |
| Tab f                    | 1                    | 0   | 0                 |         |
| SubTotal                 | 155                  | 235 | 2960              |         |

| Taxa                 | <u>Phytoplankton</u> |            | <u>Periphyton</u> |         |
|----------------------|----------------------|------------|-------------------|---------|
|                      | Top                  | Bot        | Art Sub           | Nat Sub |
| <b>CRYPTOPHYCEAE</b> |                      |            |                   |         |
| Chroom m             | 3                    | 6          | 0                 |         |
| Crypto o             | 7                    | 10         | 0                 |         |
| SubTotal             | 10                   | 16         | 0                 |         |
| <b>CYANOPHYCEAE</b>  |                      |            |                   |         |
| Dactyl r             | 7                    | 12         | 0                 |         |
| Phorm f              | 0                    | 0          | 300               |         |
| SubTotal             | 7                    | 12         | 300               |         |
| <b>UNKNOWN</b>       |                      |            |                   |         |
| Phytof1              | 4                    | 6          | 0                 |         |
| SubTotal             | 4                    | 6          | 0                 |         |
| <b>TOTAL</b>         | <b>257</b>           | <b>347</b> | <b>3260</b>       |         |

Table A5.2.19. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, June 22, 1983. Top = 1m; Bot = 3m; Art Sub = glass slide; Nat Sub = stone; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | <u>Phytoplankton</u> |     | <u>Periphyton</u> |         |
|--------------------------|----------------------|-----|-------------------|---------|
|                          | Top                  | Bot | Art Sub           | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |                      |     |                   |         |
| Chamy spp                | 2                    | 0   | 0                 | 0       |
| Mouge sp                 | 0                    | 10  | 0                 | 0       |
| Oocyst B                 | 10                   | 4   | 0                 | 0       |
| Ocyst p                  | 2                    | 4   | 0                 | 0       |
| Pando m                  | 0                    | 17  | 0                 | 0       |
| Scened bi                | 0                    | 4   | 0                 | 0       |
| Scened q                 | 10                   | 17  | 0                 | 0       |
| Selen W                  | 5                    | 0   | 0                 | 0       |
| Staur spp                | 2                    | 1   | 0                 | 0       |
| SubTotal                 | 31                   | 57  | 0                 | 0       |
| <b>BACILLARIOPHYCEAE</b> |                      |     |                   |         |
| Achn l                   | 0                    | 0   | 40                | 0       |
| Ampho spp                | 0                    | 2   | 0                 | 0       |
| Cocco pe                 | 0                    | 0   | 50                | 0       |
| Cocco pl                 | 0                    | 0   | 940               | 70      |
| Cyclo m                  | 2                    | 2   | 0                 | 0       |
| Cymb mi                  | 2                    | 0   | 10                | 100     |
| Cymb t                   | 0                    | 0   | 0                 | 40      |
| Diat v                   | 0                    | 0   | 0                 | 70      |
| Gompha p                 | 0                    | 0   | 10                | 0       |
| Gompha t                 | 0                    | 0   | 40                | 0       |
| Melos v                  | 200                  | 130 | 680               | 2200    |
| Naviculoid               | 10                   | 6   | 260               | 500     |
| Navic t                  | 0                    | 0   | 60                | 0       |
| Navic v                  | 10                   | 3   | 0                 | 0       |
| Nitz spp                 | 0                    | 0   | 29                | 1200    |
| Nitz a                   | 0                    | 0   | 0                 | 40      |
| Rhoic c                  | 0                    | 0   | 10                | 0       |
| Skelet p                 | 10                   | 15  | 0                 | 0       |
| Syn spp                  | 2                    | 3   | 0                 | 0       |
| Syn u                    | 0                    | 0   | 0                 | 40      |
| SubTotal                 | 236                  | 161 | 2129              | 4260    |

| Taxa                 | <u>Phytoplankton</u> |            | <u>Periphyton</u> |              |
|----------------------|----------------------|------------|-------------------|--------------|
|                      | Top                  | Bot        | Art Sub           | Nat Sub      |
| <b>CRYPTOPHYCEAE</b> |                      |            |                   |              |
| Chroom m             | 5                    | 7          | 0                 | 0            |
| Crypto sp            | 10                   | 3          | 0                 | 0            |
| SubTotal             | 15                   | 10         | 0                 | 0            |
| <b>CYANOPHYCEAE</b>  |                      |            |                   |              |
| Dactyl r             | 2                    | 2          | 0                 | 0            |
| Oscil t              | 0                    | 0          | 300               | 12000        |
| Phorm f              | 0                    | 0          | 400               | 3000         |
| SubTotal             | 2                    | 2          | 700               | 15000        |
| <b>TOTAL</b>         | <b>284</b>           | <b>230</b> | <b>2829</b>       | <b>19260</b> |

Table A5.2.20. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Lower Winfield, June 23, 1983. Top = 1m; Bot = 8m; Art Sub = glass slide; Nat Sub = stone; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Chlamy spp               | 2             | 0   | 0          | 0       |
| Dicty E                  | 50            | 80  | 0          | 0       |
| Dicty p                  | 7             | 0   | 0          | 0       |
| Oocyst B                 | 2             | 0   | 0          | 0       |
| Oocyst p                 | 0             | 4   | 0          | 0       |
| Scened bi                | 0             | 7   | 0          | 0       |
| Scened q                 | 7             | 0   | 0          | 0       |
| Selen W                  | 2             | 10  | 0          | 0       |
| SubTotal                 | 70            | 101 | 0          | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Achn l                   | 0             | 0   | 210        | 0       |
| Ampho spp                | 0             | 0   | 40         | 0       |
| Cocco pl                 | 2             | 0   | 530        | 0       |
| Cyclo m                  | 7             | 0   | 0          | 0       |
| Cymb mi                  | 0             | 0   | 60         | 0       |
| Frag c                   | 50            | 0   | 0          | 0       |
| Gompha p                 | 0             | 0   | 200        | 0       |
| Melos v                  | 200           | 190 | 990        | 2300    |
| Naviculoid               | 2             | 4   | 450        | 3600    |
| Navic t                  | 0             | 2   | 0          | 0       |
| Navic v                  | 2             | 4   | 0          | 0       |
| Nitz spp                 | 0             | 0   | 990        | 8500    |
| Skelet p                 | 0             | 7   | 0          | 0       |
| Syn spp                  | 7             | 9   | 0          | 0       |
| Syn u                    | 0             | 0   | 0          | 100     |
| SubTotal                 | 270           | 216 | 3470       | 14500   |
| <b>CRYPTOPHYCEAE</b>     |               |     |            |         |
| Chroom m                 | 2             | 4   | 0          | 0       |
| Crypto sp                | 10            | 9   | 0          | 0       |
| SubTotal                 | 12            | 13  | 0          | 0       |

| Taxa                | Phytoplankton |            | Periphyton  |              |
|---------------------|---------------|------------|-------------|--------------|
|                     | Top           | Bot        | Art Sub     | Nat Sub      |
| <b>CYANOPHYCEAE</b> |               |            |             |              |
| Dactyl r            | 2             | 2          | 0           | 0            |
| Oscil t             | 0             | 0          | 0           | 20000        |
| Phorm f             | 0             | 0          | 5500        | 20000        |
| SubTotal            | 2             | 2          | 5500        | 40000        |
| <b>UNKNOWN</b>      |               |            |             |              |
| Phytofl             | 5             | 2          | 0           | 0            |
| SubTotal            | 5             | 2          | 0           | 0            |
| <b>TOTAL</b>        | <b>359</b>    | <b>334</b> | <b>8970</b> | <b>54500</b> |

Table A5.2.21. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, July 20, 1983. Top = 1m; Bot = 3m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Actin H                  | 9             | 30  | 0          |         |
| Actin H f                | 100           | 130 | 0          |         |
| Ankis f                  | 0             | 2   | 0          |         |
| Chamy spp                | 48            | 37  | 0          |         |
| Dicty E                  | 30            | 9   | 0          |         |
| Eudor e                  | 70            | 30  | 0          |         |
| Franc D                  | 9             | 10  | 0          |         |
| Micrac p                 | 40            | 30  | 0          |         |
| Pando m                  | 190           | 90  | 0          |         |
| Pedia s                  | 20            | 0   | 0          |         |
| Pleod i                  | 0             | 70  | 0          |         |
| Scened a                 | 0             | 20  | 0          |         |
| Scened bi                | 0             | 4   | 0          |         |
| Scened q                 | 9             | 20  | 0          |         |
| Selen W                  | 0             | 20  | 0          |         |
| Sphaer s                 | 0             | 30  | 0          |         |
| Stigeo sp                | 0             | 0   | 1000       |         |
| SubTotal                 | 525           | 532 | 1000       |         |
| <b>CHRYSTOPHYCEAE</b>    |               |     |            |         |
| Dinob d                  | 2             | 0   | 0          |         |
| Mallo spp                | 0             | 2   | 0          |         |
| Ochro sp                 | 0             | 9   | 0          |         |
| SubTotal                 | 2             | 11  | 0          |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Achn m                   | 0             | 0   | 800        |         |
| Cocco pl                 | 0             | 0   | 4130       |         |
| Cyclo sp                 | 30            | 0   | 0          |         |
| Cyclo m                  | 160           | 100 | 0          |         |
| Cymb mi                  | 0             | 0   | 20         |         |
| Gompha p                 | 0             | 0   | 570        |         |
| Gompha t                 | 0             | 0   | 1700       |         |
| Melos d                  | 2             | 0   | 0          |         |
| Melos g                  | 30            | 30  | 0          |         |
| Melos v                  | 4             | 0   | 200        |         |
| Naviculoid               | 0             | 0   | 80         |         |
| Navic a                  | 0             | 0   | 100        |         |
| Navic mi                 | 0             | 0   | 880        |         |



| Taxa          | Phytoplankton |      | Periphyton |         |
|---------------|---------------|------|------------|---------|
|               | Top           | Bot  | Art Sub    | Nat Sub |
| Nitz spp      | 0             | 0    | 100        |         |
| Nitz p        | 10            | 6    | 0          |         |
| Skelet p      | 1990          | 2200 | 200        |         |
| Syn spp       | 0             | 2    | 0          |         |
| SubTotal      | 2226          | 2338 | 8780       |         |
| DINOPHYCEAE   |               |      |            |         |
| Gymno sp      | 2             | 4    | 0          |         |
| SubTotal      | 2             | 4    | 0          |         |
| CRYPTOPHYCEAE |               |      |            |         |
| Chroom m      | 48            | 20   | 0          |         |
| Crypto sp     | 63            | 65   | 0          |         |
| Crypto o      | 9             | 6    | 0          |         |
| SubTotal      | 120           | 91   | 0          |         |
| CYANAPHYCEAE  |               |      |            |         |
| Agmen t       | 70            | 0    | 0          |         |
| Chamae sp     | 0             | 0    | 700        |         |
| Dactyl r      | 22            | 20   | 0          |         |
| Oscil spp     | 0             | 0    | 2000       |         |
| Phorm spp     | 0             | 0    | 300        |         |
| Phorm a       | 0             | 0    | 100        |         |
| Phorm f       | 0             | 0    | 14000      |         |
| SubTotal      | 92            | 20   | 17100      |         |
| UNKNOWN       |               |      |            |         |
| Phytofl       | 106           | 4    | 0          |         |
| SubTotal      | 106           | 4    | 0          |         |
| TOTAL         | 3073          | 3000 | 25880      |         |

Table A5.2.22. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Lower Winfield, July 21, 1983. Top = 1m; Bot = 9m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |      | Periphyton |         |
|--------------------------|---------------|------|------------|---------|
|                          | Top           | Bot  | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |      |            |         |
| Actin H                  | 200           | 300  | 0          |         |
| Ankis f                  | 2             | 0    | 0          |         |
| Chlamy spp               | 225           | 81   | 0          |         |
| Coela m                  | 0             | 30   | 0          |         |
| Eudor e                  | 500           | 100  | 0          |         |
| Lobom r                  | 2             | 0    | 0          |         |
| Micrac p                 | 0             | 30   | 0          |         |
| Nephro A                 | 20            | 40   | 0          |         |
| Pando m                  | 3600          | 650  | 0          |         |
| Pedia s                  | 0             | 30   | 0          |         |
| Platyd c                 | 70            | 0    | 0          |         |
| Pleod i                  | 100           | 0    | 0          |         |
| Scened de                | 20            | 0    | 0          |         |
| Scened o                 | 0             | 30   | 0          |         |
| Scened q                 | 9             | 20   | 0          |         |
| Schro s                  | 2             | 0    | 0          |         |
| Selen W                  | 10            | 30   | 0          |         |
| Sphaer s                 | 100           | 70   | 0          |         |
| Tetras h                 | 4             | 0    | 0          |         |
| Treub s                  | 0             | 4    | 0          |         |
| SubTotal                 | 4864          | 1415 | 0          |         |
| <b>CHRYSOPHYCEAE</b>     |               |      |            |         |
| Ochro sp                 | 6             | 0    | 0          |         |
| SubTotal                 | 6             | 0    | 0          |         |
| <b>BACILLARIOPHYCEAE</b> |               |      |            |         |
| Achn m                   | 0             | 0    | 60         |         |
| Cocco pl                 | 0             | 0    | 200        |         |
| Cyclo m                  | 9             | 74   | 0          |         |
| Gompha p                 | 0             | 0    | 840        |         |
| Melos v                  | 0             | 50   | 0          |         |
| Naviculoid               | 0             | 0    | 820        |         |
| Navic mi                 | 0             | 0    | 1600       |         |
| Nitz spp                 | 0             | 0    | 760        |         |
| Nitz p                   | 0             | 2    | 0          |         |
| Rhizos e                 | 2             | 0    | 0          |         |
| Skelet p                 | 52            | 120  | 100        |         |
| SubTotal                 | 63            | 246  | 4380       |         |

| Taxa                 | <u>Phytoplankton</u> |             | <u>Periphyton</u> |         |
|----------------------|----------------------|-------------|-------------------|---------|
|                      | Top                  | Bot         | Art Sub           | Nat Sub |
| <b>DINOPHYCEAE</b>   |                      |             |                   |         |
| Gymno sp             | 20                   | 4           | 0                 |         |
| SubTotal             | 20                   | 4           | 0                 |         |
| <b>CRYPTOPHYCEAE</b> |                      |             |                   |         |
| Chroom m             | 45                   | 9           | 0                 |         |
| Crypto sp            | 438                  | 54          | 0                 |         |
| Crypto o             | 65                   | 2           | 0                 |         |
| SubTotal             | 548                  | 65          | 0                 |         |
| <b>CYANOPHYCEAE</b>  |                      |             |                   |         |
| Agmen t              | 200                  | 30          | 0                 |         |
| Dactyl r             | 67                   | 37          | 0                 |         |
| Phorm a              | 0                    | 0           | 8000              |         |
| Phorm f              | 0                    | 0           | 11000             |         |
| Spiral s             | 0                    | 2           | 0                 |         |
| SubTotal             | 267                  | 69          | 19000             |         |
| <b>TOTAL</b>         | <b>5768</b>          | <b>1799</b> | <b>23380</b>      |         |

Table A5.2.23. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, August 24, 1983. Top = 1m; Bot = 3m; Nat Sub = stone; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |      | Periphyton |         |
|--------------------------|---------------|------|------------|---------|
|                          | Top           | Bot  | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |      |            |         |
| Actin H                  | 1000          | 800  |            | 0       |
| Ankis f                  | 0             | 10   |            | 0       |
| Ankyr j                  | 4             | 9    |            | 0       |
| Chlamy spp               | 20            | 9    |            | 0       |
| Gonium p                 | 70            | 0    |            | 0       |
| Lobom r                  | 9             | 9    |            | 0       |
| Micrac p                 | 60            | 50   |            | 0       |
| Scened bi                | 0             | 50   |            | 0       |
| Scened q                 | 50            | 30   |            | 0       |
| Schro s                  | 20            | 30   |            | 0       |
| Sphaer s                 | 30            | 100  |            | 0       |
| Traub s                  | 0             | 4    |            | 0       |
| SubTotal                 | 1263          | 1101 |            | 0       |
| <b>CHRYSTOPHYCEAE</b>    |               |      |            |         |
| Mallo spp                | 4             | 20   |            | 0       |
| SubTotal                 | 4             | 20   |            | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |      |            |         |
| Cocco pl                 | 4             | 0    |            | 0       |
| Cyclo sp                 | 550           | 550  |            | 0       |
| Cyclo m                  | 919           | 923  |            | 0       |
| Cymb t                   | 0             | 0    |            | 100     |
| Gompha p                 | 0             | 0    |            | 100     |
| Melos g                  | 80            | 30   |            | 0       |
| Melos v                  | 0             | 0    |            | 100     |
| Naviculoid               | 4             | 0    |            | 700     |
| Nitz spp                 | 0             | 0    |            | 2600    |
| Nitz p                   | 30            | 30   |            | 0       |
| Skelet p                 | 3170          | 3950 |            | 0       |
| Steph spp                | 69            | 78   |            | 0       |
| Syn spp                  | 4             | 4    |            | 100     |
| SubTotal                 | 4830          | 5565 |            | 3700    |
| <b>DINOPHYCEAE</b>       |               |      |            |         |
| Gymno sp                 | 4             | 10   |            | 0       |
| SubTotal                 | 4             | 10   |            | 0       |

| Taxa                 | <u>Phytoplankton</u> |             | <u>Periphyton</u> |               |
|----------------------|----------------------|-------------|-------------------|---------------|
|                      | Top                  | Bot         | Art Sub           | Nat Sub       |
| <b>CRYPTOPHYCEAE</b> |                      |             |                   |               |
| Chroom m             | 82                   | 120         |                   | 0             |
| Crypto sp            | 30                   | 86          |                   | 0             |
| Crypto o             | 30                   | 10          |                   | 0             |
| SubTotal             | 142                  | 216         |                   | 0             |
| <b>CYANOPHYCEAE</b>  |                      |             |                   |               |
| Agmen t              | 3100                 | 2700        |                   | 0             |
| Dactyl r             | 30                   | 56          |                   | 0             |
| Oscil spp            | 0                    | 0           |                   | 6000          |
| Oscil c              | 0                    | 0           |                   | 60000         |
| Oscil t              | 0                    | 0           |                   | 90000         |
| Phorm spp            | 0                    | 0           |                   | 140000        |
| Phorm a              | 0                    | 0           |                   | 190000        |
| Phorm f              | 0                    | 0           |                   | 65000         |
| SubTotal             | 3130                 | 2756        |                   | 551000        |
| <b>UNKNOWN</b>       |                      |             |                   |               |
| Phytofl              | 110                  | 110         |                   | 0             |
| SubTotal             | 110                  | 110         |                   | 0             |
| <b>TOTAL</b>         | <b>9483</b>          | <b>9778</b> |                   | <b>554700</b> |

Table A5.2.24. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Lower Winfield, August 25, 1983. Top = 1m; Bot = 9m; Art Sub = glass slide; Nat Sub = stone; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Actin H                  | 0             | 20  | 0          | 0       |
| Ankyr j                  | 4             | 0   | 0          | 0       |
| Chlamy spp               | 9             | 20  | 0          | 0       |
| Closts l                 | 2             | 0   | 0          | 0       |
| Cruci r                  | 9             | 0   | 0          | 0       |
| Dicty E                  | 20            | 0   | 0          | 0       |
| Errer b                  | 10            | 10  | 0          | 0       |
| Eudor e                  | 300           | 70  | 0          | 0       |
| Galenk r                 | 4             | 0   | 0          | 0       |
| Lobom r                  | 2             | 0   | 0          | 0       |
| Micrac p                 | 200           | 200 | 0          | 0       |
| Pando m                  | 100           |     | 0          | 0       |
| Pedia d c                | 200           | 0   | 0          | 0       |
| Pedia s                  | 20            | 0   | 0          | 0       |
| Platyd c                 | 300           | 70  | 0          | 0       |
| Polyed s                 | 30            | 40  | 0          | 0       |
| Scened bi                | 0             | 9   | 0          | 0       |
| Scened o                 | 20            | 0   | 0          | 0       |
| Scened q                 | 30            | 20  | 0          | 0       |
| Schro s                  | 0             | 10  | 0          | 0       |
| Sphaer s                 | 40            | 20  | 0          | 0       |
| SubTotal                 | 1300          | 489 | 0          | 0       |
| <b>CHRYSOPHYCEAE</b>     |               |     |            |         |
| Mallo spp                | 2             | 0   | 0          | 0       |
| SubTotal                 | 2             | 0   | 0          | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Achn m                   | 0             | 0   | 300        | 0       |
| Cocco pl                 | 0             | 0   | 200        | 70      |
| Cyclo sp                 | 200           | 30  | 0          | 0       |
| Cyclo m                  | 0             | 6   | 0          | 0       |
| Cymb t                   | 0             | 0   | 0          | 70      |
| Gompha p                 | 0             | 0   | 580        | 70      |
| Gompha t                 | 0             | 0   | 390        | 0       |
| Melos g                  | 50            | 0   | 0          | 0       |
| Melos v                  | 9             | 30  | 0          | 0       |

| Taxa          | Phytoplankton |      | Periphyton |         |
|---------------|---------------|------|------------|---------|
|               | Top           | Bot  | Art Sub    | Nat Sub |
| Naviculoid    | 0             | 0    | 300        | 400     |
| Navic c       | 0             | 0    | 300        | 0       |
| Navic mi      | 0             | 0    | 4640       | 710     |
| Nitz spp      | 0             | 0    | 3500       | 4900    |
| Skelet p      | 0             | 30   | 0          | 0       |
| SubTotal      | 259           | 96   | 10210      | 6220    |
| DINOPHYCEAE   |               |      |            |         |
| Gymno sp      | 9             | 2    | 0          | 0       |
| SubTotal      | 9             | 2    | 0          | 0       |
| CRYPTOPHYCEAE |               |      |            |         |
| Chroom m      | 297           | 89   | 0          | 0       |
| Crypto sp     | 316           | 58   | 0          | 0       |
| Crypto o      | 48            | 7    | 0          | 0       |
| SubTotal      | 661           | 154  | 0          | 0       |
| CYANOPHYCEAE  |               |      |            |         |
| Agmen t       | 920           | 1300 | 0          | 0       |
| Dactyl r      | 82            | 63   | 0          | 0       |
| Oscil spp     | 0             | 0    | 0          | 1000    |
| Oscil t       | 9             | 0    | 0          | 33000   |
| Phorm a       |               |      | 69000      | 250000  |
| Phorm f       |               |      | 4000       | 15000   |
| Spiral s      |               |      | 40         | 1000    |
| SubTotal      | 1011          | 1363 | 73040      | 300000  |
| UNKNOWN       |               |      |            |         |
| Phytofl       | 30            | 10   | 0          | 0       |
| SubTotal      | 30            | 10   | 0          | 0       |
| TOTAL         | 3272          | 2114 | 83250      | 306220  |

Table A5.2.25. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Gallipolis, August 25, 1983. Top = 1m; Bot = 3m; Nat Sub = stone; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |      | Periphyton |         |
|--------------------------|---------------|------|------------|---------|
|                          | Top           | Bot  | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |      |            |         |
| Actin H                  | 10            | 30   |            | 0       |
| Chlamy spp               | 10            | 10   |            | 0       |
| Closts l                 | 4             | 0    |            | 0       |
| Errer b                  | 300           | 800  |            | 0       |
| Eudor e                  | 100           | 70   |            | 0       |
| Micrac p                 | 200           | 30   |            | 0       |
| Pando m                  | 0             | 209  |            | 0       |
| Pedia d c                | 0             | 30   |            | 0       |
| Platy c                  | 300           | 690  |            | 0       |
| Polyed s                 | 43            | 28   |            | 0       |
| Scened di                | 9             | 0    |            | 0       |
| Scened q                 | 60            | 40   |            | 0       |
| Schro s                  | 9             | 4    |            | 0       |
| SubTotal                 | 1045          | 1932 |            | 0       |
| <b>EUGENOPHYCEAE</b>     |               |      |            |         |
| Eugl spp                 | 2             | 0    |            | 0       |
| SubTotal                 | 2             | 0    |            | 0       |
| <b>CHRYSTOPHYCEAE</b>    |               |      |            |         |
| Mallo spp                | 0             | 2    |            | 0       |
| SubTotal                 | 0             | 2    |            | 0       |
| <b>BACILLARIOPHYCEAE</b> |               |      |            |         |
| Cyclo sp                 | 20            | 140  |            | 0       |
| Cyclo m                  | 9             | 6    |            | 0       |
| Cymb t                   | 0             | 0    |            | 100     |
| Melos g                  | 100           | 80   |            | 0       |
| Melos v                  | 0             | 2    |            | 0       |
| Naviculoid               | 0             | 2    |            | 460     |
| Navic mi                 | 0             | 0    |            | 500     |
| Nitz spp                 | 0             | 20   |            | 2300    |
| Skelet p                 | 85            | 120  |            | 0       |
| Syn spp                  | 0             | 2    |            | 40      |
| SubTotal                 | 214           | 372  |            | 3400    |
| <b>DINOPHYCEAE</b>       |               |      |            |         |
| Gymno sp                 | 6             | 9    |            | 0       |
| SubTotal                 | 6             | 9    |            | 0       |



| Taxa                 | Phytoplankton |             | Periphyton |              |
|----------------------|---------------|-------------|------------|--------------|
|                      | Top           | Bot         | Art Sub    | Nat Sub      |
| <b>CRYPTOPHYCEAE</b> |               |             |            |              |
| Chroom m             | 87            | 130         |            | 0            |
| Crypto sp            | 190           | 250         |            | 0            |
| Crypto o             | 67            | 74          |            | 0            |
| SubTotal             | 344           | 454         |            | 0            |
| <b>CYANOPHYCEAE</b>  |               |             |            |              |
| Agmen t              | 2000          | 1000        |            | 0            |
| Dactyl r             | 110           | 95          |            | 0            |
| Phorm spp            | 0             | 0           |            | 300          |
| Phorm a              | 0             | 0           |            | 24000        |
| Phorm f              | 0             | 0           |            | 5800         |
| SubTotal             | 2110          | 1095        |            | 30100        |
| <b>UNKNOWN</b>       |               |             |            |              |
| Phytofl              | 24            | 10          |            | 0            |
| SubTotal             | 24            | 10          |            | 0            |
| <b>TOTAL</b>         | <b>3745</b>   | <b>3874</b> |            | <b>33500</b> |

Table A5.2.26. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, September 14, 1983. Top = 1m; Bot = 2m; Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |      | Periphyton |         |
|--------------------------|---------------|------|------------|---------|
|                          | Top           | Bot  | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |      |            |         |
| Actin H                  | 590           | 750  | 0          |         |
| Chlamy spp               | 0             | 5    | 0          |         |
| Dicty E                  | 100           | 90   | 0          |         |
| Gonium p                 | 90            | 90   | 0          |         |
| Mouge sp                 | 50            | 0    | 0          |         |
| Pando m                  | 90            | 500  | 0          |         |
| Pedia s                  | 40            | 0    | 0          |         |
| Pleod i                  | 200           | 0    | 0          |         |
| Scened a                 | 60            | 30   | 0          |         |
| Scened Be                | 10            | 0    | 0          |         |
| Scened di                | 20            | 0    | 0          |         |
| Scened l                 | 10            | 0    | 0          |         |
| Schro s                  | 0             | 5    | 0          |         |
| Selen W                  | 20            | 20   | 0          |         |
| SubTotal                 | 1280          | 1490 | 0          |         |
| <b>CHRYSOPHYCEAE</b>     |               |      |            |         |
| Chrysa r                 | 5             | 0    | 0          |         |
| Mallo spp                | 5             | 0    | 0          |         |
| SubTotal                 | 10            | 0    | 0          |         |
| <b>BACILLARIOPHYCEAE</b> |               |      |            |         |
| Cocco pl                 | 0             | 0    | 310        |         |
| Cyclo sp                 | 2360          | 1840 | 0          |         |
| Cyclo m                  | 65            | 140  | 0          |         |
| Cymb mi                  | 0             | 0    | 5          |         |
| Gyro sp                  | 5             | 0    | 5          |         |
| Melos v                  | 10            | 0    | 50         |         |
| Naviculoid               | 0             | 0    | 20         |         |
| Navic mi                 | 0             | 0    | 73         |         |
| Nitz spp                 | 0             | 0    | 97         |         |
| Nitz f                   | 0             | 0    | 5          |         |
| Skelet p                 | 5550          | 6280 | 50         |         |
| Steph spp                | 30            | 5    | 0          |         |
| Syn spp                  | 5             | 0    | 0          |         |
| SubTotal                 | 8025          | 8265 | 615        |         |

| Taxa                 | <u>Phytoplankton</u> |              | <u>Periphyton</u> |         |
|----------------------|----------------------|--------------|-------------------|---------|
|                      | Top                  | Bot          | Art Sub           | Nat Sub |
| <b>DINOPHYCEAE</b>   |                      |              |                   |         |
| Gymno sp             | 5                    | 10           | 0                 |         |
| SubTotal             | 5                    | 10           | 0                 |         |
| <b>CRYPTOPHYCEAE</b> |                      |              |                   |         |
| Chroom m             | 40                   | 40           | 0                 |         |
| Crypto sp            | 170                  | 76           | 0                 |         |
| SubTotal             | 210                  | 116          | 0                 |         |
| <b>CYANOPHYCEAE</b>  |                      |              |                   |         |
| Agmen t              | 2000                 | 900          | 0                 |         |
| Dactyl r             | 50                   | 10           | 0                 |         |
| Marss e              | 40                   | 0            | 0                 |         |
| Oscil spp            | 0                    | 0            | 90                |         |
| Oscil g              | 0                    | 0            | 500               |         |
| Phorm a              | 0                    | 0            | 1800              |         |
| Phorm f              | 0                    | 0            | 500               |         |
| SubTotal             | 2090                 | 910          | 2890              |         |
| <b>TOTAL</b>         | <b>11620</b>         | <b>10791</b> | <b>3505</b>       |         |

Table A5.2.27. Community composition of phytoplankton ( $10^6$  cells/m<sup>3</sup>) and periphyton ( $10^6$  cells/m<sup>2</sup>), Lower Winfield, September 15, 1983. Top = 1m; Bot = 10m; See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Chlamy spp               | 2             | 4   |            |         |
| Chloro spp               | 2             | 0   |            |         |
| Coela m                  | 20            | 0   |            |         |
| Dicty E                  | 4             | 0   |            |         |
| Pando m                  | 90            | 20  |            |         |
| Pedia d c                | 0             | 60  |            |         |
| Roya sp                  | 2             | 0   |            |         |
| Scened a                 | 10            | 30  |            |         |
| Scened bi                | 50            | 20  |            |         |
| Scened de                | 4             | 0   |            |         |
| Scened q                 | 40            | 30  |            |         |
| SubTotal                 | 224           | 164 |            |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Atth z                   | 1             | 0   |            |         |
| Cyclo sp                 | 6             | 4   |            |         |
| Melos g                  | 286           | 220 |            |         |
| Skelet p                 | 48            | 10  |            |         |
| Syn spp                  | 2             | 0   |            |         |
| SubTotal                 | 343           | 234 |            |         |
| <b>DINOPHYCEAE</b>       |               |     |            |         |
| Gymno sp                 | 2             | 0   |            |         |
| SubTotal                 | 2             | 0   |            |         |
| <b>CRYPTOPHYCEAE</b>     |               |     |            |         |
| Chroom m                 | 35            | 10  |            |         |
| Crypto sp                | 140           | 44  |            |         |
| Crypto o                 | 37            | 10  |            |         |
| SubTotal                 | 212           | 64  |            |         |

| Taxa                | <u>Phytoplankton</u> |            | <u>Periphyton</u> |         |
|---------------------|----------------------|------------|-------------------|---------|
|                     | Top                  | Bot        | Art Sub           | Nat Sub |
| <b>CYANOPHYCEAE</b> |                      |            |                   |         |
| Agmen t             | 360                  | 300        |                   |         |
| Dactyl r            | 10                   | 10         |                   |         |
| SubTotal            | 370                  | 310        |                   |         |
| <b>UNKNOWN</b>      |                      |            |                   |         |
| Phytofl             | 10                   | 6          |                   |         |
| SubTotal            | 10                   | 6          |                   |         |
| <b>TOTAL</b>        | <b>1161</b>          | <b>778</b> |                   |         |

Table A5.2.28. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Upper Winfield, October 19, 1983. Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | Phytoplankton |     | Periphyton |         |
|--------------------------|---------------|-----|------------|---------|
|                          | Top           | Bot | Art Sub    | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |               |     |            |         |
| Spiro sp                 |               |     | 0.1        |         |
| SubTotal                 |               |     | 0.1        |         |
| <b>BACILLARIOPHYCEAE</b> |               |     |            |         |
| Cocco pl                 |               |     | 304.0      |         |
| Gompha p                 |               |     | 2.0        |         |
| Gyro sp                  |               |     | 2.0        |         |
| Melos v                  |               |     | 10.0       |         |
| Naviculoid               |               |     | 20.0       |         |
| Nitz spp                 |               |     | 20.0       |         |
| Skelet p                 |               |     | 58.0       |         |
| SubTotal                 |               |     | 416.0      |         |
| <b>CYANOPHYCEAE</b>      |               |     |            |         |
| Oscil g                  |               |     | 5.0        |         |
| Phorm a                  |               |     | 200.0      |         |
| Phorm f                  |               |     | 50.0       |         |
| SubTotal                 |               |     | 255.0      |         |
| TOTAL                    |               |     | 671.1      |         |

Table A5.2.29. Community composition of phytoplankton ( $10^6$  cells/ $m^3$ ) and periphyton ( $10^6$  cells/ $m^2$ ), Lower Winfield, October 20, 1983. Art Sub = glass slide; Blank = not sampled. See Table A5.1.1 for explanation of taxa abbreviations.

| Taxa                     | <u>Phytoplankton</u> |     | <u>Periphyton</u> |         |
|--------------------------|----------------------|-----|-------------------|---------|
|                          | Top                  | Bot | Art Sub           | Nat Sub |
| <b>CHLOROPHYCEAE</b>     |                      |     |                   |         |
| Mouge sp                 |                      |     | 40                |         |
| Spiro sp                 |                      |     | 16                |         |
| Stigeo sp                |                      |     | 60                |         |
| SubTotal                 |                      |     | 116               |         |
| <b>BACILLARIOPHYCEAE</b> |                      |     |                   |         |
| Bacil p                  |                      |     | 63                |         |
| Carp c                   |                      |     | 5                 |         |
| Cymb t                   |                      |     | 10                |         |
| Gompha p                 |                      |     | 10                |         |
| Gyro sp                  |                      |     | 5                 |         |
| Melos g                  |                      |     | 90                |         |
| Melos v                  |                      |     | 210               |         |
| Naviculoid               |                      |     | 92                |         |
| Navic c                  |                      |     | 180               |         |
| Nitz spp                 |                      |     | 78                |         |
| Nitz f                   |                      |     | 5                 |         |
| Syn spp                  |                      |     | 10                |         |
| SubTotal                 |                      |     | 758               |         |
| <b>CYANOPHYCEAE</b>      |                      |     |                   |         |
| Oscil spp                |                      |     | 100               |         |
| Phorm a                  |                      |     | 1000              |         |
| Phorm f                  |                      |     | 300               |         |
| SubTotal                 |                      |     | 1400              |         |
| <b>TOTAL</b>             |                      |     | <b>2274</b>       |         |

Table A5.2.30. Community composition of phytoplankton (percent of total cell numbers in each class), October 18-19, 1982. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 3m; LW Bot = 7m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 58.9 | 43.2 | 19.4 | 25.0 |     |     |
| Euglenophyceae    | 0.7  | 0.0  | 0.0  | 0.0  |     |     |
| Chrysophyceae     | 10.6 | 14.2 | 0.0  | 0.0  |     |     |
| Bacillariophyceae | 12.6 | 23.6 | 17.1 | 17.7 |     |     |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Cryptophyceae     | 9.3  | 12.2 | 34.9 | 19.8 |     |     |
| Cyanophyceae      | 7.9  | 6.8  | 28.6 | 37.5 |     |     |
| Unknown Phytofl.  | 0.0  | 0.0  | 0.0  | 0.0  |     |     |



Table A5.2.31. Community composition of phytoplankton (percent of total cell numbers in each class), November 18-19, 1982. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 3m; LW Bot = 8m; UG Bot = 3m. Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG   |      |
|-------------------|------|------|------|------|------|------|
|                   | Top  | Bot  | Top  | Bot  | Top  | Bot  |
| Chlorophyceae     | 9.7  | 19.2 | 37.7 | 21.9 | 13.1 | 49.2 |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 0.7  | 1.6  | 3.2  |
| Chrysophyceae     | 1.4  | 0.0  | 1.9  | 0.7  | 3.3  | 1.6  |
| Bacillariophyceae | 43.1 | 36.7 | 9.4  | 2.7  | 9.8  | 14.3 |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Cryptophyceae     | 44.4 | 33.3 | 41.5 | 17.1 | 16.4 | 25.3 |
| Cyanophyceae      | 1.4  | 10.8 | 9.4  | 56.8 | 55.7 | 6.3  |
| Unknown Phytofl.  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

Table A5.2.32. Community composition of phytoplankton (percent of total cell numbers in each class), December 16-17, 1982. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 4m; LW Bot = 9m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 5.4  | 2.7  | 2.6  | 8.3  |     |     |
| Euglenophyceae    | 0.0  | 2.7  | 1.3  | 2.8  |     |     |
| Chrysophyceae     | 0.0  | 0.0  | 0.0  | 2.8  |     |     |
| Bacillariophyceae | 37.0 | 64.8 | 13.0 | 8.3  |     |     |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Cryptophyceae     | 2.2  | 2.7  | 2.6  | 5.6  |     |     |
| Cyanophyceae      | 55.4 | 27.0 | 80.5 | 61.1 |     |     |
| Unknown Phytofl.  | 0.0  | 0.0  | 0.0  | 11.1 |     |     |

Table A5.2.33. Community composition of phytoplankton (percent of total cell numbers in each class), January 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 2m; LW Bot = 9m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 11.7 | 12.6 | 25.0 | 11.1 |     |     |
| Euglenophyceae    | 0.0  | 0.7  | 12.5 | 22.2 |     |     |
| Chrysophyceae     | 0.0  | 1.5  | 0.0  | 5.6  |     |     |
| Bacillariophyceae | 38.3 | 62.2 | 31.3 | 38.9 |     |     |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Cryptophyceae     | 38.3 | 22.2 | 6.3  | 5.6  |     |     |
| Cyanophyceae      | 11.7 | 0.7  | 25.0 | 16.7 |     |     |
| Unknown Phytofl.  | 0.0  | 0.0  | 0.0  | 0.0  |     |     |

**Table A5.2.34. Community composition of phytoplankton (percent of total cell numbers in each class), February 17-18, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 2m; LW Bot = 9m; Blank = Not Sampled.**

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 8.9  | 16.7 | 11.1 | 15.4 |     |     |
| Euglenophyceae    | 1.8  | 3.3  | 0.0  | 0.0  |     |     |
| Chrysophyceae     | 3.6  | 3.3  | 2.8  | 0.0  |     |     |
| Bacillariophyceae | 69.6 | 70.0 | 22.2 | 55.8 |     |     |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Cryptophyceae     | 1.8  | 3.3  | 2.8  | 3.8  |     |     |
| Cyanophyceae      | 14.3 | 3.3  | 61.1 | 25.0 |     |     |
| Unknown Phytofl.  |      |      |      |      |     |     |

Table A5.2.35. Community composition of phytoplankton (percent of total cell numbers in each class), March 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 3m; LW Bot = 9m; UG Bot = 3m. Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG   |      |
|-------------------|------|------|------|------|------|------|
|                   | Top  | Bot  | Top  | Bot  | Top  | Bot  |
| Chlorophyceae     | 25.1 | 23.6 | 13.0 | 5.6  | 14.0 | 11.1 |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Chrysophyceae     | 10.2 | 7.9  | 1.9  | 0.7  | 20.0 | 23.5 |
| Bacillariophyceae | 23.7 | 14.2 | 40.3 | 55.6 | 12.0 | 14.8 |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Cryptophyceae     | 5.6  | 11.8 | 6.5  | 2.1  | 20.0 | 12.3 |
| Cyanophyceae      | 35.3 | 37.8 | 38.3 | 35.9 | 34.0 | 35.8 |
| Unknown Phytofl.  | 0.0  | 4.7  | 0.0  | 0.0  | 0.0  | 2.5  |

Table A5.2.36. Community composition of phytoplankton (percent of total cell numbers in each class), April 21-22, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 2m; LW Bot = 9m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 40.2 | 35.3 | 21.6 | 13.5 |     |     |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 1.0  |     |     |
| Chrysophyceae     | 1.2  | 9.8  | 1.8  | 1.0  |     |     |
| Bacillariophyceae | 20.7 | 21.6 | 24.3 | 24.0 |     |     |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Cryptophyceae     | 20.7 | 9.8  | 3.6  | 9.6  |     |     |
| Cyanophyceae      | 9.8  | 19.6 | 45.9 | 47.1 |     |     |
| Unknown Phytofl.  | 7.3  | 3.9  | 2.7  | 3.8  |     |     |

Table A5.2.37. Community composition of phytoplankton (percent of total cell numbers in each class), May 19-20, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 3m; LW Bot = 9m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 20.9 | 22.9 | 17.1 | 20.7 |     |     |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Chrysophyceae     | 0.3  | 3.3  | 14.4 | 1.7  |     |     |
| Bacillariophyceae | 68.6 | 66.3 | 60.3 | 67.7 |     |     |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Cryptophyceae     | 7.1  | 4.6  | 3.9  | 4.6  |     |     |
| Cyanophyceae      | 3.0  | 2.9  | 2.7  | 3.5  |     |     |
| Unknown Phytol.   | 0.0  | 0.0  | 1.6  | 1.7  |     |     |

Table A5.2.38. Community composition of phytoplankton (percent of total cell numbers in each class), June 22-23, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 3m; LW Bot = 8m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 10.9 | 24.8 | 19.5 | 30.2 |     |     |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Chrysophyceae     | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Bacillariophyceae | 83.1 | 70.0 | 75.2 | 64.7 |     |     |
| Dinophyceae       | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Cryptophyceae     | 5.3  | 4.3  | 3.3  | 3.9  |     |     |
| Cyanophyceae      | 0.7  | 0.9  | 0.6  | 0.6  |     |     |
| Unknown Phytofl.  | 0.0  | 0.0  | 1.4  | 0.6  |     |     |



Table A5.2.39. Community composition of phytoplankton (percent of total cell numbers in each class), July 20-21, 1983.. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 3m; LW Bot = 9m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 17.1 | 18.0 | 84.3 | 78.6 |     |     |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Chrysophyceae     | 0.1  | 0.4  | 0.1  | 0.0  |     |     |
| Bacillariophyceae | 72.5 | 77.7 | 1.1  | 13.7 |     |     |
| Dinophyceae       | 0.1  | 0.1  | 0.3  | 0.2  |     |     |
| Cryptophyceae     | 3.9  | 3.0  | 9.5  | 3.6  |     |     |
| Cyanophyceae      | 3.0  | 0.6  | 4.6  | 3.8  |     |     |
| Unknown Phytofl.  | 3.4  | 0.1  | 0.0  | 0.0  |     |     |

Table A5.2.40. Community composition of phytoplankton (percent of total cell numbers in each class), August 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 3m; LW Bot = 9m; UG Bot = 3m. Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG   |      |
|-------------------|------|------|------|------|------|------|
|                   | Top  | Bot  | Top  | Bot  | Top  | Bot  |
| Chlorophyceae     | 13.3 | 11.2 | 39.7 | 23.1 | 27.9 | 49.9 |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  | 0.0  |
| Chrysophyceae     | 0.1  | 0.2  | 0.1  | 0.0  | 0.0  | 0.1  |
| Bacillariophyceae | 50.9 | 56.8 | 7.9  | 4.5  | 5.7  | 9.6  |
| Dinophyceae       | 0.1  | 0.1  | 0.2  | 0.1  | 0.2  | 0.2  |
| Cryptophyceae     | 1.5  | 2.4  | 20.2 | 7.3  | 9.2  | 11.7 |
| Cyanophyceae      | 33.0 | 28.1 | 30.9 | 64.5 | 56.3 | 28.3 |
| Unknown Phytofl.  | 1.1  | 1.1  | 0.9  | 0.5  | 0.6  | 0.2  |

Table A5.2.41. Community composition of phytoplankton (percent of total cell numbers in each class), September 14-15, 1983. UW = Upper Winfield; LW = Lower Winfield; UG = Upper Gallipolis. All Top = 1m; UW Bot = 2m; LW Bot = 10m; Blank = Not Sampled.

| Class             | UW   |      | LW   |      | UG  |     |
|-------------------|------|------|------|------|-----|-----|
|                   | Top  | Bot  | Top  | Bot  | Top | Bot |
| Chlorophyceae     | 11.0 | 13.8 | 19.3 | 21.1 |     |     |
| Euglenophyceae    | 0.0  | 0.0  | 0.0  | 0.0  |     |     |
| Chrysophyceae     | 0.1  | 0.0  | 0.0  | 0.0  |     |     |
| Bacillariophyceae | 69.1 | 76.6 | 29.5 | 30.1 |     |     |
| Dinophyceae       | 0.1  | 0.1  | 0.2  | 0.0  |     |     |
| Cryptophyceae     | 1.8  | 1.1  | 18.3 | 8.2  |     |     |
| Cyanophyceae      | 18.0 | 8.4  | 31.9 | 39.8 |     |     |
| Unknown Phytofl.  | 0.0  | 0.0  | 0.9  | 0.8  |     |     |

**Table A5.3.1. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Upper Winfield, January 21, 1983.**

| <b>Depth</b> | <b>Size Class</b> | <b>Replicates</b> | <b>Mean ± S.D.</b> | <b>%</b>    |
|--------------|-------------------|-------------------|--------------------|-------------|
| <b>Top</b>   | <b>L</b>          | <b>0.017</b>      |                    | <b>0.2</b>  |
|              | <b>ML</b>         | <b>0.050</b>      |                    | <b>0.5</b>  |
|              | <b>S</b>          | <b>0.157</b>      |                    | <b>1.7</b>  |
|              | <b>F</b>          | <b>0.458</b>      |                    | <b>4.8</b>  |
|              | <b>VF</b>         | <b>0.191</b>      |                    | <b>2.0</b>  |
|              | <b>UF</b>         | <b>8.591</b>      |                    | <b>90.8</b> |
|              | <b>Total</b>      | <b>9.464</b>      |                    |             |
| <b>Bot</b>   | <b>L</b>          | <b>0.013</b>      |                    | <b>0.3</b>  |
|              | <b>ML</b>         | <b>0.069</b>      |                    | <b>1.8</b>  |
|              | <b>S</b>          | <b>0.107</b>      |                    | <b>2.7</b>  |
|              | <b>F</b>          | <b>0.935</b>      |                    | <b>23.9</b> |
|              | <b>VF</b>         | <b>0.107</b>      |                    | <b>2.7</b>  |
|              | <b>UF</b>         | <b>2.673</b>      |                    | <b>68.5</b> |
|              | <b>Total</b>      | <b>3.904</b>      |                    |             |

**Table A5.3.2. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Lower Winfield, January 20, 1983.**

| <b>Depth</b> | <b>Size Class</b> | <b>Replicates</b> | <b>Mean ± S.D.</b> | <b>%</b>    |
|--------------|-------------------|-------------------|--------------------|-------------|
| <b>Top</b>   | <b>L</b>          | <b>0.001</b>      |                    | <b>0.0</b>  |
|              | <b>ML</b>         | <b>0.000</b>      |                    | <b>0.0</b>  |
|              | <b>S</b>          | <b>0.006</b>      |                    | <b>0.3</b>  |
|              | <b>F</b>          | <b>0.010</b>      |                    | <b>0.4</b>  |
|              | <b>VF</b>         | <b>0.002</b>      |                    | <b>0.1</b>  |
|              | <b>UF</b>         | <b>2.291</b>      |                    | <b>99.2</b> |
|              | <b>Total</b>      | <b>2.310</b>      |                    |             |
| <b>Bot</b>   | <b>L</b>          | <b>0.004</b>      |                    | <b>0.1</b>  |
|              | <b>ML</b>         | <b>0.006</b>      |                    | <b>0.2</b>  |
|              | <b>S</b>          | <b>0.002</b>      |                    | <b>0.1</b>  |
|              | <b>F</b>          | <b>0.006</b>      |                    | <b>0.2</b>  |
|              | <b>VF</b>         | <b>0.955</b>      |                    | <b>34.2</b> |
|              | <b>UF</b>         | <b>1.814</b>      |                    | <b>64.9</b> |
|              | <b>Total</b>      | <b>2.787</b>      |                    |             |

**Table A5.3.3. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Upper Winfield, February 18, 1983.**

| <b>Depth</b> | <b>Size Class</b> | <b>Replicates</b> | <b>Mean ± S.D.</b> | <b>%</b>    |
|--------------|-------------------|-------------------|--------------------|-------------|
| <b>Top</b>   | <b>L</b>          | <b>0.042</b>      |                    | <b>6.9</b>  |
|              | <b>ML</b>         | <b>0.015</b>      |                    | <b>2.5</b>  |
|              | <b>S</b>          | <b>0.061</b>      |                    | <b>10.1</b> |
|              | <b>F</b>          | <b>0.053</b>      |                    | <b>8.7</b>  |
|              | <b>VF</b>         | <b>0.015</b>      |                    | <b>2.5</b>  |
|              | <b>UF</b>         | <b>0.420</b>      |                    | <b>69.3</b> |
|              | <b>Total</b>      | <b>0.606</b>      |                    |             |
| <b>Bot</b>   | <b>L</b>          | <b>0.017</b>      |                    | <b>2.1</b>  |
|              | <b>ML</b>         | <b>0.019</b>      |                    | <b>2.4</b>  |
|              | <b>S</b>          | <b>0.050</b>      |                    | <b>6.3</b>  |
|              | <b>F</b>          | <b>0.076</b>      |                    | <b>9.5</b>  |
|              | <b>VF</b>         | <b>0.023</b>      |                    | <b>2.9</b>  |
|              | <b>UF</b>         | <b>0.611</b>      |                    | <b>76.8</b> |
|              | <b>Total</b>      | <b>0.796</b>      |                    |             |

Table A5.3.4. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Lower Winfield, February 17, 1983.

| Depth | Size Class | Replicates | Mean ± S.D. | %    |
|-------|------------|------------|-------------|------|
| Top   | L          | 0.002      |             | 0.6  |
|       | ML         | 0.009      |             | 2.8  |
|       | S          | 0.012      |             | 3.8  |
|       | F          | 0.013      |             | 4.1  |
|       | VF         | 0.001      |             | 0.3  |
|       | UF         | 0.281      |             | 88.4 |
|       | Total      | 0.318      |             |      |
| Bot   | L          | 0.004      |             | 0.8  |
|       | ML         | 0.033      |             | 6.5  |
|       | S          | 0.053      |             | 10.5 |
|       | F          | 0.028      |             | 5.5  |
|       | VF         | 0.005      |             | 1.0  |
|       | UF         | 0.382      |             | 75.6 |
|       | Total      | 0.505      |             |      |

**Table A5.3.5. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Upper Winfield, March 25, 1983.**

| <b>Depth</b> | <b>Size Class</b> | <b>Replicates</b> |              |              | <b>Mean ± S.D.</b> | <b>%</b>    |
|--------------|-------------------|-------------------|--------------|--------------|--------------------|-------------|
| <b>Top</b>   | <b>L</b>          | <b>.002</b>       | <b>.005</b>  | <b>.007</b>  | <b>.005± .003</b>  | <b>0.5</b>  |
|              | <b>M</b>          | <b>.016</b>       | <b>.013</b>  | <b>.017</b>  | <b>.015± .002</b>  | <b>1.5</b>  |
|              | <b>S</b>          | <b>.076</b>       | <b>.032</b>  | <b>.071</b>  | <b>.060± .024</b>  | <b>5.9</b>  |
|              | <b>F</b>          | <b>.057</b>       | <b>.038</b>  | <b>.052</b>  | <b>.049± .010</b>  | <b>4.8</b>  |
|              | <b>VF</b>         | <b>.009</b>       | <b>.014</b>  | <b>.014</b>  | <b>.012± .003</b>  | <b>1.2</b>  |
|              | <b>UF</b>         | <b>.799</b>       | <b>.861</b>  | <b>.952</b>  | <b>.871± .077</b>  | <b>86.1</b> |
|              | <b>Total</b>      | <b>0.959</b>      | <b>0.963</b> | <b>1.113</b> | <b>1.012±0.421</b> |             |
| <b>Bot</b>   | <b>L</b>          | <b>.002</b>       | <b>.001</b>  | <b>.000</b>  | <b>.001± .001</b>  | <b>0.1</b>  |
|              | <b>M</b>          | <b>.071</b>       | <b>.055</b>  | <b>.049</b>  | <b>.058± .011</b>  | <b>6.8</b>  |
|              | <b>S</b>          | <b>.029</b>       | <b>.042</b>  | <b>.040</b>  | <b>.037± .007</b>  | <b>4.3</b>  |
|              | <b>F</b>          | <b>.049</b>       | <b>.048</b>  | <b>.024</b>  | <b>.040± .014</b>  | <b>4.7</b>  |
|              | <b>VF</b>         | <b>.006</b>       | <b>.009</b>  | <b>.014</b>  | <b>.010± .004</b>  | <b>1.2</b>  |
|              | <b>UF</b>         | <b>.784</b>       | <b>.646</b>  | <b>.689</b>  | <b>.706± .071</b>  | <b>82.9</b> |
|              | <b>Total</b>      | <b>0.941</b>      | <b>0.801</b> | <b>0.816</b> | <b>0.853±0.077</b> |             |



Table A5.3.6. Phytoplankton biomass (ug Chla/l) according to size class, Lower Winfield, March 24, 1983.

| Depth | Size Class | Replicates |       |       | Mean $\pm$ S.D.   | %    |
|-------|------------|------------|-------|-------|-------------------|------|
| Top   | L          | .010       | .003  | .011  | .008 $\pm$ .004   | 0.4  |
|       | M          | .038       | .046  | .048  | .044 $\pm$ .005   | 2.0  |
|       | S          | .213       | .199  | .290  | .234 $\pm$ .049   | 10.9 |
|       | F          | .178       | .160  | .302  | .213 $\pm$ .077   | 9.9  |
|       | VF         | .063       | .082  | .089  | .078 $\pm$ .013   | 3.6  |
|       | UF         | 1.596      | 1.579 | 1.546 | 1.574 $\pm$ .025  | 73.2 |
|       | Total      | 2.098      | 2.069 | 2.286 | 2.151 $\pm$ 0.118 |      |

**Table A5.3.7. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Upper Winfield, April 21, 1983.**

| <b>Depth</b> | <b>Size Class</b> | <b>Replicates</b> |             |             | <b>Mean ± S.D.</b> | <b>%</b>    |
|--------------|-------------------|-------------------|-------------|-------------|--------------------|-------------|
| <b>Top</b>   | <b>L</b>          | <b>.002</b>       | <b>.001</b> | <b>.001</b> | <b>.001± .001</b>  | <b>0.4</b>  |
|              | <b>M</b>          | <b>.003</b>       | <b>.004</b> | <b>.004</b> | <b>.004± .001</b>  | <b>1.4</b>  |
|              | <b>S</b>          | <b>.006</b>       | <b>.006</b> | <b>.007</b> | <b>.006± .037</b>  | <b>9.6</b>  |
|              | <b>F</b>          | <b>.010</b>       | <b>.010</b> | <b>.013</b> | <b>.011± .002</b>  | <b>3.9</b>  |
|              | <b>VF</b>         | <b>.005</b>       | <b>.005</b> | <b>.005</b> | <b>.005± .000</b>  | <b>1.8</b>  |
|              | <b>UF</b>         | <b>.233</b>       | <b>.255</b> | <b>.276</b> | <b>.255± .022</b>  | <b>90.4</b> |
|              | <b>Total</b>      | <b>.259</b>       | <b>.281</b> | <b>.306</b> | <b>.282± .024</b>  |             |
| <b>Bot</b>   | <b>L</b>          | <b>.001</b>       | <b>.001</b> | <b>.001</b> | <b>.001± .000</b>  | <b>0.4</b>  |
|              | <b>M</b>          | <b>.002</b>       | <b>.002</b> | <b>.002</b> | <b>.002± .000</b>  | <b>0.7</b>  |
|              | <b>S</b>          | <b>.008</b>       | <b>.008</b> | <b>.008</b> | <b>.008± .000</b>  | <b>2.9</b>  |
|              | <b>F</b>          | <b>.013</b>       | <b>.013</b> | <b>.013</b> | <b>.013± .000</b>  | <b>4.7</b>  |
|              | <b>VF</b>         | <b>.006</b>       | <b>.005</b> | <b>.008</b> | <b>.006± .002</b>  | <b>2.2</b>  |
|              | <b>UF</b>         | <b>.212</b>       | <b>.233</b> | <b>.297</b> | <b>.247± .044</b>  | <b>88.8</b> |
|              | <b>Total</b>      | <b>.242</b>       | <b>.262</b> | <b>.329</b> | <b>.278± .046</b>  |             |

**Table A5.3.8. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Lower Winfield, April 22, 1983.**

| Depth | Size Class |      | Replicates |      | Mean ± S.D. |  | %    |
|-------|------------|------|------------|------|-------------|--|------|
| Top   | L          | .000 | .001       | .000 | .000± .000  |  | 0.0  |
|       | M          | .001 | .001       | .001 | .001± .000  |  | 0.3  |
|       | S          | .002 | .003       | .003 | .003± .000  |  | 0.9  |
|       | F          | .011 | .008       | .004 | .008± .004  |  | 2.4  |
|       | VF         | .006 | .006       | .003 | .005± .002  |  | 1.5  |
|       | UF         | .458 | .255       | .255 | .323± .117  |  | 95.3 |
|       | Total      | .478 | .274       | .266 | 0.339±0.120 |  |      |
| Bot   | L          | .002 | .002       | .002 | .002± .000  |  | 0.5  |
|       | M          | .003 | .003       | .003 | .003± .000  |  | 0.7  |
|       | S          | .008 | .011       | .005 | .008± .003  |  | 2.0  |
|       | F          | .015 | .013       | .022 | .017± .005  |  | 4.2  |
|       | VF         | .002 | .003       | .002 | .002± .000  |  | 0.5  |
|       | UF         | .352 | .411       | .352 | .372± .034  |  | 92.1 |
|       | Total      | .382 | .443       | .386 | 0.404±0.034 |  |      |

Table A5.3.9. Phytoplankton biomass (ug Chla/l) according to size class, Upper Winfield, May 19, 1983.

| Depth | Size Class | Replicates |       |       | Mean $\pm$ S.D.   | %    |
|-------|------------|------------|-------|-------|-------------------|------|
| Top   | L          | .053       | .033  | .011  | .032 $\pm$ .021   | 1.1  |
|       | M          | .153       | .178  | .079  | .137 $\pm$ .052   | 4.7  |
|       | S          | .585       | .535  | .420  | .513 $\pm$ .085   | 17.5 |
|       | F          | .827       | .636  | .764  | .742 $\pm$ .097   | 25.2 |
|       | VF         | .305       | .204  | .216  | .242 $\pm$ .055   | 8.2  |
|       | UF         | 1.145      | 1.527 | 1.145 | 1.272 $\pm$ .221  | 43.3 |
|       | Total      | 3.068      | 3.113 | 2.635 | 2.939 $\pm$ 0.264 |      |
| Bot   | L          | .018       | .097  | .005  | .040 $\pm$ .050   | 1.7  |
|       | M          | .135       | .101  | .100  | .112 $\pm$ .020   | 4.8  |
|       | S          | .509       | .382  | .255  | .382 $\pm$ .127   | 16.5 |
|       | F          | .305       | .484  | .509  | .433 $\pm$ .111   | 18.7 |
|       | VF         | .191       | .127  | .305  | .208 $\pm$ .090   | 9.0  |
|       | UF         | 1.145      | 1.145 | 1.122 | 1.137 $\pm$ .013  | 49.2 |
|       | Total      | 2.303      | 2.336 | 2.296 | 2.312 $\pm$ 0.021 |      |

Table A5.3.10. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Lower Winfield, May 20, 1983.

| Depth | Size Class |       | Replicates |       |        | Mean ± S.D. | %    |
|-------|------------|-------|------------|-------|--------|-------------|------|
| Top   | L          | .023  | .076       | .003  | .034±  | .037        | 1.8  |
|       | M          | .092  | .137       | .031  | .087±  | .053        | 4.7  |
|       | S          | .153  | .305       | .191  | .216±  | .079        | 11.6 |
|       | F          | .230  | .153       | .305  | .230±  | .076        | 12.3 |
|       | VF         | .137  | .107       | .218  | .154±  | .057        | 8.3  |
|       | UF         | 1.145 | 1.145      | 1.145 | 1.145± | 0.000       | 61.4 |
|       | Total      | 1.780 | 1.923      | 1.893 | 1.865± | 0.075       |      |
| Bot   | L          | .008  | .011       | .005  | .008±  | .003        | 0.3  |
|       | M          | .021  | .034       | .038  | .031±  | .009        | 1.3  |
|       | S          | .065  | .080       | .069  | .071±  | .008        | 3.1  |
|       | F          | .130  | .130       | .092  | .117±  | .002        | 5.1  |
|       | VF         | .050  | .061       | .023  | .045±  | .020        | 1.9  |
|       | UF         | 2.291 | 2.291      | 1.527 | 2.036± | 0.441       | 88.2 |
|       | Total      | 2.565 | 2.607      | 1.754 | 2.309± | 0.481       |      |

Table A5.3.11. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Upper Winfield, June 22, 1983.

| Depth | Size Class | Replicates |       |       | Mean ± S.D. | %    |
|-------|------------|------------|-------|-------|-------------|------|
| Top   | L          | .019       | .046  | .023  | .031± .013  | 2.2  |
|       | M          | .122       | .031  | .080  | .078± .046  | 5.9  |
|       | S          | .191       | .191  | .267  | .216± .044  | 16.3 |
|       | F          | .210       | .191  | .210  | .204± .011  | 15.4 |
|       | VF         | .118       | .137  | .076  | .110± .031  | 8.3  |
|       | UF         | .687       | .687  | .687  | .687± .000  | 51.9 |
|       | Total      | 1.347      | 1.283 | 1.343 | 1.324±0.036 |      |
| Bot   | L          | .038       | .003  | .015  | .019± .018  | 1.0  |
|       | M          | .027       | .038  | .046  | .037± .010  | 2.4  |
|       | S          | .229       | .229  | .344  | .267± .066  | 17.3 |
|       | F          | .076       | .084  | .229  | .130± .086  | 8.4  |
|       | VF         | .107       | .107  | .069  | .094± .022  | 6.1  |
|       | UF         | .916       | .916  | 1.145 | .992± .132  | 64.5 |
|       | Total      | 1.393      | 1.377 | 1.848 | 1.539±0.267 |      |

Table A5.3.12. Phytoplankton biomass (ug Chla/l) according to size class, Lower Winfield, June 23, 1983.

| Depth | Size Class |       | Replicates |       | Mean $\pm$ S.D.   |  | %    |
|-------|------------|-------|------------|-------|-------------------|--|------|
| Top   | L          | .003  | .011       | .002  | .005 $\pm$ .005   |  | 0.4  |
|       | M          | .004  | .014       | .009  | .009 $\pm$ .005   |  | 0.7  |
|       | S          | .046  | .153       | .076  | .092 $\pm$ .055   |  | 7.3  |
|       | F          | .382  | .229       | .153  | .255 $\pm$ .117   |  | 20.2 |
|       | VF         | .153  | .153       | .153  | .153 $\pm$ .000   |  | 12.1 |
|       | UF         | .760  | .840       | .649  | .750 $\pm$ .096   |  | 59.4 |
|       | Total      | 1.348 | 1.400      | 1.042 | 1.263 $\pm$ 0.193 |  |      |
| Bot   | L          | .016  | .001       | .003  | .007 $\pm$ .008   |  | 0.4  |
|       | M          | Lost  | .003       | .008  | .006 $\pm$        |  | 0.3  |
|       | S          | .160  | .092       | .137  | .130 $\pm$ .035   |  | 6.7  |
|       | F          | .496  | .535       | .535  | .522 $\pm$ .023   |  | 26.8 |
|       | VF         | .191  | .191       | .115  | .166 $\pm$ .044   |  | 8.5  |
|       | UF         | 1.222 | 1.069      | 1.069 | 1.120 $\pm$ .088  |  | 57.5 |
|       | Total      | 2.085 | 1.891      | 1.867 | 1.948 $\pm$ 0.120 |  |      |

**Table A5.3.13. Phytoplankton biomass (ug Chla/l) according to size class, Upper Winfield, July 20, 1983.**

| Depth | Size Class | Replicates |       |       | Mean $\pm$ S.D.   | %    |
|-------|------------|------------|-------|-------|-------------------|------|
| Top   | L          | .002       | .001  | .001  | .001 $\pm$ .001   | 0.0  |
|       | M          | .003       | .002  | .002  | .002 $\pm$ .001   | 0.0  |
|       | S          | .015       | .013  | .012  | .013 $\pm$ .002   | 0.2  |
|       | F          | .040       | .052  | .008  | .033 $\pm$ .023   | 0.5  |
|       | VF         | .012       | .020  | .024  | .019 $\pm$ .006   | 0.3  |
|       | UF         | 5.727      | 6.682 | 7.159 | 6.523 $\pm$ .729  | 99.0 |
|       | Total      | 5.799      | 6.770 | 7.206 | 6.592 $\pm$ 0.720 |      |
| Bot   | L          | .002       | .002  | .003  | .002 $\pm$ .001   | 0.0  |
|       | M          | .004       | .004  | .004  | .004 $\pm$ .000   | 0.1  |
|       | S          | .032       | .044  | .020  | .032 $\pm$ .012   | 0.5  |
|       | F          | .067       | .080  | .080  | .076 $\pm$ .008   | 1.2  |
|       | VF         | .024       | .020  | .017  | .020 $\pm$ .004   | 0.3  |
|       | UF         | 6.920      | 4.963 | 6.363 | 6.082 $\pm$ 1.008 | 97.8 |
|       | Total      | 7.049      | 5.113 | 6.487 | 6.216 $\pm$ 0.996 |      |



Table A5.3.14. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Lower Winfield, July 21, 1983.

| Depth | Size Class | Replicates |        |        | Mean ± S.D.  | %    |
|-------|------------|------------|--------|--------|--------------|------|
| Top   | L          | .001       | .002   | .002   | .002± .001   | 0.0  |
|       | M          | .000       | .003   | .002   | .002± .002   | 0.0  |
|       | S          | .019       | .042   | .015   | .025± .015   | 0.2  |
|       | F          | .095       | .153   | .061   | .103± .047   | 0.8  |
|       | VF         | .115       | .382   | .305   | .267± .137   | 2.0  |
|       | UF         | 10.690     | 17.181 | 11.454 | 13.108±3.548 | 97.0 |
|       | Total      | 10.920     | 17.763 | 11.839 | 13.507±3.714 |      |
| Bot   | L          | .001       | .001   | .001   | .001± .000   | 0.0  |
|       | M          | .002       | .006   | .002   | .003± .002   | 0.0  |
|       | S          | .015       | .031   | .027   | .024± .008   | 0.3  |
|       | F          | .134       | .153   | .115   | .134± .019   | 1.6  |
|       | VF         | .029       | .095   | .080   | .068± .035   | 0.8  |
|       | UF         | 7.636      | 10.181 | 6.363  | 8.060±1.944  | 97.2 |
|       | Total      | 7.817      | 10.467 | 6.588  | 8.291±1.982  |      |

Table A5.3.15. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Upper Winfield, August 24, 1983.

| Depth | Size Class |        | Replicates |        | Mean ± S.D.  | %    |
|-------|------------|--------|------------|--------|--------------|------|
| Top   | L          | .001   | .002       | .001   | .001± .001   | 0.0  |
|       | M          | .001   | .004       | .006   | .004± .003   | 0.0  |
|       | S          | .011   | .021       | .022   | .018± .006   | 0.2  |
|       | F          | .067   | .143       | .200   | .137± .067   | 1.3  |
|       | VF         | .061   | .048       | .048   | .052± .008   | 0.5  |
|       | UF         | 10.363 | 9.818      | 9.818  | 10.000± .315 | 97.9 |
|       | Total      | 10.504 | 10.036     | 10.095 | 10.212±0.255 |      |
| Bot   | L          | .003   | .002       | .002   | .002± .001   | 0.0  |
|       | M          | .002   | .002       | .002   | .002± .000   | 0.0  |
|       | S          | .020   | .007       | .007   | .011± .008   | 0.1  |
|       | F          | .086   | .086       | .067   | .080± .011   | 1.0  |
|       | VF         | .076   | .057       | .076   | .070± .011   | 0.9  |
|       | UF         | 6.818  | 8.184      | 8.184  | 7.729± .789  | 97.9 |
|       | Total      | 7.005  | 8.338      | 8.338  | 7.894±0.770  |      |

Table A5.3.16. Phytoplankton biomass ( $\mu\text{g Chl}_a/\text{l}$ ) according to size class, Lower Winfield, August 25, 1983.

| Depth | Size Class | Replicates |       |       | Mean $\pm$ S.D.   | %    |
|-------|------------|------------|-------|-------|-------------------|------|
| Top   | L          | .001       | .001  | .001  | .001 $\pm$ .000   | 0.0  |
|       | M          | .001       | .001  | .001  | .001 $\pm$ .000   | 0.0  |
|       | S          | .267       | .010  | .010  | .096 $\pm$ .148   | 2.5  |
|       | F          | .045       | .032  | .121  | .066 $\pm$ .048   | 1.7  |
|       | VF         | .165       | .142  | .115  | .141 $\pm$ .025   | 3.7  |
|       | UF         | 4.073      | 4.073 | 2.291 | 3.479 $\pm$ 1.029 | 92.0 |
|       | Total      | 4.552      | 4.259 | 2.539 | 3.783 $\pm$ 1.088 |      |
| Bot   | L          | .001       | .001  | .001  | .001 $\pm$ .000   | 0.0  |
|       | M          | .012       | .007  | .001  | .007 $\pm$ .006   | 0.3  |
|       | S          | .032       | .070  | .017  | .040 $\pm$ .027   | 1.7  |
|       | F          | .204       | .178  | .216  | .199 $\pm$ .019   | 8.3  |
|       | VF         | .102       | .115  | .089  | .102 $\pm$ .013   | 4.3  |
|       | UF         | 2.291      | 1.782 | 2.036 | 2.036 $\pm$ .255  | 85.4 |
|       | Total      | 2.642      | 2.153 | 2.360 | 2.385 $\pm$ 0.245 |      |

Table A5.3.17. Phytoplankton biomass ( $\mu\text{g Chl}_a/\text{l}$ ) according to size class, Upper Winfield, September 14, 1983.

| Depth | Size Class | Replicates |        |        | Mean $\pm$ S.D.    | %    |
|-------|------------|------------|--------|--------|--------------------|------|
| Top   | L          | .002       | .004   | .003   | .003 $\pm$ .001    | 0.0  |
|       | M          | .004       | .003   | .006   | .004 $\pm$ .002    | 0.0  |
|       | S          | .066       | .051   | .030   | .049 $\pm$ .018    | 0.4  |
|       | F          | .279       | .355   | .305   | .313 $\pm$ .039    | 2.4  |
|       | VF         | .127       | .140   | .152   | .140 $\pm$ .013    | 1.1  |
|       | UF         | 13.363     | 11.454 | 13.363 | 12.727 $\pm$ 1.102 | 96.2 |
|       | Total      | 13.841     | 12.007 | 13.859 | 13.236 $\pm$ 1.064 |      |
| Bot   | L          | .006       | .002   | .004   | .004 $\pm$ .002    | 0.0  |
|       | M          | .005       | .002   | .004   | .004 $\pm$ .002    | 0.0  |
|       | S          | .048       | .038   | .036   | .041 $\pm$ .006    | 0.3  |
|       | F          | .355       | .102   | .254   | .237 $\pm$ .127    | 1.8  |
|       | VF         | .152       | .305   | .178   | .212 $\pm$ .082    | 1.6  |
|       | UF         | 12.600     | 12.600 | 12.600 | 12.600 $\pm$ .000  | 96.2 |
|       | Total      | 13.166     | 13.049 | 13.076 | 13.097 $\pm$ 0.061 |      |

Table A5.3.18. Phytoplankton biomass (ug Chl<sub>a</sub>/l) according to size class, Lower Winfield, September 15, 1983.

| Depth | Size Class | Replicates |       |       | Mean ± S.D. | %    |
|-------|------------|------------|-------|-------|-------------|------|
| Top   | L          | .003       | .004  | .003  | .003± .001  | 0.0  |
|       | M          | .013       | .089  | .089  | .064± .044  | 0.8  |
|       | S          | 1.269      | 1.904 | 1.904 | 1.692± .367 | 20.5 |
|       | F          | 1.269      | 1.396 | 1.016 | 1.227± .193 | 14.9 |
|       | VF         | .140       | .216  | .114  | .157± .053  | 1.9  |
|       | UF         | 8.781      | 3.436 | 3.054 | 5.090±3.202 | 61.8 |
|       | Total      | 11.475     | 7.045 | 6.180 | 8.242±2.831 |      |
| Bot   | L          | .002       | .002  | .002  | .002± .000  | 0.0  |
|       | M          | .007       | .011  | .019  | .012± .006  | 0.2  |
|       | S          | .687       | 1.050 | 1.814 | 1.184± .575 | 23.9 |
|       | F          | .573       | 1.623 | .764  | .987± .559  | 19.9 |
|       | VF         | .153       | .153  | .134  | .147± .011  | 3.0  |
|       | UF         | 3.150      | 1.985 | 2.730 | 2.622± .590 | 52.9 |
|       | Total      | 4.572      | 4.824 | 5.463 | 4.953±0.459 |      |

**Table A5.4.1. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on October 19, 1982.**

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 8.92                                    | 8.86 | 9.01  |           |                     |                                                       |
|              | 8.92                                    | 8.83 | 8.88  | 8.95      | 0.16                | 270                                                   |
| 0.5          | 9.38                                    | 8.80 | 8.99  |           |                     |                                                       |
|              | 8.82                                    | 8.85 | 9.11  | 9.05      | 0.26                | 430                                                   |
| 1            | 9.04                                    | 8.49 | 8.85  |           |                     |                                                       |
|              | 8.74                                    | 8.72 | 8.76  | 8.81      | 0.02                | 30                                                    |
| 2            | 8.64                                    | 8.95 | 8.93  |           |                     |                                                       |
|              | 8.88                                    | 8.85 | 8.97  | 8.95      | 0.16                | 270                                                   |
| Average      | 8.92                                    | 8.79 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.60

Incubation Period = 4.5 hours.

Depth of 1% Incident Light = 3.5 m

Maximum Depth = 4.5 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 690

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 3,100

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 850

Table A5.4.2. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on October 18, 1982.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |                     | Daily GPP                   |                     | Daily Resp.                 |  |
|--------------|-----------------------------------------|------|-------|---------------------|-----------------------------|---------------------|-----------------------------|--|
|              | Initial                                 | Dark | Light | $\bar{I} - \bar{D}$ | (mg O /m <sup>3</sup> /day) | $\bar{I} - \bar{D}$ | (mg O /m <sup>3</sup> /day) |  |
| 0            | 7.47                                    | 6.58 | 6.94  |                     |                             |                     |                             |  |
|              | 6.30                                    | 6.76 | 7.07  | 0.34                | 430                         | 0.21                | 920                         |  |
| 0.5          | 7.41                                    | 6.89 | 7.20  |                     |                             |                     |                             |  |
|              | 7.21                                    | 6.64 | 7.38  | 0.53                | 660                         | 0.55                | 2,400                       |  |
| 1            | 7.26                                    | 6.97 | 7.20  |                     |                             |                     |                             |  |
|              | 7.29                                    | 6.52 | 7.10  | 0.41                | 510                         | 0.54                | 2,400                       |  |
| 2            | 7.49                                    | 6.72 | 7.30  |                     |                             |                     |                             |  |
|              | 7.27                                    | 7.11 | 7.28  | 0.38                | 470                         | 0.47                | 2,000                       |  |
| 3            | 7.26                                    | 7.14 | 7.10  |                     |                             |                     |                             |  |
|              | 7.28                                    | 6.61 | 7.28  | 0.32                | 400                         | 0.40                | 1,700                       |  |
| Average      |                                         |      |       |                     |                             |                     |                             |  |

Incubation Solar Radiation/Total Solar Radiation = 0.80  
 Incubation Period = 5.5 hours.  
 Depth of 1% Incident Light = 3.4 m  
 Maximum Depth = 10.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 18,000

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,700

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**Table A5.4.3. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on November 19, 1982.**

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 11.56                                   | 11.57 | 11.37 |           |                     |                                                       |
|              | 11.56                                   | 11.58 | 11.40 | 11.38     | -0.13               | -150                                                  |
| 0.5          | 11.54                                   | 11.54 | 11.37 |           |                     |                                                       |
|              | 11.58                                   | 11.42 | --    | 11.37     | -0.14               | -160                                                  |
| 1            | 11.52                                   | 11.51 | 11.39 |           |                     |                                                       |
|              | 11.53                                   | 11.45 | 11.37 | 11.38     | -0.13               | -150                                                  |
| 2            | 11.50                                   | 11.51 | 11.39 |           |                     |                                                       |
|              | 11.52                                   | 11.47 | 11.30 | 11.34     | -0.17               | -200                                                  |
| Average      | 11.54                                   | 11.51 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.85

Incubation Period = 5.25 hours.

Depth of 1% Incident Light = 2.1 m

Maximum Depth = 4.5 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 140

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 600

Daily GPP (mg/O<sub>2</sub>/m<sup>2</sup>/day) = 0



Table A5.4.4. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on November 18, 1982.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 10.14                                   | 10.16 | 10.14 |           |                     |                                                       |
|              | 10.17                                   | 10.08 | 10.08 | 10.11     | 0.03                | 40                                                    |
| 0.5          | 10.19                                   | 10.11 | 10.07 |           |                     |                                                       |
|              | 10.14                                   | 10.12 | 10.14 | 10.11     | 0.03                | 40                                                    |
| 1            | 10.10                                   | 10.09 | 10.03 |           |                     |                                                       |
|              | 10.12                                   | 10.12 | 10.19 | 10.11     | 0.03                | 40                                                    |
| 2            | 10.06                                   | 9.98  | 10.07 |           |                     |                                                       |
|              | 10.09                                   | --    | 10.07 | 10.07     | -0.01               | -10                                                   |
| 3            | 10.05                                   | 9.97  | 10.01 |           |                     |                                                       |
|              | 10.14                                   | 10.06 | 10.14 | 10.07     | -0.01               | -10                                                   |
| Average      | 10.12                                   | 10.08 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.67

Incubation Period = 4.75 hours.

Depth of 1% Incident Light = 3.5 m

Maximum Depth = 9.5 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 200

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,900

Daily GPP (mg/O<sub>2</sub>/m<sup>2</sup>/day) = 100

Table A5.4.5. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on December 17, 1982.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                          |
| 0            | 13.10                                   | 13.18 | 13.31 |           |                     |                                          |
|              | 12.97                                   | 13.11 | 13.03 |           |                     |                                          |
|              | 13.14                                   | 12.90 |       |           |                     |                                          |
| Average      | 13.07                                   | 13.06 | 13.17 |           | 0.11                | 120                                      |

Incubation Solar Radiation/Total Solar Radiation = 0.93

Incubation Period = 7.25 hours.

Depth of 1% Incident Light = 1.0 m

Maximum Depth = 5.2 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 30

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 170

Daily GPP (mg/O /m<sup>2</sup>/day) = 60

Table A5.4.6. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on December 16, 1982.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 11.33                                   | 11.17 | 11.12 |           |                     |                                                       |
|              | 11.09                                   | 11.26 | 11.63 | 11.37     | 0.18                | 200                                                   |
| 0.5          | 11.34                                   | 10.94 | 11.88 |           |                     |                                                       |
|              | 11.45                                   | 11.19 | 12.05 | 11.96     | 0.77                | 870                                                   |
| 1            | 11.29                                   | 11.31 | 11.28 |           |                     |                                                       |
|              | 11.22                                   | 10.97 | 11.51 | 11.39     | 0.20                | 230                                                   |
| 2            | 11.20                                   | 11.24 | 11.42 |           |                     |                                                       |
|              | --                                      | 11.49 | 11.35 | 11.38     | 0.19                | 220                                                   |
| 3            | 11.47                                   | 11.16 | 11.28 |           |                     |                                                       |
|              | --                                      | 11.14 | 11.35 | 11.31     | 0.12                | 140                                                   |
| Average      | 11.30                                   | 11.19 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.88

Incubation Period = 6.75 hours.

Depth of 1% Incident Light = 3.9 m

Maximum Depth = 10.5 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 390

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 4,100

Daily GPP (mg/O<sub>2</sub>/m<sup>2</sup>/day) = 1,000

**Table A5.4.7. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on January 21, 1983.**

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 13.23                                   | 13.47 | 13.39 |           |                     |                                                       |
|              | 13.12                                   | 13.66 | 13.29 | 13.34     | -0.10               | -140                                                  |
| 0.5          | 13.00                                   | 13.53 | 13.02 |           |                     |                                                       |
|              | 13.27                                   | 13.39 | --    | 13.02     | -0.42               | -590                                                  |
| 1            | 13.39                                   | 13.29 | 13.27 |           |                     |                                                       |
|              | 13.64                                   | 13.31 | 13.44 | 13.35     | -0.09               | -130                                                  |
| 2            | 13.33                                   | 13.37 | 13.31 |           |                     |                                                       |
|              | 13.47                                   | 13.47 | 13.27 | 13.29     | -0.15               | -210                                                  |
| Average      | 13.31                                   | 13.44 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.71

Incubation Period = 5.0 hours.

Depth of 1% Incident Light = >3.0 m

Maximum Depth = 3.0 m

Daily Respiration (mg O /m<sup>3</sup>/day) = 0

Daily Respiration (mg O /m<sup>2</sup>/day) = 0

Daily GPP (mg/O /m<sup>2</sup>/day) = 0

Table A5.4.8. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on January 20, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                          |
| 0            | 11.91                                   | 11.81 | 11.85 |           |                     |                                          |
|              | 12.08                                   | 12.20 | --    | 11.85     | -0.27               | -380                                     |
| 0.5          | 11.99                                   | 12.16 | 12.40 |           |                     |                                          |
|              | 12.14                                   | 12.06 | 12.71 | 12.55     | 0.43                | 610                                      |
| 1            | 12.10                                   | 12.16 | 11.75 |           |                     |                                          |
|              | 12.01                                   | 12.12 | --    | 11.75     | -0.37               | -530                                     |
| 2            | 11.89                                   | 12.13 | 12.18 |           |                     |                                          |
|              | 11.91                                   | 12.20 | 11.79 | 11.98     | -0.14               | -200                                     |
| 3            | 11.94                                   | 12.13 | 12.04 |           |                     |                                          |
|              | 11.79                                   | 12.24 | 11.75 | 11.89     | -0.23               | -330                                     |
| Average      | 11.98                                   | 12.12 |       |           |                     |                                          |

Incubation Solar Radiation/Total Solar Radiation = 0.70

Incubation Period = 6.8 hours.

Depth of 1% Incident Light = 7.0 m

Maximum Depth = 10.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 0

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 0

Daily GPP (mg/O<sub>2</sub>/m<sup>2</sup>/day) = 0

Table A5.4.9. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on February 18, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 13.56                                   | 13.37 | 13.40 |           |                     |                                                       |
|              | 13.48                                   | 13.42 | 13.34 |           |                     |                                                       |
|              | 13.42                                   | 13.45 | 13.52 |           |                     |                                                       |
|              | 13.52                                   | --    | 13.47 |           |                     |                                                       |
| Average      | 13.49                                   | 13.41 | 13.43 |           | 0.02                | 20                                                    |

Incubation Solar Radiation/Total Solar Radiation = 0.94

Incubation Period = 7.25 hours.

Depth of 1% Incident Light = 1.4 m

Maximum Depth = 5.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 260

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,300

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 20

Table A5.4.10. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on February 17, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 13.08                                   | 13.13 | 13.10 |           |                     |                                                       |
|              | 13.17                                   | 13.10 | 13.15 | 13.13     | 0.04                | 50                                                    |
| 0.5          | 13.18                                   | 12.85 | 13.08 |           |                     |                                                       |
|              | 13.13                                   | 13.10 | 13.13 | 13.11     | 0.02                | 20                                                    |
| 1            | 13.10                                   | 13.16 | 13.11 |           |                     |                                                       |
|              | 13.15                                   | 13.08 | 13.14 | 13.13     | 0.04                | 50                                                    |
| 2            | 13.17                                   | 13.11 | 13.01 |           |                     |                                                       |
|              | 13.19                                   | 13.13 | 13.15 | 13.08     | -0.01               | -10                                                   |
| 3            | 13.10                                   | 13.15 | 13.16 |           |                     |                                                       |
|              | 13.07                                   | --    | 13.11 | 13.14     | 0.05                | 60                                                    |
| Average      | 13.13                                   | 13.09 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.85

Incubation Period = 6.7 hours.

Depth of 1% Incident Light = 2.6 m

Maximum Depth = 10.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 140

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,400

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 60

Table A5.4.11. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on March 25, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 13.06                                   | 12.85 | 13.86 |           |                     |                                                       |
|              | 12.97                                   | 12.93 | 12.90 |           |                     |                                                       |
| Average      | 13.01                                   | 12.89 | 13.38 |           | 0.49                | 650                                                   |

Incubation Solar Radiation/Total Solar Radiation = 0.75

Incubation Period = 6.1 hours.

Depth of 1% Incident Light = 2.0 m

Maximum Depth = 6.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 470

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 2,800

Daily GPP (mg/O<sub>2</sub>/m<sup>2</sup>/day) = 650



Table A5.4.12. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on March 24, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 12.45                                   | 12.34 | 12.51 |           |                     |                                                       |
|              | 12.46                                   | 12.37 | 12.48 |           |                     |                                                       |
| Average      | 12.45                                   | 12.35 | 12.49 |           | 0.14                | 190                                                   |

Incubation Solar Radiation/Total Solar Radiation = 0.73

Incubation Period = 6.0 hours.

Depth of 1% Incident Light = 1.0 m

Maximum Depth = 10.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 400

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 4,000

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 100

Table A5.4.13. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on April 21, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 12.85                                   | 12.85 | 12.93 |           |                     |                                                       |
|              | 12.84                                   | 13.02 | --    | 12.93     | -0.04               | -50                                                   |
| 0.5          | 12.69                                   | 13.03 | 12.97 |           |                     |                                                       |
|              | 12.72                                   | 12.96 | --    | 12.97     | 0                   | 0                                                     |
| 1            | 12.89                                   | 13.11 | 13.12 |           |                     |                                                       |
|              | 12.70                                   | 12.81 | 12.99 | 13.05     | 0.08                | 100                                                   |
| 2            | 12.85                                   | 12.94 | 12.92 |           |                     |                                                       |
|              | 12.97                                   | 13.01 | 13.00 | 12.96     | -0.01               | -10                                                   |
| Average      | 12.81                                   | 12.97 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.75

Incubation Period = 7.3 hours.

Depth of 1% Incident Light = 2.2 m

Maximum Depth = 3.0 m

Daily Respiration (mg O /m<sup>3</sup>/day) = 0

Daily Respiration (mg O /m<sup>2</sup>/day) = 0

Daily GPP (mg/O /m<sup>2</sup>/day) = 0

Table A5.4.14. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on April 22, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 12.23                                   | 12.61 | 11.74 |           |                     |                                                       |
|              | 12.01                                   | 12.41 | 12.33 | 12.03     | -0.42               | -570                                                  |
| 0.5          | 12.02                                   | 12.03 | 11.73 |           |                     |                                                       |
|              | 12.33                                   | 12.35 | 12.06 | 11.89     | -0.56               | -760                                                  |
| 1            | 12.13                                   | 12.25 | 12.23 |           |                     |                                                       |
|              | 12.37                                   | 12.59 | 11.35 | 11.79     | -0.66               | -890                                                  |
| 2            | 12.06                                   | 12.31 | 11.51 |           |                     |                                                       |
|              | 12.32                                   | 12.82 | 12.44 | 11.97     | -0.48               | -650                                                  |
| 3            | 12.06                                   | 12.35 | 12.49 |           |                     |                                                       |
|              | 12.29                                   | 12.77 | 12.34 | 12.41     | -0.04               | -50                                                   |
| Average      | 12.18                                   | 12.45 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.74

Incubation Period = 6.5 hours.

Depth of 1% Incident Light = 2.8 m

Maximum Depth = 10.5 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 0

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 0

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 0

**Table A5.4.15. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on May 19, 1984.**

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |       |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|-------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark  | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 10.32                                   | 10.27 | 10.50 |           |                     |                                                       |
|              | 10.37                                   | 10.29 | 10.58 |           |                     |                                                       |
|              | 10.30                                   | 10.29 | 10.47 |           |                     |                                                       |
| Average      | 10.33                                   | 10.28 | 10.52 |           | 0.24                | 280                                                   |

Incubation Solar Radiation/Total Solar Radiation = 0.85

Incubation Period = 6.5 hours.

Depth of 1% Incident Light = 2.1 m

Maximum Depth = 4.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 180

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 740

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 300

Table A5.4.16. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on May 20, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 9.84                                    | 9.72 | 9.79  |           |                     |                                                       |
|              | 9.77                                    | --   | 9.93  | 9.86      | 0.01                | 10                                                    |
| 0.5          | 9.82                                    | 9.80 | 10.00 |           |                     |                                                       |
|              | 9.77                                    | 9.98 | 9.95  | 9.98      | 0.13                | 160                                                   |
| 1            | 9.73                                    | 9.87 | 9.98  |           |                     |                                                       |
|              | 9.72                                    | 9.85 | 10.04 | 10.01     | 0.16                | 190                                                   |
| 2            | 9.65                                    | 9.81 | 9.86  |           |                     |                                                       |
|              | 9.80                                    | 9.91 | 9.87  | 9.87      | 0.02                | 20                                                    |
| 3            | 9.80                                    | 9.84 | 9.75  |           |                     |                                                       |
|              | 9.78                                    | 9.86 | 9.86  | 9.82      | -0.03               | -30                                                   |
| Average      | 9.77                                    | 9.85 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.83

Incubation Period = 7.8 hours.

Depth of 1% Incident Light = 2.1 m

Maximum Depth = 10.0 m

Daily Respiration (mg O /m<sup>3</sup>/day) = 0;200\*

Daily Respiration (mg O /m<sup>2</sup>/day) = 0;200\*

Daily GPP (mg/O /m<sup>2</sup>/day) = 230

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\*Calculated from experiments conducted for estimating the contribution of bacteria to plankton respiration.

Table A5.4.17. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on June 22, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 8.59                                    | 8.41 | 8.94  |           |                     |                                                       |
|              | 8.61                                    | 8.51 | 8.94  | 8.94      | 0.41                | 590                                                   |
| 0.5          | 8.58                                    | 8.51 | 9.00  |           |                     |                                                       |
|              | 8.59                                    | 8.52 | 9.01  | 9.01      | 0.48                | 690                                                   |
| 1            | 8.51                                    | 8.49 | 8.82  |           |                     |                                                       |
|              | 8.64                                    | 8.56 | 8.72  | 8.77      | 0.24                | 340                                                   |
| 2            | 8.72                                    | 8.54 | 8.61  |           |                     |                                                       |
|              | 8.60                                    | 8.68 | --    | 8.61      | 0.08                | 110                                                   |
| 3            | 8.48                                    | 8.47 | 8.57  |           |                     |                                                       |
|              | 8.55                                    | 8.57 | --    | 8.57      | 0.04                | 60                                                    |
| Average      | 8.59                                    | 8.53 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.70

Incubation Period = 6.7 hours.

Depth of 1% Incident Light = 1.8 m

Maximum Depth = 3.5 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 210

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 750

Daily GPP (mg/O<sub>2</sub>/m<sup>2</sup>/day) = 880

Table A5.4.18. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on June 23, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 7.86                                    | 7.78 | 7.74  |           |                     |                                                       |
|              | 7.90                                    | 7.51 | 7.72  | 7.73      | 0.05                | 70                                                    |
| 0.5          | 7.95                                    | 7.77 | 7.53  |           |                     |                                                       |
|              | 7.94                                    | --   | --    | 7.53      | -0.15               | -200                                                  |
| 1            | 7.86                                    | 7.60 | 7.76  |           |                     |                                                       |
|              | 7.83                                    | 7.74 | 7.60  | 7.68      | 0                   | 0                                                     |
| 2            | 7.94                                    | 7.73 | 7.70  |           |                     |                                                       |
|              | 7.87                                    | 7.75 | --    | 7.70      | 0.02                | 30                                                    |
| 3            | 7.80                                    | 7.51 | --    |           |                     |                                                       |
|              | 7.90                                    | 7.77 | --    |           |                     |                                                       |
| Average      | 7.89                                    | 7.68 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.76

Incubation Period = 7.3 hours.

Depth of 1% Incident Light = 0.9 m

Maximum Depth = 9.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 690

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 6,200

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 10

**Table A5.4.19. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on July 20, 1983.**

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 7.75                                    | 7.50 | 9.50  |           |                     |                                                       |
|              | 7.76                                    | 7.51 | 9.24  | 9.37      | 1.86                | 2190                                                  |
| 0.5          | 7.72                                    | 7.56 | 9.79  |           |                     |                                                       |
|              | 7.76                                    | 7.50 | 9.93  | 9.86      | 2.35                | 2760                                                  |
| 1            | 7.63                                    | 7.51 | 9.78  |           |                     |                                                       |
|              | 7.69                                    | 7.52 | 9.60  | 9.69      | 2.18                | 2560                                                  |
| 2            | 7.71                                    | 7.52 | 8.36  |           |                     |                                                       |
|              | 7.68                                    | 7.49 | 8.29  | 8.33      | 0.82                | 960                                                   |
| Average      | 7.71                                    | 7.51 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.85

Incubation Period = 7.3 hours.

Depth of 1% Incident Light = 3.0 m

Maximum Depth = 4.0 m

Daily Respiration (mg O /m<sup>3</sup>/day) = 660

Daily Respiration (mg O /m<sup>2</sup>/day) = 2,600

Daily GPP (mg/O /m<sup>2</sup>/day) = 4,600



Table A5.4.20. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on July 21, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |                     | Daily GPP                                |                     | Daily Resp.                              |  |
|--------------|-----------------------------------------|------|-------|---------------------|------------------------------------------|---------------------|------------------------------------------|--|
|              | Initial                                 | Dark | Light | $\bar{I} - \bar{D}$ | (mg O <sub>2</sub> /m <sup>3</sup> /day) | $\bar{I} - \bar{D}$ | (mg O <sub>2</sub> /m <sup>3</sup> /day) |  |
| 0            | 9.12                                    | 7.92 | 12.56 |                     |                                          |                     |                                          |  |
|              | 9.23                                    | 7.88 | 12.88 | 4.82                | 6,260                                    | 1.28                | 3,840                                    |  |
| 0.5          | 9.09                                    | 8.26 | 12.64 |                     |                                          |                     |                                          |  |
|              | 9.01                                    | 8.02 | 11.93 | 4.22                | 5,480                                    | 0.91                | 2,700                                    |  |
| 1            | 9.14                                    | 7.75 | 10.82 |                     |                                          |                     |                                          |  |
|              | 9.23                                    | 7.84 | 10.55 | 2.89                | 3,750                                    | 1.39                | 4,170                                    |  |
| 2            | 8.83                                    | 7.92 | 8.24  |                     |                                          |                     |                                          |  |
|              | 8.97                                    | 7.84 | 8.50  | 0.49                | 640                                      | 1.02                | 3,060                                    |  |
| 3            | 8.34                                    | 7.43 | 7.51  | 0.08                | 100                                      | 0.91                | 2,700                                    |  |

#### Average

Incubation Solar Radiation/Total Solar Radiation = 0.77  
 Incubation Period = 8.0 hours.  
 Depth of 1% Incident Light = 3.0 m  
 Maximum Depth = 10.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 23,000\*

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 7,700

\*Daily Respiration per m<sup>2</sup> was corrected for the large difference in algal biomass between top and bottom: Top Respiration is calculated as the integrated value for a depth = 0.5 maximum depth; Bottom Respiration is calculated as 0.5 (max. depth) (mg O<sub>2</sub>/m<sup>3</sup>/day at 3m) X (mg Chl a/m<sup>3</sup> at Bottom/mg Chl a/m<sup>3</sup> at Top); the sum of Top Respiration and Bottom Respiration is the total respiration.

Table A5.4.21. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on August 24, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 7.60                                    | 7.43 | 9.75  |           |                     |                                                       |
|              | 7.77                                    | 7.47 | 9.64  | 9.70      | 2.22                | 2610                                                  |
| 0.5          | 7.65                                    | 7.40 | 9.69  |           |                     |                                                       |
|              | 7.82                                    | 7.49 | --    | 9.69      | 2.21                | 2600                                                  |
| 1            | 7.67                                    | 7.50 | 9.08  |           |                     |                                                       |
|              | 7.82                                    | --   | 9.26  | 9.17      | 1.69                | 1990                                                  |
| 2            | 7.72                                    | 7.53 | 7.98  |           |                     |                                                       |
|              | 7.71                                    | 7.52 | 8.03  | 8.01      | 0.53                | 620                                                   |
| Average      | 7.72                                    | 7.48 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.85

Incubation Period = 7.0 hours.

Depth of 1% Incident Light = 3.3 m

Maximum Depth = 3.5 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 820

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 2,900

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 7,100

Table A5.4.22. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on August 25, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 5.11                                    | 5.11 | 6.10  |           |                     |                                                       |
|              | 5.21                                    | 5.12 | 6.20  | 6.15      | 1.09                | 1330                                                  |
| 0.5          | 5.23                                    | 5.10 | 6.11  |           |                     |                                                       |
|              | 5.29                                    | --   | 5.93  | 6.02      | 0.96                | 1200                                                  |
| 1            | 5.25                                    | 5.09 | 5.84  |           |                     |                                                       |
|              | 5.22                                    | 5.08 | 5.63  | 5.74      | 0.68                | 830                                                   |
| 2            | 5.21                                    | 5.04 | 5.18  |           |                     |                                                       |
|              | 5.13                                    | 5.01 | 5.15  | 5.17      | 0.11                | 130                                                   |
| 3            | 5.08                                    | 5.00 | 5.07  |           |                     |                                                       |
|              | 5.13                                    | 5.03 | 5.06  | 5.07      | 0.01                | 10                                                    |
| Average      | 5.19                                    | 5.06 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.82

Incubation Period = 6.5 hours.

Depth of 1% Incident Light = 2.8 m

Maximum Depth = 10.0 m

Daily Respiration (mg O /m<sup>3</sup>/day) = 480

Daily Respiration (mg O /m<sup>2</sup>/day) = 3,500x

Daily GPP (mg/O /m<sup>2</sup>/day) = 1,600

xDaily Respiration per m<sup>2</sup> was corrected for the large difference in algal biomass between Top and Bottom: Top Respiration is calculated as the integrated value for a depth = 0.5 maximum depth; Bottom Respiration is calculated as 0.5 (max. depth)(mg O /m<sup>3</sup>/day at 3 m) X (mg Chl a/m<sup>3</sup> at Bottom/mg Chl a/m<sup>3</sup> at Top); the sum of Top Respiration and Bottom Respiration is the total respiration.

**Table A5.4.23. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Upper Winfield on September 14, 1983.**

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 8.46                                    | 8.01 | 10.37 |           |                     |                                                       |
|              | 8.70                                    | 8.06 | 10.28 | 10.42     | 2.43                | 2790                                                  |
| 0.5          | 8.59                                    | 8.00 | 10.70 |           |                     |                                                       |
|              | 8.22                                    | 8.00 | 9.93  | 10.32     | 2.33                | 2680                                                  |
| 1            | 5.59                                    | 7.96 | 9.64  |           |                     |                                                       |
|              | 8.20                                    | 7.93 | 9.07  | 9.35      | 1.36                | 1560                                                  |
| Average      | 8.46                                    | 7.99 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.87

Incubation Period = 7.5 hours.

Depth of 1% Incident Light = 2.0 m

Maximum Depth = 3.0 m

Daily Respiration (mg O<sub>2</sub>/m<sup>3</sup>/day) = 1,500

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 4,500

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 3,100

Table A5.4.24. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the plankton of Lower Winfield on September 15, 1983.

| Depth<br>(m) | Dissolved Oxygen (mg O <sub>2</sub> /l) |      |       |           |                     | Daily GPP<br>(mg O <sub>2</sub> /m <sup>3</sup> /day) |
|--------------|-----------------------------------------|------|-------|-----------|---------------------|-------------------------------------------------------|
|              | Initial                                 | Dark | Light | $\bar{L}$ | $\bar{L} - \bar{D}$ |                                                       |
| 0            | 6.12                                    | 5.89 | 6.69  |           |                     |                                                       |
|              | 6.07                                    | 5.64 | 7.38  | 6.54      | 0.94                | 1100                                                  |
| 0.5          | 6.21                                    | 5.35 | 6.78  |           |                     |                                                       |
|              | 6.10                                    | 5.62 | 6.76  | 6.77      | 1.17                | 1430                                                  |
| 1            | 6.09                                    | 5.76 | 6.44  |           |                     |                                                       |
|              | 6.11                                    | --   | 6.63  | 6.54      | 0.94                | 1100                                                  |
| 2            | 6.03                                    | 5.44 | 6.18  |           |                     |                                                       |
|              | 6.17                                    | 5.83 | 6.44  | 6.31      | 0.71                | 870                                                   |
| 3            | 6.08                                    | 5.55 | 5.76  |           |                     |                                                       |
|              | 6.03                                    | 5.35 | 5.83  | 5.80      | 0.20                | 240                                                   |
| Average      | 6.10                                    | 5.60 |       |           |                     |                                                       |

Incubation Solar Radiation/Total Solar Radiation = 0.82

Incubation Period = 5.9 hours.

Depth of 1% Incident Light = 3.1 m

Maximum Depth = 11.0 m

Daily Respiration (mg O /m<sup>3</sup>/day) = 2,000

Daily Respiration (mg O /m<sup>2</sup>/day) = 18,000\*

Daily GPP (mg/O /m<sup>2</sup>/day) = 2,900

\*Daily Respiration per m<sup>2</sup> was corrected for the large difference in algal biomass between Top and Bottom: Top Respiration is calculated as the integrated value for a depth = 0.5 maximum depth; Bottom Respiration is calculated as 0.5 (max. depth)(mg O /m<sup>3</sup>/day at 3 m) X (mg Chl a/m<sup>3</sup> at Bottom/mg Chl a/m<sup>3</sup> at Top); the sum of Top Respiration and Bottom Respiration is the total respiration.

**Table A6.2.1. Community composition of periphyton (percent of total cell numbers in each class), November 18-19, 1982. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; UW Nat Sub = stone; LW Nat Sub = wood. Blank = Not Sampled.**

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 0.0     | 0.0     | 17.7    | 1.2     |
| Chrysophyceae     | 0.0     | 0.0     | 0.0     | 0.0     |
| Bacillariophyceae | 96.9    | 34.2    | 70.8    | 1.4     |
| Cyanophyceae      | 3.1     | 63.7    | 11.5    | 97.4    |

**Table A6.2.2. Community composition of periphyton (percent of total cell numbers in each class), December 16-17, 1982. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; LW Nat Sub = wood. Blank = Not Sampled.**

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 0.0     |         | 0.0     | 0.7     |
| Chrysophyceae     | 0.0     |         | 0.0     | 0.0     |
| Bacillariophyceae | 59.2    |         | 12.0    | 13.1    |
| Cyanophyceae      | 40.8    |         | 88.0    | 26.2    |

**Table A6.2.3. Community composition of periphyton (percent of total cell numbers in each class), January 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; UW Nat Sub = stone; Blank = Not Sampled.**

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     |         | 0.0     | 0.0     |         |
| Chrysophyceae     |         | 0.0     | 0.0     |         |
| Bacillariophyceae |         | 4.1     | 80.8    |         |
| Cyanophyceae      |         | 95.9    | 19.2    |         |



Table A6.2.4. Community composition of periphyton (percent of total cell numbers in each class), February 17-18, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; LW Nat Sub = wood. Blank = Not Sampled.

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 0.0     |         | 0.0     | 0.0     |
| Chrysophyceae     | 0.0     |         | 0.0     | 0.0     |
| Bacillariophyceae | 66.2    |         | 67.5    | 46.7    |
| Cyanophyceae      | 33.8    |         | 32.5    | 53.3    |

**Table A6.2.5. Community composition of periphyton (percent of total cell numbers in each class), March 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; Blank = Not Sampled.**

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 0.0     |         | 0.0     |         |
| Chrysophyceae     | 1.0     |         | 41.5    |         |
| Bacillariophyceae | 63.8    |         | 58.5    |         |
| Cyanophyceae      | 35.2    |         | 0.0     |         |

Table A6.2.6. Community composition of periphyton (percent of total cell numbers in each class), April 21-22, 1983 UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; Blank = Not Sampled.

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 0.0     |         | 0.0     |         |
| Chrysophyceae     | 1.8     |         | 0.0     |         |
| Bacillariophyceae | 98.2    |         | 88.2    |         |
| Cyanophyceae      | 0.0     |         | 11.8    |         |

**Table A6.2.7. Community composition of periphyton (percent of total cell numbers in each class), May 19-20, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; Blank = Not Sampled.**

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     |         |         | 0.0     |         |
| Chrysophyceae     |         |         | 0.0     |         |
| Bacillariophyceae |         |         | 90.8    |         |
| Cyanophyceae      |         |         | 9.2     |         |

Table A6.2.8. Community composition of periphyton (percent of total cell numbers in each class), June 22-23, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; UW Nat Sub = stone; LW Nat Sub = stone. Blank = Not Sampled.

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 0.0     | 0.0     | 0.0     | 0.0     |
| Chrysophyceae     | 0.0     | 0.0     | 0.0     | 0.0     |
| Bacillariophyceae | 75.3    | 22.1    | 38.7    | 26.6    |
| Cyanophyceae      | 24.7    | 77.9    | 61.3    | 73.4    |

Table A6.2.9. Community composition of periphyton (percent of total cell numbers in each class), July 20-21, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; Blank = Not Sampled.

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 3.7     |         | 0.0     |         |
| Chrysophyceae     | 0.0     |         | 0.0     |         |
| Bacillariophyceae | 32.7    |         | 18.7    |         |
| Cyanophyceae      | 63.6    |         | 81.3    |         |

Table A6.2.10. Community composition of periphyton (percent of total cell numbers in each class), August 24-25, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; UW Nat Sub = stone; LW Nat Sub = stone. Blank = Not Sampled.

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     |         | 0.0     | 0.0     | 0.0     |
| Chrysophyceae     |         | 0.0     | 0.0     | 0.0     |
| Bacillariophyceae |         | 0.8     | 12.3    | 2.0     |
| Cyanophyceae      |         | 99.2    | 87.7    | 98.0    |

**Table A6.2.11. Community composition of periphyton (percent of total cell numbers in each class), September 14-15, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; Blank = Not Sampled.**

| Class             | <u>UW</u> |         | <u>LW</u> |         |
|-------------------|-----------|---------|-----------|---------|
|                   | Art Sub   | Nat Sub | Art Sub   | Nat Sub |
| Chlorophyceae     |           | 0.0     |           |         |
| Chrysophyceae     |           | 0.0     |           |         |
| Bacillariophyceae |           | 17.5    |           |         |
| Cyanophyceae      |           | 82.5    |           |         |



able A6.2.12. Community composition of periphyton (percent of total cell numbers in each class), October 18-19, 1983. UW = Upper Winfield; LW = Lower Winfield. Art Sub = glass slide; Blank = Not Sampled.

| Class             | UW      |         | LW      |         |
|-------------------|---------|---------|---------|---------|
|                   | Art Sub | Nat Sub | Art Sub | Nat Sub |
| Chlorophyceae     | 0.0     |         | 5.1     |         |
| Chrysophyceae     | 0.0     |         | 0.0     |         |
| Bacillariophyceae | 62.0    |         | 33.3    |         |
| Cyanophyceae      | 38.0    |         | 61.6    |         |

**Table A6.3.1. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on November 18, 1982.**

| Treatment                                                                                                                                                                                                                                                                                  | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------|---------------------|---------------------|
|                                                                                                                                                                                                                                                                                            | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial                                                                                                                                                                                                                                                                                    | 7.86<br>--                              | 7.86    |                     |                     |
| Light                                                                                                                                                                                                                                                                                      | 12.40<br>12.18                          | 12.29   |                     |                     |
| Dark                                                                                                                                                                                                                                                                                       | 4.99<br>5.16                            | 5.07    | 7.22                | 2.79                |
| Incubation Solar Radiation/Total Solar Radiation = 0.53<br>Incubation Period = 4.0 hours.<br>Area of Artificial Substrate = 0.00357 m <sup>2</sup><br><br>Daily Respiration (mg O <sub>2</sub> /m <sup>2</sup> /day) = 1,410<br>Daily GPP (mg O <sub>2</sub> /m <sup>2</sup> /day) = 1,140 |                                         |         |                     |                     |

**Table A6.3.2. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Upper Winfield on November 19, 1982.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 8.68<br>--                              | 8.68    |                     |                     |
| Light     | 14.41<br>13.55                          | 13.98   |                     |                     |
| Dark      | 7.55<br>7.59                            | 7.57    | 6.41                | 1.11                |

Incubation Solar Radiation/Total Solar Radiation = 0.73  
Incubation Period = 4.5 hours.  
Area of Artificial Substrate = 0.00352 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 500  
Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 750

**Table A6.3.3. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on December 16, 1982.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 9.75                                    |         |                     |                     |
| Light     | 9.98                                    |         |                     |                     |
| Dark      | 9.71                                    |         | 0.27                | 0.04                |

Incubation Solar Radiation/Total Solar Radiation = 0.42

Incubation Period = 4.0 hours.

Area of Artificial Substrate = 0.00222 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 30

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day)= 90

Table A6.3.4. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Upper Winfield on December 17, 1982.

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 8.95<br>--                              | 8.95    |                     |                     |
| Light     | 7.66<br>7.27                            | 7.47    |                     |                     |
| Dark      | 7.34<br>--                              | 7.34    | 0.13                | 1.61                |

Incubation Solar Radiation/Total Solar Radiation = 0.46

Incubation Period = 3.25 hours.

Area of Artificial Substrate = 0.00231 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,540

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 40

**Table A6.3.5. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on January 20, 1983.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 8.84                                    |         |                     |                     |
|           | 9.02                                    | 8.93    |                     |                     |
| Light     | 8.98                                    |         |                     |                     |
|           | 8.41                                    | 8.70    |                     |                     |
| Dark      | 8.78                                    |         |                     |                     |
|           | --                                      | 8.78    | -0.08               | 0.15                |

Incubation Solar Radiation/Total Solar Radiation = 0.65

Incubation Period = 6.50 hours.

Area of Artificial Substrate = 0.00223 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 70

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 0

Table A6.3.6. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on February 17, 1983.

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 12.86                                   |         |                     |                     |
|           | 12.84                                   | 12.85   |                     |                     |
| Light     | 13.62                                   |         |                     |                     |
|           | 13.66                                   | 13.64   |                     |                     |
| Dark      | 12.75                                   |         |                     |                     |
|           | 12.73                                   | 12.74   | 0.90                | 0.11                |

Incubation Solar Radiation/Total Solar Radiation = 0.87

Incubation Period = 6.8 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 60

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 170

**Table A6.3.7. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on March 24, 1983.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 11.59                                   |         |                     |                     |
|           | 11.56                                   | 11.57   |                     |                     |
| Light     | 11.91                                   |         |                     |                     |
|           | 11.93                                   | 11.92   |                     |                     |
| Dark      | 11.44                                   |         |                     |                     |
|           | 11.48                                   | 11.46   | 0.46                | 0.11                |

Incubation Solar Radiation/Total Solar Radiation = 0.73

Incubation Period = 6.0 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 70

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day)= 100



Table A6.3.8. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Upper Winfield on March 25, 1983.

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 12.49                                   |         |                     |                     |
| Light     | 12.67                                   |         |                     |                     |
| Dark      | 12.43                                   |         | 0.24                | 0.06                |

Incubation Solar Radiation/Total Solar Radiation = 0.75

Incubation Period = 6.1 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 40

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 50

**Table A6.3.9. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Upper Winfield on April 21, 1983.**

| Treatment                                                                                                                                                                                                                                                                                  | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------|---------------------|---------------------|
|                                                                                                                                                                                                                                                                                            | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial                                                                                                                                                                                                                                                                                    | 11.30                                   |         |                     |                     |
|                                                                                                                                                                                                                                                                                            | 11.79                                   | 11.54   |                     |                     |
| Light                                                                                                                                                                                                                                                                                      | 18.44                                   |         |                     |                     |
|                                                                                                                                                                                                                                                                                            | 18.21                                   | 18.33   |                     |                     |
| Dark                                                                                                                                                                                                                                                                                       | 9.21                                    |         |                     |                     |
|                                                                                                                                                                                                                                                                                            | --                                      | 9.21    | 9.12                | 2.33                |
| Incubation Solar Radiation/Total Solar Radiation = 0.75<br>Incubation Period = 7.3 hours.<br>Area of Artificial Substrate = 0.00183 m <sup>2</sup><br><br>Daily Respiration (mg O <sub>2</sub> /m <sup>2</sup> /day) = 1,260<br>Daily GPP (mg O <sub>2</sub> /m <sup>2</sup> /day) = 1,990 |                                         |         |                     |                     |

Table A6.3.10. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on April 22, 1983.

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 12.00<br>--                             | 12.00   |                     |                     |
| Light     | 18.82<br>14.98                          | 16.90   |                     |                     |
| Dark      | 9.94<br>10.05                           | 9.99    | 6.91                | 2.01                |

Incubation Solar Radiation/Total Solar Radiation = 0.74

Incubation Period = 6.5 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,210

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,530

**Table A6.3.11. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on May 20, 1983.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 9.38                                    | 9.40    |                     |                     |
|           | 9.43                                    |         |                     |                     |
| Light     | 13.27                                   | 13.16   |                     |                     |
|           | 13.05                                   |         |                     |                     |
| Dark      | 8.92                                    | 8.88    | 4.28                | 0.52                |
|           | 8.85                                    |         |                     |                     |

Incubation Solar Radiation/Total Solar Radiation = 0.83

Incubation Period = 7.8 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 260

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 850

Table 6.3.12. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Upper Winfield on June 22, 1983.

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 8.32                                    |         |                     |                     |
|           | 8.32                                    | 8.32    |                     |                     |
| Light     | 13.29                                   |         |                     |                     |
|           | 13.80                                   | 13.54   |                     |                     |
| Dark      | 7.45                                    |         |                     |                     |
|           | 7.50                                    | 7.47    | 6.07                | 0.85                |

Incubation Solar Radiation/Total Solar Radiation = 0.70

Incubation Period = 6.7 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 500

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,420

**Table A6.3.13. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on June 23, 1983.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 7.51                                    | 7.51    |                     |                     |
|           | 7.52                                    |         |                     |                     |
| Light     | 14.74                                   | 14.75   |                     |                     |
|           | 14.75                                   |         |                     |                     |
| Dark      | 5.99                                    | 6.17    | 8.58                | 1.34                |
|           | 6.34                                    |         |                     |                     |

Incubation Solar Radiation/Total Solar Radiation = 0.76

Incubation Period = 7.3 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 720

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,850

Table A6.3.14. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Upper Winfield on July 20, 1983.

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 7.60                                    |         |                     |                     |
|           | 7.64                                    | 7.62    |                     |                     |
| Light     | 10.55                                   |         |                     |                     |
|           | 12.27                                   | 11.41   |                     |                     |
| Dark      | 6.02                                    |         |                     |                     |
|           | 6.22                                    | 6.12    | 5.29                | 1.50                |

Incubation Solar Radiation/Total Solar Radiation = 0.85

Incubation Period = 7.3 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 810

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,020

**Table A6.3.15. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on July 21, 1983.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 7.95                                    |         |                     |                     |
|           | 8.11                                    | 8.03    |                     |                     |
| Light     | 16.48                                   |         |                     |                     |
|           | --                                      | 16.48   |                     |                     |
| Dark      | 6.66                                    |         |                     |                     |
|           | 6.80                                    | 6.73    | 9.75                | 1.30                |

Incubation Solar Radiation/Total Solar Radiation = 0.77

Incubation Period = 8.0 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 640

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 2,080



**Table A6.3.16. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Lower Winfield on August 25, 1983.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 5.68<br>5.75                            | 5.71    |                     |                     |
| Light     | 12.77<br>10.89                          | 11.83   |                     |                     |
| Dark      | 2.97<br>3.71                            | 3.34    | 8.49                | 2.37                |

Incubation Solar Radiation/Total Solar Radiation = 0.92

Incubation Period = 8.3 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,120

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 1,510

**Table A6.3.17. Dissolved oxygen values from Light-Dark Bottle experiments and calculations of gross primary production and respiration for the periphyton of Upper Winfield on September 14, 1983.**

| Treatment | Dissolved Oxygen (mg O <sub>2</sub> /l) |         |                     |                     |
|-----------|-----------------------------------------|---------|---------------------|---------------------|
|           | Reps                                    | Average | $\bar{L} - \bar{D}$ | $\bar{I} - \bar{D}$ |
| Initial   | 8.53                                    |         |                     |                     |
|           | 8.61                                    | 8.57    |                     |                     |
| Light     | 9.62                                    |         |                     |                     |
|           | 9.47                                    | 9.55    |                     |                     |
| Dark      | 7.50                                    |         |                     |                     |
|           | 7.56                                    | 7.53    | 2.02                | 1.04                |

Incubation Solar Radiation/Total Solar Radiation = 0.87

Incubation Period = 7.5 hours.

Area of Artificial Substrate = 0.00183 m<sup>2</sup>

Daily Respiration (mg O<sub>2</sub>/m<sup>2</sup>/day) = 550

Daily GPP (mg O<sub>2</sub>/m<sup>2</sup>/day) = 380

Table A7.1.1. List of zooplankton and benthic microcrustaceans collected in the Winfield Pool of the Kanawha River.

---

Phylum Ciliophora

Class Gymnostomea

Order Haptorida

Family Didinidae  
Didinium nasutum

Class Peritrichea

Order Sessilida

Family Epistylididae  
Epistylis sp.

Family Vorticellidae  
Vorticella sp.

Class Hypotrichea

Order Stichotrichida

Family Holostichidae  
Uroleptus sp.

Phylum Mastigophora

Class Protomastigea

Order Choanomastigida

Order Bodonida

Family Bodonidae  
Bodo sp.

Phylum Sarcodina

Class Cyclea

Order Granulopodida

Family Diffugiidae  
Diffugia sp.

**Class Filoreticulosea**

**Order Filida**

**Family Eughyphidae**  
**Euglypha sp.**

**Family Gromiidae**  
**Chlamydophrys sp.**

**Class Sarcodina**

**Order Heliozoida**

**Family Actinophrydae**  
**Echinosphaerium eichhorni**

**Order Proteomyxida**

**Family Vapyrellidae**  
**Nuclearia simplex**

**Phylum Nematoda**

**Phylum Rotatoria**

**Class Bdelloidea (Digononta)**

**Order Bdelloida**

**Family Philodinidae**  
**Philodina tranquilla (Wulfert, 1942)**  
**Philodina sp.**

**Class Monogononta**

**Order Collothecaceae**

**Family Collothecidae**  
**Collotheca mutabilis (Hudson, 1885)**  
**Collotheca pelegica (Rousselet, 1893)**

**Order Flosculariaceae**

**Family Conochilidae**  
**Conochiloides dossuarius (Hudson, 1885)**  
**Conochilus unicornis (Rousselet, 1892)**

**Family Hexarthridae**  
**Hexarthra mira (Hudson, 1871)**

**Family Testudinellidae**  
**Filinia longiseta (Ehrbg., 1834)**  
**Filinia terminalis (Plate, 1886)**

**Order Ploima**

**Family Asplanchnidae**

*Asplanchna priodonta* (Gosse, 1850)  
*Asplanchna sieboldi* (Leydig, 1854)

**Family Brachionidae**

**Subfamily Brachioninae**

*Brachionus angularis* (Gosse, 1851)  
*Brachionus bidentata* (Anderson, 1899)  
*Brachionus budapestinensis* (Daday, 1894)  
*Brachionus calyciflorus* (Palas, 1766)  
*Brachionus caudatus* (Barrois & Daday, 1894)  
*Brachionus caudatus* var *personatus*  
(Ahlstrom, 1940)  
*Brachionus havanaensis* (Rousselet, 1911)  
*Brachionus quadridentatus* (Hermann, 1783)  
*Brachionus rubens* (Ehrbg., 1938)  
*Brachionus urceolaris* (Miiller, 1773)  
*Euchlanis alata* (Voronkov, 1911)  
*Euchlanis* sp.  
*Kellicottia bostoniensis* (Rousselet, 1908)  
*Keratella americana* (Carlin, 1943)  
*Keratella cochlearis cochlearis* (Gosse, 1851)  
*Keratella cochlearis* f. *tecta* (Gosse, 1851)  
*Keratella earlinae* (Ahlstrom, 1943)  
*Keratella valga* (Ehrbg.)  
*Notholca* sp.  
*Platyias patulus* (Muller, 1786)

**Subfamily Colurinae**

*Colurella gastrocantha* (Hauer, 1924)  
*Lepadella ovalis* (Muller, 1786)  
*Lepadella patella* (Muller, 1773)  
*Lepadella* sp.

**Family Dicranophoridae**

*Dicranophorus* sp.

**Family Lecanidae**

*Lecane flexilis* (Gosse, 1886)  
*Lecane* sp.  
*Monostyla bulla* (Gosse, 1886)  
*Monostyla copeis* (Harring and Myers, 1926)  
*Monostyla lunaris* (Ehrbg., 1832)  
*Monostyla* sp.

**Family Notommatidae**

*Cephalodella gibba* (Ehrbg., 1832)  
*Cephalodella mineri* (Meyers, 1926)

Family Synchaetidae  
Ploesoma truncatum (Levander, 1894)  
Polyarthra dolichoptera (Idelson, 1925)  
Polyarthra major (Burckhardt, 1900)  
Polyarthra remata (Skorikov, 1896)  
Polyarthra vulgaris (Carlin, 1943)  
Synchaeta stylata (Wierzejski, 1893)  
Synchaeta sp.

Family Trichocercidae  
Trichocerca agnata (Wulfert, 1939)  
Trichocerca cylindrica (Imhof, 1891)  
Trichocerca similis (Wierzekski, 1893)

Phylum Tardigrada

Phylum Arthropoda

Class Crustacea

Subclass Branchiopoda

Order Cladocera

Superfamily Chydoroidea

Family Bosminidae  
Bosmina coregoni (Baird, 1857)  
Bosmina longirostris (O.F.Muller, 1785)  
Bosminopsis deitersi (Richard, 1895)

Family Chydoridae  
Alona guttata (Sars, 1862)  
Alona intermedia (Sars, 1862)  
Alona quadrangularis (O.F.Muller, 1785)  
Alona rectangula (Sars, 1861)  
Chydorus sphaericus (O.F.Muller, 1785)  
Plueroxus uncinatus (Baird, 1850)

Family Daphnidae  
Ceriodaphnia reticulata (Jurine, 1820)  
Ceriodaphnia sp.  
Daphnia sp.  
Scapholeberis kingi (Sars, 1903)  
Simocephalus expinosus (Koch, 1841)

Family Macrothricidae  
Ilyocryptus spinifer (Herrick, 1884)

Family Moinidae  
Moina affinis (Birge, 1893)  
Moina miccura (Kurz, 1874)

Superfamily Sidoidea

**Family Sididae**  
**Sida crystallina (O.F.Muller, 1785)**

**Subclass Ostracoda**

**Subclass Copepoda**

**Order Eucopepoda**

**Suborder Cyclopoida**

**Suborder Harpacticoida**  
**(Copepodids and nauplii are immature copepods**  
**of uncertain suborder)**

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Table A7.2.1. Community composition of zooplankton, Upper Winfield, October 19, 1982. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                 | Top          |      | Bot           |      |
|----------------------|--------------|------|---------------|------|
|                      | Density      | %    | Density       | %    |
| <b>CLADOCERA</b>     |              |      |               |      |
| Alona quadrangularis | 0            |      | 0.1           |      |
| Basmina coregoni     | <u>0.1</u>   |      | <u>0</u>      |      |
| SUBTOTAL             | 0.1          | <0.1 | 0.1           | <0.1 |
| <b>PROTOZOA</b>      |              |      |               |      |
| Chlamydomphrys sp.   | 220.0        |      | 140.0         |      |
| Diffflugia sp.       | 0.5          |      | 0.5           |      |
| Nuclearia simplex    | <u>720.0</u> |      | <u>3900.0</u> |      |
| SUBTOTAL             | 940.5        | 99.9 | 4040.5        | 99.9 |
| TOTAL                | 940.6        |      | 4040.6        |      |



Table A7.2.2. Community composition of zooplankton, Lower Winfield, October 18, 1982. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top        |      | Bot      |      |
|---------------------------------|------------|------|----------|------|
|                                 | Density    | %    | Density  | %    |
| <b>ROTIFERA</b>                 |            |      |          |      |
| Keratella cochlearis cochlearis | 1.6        |      | 2.1      |      |
| Lecane sp.                      | 0          |      | 0.1      |      |
| Lepadella sp.                   | 0.4        |      | 0.1      |      |
| Polyarthra major                | 0          |      | 0.3      |      |
| Synchaeta stylata               | 0.4        |      | 0.1      |      |
| Synchaeta sp.                   | <u>0.2</u> |      | <u>0</u> |      |
| SUBTOTAL                        | 2.6        | .1   | 2.7      | .2   |
| <b>CLADOCERA</b>                |            |      |          |      |
| Ilyocryptus spinifer            | <u>0.2</u> |      | <u>0</u> |      |
| SUBTOTAL                        | 0.2        | < .1 | 0        |      |
| <b>COPEPODA</b>                 |            |      |          |      |
| Nauplii                         | <u>0.4</u> |      | <u>0</u> |      |
| SUBTOTAL                        | 0.4        | < .1 | 0        |      |
| <b>PROTOZOA</b>                 |            |      |          |      |
| Chlamydomonas sp.               | 140.0      |      | 220.0    |      |
| Diffugia sp.                    | 1.0        |      | 4.3      |      |
| Nuclearia simplex               | 2530.0     |      | 1520.0   |      |
| SUBTOTAL                        | 2671.0     | 99.8 | 1744.3   | 99.8 |
| TOTAL                           | 2674.2     |      | 1747.0   |      |

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Table A7.2.3. Community composition of zooplankton, Upper Winfield, November 19, 1982. Top = 1m; Bot = 3.5m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top          |      | Bot          |      |
|---------------------------------|--------------|------|--------------|------|
|                                 | Density      | %    | Density      | %    |
| <b>ROTIFERA</b>                 |              |      |              |      |
| Cephalodella sp                 | 0.1          |      | 0.1          |      |
| Keratella cochlearis cochlearis | 0.6          |      | 0            |      |
| Philodina sp.                   | <u>0</u>     |      | <u>0.1</u>   |      |
| SUBTOTAL                        | .7           | < .1 | .2           | < .1 |
| <b>PROTOZOA</b>                 |              |      |              |      |
| Bodo sp.                        | 3000.0       |      | 2200.0       |      |
| Chlamydomorphys sp.             | 360.0        |      | 140.0        |      |
| Diffugia sp.                    | 0            |      | 0.6          |      |
| Nuclearia simplex               | <u>500.0</u> |      | <u>500.0</u> |      |
| SUBTOTAL                        | 3860         | 99.9 | 2840.6       | 99.9 |
| TOTAL                           | 3860.7       |      | 2840.8       |      |

Table A7.2.4. Community composition of zooplankton, Lower Winfield, November 18, 1982. Top = 1m; Bot = 8m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top          |                | Bot          |             |
|---------------------------------|--------------|----------------|--------------|-------------|
|                                 | Density      | %              | Density      | %           |
| <b>ROTIFERA</b>                 |              |                |              |             |
| Keratella cochlearis cochlearis | 0.1          |                | 0.5          |             |
| Lecane sp.                      | 0            |                | 0.1          |             |
| Monostyla lunaris               | 0            |                | 0.1          |             |
| Philadina sp.                   | 0.1          |                | 1.5          |             |
| Tricocerca agnata               | <u>0</u>     |                | <u>0.3</u>   |             |
| <b>SUBTOTAL</b>                 | <b>.2</b>    | <b>&lt; .1</b> | <b>2.5</b>   | <b>.3</b>   |
| <b>PROTOZOA</b>                 |              |                |              |             |
| Bodo sp.                        | 100.0        |                | 360.0        |             |
| Diffugia sp.                    | 0.1          |                | 0.9          |             |
| Nuclearia simplex               | <u>650.0</u> |                | <u>360.0</u> |             |
| <b>SUBTOTAL</b>                 | <b>750.1</b> | <b>99.9</b>    | <b>720.9</b> | <b>99.9</b> |
| <b>TOTAL</b>                    | <b>750.3</b> |                | <b>723.4</b> |             |

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Table A7.2.5. Community composition of zooplankton, Upper Gallipolis November 11, 1982. Top = 1m; Bot = 2m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Keradella cochlearis cochlearis | 0.2     |      | 0.2     |      |
| Lecane sp.                      | 0.2     |      | 0.3     |      |
| Lepadella sp.                   | 0       |      | 0.2     |      |
| Philodina sp.                   | 0.2     |      | 1.1     |      |
| Synchaeta sp.                   | 0.2     |      | 0       |      |
| SUBTOTAL                        | .8      | < .1 | 1.8     | .1   |
| <b>COPEPODA</b>                 |         |      |         |      |
| Nauplii                         | 0.2     |      | 0       |      |
| SUBTOTAL                        | .2      | < .1 |         |      |
| <b>PROTOZOA</b>                 |         |      |         |      |
| Bodo sp.                        | 2600.0  |      | 2600.0  |      |
| Chlamydophrys sp.               | 30.0    |      | 0       |      |
| "Ciliate"                       | 0.5     |      | 0       |      |
| Diffugia sp.                    | 0.9     |      | 0.8     |      |
| Nuclearia simplex               | 180.0   |      | 290.0   |      |
| SUBTOTAL                        | 2811.4  | 99.9 | 2890.8  | 99.9 |
| TOTAL                           | 2812.4  |      | 2892.6  |      |

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on .  
 Table A7.2.6. Community composition of zooplankton, Upper Winfield, December 17, 1982. Top = 1m; Bot = 5m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa              | Top           |      | Bot           |      |
|-------------------|---------------|------|---------------|------|
|                   | Density       | %    | Density       | %    |
| <b>ROTIFERA</b>   |               |      |               |      |
| Cephalodella sp.  | 0.5           |      | 0             |      |
| Lecane sp.        | 0.9           |      | 0.9           |      |
| Lepadella sp.     | 0.5           |      | 0             |      |
| Notholca sp.      | <u>0</u>      |      | <u>0.5</u>    |      |
| SUBTOTAL          | 1.9           | .1   | 1.4           | < .1 |
| <b>OSTRACODA</b>  |               |      |               |      |
|                   | 0             |      | 0.5           |      |
| SUBTOTAL          |               | -    | 0.5           | < .1 |
| <b>PROTOZOA</b>   |               |      |               |      |
| Diffflugia sp.    | 1.3           |      | 0.9           |      |
| Nuclearia simplex | <u>1800.0</u> |      | <u>4260.0</u> |      |
| SUBTOTAL          | 1801.3        | 99.9 | 4260.9        | 99.9 |
| TOTAL             | 1803.2        |      | 4262.8        |      |

Table A7.2.7. Community composition of zooplankton, Lower Winfield, December 16, 1982. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top           |      | Bot          |      |
|---------------------------------|---------------|------|--------------|------|
|                                 | Density       | %    | Density      | %    |
| <b>ROTIFERA</b>                 |               |      |              |      |
| Keratella cochlearis cochlearis | 0             |      | 0.1          |      |
| Lecane sp.                      | 0             |      | 0.1          |      |
| Lepadella sp.                   | 0.1           |      | 0.1          |      |
| Notholca sp.                    | 0.1           |      | 0            |      |
| Philodina sp.                   | 0             |      | 0.1          |      |
| Synchaeta stylata               | <u>0.1</u>    |      | <u>0</u>     |      |
| SUBTOTAL                        | .3            | < .1 | .4           | < .1 |
| <b>PROTOZOA</b>                 |               |      |              |      |
| Diffugia sp.                    | 0.5           |      | 0.5          |      |
| Nuclearia simplex               | <u>1190.0</u> |      | <u>900.0</u> |      |
| SUBTOTAL                        | 1190.5        | 99.9 | 900.5        | 99.9 |
| TOTAL                           | 1190.8        |      | 900.9        |      |

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Table A7.2.8. Community composition of zooplankton, Upper Winfield, January 21, 1983. Top = 1m; Bot = 2m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa              | Top     |      | Bot     |      |
|-------------------|---------|------|---------|------|
|                   | Density | %    | Density | %    |
| <b>ROTIFERA</b>   |         |      |         |      |
| Dicranophorus sp. | 0.2     |      | 0       |      |
| Monostyla sp.     | 0       |      | 0.2     |      |
| Notholca sp.      | 0.3     |      | 0       |      |
| Philodina sp.     | 0       |      | 0.5     |      |
| SUBTOTAL          | .5      | < .1 | .7      | < .1 |
| <b>PROTOZOA</b>   |         |      |         |      |
| Diffugia sp.      | 0.2     |      | 0       |      |
| Euglypha sp.      | 0       |      | 0.3     |      |
| Nuclearia simplex | 1440.0  |      | 2330.0  |      |
| Vorticella sp.    | 0.2     |      | 0       |      |
| SUBTOTAL          | 1440.4  | 99.9 | 2330.3  | 99.9 |
| TOTAL             | 1440.9  |      | 2331.0  |      |

Table A7.2.9. Community composition of zooplankton, Lower Winfield, January 20, 1983. Top = 1m; Bot = 10m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top          |      | Bot          |     |
|---------------------------------|--------------|------|--------------|-----|
|                                 | Density      | %    | Density      | %   |
| <b>ROTIFERA</b>                 |              |      |              |     |
| Keratella cochlearis cochlearis | 0.1          |      | 0.1          |     |
| Philodina sp.                   | 0.1          |      | 0            |     |
| Synchaeta stylata               | <u>0.1</u>   |      | <u>0</u>     |     |
| SUBTOTAL                        | .3           | .1   | 0            | 0   |
| <b>PROTOZOA</b>                 |              |      |              |     |
| Chlamydomorphys sp.             | 0            |      | 70.0         |     |
| Didinium nasutum                | 0            |      | 8.0          |     |
| Nuclearia simplex               | <u>290.0</u> |      | <u>290.0</u> |     |
| SUBTOTAL                        | 290.0        | 99.9 | 368.0        | 100 |
| TOTAL                           | 290.3        |      | 368.0        |     |

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Table A7.2.10. Community composition of zooplankton, Upper Winfield, February 18, 1983. Top = 1m; Bot = 4m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Asplanchna sp.                  | 0       |      | 0.2     |      |
| Dicranophorus sp.               | 0.7     |      | 0       |      |
| Keratella cochlearis cochlearis | 0.4     |      | 0.6     |      |
| Lepadella sp.                   | 0.4     |      | 0.2     |      |
| Notholca sp.                    | 0       |      | 0.2     |      |
| Philodina sp.                   | 0.4     |      | 0       |      |
| SUBTOTAL                        | 1.9     | .5   | 1.2     | .1   |
| <b>COPEPODA</b>                 |         |      |         |      |
| Nauplii                         | 0.2     |      | 0.2     |      |
| SUBTOTAL                        | .2      | .1   | .2      | < .1 |
| <b>PROTOZOA</b>                 |         |      |         |      |
| Chlamydomphrys sp.              | 110.0   |      | 70.0    |      |
| "Ciliate"                       | 140.0   |      | 0       |      |
| Diffugia sp.                    | 0.3     |      | 0.6     |      |
| Echinospaerium eichhorni        | 0       |      | 0.2     |      |
| Epistylis sp.                   | 7.2     |      | 9.6     |      |
| Euglypha sp.                    | 0.2     |      | 0.2     |      |
| Nuclearia simplex               | 110.0   |      | 760.0   |      |
| SUBTOTAL                        | 367.7   | 99.4 | 840.6   | 99.8 |
| TOTAL                           | 369.8   |      | 842.0   |      |

Table A7.2.11. Community composition of zooplankton, Lower Winfield, February 17, 1983. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top          |      | Bot          |      |
|---------------------------------|--------------|------|--------------|------|
|                                 | Density      | %    | Density      | %    |
| <b>ROTIFERA</b>                 |              |      |              |      |
| Euchlanis alata                 | 0.2          |      | 0            |      |
| Keratella cochlearis cochlearis | 0.2          |      | 0            |      |
| Philodina sp.                   | 0            |      | 1.0          |      |
| Polyarthra vulgaris             | 0            |      | 0.4          |      |
| Synchaeta stylata               | <u>0.2</u>   |      | <u>0</u>     |      |
| SUBTOTAL                        | .6           | .1   | 1.4          | 1.2  |
| <b>PROTOZOA</b>                 |              |      |              |      |
| Chlamydomorphys sp.             | 70.0         |      | 0            |      |
| Diffugia sp.                    | 0.3          |      | 0.6          |      |
| Epistylis sp.                   | 2.0          |      | 3.2          |      |
| Nuclearia simplex               | <u>400.0</u> |      | <u>110.0</u> |      |
| SUBTOTAL                        | 472.3        | 99.7 | 113.6        | 98.6 |
| <b>NEMATA</b>                   |              |      |              |      |
|                                 | 0.3          |      | 0.2          |      |
| SUBTOTAL                        | .3           | .1   | .2           | .2   |
| <b>TARDIGRADA</b>               |              |      |              |      |
|                                 | 0.2          |      | 0            |      |
| SUBTOTAL                        | .2           | < .1 | 0            |      |
| TOTAL                           | 473.4        |      | 115.2        |      |

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Table A7.2.12. Community composition of zooplankton, Upper Winfield, March 25, 1983. Top = 1m; Bot = 4m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top        |             | Bot           |                |
|---------------------------------|------------|-------------|---------------|----------------|
|                                 | Density    | %           | Density       | %              |
| <b>ROTIFERA</b>                 |            |             |               |                |
| Asplanchna sp.                  | 0.1        |             | 0             |                |
| Cephalodella gibba              | 0.8        |             | 0.3           |                |
| Colurella gastrocantha          | 0          |             | 0.4           |                |
| Keratella cochlearis cochlearis | 0.3        |             | 0.2           |                |
| Keratella earlinae              | 0          |             | 0.1           |                |
| Lepadella sp.                   | 1.3        |             | 0             |                |
| Philodina sp.                   | 0.1        |             | 0             |                |
| <b>SUBTOTAL</b>                 | <b>2.6</b> | <b>48.1</b> | <b>1.0</b>    | <b>.1</b>      |
| <b>PROTOZOA</b>                 |            |             |               |                |
| Chlamydomphrys sp.              | 0          |             | 430.0         |                |
| Choanomastigida                 | 0.2        |             | 0.1           |                |
| Diffflugia sp.                  | 0          |             | 0.2           |                |
| Epistylis sp.                   | 0.5        |             | 1.1           |                |
| Euglypha sp.                    | 0.5        |             | 0.2           |                |
| Nuclearia simplex               | 0          |             | 1300.0        |                |
| Vorticella sp.                  | 0.9        |             | 2.7           |                |
| <b>SUBTOTAL</b>                 | <b>2.1</b> | <b>38.9</b> | <b>1736.4</b> | <b>99.9</b>    |
| <b>TARDIGRADA</b>               |            |             |               |                |
|                                 | 0.1        |             | 0.1           |                |
| <b>SUBTOTAL</b>                 | <b>.1</b>  | <b>1.9</b>  | <b>.1</b>     | <b>&lt; .1</b> |
| <b>NEMATA</b>                   |            |             |               |                |
|                                 | 0.6        |             | 0.3           |                |
| <b>SUBTOTAL</b>                 | <b>.6</b>  | <b>11.1</b> | <b>.3</b>     | <b>.1</b>      |
| <b>TOTAL</b>                    | <b>5.4</b> |             | <b>1737.8</b> |                |

Table A7.2.13. Community composition of zooplankton, Lower Winfield, March 24, 1983. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Cephalodella gibba              | 0       |      | 0.3     |      |
| Cephalodella sp.                | 0       |      | 0.1     |      |
| Euchlanis alata                 | 1.0     |      | 0       |      |
| Euchlanis sp.                   | 0       |      | 0.1     |      |
| Keratella cochlearis cochlearis | 0.6     |      | 0.7     |      |
| Lepadella sp.                   | 0       |      | 0.3     |      |
| SUBTOTAL                        | 1.6     | 50   | 1.5     | .7   |
| <b>PROTOZOA</b>                 |         |      |         |      |
| Chlamydomorphys sp.             | 0       |      | 100.0   |      |
| Diffugia sp.                    | 0       |      | 0.1     |      |
| Echinospaerium eichhorni        | 0       |      | 0.1     |      |
| Epistylis sp.                   | 1.2     |      | 4.5     |      |
| Euglypha sp.                    | 0       |      | 0.9     |      |
| Uroleptus sp.                   | 0       |      | 100.0   |      |
| Vorticella sp.                  | 0.2     |      | 0.9     |      |
| SUBTOTAL                        | 1.4     | 43.7 | 206.5   | 98.7 |
| <b>TARDIGRADA</b>               |         |      |         |      |
|                                 | 0       |      | 0.4     |      |
| SUBTOTAL                        |         |      | .4      | .2   |
| <b>NEMATA</b>                   |         |      |         |      |
|                                 | 0.2     |      | 0.7     |      |
| SUBTOTAL                        | .2      | 6.3  | .7      | .3   |
| TOTAL                           | 3.2     |      | 209.1   |      |

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Table A7.2.14. Community composition of zooplankton, Upper Gallipolis, March 22, 1983. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                   | Top        |      | Bot        |      |
|------------------------|------------|------|------------|------|
|                        | Density    | %    | Density    | %    |
| <b>ROTIFERA</b>        |            |      |            |      |
| Colurella gastrocantha | 0.2        |      | 0          |      |
| Philodina sp.          | <u>0.3</u> |      | <u>0.2</u> |      |
| SUBTOTAL               | .5         | .5   | .2         | .1   |
| <b>PROTOZOA</b>        |            |      |            |      |
| Chlamydophrys sp.      | 0          |      | 100.0      |      |
| Euglypha sp.           | 0.3        |      | 0.3        |      |
| Nuclearia simplex      | 100.0      |      | 100.0      |      |
| Vorticella sp.         | <u>0.2</u> |      | <u>0</u>   |      |
| SUBTOTAL               | 100.5      | 99.3 | 200.3      | 99.9 |
| <b>NEMATA</b>          |            |      |            |      |
|                        | 0.2        |      | 0          |      |
| SUBTOTAL               | .2         | .2   |            |      |
| TOTAL                  | 101.2      |      | 200.5      |      |

Table A7.2.15. Community composition of zooplankton, Upper Winfield, April 22, 1983. Top = 1m; Bot = 2m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                   | Top     |      | Bot     |      |
|------------------------|---------|------|---------|------|
|                        | Density | %    | Density | %    |
| <b>ROTIFERA</b>        |         |      |         |      |
| Cephalodella sp.       | 0       |      | 0.1     |      |
| Colurella gastrocantha | 0       |      | 0.3     |      |
| Lepadella ovalis       | 0.1     |      | 0       |      |
| Lepadella sp.          | 0       |      | 0.1     |      |
| Monostyla lunaris      | 0       |      | 0.1     |      |
| Philodina sp.          | 0.4     |      | 0.7     |      |
| Synchaeta stylata      | 0.1     |      | 0       |      |
| Synchaeta sp.          | 0       |      | 0.2     |      |
| SUBTOTAL               | .6      | < .1 | 1.5     | .2   |
| <b>PROTOZOA</b>        |         |      |         |      |
| Chlamydomphrys sp.     | 100.0   |      | 320.0   |      |
| Diffflugia sp.         | 0.3     |      | 0.0     |      |
| Epistylis sp.          | 1.5     |      | 1.3     |      |
| Euglypha sp.           | 0.3     |      | 0.1     |      |
| Nuclearia simplex      | 1400.0  |      | 650.0   |      |
| Vorticella sp.         | 1.5     |      | 0.1     |      |
| SUBTOTAL               | 1503.6  | 99.9 | 971.5   | 99.7 |
| <b>COPEPODA</b>        |         |      |         |      |
| Harpacticoida          | 0       |      | 0.1     |      |
| SUBTOTAL               |         |      | .1      | < .1 |
| <b>TARDIGRADA</b>      |         |      |         |      |
|                        | 0       |      | 0.1     |      |
| SUBTOTAL               |         |      | .1      | < .1 |
| <b>NEMATA</b>          |         |      |         |      |
|                        | 0.1     |      | 0.3     |      |
| SUBTOTAL               | .1      | < .1 | .3      | < .1 |
| TOTAL                  | 1504.3  |      | 973.5   |      |

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Table A7.2.16. Community composition of zooplankton, Lower Winfield, April 21, 1983. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                   | Top     |      | Bot     |      |
|------------------------|---------|------|---------|------|
|                        | Density | %    | Density | %    |
| <b>ROTIFERA</b>        |         |      |         |      |
| Cephalodella gibba     | 0.2     |      | 0       |      |
| Colurella gastrocantha | 0.1     |      | 0.1     |      |
| Lecane sp.             | 0.1     |      | 0       |      |
| Philodina sp.          | 0.1     |      | 0.5     |      |
| Polyarthra remata      | 0       |      | 0.1     |      |
| SUBTOTAL               | .5      | < .1 | .7      | .1   |
| <b>PROTOZOA</b>        |         |      |         |      |
| Chlamydomorphys sp.    | 70.0    |      | 220.0   |      |
| Choanomastigida        | 0.4     |      | 0.2     |      |
| Diffugia sp.           | 0.4     |      | 0.4     |      |
| Epistylis sp.          | 1.0     |      | 0.3     |      |
| Euglypha sp.           | 0.8     |      | 0.2     |      |
| Nuclearia simplex      | 5490.0  |      |         |      |
| Vorticella sp.         |         |      | 1010.0  |      |
| SUBTOTAL               | 5562.6  | 99.9 | 1231.1  | 99.9 |
| <b>TARDIGRADA</b>      |         |      |         |      |
|                        | 0.1     |      | 0       |      |
| SUBTOTAL               | .2      | < .1 |         |      |
| <b>NEMATA</b>          |         |      |         |      |
|                        | 0.2     |      | 0.3     |      |
| SUBTOTAL               | .2      | < .1 | .3      |      |
| TOTAL                  | 5563.4  |      | 1232.1  | < .1 |

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Table A7.2.17. Community composition of zooplankton, Upper Winfield, May 19, 1983. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Cephalodella gibba              | 0.3     |      | 0.3     |      |
| Cephalodella mineri             | 0.3     |      | 0.6     |      |
| Colurella gastrocantha          | 0.5     |      | 0.7     |      |
| Keratella cochlearis cochlearis | 0.2     |      | 0.3     |      |
| Lepadella ovalis                | 0.1     |      | 0       |      |
| Lepadella patella               | 0.1     |      | 0       |      |
| Philodina sp.                   | 0.4     |      | 0.3     |      |
| Polyarthra remata               | 0.1     |      | 0.2     |      |
| Synchaeta stylata               | 0       |      | 0.1     |      |
| SUBTOTAL                        | 2.0     | .5   | 2.5     | 2.4  |
| <b>PROTOZOA</b>                 |         |      |         |      |
| Chlamydomphrys sp.              | 430.0   |      | 100.0   |      |
| Diffflugia sp.                  | 0.9     |      | 0.3     |      |
| Euglypha sp.                    | 0.3     |      | 0.7     |      |
| Vorticella sp.                  | 0       |      | 0.1     |      |
| SUBTOTAL                        | 431.2   | 99.3 | 101.1   | 96.8 |
| <b>TARDIGRADA</b>               |         |      |         |      |
|                                 | 0       |      | 0.1     |      |
| SUBTOTAL                        |         |      | .1      | .1   |
| <b>NEMATA</b>                   |         |      |         |      |
|                                 | 0.8     |      | 0.7     |      |
| SUBTOTAL                        | .8      | .2   | .7      | .8   |
| TOTAL                           | 434.0   |      | 104.4   |      |

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Table A7.2.18. Community composition of zooplankton, Lower Winfield, May 20, 1983. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Cephaladella gibba              | 0       |      | 0.5     |      |
| Colurella gastrocantha          | 0.4     |      | 0.3     |      |
| Euchlanis alata                 | 0.1     |      | 0       |      |
| Keratella cochlearis cochlearis | 0.1     |      | 0.1     |      |
| Lecane sp.                      | 0.1     |      | 0.1     |      |
| Philodina                       | 0       |      | 1.0     |      |
| SUBTOTAL                        | .7      | .1   | 2.0     | 1.0  |
| <b>COPEPODA</b>                 |         |      |         |      |
| Cyclopoida                      | 0.1     |      | 0       |      |
| SUBTOTAL                        | .1      | < .1 |         |      |
| <b>PROTOZOA</b>                 |         |      |         |      |
| Bodo sp.                        | 400.0   |      | 100.0   |      |
| Chlamydomphrys sp.              | 100.0   |      | 0       |      |
| Choanomastigida                 | 0.2     |      | 0.3     |      |
| Diffugia sp.                    | 0       |      | 1.4     |      |
| Epistylis sp.                   | 0.6     |      | 0.1     |      |
| Euglypha sp.                    | 0       |      | 0.9     |      |
| Nuclearia simplex               | 580.0   |      | 100.0   |      |
| Vorticella sp.                  | 0.3     |      | 0       |      |
| SUBTOTAL                        | 1081.1  | 99.8 | 202.7   | 98.6 |
| <b>NEMATA</b>                   |         |      |         |      |
|                                 | 0.6     |      | 0.8     |      |
| SUBTOTAL                        | .6      | .1   | .8      | .4   |
| TOTAL                           | 1082.5  |      | 205.5   |      |

Table A7.2.19. Community composition of zooplankton, Upper Winfield, June 22, 1983. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top        |      | Bot        |      |
|---------------------------------|------------|------|------------|------|
|                                 | Density    | %    | Density    | %    |
| <b>ROTIFERA</b>                 |            |      |            |      |
| Cephalodella sp.                | 0          |      | 0.1        |      |
| Keratella cochlearis cochlearis | 0.3        |      | 0          |      |
| Lecane sp.                      | 0          |      | 2.5        |      |
| Philodina sp.                   | 0          |      | 0.3        |      |
| Sychaeta stylata                | <u>0</u>   |      | <u>0.1</u> |      |
| SUBTOTAL                        | .3         | < .1 | 3.0        | .2   |
| <b>PROTOZOA</b>                 |            |      |            |      |
| Chlamydomorphys sp.             | 200.0      |      | 0          |      |
| "Ciliate"                       | 1080.0     |      | 1410.0     |      |
| Diffugia sp.                    | 0.1        |      | 0          |      |
| Euglypha sp.                    | <u>0.2</u> |      | <u>0.9</u> |      |
| SUBTOTAL                        | 1280.3     | 99.9 | 1410.9     | 99.8 |
| <b>NEMATA</b>                   |            |      |            |      |
|                                 | 0.2        |      | 0          |      |
| SUBTOTAL                        | .2         | < .1 |            |      |
| TOTAL                           | 1280.8     |      | 1413.9     |      |

Table A7.2.20. Community composition of zooplankton, Lower Winfield, June 23, 1983. Top = 1m; Bot = 8m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                    | Top     |      | Bot     |      |
|-------------------------|---------|------|---------|------|
|                         | Density | %    | Density | %    |
| <b>ROTIFERA</b>         |         |      |         |      |
| Brachionus calyciflorus | 0       |      | 0.1     |      |
| Brachionus rubens       | 0.2     |      | 0       |      |
| Cephalodella gibba      | 0.2     |      | 0       |      |
| Colurella gastrocantha  | 0       |      | 0.1     |      |
| Hexarthra mira          | 0.4     |      | 0       |      |
| Lecane sp.              | 0       |      | 0.1     |      |
| Monostyla lunaris       | 0.4     |      | 0       |      |
| Philodina tranquila     | 0       |      | 0.2     |      |
| Philodina sp.           | 0.2     |      | 0.1     |      |
| Ploesoma truncatum      | 0.2     |      | 0       |      |
| Polyarthra remata       | 1.0     |      | 0.5     |      |
| Synchaeta stylata       | 0.8     |      | 0.2     |      |
| Trichocerca agnata      | 1.8     |      | 0.2     |      |
| SUBTOTAL                | 5.2     | 86.7 | 1.5     | .2   |
| <b>COPEPODA</b>         |         |      |         |      |
| Nauplii                 | 0       |      | 0.1     |      |
| SUBTOTAL                | -       |      | .1      | <.1  |
| <b>PROTOZOA</b>         |         |      |         |      |
| Chlamydomphrys sp.      | 0       |      | 360.0   |      |
| Diffugia sp.            | 0.6     |      | 0.1     |      |
| Euglypha sp.            | 0       |      | 0.3     |      |
| Nuclearia simplex       | 0       |      | 360.0   |      |
| SUBTOTAL                | .6      | 1.0  | 720.4   | 99.7 |
| <b>NEMATA</b>           |         |      |         |      |
|                         | 0.2     |      | 0       |      |
| SUBTOTAL                | .2      | 3.3  | -       |      |
| TOTAL                   | 6       |      | 722     |      |

Table A7.2.21. Community composition of zooplankton, Upper Winfield, July 20, 1983. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Asplancha sp.                   | 0.1     |      | 0.1     |      |
| Brachionius calyciflorus        | 0.8     |      | 0.4     |      |
| Brachionius caudatus            | 0.7     |      | 0.3     |      |
| Colotheca pelagica              | 0.9     |      | 0       |      |
| Colurella gastrocantha          | 0       |      | 0.3     |      |
| Hexarthra mira                  | 8.1     |      | 14.8    |      |
| Keratella cochlearis cochlearis | 0.7     |      | 1.1     |      |
| Lecane flexilis                 | 0.1     |      | 0       |      |
| Monostyla lunaris               | 0       |      | 0.1     |      |
| Philodina sp.                   | 0.3     |      | 1.7     |      |
| Platytias patula                | 0.1     |      | 0.7     |      |
| Ploesoma truncatum              | 3.3     |      | 1.3     |      |
| Polyarthra dolichoptera         | 0.9     |      | 0       |      |
| Polyarthra major                | 1.3     |      | 1.5     |      |
| Polyarthra remata               | 23.3    |      | 29.1    |      |
| Synchaeta stylata               | 76.9    |      | 96.8    |      |
| Trichocerra agnata              | 18.5    |      | 18.7    |      |
| SUBTOTAL                        | 136.0   | 9.6  | 166.9   | 16.3 |
| <b>PROTOZOA</b>                 |         |      |         |      |
| Chlamydomorphys sp.             | 650.0   |      | 650.0   |      |
| "Ciliate"                       | 430.0   |      | 200.0   |      |
| Diffflugia sp.                  | 1.1     |      | 3.3     |      |
| Eughypha sp.                    | 0.1     |      | 0.1     |      |
| Nuclearia simplex               | 200.0   |      | 0       |      |
| SUBTOTAL                        | 1281.2  | 90.3 | 853.4   | 83.6 |
| <b>CLADOCERA</b>                |         |      |         |      |
| Sida crystalina                 | 0.1     |      | 0.3     |      |
| SUBTOTAL                        | .1      | < .1 | .3      | < .1 |
| <b>NEMATA</b>                   |         |      |         |      |
|                                 | 0       |      | 0.1     |      |
| SUBTOTAL                        | -       |      | .1      | < .1 |
| TOTAL                           | 1417.3  |      | 1020.7  |      |

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Table A7.2.22. Community composition of zooplankton, Lower Winfield, July 21, 1983. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Asplanchna sp.                  | 1.3     |      | 0.4     |      |
| Brachionus budapestinensis      | 1.5     |      | 1.7     |      |
| Brachionus calyciflorus         | 28.4    |      | 15.3    |      |
| Brachionus caudatus             | 11.1    |      | 4.3     |      |
| Brachionus rubens               | 9.9     |      | 3.5     |      |
| Cephalodella gibba              | 0.1     |      | 0.1     |      |
| Colotheca pelagica              | 3.9     |      | 4.9     |      |
| Euchlanis alata                 | 0       |      | 0.1     |      |
| Filinia longiseta               | 0.1     |      | 0.1     |      |
| Hexarthra mira                  | 0.4     |      | 0.1     |      |
| Keratella cochlearis cochlearis | 0.5     |      | 3.3     |      |
| Philodina sp.                   | 0.5     |      | 1.2     |      |
| Platylas patula                 | 8.5     |      | 4.0     |      |
| Ploesoma truncatum              | 11.1    |      | 0.3     |      |
| Polyarthra dolichoptera         | 0       |      | 0.7     |      |
| Polyarthra major                | 7.5     |      | 2.0     |      |
| Polyarthra remata               | 109.1   |      | 40.8    |      |
| Polyarthra vulgaris             | 0.2     |      | 0.3     |      |
| Synchaeta stylata               | 73.7    |      | 21.6    |      |
| Trichocerca agnata              | 76.8    |      | 38.8    |      |
| Trichocerca similis             | 1.5     |      | 1.5     |      |
| SUBTOTAL                        | 346.1   | 10.9 | 145     | 3.2  |
| <b>CLADOCERA</b>                |         |      |         |      |
| Alona rectangularis             | 0       |      | 0.1     |      |
| Moina micrura                   | 0.6     |      | 0.4     |      |
| Sida crystalina                 | 0.3     |      | 0       |      |
| SUBTOTAL                        | .9      | < .1 | .5      | < .1 |
| <b>COPEPODA</b>                 |         |      |         |      |
| Copepodid                       | 0       |      | 0.3     |      |
| Cyclopoida                      | 0       |      | 0.4     |      |
| SUBTOTAL                        | -       |      | .7      | < .1 |

PROTOZOA

|                           |            |      |            |      |
|---------------------------|------------|------|------------|------|
| Chlamydomorphys sp        | 2160.0     |      | 2160.0     |      |
| Ciliate                   | 650.0      |      | 1700.0     |      |
| Diffflugia sp.            | 0          |      | 3.3        |      |
| Echinosphaerium eichhorni | 0          |      | 0.3        |      |
| Nuclearia simplex         | 0          |      | 430.0      |      |
| Vorticella sp.            | <u>0.1</u> |      | <u>0.3</u> |      |
| SUBTOTAL                  | 2810.1     | 89.1 | 4293.9     | 96.7 |
| TOTAL                     | 3157.1     |      | 4440.1     |      |

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Table A7.2.23. Community composition of zooplankton, Upper Winfield, August 24, 1983. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top     |      | Bot     |      |
|---------------------------------|---------|------|---------|------|
|                                 | Density | %    | Density | %    |
| <b>ROTIFERA</b>                 |         |      |         |      |
| Asplanchna seiboldi             | 0       |      | 0.1     |      |
| Brachionus urceolaris           | 3.8     |      | 1.3     |      |
| Colletheca pelagica             | 0.1     |      | 0.1     |      |
| Filinia terminalis              | 0.5     |      | 0.6     |      |
| Hexarthra mira                  | 0.3     |      | 0.4     |      |
| Keratella cochlearis cochlearis | 0.3     |      | 0.1     |      |
| Keratella cochlearis f. tecta   | 0       |      | 0.2     |      |
| Ploesoma truncatum              | 0.1     |      | 0.1     |      |
| Polyarthra major                | 0.1     |      | 0.2     |      |
| Polyarthra remata               | 17.2    |      | 13.7    |      |
| Polyarthra vulgaris             | 2.4     |      | 1.9     |      |
| Synchaeta stylata               | 78.4    |      | 66.2    |      |
| Trichocerca agnata              | 8.7     |      | 7.5     |      |
| Trichocerca similis             | 0.1     |      | 0       |      |
| SUBTOTAL                        | 112     | 9.5  | 92.4    | 31.3 |
| <b>CLADOCERA</b>                |         |      |         |      |
| Bosminopsis deitersi            | 1.8     |      | 1.6     |      |
| Sida crystalina                 | 0.7     |      | 0.7     |      |
| SUBTOTAL                        | 2.5     | .2   | 2.3     | .7   |
| <b>PROTOZOA</b>                 |         |      |         |      |
| Chlamydomorphys sp              | 860.0   |      | 200.0   |      |
| Euglypha sp                     | 0       |      | 0.4     |      |
| Nuclearia simplex               | 200.0   |      | 0       |      |
| SUBTOTAL                        | 1060    | 90.2 | 200.4   | 67.9 |
| TOTAL                           | 1174.5  |      | 295.1   |      |

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Table A7.2.24. Community composition of zooplankton, Lower Winfield, August 25, 1983. Top = 1m; Bot = 9m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top           |             | Bot           |                |
|---------------------------------|---------------|-------------|---------------|----------------|
|                                 | Density       | %           | Density       | %              |
| <b>ROTIFERA</b>                 |               |             |               |                |
| Asplanchna priodonta            | 8.3           |             | 0             |                |
| Asplanchna seiboldi             | 0             |             | 1.7           |                |
| Brachionus budapestinensis      | 6.5           |             | 2.3           |                |
| Brachionus calyciflorus         | 0.1           |             | 0.1           |                |
| Colletheca pelagica             | 0.5           |             | 0.1           |                |
| Filinia terminalis              | 0.3           |             | 0.5           |                |
| Keratella cochlearis cochlearis | 0.8           |             | 1.3           |                |
| Lecane sp.                      | 1.6           |             | 0             |                |
| Polyarthra major                | 2.2           |             | 0             |                |
| Polyarthra remata               | 26.7          |             | 8.4           |                |
| Polyarthra vulgaris             | 5.0           |             | 1.1           |                |
| Synchaeta stylata               | 0.5           |             | 0.2           |                |
| Trichocerca agnata              | 6.7           |             | 2.0           |                |
| <b>SUBTOTAL</b>                 | <b>59.2</b>   | <b>2.6</b>  | <b>17.7</b>   | <b>.3</b>      |
| <b>CLADOCERA</b>                |               |             |               |                |
| Bosmina longirostris            | 0.3           |             | 0             |                |
| Bosminopsis deitersi            | 1.7           |             | 0.3           |                |
| Daphnia sp.                     | 0             |             | 0.2           |                |
| Moina affinis                   | 2.1           |             | 0.8           |                |
| Sida crystalina                 | 0.2           |             | 0.3           |                |
| <b>SUBTOTAL</b>                 | <b>4.3</b>    | <b>.2</b>   | <b>1.6</b>    | <b>&lt; .1</b> |
| <b>PROTOZOA</b>                 |               |             |               |                |
| Chlamydomphrys sp.              | 860.0         |             | 1700.0        |                |
| Ciliate                         | 1100.0        |             | 2600.0        |                |
| Diffugia sp.                    | 17.8          |             | 2.7           |                |
| Nuclearia simplex               | 200.0         |             | 650.0         |                |
| <b>SUBTOTAL</b>                 | <b>2177.8</b> | <b>97.2</b> | <b>4952.7</b> | <b>99.6</b>    |
| <b>TOTAL</b>                    | <b>2241.3</b> |             | <b>4972</b>   |                |

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Table A7.2.25. Community composition of zooplankton, Upper Gallipolis, August 25, 1983. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top          |      | Bot          |      |
|---------------------------------|--------------|------|--------------|------|
|                                 | Density      | %    | Density      | %    |
| <b>ROTIFERA</b>                 |              |      |              |      |
| Asplanchna seiboldi             | 0.4          |      | 2.4          |      |
| Brachionus budapestinensis      | 0.5          |      | 0.3          |      |
| Brachionus calyciflorus         | 0.1          |      | 0            |      |
| Collotheca pelagica             | 0.2          |      | 0            |      |
| Filinia longiseta               | 0.4          |      | 0.7          |      |
| Keratella cochlearis cochlearis | 1.0          |      | 0.7          |      |
| Platyias patula                 | 0.1          |      | 0            |      |
| Polyarthra vulgaris             | 22.2         |      | 18.5         |      |
| Synchaeta stylata               | 0.4          |      | 0.1          |      |
| Trichocerca agnata              | <u>1.3</u>   |      | <u>0.9</u>   |      |
| SUBTOTAL                        | 26.6         | 1.2  | 23.6         | .9   |
| <b>CLADOCERA</b>                |              |      |              |      |
| Bosmina longirostris            | 0            |      | 0.1          |      |
| Bosminopsis deitersi            | 0.6          |      | 1.6          |      |
| Moina affinis                   | 0.1          |      | 0.5          |      |
| Sida crystalina                 | <u>0.6</u>   |      | <u>0.4</u>   |      |
| SUBTOTAL                        | 1.3          | .1   | 2.6          | .1   |
| <b>COPEPODA</b>                 |              |      |              |      |
| Nauplii                         | <u>0.8</u>   |      | <u>0.7</u>   |      |
| SUBTOTAL                        | .8           | < .1 | .7           | < .1 |
| <b>PROTOZOA</b>                 |              |      |              |      |
| Chlamydomphrys sp.              | 430.0        |      | 1100.0       |      |
| Ciliate                         | 1500.0       |      | 850.0        |      |
| Diffugia sp.                    | 0.4          |      | 0.1          |      |
| Euglypha sp.                    | 0            |      | 0.1          |      |
| Nuclearia simplex               | <u>200.0</u> |      | <u>650.0</u> |      |
| SUBTOTAL                        | 2130.4       | 98.6 | 2600.2       | 98.9 |
| TOTAL                           | 2159.1       |      | 2627.1       |      |

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Table A7.2.26. Community composition of zooplankton, Upper Winfield, September 14, 1983. Top = 1m; Bot = 3m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                            | Top            |      | Bot            |      |
|---------------------------------|----------------|------|----------------|------|
|                                 | Density        | %    | Density        | %    |
| <b>ROTIFERA</b>                 |                |      |                |      |
| Brachionus calyciflorus         | 0              |      | 0.1            |      |
| Brachionus quadridentatus       | 0.4            |      | 0.4            |      |
| Cephalodella gibba              | 0              |      | 0.2            |      |
| Collotheca pelagica             | 0.4            |      | 0.2            |      |
| Conochiloides dossaurius        | 0.3            |      | 0.1            |      |
| Hexarthra mira                  | 0.3            |      | 0              |      |
| Keratella cochlearis cochlearis | 0.2            |      | 0              |      |
| Lecane sp.                      | 0.3            |      | 0              |      |
| Platyias patula                 | 0              |      | 0.1            |      |
| Polyarthra vulgaris             | 4.9            |      | 4.7            |      |
| Synchaeta stylata               | 1.8            |      | 2.0            |      |
| Trichocerca agnata              | <u>0.8</u>     |      | <u>0.8</u>     |      |
| SUBTOTAL                        | 94             | .1   | 8.6            | < .1 |
| <b>CLADOCERA</b>                |                |      |                |      |
| Bosminopsis deitersi            | 0.2            |      | 0.1            |      |
| Moina affinis                   | 0.1            |      | 0.1            |      |
| Sida crystalina                 | <u>0</u>       |      | <u>0.1</u>     |      |
| SUBTOTAL                        | .3             | < .1 | .3             | < .1 |
| <b>COPEPODA</b>                 |                |      |                |      |
| Nauplii                         | 0              |      | 0.1            |      |
| Copepodid                       | <u>0.1</u>     |      | <u>0.2</u>     |      |
| SUBTOTAL                        | .1             | < .1 | .3             | < .1 |
| <b>PROTOZOA</b>                 |                |      |                |      |
| Chlamydomphrys sp.              | 1600.0         |      | 500.0          |      |
| Euglypha sp.                    | 0.4            |      | 0.2            |      |
| Nuclearia simplex               | <u>14000.0</u> |      | <u>18000.0</u> |      |
| SUBTOTAL                        | 15600.4        | 99.9 | 18500.2        | 99.9 |
| <b>NEMATA</b>                   |                |      |                |      |
|                                 | <u>0.1</u>     |      | <u>0</u>       |      |
| SUBTOTAL                        | .1             | < .1 | -              |      |
| TOTAL                           | 15610.3        |      | 18509.5        |      |

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Table A7.2.27. Community composition of zooplankton, Lower Winfield, September 15, 1983. Top = 1m; Bot = 10m; Density = mean number of individuals per m<sup>3</sup> x 10<sup>4</sup>.

| Taxa                               | Top          |      | Bot           |      |
|------------------------------------|--------------|------|---------------|------|
|                                    | Density      | %    | Density       | %    |
| <b>ROTIFERA</b>                    |              |      |               |      |
| Asplanchna seiboldi                | 1.0          |      | 1.1           |      |
| Brachionus calyciflorus            | 0.4          |      | 0             |      |
| Brachionus caudatus                | 0.2          |      | 0.1           |      |
| Brachionus caudatus var personatus | 0.1          |      | 0             |      |
| Brachionus quadridentatus          | 0.6          |      | 1.5           |      |
| Colletheca pelagica                | 1.4          |      | 1.5           |      |
| Filinia terminalis                 | 0            |      | 0.1           |      |
| Hexarthra mira                     | 0.1          |      | 0.1           |      |
| Keratella cochlearis cochlearis    | 0            |      | 0.1           |      |
| Lecane sp.                         | 0            |      | 0.1           |      |
| Ploesoma truncatum                 | 0.3          |      | 0.1           |      |
| Polyarthra vulgaris                | 7.6          |      | 4.6           |      |
| Synchaeta stylata                  | 0.7          |      | 0.4           |      |
| Trichocerca cylindrica             | <u>5.1</u>   |      | <u>1.7</u>    |      |
| SUBTOTAL                           | 17.5         | .5   | 11.4          | < .1 |
| <b>CLADOCERA</b>                   |              |      |               |      |
| Bosmina longirostris               | 0            |      | 0.1           |      |
| Bosminopsis deitersi               | 3.0          |      | 1.1           |      |
| Daphnia sp.                        | 0.1          |      | 0.1           |      |
| Moina affinis                      | 1.5          |      | 0             |      |
| Sida crystalina                    | <u>0.1</u>   |      | <u>0</u>      |      |
| SUBTOTAL                           | 4.7          | < .1 | 1.3           | < .1 |
| <b>COPEPODA</b>                    |              |      |               |      |
| Nauplii                            | 0.6          |      | 1.5           |      |
| Copepodid                          | 0            |      | 0.3           |      |
| Cyclopoida                         | <u>0</u>     |      | <u>0.1</u>    |      |
| SUBTOTAL                           | .6           | < .1 | 1.9           | < .1 |
| <b>PROTOZOA</b>                    |              |      |               |      |
| EODD sp.                           | 400.0        |      | 0             |      |
| Chlamydomorphys sp.                | 860.0        |      | 1500.0        |      |
| Ciliate                            | 200.0        |      | 0             |      |
| Diffflugia sp.                     | 0            |      | 0.1           |      |
| Nuclearia simplex                  | <u>860.0</u> |      | <u>1100.0</u> |      |
| SUBTOTAL                           | 2720         | 99.3 | 2600          | 99.5 |
| TOTAL                              | 2737.7       |      | 2612.5        |      |

Table A8.1.1. Taxa collected from Winfield Pool of Kanawha River,  
 taxa with \* were collected as part of this study,  
 others collected and identified by Fred Kirchner,  
 U.S. Army Corps of Engineers, Huntington District.

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|                        |  |
|------------------------|--|
| PHYLUM COELENTERATA    |  |
| CLASS HYDROZOA         |  |
| ORDER HYDROIDA         |  |
| HYDRIDAE               |  |
| Hydra                  |  |
| PHYLUM PLATYHELMINTHES |  |
| CLASS TURBELLARIA*     |  |
| ORDER TRICLADIDA       |  |
| PLANARIIDAE            |  |
| Dugesia tigrina        |  |
| PHYLUM NEMERTINA       |  |
| CLASS ENOPLA           |  |
| ORDER HOPOLONEMERTINI  |  |
| Prostoma               |  |
| PHYLUM ANNELIDA        |  |
| CLASS ASCHELMINTHES    |  |
| ORDER NEMATODA*        |  |
| CLASS OLIGOCHAETA*     |  |
| ORDER LIMBRICULIDA     |  |
| LUMBRICULIDAE          |  |
| Kincaidiana hexatheca  |  |
| ORDER HAPLOTAXIDA      |  |
| NAIDIDAE               |  |
| Arcteonais lomondi     |  |
| Chaetogaster diaphanus |  |
| Dero obtusa            |  |
| Dero nivea             |  |
| Dero furcata           |  |
| Pristina osborni       |  |
| Nais communis          |  |
| Nais variabilis        |  |
| Slavina appendiculata  |  |
| Stylaria lacustris     |  |
| CLASS HIRUDINEA        |  |
| ORDER RHYNCHOBDELLIDA  |  |
| POSCICOLIDAE           |  |
| Myzobdella lugubris    |  |
| PHYLUM ARTHROPODA      |  |
| CLASS CRUSTACEA        |  |
| ORDER CLADOCERA        |  |
| SIDIDAE                |  |
| Sida crystallina       |  |
| DAPHNIDAE              |  |
| Simocephalus vetulus   |  |

TABLE A8.1. (continued)

|                          |  |
|--------------------------|--|
| ORDER ISOPODA            |  |
| ASELLIDAE                |  |
| Asellus*                 |  |
| ORDER AMPHIPODA          |  |
| TALITRIDAE               |  |
| Hyaella azteca*          |  |
| GAMMARIDAE               |  |
| Gammarus*                |  |
| Crangonyx                |  |
| ORDER DECAPODA           |  |
| CAMBARIDAE               |  |
| Orconectes*              |  |
| Orconectes rusticus      |  |
| CLASS INSECTA            |  |
| ORDER EPHEMEROPTERA      |  |
| SIPHONURIDAE             |  |
| Isonychia bicolor*       |  |
| BAETIDAE*                |  |
| Baetis pygmaeus          |  |
| Cloeon                   |  |
| Pseudocloeon             |  |
| HEPTAGENIIDAE            |  |
| Stenacron*               |  |
| Stenacron interpunctatum |  |
| Stenonema                |  |
| Stenonema mediopunctatum |  |
| Stenonema terminatum     |  |
| EPHEMERELLIDAE           |  |
| Ephemerella*             |  |
| Ephemerella needhami     |  |
| Eurylophella minimella   |  |
| Eurylophella coxalis     |  |
| BAETISCIDAE              |  |
| Baetisca lacustris       |  |
| LEPTOPHLEBIIDAE          |  |
| Leptophlebia             |  |
| TRICORYTHIDAE            |  |
| Tricorythodes*           |  |
| CAENIDAE                 |  |
| Caenis*                  |  |
| EPHEMERIDAE              |  |
| Hexagenia spp.*          |  |
| ORDER ODONATA            |  |
| COENAGRIONIDAE           |  |
| Argia*                   |  |
| Argia translata          |  |
| Argia tibialis           |  |
| Enallagma                |  |
| Enallagma signatum       |  |
| GOMPHIDAE                |  |
| Hagenius brevistylus     |  |

TABLE A8.1. (continued)

MACROMIIDAE\*  
     *Macromia taeniolata*  
 CORDULIIDAE  
     *Calopteryx dimidiata*  
     *Neurocordula*\*  
 ORDER PLECOPTERA  
     TAENIOPTERYGIDAE  
         *Taeniopteryx*\*  
         *Taeniopteryx burksi*  
         *Taeniopteryx parvula*  
         *Strophopteryx*\*  
         *Strophopteryx fasciata*  
         *Strophopteryx appalachia*  
     NEMOURIDAE  
         *Amphinemura*\*  
     PERLIDAE  
         *Phasganophora*\*  
         *Acroneuria*\*  
         *Acroneuria abnormis*  
         *Paragnetina*\*  
         *Neoperla*\*  
     PTERONARCYIDAE  
         *Pteronarcys dorsata*  
     PERLODIDAE  
         *Isogenus*\*  
         *Isoperla*\*  
         *Helopicus subvarians*  
 ORDER COLEOPTERA  
     HYDROPHILIDAE\*  
     PSEPHINIDAE  
         *Psephenus herricki*\*  
     ELMIDAE  
         *Stenelmis*\*  
         *Microcyllloepus*\*  
         *Macronychus*\*  
         *Macronychus glabratus*  
         *Dubiraphia*\*  
         *Promoresia*\*  
         *Promoresia elegans*  
 ORDER MEGALOPTERA  
     CORYDALIDAE  
         *Corydalis cornutus*\*  
 ORDER TRICHOPTERA  
     PHILOPOTAMIDAE  
         *Chimarra*\*  
     POLYCENTROPIDIDAE  
         *Cyrnellus fraternus*\*  
         *Neureclipsis*\*  
         *Polycentropus*\*

TABLE A8.1. (continued)

|                           |
|---------------------------|
| HYDROPSYCHIDAE            |
| Cheumatopsyche*           |
| Hydropsyche aerata*       |
| Hydropsyche morosa*       |
| Hydropsyche phalerata*    |
| Hydropsyche orris*        |
| Potamyia*                 |
| RHYACOPHILIDAE            |
| Rhyacophila*              |
| HYDROPTILIDAE             |
| Hydroptila*               |
| LEPTOCERIDAE              |
| Ceraclea tarsipunctata    |
| ORDER DIPTERA             |
| TIPULIDAE                 |
| Antocha*                  |
| CHAOBORIDAE*              |
| CERATOPOGONIDAE*          |
| CHIRONOMIDAE              |
| ORTHOCLADIINAE*           |
| Corynoneuria              |
| Cricotopus / orthocladius |
| Eukiefferiella            |
| Nanocladius               |
| Rheocricotopus            |
| Parametriocnemus          |
| Parakiefferiella          |
| Synotrissocladius         |
| Heterotrissocladius       |
| CHIRONOMINAE*             |
| Chironomus                |
| Crytochironomus           |
| Glyptotendipes            |
| Glyptotendipes lobiferus  |
| Dicrotendipes neomodestus |
| Dicrotendipes nervosus    |
| Dicrotendipes modestus    |
| Phaenopsectra             |
| Polypedilum               |
| Pseudochironomus          |
| Paratanytarsus            |
| Rheotanytarsus            |
| Tanytarsus                |
| TANYPODINAE*              |
| Procladius                |
| Ablabesmyia mallochi      |
| Ablabesmyia parajanta     |
| Larsia                    |

TABLE A8.1. (continued)

|        |                     |
|--------|---------------------|
|        | SIMULIIDAE          |
|        | Prosimulium*        |
|        | Simulium jenningsi* |
|        | Simulium vittatum*  |
|        | ATHERICIDAE         |
|        | Atherix*            |
|        | EMPIDIDAE           |
|        | Hemerodromia*       |
|        | TABANIDAE*          |
| CLASS  | ARACHNIDA           |
|        | ORDER ACARI*        |
| PHYLUM | MOLLUSCA            |
|        | CLASS GASTROPODA    |
|        | ORDER LIMNOPHILA    |
|        | PHYSIDAE            |
|        | Physella            |
|        | LYMNAEIDAE          |
|        | Fossaria            |
|        | PLANORBIDAE         |
|        | Menetus dilatatus   |
|        | ORDER PULMONATA     |
|        | ANCYLIDAE           |
|        | Ferrissia*          |
|        | CLASS BIVALVIA      |
|        | ORDER VENEROIDA     |
|        | CORBICULIDAE        |
|        | Corbicula fluminea  |

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**Table A8.2.1. Benthic macroinvertebrates collected at UW using artificial substrates January 21, 1983 (\* indicates that mean or percentage is less than 0.1).**

| Organisms                                | Replicates                     |      |      |      |      | Mean | % of total |
|------------------------------------------|--------------------------------|------|------|------|------|------|------------|
|                                          | 1                              | 2    | 3    | 4    | 5    |      |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |      |      |      |      |      |            |
| Misc. Invertebrates                      |                                |      |      |      |      |      |            |
| Oligochaeta                              | 1                              | -    | 1    | 1    | -    | 0.6  | 2.4        |
| SUBTOTAL                                 |                                |      |      |      |      | 0.6  | 2.4        |
| Ephemeroptera                            |                                |      |      |      |      |      |            |
| Isonychia bicolor                        | -                              | -    | -    | -    | 1    | 0.2  | 0.8        |
| Stenacron                                | -                              | -    | -    | -    | 2    | 0.4  | 1.6        |
| SUBTOTAL                                 |                                |      |      |      |      | 0.6  | 2.4        |
| Plecoptera                               |                                |      |      |      |      |      |            |
| Strophopteryx                            | 3                              | 14   | 5    | 7    | 9    | 7.6  | 30.6       |
| SUBTOTAL                                 |                                |      |      |      |      | 7.6  | 30.6       |
| Trichoptera                              |                                |      |      |      |      |      |            |
| Hydroptila                               | -                              | -    | -    | 1    | -    | 0.2  | 0.8        |
| SUBTOTAL                                 |                                |      |      |      |      | 0.2  | 0.8        |
| Diptera                                  |                                |      |      |      |      |      |            |
| Antocha                                  | -                              | -    | -    | -    | 1    | 0.2  | 0.8        |
| Orthoclad/Chiro                          | 9                              | 9    | 4    | 7    | 31   | 12.0 | 48.4       |
| Simulium vittatum                        | 5                              | 3    | 3    | 3    | 3    | 3.4  | 13.7       |
| Hemerodromia                             | 1                              | -    | -    | -    | -    | 0.2  | 0.8        |
| SUBTOTAL                                 |                                |      |      |      |      | 15.8 | 63.7       |
| FUNCTIONAL GROUPS (%)                    |                                |      |      |      |      |      |            |
| Collector-gatherers                      | 52.6                           | 34.6 | 38.5 | 42.1 | 74.5 | 48.5 |            |
| Collector-filterers                      | 26.3                           | 11.5 | 23.1 | 15.8 | 6.4  | 16.6 |            |
| Shredders                                | 15.8                           | 53.8 | 38.5 | 36.8 | 19.1 | 32.8 |            |
| Scrapers                                 | -                              | -    | -    | 5.3  | -    | 1.1  |            |
| Predators                                | 5.3                            | -    | -    | -    | -    | 1.1  |            |
| SUMMARY                                  |                                |      |      |      |      |      |            |
| Total Individuals                        | 19                             | 26   | 13   | 19   | 47   | 24.8 |            |
| Total Taxa                               | 5                              | 3    | 4    | 5    | 6    | 4.6  |            |
| Diversity (Dbar)                         | 1.9                            | 1.4  | 1.8  | 1.9  | 1.5  | 1.7  |            |
| 124                                      | Total Individuals collected    |      |      |      |      |      |            |
| 9                                        | Total Number of Taxa collected |      |      |      |      |      |            |
| 1.9                                      | Total Sample Diversity (Dbar)  |      |      |      |      |      |            |

Table A8.2.2. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on January 20, 1983.

| Organisms                                | Replicates                     |     |     |     |      | Mean | % of total |
|------------------------------------------|--------------------------------|-----|-----|-----|------|------|------------|
|                                          | 1                              | 2   | 3   | 4   | 5    |      |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |     |     |     |      |      |            |
| Misc. Invertebrates                      |                                |     |     |     |      |      |            |
| Oligochaeta                              | 1                              | -   | -   | -   | 1    | 0.4  | 2.2        |
| Hyalella azteca                          | -                              | -   | -   | -   | 1    | 0.2  | 1.1        |
| SUBTOTAL                                 |                                |     |     |     |      | 0.6  | 3.3        |
| Plecoptera                               |                                |     |     |     |      |      |            |
| Strophopteryx                            | 1                              | -   | -   | -   | -    | 0.2  | 1.1        |
| SUBTOTAL                                 |                                |     |     |     |      | 0.2  | 1.1        |
| Diptera                                  |                                |     |     |     |      |      |            |
| Orthoclad/Chiro                          | 29                             | 8   | 34  | 9   | 5    | 17.0 | 93.4       |
| Simulium vittatum                        | 1                              | -   | -   | -   | -    | 0.2  | 1.1        |
| Hemerodromia                             | -                              | -   | -   | -   | 1    | 0.2  | 1.1        |
| SUBTOTAL                                 |                                |     |     |     |      | 17.4 | 95.6       |
| FUNCTIONAL GROUPS (%)                    |                                |     |     |     |      |      |            |
| Collector-gatherers                      | 93.8                           | 100 | 100 | 100 | 87.5 | 96.3 |            |
| Collector-filterers                      | 3.1                            | -   | -   | -   | -    | 0.6  |            |
| Shredders                                | 3.1                            | -   | -   | -   | -    | 0.6  |            |
| Scrapers                                 | -                              | -   | -   | -   | -    | -    |            |
| Predators                                | -                              | -   | -   | -   | 12.5 | 2.5  |            |
| SUMMARY                                  |                                |     |     |     |      |      |            |
| Total Individuals                        | 32                             | 8   | 34  | 9   | 8    | 18.2 |            |
| Total Taxa                               | 4                              | 1   | 1   | 1   | 4    | 2.2  |            |
| Diversity (Dbar)                         | 0.6                            | 0   | 0   | 0   | 1.5  | 0.4  |            |
| 91                                       | Total Individuals collected    |     |     |     |      |      |            |
| 6                                        | Total Number of Taxa collected |     |     |     |      |      |            |
| 0.5                                      | Total Sample Diversity (Dbar)  |     |     |     |      |      |            |

**Table A8.2.3. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on February 18, 1983.**

| Organisms                                | Replicates                     |      |      |      |      | Mean | % of total |
|------------------------------------------|--------------------------------|------|------|------|------|------|------------|
|                                          | 1                              | 2    | 3    | 4    | 5    |      |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |      |      |      |      |      |            |
| Misc. Invertebrates                      |                                |      |      |      |      |      |            |
| Planariidae                              | 1                              | -    | -    | -    | -    | 0.2  | 0.9        |
| Hyalella azteca                          | 2                              | -    | -    | -    | -    | 0.4  | 1.8        |
| SUBTOTAL                                 |                                |      |      |      |      | 0.6  | 2.7        |
| Ephemeroptera                            |                                |      |      |      |      |      |            |
| Tricorythodes                            | 1                              | -    | -    | -    | -    | 0.2  | 0.9        |
| SUBTOTAL                                 |                                |      |      |      |      | 0.2  | 0.9        |
| Plecoptera                               |                                |      |      |      |      |      |            |
| Strophopteryx                            | 2                              | -    | 1    | -    | -    | 0.6  | 2.7        |
| SUBTOTAL                                 |                                |      |      |      |      | 0.6  | 2.7        |
| Trichoptera                              |                                |      |      |      |      |      |            |
| Cheumatopsyche                           | -                              | -    | 1    | -    | -    | 0.2  | 0.9        |
| Hydropsyche morosa                       | 1                              | -    | -    | -    | -    | 0.2  | 0.9        |
| Hydroptila                               | 1                              | -    | -    | -    | -    | 0.2  | 0.9        |
| SUBTOTAL                                 |                                |      |      |      |      | 0.6  | 2.7        |
| Diptera                                  |                                |      |      |      |      |      |            |
| Antocha                                  | 1                              | 1    | -    | -    | -    | 0.4  | 1.8        |
| Orthoclad/Chiro                          | 22                             | 19   | 17   | 13   | 16   | 17.4 | 79.1       |
| Prosimulium                              | 2                              | 1    | -    | -    | -    | 0.6  | 2.7        |
| Simulium vittatum                        | 1                              | 1    | 2    | 3    | 1    | 1.6  | 7.3        |
| SUBTOTAL                                 |                                |      |      |      |      | 20.0 | 90.9       |
| FUNCTIONAL GROUPS (%)                    |                                |      |      |      |      |      |            |
| Collector-gatherers                      | 79.4                           | 90.9 | 81.0 | 81.3 | 94.1 | 85.3 |            |
| Collector-filterers                      | 11.8                           | 9.1  | 14.3 | 18.8 | 5.9  | 12.0 |            |
| Shredders                                | 5.9                            | -    | 4.8  | -    | -    | 2.1  |            |
| Scrapers                                 | 2.9                            | -    | -    | -    | -    | 0.6  |            |
| Predators                                | -                              | -    | -    | -    | -    | -    |            |
| SUMMARY                                  |                                |      |      |      |      |      |            |
| Total Individuals                        | 34                             | 22   | 21   | 16   | 17   | 22.0 |            |
| Total Taxa                               | 10                             | 4    | 4    | 2    | 2    | 4.8  |            |
| Diversity (Dbar)                         | 2.0                            | 0.8  | 1.0  | 0.7  | 0.3  | 1.0  |            |
| 110                                      | Total Individuals collected    |      |      |      |      |      |            |
| 11                                       | Total Number of Taxa collected |      |      |      |      |      |            |
| 1.3                                      | Total Sample Diversity (Dbar)  |      |      |      |      |      |            |

**Table A8.2.4. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on February 17, 1983.**

| Organisms                                | Replicates                     |     |     |      |      | Mean | % of total |
|------------------------------------------|--------------------------------|-----|-----|------|------|------|------------|
|                                          | 1                              | 2   | 3   | 4    | 5    |      |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |     |     |      |      |      |            |
| Misc. Invertebrates                      |                                |     |     |      |      |      |            |
| Oligochaeta                              | 3                              | 2   | 2   | 3    | 6    | 3.2  | 4.0        |
| SUBTOTAL                                 |                                |     |     |      |      | 3.2  | 4.0        |
| Plecoptera                               |                                |     |     |      |      |      |            |
| Strophopteryx                            | 2                              | -   | -   | 2    | -    | 0.8  | 1.0        |
| SUBTOTAL                                 |                                |     |     |      |      | 0.8  | 1.0        |
| Diptera                                  |                                |     |     |      |      |      |            |
| Orthoclad/Chiro                          | 61                             | 56  | 53  | 71   | 133  | 74.8 | 94.0       |
| Tanypodinae                              | -                              | -   | -   | -    | 1    | 0.2  | 0.3        |
| Prosimulium                              | -                              | -   | -   | 1    | -    | 0.2  | 0.3        |
| Simulium vittatum                        | -                              | -   | -   | -    | 2    | 0.4  | 0.5        |
| SUBTOTAL                                 |                                |     |     |      |      | 75.6 | 95.0       |
| FUNCTIONAL GROUPS (%)                    |                                |     |     |      |      |      |            |
| Collector-gatherers                      | 97.0                           | 100 | 100 | 96.1 | 97.9 | 98.2 |            |
| Collector-filterers                      | -                              | -   | -   | 1.3  | 1.4  | 0.5  |            |
| Shredders                                | 3.0                            | -   | -   | 2.6  | -    | 1.1  |            |
| Scrapers                                 | -                              | -   | -   | -    | -    | -    |            |
| Predators                                | -                              | -   | -   | -    | 0.7  | 0.1  |            |
| SUMMARY                                  |                                |     |     |      |      |      |            |
| Total Individuals                        | 66                             | 58  | 54  | 77   | 142  | 79.6 |            |
| Total Taxa                               | 3                              | 2   | 2   | 4    | 4    | 3.0  |            |
| Diversity (Dbar)                         | 0.5                            | 0.2 | 0.2 | 0.5  | 0.4  | 0.4  |            |
| 398                                      | Total Individuals collected    |     |     |      |      |      |            |
| 6                                        | Total Number of Taxa collected |     |     |      |      |      |            |
| 0.4                                      | Total Sample Diversity (Dbar)  |     |     |      |      |      |            |

**Table A8.2.5. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on March 25, 1983.**

| Organisms                                | Replicates |      |      |      |      | Mean  | % of total |
|------------------------------------------|------------|------|------|------|------|-------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |       |            |
| Misc. Invertebrates                      |            |      |      |      |      |       |            |
| Nematoda                                 | -          | -    | -    | 1    | -    | 0.2   | 0.2        |
| Oligochaeta                              | 2          | 2    | 3    | 1    | 1    | 1.8   | 1.4        |
| Hyalella azteca                          | 1          | 1    | 3    | 2    | -    | 1.4   | 1.1        |
| SUBTOTAL                                 |            |      |      |      |      | 3.4   | 2.6        |
| Ephemeroptera                            |            |      |      |      |      |       |            |
| Baetidae                                 | 1          | -    | -    | -    | -    | 0.2   | 0.2        |
| Ephemerella                              | 1          | -    | 1    | 1    | 1    | 0.8   | 0.6        |
| SUBTOTAL                                 |            |      |      |      |      | 1.0   | 0.8        |
| Plecoptera                               |            |      |      |      |      |       |            |
| Strophopteryx                            | -          | 2    | 2    | -    | -    | 0.8   | 0.6        |
| Isogenus                                 | -          | -    | 1    | -    | -    | 0.2   | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 1.0   | 0.8        |
| Coleoptera                               |            |      |      |      |      |       |            |
| Hydrophilidae                            | 1          | -    | -    | -    | -    | 0.2   | 0.2        |
| Promoresia larvae                        | -          | 1    | 1    | 2    | -    | 0.8   | 0.6        |
| SUBTOTAL                                 |            |      |      |      |      | 1.0   | 0.8        |
| Trichoptera                              |            |      |      |      |      |       |            |
| Cheumatopsyche                           | 1          | 1    | -    | -    | -    | 0.4   | 0.3        |
| Hydropsyche morosa                       | -          | -    | 2    | -    | -    | 0.4   | 0.3        |
| Hydroptila                               | -          | 1    | -    | -    | -    | 0.2   | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 1.0   | 0.8        |
| Diptera                                  |            |      |      |      |      |       |            |
| Orthoclad/Chiro                          | 130        | 82   | 183  | 84   | 111  | 118.0 | 91.8       |
| Tanypodinae                              | 1          | 1    | -    | 1    | -    | 0.6   | 0.5        |
| Prosimulium                              | -          | -    | -    | 1    | -    | 0.2   | 0.2        |
| Simulium jenningsi                       | 1          | 1    | 1    | 1    | 1    | 1.0   | 0.8        |
| Simulium vittatum                        | -          | 2    | -    | -    | 3    | 1.0   | 0.8        |
| Atherix                                  | -          | 1    | -    | -    | -    | 0.2   | 0.2        |
| Hemerodromia                             | -          | -    | 1    | -    | -    | 0.2   | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 121.2 | 94.2       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |       |            |
| Collector-gatherers                      | 97.1       | 89.5 | 96.0 | 94.7 | 96.6 | 94.8  |            |
| Collector-filterers                      | 1.4        | 4.2  | 1.5  | 2.1  | 3.4  | 2.5   |            |
| Shredders                                | -          | 2.1  | 1.0  | -    | -    | 0.6   |            |
| Scrapers                                 | 0.7        | 2.1  | 0.5  | 2.1  | -    | 1.1   |            |
| Predators                                | 0.7        | 2.1  | 1.0  | 1.1  | -    | 1.0   |            |

| Organisms         | Replicates                     |     |     |     |     | Mean  | % of total |
|-------------------|--------------------------------|-----|-----|-----|-----|-------|------------|
|                   | 1                              | 2   | 3   | 4   | 5   |       |            |
| SUMMARY           |                                |     |     |     |     |       |            |
| Total Individuals | 139                            | 95  | 198 | 94  | 117 | 128.6 |            |
| Total Taxa        | 9                              | 11  | 10  | 9   | 5   | 8.8   |            |
| Diversity (Dbar)  | 0.5                            | 1.0 | 0.6 | 0.8 | 0.4 | 0.7   |            |
| 643               | Total Individuals collected    |     |     |     |     |       |            |
| 19                | Total Number of Taxa collected |     |     |     |     |       |            |
| 0.7               | Total Sample Diversity (Dbar)  |     |     |     |     |       |            |

Table A8.2.6. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on March 24, 1983.

| Organisms                                | Replicate                      |      |      |     |      | Mean  | % of total |
|------------------------------------------|--------------------------------|------|------|-----|------|-------|------------|
|                                          | 1                              | 2    | 3    | 4   | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |      |      |     |      |       |            |
| Misc. Invertebrates                      |                                |      |      |     |      |       |            |
| Oligochaeta                              | -                              | 5    | 6    | 2   | 1    | 2.8   | 1.8        |
| SUBTOTAL                                 |                                |      |      |     |      | 2.8   | 1.8        |
| Ephemeroptera                            |                                |      |      |     |      |       |            |
| Baetidae                                 | -                              | 1    | -    | -   | -    | 0.2   | 0.1        |
| Ephemerella                              | -                              | -    | -    | -   | 2    | 0.4   | 0.3        |
| SUBTOTAL                                 |                                |      |      |     |      | 0.8   | 0.4        |
| Trichoptera                              |                                |      |      |     |      |       |            |
| Cheumatopsyche                           | -                              | -    | -    | -   | 1    | 0.2   | 0.1        |
| Hydropsyche morosa                       | -                              | 5    | -    | -   | -    | 1.0   | 0.6        |
| SUBTOTAL                                 |                                |      |      |     |      | 1.2   | 0.8        |
| Diptera                                  |                                |      |      |     |      |       |            |
| Orthoclad/Chiro                          | 183                            | 169  | 165  | 144 | 101  | 152.4 | 96.7       |
| Simulium jenningsi                       | -                              | 1    | -    | -   | -    | 0.2   | 0.1        |
| Simulium vittatum                        | -                              | 1    | 1    | -   | -    | 0.4   | 0.3        |
| SUBTOTAL                                 |                                |      |      |     |      | 153.0 | 97.1       |
| FUNCTIONAL GROUPS (%)                    |                                |      |      |     |      |       |            |
| Collector-gatherers                      | 100                            | 96.2 | 99.4 | 100 | 99.0 | 98.9  |            |
| Collector-filterers                      | -                              | 3.8  | 0.6  | -   | 1.0  | 1.1   |            |
| Shredders                                | -                              | -    | -    | -   | -    | -     |            |
| Scrapers                                 | -                              | -    | -    | -   | -    | -     |            |
| Predators                                | -                              | -    | -    | -   | -    | -     |            |
| SUMMARY                                  |                                |      |      |     |      |       |            |
| Total Individuals                        | 183                            | 182  | 172  | 146 | 105  | 157.6 |            |
| Total Taxa                               | 1                              | 6    | 3    | 2   | 4    | 3.2   |            |
| Diversity (Dbar)                         | 0                              | 0.5  | 0.3  | 0.1 | 0.3  | 0.2   |            |
| 788                                      | Total Individuals collected    |      |      |     |      |       |            |
| 8                                        | Total Number of Taxa collected |      |      |     |      |       |            |
| 0.3                                      | Total Sample Diversity (Dbar)  |      |      |     |      |       |            |

**Table A8.2.7. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on April 21, 1983 (\* indicates that mean or percentage is less than 0.1).**

| Organisms                                | Replicates |    |    |    |    | Mean | % of total |
|------------------------------------------|------------|----|----|----|----|------|------------|
|                                          | 1          | 2  | 3  | 4  | 5  |      |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |    |    |    |    |      |            |
| Misc. Invertebrates                      |            |    |    |    |    |      |            |
| Oligochaeta                              | 1          | 4  | 2  | 1  | 1  | 1.8  | 0.8        |
| Hyalella azteca                          | -          | 3  | -  | 3  | 3  | 1.8  | 0.8        |
| Isopoda Assellus                         | -          | 1  | -  | -  | -  | 0.2  | ×          |
| Arachnida                                | -          | 1  | -  | -  | -  | 0.2  | ×          |
| SUBTOTAL                                 |            |    |    |    |    | 4.0  | 1.8        |
| Ephemeroptera                            |            |    |    |    |    |      |            |
| Isonychia bicolor                        | -          | 1  | -  | 4  | -  | 1.0  | 0.5        |
| Baetidae                                 | -          | 1  | 1  | 1  | 1  | 0.8  | 0.4        |
| Stenacron                                | -          | -  | -  | 1  | -  | 0.2  | ×          |
| Ephemerella                              | 2          | 10 | 21 | 28 | 11 | 14.4 | 6.5        |
| Tricorythodes                            | -          | -  | -  | 6  | 1  | 1.4  | 0.6        |
| Hexagenia                                | -          | 1  | -  | -  | -  | 0.2  | ×          |
| SUBTOTAL                                 |            |    |    |    |    | 18.0 | 8.2        |
| Plecoptera                               |            |    |    |    |    |      |            |
| Amphinemura                              | 1          | 2  | 1  | 4  | -  | 1.6  | 0.7        |
| Neoperla                                 | 1          | -  | -  | -  | -  | 0.2  | ×          |
| Isogenus                                 | -          | 1  | -  | 1  | -  | 0.4  | 0.2        |
| SUBTOTAL                                 |            |    |    |    |    | 2.2  | 1.0        |
| Coleoptera                               |            |    |    |    |    |      |            |
| Hydrophilidae                            | -          | -  | -  | 1  | -  | 0.2  | ×          |
| Psephenus herricki                       | 1          | 1  | 1  | 1  | -  | 0.8  | 0.4        |
| Microcylloepus larvae                    | -          | 7  | 3  | 6  | 2  | 3.6  | 1.6        |
| Macronychus larvae                       | -          | -  | 1  | 3  | 1  | 1.0  | 0.5        |
| Dubiraphia larvae                        | -          | -  | -  | 1  | -  | 0.2  | ×          |
| Promoresia larvae                        | -          | 1  | -  | 3  | -  | 0.8  | 0.4        |
| SUBTOTAL                                 |            |    |    |    |    | 6.6  | 3.0        |
| Trichoptera                              |            |    |    |    |    |      |            |
| Chimarra                                 | -          | 5  | -  | 6  | 1  | 2.4  | 1.1        |
| Neureclipsis                             | -          | 1  | -  | -  | -  | 0.2  | ×          |
| Cheumatopsyche                           | -          | 6  | 5  | 2  | 1  | 2.8  | 1.3        |
| Hydropsyche morosa                       | 2          | 12 | -  | 18 | 5  | 7.4  | 3.4        |
| SUBTOTAL                                 |            |    |    |    |    | 12.8 | 5.8        |



| Organisms                                | Replicates |      |      |      |      | Mean  | % of total |
|------------------------------------------|------------|------|------|------|------|-------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |       |            |
| <b>Diptera</b>                           |            |      |      |      |      |       |            |
| Orthoclad/Chiro                          | 34         | 203  | 142  | 185  | 39   | 120.6 | 54.8       |
| Tanypodinae                              | 2          | 13   | 3    | 4    | -    | 4.4   | 2.0        |
| Simulium jenningsi                       | 23         | 51   | 70   | 64   | 42   | 50.0  | 22.7       |
| Hemerodromia                             | 1          | 2    | -    | 4    | -    | 1.4   | 0.6        |
| <b>SUBTOTAL</b>                          |            |      |      |      |      | 176.4 | 80.2       |
| <b>FUNCTIONAL GROUPS (%)</b>             |            |      |      |      |      |       |            |
| Collector-gatherers                      | 54.4       | 68.5 | 66.4 | 66.0 | 51.9 | 61.4  |            |
| Collector-filterers                      | 36.8       | 22.9 | 30.0 | 25.9 | 45.4 | 32.2  |            |
| Shredders                                | 1.5        | 0.6  | 0.4  | 1.2  | -    | 0.7   |            |
| Scrapers                                 | 1.5        | 2.8  | 2.0  | 4.0  | 2.8  | 2.6   |            |
| Predators                                | 5.9        | 5.2  | 1.2  | 2.9  | -    | 3.0   |            |
| <b>SUMMARY</b>                           |            |      |      |      |      |       |            |
| Total Individuals                        | 68         | 329  | 250  | 347  | 108  | 220.0 |            |
| Total Taxa                               | 10         | 22   | 11   | 22   | 12   | 15.2  |            |
| Diversity (Dbar)                         | 1.9        | 2.2  | 1.7  | 2.4  | 2.2  | 2.1   |            |
| <b>1100 Total Individuals collected</b>  |            |      |      |      |      |       |            |
| <b>27 Total Number of Taxa collected</b> |            |      |      |      |      |       |            |
| <b>2.3 Total Sample Diversity (Dbar)</b> |            |      |      |      |      |       |            |

Table A8.2.8. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on April 22, 1983.

| Organisms                                | Replicates |      |      |      |      | Mean  | % of total |
|------------------------------------------|------------|------|------|------|------|-------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |       |            |
| Misc. Invertebrates                      |            |      |      |      |      |       |            |
| Oligochaeta                              | 1          | -    | 3    | 3    | 3    | 2.0   | 1.4        |
| Hyaella azteca                           | -          | -    | -    | 1    | -    | 0.2   | 0.1        |
| Arachnida                                | -          | -    | -    | -    | 1    | 0.2   | 0.1        |
| SUBTOTAL                                 |            |      |      |      |      | 2.4   | 1.7        |
| Ephemeroptera                            |            |      |      |      |      |       |            |
| Baetidae                                 | -          | -    | -    | 1    | -    | 0.2   | 0.1        |
| Ephemerella                              | -          | -    | 1    | 4    | -    | 1.0   | 0.7        |
| Tricorythodes                            | -          | 1    | -    | -    | -    | 0.2   | 0.1        |
| SUBTOTAL                                 |            |      |      |      |      | 1.4   | 1.0        |
| Plecoptera                               |            |      |      |      |      |       |            |
| Amphinemura                              | -          | 1    | -    | 1    | -    | 0.4   | 0.3        |
| SUBTOTAL                                 |            |      |      |      |      | 0.4   | 0.3        |
| Coleoptera                               |            |      |      |      |      |       |            |
| Microcylloepus larvae                    | -          | -    | -    | 1    | 1    | 0.4   | 0.3        |
| SUBTOTAL                                 |            |      |      |      |      | 0.4   | 0.3        |
| Trichoptera                              |            |      |      |      |      |       |            |
| Cheumatopsyche                           | -          | 2    | -    | 2    | -    | 0.8   | 0.6        |
| Hydroptila                               | -          | 2    | -    | -    | -    | 0.4   | 0.3        |
| SUBTOTAL                                 |            |      |      |      |      | 1.2   | 0.9        |
| Diptera                                  |            |      |      |      |      |       |            |
| Antocha                                  | -          | -    | 1    | -    | -    | 0.2   | 0.1        |
| Orthoclad/Chiro                          | 119        | 164  | 73   | 148  | 134  | 127.6 | 91.0       |
| Simulium jenningsi                       | -          | 11   | 8    | 7    | 7    | 6.6   | 4.7        |
| SUBTOTAL                                 |            |      |      |      |      | 134.4 | 95.9       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |       |            |
| Collector-gatherers                      | 100        | 91.2 | 90.7 | 92.9 | 94.5 | 93.8  |            |
| Collector-filterers                      | -          | 7.2  | 9.3  | 5.3  | 4.8  | 5.3   |            |
| Shredders                                | -          | 0.6  | -    | 0.6  | -    | 0.2   |            |
| Scrapers                                 | -          | 1.1  | -    | 0.6  | 0.7  | 0.5   |            |
| Predators                                | -          | -    | -    | 0.6  | -    | 0.1   |            |

| Organisms         |                                | Replicates |     |     |     |     | Mean  | % of total |
|-------------------|--------------------------------|------------|-----|-----|-----|-----|-------|------------|
|                   |                                | 1          | 2   | 3   | 4   | 5   |       |            |
| SUMMARY           |                                |            |     |     |     |     |       |            |
| Total Individuals |                                | 120        | 181 | 86  | 169 | 145 | 140.2 |            |
| Total Taxa        |                                | 2          | 6   | 5   | 10  | 4   | 5.4   |            |
| Diversity (Dbar)  |                                | 0.1        | 0.6 | 0.8 | 0.9 | 0.5 | 0.6   |            |
|                   |                                |            |     |     |     |     |       |            |
| 701               | Total Individuals collected    |            |     |     |     |     |       |            |
| 13                | Total Number of Taxa collected |            |     |     |     |     |       |            |
| 0.7               | Total Sample Diversity (Dbar)  |            |     |     |     |     |       |            |

Table A8.2.9. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on May 19, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |    |    |    |    | Mean | % of total |
|------------------------------------------|------------|----|----|----|----|------|------------|
|                                          | 1          | 2  | 3  | 4  | 5  |      |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |    |    |    |    |      |            |
| Misc. Invertebrates                      |            |    |    |    |    |      |            |
| Oligochaeta                              | 1          | 4  | 4  | 3  | 1  | 2.6  | 0.6        |
| Hyalella azteca                          | -          | 1  | 2  | 1  | -  | 0.8  | 0.2        |
| Isopoda Assellus                         | -          | -  | 3  | -  | -  | 0.6  | 0.1        |
| Arachnida                                | -          | 1  | 2  | -  | 1  | 0.8  | 0.2        |
| SUBTOTAL                                 |            |    |    |    |    | 4.8  | 1.1        |
| Ephemeroptera                            |            |    |    |    |    |      |            |
| Isonychia bicolor                        | -          | 10 | 34 | 14 | -  | 11.6 | 2.7        |
| Baetidae                                 | 2          | 3  | -  | 1  | -  | 1.2  | 0.3        |
| Stenacron                                | -          | -  | -  | 2  | -  | 0.4  | ×          |
| Stenonema                                | 6          | 6  | 14 | 38 | -  | 12.8 | 2.9        |
| Ephemerella                              | 20         | 38 | 76 | 34 | 10 | 35.6 | 8.2        |
| Tricorythodes                            | -          | -  | -  | 1  | -  | 0.2  | ×          |
| SUBTOTAL                                 |            |    |    |    |    | 61.8 | 14.2       |
| Plecoptera                               |            |    |    |    |    |      |            |
| Amphinemura                              | 1          | 3  | 2  | -  | -  | 1.2  | 0.3        |
| Phasganophora                            | -          | -  | -  | 1  | -  | 0.2  | ×          |
| Acroneuria                               | -          | -  | 1  | 1  | -  | 0.4  | ×          |
| Paragnetina                              | -          | 1  | -  | -  | -  | 0.2  | ×          |
| Neoperla                                 | 1          | -  | 1  | -  | -  | 0.4  | ×          |
| Isoperla                                 | -          | -  | 1  | -  | -  | 0.2  | ×          |
| SUBTOTAL                                 |            |    |    |    |    | 2.6  | 0.6        |
| Coleoptera                               |            |    |    |    |    |      |            |
| Psephenus herricki                       | -          | -  | -  | -  | 1  | 0.2  | ×          |
| Stenelmis larvae                         | -          | 1  | -  | -  | -  | 0.2  | ×          |
| Microcylloepus larvae                    | 2          | 5  | 9  | 12 | 3  | 6.2  | 1.4        |
| Macronychus larvae                       | -          | 1  | -  | -  | 1  | 0.4  | ×          |
| Dubiraphia larvae                        | -          | -  | -  | 1  | -  | 0.4  | ×          |
| Promoresia larvae                        | -          | -  | -  | -  | 1  | 0.2  | ×          |
| SUBTOTAL                                 |            |    |    |    |    | 7.4  | 1.7        |
| Trichoptera                              |            |    |    |    |    |      |            |
| Chimarra                                 | 1          | 5  | 3  | 7  | 1  | 3.4  | 0.8        |
| Cheumatopsyche                           | 5          | 8  | 11 | 18 | 5  | 9.4  | 2.2        |
| Hydropsyche morosa                       | 9          | 12 | 19 | 18 | 11 | 13.8 | 3.2        |
| Hydroptila                               | 3          | 5  | -  | 4  | -  | 2.4  | 0.6        |
| SUBTOTAL                                 |            |    |    |    |    | 29.0 | 6.6        |

| Organisms                                | Replicates |      |      |      |      | Mean         | % of total  |
|------------------------------------------|------------|------|------|------|------|--------------|-------------|
|                                          | 1          | 2    | 3    | 4    | 5    |              |             |
| <b>Diptera</b>                           |            |      |      |      |      |              |             |
| Tipulidae                                | -          | -    | 1    | -    | -    | 0.2          | ×           |
| Ceratopogonidae                          | -          | 1    | -    | -    | -    | 0.2          | ×           |
| Orthoclad/Chiro                          | 44         | 404  | 414  | 460  | 74   | 279.2        | 64.0        |
| Tanypodinae                              | 4          | 12   | 10   | 8    | 1    | 7.0          | 1.6         |
| Simulium jenningsi                       | 23         | 48   | 60   | 37   | 29   | 39.4         | 9.0         |
| Simulium vittatum                        | 1          | 1    | -    | 1    | -    | 0.6          | 0.1         |
| Hemerodromia                             | -          | 3    | 6    | 10   | 1    | 4.0          | 0.9         |
| <b>SUBTOTAL</b>                          |            |      |      |      |      | <b>330.6</b> | <b>75.8</b> |
| <b>FUNCTIONAL GROUPS (%)</b>             |            |      |      |      |      |              |             |
| Collector-gatherers                      | 59.3       | 79.6 | 76.2 | 80.4 | 60.7 | 71.2         |             |
| Collector-filterers                      | 31.7       | 14.7 | 18.9 | 14.1 | 32.9 | 22.4         |             |
| Shredders                                | 0.8        | 0.5  | 0.4  | -    | -    | 0.4          |             |
| Scrapers                                 | 4.1        | 2.1  | 1.3  | 2.5  | 4.3  | 2.9          |             |
| Predators                                | 4.1        | 3.1  | 3.1  | 3.0  | 2.1  | 3.1          |             |
| <b>SUMMARY</b>                           |            |      |      |      |      |              |             |
| Total Individuals                        | 123        | 573  | 673  | 672  | 140  | 436.2        |             |
| Total Taxa                               | 15         | 22   | 20   | 21   | 14   | 18.4         |             |
| Diversity (Dbar)                         | 2.9        | 1.9  | 2.2  | 2.0  | 2.2  | 2.2          |             |
| <b>2181 Total Individuals collected</b>  |            |      |      |      |      |              |             |
| <b>33 Total Number of Taxa collected</b> |            |      |      |      |      |              |             |
| <b>2.2 Total Sample Diversity (Dbar)</b> |            |      |      |      |      |              |             |

Table A8.2.10. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on May 20, 1983.

| Organisms                                | Replicates |      |      |      |      | Mean | % of total |
|------------------------------------------|------------|------|------|------|------|------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |      |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |      |            |
| Misc. Invertebrates                      |            |      |      |      |      |      |            |
| Oligochaeta                              | 1          | 1    | -    | -    | -    | 0.4  | 0.5        |
| Gammarus                                 | -          | -    | -    | -    | 1    | 0.2  | 0.2        |
| Arachnida                                | 1          | 2    | -    | -    | 1    | 0.8  | 0.9        |
| SUBTOTAL                                 |            |      |      |      |      | 1.4  | 1.6        |
| Ephemeroptera                            |            |      |      |      |      |      |            |
| Baetidae                                 | -          | -    | -    | 2    | 2    | 0.8  | 0.9        |
| Stenacron                                | 2          | -    | 2    | -    | -    | 0.8  | 0.9        |
| Stenonema                                | 14         | 14   | 4    | 4    | 20   | 11.2 | 13.0       |
| Ephemerella                              | 2          | 8    | -    | 8    | 4    | 4.4  | 5.1        |
| SUBTOTAL                                 |            |      |      |      |      | 17.2 | 20.0       |
| Coleoptera                               |            |      |      |      |      |      |            |
| Microcylloepus larvae                    | -          | -    | -    | -    | 2    | 0.4  | 0.5        |
| SUBTOTAL                                 |            |      |      |      |      | 0.4  | 0.5        |
| Trichoptera                              |            |      |      |      |      |      |            |
| Cheumatopsyche                           | 3          | 6    | 1    | 2    | 4    | 3.2  | 3.7        |
| Hydropsyche morosa                       | -          | 3    | 1    | -    | -    | 0.8  | 0.9        |
| Hydropsyche phalerata                    | 1          | -    | -    | -    | -    | 0.2  | 0.2        |
| Hydroptila                               | -          | -    | -    | -    | 1    | 0.2  | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 4.4  | 5.1        |
| Diptera                                  |            |      |      |      |      |      |            |
| Orthoclad/Chiro                          | 39         | 74   | 33   | 40   | 107  | 58.6 | 68.0       |
| Tanypodinae                              | 5          | 2    | 3    | 2    | 7    | 3.8  | 4.4        |
| Simulium jenningsi                       | -          | -    | -    | 1    | -    | 0.2  | 0.2        |
| Hemerodromia                             | -          | -    | -    | -    | 1    | 0.2  | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 62.8 | 72.9       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |      |            |
| Collector-gatherers                      | 85.3       | 88.2 | 88.6 | 91.5 | 89.3 | 88.6 |            |
| Collector-filterers                      | 5.9        | 8.2  | 4.5  | 5.1  | 2.7  | 5.3  |            |
| Shredders                                | -          | -    | -    | -    | -    | -    |            |
| Scrapers                                 | -          | -    | -    | -    | 2.0  | 0.4  |            |
| Predators                                | 8.8        | 3.6  | 6.8  | 3.4  | 6.0  | 5.7  |            |

| Organisms         | Replicates                     |     |     |     |     | Mean | % of total |
|-------------------|--------------------------------|-----|-----|-----|-----|------|------------|
|                   | 1                              | 2   | 3   | 4   | 5   |      |            |
| SUMMARY           |                                |     |     |     |     |      |            |
| Total Individuals | 68                             | 110 | 44  | 59  | 150 | 86.2 |            |
| Total Taxa        | 9                              | 8   | 6   | 7   | 11  | 8.2  |            |
| Diversity (Dbar)  | 2.0                            | 1.7 | 1.3 | 1.6 | 1.6 | 1.6  |            |
|                   |                                |     |     |     |     |      |            |
| 431               | Total Individuals collected    |     |     |     |     |      |            |
| 16                | Total Number of Taxa collected |     |     |     |     |      |            |
| 1.6               | Total Sample Diversity (Dbar)  |     |     |     |     |      |            |

Table A8.2.11. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on June 22, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |     |    |    |     | Mean  | % of total |
|------------------------------------------|------------|-----|----|----|-----|-------|------------|
|                                          | 1          | 2   | 3  | 4  | 5   |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |     |    |    |     |       |            |
| Misc. Invertebrates                      |            |     |    |    |     |       |            |
| Nematoda                                 | 26         | -   | 4  | 13 | 4   | 9.4   | 0.2        |
| Arachnida                                | 1          | 10  | -  | 1  | 4   | 3.2   | ×          |
| Orconectes                               | -          | -   | 1  | -  | -   | 0.2   | ×          |
| SUBTOTAL                                 |            |     |    |    |     | 12.8  | 0.3        |
| Ephemeroptera                            |            |     |    |    |     |       |            |
| Isonychia bicolor                        | 112        | 36  | 54 | 18 | 88  | 61.6  | 1.6        |
| Baetidae                                 | 4          | 8   | 2  | 6  | 4   | 4.8   | 0.1        |
| Stenonema                                | 62         | 30  | 24 | 38 | 66  | 44.0  | 1.2        |
| Ephemerella                              | 25         | 12  | 5  | 6  | 16  | 12.8  | 0.3        |
| Tricorythodes                            | 5          | 29  | -  | 10 | 14  | 11.6  | 0.3        |
| Caenis                                   | 4          | -   | -  | -  | 4   | 1.6   | ×          |
| SUBTOTAL                                 |            |     |    |    |     | 136.4 | 3.6        |
| Odonata                                  |            |     |    |    |     |       |            |
| Macromiidae                              | -          | -   | -  | -  | 1   | 0.2   | ×          |
| SUBTOTAL                                 |            |     |    |    |     | 0.2   | ×          |
| Plecoptera                               |            |     |    |    |     |       |            |
| Amphinemura                              | -          | -   | -  | 1  | -   | 0.2   | ×          |
| Acroneuria                               | -          | -   | -  | -  | 1   | 0.2   | ×          |
| Neoperla                                 | -          | -   | 3  | -  | -   | 0.6   | ×          |
| SUBTOTAL                                 |            |     |    |    |     | 1.0   | ×          |
| Coleoptera                               |            |     |    |    |     |       |            |
| Microcylloepus larvae                    | -          | -   | -  | 1  | -   | 0.2   | ×          |
| Macronychus larvae                       | -          | -   | -  | -  | 3   | 0.6   | ×          |
| SUBTOTAL                                 |            |     |    |    |     | 0.8   | ×          |
| Trichoptera                              |            |     |    |    |     |       |            |
| Neureclipsis                             | 1          | -   | -  | -  | 2   | 0.6   | ×          |
| Cheumatopsyche                           | 118        | 141 | 79 | 89 | 100 | 105.4 | 2.8        |
| Hydropsyche morosa                       | 39         | 46  | 23 | 37 | 32  | 35.4  | 0.9        |
| Hydropsyche phalerata                    | -          | -   | 2  | 7  | 5   | 2.8   | ×          |
| Potamyia                                 | -          | -   | 2  | -  | -   | 0.4   | ×          |
| Rhyacophila                              | -          | -   | -  | -  | 2   | 0.4   | ×          |
| Hydroptila                               | 19         | 18  | 7  | 29 | 12  | 17.0  | 0.4        |
| SUBTOTAL                                 |            |     |    |    |     | 162.0 | 4.3        |



| Organisms                | Replicates                     |      |      |      |      | Mean   | % of total |
|--------------------------|--------------------------------|------|------|------|------|--------|------------|
|                          | 1                              | 2    | 3    | 4    | 5    |        |            |
| <hr/>                    |                                |      |      |      |      |        |            |
| Diptera                  |                                |      |      |      |      |        |            |
| Orthoclad/Chiro          | 2800                           | 4912 | 2952 | 3704 | 2952 | 3464.0 | 91.1       |
| Tanypodinae              | 20                             | 12   | 16   | 16   | 16   | 16.0   | 0.4        |
| Simulium jenningsi       | 4                              | 19   | -    | 10   | 10   | 8.6    | 0.2        |
| Simulium jenningsi pupae | -                              | 2    | -    | -    | -    | 0.4    | ×          |
| Simulium vittatum        | -                              | -    | 1    | -    | -    | 0.2    | ×          |
| Hemerodromia             | 3                              | -    | -    | 1    | 1    | 1.0    | ×          |
| SUBTOTAL                 |                                |      |      |      |      | 3490.2 | 91.8       |
| <hr/>                    |                                |      |      |      |      |        |            |
| FUNCTIONAL GROUPS (%)    |                                |      |      |      |      |        |            |
| Collector-gatherers      | 93.7                           | 95.3 | 95.8 | 95.2 | 94.3 | 94.9   |            |
| Collector-filterers      | 5.0                            | 3.9  | 3.4  | 3.6  | 4.5  | 4.1    |            |
| Shredders                | -                              | -    | -    | -    | -    | -      |            |
| Scrapers                 | 0.6                            | 0.3  | 0.2  | 0.8  | 0.4  | 0.5    |            |
| Predators                | 0.7                            | 0.4  | 0.6  | 0.5  | 0.7  | 0.6    |            |
| <hr/>                    |                                |      |      |      |      |        |            |
| SUMMARY                  |                                |      |      |      |      |        |            |
| Total Individuals        | 3244                           | 5274 | 3174 | 3987 | 3337 | 3803.2 |            |
| Total Taxa               | 16                             | 12   | 15   | 17   | 21   | 16.2   |            |
| Diversity (Dbar)         | 1.0                            | 0.6  | 0.6  | 0.6  | 0.9  | 0.7    |            |
| <hr/>                    |                                |      |      |      |      |        |            |
| 19017                    | Total Individuals collected    |      |      |      |      |        |            |
| 28                       | Total Number of Taxa collected |      |      |      |      |        |            |
| 0.7                      | Total Sample Diversity (Dbar)  |      |      |      |      |        |            |

Table A8.2.12. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on June 23, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                       | Replicates |      |      |      |      | Mean   | % of total |
|-------------------------------------------------|------------|------|------|------|------|--------|------------|
|                                                 | 1          | 2    | 3    | 4    | 5    |        |            |
| <b>COMMUNITY STRUCTURE</b><br>(number/art. sub) |            |      |      |      |      |        |            |
| <b>Misc. Invertebrates</b>                      |            |      |      |      |      |        |            |
| Nematoda                                        | 3          | 7    | 2    | 8    | 11   | 6.2    | 0.4        |
| Oligochaeta                                     | 5          | -    | -    | -    | 17   | 4.4    | 0.3        |
| Gammarus                                        | 1          | 13   | -    | 1    | -    | 3.0    | 0.2        |
| Arachnida                                       | 1          | -    | 5    | 3    | 22   | 6.2    | 0.4        |
| SUBTOTAL                                        |            |      |      |      |      | 19.8   | 1.3        |
| <b>Ephemeroptera</b>                            |            |      |      |      |      |        |            |
| Baetidae                                        | 4          | 26   | 5    | 3    | 13   | 10.2   | 0.7        |
| Stenacron                                       | -          | 2    | 1    | -    | 3    | 1.2    | ×          |
| Stenonema                                       | 24         | 50   | 29   | 13   | 39   | 31.0   | 2.1        |
| Tricorythodes                                   | 92         | 142  | 38   | 26   | 97   | 79.0   | 5.3        |
| Caenis                                          | 4          | 12   | -    | 1    | 22   | 7.8    | 0.5        |
| SUBTOTAL                                        |            |      |      |      |      | 129.2  | 8.7        |
| <b>Odonata</b>                                  |            |      |      |      |      |        |            |
| Argia                                           | -          | 2    | -    | 2    | 2    | 1.2    | 0.1        |
| SUBTOTAL                                        |            |      |      |      |      | 1.4    | 0.1        |
| <b>Trichoptera</b>                              |            |      |      |      |      |        |            |
| Neureclipsis                                    | -          | 2    | -    | 2    | -    | 0.4    | ×          |
| Cheumatopsyche                                  | 117        | 54   | 72   | 45   | 72   | 72.0   | 4.8        |
| Hydropsyche aerata                              | 1          | 3    | 2    | -    | 1    | 1.4    | ×          |
| Hydroptila                                      | 4          | 4    | 5    | 11   | 10   | 6.8    | 0.5        |
| SUBTOTAL                                        |            |      |      |      |      | 81.0   | 5.4        |
| <b>Diptera</b>                                  |            |      |      |      |      |        |            |
| Orthoclad/Chiro                                 | 1004       | 1632 | 852  | 968  | 1688 | 1228.8 | 82.3       |
| Tanypodinae                                     | 16         | 64   | 20   | 8    | 56   | 32.8   | 2.2        |
| Simulium jenningsi                              | -          | 1    | -    | -    | -    | 0.2    | ×          |
| SUBTOTAL                                        |            |      |      |      |      | 1261.8 | 84.5       |
| <b>FUNCTIONAL GROUPS (%)</b>                    |            |      |      |      |      |        |            |
| Collector-gatherers                             | 89.1       | 93.5 | 89.9 | 93.5 | 92.0 | 91.6   |            |
| Collector-filterers                             | 9.2        | 3.0  | 7.2  | 4.3  | 3.6  | 5.5    |            |
| Shredders                                       | -          | -    | -    | -    | -    | -      |            |
| Scrapers                                        | 0.3        | 0.2  | 0.5  | 1.0  | 0.5  | 0.5    |            |
| Predators                                       | 1.3        | 3.3  | 2.4  | 1.2  | 3.9  | 2.5    |            |

| Organisms         | Replicates                     |      |      |      |      | Mean   | % of total |
|-------------------|--------------------------------|------|------|------|------|--------|------------|
|                   | 1                              | 2    | 3    | 4    | 5    |        |            |
| SUMMARY           |                                |      |      |      |      |        |            |
| Total Individuals | 1276                           | 2014 | 1031 | 1091 | 2054 | 1493.4 |            |
| Total Taxa        | 13                             | 15   | 11   | 13   | 15   | 13.4   |            |
| Diversity (Dbar)  | 1.2                            | 1.2  | 1.1  | 0.8  | 1.2  | 1.1    |            |
|                   |                                |      |      |      |      |        |            |
| 7466              | Total Individuals collected    |      |      |      |      |        |            |
| 18                | Total Number of Taxa collected |      |      |      |      |        |            |
| 1.2               | Total Sample Diversity (Dbar)  |      |      |      |      |        |            |

Table A8.2.13. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on July 20, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |      |      |      |      | Mean   | % of total |
|------------------------------------------|------------|------|------|------|------|--------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |        |            |
| Misc. Invertebrates                      |            |      |      |      |      |        |            |
| Arachnida                                | -          | -    | 2    | -    | 5    | 1.4    | ×          |
| Corydalis                                | -          | -    | 1    | -    | -    | 0.2    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 1.6    | ×          |
| Ephemeroptera                            |            |      |      |      |      |        |            |
| Isonychia bicolor                        | 27         | 22   | 17   | 14   | 8    | 17.6   | 0.2        |
| Baetidae                                 | 13         | 3    | 9    | 16   | 17   | 11.6   | 0.2        |
| Stenacron                                | -          | 1    | -    | 2    | 7    | 2.0    | ×          |
| Stenonema                                | 169        | 171  | 122  | 222  | 128  | 162.4  | 2.2        |
| Tricorythodes                            | 8          | 5    | 4    | 7    | 4    | 5.6    | ×          |
| Caenis                                   | -          | -    | -    | -    | 1    | 0.2    | ×          |
| Hexagenia                                | -          | 1    | -    | -    | -    | 0.2    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 199.6  | 2.7        |
| Odonata                                  |            |      |      |      |      |        |            |
| Argia                                    | 2          | 1    | 3    | 1    | 3    | 2.0    | ×          |
| Macromiidae                              | -          | -    | -    | 1    | -    | 0.2    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 2.2    | ×          |
| Trichoptera                              |            |      |      |      |      |        |            |
| Cynellus fraternus                       | 2          | -    | -    | -    | -    | 0.4    | ×          |
| Neureclipsis                             | 6          | 1    | -    | 5    | 3    | 3.0    | ×          |
| Polycentropus                            | -          | -    | 1    | -    | -    | 0.2    | ×          |
| Cheumatopsyche                           | 284        | 205  | 211  | 297  | 225  | 244.4  | 3.3        |
| Hydropsyche aerata                       | 1          | 1    | -    | -    | 1    | 0.6    | ×          |
| Hydropsyche morosa                       | 10         | 10   | 10   | 7    | 20   | 11.4   | 0.2        |
| Hydropsyche phalerata                    | 27         | 13   | 5    | 9    | 17   | 14.2   | 0.2        |
| Hydropsyche orris                        | 1          | -    | -    | -    | 4    | 1.0    | ×          |
| Potamyia                                 | -          | -    | -    | -    | 1    | 0.2    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 275.4  | 3.7        |
| Diptera                                  |            |      |      |      |      |        |            |
| Orthoclad/Chiro                          | 9128       | 6688 | 4408 | 9400 | 4872 | 6899.2 | 93.2       |
| Tanypodinae                              | 32         | 8    | 16   | 32   | -    | 17.6   | 0.2        |
| Hemerodromia                             | -          | 5    | -    | 7    | 1    | 2.6    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 6919.4 | 93.5       |

| Organisms                         | Replicates |      |      |       |      | Mean   | % of total |
|-----------------------------------|------------|------|------|-------|------|--------|------------|
|                                   | 1          | 2    | 3    | 4     | 5    |        |            |
| FUNCTIONAL GROUPS (%)             |            |      |      |       |      |        |            |
| Collector-gatherers               | 96.0       | 96.3 | 94.5 | 96.2  | 94.6 | 95.5   |            |
| Collector-filterers               | 3.7        | 3.5  | 5.1  | 3.3   | 5.2  | 4.2    |            |
| Shredders                         | -          | -    | -    | -     | -    | -      |            |
| Scrapers                          | -          | -    | -    | -     | -    | -      |            |
| Predators                         | 0.4        | 0.2  | 0.5  | 0.4   | 0.2  | 0.3    |            |
| SUMMARY                           |            |      |      |       |      |        |            |
| Total Individuals                 | 9710       | 7135 | 4809 | 10023 | 5317 | 7398.8 |            |
| Total Taxa                        | 14         | 15   | 13   | 16    | 17   | 15.0   |            |
| Diversity (Dbar)                  | 0.5        | 0.5  | 0.6  | 0.5   | 0.6  | 0.5    |            |
| 36994 Total Individuals collected |            |      |      |       |      |        |            |
| 25 Total Number of Taxa collected |            |      |      |       |      |        |            |
| 0.5 Total Sample Diversity (Dbar) |            |      |      |       |      |        |            |

Table A8.2.14. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on July 21, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |      |      |      |      | Mean  | % of total |
|------------------------------------------|------------|------|------|------|------|-------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |       |            |
| Misc. Invertebrates                      |            |      |      |      |      |       |            |
| Gammarus                                 | -          | 1    | -    | -    | 1    | 0.4   | ×          |
| Arachnida                                | -          | 7    | 1    | -    | -    | 1.6   | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 2.0   | 0.2        |
| Ephemeroptera                            |            |      |      |      |      |       |            |
| Stenacron                                | 4          | 8    | 2    | 3    | 2    | 3.8   | 0.5        |
| Stenonema                                | 1          | -    | 1    | 3    | -    | 1.0   | 0.1        |
| Tricorythodes                            | 12         | 8    | 7    | 14   | 20   | 12.2  | 1.5        |
| Caenis                                   | -          | 2    | -    | -    | -    | 0.4   | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 17.4  | 2.1        |
| Odonata                                  |            |      |      |      |      |       |            |
| Argia                                    | 2          | 1    | 3    | 1    | 2    | 1.8   | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 1.8   | 0.2        |
| Trichoptera                              |            |      |      |      |      |       |            |
| Cynnellus fraternus                      | 44         | 16   | 25   | 12   | 3    | 20.0  | 2.4        |
| Cheumatopsyche                           | 1          | 2    | 1    | 2    | 2    | 1.6   | 0.2        |
| Hydropsyche aerata                       | -          | -    | -    | 2    | -    | 0.4   | ×          |
| Hydropsyche morosa                       | 2          | -    | -    | -    | -    | 0.4   | ×          |
| Hydropsyche orris                        | -          | -    | 3    | 1    | -    | 0.8   | ×          |
| Hydroptila                               | 1          | -    | -    | -    | -    | 0.2   | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 23.4  | 2.8        |
| Diptera                                  |            |      |      |      |      |       |            |
| Orthoclad/Chiro                          | 458        | 1016 | 800  | 622  | 936  | 766.4 | 92.8       |
| Tanypodinae                              | 22         | 12   | 8    | 11   | 20   | 14.6  | 1.8        |
| Empididae pupae                          | -          | -    | -    | -    | 1    | 0.2   | ×          |
| Hemerodromia                             | -          | 1    | -    | -    | -    | 0.2   | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 781.4 | 94.6       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |       |            |
| Collector-gatherers                      | 94.9       | 97.9 | 98.1 | 97.5 | 97.5 | 97.2  |            |
| Collector-filterers                      | 0.5        | 0.2  | 0.5  | 0.7  | 0.2  | 0.4   |            |
| Shredders                                | -          | -    | -    | -    | -    | -     |            |
| Scrapers                                 | 0.2        | -    | -    | -    | -    | ×     |            |
| Predators                                | 4.4        | 2.0  | 1.4  | 1.8  | 2.3  | 2.4   |            |
| SUMMARY                                  |            |      |      |      |      |       |            |
| Total Individuals                        | 547        | 1074 | 851  | 671  | 987  | 826.0 |            |
| Total Taxa                               | 10         | 11   | 10   | 10   | 9    | 10    |            |
| Diversity (Dbar)                         | 1.0        | 0.5  | 0.5  | 0.6  | 0.4  | 0.6   |            |

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4130 Total Individuals collected  
17 Total Number of Taxa collected  
0.6 Total Sample Diversity (Dbar)

Table A8.2.15. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on August 24, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |      |      |      |      | Mean   | % of total |
|------------------------------------------|------------|------|------|------|------|--------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |        |            |
| Misc. Invertebrates                      |            |      |      |      |      |        |            |
| Planariidae                              | -          | -    | -    | -    | 3    | 0.6    | ×          |
| Arachnida                                | -          | 8    | 5    | -    | 3    | 3.2    | ×          |
| Ferrissia                                | -          | 4    | 16   | 3    | 2    | 5.0    | 0.1        |
| SUBTOTAL                                 |            |      |      |      |      | 8.8    | 0.2        |
| Ephemeroptera                            |            |      |      |      |      |        |            |
| Isonychia bicolor                        | -          | 2    | 1    | -    | -    | 0.6    | ×          |
| Baetidae                                 | 1          | 2    | -    | -    | 1    | 0.8    | ×          |
| Stenacron                                | 19         | 18   | 12   | 1    | 12   | 12.4   | 0.3        |
| Stenonema                                | 60         | 109  | 78   | 11   | 55   | 62.6   | 1.4        |
| Tricorythodes                            | 13         | 12   | 10   | 2    | 10   | 9.4    | 0.2        |
| Caenis                                   | 1          | 3    | 11   | -    | 1    | 3.2    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 89.0   | 2.0        |
| Odonata                                  |            |      |      |      |      |        |            |
| Argia                                    | -          | 5    | 1    | -    | 1    | 1.4    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 1.4    | ×          |
| Megaloptera                              |            |      |      |      |      |        |            |
| Corydalus                                | -          | -    | 1    | -    | -    | 0.2    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 0.2    | ×          |
| Coleoptera                               |            |      |      |      |      |        |            |
| Stenelmis adults                         | 2          | 1    | -    | -    | 3    | 1.2    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 1.2    | ×          |
| Trichoptera                              |            |      |      |      |      |        |            |
| Cynellus fraternus                       | 2          | 11   | 12   | 9    | 11   | 9.0    | 0.2        |
| Neureclipsis                             | 2          | 1    | 3    | -    | -    | 1.2    | ×          |
| Cheumatopsyche                           | 268        | 276  | 325  | 254  | 171  | 258.8  | 5.9        |
| Hydropsyche orris                        | 6          | 1    | 2    | 4    | -    | 2.6    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 271.2  | 6.2        |
| Diptera                                  |            |      |      |      |      |        |            |
| Orthoclad/Chiro                          | 3840       | 4184 | 6096 | 2336 | 3168 | 3924.8 | 90.2       |
| Tanypodinae                              | 24         | 112  | 88   | 8    | 32   | 52.8   | 1.2        |
| Empididae                                | -          | 3    | -    | -    | -    | 0.6    | ×          |
| Empididae pupae                          | -          | -    | -    | -    | 1    | 0.2    | ×          |
| Hemerodromia                             | 2          | -    | 2    | 2    | 1    | 1.4    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 3979.8 | 91.5       |



| Organisms             | Replicates                     |      |      |      |      | Mean   | % of total |
|-----------------------|--------------------------------|------|------|------|------|--------|------------|
|                       | 1                              | 2    | 3    | 4    | 5    |        |            |
| FUNCTIONAL GROUPS (%) |                                |      |      |      |      |        |            |
| Collector-gatherers   | 92.8                           | 91.4 | 93.4 | 89.7 | 93.9 | 92.2   |            |
| Collector-filterers   | 6.5                            | 5.9  | 5.0  | 9.8  | 4.9  | 6.4    |            |
| Shredders             | -                              | -    | -    | -    | -    | -      |            |
| Scrapers              | -                              | 0.1  | 0.2  | 0.1  | 0.1  | 0.1    |            |
| Predators             | 0.6                            | 2.7  | 1.4  | 0.4  | 1.1  | 1.3    |            |
| SUMMARY               |                                |      |      |      |      |        |            |
| Total Individuals     | 4240                           | 4752 | 6663 | 2630 | 3475 | 4351.8 |            |
| Total Taxa            | 13                             | 17   | 16   | 10   | 16   | 14.2   |            |
| Diversity (Dbar)      | 0.6                            | 0.8  | 0.6  | 0.6  | 0.6  | 0.6    |            |
| <hr/>                 |                                |      |      |      |      |        |            |
| 21760                 | Total Individuals collected    |      |      |      |      |        |            |
| 20                    | Total Number of Taxa collected |      |      |      |      |        |            |
| 0.7                   | Total Sample Diversity (Dbar)  |      |      |      |      |        |            |

Table A8.2.16. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on August 25, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates                     |      |      |      |      | Mean  | % of total |
|------------------------------------------|--------------------------------|------|------|------|------|-------|------------|
|                                          | 1                              | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |      |      |      |      |       |            |
| Misc. Invertebrates                      |                                |      |      |      |      |       |            |
| Gammarus                                 | 18                             | 1    | -    | 2    | 5    | 5.2   | 0.9        |
| Arachnida                                | 1                              | 1    | -    | -    | -    | 0.4   | x          |
| SUBTOTAL                                 |                                |      |      |      |      | 5.6   | 1.0        |
| Ephemeroptera                            |                                |      |      |      |      |       |            |
| Stenacron                                | 36                             | 13   | 49   | 22   | 37   | 31.4  | 5.6        |
| Stenonema                                | 2                              | -    | 1    | -    | 3    | 1.2   | 0.2        |
| Tricorythodes                            | 3                              | -    | 1    | 1    | 2    | 1.4   | 0.2        |
| SUBTOTAL                                 |                                |      |      |      |      | 34.0  | 6.0        |
| Odonata                                  |                                |      |      |      |      |       |            |
| Argia                                    | 2                              | 1    | -    | 1    | -    | 0.8   | 0.1        |
| Macromiidae                              | 1                              | -    | -    | -    | -    | 0.2   | x          |
| SUBTOTAL                                 |                                |      |      |      |      | 1.0   | 0.2        |
| Trichoptera                              |                                |      |      |      |      |       |            |
| Cynellus fraternus                       | 55                             | 117  | 193  | 198  | 21   | 116.8 | 20.7       |
| Cheumatopsyche                           | 4                              | 1    | -    | -    | -    | 1.0   | 2.0        |
| SUBTOTAL                                 |                                |      |      |      |      | 117.8 | 20.9       |
| Diptera                                  |                                |      |      |      |      |       |            |
| Orthoclad/Chiro                          | 553                            | 657  | 265  | 162  | 238  | 375.0 | 66.4       |
| Tanypodinae                              | 48                             | 45   | 24   | 19   | 19   | 31.0  | 5.5        |
| SUBTOTAL                                 |                                |      |      |      |      | 406.0 | 71.9       |
| FUNCTIONAL GROUPS (%)                    |                                |      |      |      |      |       |            |
| Collector-gatherers                      | 92.3                           | 94.3 | 95.5 | 95.1 | 94.2 | 91.0  |            |
| Collector-filterers                      | 0.6                            | 0.1  | -    | -    | -    | 0.1   |            |
| Shredders                                | -                              | -    | -    | -    | -    | -     |            |
| Scrapers                                 | -                              | -    | -    | -    | -    | -     |            |
| Predators                                | 7.2                            | 5.6  | 4.5  | 4.9  | 5.8  | 5.6   |            |
| SUMMARY                                  |                                |      |      |      |      |       |            |
| Total Individuals                        | 723                            | 836  | 533  | 405  | 325  | 564.4 |            |
| Total Taxa                               | 11                             | 8    | 6    | 7    | 7    | 7.8   |            |
| Diversity (Dbar)                         | 1.3                            | 1.0  | 1.6  | 1.5  | 1.4  | 1.4   |            |
| 2822                                     | Total Individuals collected    |      |      |      |      |       |            |
| 11                                       | Total Number of Taxa collected |      |      |      |      |       |            |
| 1.5                                      | Total Sample Diversity (Dbar)  |      |      |      |      |       |            |

Table A8.2.17. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on September 14, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |      |      |      |      | Mean   | % of total |
|------------------------------------------|------------|------|------|------|------|--------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |        |            |
| Misc. Invertebrates                      |            |      |      |      |      |        |            |
| Planariidae                              | -          | -    | -    | -    | 4    | 0.8    | ×          |
| Hyalella azteca                          | -          | -    | -    | 1    | -    | 0.2    | ×          |
| Arachnida                                | 2          | 7    | 1    | 6    | 7    | 4.6    | 0.2        |
| Ferrissia                                | -          | 1    | -    | -    | 3    | 0.8    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 6.4    | 0.3        |
| Ephemeroptera                            |            |      |      |      |      |        |            |
| Baetidae                                 | -          | -    | -    | -    | 1    | 0.2    | ×          |
| Stenacron                                | 44         | 42   | 40   | 26   | 74   | 45.2   | 1.9        |
| Stenonema                                | 82         | 131  | 76   | 54   | 131  | 94.8   | 4.0        |
| Tricorythodes                            | 1          | 3    | 2    | 2    | 5    | 2.6    | 0.1        |
| Caenis                                   | -          | 3    | -    | 1    | 2    | 1.2    | 0.1        |
| SUBTOTAL                                 |            |      |      |      |      | 144.0  | 6.0        |
| Odonata                                  |            |      |      |      |      |        |            |
| Argia                                    | 1          | 1    | 2    | 3    | 8    | 3.0    | 0.1        |
| Macromiidae                              | -          | 1    | -    | -    | 1    | 0.4    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 3.4    | 0.1        |
| Trichoptera                              |            |      |      |      |      |        |            |
| Cyrnellus fraternus                      | 21         | 30   | 29   | 17   | 51   | 29.6   | 1.2        |
| Cheumatopsyche                           | 72         | 172  | 263  | 123  | 211  | 168.2  | 7.1        |
| SUBTOTAL                                 |            |      |      |      |      | 197.8  | 8.3        |
| Diptera                                  |            |      |      |      |      |        |            |
| Orthoclad/Chiro                          | 1885       | 1405 | 2429 | 949  | 3428 | 2019.2 | 84.6       |
| Tanypodinae                              | 5          | 19   | 13   | 13   | 22   | 14.4   | 0.6        |
| Hemerodromia                             | 1          | 1    | -    | -    | 1    | 0.6    | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 2034.2 | 85.3       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |        |            |
| Collector-gatherers                      | 96.2       | 88.9 | 90.2 | 87.9 | 93.6 | 91.3   |            |
| Collector-filterers                      | 3.4        | 9.5  | 9.2  | 10.3 | 5.3  | 7.5    |            |
| Shredders                                | -          | -    | -    | -    | -    | -      |            |
| Scrapers                                 | -          | 0.1  | -    | -    | 0.1  | ×      |            |
| Predators                                | 0.4        | 1.6  | 0.6  | 1.8  | 1.0  | 1.1    |            |

| Organisms                         | Replicates |      |      |      |      | Mean   | % of total |
|-----------------------------------|------------|------|------|------|------|--------|------------|
|                                   | 1          | 2    | 3    | 4    | 5    |        |            |
| SUMMARY                           |            |      |      |      |      |        |            |
| Total Individuals                 | 2114       | 1816 | 2855 | 1195 | 3949 | 2385.8 |            |
| Total Taxa                        | 10         | 13   | 9    | 11   | 15   | 11.6   |            |
| Diversity (Dbar)                  | 0.7        | 1.3  | 0.9  | 1.2  | 0.9  | 1.0    |            |
| 11929 Total Individuals collected |            |      |      |      |      |        |            |
| 16 Total Number of Taxa collected |            |      |      |      |      |        |            |
| 1.0 Total Sample Diversity (Dbar) |            |      |      |      |      |        |            |

Table A8.2.18. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on September 15, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |      |      |      |      | Mean  | % of total |
|------------------------------------------|------------|------|------|------|------|-------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |       |            |
| Misc. Invertebrates                      |            |      |      |      |      |       |            |
| Gammarus                                 | 4          | -    | -    | 1    | 2    | 1.4   | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 1.4   | 0.2        |
| Ephemeroptera                            |            |      |      |      |      |       |            |
| Stenacron                                | -          | -    | -    | 2    | 5    | 1.4   | 0.2        |
| Stenonema                                | -          | -    | 2    | -    | 1    | 0.6   | 0.1        |
| Tricorythodes                            | 1          | -    | -    | -    | -    | 0.2   | x          |
| SUBTOTAL                                 |            |      |      |      |      | 2.2   | 0.3        |
| Odonata                                  |            |      |      |      |      |       |            |
| Argia                                    | 4          | 3    | -    | 1    | 3    | 2.2   | 0.3        |
| SUBTOTAL                                 |            |      |      |      |      | 2.2   | 0.3        |
| Trichoptera                              |            |      |      |      |      |       |            |
| Cynnellus fraternus                      | 39         | 52   | 136  | 129  | 101  | 91.4  | 13.5       |
| Cheumatopsyche                           | 5          | -    | -    | -    | -    | 1.0   | 0.1        |
| SUBTOTAL                                 |            |      |      |      |      | 92.2  | 13.7       |
| Diptera                                  |            |      |      |      |      |       |            |
| Orthoclad/Chiro                          | 539        | 812  | 390  | 526  | 521  | 557.6 | 82.5       |
| Tanypodinae                              | 21         | 20   | 18   | 22   | 21   | 20.4  | 3.0        |
| SUBTOTAL                                 |            |      |      |      |      | 578.0 | 85.5       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |       |            |
| Collector-gatherers                      | 95.1       | 97.4 | 96.7 | 96.6 | 96.3 | 96.4  |            |
| Collector-filterers                      | 0.8        | -    | -    | -    | -    | 0.2   |            |
| Shredders                                | -          | -    | -    | -    | -    | -     |            |
| Scrapers                                 | -          | -    | -    | -    | -    | -     |            |
| Predators                                | 4.1        | 2.6  | 3.3  | 3.4  | 3.7  | 3.4   |            |
| SUMMARY                                  |            |      |      |      |      |       |            |
| Total Individuals                        | 613        | 887  | 546  | 681  | 654  | 676.2 |            |
| Total Taxa                               | 7          | 4    | 4    | 6    | 7    | 5.6   |            |
| Diversity (Dbar)                         | 0.7        | 0.5  | 1.0  | 1.0  | 1.0  | 0.8   |            |
| 3381 Total Individuals collected         |            |      |      |      |      |       |            |
| 9 Total Number of Taxa collected         |            |      |      |      |      |       |            |
| 0.9 Total Sample Diversity (Dbar)        |            |      |      |      |      |       |            |

Table A8.2.19. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on October 12, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |      |      |      |      | Mean   | % of total |
|------------------------------------------|------------|------|------|------|------|--------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |        |            |
| Misc. Invertebrates                      |            |      |      |      |      |        |            |
| Planariidae                              | -          | -    | -    | -    | 6    | 1.2    | ✕          |
| Oligochaeta                              | -          | 1    | -    | -    | -    | 0.2    | ✕          |
| Arachnida                                | 1          | 3    | 4    | 2    | 1    | 2.2    | 0.1        |
| SUBTOTAL                                 |            |      |      |      |      | 3.6    | 0.2        |
| Ephemeroptera                            |            |      |      |      |      |        |            |
| Isonychia bicolor                        | 1          | 3    | 4    | -    | -    | 1.6    | 0.1        |
| Baetidae                                 | -          | -    | -    | 1    | 1    | 0.4    | ✕          |
| Stenacron                                | 181        | 211  | 185  | 184  | 236  | 199.4  | 12.9       |
| Stenonema                                | 16         | 37   | 19   | 10   | 8    | 18.0   | 1.2        |
| Tricorythodes                            | 2          | 3    | 1    | 5    | 2    | 2.6    | 0.2        |
| SUBTOTAL                                 |            |      |      |      |      | 222.0  | 14.4       |
| Odonata                                  |            |      |      |      |      |        |            |
| Argia                                    | 2          | 5    | 16   | 4    | 15   | 8.4    | 0.5        |
| SUBTOTAL                                 |            |      |      |      |      | 8.4    | 0.5        |
| Trichoptera                              |            |      |      |      |      |        |            |
| Cynellus fraternus                       | 22         | 27   | 6    | 19   | 14   | 17.6   | 1.1        |
| Cheumatopsyche                           | 94         | 175  | 193  | 118  | 116  | 139.2  | 9.0        |
| SUBTOTAL                                 |            |      |      |      |      | 156.6  | 10.1       |
| Diptera                                  |            |      |      |      |      |        |            |
| Orthoclad/Chiro                          | 992        | 804  | 900  | 1568 | 1424 | 1137.6 | 73.6       |
| Tanypodinae                              | 4          | 8    | 4    | 40   | 32   | 17.6   | 1.1        |
| SUBTOTAL                                 |            |      |      |      |      | 1155.2 | 74.7       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |        |            |
| Collector-gatherers                      | 92.3       | 85.0 | 83.7 | 91.6 | 91.2 | 88.8   |            |
| Collector-filterers                      | 7.1        | 13.7 | 14.5 | 6.0  | 6.3  | 9.5    |            |
| Shredders                                | -          | -    | -    | -    | -    | -      |            |
| Scrapers                                 | -          | -    | -    | -    | -    | -      |            |
| Predators                                | 0.5        | 1.3  | 1.8  | 2.4  | 2.6  | 1.7    |            |
| SUMMARY                                  |            |      |      |      |      |        |            |
| Total Individuals                        | 1315       | 1277 | 1332 | 1951 | 1855 | 1546.0 |            |
| Total Taxa                               | 10         | 11   | 10   | 10   | 11   | 10.4   |            |
| Diversity (Dbar)                         | 1.2        | 1.7  | 1.5  | 1.1  | 1.2  | 1.3    |            |
| 7730 Total Individuals collected         |            |      |      |      |      |        |            |
| 13 Total Number of Taxa collected        |            |      |      |      |      |        |            |
| 1.3 Total Sample Diversity (Dbar)        |            |      |      |      |      |        |            |

Table A8.2.20. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on October 13, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates                     |      |      |      |      | Mean   | % of total |
|------------------------------------------|--------------------------------|------|------|------|------|--------|------------|
|                                          | 1                              | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |      |      |      |      |        |            |
| Misc. Invertebrates                      |                                |      |      |      |      |        |            |
| Gammarus                                 | 1                              | -    | -    | -    | -    | 0.2    | ✖          |
| Arachnida                                | -                              | -    | -    | -    | 2    | 0.4    | ✖          |
| SUBTOTAL                                 |                                |      |      |      |      | 0.6    | ✖          |
| Ephemeroptera                            |                                |      |      |      |      |        |            |
| Stenacron                                | 3                              | -    | -    | 2    | -    | 1.0    | 0.1        |
| Stenonema                                | 1                              | -    | -    | -    | -    | 0.2    | ✖          |
| Tricorythodes                            | -                              | -    | -    | 1    | -    | 0.2    | ✖          |
| Caenis                                   | 1                              | -    | -    | -    | -    | 0.2    | ✖          |
| SUBTOTAL                                 |                                |      |      |      |      | 2.2    | 0.1        |
| Odonata                                  |                                |      |      |      |      |        |            |
| Argia                                    | 3                              | 6    | 3    | 5    | 9    | 5.2    | 0.3        |
| Macromiidae                              | -                              | -    | -    | 1    | -    | 0.2    | ✖          |
| SUBTOTAL                                 |                                |      |      |      |      | 5.4    | 0.3        |
| Trichoptera                              |                                |      |      |      |      |        |            |
| Cynellus fraternus                       | 103                            | 303  | 411  | 203  | 210  | 246.0  | 15.0       |
| SUBTOTAL                                 |                                |      |      |      |      | 246.0  | 15.0       |
| Diptera                                  |                                |      |      |      |      |        |            |
| Orthoclad/Chiro                          | 1728                           | 1000 | 692  | 1608 | 1648 | 1335.2 | 81.5       |
| Tanypodinae                              | 80                             | 20   | 24   | 72   | 56   | 50.4   | 3.1        |
| SUBTOTAL                                 |                                |      |      |      |      | 1385.6 | 84.5       |
| FUNCTIONAL GROUPS (%)                    |                                |      |      |      |      |        |            |
| Collector-gatherers                      | 95.7                           | 98.0 | 97.6 | 95.9 | 96.5 | 96.7   |            |
| Collector-filterers                      | -                              | -    | -    | -    | -    | -      |            |
| Shredders                                | -                              | -    | -    | -    | -    | -      |            |
| Scrapers                                 | -                              | -    | -    | -    | -    | -      |            |
| Predators                                | 4.3                            | 2.0  | 2.4  | 4.1  | 3.5  | 3.3    |            |
| SUMMARY                                  |                                |      |      |      |      |        |            |
| Total Individuals                        | 1920                           | 1329 | 1130 | 1892 | 1925 | 1639.2 |            |
| Total Taxa                               | 8                              | 4    | 4    | 7    | 5    | 5.6    |            |
| Diversity (Dbar)                         | 0.6                            | 0.9  | 1.1  | 0.8  | 0.7  | 0.8    |            |
| 8196                                     | Total Individuals collected    |      |      |      |      |        |            |
| 11                                       | Total Number of Taxa collected |      |      |      |      |        |            |
| 0.8                                      | Total Sample Diversity (Dbar)  |      |      |      |      |        |            |

Table A8.2.21. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on November 17, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |      |      |      |      | Mean  | % of total |
|------------------------------------------|------------|------|------|------|------|-------|------------|
|                                          | 1          | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |      |      |      |      |       |            |
| Misc. Invertebrates                      |            |      |      |      |      |       |            |
| Hyalella azteca                          | -          | 1    | -    | -    | -    | 0.2   | ×          |
| Arachnida                                | 6          | -    | 2    | -    | 4    | 2.4   | 0.5        |
| SUBTOTAL                                 |            |      |      |      |      | 2.6   | 0.5        |
| Ephemeroptera                            |            |      |      |      |      |       |            |
| Isonychia bicolor                        | -          | 1    | 5    | -    | 3    | 1.8   | 0.3        |
| Stenacron                                | 27         | 12   | 17   | 37   | 51   | 28.8  | 5.5        |
| Stenonema                                | 3          | 4    | 6    | 2    | 7    | 4.4   | 0.8        |
| SUBTOTAL                                 |            |      |      |      |      | 35.0  | 6.7        |
| Odonata                                  |            |      |      |      |      |       |            |
| Argia                                    | 1          | -    | -    | -    | -    | 0.2   | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 0.2   | ×          |
| Plecoptera                               |            |      |      |      |      |       |            |
| Taeniopteryx                             | 3          | 5    | 7    | 4    | 5    | 4.8   | 0.9        |
| Strophopteryx                            | 4          | 3    | 3    | 8    | -    | 3.6   | 0.7        |
| SUBTOTAL                                 |            |      |      |      |      | 8.2   | 1.6        |
| Coleoptera                               |            |      |      |      |      |       |            |
| Stenelmis adult                          | -          | -    | -    | -    | 1    | 0.2   | ×          |
| SUBTOTAL                                 |            |      |      |      |      | 0.2   | ×          |
| Trichoptera                              |            |      |      |      |      |       |            |
| Cheumatopsyche                           | 39         | 60   | 97   | 51   | 37   | 56.8  | 10.9       |
| Hydropsyche orris                        | -          | 4    | 5    | -    | -    | 1.8   | 0.3        |
| SUBTOTAL                                 |            |      |      |      |      | 57.8  | 11.1       |
| Diptera                                  |            |      |      |      |      |       |            |
| Orthoclad/Chiro                          | 691        | 392  | 469  | 294  | 212  | 411.6 | 78.9       |
| Tanypodinae                              | 8          | 2    | 11   | 3    | 2    | 5.2   | 1.0        |
| SUBTOTAL                                 |            |      |      |      |      | 416.8 | 79.9       |
| FUNCTIONAL GROUPS (%)                    |            |      |      |      |      |       |            |
| Collector-gatherers                      | 92.2       | 84.7 | 79.9 | 83.5 | 84.8 | 85.0  |            |
| Collector-filterers                      | 5.0        | 13.2 | 16.4 | 12.8 | 11.5 | 11.8  |            |
| Shredders                                | 0.9        | 1.7  | 1.6  | 3.0  | 1.6  | 1.7   |            |
| Scrapers                                 | -          | -    | -    | -    | 0.3  | 0.1   |            |
| Predators                                | 1.9        | 0.4  | 2.1  | 0.8  | 1.9  | 1.4   |            |



| Organisms                         | Replicates |     |     |     |     | Mean  | % of total |
|-----------------------------------|------------|-----|-----|-----|-----|-------|------------|
|                                   | 1          | 2   | 3   | 4   | 5   |       |            |
| SUMMARY                           |            |     |     |     |     |       |            |
| Total Individuals                 | 782        | 484 | 622 | 399 | 322 | 521.8 |            |
| Total Taxa                        | 9          | 10  | 10  | 7   | 9   | 9.0   |            |
| Diversity (Dbar)                  | 0.8        | 1.0 | 1.3 | 1.3 | 1.6 | 1.2   |            |
| 2609 Total Individuals collected  |            |     |     |     |     |       |            |
| 13 Total Number of Taxa collected |            |     |     |     |     |       |            |
| 1.2 Total Sample Diversity (Dbar) |            |     |     |     |     |       |            |

Table A8.2.22. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on November 18, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates                     |      |      |      |      | Mean   | % of total |
|------------------------------------------|--------------------------------|------|------|------|------|--------|------------|
|                                          | 1                              | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |      |      |      |      |        |            |
| Misc. Invertebrates                      |                                |      |      |      |      |        |            |
| Oligochaeta                              | -                              | -    | -    | -    | 1    | 0.2    | *          |
| Arachnida                                | 2                              | -    | 2    | 8    | -    | 2.4    | 0.1        |
| SUBTOTAL                                 |                                |      |      |      |      | 2.6    | 0.1        |
| Ephemeroptera                            |                                |      |      |      |      |        |            |
| Stenacron                                | 8                              | -    | -    | -    | -    | 1.6    | *          |
| SUBTOTAL                                 |                                |      |      |      |      | 1.6    | 0.1        |
| Odonata                                  |                                |      |      |      |      |        |            |
| Argia                                    | 4                              | 1    | 3    | -    | -    | 1.6    | *          |
| SUBTOTAL                                 |                                |      |      |      |      | 1.6    | 0.1        |
| Plecoptera                               |                                |      |      |      |      |        |            |
| Taeniopteryx                             | 15                             | 12   | 14   | 16   | 6    | 12.6   | 0.6        |
| Strophopteryx                            | 1                              | 1    | -    | 4    | 2    | 1.6    | *          |
| SUBTOTAL                                 |                                |      |      |      |      | 14.2   | 0.6        |
| Trichoptera                              |                                |      |      |      |      |        |            |
| Cynrellus fraternus                      | 16                             | 29   | 27   | 23   | 25   | 24.0   | 1.1        |
| SUBTOTAL                                 |                                |      |      |      |      | 24.0   | 1.1        |
| Diptera                                  |                                |      |      |      |      |        |            |
| Orthoclad/Chiro                          | 1488                           | 776  | 2568 | 3632 | 2472 | 2187.2 | 97.0       |
| Tanypodinae                              | 32                             | 16   | 32   | 24   | 8    | 22.4   | 1.0        |
| Atherix                                  | -                              | -    | 2    | -    | -    | 0.4    | *          |
| SUBTOTAL                                 |                                |      |      |      |      | 2210.0 | 98.0       |
| FUNCTIONAL GROUPS (%)                    |                                |      |      |      |      |        |            |
| Collector-gatherers                      | 96.6                           | 96.4 | 98.0 | 98.6 | 99.4 | 97.8   |            |
| Collector-filterers                      | -                              | -    | -    | -    | -    | -      |            |
| Shredders                                | 1.0                            | 1.6  | 0.5  | 0.5  | 0.3  | 0.8    |            |
| Scrapers                                 | -                              | -    | -    | -    | -    | -      |            |
| Predators                                | 2.4                            | 2.0  | 1.5  | 0.9  | 0.3  | 1.4    |            |
| SUMMARY                                  |                                |      |      |      |      |        |            |
| Total Individuals                        | 1566                           | 835  | 2648 | 3707 | 2514 | 2254.0 |            |
| Total Taxa                               | 8                              | 6    | 7    | 6    | 6    | 6.6    |            |
| Diversity (Dbar)                         | 0.4                            | 0.5  | 0.3  | 0.2  | 0.1  | 0.3    |            |
| 11270                                    | Total Individuals collected    |      |      |      |      |        |            |
| 10                                       | Total Number of Taxa collected |      |      |      |      |        |            |
| 0.3                                      | Total Sample Diversity (Dbar)  |      |      |      |      |        |            |

Table A8.2.23. Benthic macroinvertebrates collected at UW using artificial substrates (n=5) on December 15, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates |     |     |     |     | Mean  | % of total |
|------------------------------------------|------------|-----|-----|-----|-----|-------|------------|
|                                          | 1          | 2   | 3   | 4   | 5   |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |            |     |     |     |     |       |            |
| Misc. Invertebrates                      |            |     |     |     |     |       |            |
| Oligochaeta                              | -          | -   | 1   | 10  | -   | 2.2   | 1.1        |
| Gammarus                                 | 1          | -   | -   | -   | -   | 0.2   | ×          |
| Hyalella azteca                          | -          | 1   | -   | -   | -   | 0.2   | ×          |
| Isopoda Assellus                         | -          | 1   | -   | -   | -   | 0.2   | ×          |
| Arachnida                                | -          | 1   | -   | -   | 1   | 0.4   | 0.2        |
| SUBTOTAL                                 |            |     |     |     |     | 3.2   | 1.5        |
| Ephemeroptera                            |            |     |     |     |     |       |            |
| Stenacron                                | -          | -   | 5   | 2   | -   | 1.4   | 0.7        |
| Stenonema                                | 1          | -   | -   | -   | -   | 0.2   | 0.1        |
| SUBTOTAL                                 |            |     |     |     |     | 1.6   | 0.8        |
| Odonata                                  |            |     |     |     |     |       |            |
| Argia                                    | -          | 1   | -   | -   | -   | 0.2   | 0.1        |
| SUBTOTAL                                 |            |     |     |     |     | 0.2   | 0.1        |
| Plecoptera                               |            |     |     |     |     |       |            |
| Taeniopteryx                             | 4          | 5   | 8   | 1   | 6   | 4.8   | 2.3        |
| Strophopteryx                            | 1          | 11  | 5   | 3   | 1   | 4.2   | 2.0        |
| SUBTOTAL                                 |            |     |     |     |     | 9.0   | 4.3        |
| Coleoptera                               |            |     |     |     |     |       |            |
| Macronychus larvae                       | -          | -   | 1   | -   | -   | 0.2   | 0.1        |
| SUBTOTAL                                 |            |     |     |     |     | 0.2   | 0.1        |
| Trichoptera                              |            |     |     |     |     |       |            |
| Cheumatopsyche                           | -          | 5   | 3   | 2   | 1   | 2.2   | 1.1        |
| Hydropsyche morosa                       | -          | -   | -   | 2   | -   | 0.4   | 0.2        |
| Hydropsyche orris                        | 3          | 1   | 2   | -   | 1   | 1.4   | 0.7        |
| SUBTOTAL                                 |            |     |     |     |     | 4.0   | 1.9        |
| Diptera                                  |            |     |     |     |     |       |            |
| Orthoclad/Chiro                          | 96         | 134 | 253 | 182 | 270 | 187.0 | 90.1       |
| Tanypodinae                              | 2          | 1   | 2   | 2   | 2   | 1.8   | 0.9        |
| Prosimulium                              | -          | -   | 1   | -   | -   | 0.2   | ×          |
| Hemerodromia                             | -          | -   | 1   | -   | -   | 0.2   | ×          |
| Tabanidae                                | -          | -   | -   | 1   | -   | 0.2   | ×          |
| SUBTOTAL                                 |            |     |     |     |     | 189.2 | 91.2       |

| Organisms                         | Replicates |      |      |      |      | Mean  | % of total |
|-----------------------------------|------------|------|------|------|------|-------|------------|
|                                   | 1          | 2    | 3    | 4    | 5    |       |            |
| FUNCTIONAL GROUPS (%)             |            |      |      |      |      |       |            |
| Collector-gatherers               | 90.7       | 84.5 | 91.8 | 94.6 | 95.7 | 91.5  |            |
| Collector-filterers               | 2.8        | 3.7  | 2.1  | 2.0  | 0.7  | 2.3   |            |
| Shredders                         | 4.6        | 9.9  | 4.6  | 2.0  | 2.5  | 4.7   |            |
| Scrapers                          | -          | -    | 0.4  | -    | -    | 0.1   |            |
| Predators                         | 1.9        | 1.9  | 1.1  | 1.5  | 1.1  | 1.5   |            |
| SUMMARY                           |            |      |      |      |      |       |            |
| Total Individuals                 | 108        | 161  | 282  | 205  | 282  | 207.6 |            |
| Total Taxa                        | 7          | 10   | 11   | 9    | 7    | 8.8   |            |
| Diversity (Dbar)                  | 0.8        | 1.1  | 0.8  | 0.8  | 0.3  | 0.7   |            |
| 1038 Total Individuals collected  |            |      |      |      |      |       |            |
| 19 Total Number of Taxa collected |            |      |      |      |      |       |            |
| 0.8 Total Sample Diversity (Dbar) |            |      |      |      |      |       |            |

Table A8.2.24. Benthic macroinvertebrates collected at LW using artificial substrates (n=5) on December 16, 1983 (\* indicates that mean or percentage is less than 0.1).

| Organisms                                | Replicates                     |      |      |      |      | Mean  | % of total |
|------------------------------------------|--------------------------------|------|------|------|------|-------|------------|
|                                          | 1                              | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub) |                                |      |      |      |      |       |            |
| Misc. Invertebrates                      |                                |      |      |      |      |       |            |
| Oligochaeta                              | -                              | 2    | -    | -    | -    | 0.4   | ✕          |
| Hyalella azteca                          | 1                              | -    | -    | -    | -    | 0.2   | ✕          |
| SUBTOTAL                                 |                                |      |      |      |      | 0.6   | 0.1        |
| Ephemeroptera                            |                                |      |      |      |      |       |            |
| Stenacron                                | -                              | -    | -    | -    | 1    | 0.2   | ✕          |
| SUBTOTAL                                 |                                |      |      |      |      | 0.2   | ✕          |
| Plecoptera                               |                                |      |      |      |      |       |            |
| Taeniopteryx                             | 13                             | 32   | 8    | 12   | 14   | 15.8  | 3.4        |
| Strophopteryx                            | 11                             | 23   | 17   | 19   | 18   | 17.6  | 3.8        |
| SUBTOTAL                                 |                                |      |      |      |      | 33.4  | 7.3        |
| Trichoptera                              |                                |      |      |      |      |       |            |
| Cynnellus fraternus                      | -                              | -    | -    | 2    | -    | 0.4   | ✕          |
| Cheumatopsyche                           | 1                              | 2    | -    | -    | 1    | 0.8   | 0.2        |
| SUBTOTAL                                 |                                |      |      |      |      | 1.2   | 0.3        |
| Diptera                                  |                                |      |      |      |      |       |            |
| Orthoclad/Chiro                          | 406                            | 428  | 518  | 349  | 398  | 419.8 | 91.7       |
| Tanypodinae                              | 4                              | 8    | -    | -    | 2    | 2.8   | 0.6        |
| SUBTOTAL                                 |                                |      |      |      |      | 422.6 | 92.3       |
| FUNCTIONAL GROUPS (%)                    |                                |      |      |      |      |       |            |
| Collector-gatherers                      | 93.3                           | 86.9 | 95.4 | 91.9 | 91.9 | 91.9  |            |
| Collector-filterers                      | 0.2                            | 0.4  | -    | -    | 0.2  | 0.2   |            |
| Shredders                                | 5.5                            | 11.1 | 4.6  | 8.1  | 7.4  | 7.3   |            |
| Scrapers                                 | -                              | -    | -    | -    | -    | -     |            |
| Predators                                | 0.9                            | 1.6  | -    | -    | 0.5  | 0.6   |            |
| SUMMARY                                  |                                |      |      |      |      |       |            |
| Total Individuals                        | 436                            | 495  | 543  | 382  | 434  | 458.0 |            |
| Total Taxa                               | 6                              | 6    | 3    | 4    | 6    | 5.0   |            |
| Diversity (Dbar)                         | 0.5                            | 0.8  | 0.3  | 0.5  | 0.5  | 0.5   |            |
| 2290                                     | Total Individuals collected    |      |      |      |      |       |            |
| 9                                        | Total Number of Taxa collected |      |      |      |      |       |            |
| 0.6                                      | Total Sample Diversity (Dbar)  |      |      |      |      |       |            |

Table A8.3.1. Benthic macroinvertebrates collected at UW using Ponar grab method on January 21, 1983.

| Organisms                                    | Replicates                     |      |     |      |      | Mean   | % of total |
|----------------------------------------------|--------------------------------|------|-----|------|------|--------|------------|
|                                              | 1                              | 2    | 3   | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |     |      |      |        |            |
| Diptera                                      |                                |      |     |      |      |        |            |
| Orthoclad/Chiro                              | 1033                           | 1971 | 287 | 5377 | 2277 | 2189.0 | 100.0      |
| SUBTOTAL                                     |                                |      |     |      |      | 2189.0 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |      |     |      |      |        |            |
| Collector-gatherers                          | 100                            | 100  | 100 | 100  | 100  | 100    |            |
| Collector-filterers                          | -                              | -    | -   | -    | -    | -      |            |
| Shredders                                    | -                              | -    | -   | -    | -    | -      |            |
| Scrapers                                     | -                              | -    | -   | -    | -    | -      |            |
| Predators                                    | -                              | -    | -   | -    | -    | -      |            |
| SUMMARY                                      |                                |      |     |      |      |        |            |
| Total Individuals                            | 1033                           | 1971 | 287 | 5377 | 2277 | 2189.0 |            |
| Total Taxa                                   | 1                              | 1    | 1   | 1    | 1    | 1      |            |
| Diversity (Dbar)                             | 0                              | 0    | 0   | 0    | 0    | 0      |            |
| 10945 Total Individuals collected            |                                |      |     |      |      |        |            |
| 1                                            | Total Number of Taxa collected |      |     |      |      |        |            |
| 0                                            | Total Sample Diversity (Dbar)  |      |     |      |      |        |            |

**Table A8.3.2. Benthic macroinvertebrates collected at LW using Ponar grab method on January 20, 1983.**

| Organisms                                    | Replicates |      |      |      |     | Mean  | % of total |
|----------------------------------------------|------------|------|------|------|-----|-------|------------|
|                                              | 1          | 2    | 3    | 4    | 5   |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |            |      |      |      |     |       |            |
| Diptera                                      |            |      |      |      |     |       |            |
| Orthoclad/Chiro                              | 38         | 77   | 38   | 57   | 268 | 95.6  | 30.5       |
| Tanypodinae                                  | 612        | 249  | 211  | 19   | -   | 218.2 | 69.5       |
| SUBTOTAL                                     |            |      |      |      |     | 313.8 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |            |      |      |      |     |       |            |
| Collector-gatherers                          | 5.8        | 23.6 | 15.3 | 75.0 | 100 | 43.9  |            |
| Collector-filterers                          | -          | -    | -    | -    | -   | -     |            |
| Shredders                                    | -          | -    | -    | -    | -   | -     |            |
| Scrapers                                     | -          | -    | -    | -    | -   | -     |            |
| Predators                                    | 94.2       | 76.4 | 84.7 | 25.0 | 0   | 56.1  |            |
| SUMMARY                                      |            |      |      |      |     |       |            |
| Total Individuals                            | 650        | 326  | 249  | 76   | 268 | 313.8 |            |
| Total Taxa                                   | 2          | 2    | 2    | 2    | 1   | 1.8   |            |
| Diversity (Dbar)                             | 0.3        | 0.8  | 0.6  | 0.8  | 0   | 0.5   |            |
| 1569 Total Individuals collected             |            |      |      |      |     |       |            |
| 2 Total Number of Taxa collected             |            |      |      |      |     |       |            |
| 0.9 Total Sample Diversity (Dbar)            |            |      |      |      |     |       |            |

Table A8.3.3. Benthic macroinvertebrates collected at UW using Ponar grab method on February 18, 1983.

| Organisms                                    | Replicates                     |     |      |     |   | Mean  | % of total |
|----------------------------------------------|--------------------------------|-----|------|-----|---|-------|------------|
|                                              | 1                              | 2   | 3    | 4   | 5 |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |      |     |   |       |            |
| Diptera                                      |                                |     |      |     |   |       |            |
| Orthoclad/Chiro                              | 210                            | 421 | 1493 | 19  | - | 428.6 | 100.0      |
| SUBTOTAL                                     |                                |     |      |     |   | 428.6 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |     |      |     |   |       |            |
| Collector-gatherers                          | 100                            | 100 | 100  | 100 | - | 100   |            |
| Collector-filterers                          | -                              | -   | -    | -   | - | -     |            |
| Shredders                                    | -                              | -   | -    | -   | - | -     |            |
| Scrapers                                     | -                              | -   | -    | -   | - | -     |            |
| Predators                                    | -                              | -   | -    | -   | - | -     |            |
| SUMMARY                                      |                                |     |      |     |   |       |            |
| Total Individuals                            | 210                            | 421 | 1493 | 19  | - | 428.6 |            |
| Total Taxa                                   | 1                              | 1   | 1    | 1   | - | 0.8   |            |
| Diversity (Dbar)                             | 0                              | 0   | 0    | 0   | - | 0     |            |
| 2143                                         | Total Individuals collected    |     |      |     |   |       |            |
| 1                                            | Total Number of Taxa collected |     |      |     |   |       |            |
| 0                                            | Total Sample Diversity (Dbar)  |     |      |     |   |       |            |



**Table A8.3.4. Benthic macroinvertebrates collected at LW using Ponar grab method on February 17, 1983.**

| Organisms                                    | Replicates                     |      |      |      |      | Mean  | % of total |
|----------------------------------------------|--------------------------------|------|------|------|------|-------|------------|
|                                              | 1                              | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |      |      |      |       |            |
| Diptera                                      |                                |      |      |      |      |       |            |
| Orthoclad/Chiro                              | 57                             | 172  | 440  | 268  | 19   | 191.2 | 46.3       |
| Tanypodinae                                  | 172                            | 708  | 133  | 77   | 19   | 221.8 | 53.7       |
| SUBTOTAL                                     |                                |      |      |      |      | 413.0 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |      |      |      |      |       |            |
| Collector-gatherers                          | 24.9                           | 19.5 | 76.8 | 77.7 | 50.0 | 49.8  |            |
| Collector-filterers                          | -                              | -    | -    | -    | -    | -     |            |
| Shredders                                    | -                              | -    | -    | -    | -    | -     |            |
| Scrapers                                     | -                              | -    | -    | -    | -    | -     |            |
| Predators                                    | 75.1                           | 80.5 | 23.2 | 22.3 | 50.0 | 50.2  |            |
| SUMMARY                                      |                                |      |      |      |      |       |            |
| Total Individuals                            | 229                            | 880  | 573  | 345  | 38   | 413.0 |            |
| Total Taxa                                   | 2                              | 2    | 2    | 2    | 2    | 2.0   |            |
| Diversity (Dbar)                             | 0.8                            | 0.7  | 0.8  | 0.8  | 1.0  | 0.8   |            |
| 2065 Total Individuals collected             |                                |      |      |      |      |       |            |
| 2                                            | Total Number of Taxa collected |      |      |      |      |       |            |
| 1.0                                          | Total Sample Diversity (Dbar)  |      |      |      |      |       |            |

Table A8.3.5. Benthic macroinvertebrates collected at UW using Ponar grab method on April 21, 1983.

| Organisms                                    | Replicates                     |     |     |     |     | Mean | % of total |
|----------------------------------------------|--------------------------------|-----|-----|-----|-----|------|------------|
|                                              | 1                              | 2   | 3   | 4   | 5   |      |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |     |     |     |      |            |
| Diptera                                      |                                |     |     |     |     |      |            |
| Orthoclad/Chiro                              | 19                             | 19  | 19  | 115 | 38  | 42.0 | 100.0      |
| SUBTOTAL                                     |                                |     |     |     |     | 42.0 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |     |     |     |     |      |            |
| Collector-gatherers                          | 100                            | 100 | 100 | 100 | 100 | 100  |            |
| Collector-filterers                          | -                              | -   | -   | -   | -   | -    |            |
| Shredders                                    | -                              | -   | -   | -   | -   | -    |            |
| Scrapers                                     | -                              | -   | -   | -   | -   | -    |            |
| Predators                                    | -                              | -   | -   | -   | -   | -    |            |
| SUMMARY                                      |                                |     |     |     |     |      |            |
| Total Individuals                            | 19                             | 19  | 19  | 115 | 38  | 42.0 |            |
| Total Taxa                                   | 1                              | 1   | 1   | 1   | 1   | 1.0  |            |
| Diversity (Dbar)                             | 0                              | 0   | 0   | 0   | 0   | 0    |            |
| 210                                          | Total Individuals collected    |     |     |     |     |      |            |
| 1                                            | Total Number of Taxa collected |     |     |     |     |      |            |
| 0                                            | Total Sample Diversity (Dbar)  |     |     |     |     |      |            |

Table A8.3.6. Benthic macroinvertebrates collected at LW using Ponar grab method on April 22, 1983.

| Organisms                                    | Replicates                     |     |     |     |     | Mean | % of total |
|----------------------------------------------|--------------------------------|-----|-----|-----|-----|------|------------|
|                                              | 1                              | 2   | 3   | 4   | 5   |      |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |     |     |     |      |            |
| Diptera                                      |                                |     |     |     |     |      |            |
| Orthoclad/Chiro                              | 19                             | 19  | 115 | 19  | 38  | 42.0 | 100.0      |
| SUBTOTAL                                     |                                |     |     |     |     | 42.0 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |     |     |     |     |      |            |
| Collector-gatherers                          | 100                            | 100 | 100 | 100 | 100 | 100  |            |
| Collector-filterers                          | -                              | -   | -   | -   | -   | -    |            |
| Shredders                                    | -                              | -   | -   | -   | -   | -    |            |
| Scrapers                                     | -                              | -   | -   | -   | -   | -    |            |
| Predators                                    | -                              | -   | -   | -   | -   | -    |            |
| SUMMARY                                      |                                |     |     |     |     |      |            |
| Total Individuals                            | 19                             | 19  | 115 | 19  | 38  | 42.0 |            |
| Total Taxa                                   | 1                              | 1   | 1   | 1   | 1   | 1.0  |            |
| Diversity (Dbar)                             | 0                              | 0   | 0   | 0   | 0   | 0    |            |
| 210                                          | Total Individuals collected    |     |     |     |     |      |            |
| 1                                            | Total Number of Taxa collected |     |     |     |     |      |            |
| 0                                            | Total Sample Diversity (Dbar)  |     |     |     |     |      |            |

**Table A8.3.7. Benthic macroinvertebrates collected at UW using Ponar grab method on May 19, 1983.**

| Organisms                                    | Replicates                     |     |   |     |     | Mean | % of total |
|----------------------------------------------|--------------------------------|-----|---|-----|-----|------|------------|
|                                              | 1                              | 2   | 3 | 4   | 5   |      |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |   |     |     |      |            |
| Diptera                                      |                                |     |   |     |     |      |            |
| Orthoclad/Chiro                              | 38                             | 19  | - | 114 | 38  | 41.8 | 100.0      |
| SUBTOTAL                                     |                                |     |   |     |     | 41.8 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |     |   |     |     |      |            |
| Collector-gatherers                          | 100                            | 100 | - | 100 | 100 | 100  |            |
| Collector-filterers                          | -                              | -   | - | -   | -   | -    |            |
| Shredders                                    | -                              | -   | - | -   | -   | -    |            |
| Scrapers                                     | -                              | -   | - | -   | -   | -    |            |
| Predators                                    | -                              | -   | - | -   | -   | -    |            |
| SUMMARY                                      |                                |     |   |     |     |      |            |
| Total Individuals                            | 38                             | 19  | - | 114 | 38  | 41.8 |            |
| Total Taxa                                   | 1                              | 1   | - | 1   | 1   | 0.8  |            |
| Diversity (Dbar)                             | 0                              | 0   | - | 0   | 0   | 0    |            |
| 209                                          | Total Individuals collected    |     |   |     |     |      |            |
| 1                                            | Total Number of Taxa collected |     |   |     |     |      |            |
| 0                                            | Total Sample Diversity (Dbar)  |     |   |     |     |      |            |

**Table A8.3.8. Benthic macroinvertebrates collected at UW using Ponar grab method on June 22, 1983.**

| Organisms                                    | Replicates                     |     |     |     |     | Mean  | % of total |
|----------------------------------------------|--------------------------------|-----|-----|-----|-----|-------|------------|
|                                              | 1                              | 2   | 3   | 4   | 5   |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |     |     |     |       |            |
| Diptera                                      |                                |     |     |     |     |       |            |
| Orthoclad/Chiro                              | 134                            | 344 | 19  | 95  | 115 | 141.4 | 100.0      |
| SUBTOTAL                                     |                                |     |     |     |     | 141.4 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |     |     |     |     |       |            |
| Collector-gatherers                          | 100                            | 100 | 100 | 100 | 100 | 100   |            |
| Collector-filterers                          | -                              | -   | -   | -   | -   | -     |            |
| Shredders                                    | -                              | -   | -   | -   | -   | -     |            |
| Scrapers                                     | -                              | -   | -   | -   | -   | -     |            |
| Predators                                    | -                              | -   | -   | -   | -   | -     |            |
| SUMMARY                                      |                                |     |     |     |     |       |            |
| Total Individuals                            | 134                            | 344 | 19  | 95  | 115 | 141.4 |            |
| Total Taxa                                   | 1                              | 1   | 1   | 1   | 1   | 1.0   |            |
| Diversity (Dbar)                             | 0                              | 0   | 0   | 0   | 0   | 0     |            |
| 707                                          | Total Individuals collected    |     |     |     |     |       |            |
| 1                                            | Total Number of Taxa collected |     |     |     |     |       |            |
| 0                                            | Total Sample Diversity (Dbar)  |     |     |     |     |       |            |

Table A8.3.9. Benthic macroinvertebrates collected at LW using Ponar grab method on June 23, 1983.

| Organisms                                    | Replicates                     |     |     |   |     | Mean | % of total |
|----------------------------------------------|--------------------------------|-----|-----|---|-----|------|------------|
|                                              | 1                              | 2   | 3   | 4 | 5   |      |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |     |   |     |      |            |
| Diptera                                      |                                |     |     |   |     |      |            |
| Orthoclad/Chiro                              | 38                             | 57  | 153 | - | 57  | 61.8 | 100.0      |
| SUBTOTAL                                     |                                |     |     |   |     | 61.8 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |     |     |   |     |      |            |
| Collector-gatherers                          | 100                            | 100 | 100 | - | 100 | 100  |            |
| Collector-filterers                          | -                              | -   | -   | - | -   | -    |            |
| Shredders                                    | -                              | -   | -   | - | -   | -    |            |
| Scrapers                                     | -                              | -   | -   | - | -   | -    |            |
| Predators                                    | -                              | -   | -   | - | -   | -    |            |
| SUMMARY                                      |                                |     |     |   |     |      |            |
| Total Individuals                            | 38                             | 57  | 153 | - | 57  | 61.8 |            |
| Total Taxa                                   | 1                              | 1   | 1   | - | 1   | 0.8  |            |
| Diversity (Dbar)                             | 0                              | 0   | 0   | - | 0   | 0    |            |
| 309                                          | Total Individuals collected    |     |     |   |     |      |            |
| 1                                            | Total Number of Taxa collected |     |     |   |     |      |            |
| 0                                            | Total Sample Diversity (Dbar)  |     |     |   |     |      |            |

**Table A8.3.10. Benthic macroinvertebrates collected at UW using Ponar grab method on July 20, 1983.**

| Organisms                                           | Replicates |      |      |      |      | Mean  | % of total |
|-----------------------------------------------------|------------|------|------|------|------|-------|------------|
|                                                     | 1          | 2    | 3    | 4    | 5    |       |            |
| <b>COMMUNITY STRUCTURE</b><br>(number/square meter) |            |      |      |      |      |       |            |
| Diptera                                             |            |      |      |      |      |       |            |
| Orthoclad/Chiro                                     | 306        | 191  | 38   | 459  | 287  | 256.2 | 87.0       |
| Tanypodinae                                         | 19         | 38   | 19   | 19   | 96   | 38.2  | 13.0       |
| SUBTOTAL                                            |            |      |      |      |      | 294.4 | 100.0      |
| <b>FUNCTIONAL GROUPS (%)</b>                        |            |      |      |      |      |       |            |
| Collector-gatherers                                 | 94.2       | 83.4 | 66.7 | 96.0 | 74.9 | 87.0  |            |
| Collector-filterers                                 | -          | -    | -    | -    | -    | -     |            |
| Shredders                                           | -          | -    | -    | -    | -    | -     |            |
| Scrapers                                            | -          | -    | -    | -    | -    | -     |            |
| Predators                                           | 5.8        | 16.6 | 33.3 | 4.0  | 25.1 | 13.0  |            |
| <b>SUMMARY</b>                                      |            |      |      |      |      |       |            |
| Total Individuals                                   | 325        | 229  | 57   | 478  | 383  | 294.4 |            |
| Total Taxa                                          | 2          | 2    | 2    | 2    | 2    | 2.0   |            |
| Diversity (Dbar)                                    | 0.3        | 0.6  | 0.9  | 0.2  | 0.8  | 0.6   |            |
| <b>1472 Total Individuals collected</b>             |            |      |      |      |      |       |            |
| <b>2 Total Number of Taxa collected</b>             |            |      |      |      |      |       |            |
| <b>0.6 Total Sample Diversity (Dbar)</b>            |            |      |      |      |      |       |            |

Table A8.3.11. Benthic macroinvertebrates collected at LW using Ponar grab method on July 21, 1983.

| Organisms                                    | Replicates                     |      |      |      |      | Mean  | % of total |
|----------------------------------------------|--------------------------------|------|------|------|------|-------|------------|
|                                              | 1                              | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |      |      |      |       |            |
| Diptera                                      |                                |      |      |      |      |       |            |
| Orthoclad/Chiro                              | 153                            | 77   | 153  | 38   | 134  | 111.0 | 14.1       |
| Tanypodinae                                  | 383                            | 287  | 1665 | 421  | 612  | 673.6 | 85.9       |
| SUBTOTAL                                     |                                |      |      |      |      | 784.6 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |      |      |      |      |       |            |
| Collector-gatherers                          | 28.5                           | 21.2 | 8.4  | 8.3  | 18.0 | 16.9  |            |
| Collector-filterers                          | -                              | -    | -    | -    | -    | -     |            |
| Shredders                                    | -                              | -    | -    | -    | -    | -     |            |
| Scrapers                                     | -                              | -    | -    | -    | -    | -     |            |
| Predators                                    | 71.5                           | 78.8 | 91.6 | 91.7 | 82.0 | 83.1  |            |
| SUMMARY                                      |                                |      |      |      |      |       |            |
| Total Individuals                            | 536                            | 364  | 1818 | 459  | 746  | 784.6 |            |
| Total Taxa                                   | 2                              | 2    | 2    | 2    | 2    | 2     |            |
| Diversity (Dbar)                             | 0.9                            | 0.7  | 0.4  | 0.4  | 0.7  | 0.6   |            |
| 3923                                         | Total Individuals collected    |      |      |      |      |       |            |
| 2                                            | Total Number of Taxa collected |      |      |      |      |       |            |
| 0.6                                          | Total Sample Diversity (Dbar)  |      |      |      |      |       |            |



**Table A8.3.12. Benthic macroinvertebrates collected at UW using Ponar grab method on August 24, 1983.**

| Organisms                                    | Replicates                     |      |      |      |      | Mean  | % of total |
|----------------------------------------------|--------------------------------|------|------|------|------|-------|------------|
|                                              | 1                              | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |      |      |      |       |            |
| Misc. Invertebrates                          |                                |      |      |      |      |       |            |
| Oligochaeta                                  | -                              | -    | -    | -    | 19   | 3.8   | 0.8        |
| SUBTOTAL                                     |                                |      |      |      |      | 3.8   | 0.8        |
| Ephemeroptera                                |                                |      |      |      |      |       |            |
| Stenacron                                    | -                              | 19   | -    | -    | -    | 3.8   | 0.8        |
| Tricorythodes                                | -                              | 19   | -    | -    | -    | 3.8   | 0.8        |
| Hexagenia                                    | 19                             | -    | -    | -    | 38   | 11.4  | 2.4        |
| SUBTOTAL                                     |                                |      |      |      |      | 19.0  | 4.0        |
| Trichoptera                                  |                                |      |      |      |      |       |            |
| Cheumatopsyche                               | -                              | 19   | -    | 19   | -    | 7.6   | 1.6        |
| SUBTOTAL                                     |                                |      |      |      |      | 7.6   | 1.6        |
| Diptera                                      |                                |      |      |      |      |       |            |
| Orthoclad/Chiro                              | 230                            | 957  | 383  | 134  | 115  | 363.8 | 76.0       |
| Tanypodinae                                  | 115                            | 153  | 19   | 96   | 38   | 84.2  | 17.6       |
| SUBTOTAL                                     |                                |      |      |      |      | 448.0 | 93.6       |
| FUNCTIONAL GROUPS (%)                        |                                |      |      |      |      |       |            |
| Collector-gatherers                          | 68.4                           | 85.3 | 95.3 | 53.8 | 81.9 | 76.9  |            |
| Collector-filterers                          | -                              | 1.6  | -    | 7.6  | -    | 1.9   |            |
| Shredders                                    | -                              | -    | -    | -    | -    | -     |            |
| Scrapers                                     | -                              | -    | -    | -    | -    | -     |            |
| Predators                                    | 31.6                           | 13.1 | 4.7  | 38.6 | 18.1 | 21.2  |            |
| SUMMARY                                      |                                |      |      |      |      |       |            |
| Total Individuals                            | 364                            | 1167 | 402  | 249  | 210  | 478.4 |            |
| Total Taxa                                   | 3                              | 5    | 2    | 3    | 4    | 3.4   |            |
| Diversity (Dbar)                             | 1.2                            | 0.9  | 0.3  | 1.3  | 1.7  | 1.1   |            |
| 2392                                         | Total Individuals collected    |      |      |      |      |       |            |
| 7                                            | Total Number of Taxa collected |      |      |      |      |       |            |
| 1.1                                          | Total Sample Diversity (Dbar)  |      |      |      |      |       |            |

Table A8.3.13. Benthic macroinvertebrates collected at LW using Ponar grab method on August 25, 1983.

| Organisms                                    | Replicates                     |   |      |      |     | Mean | % of total |
|----------------------------------------------|--------------------------------|---|------|------|-----|------|------------|
|                                              | 1                              | 2 | 3    | 4    | 5   |      |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |   |      |      |     |      |            |
| Misc. Invertebrates                          |                                |   |      |      |     |      |            |
| Oligochaeta                                  | -                              | - | -    | 57   | -   | 11.4 | 20.0       |
| Arachnida                                    | 19                             | - | -    | -    | -   | 3.8  | 6.7        |
| SUBTOTAL                                     |                                |   |      |      |     | 15.2 | 26.7       |
| Diptera                                      |                                |   |      |      |     |      |            |
| Chaoboridae                                  | -                              | - | 19   | -    | -   | 3.8  | 6.7        |
| Orthoclad/Chiro                              | -                              | - | 19   | 57   | -   | 15.2 | 26.7       |
| Tanypodinae                                  | -                              | - | 57   | 19   | 38  | 22.8 | 40.0       |
| SUBTOTAL                                     |                                |   |      |      |     | 41.8 | 73.3       |
| FUNCTIONAL GROUPS (%)                        |                                |   |      |      |     |      |            |
| Collector-gatherers                          | -                              | - | 20.0 | 85.7 | -   | 21.1 |            |
| Collector-filterers                          | -                              | - | -    | -    | -   | -    |            |
| Shredders                                    | -                              | - | -    | -    | -   | -    |            |
| Scrapers                                     | -                              | - | -    | -    | -   | -    |            |
| Predators                                    | 100                            | - | 80.0 | 14.3 | 100 | 78.9 |            |
| SUMMARY                                      |                                |   |      |      |     |      |            |
| Total Individuals                            | 19                             | - | 95   | 133  | 38  | 57.0 |            |
| Total Taxa                                   | 1                              | - | 3    | 3    | 1   | 1.6  |            |
| Diversity (Dbar)                             | 0                              | 0 | 1.4  | 1.4  | 0   | 0.6  |            |
| 285                                          | Total Individuals collected    |   |      |      |     |      |            |
| 5                                            | Total Number of Taxa collected |   |      |      |     |      |            |
| 2                                            | Total Sample Diversity (Dbar)  |   |      |      |     |      |            |

**Table A8.3.14. Benthic macroinvertebrates collected at UW using Ponar grab method on September 14, 1983.**

| Organisms                                    | Replicates |      |      |      |      | Mean  | % of total |
|----------------------------------------------|------------|------|------|------|------|-------|------------|
|                                              | 1          | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |            |      |      |      |      |       |            |
| Misc. Invertebrates                          |            |      |      |      |      |       |            |
| Oligochaeta                                  | -          | 38   | -    | 57   | -    | 19.0  | 4.7        |
| SUBTOTAL                                     |            |      |      |      |      | 19.0  | 4.7        |
| Diptera                                      |            |      |      |      |      |       |            |
| Orthoclad/Chiro                              | 210        | 210  | 96   | 325  | 115  | 191.2 | 46.9       |
| Tanypodinae                                  | 57         | 249  | 19   | 230  | 134  | 197.8 | 48.5       |
| SUBTOTAL                                     |            |      |      |      |      | 427.0 | 95.3       |
| FUNCTIONAL GROUPS (%)                        |            |      |      |      |      |       |            |
| Collector-gatherers                          | 78.7       | 31.1 | 83.5 | 62.4 | 46.2 | 60.4  |            |
| Collector-filterers                          | -          | -    | -    | -    | -    | -     |            |
| Shredders                                    | -          | -    | -    | -    | -    | -     |            |
| Scrapers                                     | -          | -    | -    | -    | -    | -     |            |
| Predators                                    | 21.3       | 68.9 | 16.5 | 37.6 | 53.8 | 39.6  |            |
| SUMMARY                                      |            |      |      |      |      |       |            |
| Total Individuals                            | 267        | 797  | 115  | 612  | 249  | 408.0 |            |
| Total Taxa                                   | 2          | 3    | 2    | 3    | 2    | 2.4   |            |
| Diversity (Dbar)                             | 0.7        | 1.1  | 0.6  | 1.3  | 1.0  | 0.9   |            |
| 2040                                         |            |      |      |      |      |       |            |
| Total Individuals collected                  |            |      |      |      |      |       |            |
| 3 Total Number of Taxa collected             |            |      |      |      |      |       |            |
| 1.2 Total Sample Diversity (Dbar)            |            |      |      |      |      |       |            |

**Table A8.3.15. Benthic macroinvertebrates collected at LW using Ponar grab method on September 15, 1983.**

| Organisms                                    | Replicates                     |      |      |      |      | Mean  | % of total |
|----------------------------------------------|--------------------------------|------|------|------|------|-------|------------|
|                                              | 1                              | 2    | 3    | 4    | 5    |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |      |      |      |       |            |
| Misc. Invertebrates                          |                                |      |      |      |      |       |            |
| Oligochaeta                                  | -                              | 38   | 38   | 172  | -    | 49.6  | 20.8       |
| SUBTOTAL                                     |                                |      |      |      |      | 49.6  | 20.8       |
| Ephemeroptera                                |                                |      |      |      |      |       |            |
| Hexagenia                                    | -                              | -    | -    | -    | 19   | 3.8   | 1.6        |
| SUBTOTAL                                     |                                |      |      |      |      | 3.8   | 1.6        |
| Trichoptera                                  |                                |      |      |      |      |       |            |
| Cynnellus fraternus                          | -                              | 19   | -    | -    | -    | 3.8   | 1.6        |
| SUBTOTAL                                     |                                |      |      |      |      | 3.8   | 1.6        |
| Diptera                                      |                                |      |      |      |      |       |            |
| Chaoboridae                                  | -                              | -    | -    | 28   | 57   | 17.0  | 7.1        |
| Orthoclad/Chiro                              | 38                             | 76   | 19   | 57   | 57   | 49.4  | 20.7       |
| Tanypodinae                                  | 19                             | 230  | 230  | 38   | 57   | 114.8 | 48.2       |
| SUBTOTAL                                     |                                |      |      |      |      | 181.2 | 76.0       |
| FUNCTIONAL GROUPS (%)                        |                                |      |      |      |      |       |            |
| Collector-gatherers                          | 66.7                           | 36.6 | 19.9 | 77.6 | 40.0 | 48.2  |            |
| Collector-filterers                          | -                              | -    | -    | -    | -    | -     |            |
| Shredders                                    | -                              | -    | -    | -    | -    | -     |            |
| Scrapers                                     | -                              | -    | -    | -    | -    | -     |            |
| Predators                                    | 33.3                           | 63.4 | 80.1 | 22.4 | 60.0 | 51.8  |            |
| SUMMARY                                      |                                |      |      |      |      |       |            |
| Total Individuals                            | 57                             | 363  | 287  | 295  | 190  | 238.4 |            |
| Total Taxa                                   | 2                              | 4    | 3    | 4    | 4    | 3.4   |            |
| Diversity (Dbar)                             | 0.9                            | 1.5  | 0.9  | 1.6  | 1.9  | 1.4   |            |
| 1192                                         | Total Individuals collected    |      |      |      |      |       |            |
| 6                                            | Total Number of Taxa collected |      |      |      |      |       |            |
| 1.9                                          | Total Sample Diversity (Dbar)  |      |      |      |      |       |            |

Table A8.3.16. Benthic macroinvertebrates collected at UW using Ponar grab method on October 12, 1983.

| Organisms                                    | Replicates                     |       |      |       |       | Mean    | % of total |
|----------------------------------------------|--------------------------------|-------|------|-------|-------|---------|------------|
|                                              | 1                              | 2     | 3    | 4     | 5     |         |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |       |      |       |       |         |            |
| Misc. Invertebrates                          |                                |       |      |       |       |         |            |
| Arachnida                                    | 38                             | 19    | -    | 19    | 19    | 19.0    | 0.1        |
| SUBTOTAL                                     |                                |       |      |       |       | 19.0    | 0.1        |
| Ephemeroptera                                |                                |       |      |       |       |         |            |
| Stenonema                                    | 19                             | -     | -    | -     | -     | 3.8     | ✖          |
| SUBTOTAL                                     |                                |       |      |       |       | 3.8     | ✖          |
| Coleoptera                                   |                                |       |      |       |       |         |            |
| Dubiraphia larvae                            | -                              | -     | -    | 19    | -     | 3.8     | ✖          |
| SUBTOTAL                                     |                                |       |      |       |       | 3.8     | ✖          |
| Trichoptera                                  |                                |       |      |       |       |         |            |
| Cheumatopsyche                               | 19                             | -     | -    | -     | -     | 3.8     | ✖          |
| SUBTOTAL                                     |                                |       |      |       |       | 3.8     | ✖          |
| Diptera                                      |                                |       |      |       |       |         |            |
| Orthoclad/Chiro                              | 6889                           | 2449  | 2143 | 6846  | 4592  | 3983.8  | 26.1       |
| Tanypodinae                                  | 4248                           | 20054 | 6659 | 10423 | 15002 | 11277.2 | 73.7       |
| SUBTOTAL                                     |                                |       |      |       |       | 15861.0 | 99.8       |
| FUNCTIONAL GROUPS (%)                        |                                |       |      |       |       |         |            |
| Collector-gatherers                          | 61.6                           | 10.9  | 24.3 | 26.9  | 23.4  | 29.4    |            |
| Collector-filterers                          | 0.2                            | -     | -    | -     | -     | ✖       |            |
| Shredders                                    | -                              | -     | -    | -     | -     | -       |            |
| Scrapers                                     | -                              | -     | -    | 0.1   | -     | ✖       |            |
| Predators                                    | 38.2                           | 89.1  | 75.7 | 73.0  | 76.6  | 70.5    |            |
| SUMMARY                                      |                                |       |      |       |       |         |            |
| Total Individuals                            | 11213                          | 22522 | 8802 | 14307 | 19613 | 15291.4 |            |
| Total Taxa                                   | 5                              | 3     | 2    | 4     | 3     | 3.4     |            |
| Diversity (Dbar)                             | 1                              | 0.5   | 0.8  | 0.9   | 0.8   | 0.8     |            |
| 76457                                        | Total Individuals collected    |       |      |       |       |         |            |
| 6                                            | Total Number of Taxa collected |       |      |       |       |         |            |
| 0.9                                          | Total Sample Diversity (Dbar)  |       |      |       |       |         |            |

Table A8.3.17. Benthic macroinvertebrates collected at LW using Ponar grab method on October 13, 1983.

| Organisms                                    | Replicates                     |      |      |      |      | Mean  | % of<br>total |
|----------------------------------------------|--------------------------------|------|------|------|------|-------|---------------|
|                                              | 1                              | 2    | 3    | 4    | 5    |       |               |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |      |      |      |       |               |
| Misc. Invertebrates                          |                                |      |      |      |      |       |               |
| Oligochaeta                                  | 19                             | -    | -    | -    | -    | 3.8   | 0.6           |
| Arachnida                                    | -                              | 19   | -    | 19   | 19   | 11.4  | 1.7           |
| SUBTOTAL                                     |                                |      |      |      |      | 15.2  | 2.3           |
| Ephemeroptera                                |                                |      |      |      |      |       |               |
| Hexagenia                                    | 134                            | 76   | 95   | -    | -    | 61.2  | 9.2           |
| SUBTOTAL                                     |                                |      |      |      |      | 61.2  | 9.2           |
| Coleoptera                                   |                                |      |      |      |      |       |               |
| Dubiraphia larvae                            | -                              | -    | 19   | -    | -    | 3.8   | 0.6           |
| SUBTOTAL                                     |                                |      |      |      |      | 3.8   | 0.6           |
| Diptera                                      |                                |      |      |      |      |       |               |
| Orthoclad/Chiro                              | 134                            | -    | 77   | 96   | 134  | 88.2  | 13.2          |
| Tanypodinae                                  | 440                            | 19   | 555  | 1014 | 459  | 497.4 | 74.7          |
| SUBTOTAL                                     |                                |      |      |      |      | 585.6 | 88.0          |
| FUNCTIONAL GROUPS (%)                        |                                |      |      |      |      |       |               |
| Collector-gatherers                          | 39.5                           | 67.0 | 23.1 | 8.5  | 21.9 | 32.0  |               |
| Collector-filterers                          | -                              | -    | -    | -    | -    | -     |               |
| Shredders                                    | -                              | -    | -    | -    | -    | -     |               |
| Scrapers                                     | -                              | -    | 2.5  | -    | -    | 0.5   |               |
| Predators                                    | 60.5                           | 33.0 | 74.5 | 91.5 | 78.1 | 67.5  |               |
| SUMMARY                                      |                                |      |      |      |      |       |               |
| Total Individuals                            | 727                            | 115  | 746  | 1129 | 612  | 665.8 |               |
| Total Taxa                                   | 4                              | 3    | 4    | 3    | 3    | 3.4   |               |
| Diversity (Dbar)                             | 1.5                            | 1.2  | 1.2  | 0.5  | 0.9  | 1.1   |               |
| 3329                                         | Total Individuals collected    |      |      |      |      |       |               |
| 6                                            | Total Number of Taxa collected |      |      |      |      |       |               |
| 1.2                                          | Total Sample Diversity (Dbar)  |      |      |      |      |       |               |

**Table A8.3.18. Benthic macroinvertebrates collected at UW using Ponar grab method on November 17, 1983.**

| Organisms                                    | Replicates                     |      |      |      |      | Mean   | % of total |
|----------------------------------------------|--------------------------------|------|------|------|------|--------|------------|
|                                              | 1                              | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |      |      |      |        |            |
| Misc. Invertebrates                          |                                |      |      |      |      |        |            |
| Hyalella azteca                              | -                              | 19   | -    | -    | -    | 3.8    | 0.2        |
| Arachnida                                    | -                              | -    | -    | -    | 19   | 3.8    | 0.2        |
| Ferrissia                                    | -                              | 19   | -    | -    | -    | 3.8    | 0.2        |
| SUBTOTAL                                     |                                |      |      |      |      | 11.4   | 0.5        |
| Ephemeroptera                                |                                |      |      |      |      |        |            |
| Hexagenia                                    | -                              | 19   | -    | -    | 19   | 7.6    | 0.4        |
| SUBTOTAL                                     |                                |      |      |      |      | 7.6    | 0.4        |
| Trichoptera                                  |                                |      |      |      |      |        |            |
| Cheumatopsyche                               | -                              | 38   | -    | 19   | 19   | 15.2   | 0.8        |
| SUBTOTAL                                     |                                |      |      |      |      | 15.2   | 0.8        |
| Diptera                                      |                                |      |      |      |      |        |            |
| Orthoclad/Chiro                              | 727                            | 3023 | 1416 | 2392 | 1761 | 1663.8 | 87.2       |
| Tanypodinae                                  | -                              | 153  | 402  | 172  | 325  | 210.4  | 11.0       |
| SUBTOTAL                                     |                                |      |      |      |      | 2621.4 | 97.3       |
| FUNCTIONAL GROUPS (%)                        |                                |      |      |      |      |        |            |
| Collector-gatherers                          | 100                            | 90.8 | 77.9 | 92.6 | 83.1 | 88.9   |            |
| Collector-filterers                          | -                              | 1.7  | -    | 0.7  | 0.9  | 0.7    |            |
| Shredders                                    | -                              | -    | -    | -    | -    | -      |            |
| Scrapers                                     | -                              | 0.8  | -    | -    | -    | 0.2    |            |
| Predators                                    | -                              | 6.7  | 22.1 | 6.7  | 16.1 | 10.3   |            |
| SUMMARY                                      |                                |      |      |      |      |        |            |
| Total Individuals                            | 727                            | 2271 | 1818 | 2583 | 2143 | 1908.4 |            |
| Total Taxa                                   | 1                              | 6    | 2    | 3    | 5    | 3.4    |            |
| Diversity (Dbar)                             | 0                              | 0.7  | 0.8  | 0.4  | 0.8  | 0.5    |            |
| 9542                                         | Total Individuals collected    |      |      |      |      |        |            |
| 7                                            | Total Number of Taxa collected |      |      |      |      |        |            |
| 0.7                                          | Total Sample Diversity (Dbar)  |      |      |      |      |        |            |

Table A8.3.19. Benthic macroinvertebrates collected at LW using Ponar grab method on November 18, 1983.

| Organisms                                    | Replicates                     |      |      |      |      | Mean   | % of total |
|----------------------------------------------|--------------------------------|------|------|------|------|--------|------------|
|                                              | 1                              | 2    | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |      |      |      |      |        |            |
| Ephemeroptera                                |                                |      |      |      |      |        |            |
| Stenacron                                    | 153                            | -    | -    | -    | -    | 30.6   | 1.1        |
| Hexagenia                                    | 38                             | -    | 134  | -    | -    | 34.4   | 1.3        |
| SUBTOTAL                                     |                                |      |      |      |      | 65.0   | 2.4        |
| Trichoptera                                  |                                |      |      |      |      |        |            |
| Cynnellus fraternus                          | -                              | -    | -    | 19   | 19   | 7.6    | 0.3        |
| SUBTOTAL                                     |                                |      |      |      |      | 7.6    | 0.3        |
| Diptera                                      |                                |      |      |      |      |        |            |
| Orthoclad/Chiro                              | 191                            | 306  | 57   | 115  | 249  | 183.6  | 6.8        |
| Tanypodinae                                  | 325                            | 9223 | 536  | 785  | 1320 | 2437.8 | 90.5       |
| SUBTOTAL                                     |                                |      |      |      |      | 2621.4 | 97.3       |
| FUNCTIONAL GROUPS (%)                        |                                |      |      |      |      |        |            |
| Collector-gatherers                          | 54.0                           | 3.2  | 26.3 | 14.6 | 16.9 | 23.0   |            |
| Collector-filterers                          | -                              | -    | -    | -    | -    | -      |            |
| Shredders                                    | -                              | -    | -    | -    | -    | -      |            |
| Scrapers                                     | -                              | -    | -    | -    | -    | -      |            |
| Predators                                    | 46.0                           | 96.8 | 73.7 | 85.4 | 83.1 | 77.0   |            |
| SUMMARY                                      |                                |      |      |      |      |        |            |
| Total Individuals                            | 707                            | 9529 | 727  | 919  | 1588 | 2694.0 |            |
| Total Taxa                                   | 4                              | 2    | 3    | 3    | 3    | 3.0    |            |
| Diversity (Dbar)                             | 1.7                            | 0.2  | 1.1  | 0.7  | 0.7  | 0.9    |            |
| 13470                                        | Total Individuals collected    |      |      |      |      |        |            |
| 5                                            | Total Number of Taxa collected |      |      |      |      |        |            |
| 0.9                                          | Total Sample Diversity (Dbar)  |      |      |      |      |        |            |



**Table A8.3.20. Benthic macroinvertebrates collected at UW using Ponar grab method on December 15, 1983.**

| Organisms                                    | Replicates                     |     |     |      |     | Mean  | % of total |
|----------------------------------------------|--------------------------------|-----|-----|------|-----|-------|------------|
|                                              | 1                              | 2   | 3   | 4    | 5   |       |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |     |      |     |       |            |
| Diptera                                      |                                |     |     |      |     |       |            |
| Orthoclad/Chiro                              | 96                             | 804 | 746 | 1301 | 382 | 665.8 | 98.9       |
| Prosimulium                                  | -                              | -   | -   | 38   | -   | 7.6   | 1.1        |
| SUBTOTAL                                     |                                |     |     |      |     | 673.4 | 100.0      |
| FUNCTIONAL GROUPS (%)                        |                                |     |     |      |     |       |            |
| Collector-gatherers                          | 100                            | 100 | 100 | 97.2 | 100 | 99.4  |            |
| Collector-filterers                          | -                              | -   | -   | 2.8  | -   | 0.6   |            |
| Shredders                                    | -                              | -   | -   | -    | -   | -     |            |
| Scrapers                                     | -                              | -   | -   | -    | -   | -     |            |
| Predators                                    | -                              | -   | -   | -    | -   | -     |            |
| SUMMARY                                      |                                |     |     |      |     |       |            |
| Total Individuals                            | 96                             | 804 | 746 | 1339 | 382 | 673.4 |            |
| Total Taxa                                   | 1                              | 1   | 1   | 2    | 1   | 1.2   |            |
| Diversity (Dbar)                             | 0                              | 0   | 0   | 0.2  | 0   | 0.04  |            |
| 3367                                         | Total Individuals collected    |     |     |      |     |       |            |
| 2                                            | Total Number of Taxa collected |     |     |      |     |       |            |
| 0.1                                          | Total Sample Diversity (Dbar)  |     |     |      |     |       |            |

Table A8.3.21. Benthic macroinvertebrates collected at LW using Ponar grab method on December 16, 1983.

| Organisms                                    | Replicates                     |     |      |      |      | Mean   | % of total |
|----------------------------------------------|--------------------------------|-----|------|------|------|--------|------------|
|                                              | 1                              | 2   | 3    | 4    | 5    |        |            |
| COMMUNITY STRUCTURE<br>(number/square meter) |                                |     |      |      |      |        |            |
| Misc. Invertebrates                          |                                |     |      |      |      |        |            |
| Arachnida                                    | 19                             | -   | -    | 38   | -    | 11.4   | 0.7        |
| SUBTOTAL                                     |                                |     |      |      |      | 11.4   | 0.7        |
| Plecoptera                                   |                                |     |      |      |      |        |            |
| Strophopteryx                                | -                              | -   | -    | -    | 19   | 3.8    | 0.2        |
| SUBTOTAL                                     |                                |     |      |      |      | 3.8    | 0.2        |
| Diptera                                      |                                |     |      |      |      |        |            |
| Ceratopogonidae                              | -                              | -   | -    | 19   | 19   | 7.6    | 0.5        |
| Orthoclad/Chiro                              | 57                             | 38  | 2277 | 4784 | 1014 | 1634.0 | 98.2       |
| Tanypodinae                                  | -                              | -   | 38   | -    | -    | 7.6    | 0.5        |
| SUBTOTAL                                     |                                |     |      |      |      | 1649.2 | 99.1       |
| FUNCTIONAL GROUPS (%)                        |                                |     |      |      |      |        |            |
| Collector-gatherers                          | 75.0                           | 100 | 98.4 | 98.8 | 96.4 | 93.7   |            |
| Collector-filterers                          | -                              | -   | -    | -    | -    | -      |            |
| Shredders                                    | -                              | -   | -    | -    | 1.8  | 0.4    |            |
| Scrapers                                     | -                              | -   | -    | -    | -    | -      |            |
| Predators                                    | 25.0                           | -   | 1.6  | 1.2  | 1.8  | 5.9    |            |
| SUMMARY                                      |                                |     |      |      |      |        |            |
| Total Individuals                            | 76                             | 38  | 2315 | 4841 | 1052 | 1664.4 |            |
| Total Taxa                                   | 2                              | 1   | 2    | 3    | 3    | 2.2    |            |
| Diversity (Dbar)                             | 0.8                            | 0   | 0.1  | 0.1  | 0.3  | 0.3    |            |
| 8322                                         | Total Individuals collected    |     |      |      |      |        |            |
| 5                                            | Total Number of Taxa collected |     |      |      |      |        |            |
| 0.2                                          | Total Sample Diversity (Dbar)  |     |      |      |      |        |            |

Table A8.4.1. Size frequency distribution, Isonychia bicolor, UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 10            | -     | -   | -   | -   | 3   | 4   | -   | -   | -   | -   | -   | -   | 0.6  |
| 9             | -     | -   | -   | -   | 6   | 12  | -   | -   | -   | -   | -   | -   | 1.5  |
| 8             | -     | -   | -   | 2   | 13  | 3   | 3   | 2   | -   | -   | -   | -   | 1.9  |
| 7             | -     | -   | -   | -   | 14  | -   | 10  | -   | -   | -   | 2   | -   | 2.2  |
| 6             | 1     | -   | -   | 1   | 4   | -   | 9   | 1   | -   | -   | 3   | -   | 1.6  |
| 5             | -     | -   | -   | -   | 8   | 2   | 8   | -   | -   | -   | -   | -   | 1.5  |
| 4             | -     | -   | -   | 2   | 6   | 4   | 11  | -   | -   | -   | 2   | -   | 2.1  |
| 3             | -     | -   | -   | -   | 3   | 66  | 21  | -   | -   | -   | 1   | -   | 7.6  |
| 2             | -     | -   | -   | -   | -   | 114 | 24  | -   | -   | 4   | 1   | -   | 11.9 |
| 1             | -     | -   | -   | -   | 1   | 103 | 2   | -   | -   | 4   | -   | -   | 9.2  |
|               | 1     | -   | -   | 5   | 58  | 308 | 88  | 3   | -   | 8   | 9   | -   | 40.0 |

Table A8.4.2. Size frequency distribution, Baetidae, UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 8             | -     | -   | 1   | 2   | 2   | 4   | 5   | -   | -   | -   | -   | -   | 1.2 |
| 7             | -     | -   | -   | -   | -   | 8   | 3   | -   | -   | -   | -   | -   | 0.9 |
| 6             | -     | -   | -   | 2   | -   | 4   | 9   | -   | -   | -   | -   | -   | 1.2 |
| 5             | -     | -   | -   | -   | 3   | 4   | 12  | 2   | -   | -   | -   | -   | 1.8 |
| 4             | -     | -   | -   | -   | -   | 2   | 10  | 1   | -   | -   | -   | -   | 1.1 |
| 3             | -     | -   | -   | -   | 1   | -   | 11  | -   | -   | -   | -   | -   | 1.0 |
| 2             | -     | -   | -   | -   | -   | 2   | 5   | -   | -   | 2   | -   | -   | 0.8 |
| 1             | -     | -   | -   | -   | -   | -   | 3   | 1   | 1   | -   | -   | -   | 0.4 |
|               | -     | -   | 1   | 4   | 6   | 24  | 58  | 4   | 1   | 2   | -   | -   | 8.3 |

Table A8.4.3. Size frequency distribution, Baetidae, LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 8             | -     | -   | -   | 1   | -   | 4   | -   | -   | -   | -   | -   | -   | 0.3 |
| 7             | -     | -   | 1   | -   | 2   | 3   | -   | -   | -   | -   | -   | -   | 0.4 |
| 6             | -     | -   | -   | -   | -   | 6   | -   | -   | -   | -   | -   | -   | 0.5 |
| 5             | -     | -   | -   | -   | -   | 12  | -   | -   | -   | -   | -   | -   | 1.0 |
| 4             | -     | -   | -   | -   | 2   | 9   | -   | -   | -   | -   | -   | -   | 0.9 |
| 3             | -     | -   | -   | -   | -   | 8   | -   | -   | -   | -   | -   | -   | 0.7 |
| 2             | -     | -   | -   | -   | -   | 9   | -   | -   | -   | -   | -   | -   | 0.8 |
| 1             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0 |
|               | -     | -   | 1   | 1   | 4   | 51  | -   | -   | -   | -   | -   | -   | 4.8 |

Table A8.4.4. Size frequency distribution, Stenacron spp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD   |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |       |
| 9             | -     | -   | -   | -   | -   | -   | -   | 1   | -   | 1   | 8   | -   | 0.8   |
| 8             | -     | -   | -   | -   | -   | -   | -   | 3   | 1   | 14  | 9   | -   | 2.2   |
| 7             | -     | -   | -   | -   | -   | -   | 1   | 5   | 1   | 33  | 13  | -   | 4.4   |
| 6             | -     | -   | -   | -   | 2   | -   | -   | 9   | 6   | 43  | 16  | -   | 6.3   |
| 5             | -     | -   | -   | -   | -   | -   | -   | 5   | 9   | 54  | 18  | 1   | 7.2   |
| 4             | -     | -   | -   | -   | -   | -   | 4   | 9   | 14  | 104 | 20  | 1   | 12.7  |
| 3             | -     | -   | -   | 1   | -   | -   | 4   | 9   | 39  | 173 | 19  | -   | 20.4  |
| 2             | 2     | -   | -   | -   | -   | -   | 1   | 16  | 96  | 398 | 35  | 4   | 46.0  |
| 1             | -     | -   | -   | -   | -   | -   | -   | 5   | 60  | 177 | 6   | 1   | 20.8  |
|               | 2     | -   | -   | 1   | 2   | -   | 10  | 62  | 226 | 997 | 144 | 7   | 120.9 |

Table A8.4.5. Size frequency distribution, Stenacron spp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 9             | -     | -   | -   | -   | -   | -   | 1   | 1   | -   | -   | -   | -   | 0.2  |
| 8             | -     | -   | -   | -   | -   | -   | -   | 7   | -   | -   | 1   | -   | 0.7  |
| 7             | -     | -   | -   | -   | -   | -   | 2   | 6   | -   | -   | -   | -   | 0.7  |
| 6             | -     | -   | -   | -   | 2   | 3   | 3   | 5   | -   | -   | -   | -   | 1.1  |
| 5             | -     | -   | -   | -   | -   | 2   | 1   | 17  | -   | -   | -   | -   | 1.6  |
| 4             | -     | -   | -   | -   | 2   | -   | 3   | 21  | -   | -   | -   | 1   | 2.2  |
| 3             | -     | -   | -   | -   | -   | 1   | 6   | 40  | 2   | -   | -   | -   | 4.1  |
| 2             | -     | -   | -   | -   | -   | -   | 3   | 43  | 4   | 3   | 4   | -   | 4.8  |
| 1             | -     | -   | -   | -   | -   | -   | -   | 17  | 1   | 2   | 3   | -   | 1.9  |
|               | -     | -   | -   | -   | 4   | 6   | 19  | 157 | 7   | 5   | 8   | 1   | 17.2 |

Table A8.4.6. Size frequency distribution, Stenonema spp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD   |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |       |
| 9             | -     | -   | -   | -   | 3   | 18  | 1   | 4   | -   | -   | 1   | -   | 2.2   |
| 8             | -     | -   | -   | -   | 10  | 16  | 19  | 14  | -   | -   | 1   | -   | 5.0   |
| 7             | -     | -   | -   | -   | 4   | 10  | 51  | 22  | 3   | 1   | 1   | -   | 7.7   |
| 6             | -     | -   | -   | -   | 14  | 8   | 88  | 21  | -   | 6   | 4   | 1   | 11.8  |
| 5             | -     | -   | -   | -   | 8   | 12  | 108 | 43  | 3   | 7   | 3   | -   | 15.3  |
| 4             | -     | -   | -   | -   | 8   | 6   | 118 | 31  | 13  | 11  | 3   | -   | 15.8  |
| 3             | -     | -   | -   | -   | 15  | 38  | 189 | 34  | 31  | 23  | 7   | -   | 28.1  |
| 2             | -     | -   | -   | -   | 2   | 86  | 214 | 89  | 135 | 31  | 2   | -   | 46.6  |
| 1             | -     | -   | -   | -   | -   | 26  | 24  | 55  | 289 | 11  | -   | -   | 33.8  |
|               | -     | -   | -   | -   | 64  | 220 | 812 | 313 | 474 | 90  | 22  | 1   | 166.3 |



Table A8.4.7. Size frequency distribution, Stenonema spp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 9             | -     | -   | -   | -   | 20  | 16  | 1   | -   | -   | -   | -   | -   | 3.1  |
| 8             | -     | -   | -   | -   | 8   | 12  | 1   | 1   | -   | -   | -   | -   | 1.8  |
| 7             | -     | -   | -   | -   | 10  | 4   | 2   | 1   | -   | -   | -   | -   | 1.4  |
| 6             | -     | -   | -   | -   | 10  | 5   | -   | -   | -   | -   | -   | -   | 1.2  |
| 5             | -     | -   | -   | -   | 6   | 3   | -   | 1   | -   | -   | -   | -   | 0.8  |
| 4             | -     | -   | -   | -   | 2   | 7   | -   | 2   | -   | -   | -   | -   | 0.9  |
| 3             | -     | -   | -   | -   | -   | 35  | -   | -   | -   | -   | -   | -   | 2.9  |
| 2             | -     | -   | -   | -   | -   | 62  | 1   | 1   | 3   | -   | -   | -   | 5.6  |
| 1             | -     | -   | -   | -   | -   | 11  | -   | -   | -   | 1   | -   | -   | 1.0  |
|               | -     | -   | -   | -   | 56  | 155 | 5   | 6   | 3   | 1   | -   | -   | 18.8 |

Table A8.4.8. Size frequency distribution, *Ephemereilla* spp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 8             | -     | -   | -   | -   | 20  | 2   | -   | -   | -   | -   | -   | -   | 1.8  |
| 7             | -     | -   | -   | 1   | 31  | 6   | -   | -   | -   | -   | -   | -   | 3.2  |
| 6             | -     | -   | -   | 6   | 27  | 13  | -   | -   | -   | -   | -   | -   | 3.8  |
| 5             | -     | -   | -   | 8   | 22  | 8   | -   | -   | -   | -   | -   | -   | 3.2  |
| 4             | -     | -   | -   | 6   | 26  | 8   | -   | -   | -   | -   | -   | -   | 3.3  |
| 3             | -     | -   | 2   | 32  | 24  | 12  | -   | -   | -   | -   | -   | -   | 5.8  |
| 2             | -     | -   | 2   | 17  | 23  | 13  | -   | -   | -   | -   | -   | -   | 4.6  |
| 1             | -     | -   | -   | 2   | 5   | 2   | -   | -   | -   | -   | -   | -   | 0.8  |
|               | -     | -   | 4   | 72  | 178 | 64  | -   | -   | -   | -   | -   | -   | 26.5 |

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Table A8.4.9. Size frequency distribution, Ephemerella spp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 8             | -     | -   | -   | -   | 2   | -   | -   | -   | -   | -   | -   | -   | 0.2 |
| 7             | -     | -   | -   | -   | 4   | -   | -   | -   | -   | -   | -   | -   | 0.3 |
| 6             | -     | -   | -   | 1   | 2   | -   | -   | -   | -   | -   | -   | -   | 0.2 |
| 5             | -     | -   | -   | -   | 8   | -   | -   | -   | -   | -   | -   | -   | 0.7 |
| 4             | -     | -   | -   | 1   | 4   | -   | -   | -   | -   | -   | -   | -   | 0.4 |
| 3             | -     | -   | 1   | -   | 2   | -   | -   | -   | -   | -   | -   | -   | 0.3 |
| 2             | -     | -   | 1   | 3   | -   | -   | -   | -   | -   | -   | -   | -   | 0.3 |
| 1             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0 |
|               | -     | -   | 2   | 5   | 22  | -   | -   | -   | -   | -   | -   | -   | 2.4 |

Table A8.4.10. Size frequency distribution, Tricorythodes spp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 9             | -     | -   | -   | -   | -   | -   | 1   | 3   | -   | -   | -   | -   | 0.3  |
| 8             | -     | -   | -   | -   | -   | -   | 3   | 8   | 1   | 2   | -   | -   | 1.2  |
| 7             | -     | 1   | -   | 3   | -   | -   | 7   | 7   | -   | 1   | -   | -   | 1.6  |
| 6             | -     | -   | -   | 1   | -   | -   | 5   | 12  | 2   | 3   | -   | -   | 1.9  |
| 5             | -     | -   | -   | 3   | 1   | -   | 9   | 4   | 1   | 4   | -   | -   | 1.8  |
| 4             | -     | -   | -   | -   | -   | 11  | 3   | 2   | 1   | 1   | -   | -   | 1.5  |
| 3             | -     | -   | -   | -   | -   | 26  | -   | 8   | 2   | 2   | -   | -   | 3.2  |
| 2             | -     | -   | -   | -   | -   | 16  | -   | 2   | 4   | -   | -   | -   | 1.8  |
| 1             | -     | -   | -   | -   | -   | 5   | -   | 1   | 2   | -   | -   | -   | 0.7  |
|               | -     | 1   | -   | 7   | 1   | 58  | 28  | 47  | 13  | 13  | -   | -   | 14.0 |

Table A8.4.11. Size frequency distribution, Tricorythodes spp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 9             | -     | -   | -   | -   | -   | 1   | -   | -   | -   | -   | -   | -   | 0.1  |
| 8             | -     | -   | -   | -   | -   | -   | 19  | 2   | -   | -   | -   | -   | 1.8  |
| 7             | -     | -   | -   | -   | -   | -   | 19  | 1   | -   | -   | -   | -   | 1.7  |
| 6             | -     | -   | -   | -   | -   | -   | 17  | 2   | -   | 1   | -   | -   | 1.7  |
| 5             | -     | -   | -   | 1   | -   | -   | 6   | 1   | -   | -   | -   | -   | 0.7  |
| 4             | -     | -   | -   | -   | -   | 64  | -   | -   | -   | -   | -   | -   | 5.3  |
| 3             | -     | -   | -   | -   | -   | 117 | -   | 1   | -   | -   | -   | -   | 9.8  |
| 2             | -     | -   | -   | -   | -   | 164 | -   | -   | -   | -   | -   | -   | 13.7 |
| 1             | -     | -   | -   | -   | -   | 49  | -   | -   | -   | -   | -   | -   | 4.1  |
|               | -     | -   | -   | 1   | -   | 395 | 61  | 7   | -   | 1   | -   | -   | 38.8 |

Table A8.4.12. Size frequency distribution, Caenis sp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 7             | -     | -   | -   | -   | -   | -   | -   | 3   | -   | -   | -   | -   | 0.2 |
| 6             | -     | -   | -   | -   | -   | -   | -   | 5   | -   | -   | -   | -   | 0.4 |
| 5             | -     | -   | -   | -   | -   | -   | -   | 4   | -   | -   | -   | -   | 0.3 |
| 4             | -     | -   | -   | -   | -   | 2   | -   | 1   | -   | -   | -   | -   | 0.2 |
| 3             | -     | -   | -   | -   | -   | 4   | -   | 1   | -   | -   | -   | -   | 0.4 |
| 2             | -     | -   | -   | -   | -   | 2   | 1   | 1   | 4   | -   | -   | -   | 0.7 |
| 1             | -     | -   | -   | -   | -   | -   | -   | 1   | 2   | -   | -   | -   | 0.2 |
|               | -     | -   | -   | -   | -   | 8   | 1   | 16  | 6   | -   | -   | -   | 2.6 |

Table A8.4.13. Size frequency distribution, *Caenis* sp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 7             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0 |
| 6             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0 |
| 5             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0 |
| 4             | -     | -   | -   | -   | -   | 4   | -   | -   | -   | 1   | -   | -   | 0.3 |
| 3             | -     | -   | -   | -   | -   | 4   | 1   | -   | -   | -   | -   | -   | 0.5 |
| 2             | -     | -   | -   | -   | -   | 21  | 1   | -   | -   | -   | -   | -   | 1.8 |
| 1             | -     | -   | -   | -   | -   | 10  | -   | -   | -   | -   | -   | -   | 0.8 |
|               | -     | -   | -   | -   | -   | 39  | 2   | -   | -   | 1   | -   | -   | 3.5 |

Table A8.4.14. Size frequency distribution, Argia spp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 6             | -     | -   | -   | -   | -   | -   | -   | -   | -   | 1   | -   | -   | 0.1 |
| 5             | -     | -   | -   | -   | -   | -   | -   | -   | -   | 14  | 1   | -   | 1.2 |
| 4             | -     | -   | -   | -   | -   | -   | -   | -   | 5   | 17  | -   | 1   | 1.4 |
| 3             | -     | -   | -   | -   | -   | -   | -   | 1   | 9   | 7   | -   | -   | 1.9 |
| 2             | -     | -   | -   | -   | -   | -   | -   | 1   | 1   | 3   | -   | -   | 0.3 |
| 1             | -     | -   | -   | -   | -   | -   | -   | 5   | -   | -   | -   | -   | 0.7 |
|               | -     | -   | -   | -   | -   | -   | -   | 7   | 15  | 42  | 1   | 1   | 5.5 |

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Table A8.4.15. Size frequency distribution, *Argia* spp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 6             | -     | -   | -   | -   | -   | 3   | 1   | -   | -   | -   | -   | -   | 0.3 |
| 5             | -     | -   | -   | -   | -   | 3   | 8   | -   | -   | 5   | 1   | -   | 1.4 |
| 4             | -     | -   | -   | -   | -   | -   | -   | -   | 4   | 9   | 2   | -   | 1.3 |
| 3             | -     | -   | -   | -   | -   | -   | -   | -   | 3   | 8   | 3   | -   | 1.2 |
| 2             | -     | -   | -   | -   | -   | -   | -   | -   | 2   | 2   | 1   | -   | 0.4 |
| 1             | -     | -   | -   | -   | -   | -   | -   | 4   | 2   | 2   | 1   | -   | 0.8 |
|               | -     | -   | -   | -   | -   | 6   | 9   | 4   | 11  | 26  | 8   | -   | 5.3 |

Table A8.4.16. Size frequency distribution, Taeniopteryx spp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 7             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 1   | 0.1 |
| 6             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 8   | 0.7 |
| 5             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 2   | 6   | 0.7 |
| 4             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 5   | 6   | 0.9 |
| 3             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 10  | 1   | 0.9 |
| 2             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 7   | 1   | 0.7 |
| 1             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 1   | 0.1 |
|               | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 24  | 24  | 4.0 |

Table A8.4.17. Size frequency distribution, *Taeniopteryx* spp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 7             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0  |
| 6             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 14  | 1.2  |
| 5             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 38  | 3.2  |
| 4             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 7   | 16  | 1.9  |
| 3             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 32  | 8   | 3.3  |
| 2             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 13  | 3   | 1.3  |
| 1             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 11  | -   | 0.9  |
|               | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 63  | 79  | 11.8 |

Table A8.4.18. Size frequency distribution, Strophopteryx spp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 7             | 1     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.1 |
| 6             | 12    | 3   | 2   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 2.5 |
| 5             | 9     | -   | 1   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.9 |
| 4             | 4     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 10  | 1.2 |
| 3             | 1     | -   | 1   | -   | -   | -   | -   | -   | -   | -   | 1   | 3   | 0.5 |
| 2             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 5   | 6   | 0.9 |
| 1             | 2     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 12  | 2   | 1.3 |
|               | 38    | 3   | 4   | -   | -   | -   | -   | -   | -   | -   | 18  | 21  | 7.0 |

h/h

Table A8.4.19. Size frequency distribution, *Strophopteryx* spp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 7             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0 |
| 6             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0 |
| 5             | 1     | 3   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 6   | 0.8 |
| 4             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 32  | 2.7 |
| 3             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 25  | 2.1 |
| 2             | -     | 1   | -   | -   | -   | -   | -   | -   | -   | -   | 2   | 19  | 1.8 |
| 1             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | 6   | 6   | 1.0 |
|               | 1     | 4   | -   | -   | -   | -   | -   | -   | -   | -   | 8   | 88  | 8.4 |

Table A8.4.20. Size frequency distribution, Cyrtellus fraternus, UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 5             | -     | -   | -   | -   | -   | -   | -   | 25  | 19  | 22  | -   | -   | 5.5  |
| 4             | -     | -   | -   | -   | -   | -   | 2   | 14  | 46  | 24  | -   | -   | 7.2  |
| 3             | -     | -   | -   | -   | -   | -   | -   | 6   | 18  | 41  | -   | -   | 5.4  |
| 2             | -     | -   | -   | -   | -   | -   | -   | -   | 33  | 1   | -   | -   | 2.8  |
| 1             | -     | -   | -   | -   | -   | -   | -   | -   | 32  | -   | -   | -   | 2.7  |
|               | -     | -   | -   | -   | -   | -   | 2   | 45  | 148 | 88  | -   | -   | 23.6 |

Table A8.4.21. Size frequency distribution, Cyrtellus fraternus, LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |      |     |     | AAD   |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT  | NOV | DEC |       |
| 5             | -     | -   | -   | -   | -   | -   | 65  | 242 | 132 | 122  | 29  | 2   | 49.3  |
| 4             | -     | -   | -   | -   | -   | -   | 18  | 110 | 129 | 63   | 30  | -   | 29.2  |
| 3             | -     | -   | -   | -   | -   | -   | 6   | 142 | 132 | 276  | 61  | -   | 54.4  |
| 2             | -     | -   | -   | -   | -   | -   | 1   | 60  | 47  | 749  | -   | -   | 71.4  |
| 1             | -     | -   | -   | -   | -   | -   | 10  | 30  | 17  | 20   | -   | -   | 6.4   |
|               | -     | -   | -   | -   | -   | -   | 100 | 584 | 457 | 1230 | 120 | 2   | 207.8 |

Table A8.4.22. Size frequency distribution, Cheumatopsyche sp., UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |      |      |     |     |     |     | AAD   |
|---------------|-------|-----|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL  | AUG  | SEP | OCT | NOV | DEC |       |
| 5             | -     | -   | -   | 6   | 20  | 113 | 318  | 579  | 227 | 51  | 230 | 6   | 129.1 |
| 4             | -     | -   | -   | 2   | 12  | 42  | 249  | 336  | 165 | 518 | 34  | 4   | 113.6 |
| 3             | -     | 1   | 1   | 4   | 15  | 135 | 350  | 130  | 76  | 25  | 5   | 1   | 61.8  |
| 2             | -     | -   | 1   | 2   | -   | 142 | 255  | 196  | 291 | 90  | 12  | -   | 82.4  |
| 1             | -     | -   | -   | -   | -   | 95  | 50   | 53   | 82  | 12  | 3   | -   | 24.6  |
|               | -     | 1   | 2   | 14  | 47  | 527 | 1222 | 1294 | 841 | 696 | 284 | 11  | 411.6 |



Table A8.4.23. Size frequency distribution, Cheumatopsyche sp., LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 5             | -     | -   | -   | -   | 3   | 108 | 2   | 1   | 3   | -   | -   | -   | 9.8  |
| 4             | -     | -   | 1   | -   | 12  | 144 | 4   | 1   | 1   | -   | -   | -   | 13.6 |
| 3             | -     | -   | -   | -   | 1   | 108 | 2   | 2   | 1   | -   | -   | -   | 9.5  |
| 2             | -     | -   | -   | 4   | -   | -   | -   | 1   | -   | -   | -   | -   | 0.4  |
| 1             | -     | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.0  |
|               | -     | -   | 1   | 4   | 16  | 360 | 8   | 5   | 5   | -   | -   | -   | 33.2 |

Table A8.4.24. Size frequency distribution, Hydropsyche morosa, UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 5             | -     | -   | -   | 4   | 6   | 1   | 1   | -   | -   | -   | -   | -   | 1.0  |
| 4             | -     | -   | 2   | 12  | 44  | 67  | 50  | -   | -   | -   | -   | 1   | 14.7 |
| 3             | -     | -   | -   | 19  | 15  | 39  | 5   | -   | -   | -   | -   | 1   | 6.6  |
| 2             | -     | -   | -   | 1   | 4   | 41  | 1   | -   | -   | -   | -   | -   | 3.8  |
| 1             | -     | -   | -   | 1   | -   | 29  | -   | -   | -   | -   | -   | -   | 2.5  |
|               | -     | -   | 2   | 37  | 69  | 177 | 57  | -   | -   | -   | -   | 2   | 28.7 |

Table A8.4.25. Size frequency distribution, Hydropsyche morosa, LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |     |
| 5             | -     | -   | -   | -   | 1   | -   | -   | -   | -   | -   | -   | -   | 0.1 |
| 4             | -     | -   | -   | -   | 3   | -   | -   | -   | -   | -   | -   | -   | 0.2 |
| 3             | -     | -   | 2   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.2 |
| 2             | -     | -   | 2   | -   | -   | -   | 2   | -   | -   | -   | -   | -   | 0.3 |
| 1             | -     | -   | 1   | -   | -   | -   | -   | -   | -   | -   | -   | -   | 0.1 |
|               | -     | -   | 5   | -   | 4   | -   | 2   | -   | -   | -   | -   | -   | 0.9 |

Table A8.4.26. Size frequency distribution, Orthocladiinae/Chironomina e UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |      |       |       |       |       |      |      |     | AAD    |
|---------------|-------|-----|-----|-----|------|-------|-------|-------|-------|------|------|-----|--------|
|               | JAN   | FEB | MAR | APR | MAY  | JUN   | JUL   | AUG   | SEP   | OCT  | NOV  | DEC |        |
| 4             | -     | -   | 10  | 2   | 30   | -     | 16    | 16    | 8     | 76   | 8    | 1   | 13.9   |
| 3             | 16    | 30  | 245 | 299 | 322  | 1488  | 1064  | 960   | 232   | 472  | 78   | 27  | 436.1  |
| 2             | 20    | 34  | 285 | 264 | 850  | 6240  | 9656  | 6960  | 3712  | 2712 | 637  | 210 | 2631.7 |
| 1             | 24    | 23  | 50  | 38  | 194  | 9592  | 23760 | 11688 | 6144  | 2428 | 1335 | 696 | 4664.3 |
|               | 60    | 87  | 590 | 603 | 1396 | 17320 | 34496 | 19624 | 10096 | 5688 | 2058 | 935 | 7746.0 |

Table A8.4.27. Size frequency distribution, Orthocladiinae/Chironominae, LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |      |      |      |      |      |       |      | AAD    |
|---------------|-------|-----|-----|-----|-----|------|------|------|------|------|-------|------|--------|
|               | JAN   | FEB | MAR | APR | MAY | JUN  | JUL  | AUG  | SEP  | OCT  | NOV   | DEC  |        |
| 4             | -     | 3   | 6   | -   | 1   | 124  | 341  | 71   | 73   | 720  | 212   | 26   | 129.2  |
| 3             | 7     | 79  | 353 | 117 | 89  | 672  | 779  | 185  | 250  | 1712 | 444   | 59   | 395.5  |
| 2             | 27    | 117 | 319 | 382 | 168 | 2712 | 1545 | 651  | 1100 | 2688 | 1416  | 450  | 964.6  |
| 1             | 51    | 175 | 84  | 139 | 35  | 2636 | 1167 | 969  | 1355 | 1556 | 8864  | 1564 | 1550.0 |
|               | 85    | 374 | 762 | 638 | 293 | 6144 | 3832 | 1876 | 2778 | 6676 | 10936 | 2099 | 3041.1 |

Table A8.4.28. Size frequency distribution, Orthoclaadiinae/Chironominae, UW. Numbers are total individuals in each size class, combining all 5 Ponar grabs. \* = samples could not be taken, AAD is based upon 11 sample sets.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |      |     |     | AAD   |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT  | NOV | DEC |       |
| 4             | 17    | 9   | *   | -   | -   | 4   | 1   | 2   | -   | 98   | 48  | 30  | 19.0  |
| 3             | 18    | 10  | *   | 6   | 6   | 8   | 5   | 22  | 10  | 245  | 45  | 20  | 35.9  |
| 2             | 136   | 31  | *   | 5   | 5   | 15  | 51  | 46  | 27  | 234  | 49  | 35  | 57.6  |
| 1             | 401   | 62  | *   | -   | -   | 10  | 10  | 25  | 13  | 621  | 345 | 89  | 143.3 |
|               | 572   | 112 | *   | 11  | 11  | 37  | 67  | 95  | 50  | 1198 | 487 | 174 | 255.8 |

Table A8.4.29. Size frequency distribution, Orthocladiinae/Chironominae, LW. Numbers are total individuals in each size class, combining all 5 Ponar grabs. \* = samples could not be taken, AAD is based upon 10 sample sets.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 4             | 19    | 36  | *   | -   | *   | 1   | 9   | -   | 1   | -   | 8   | 34  | 10.8 |
| 3             | 2     | 7   | *   | 7   | *   | 3   | 5   | 3   | 5   | 8   | 14  | 107 | 16.1 |
| 2             | 3     | 5   | *   | 4   | *   | 6   | 13  | 1   | 7   | 9   | 13  | 272 | 33.3 |
| 1             | 1     | 2   | *   | -   | *   | 6   | 2   | -   | -   | 6   | 13  | 16  | 4.6  |
|               | 25    | 50  | *   | 11  | *   | 16  | 29  | 4   | 13  | 23  | 48  | 427 | 64.6 |

Table A8.4.30. Size frequency distribution, Tanypodinae, UW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 4             | -     | -   | 2   | 18  | 29  | 48  | 32  | 56  | 16  | 20  | 8   | -   | 19.1 |
| 3             | -     | -   | -   | 3   | 6   | 32  | 24  | 120 | 24  | 16  | 5   | -   | 19.2 |
| 2             | -     | -   | 1   | 1   | -   | -   | 32  | 72  | 24  | 52  | 10  | 9   | 16.8 |
| 1             | -     | -   | -   | -   | -   | -   | -   | 16  | 8   | -   | 3   | -   | 2.2  |
|               | -     | -   | 3   | 22  | 35  | 80  | 88  | 264 | 72  | 88  | 26  | 9   | 57.2 |



Table A8.4.31. Size frequency distribution, Tanypodinae, LW. Numbers are total individuals in each size class, combining all 5 artificial substrates.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 4             | -     | -   | -   | -   | 18  | 96  | 27  | 45  | 29  | -   | 8   | 2   | 18.8 |
| 3             | -     | -   | -   | -   | 1   | 60  | 40  | 61  | 54  | 140 | 28  | 2   | 32.2 |
| 2             | -     | 1   | -   | -   | -   | 8   | 6   | 34  | 15  | 104 | 76  | 10  | 21.2 |
| 1             | -     | -   | -   | -   | -   | -   | -   | 15  | 4   | 8   | -   | -   | 2.2  |
|               | -     | 1   | -   | -   | 19  | 164 | 73  | 155 | 102 | 252 | 112 | 14  | 74.3 |

Table A8.4.32. Size frequency distribution, Tanypodinae, UW. Numbers are total individuals in each size class, combining all 5 Ponar grabs. \* = sample could not be taken, AAD is based upon 11 sample sets.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |      |     |     | AAD   |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT  | NOV | DEC |       |
| 4             | -     | -   | *   | -   | -   | -   | 6   | 10  | 5   | 6    | -   | -   | 2.4   |
| 3             | -     | -   | *   | -   | -   | -   | 4   | 5   | 10  | 200  | 15  | -   | 21.3  |
| 2             | -     | -   | *   | -   | -   | -   | -   | 5   | 19  | 1067 | 19  | -   | 100.9 |
| 1             | -     | -   | *   | -   | -   | -   | -   | 2   | 2   | 1674 | 21  | -   | 154.4 |
|               | -     | -   | *   | -   | -   | -   | 10  | 22  | 36  | 2947 | 55  | -   | 279.1 |

Table A8.4.33. Size frequency distribution, Tanypodinae, LW. Numbers are total individuals in each size class, combining all 5 Ponar grabs. \* = sample could not be taken, AAD is based upon 10 sample sets.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD   |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |       |
| 4             | 50    | 48  | *   | -   | *   | -   | 58  | 4   | 12  | 36  | 28  | 1   | 23.7  |
| 3             | 6     | 4   | *   | -   | *   | -   | 71  | 2   | 6   | 13  | 415 | 1   | 51.8  |
| 2             | 1     | 6   | *   | -   | *   | -   | 38  | -   | 10  | 25  | 155 | -   | 23.5  |
| 1             | -     | -   | *   | -   | *   | -   | 9   | -   | 2   | 56  | 39  | -   | 10.6  |
|               | 57    | 58  | *   | -   | *   | -   | 176 | 6   | 30  | 130 | 637 | 1   | 109.6 |

Table A8.4.34 Size frequency distribution, Simulium jenningsi, UW. Numbers are total individuals in each size class, combining all 5 artificial substrates. No individuals were collected from instars one and two.

| Size<br>Class | Month |     |     |     |     |     |     |     |     |     |     |     | AAD  |
|---------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|               | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |      |
| 7             | -     | -   | 1   | 48  | 30  | 5   | -   | -   | -   | -   | -   | -   | 7.0  |
| 6             | -     | -   | 2   | 92  | 99  | 28  | -   | -   | -   | -   | -   | -   | 18.4 |
| 5             | -     | -   | 1   | 87  | 56  | 5   | -   | -   | -   | -   | -   | -   | 12.4 |
| 4             | -     | -   | 1   | 23  | 10  | 3   | -   | -   | -   | -   | -   | -   | 3.1  |
| 3             | -     | -   | -   | -   | 2   | 2   | -   | -   | -   | -   | -   | -   | 0.3  |
| 2             |       |     |     |     |     |     |     |     |     |     |     |     |      |
| 1             |       |     |     |     |     |     |     |     |     |     |     |     |      |
|               | -     | -   | 5   | 250 | 197 | 43  | -   | -   | -   | -   | -   | -   | 41.2 |

**Table A8.5.1. Average weight (gDW) of individuals in each size class of the major taxa found in the Kanawha River. Corrected weights have been adjusted to compensate for loss in of preserving fluid (see Section IV.8).**

| <b>Organism</b>     | <b>Size Class</b> | <b>Size Range (mm)</b> | <b>Average Ind. Dry Weight (g)</b> | <b>Corrected Dry Weight (g)</b> |
|---------------------|-------------------|------------------------|------------------------------------|---------------------------------|
| <b>Isonychia</b>    |                   |                        |                                    |                                 |
|                     | 1                 | 0.00-0.39              | 0.00006                            | 0.00009                         |
|                     | 2                 | 0.40-0.59              | 0.00006                            | 0.00009                         |
|                     | 3                 | 0.60-0.79              | 0.00020                            | 0.00029                         |
|                     | 4                 | 0.80-0.99              | 0.00048                            | 0.00069                         |
|                     | 5                 | 1.00-1.19              | 0.00097                            | 0.00139                         |
|                     | 6                 | 1.20-1.39              | 0.00172                            | 0.00246                         |
|                     | 7                 | 1.40-1.59              | 0.00267                            | 0.00381                         |
|                     | 8                 | 1.60-1.79              | 0.00432                            | 0.00617                         |
|                     | 9                 | 1.80-1.99              | 0.00794                            | 0.01134                         |
|                     | 10                | 2.00+                  | 0.01245                            | 0.01779                         |
| <b>Stenonema</b>    |                   |                        |                                    |                                 |
|                     | 1                 | 0.00-0.39              | 0.00003                            | 0.00004                         |
|                     | 2                 | 0.40-0.69              | 0.00003                            | 0.00004                         |
|                     | 3                 | 0.70-0.99              | 0.00006                            | 0.00009                         |
|                     | 4                 | 1.00-1.29              | 0.00013                            | 0.00019                         |
|                     | 5                 | 1.30-1.59              | 0.00030                            | 0.00043                         |
|                     | 6                 | 1.60-1.89              | 0.00055                            | 0.00079                         |
|                     | 7                 | 1.90-2.19              | 0.00088                            | 0.00126                         |
|                     | 8                 | 2.20-2.49              | 0.00177                            | 0.00253                         |
|                     | 9                 | 2.5+                   | 0.00330                            | 0.00471                         |
| <b>Stenacron</b>    |                   |                        |                                    |                                 |
|                     | 1                 | 0.00-0.39              | 0.00003                            | 0.00004                         |
|                     | 2                 | 0.40-0.69              | 0.00002                            | 0.00003                         |
|                     | 3                 | 0.70-0.99              | 0.00005                            | 0.00007                         |
|                     | 4                 | 1.00-1.29              | 0.00013                            | 0.00019                         |
|                     | 5                 | 1.30-1.59              | 0.00031                            | 0.00044                         |
|                     | 6                 | 1.60-1.89              | 0.00046                            | 0.00066                         |
|                     | 7                 | 1.90-2.19              | 0.00179                            | 0.00256                         |
|                     | 8                 | 2.20-2.49              | 0.00208                            | 0.00297                         |
|                     | 9                 | 2.5+                   | 0.00332                            | 0.00474                         |
| <b>Ephemereilla</b> |                   |                        |                                    |                                 |
|                     | 1                 | 0.00-0.50              | 0.00014                            | 0.00020                         |
|                     | 2                 | 0.60-0.79              | 0.00010                            | 0.00014                         |
|                     | 3                 | 0.80-0.99              | 0.00025                            | 0.00036                         |
|                     | 4                 | 1.00-1.99              | 0.00046                            | 0.00066                         |
|                     | 5                 | 1.10-1.19              | 0.00064                            | 0.00091                         |
|                     | 6                 | 1.20-1.29              | 0.00084                            | 0.00120                         |
|                     | 7                 | 1.30-1.39              | 0.00122                            | 0.00174                         |
|                     | 8                 | 1.40+                  | 0.00132                            | 0.00189                         |

| Organism             | Size Class | Size Range (mm) | Average Ind. Dry Weight (g) | Corrected Dry Weight (g) |
|----------------------|------------|-----------------|-----------------------------|--------------------------|
| <b>Tricorythodes</b> |            |                 |                             |                          |
|                      | 1          | 0.00-0.29       | 0.00005                     | 0.00007                  |
|                      | 2          | 0.30-0.39       | 0.00001                     | 0.00001                  |
|                      | 3          | 0.40-0.49       | 0.00003                     | 0.00004                  |
|                      | 4          | 0.50-0.59       | 0.00004                     | 0.00006                  |
|                      | 5          | 0.60-0.79       | 0.00010                     | 0.00014                  |
|                      | 6          | 0.80-0.89       | 0.00032                     | 0.00046                  |
|                      | 7          | 0.90-0.99       | 0.00045                     | 0.00064                  |
|                      | 8          | 1.00-1.99       | 0.00079                     | 0.00113                  |
|                      | 9          | 1.10+           | 0.00139                     | 0.00199                  |
| <b>Baetidae</b>      |            |                 |                             |                          |
|                      | 1          | 0.00-0.29       | 0.00003                     | 0.00004                  |
|                      | 2          | 0.30-0.39       | 0.00004                     | 0.00006                  |
|                      | 3          | 0.40-0.49       | 0.00005                     | 0.00007                  |
|                      | 4          | 0.50-0.59       | 0.00009                     | 0.00013                  |
|                      | 5          | 0.60-0.69       | 0.00015                     | 0.00021                  |
|                      | 6          | 0.70-0.79       | 0.00028                     | 0.00040                  |
|                      | 7          | 0.80-0.89       | 0.00040                     | 0.00057                  |
|                      | 8          | 0.90+           | 0.00051                     | 0.00073                  |
| <b>Caenis</b>        |            |                 |                             |                          |
|                      | 1          | 0.00-2.99       | 0.00002                     | 0.00003                  |
|                      | 2          | 0.30-0.39       | 0.00003                     | 0.00004                  |
|                      | 3          | 0.40-4.99       | 0.00004                     | 0.00006                  |
|                      | 4          | 0.50-0.59       | 0.00010                     | 0.00014                  |
|                      | 5          | 0.60-0.69       | 0.00030                     | 0.00043                  |
|                      | 6          | 0.70-0.79       | 0.00042                     | 0.00060                  |
|                      | 7          | 0.80+           | 0.00074                     | 0.00106                  |
| <b>Strophopteryx</b> |            |                 |                             |                          |
|                      | 1          | 0.00-0.39       | 0.00003                     | 0.00004                  |
|                      | 2          | 0.40-0.59       | 0.00006                     | 0.00009                  |
|                      | 3          | 0.60-0.79       | 0.00013                     | 0.00019                  |
|                      | 4          | 0.80-0.99       | 0.00025                     | 0.00036                  |
|                      | 5          | 1.00-1.19       | 0.00061                     | 0.00087                  |
|                      | 6          | 1.20-1.39       | 0.00146                     | 0.00209                  |
|                      | 7          | 1.40+           | 0.00221                     | 0.00316                  |
| <b>Taeniopteryx</b>  |            |                 |                             |                          |
|                      | 1          | 0.00-0.39       | 0.00006                     | 0.00009                  |
|                      | 2          | 0.40-0.59       | 0.00007                     | 0.00010                  |
|                      | 3          | 0.60-0.79       | 0.00016                     | 0.00023                  |
|                      | 4          | 0.80-0.99       | 0.00035                     | 0.00050                  |
|                      | 5          | 1.00-1.19       | 0.00060                     | 0.00086                  |
|                      | 6          | 1.20-1.39       | 0.00112                     | 0.00160                  |
|                      | 7          | 1.40+           | 0.00204                     | 0.00291                  |

| Organism                                       | Size Class | Size Range (mm) | Average Ind. Dry Weight (g) | Corrected Dry Weight (g) |
|------------------------------------------------|------------|-----------------|-----------------------------|--------------------------|
| <b>Argia</b>                                   |            |                 |                             |                          |
|                                                | 1          | 0.00-1.19       | 0.00010                     | 0.00013                  |
|                                                | 2          | 1.20-1.79       | 0.00084                     | 0.00105                  |
|                                                | 3          | 1.80-2.39       | 0.00184                     | 0.00230                  |
|                                                | 4          | 2.40-2.99       | 0.00325                     | 0.00406                  |
|                                                | 5          | 3.00-3.59       | 0.00555                     | 0.00694                  |
|                                                | 6          | 3.60+           | 0.00973                     | 0.01216                  |
| <b>Cyrnellus</b>                               |            |                 |                             |                          |
|                                                | 1          | 0.00-0.21       | 0.00001                     | 0.00001                  |
|                                                | 2          | 0.22-0.34       | 0.00001                     | 0.00001                  |
|                                                | 3          | 0.35-0.55       | 0.00003                     | 0.00004                  |
|                                                | 4          | 0.56-0.81       | 0.00008                     | 0.00010                  |
|                                                | 5          | 0.82+           | 0.00030                     | 0.00038                  |
| <b>Cheumatopsyche (Winter generation)</b>      |            |                 |                             |                          |
|                                                | 1          | 0.00-0.31       | 0.00002                     | 0.00002                  |
|                                                | 2          | 0.32-0.45       | 0.00008                     | 0.00010                  |
|                                                | 3          | 0.46-0.61       | 0.00014                     | 0.00018                  |
|                                                | 4          | 0.62-0.72       | 0.00035                     | 0.00044                  |
|                                                | 5          | 0.73+           | 0.00087                     | 0.00109                  |
| <b>Cheumatopsyche (Summer generation)</b>      |            |                 |                             |                          |
|                                                | 1          | 0.00-0.31       | 0.00002                     | 0.00002                  |
|                                                | 2          | 0.32-0.45       | 0.00008                     | 0.00010                  |
|                                                | 3          | 0.46-0.61       | 0.00019                     | 0.00024                  |
|                                                | 4          | 0.62-0.72       | 0.00050                     | 0.00063                  |
|                                                | 5          | 0.73+           | 0.00120                     | 0.00150                  |
| <b>Cheumatopsyche (Tow Passage experiment)</b> |            |                 |                             |                          |
|                                                | 1          | 0.00-0.31       | 0.00002                     | 0.00003                  |
|                                                | 2          | 0.32-0.45       | 0.00007                     | 0.00009                  |
|                                                | 3          | 0.46-0.61       | 0.00010                     | 0.00013                  |
|                                                | 4          | 0.62-0.72       | 0.00022                     | 0.00028                  |
|                                                | 5          | 0.73+           | 0.00057                     | 0.00071                  |
| <b>Hydropsyche morosa</b>                      |            |                 |                             |                          |
|                                                | 1          | 0.00-0.35       | 0.00007                     | 0.00009                  |
|                                                | 2          | 0.36-0.55       | 0.00013                     | 0.00016                  |
|                                                | 3          | 0.56-0.78       | 0.00034                     | 0.00043                  |
|                                                | 4          | 0.79-1.03       | 0.00146                     | 0.00183                  |
|                                                | 5          | 1.04+           | 0.00224                     | 0.00280                  |
| <b>Orthoclad/Chiro (artificial substrates)</b> |            |                 |                             |                          |
|                                                | 1          | 0.00-0.18       | 0.00001                     | 0.00001                  |
|                                                | 2          | 0.19-0.33       | 0.00003                     | 0.00005                  |
|                                                | 3          | 0.34-0.55       | 0.00006                     | 0.00010                  |
|                                                | 4          | 0.56+           | 0.00009                     | 0.00015                  |

| Organism                                   | Size Class                             | Size Range (mm) | Average Ind. Dry Weight (g) | Corrected Dry Weight (g) |
|--------------------------------------------|----------------------------------------|-----------------|-----------------------------|--------------------------|
| <b>Orthoclad/Chiro (Ponar grabs)</b>       |                                        |                 |                             |                          |
|                                            | 1                                      | 0.00-0.23       | 0.00001                     | 0.00002                  |
|                                            | 2                                      | 0.24-0.33       | 0.00003                     | 0.00006                  |
|                                            | 3                                      | 0.34-0.56       | 0.00006                     | 0.00010                  |
|                                            | 4                                      | 0.57+           | 0.00009                     | 0.00015                  |
| <b>Tanypodinae (artificial substrates)</b> |                                        |                 |                             |                          |
|                                            | 1                                      | 0.00-0.15       | 0.00001                     | 0.00001                  |
|                                            | 2                                      | 0.16-0.28       | 0.00001                     | 0.00001                  |
|                                            | 3                                      | 0.29-0.51       | 0.00002                     | 0.00004                  |
|                                            | 4                                      | 0.52+           | 0.00010                     | 0.00016                  |
| <b>Tanypodinae (Ponar grabs)</b>           |                                        |                 |                             |                          |
|                                            | 1                                      | 0.00-0.23       | 0.00001                     | 0.00001                  |
|                                            | 2                                      | 0.24-0.38       | 0.00001                     | 0.00002                  |
|                                            | 3                                      | 0.39-0.53       | 0.00003                     | 0.00006                  |
|                                            | 4                                      | 0.54+           | 0.00010                     | 0.00017                  |
| <b>Simulium jenningsi</b>                  |                                        |                 |                             |                          |
|                                            | 1 (instars 1 and 2 were not collected) |                 |                             |                          |
|                                            | 2                                      |                 |                             |                          |
|                                            | 3                                      | 0.12-0.16       | 0.00001*                    |                          |
|                                            | 4                                      | 0.17-0.21       | 0.00001*                    |                          |
|                                            | 5                                      | 0.22-0.26       | 0.00004*                    |                          |
|                                            | 6                                      | 0.27-0.33       | 0.00015*                    |                          |
|                                            | 7                                      | 0.34+           | 0.00026*                    |                          |

\*These weights are live larval weights obtained during previous research on the New River, West Virginia.



**Table A8.6.1. Aquatic macroinvertebrates collected on artificial substrate samplers placed out of the sailing line during tow passage experiment.**

| TAXA                                             | Artificial Substrate |      |      |      |      | Mean  | % of total |
|--------------------------------------------------|----------------------|------|------|------|------|-------|------------|
|                                                  | 1                    | 2    | 3    | 4    | 5    |       |            |
| <b>COMMUNITY STRUCTURE</b><br>(number/art. sub.) |                      |      |      |      |      |       |            |
| <b>Misc. Invertebrates</b>                       |                      |      |      |      |      |       |            |
| Turbellaria                                      | -                    | 3    | -    | -    | 2    | 1     | .1         |
| SUBTOTAL                                         |                      |      |      |      |      | 1     | .1         |
| <b>Ephemeroptera</b>                             |                      |      |      |      |      |       |            |
| Stenacron                                        | 113                  | 111  | 73   | 227  | 145  | 133.8 | 14.2       |
| Stenonema                                        | 3                    | -    | -    | 2    | -    | 1     | .1         |
| Ephemereilla                                     | -                    | 1    | -    | 3    | -    | .8    | .1         |
| SUBTOTAL                                         |                      |      |      |      |      | 135.6 | 14.4       |
| <b>Odonata</b>                                   |                      |      |      |      |      |       |            |
| Argia                                            | 7                    | 10   | 12   | 12   | -    | 8.2   | .9         |
| Neurocordula                                     | -                    | -    | 3    | 2    | -    | 1     | .1         |
| SUBTOTAL                                         |                      |      |      |      |      | 9.2   | 1.0        |
| <b>Trichoptera</b>                               |                      |      |      |      |      |       |            |
| Cyrnellus fraternus                              | 414                  | 484  | 446  | 581  | 289  | 442.8 | 46.9       |
| SUBTOTAL                                         |                      |      |      |      |      | 442.8 | 46.9       |
| <b>Diptera</b>                                   |                      |      |      |      |      |       |            |
| Orthoclad/Chiro                                  | 183                  | 265  | 326  | 578  | 213  | 313   | 33.2       |
| Tanypodinae                                      | 19                   | 30   | 57   | 89   | 16   | 42.2  | 4.5        |
| SUBTOTAL                                         |                      |      |      |      |      | 355.2 | 37.6       |
| <b>FUNCTIONAL GROUPS</b>                         |                      |      |      |      |      |       |            |
| Collector-gatherers                              | 96.5                 | 95.6 | 92.1 | 93.1 | 97.6 | 95.0  |            |
| Collector-filterers                              | -                    | -    | -    | -    | -    | -     |            |
| Shredders                                        | -                    | -    | -    | -    | -    | -     |            |
| Scrapers                                         | -                    | -    | -    | -    | -    | -     |            |
| Predators                                        | 3.5                  | 4.4  | 7.9  | 6.9  | 2.4  | 5.0   |            |
| <b>SUMMARY</b>                                   |                      |      |      |      |      |       |            |
| Total Individuals                                | 739                  | 904  | 917  | 1494 | 665  | 943.8 |            |
| Total Taxa                                       | 6                    | 7    | 6    | 8    | 5    | 6.4   |            |
| Diversity (Dbar)                                 | 1.6                  | 1.6  | 1.7  | 1.8  | 1.7  | 1.7   |            |
| <b>TOTAL SITE SUMMARY</b>                        |                      |      |      |      |      |       |            |
| Total Individuals                                |                      | 4719 |      |      |      |       |            |
| Total Taxa                                       |                      | 7    |      |      |      |       |            |
| Diversity                                        |                      | 1.7  |      |      |      |       |            |

**Table A8.6.2. Aquatic macroinvertebrates collected on artificial substrate samplers placed in the sailing line during tow passage experiment.**

| TAXA                                      | Artificial Substrate |      |      |      | Mean  | % of total |
|-------------------------------------------|----------------------|------|------|------|-------|------------|
|                                           | 6                    | 7    | 8    | 9    |       |            |
| COMMUNITY STRUCTURE<br>(number/art. sub.) |                      |      |      |      |       |            |
| Misc. Invertebrates                       |                      |      |      |      |       |            |
| Turbellaria                               | 11                   | 18   | 9    | 10   | 12.0  | 2.0        |
| SUBTOTAL                                  |                      |      |      |      | 12.0  | 2.0        |
| Ephemeroptera                             |                      |      |      |      |       |            |
| Stenacron                                 | 157                  | 118  | 18   | 13   | 76.5  | 13.0       |
| Stenonema                                 | 6                    | 6    | 2    | -    | 3.5   | .6         |
| Ephemerella                               | 1                    | 1    | -    | -    | .5    | .1         |
| Tricorythodes                             | -                    | -    | -    | 1    | .3    | .0         |
| Caenis                                    | 1                    | -    | -    | -    | .3    | .0         |
| SUBTOTAL                                  |                      |      |      |      | 81.0  | 13.7       |
| Odonata                                   |                      |      |      |      |       |            |
| Argia                                     | 1                    | -    | -    | -    | .3    | .0         |
| SUBTOTAL                                  |                      |      |      |      | .3    | .0         |
| Trichoptera                               |                      |      |      |      |       |            |
| Cynellus fraternus                        | 83                   | 221  | 141  | 50   | 123.8 | 21.0       |
| Polycentropus                             | 1                    | 7    | 3    | -    | 2.8   | .5         |
| Cheumatopsyche                            | 125                  | 135  | 81   | 67   | 102.0 | 17.3       |
| Hydropsyche                               | 1                    | 4    | -    | 1    | 1.5   | .3         |
| Potamyia                                  | 1                    | 6    | -    | -    | 1.8   | .3         |
| SUBTOTAL                                  |                      |      |      |      | 231.8 | 39.2       |
| Diptera                                   |                      |      |      |      |       |            |
| Orthoclad/Chiro                           | 333                  | 352  | 235  | 131  | 262.8 | 44.5       |
| Tanypodinae                               | 4                    | 3    | 3    | 1    | 2.8   | .5         |
| SUBTOTAL                                  |                      |      |      |      | 265.5 | 45.0       |
| FUNCTIONAL GROUPS (%)                     |                      |      |      |      |       |            |
| Collector-gatherers                       | 81.7                 | 82.2 | 82.3 | 74.8 | 80.2  |            |
| Collector-filterers                       | 17.5                 | 16.6 | 16.5 | 24.8 | 18.9  |            |
| Shredders                                 | -                    | -    | -    | -    | -     |            |
| Scrapers                                  | -                    | -    | -    | -    | -     |            |
| Predators                                 | .8                   | 1.1  | 1.2  | .4   | .9    |            |
| SUMMARY                                   |                      |      |      |      |       |            |
| Total Individuals                         | 725                  | 871  | 492  | 274  | 590.5 |            |
| Total Taxa                                | 13                   | 11   | 8    | 8    | 10.0  |            |
| Diversity (Dbar)                          | 2.1                  | 2.2  | 1.9  | 1.9  | 2.0   |            |

**Table A8.6.2. (continued)**

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**TOTAL SAMPLE SUMMARY**

|                          |             |
|--------------------------|-------------|
| <b>Total Individuals</b> | <b>2362</b> |
| <b>Total Taxa</b>        | <b>14</b>   |
| <b>Diversity</b>         | <b>2.1</b>  |

Table A8.7. Average individual dry weights (mg), numbers of individuals in each size class, and calculated average biomass (mg) per sampler from tow passage experiemnt. OSL = samplers out of sailing line; ISL = samplers within sailing line.

| Organism                           | Size Class | Average Indiv.    |     | Mean #              |       | Calculated     |             |
|------------------------------------|------------|-------------------|-----|---------------------|-------|----------------|-------------|
|                                    |            | <u>Dry Weight</u> |     | <u>Per. Sampler</u> |       | <u>Biomass</u> |             |
|                                    |            | OSL               | ISL | OSL                 | ISL   | OSL            | ISL         |
| <b>Stenacron</b>                   |            |                   |     |                     |       |                |             |
|                                    | 1          | .01               | .01 | 42.4                | 26.3  |                |             |
|                                    | 2          | .01               | .01 | 31.1                | 14.6  |                |             |
|                                    | 3          | .03               | .03 | 21.0                | 9.7   |                |             |
|                                    | 4          | .03               | .03 | 11.7                | 6.8   |                |             |
|                                    | 5          | .11               | .14 | 10.0                | 5.9   |                |             |
|                                    | 6          | .37               | .36 | 14.1                | 9.7   |                |             |
|                                    | 7          | .37               | .36 | 5.0                 | 1.9   |                |             |
|                                    | 8          | .68               | .61 | .8                  | 1.9   |                |             |
|                                    | 9          |                   |     | 0.0                 | 0.0   |                |             |
|                                    |            |                   |     |                     |       | 10.4           | 7.1         |
| <b>Cyrnellus fraternus</b>         |            |                   |     |                     |       |                |             |
|                                    | 1          | .01               | .01 | 14.6                | 3.3   |                |             |
|                                    | 2          | .01               | .01 | 124.5               | 39.0  |                |             |
|                                    | 3          | .03               | .03 | 94.4                | 20.5  |                |             |
|                                    | 4          | .08               | .09 | 29.5                | 5.5   |                |             |
|                                    | 5          | .30               |     | 14.3                | 0.0   |                |             |
|                                    |            |                   |     |                     |       | 10.9           | 1.5         |
| <b>Cheumatopsyche</b>              |            |                   |     |                     |       |                |             |
|                                    | 1          |                   | .02 |                     | 48.0  |                |             |
|                                    | 2          |                   | .07 |                     | 70.0  |                |             |
|                                    | 3          |                   | .10 |                     | 16.0  |                |             |
|                                    | 4          |                   | .22 |                     | 146.0 |                |             |
|                                    | 5          |                   | .57 |                     | 34.0  |                |             |
|                                    |            |                   |     |                     |       |                | 59.0        |
| <b>Orthocladiinae/Chironominae</b> |            |                   |     |                     |       |                |             |
|                                    | 1          | .01               | .01 | 114.6               | 56.5  |                |             |
|                                    | 2          | .03               | .02 | 148.0               | 141.5 |                |             |
|                                    | 3          | .09               | .09 | 8.0                 | 12.3  |                |             |
|                                    | 4          | .21               | .21 | 2.0                 | .5    |                |             |
|                                    |            |                   |     |                     |       | 6.7            | 4.6         |
| <b>Tanypodinae</b>                 |            |                   |     |                     |       |                |             |
|                                    | 1          | .01               | .01 | 1.0                 | .0    |                |             |
|                                    | 2          | .01               | .01 | 12.0                | .3    |                |             |
|                                    | 3          | .02               | .02 | 13.4                | .5    |                |             |
|                                    | 4          | .09               | .09 | 20.4                | 1.5   |                |             |
|                                    |            |                   |     |                     |       | 2.2            | .2          |
| <b>Total Biomass</b>               |            |                   |     |                     |       | <b>19.8</b>    | <b>65.2</b> |

Table A9.1.1. Historical record of the fish species (number of subspecies in parenthesis) in the Kanawa River

|                                         | <u>Addair</u>         |          | <u>Jenkins</u>              | <u>ORSANCO</u>        |                     | <u>West Virginia</u>  |                     |
|-----------------------------------------|-----------------------|----------|-----------------------------|-----------------------|---------------------|-----------------------|---------------------|
|                                         | Mainstem <sup>1</sup> | Winfield | Drainage basin <sup>2</sup> | Winfield <sup>3</sup> | London <sup>3</sup> | Winfield <sup>3</sup> | London <sup>3</sup> |
| <b>Petromyzontidae</b>                  |                       |          |                             |                       |                     |                       |                     |
| Ichthyomyzon bdellium, Ohio lamprey     |                       |          | X                           |                       |                     |                       | X                   |
| Lampetra aepyptera, Least brook lamprey |                       |          | X                           |                       |                     |                       |                     |
| <b>Polyodontidae</b>                    |                       |          |                             |                       |                     |                       |                     |
| Polyodon spathula, Paddle fish          |                       |          | X                           |                       |                     |                       |                     |
| <b>Lepisosteidae</b>                    |                       |          |                             |                       |                     |                       |                     |
| Lepisosteus osseus, Longnose gar        | X                     | X        | X                           |                       | X                   |                       | X                   |
| <b>Anguillidae</b>                      |                       |          |                             |                       |                     |                       |                     |
| Anguilla rostrata, American eel         |                       |          | X                           | X                     | X                   |                       |                     |
| <b>Clupeidae</b>                        |                       |          |                             |                       |                     |                       |                     |
| Alosa chrysochloris, Skipjack herring   |                       |          | X                           | X                     | X                   | X                     | X                   |
| Alosa pseudoharengus, Alewife           |                       |          |                             |                       | X                   |                       |                     |
| Dorosoma cepedianum, Gizzard shad       | X                     | X        | X                           | X                     | X                   | X                     | X                   |
| Dorosoma petenense, Threadfin shad      |                       |          | X                           |                       |                     |                       |                     |
| <b>Salmonidae</b>                       |                       |          |                             |                       |                     |                       |                     |
| Salmo gairdneri, Rainbow trout          |                       |          | X                           |                       |                     |                       |                     |
| Salmo trutta, Brown trout               |                       |          | X                           |                       |                     |                       |                     |
| Salvelinus fontinalis, Brook trout      |                       |          | X                           |                       |                     |                       |                     |
| <b>Esocidae</b>                         |                       |          |                             |                       |                     |                       |                     |
| Esox masquinongy, Muskellunge           |                       |          | X                           |                       | X                   |                       | X                   |
| Esox niger, Chain pickerel              |                       |          | X                           |                       |                     |                       |                     |

|                   |                                         | <u>Addair</u>         |          | <u>Jenkins</u>              | <u>ORSANCO</u>        |                     | <u>West Virginia</u>  |                     |
|-------------------|-----------------------------------------|-----------------------|----------|-----------------------------|-----------------------|---------------------|-----------------------|---------------------|
|                   |                                         | Mainstem <sup>1</sup> | Winfield | Drainage basin <sup>2</sup> | Winfield <sup>3</sup> | London <sup>3</sup> | Winfield <sup>3</sup> | London <sup>3</sup> |
| <b>Cyprinidae</b> |                                         |                       |          |                             |                       |                     |                       |                     |
|                   | Campostoma anomalum (2), Stoneroller    | X                     | X        | X                           |                       |                     |                       | X                   |
|                   | Carassius auratus, Goldfish             |                       |          | X                           |                       |                     |                       |                     |
|                   | Cyprinus carpio, Carp                   | X                     | X        | X                           | X                     | X                   | X                     | X                   |
|                   | Ericymba buccata, Silverjaw minnow      | X                     | X        | X                           |                       |                     |                       |                     |
|                   | Hybopsis aestivalis, Speckled chub      | X                     |          | X                           |                       | X                   | X                     | X                   |
|                   | Hybopsis amblops, Bigeye chub           | X                     | X        | X                           | X                     | X                   |                       | X                   |
|                   | Hybopsis dissimilis, Streamline chub    |                       |          | X                           |                       | X                   |                       |                     |
|                   | Hybopsis storeriana, Silver chub        |                       |          | X                           | X                     |                     | X                     |                     |
|                   | Nocomis micropogon, River chub          |                       |          | X                           |                       |                     |                       |                     |
|                   | Notemigonus crysoleucas, Golden shiner  |                       |          | X                           |                       | X                   |                       |                     |
|                   | Notropis amoenus, Comely shiner         |                       |          | X                           |                       |                     |                       |                     |
| 0447              | Notropis atherinoides, Emerald shiner   | X                     | X        | X                           | X                     | X                   | X                     | X                   |
|                   | Notropis blennius, River shiner         |                       |          |                             | X                     | X                   | X                     |                     |
|                   | Notropis boops, Bigeye shiner           |                       |          |                             |                       | X                   |                       |                     |
|                   | Notropis buechanani, Ghost shiner       | X                     | X        | X                           | X                     | X                   | X                     | X                   |
|                   | Notropis chrysocephalus, Striped shiner | X                     | X        | X                           |                       |                     |                       |                     |
|                   | Notropis cornutus, Common shiner        |                       |          | X                           |                       |                     |                       |                     |
|                   | Notropis hudsonius, Spottail shiner     |                       |          |                             |                       | X                   |                       | X                   |
|                   | Notropis photogenis, Silver shiner      |                       |          | X                           |                       |                     |                       |                     |
|                   | Notropis rubellus, Rosyface shiner      | X                     | X        | X                           |                       | X                   |                       |                     |
|                   | Notropis spilopterus, Spotfin shiner    | X                     |          | X                           | X                     | X                   | X                     | X                   |

|                                                | <u>Addair</u>         |          | <u>Jenkins</u>              | <u>ORSANCO</u>        |                     | <u>West Virginia</u>  |                     |
|------------------------------------------------|-----------------------|----------|-----------------------------|-----------------------|---------------------|-----------------------|---------------------|
|                                                | Mainstem <sup>1</sup> | Winfield | Drainage basin <sup>2</sup> | Winfield <sup>3</sup> | London <sup>3</sup> | Winfield <sup>3</sup> | London <sup>3</sup> |
| Notropis stramineus, Sand shiner               | X                     | X        | X                           | X                     | X                   |                       | X                   |
| Notropis telescopus, Telescope shiner          |                       |          |                             |                       |                     |                       | X                   |
| Notropis umbratilis, Redfin shiner             |                       |          | X                           |                       |                     |                       |                     |
| Notropis volucellus (2), Mimic shiner          | X                     | X        | X                           | X                     | X                   | X                     | X                   |
| Notropis whipplei, Steelcolor shiner           | X                     | X        | X                           |                       |                     |                       |                     |
| Phenacobius mirabilis, Suckermouth minnow      |                       |          | X                           |                       |                     |                       |                     |
| Phoxinus erythrogaster, Southern redbelly dace | X                     |          | X                           |                       |                     |                       |                     |
| Pimephales notatus, Bluntnose minnow           | X                     | X        | X                           | X                     | X                   | X                     | X                   |
| Pimephales promelas, Fathead minnow            |                       |          | X                           |                       |                     |                       |                     |
| Pimephales vigilax, Bullhead minnow            | X                     | X        | X                           |                       | X                   |                       |                     |
| Rhinichthys atratulus, Blacknose dace          |                       |          | X                           |                       |                     |                       |                     |
| Rhinichthys cataractae, Longnose dace          |                       |          | X                           |                       |                     |                       |                     |
| Semotilus atromaculatus, Creek chub            | X                     | X        | X                           |                       |                     |                       |                     |
| Catostomidae                                   |                       |          |                             |                       |                     |                       |                     |
| Carpiodes carpio, River carpsucker             |                       |          | X                           |                       |                     |                       |                     |
| Carpiodes cyprinus, Quillback                  |                       |          | X                           | X                     |                     |                       |                     |
| Carpiodes velifer, Highfin carpsucker          |                       |          | X                           |                       |                     |                       |                     |
| Catostomus commersoni, White sucker            | X                     | X        | X                           |                       |                     |                       |                     |
| Hypentelium nigricans, Northern hogsucker      | X                     | X        | X                           |                       |                     |                       |                     |
| Ictiobus bubalus, Smallmouth buffalo           |                       |          | X                           | X                     | X                   |                       |                     |
| Ictiobus niger, Black buffalo                  | X                     |          | X                           | X                     |                     | X                     |                     |
| Minytrema melanops, Spotted sucker             |                       |          | X                           |                       |                     |                       |                     |

|                                              | <u>Addair</u>         |          | <u>Jenkins</u>              | <u>ORSANCO</u>        |                     | <u>West Virginia</u>  |                     |
|----------------------------------------------|-----------------------|----------|-----------------------------|-----------------------|---------------------|-----------------------|---------------------|
|                                              | Mainstem <sup>1</sup> | Winfield | Drainage basin <sup>2</sup> | Winfield <sup>3</sup> | London <sup>3</sup> | Winfield <sup>3</sup> | London <sup>3</sup> |
| Moxostoma anisurum, Silver redhorse          |                       |          | X                           |                       | X                   |                       | X                   |
| Moxostoma carinatum, River redhorse          |                       |          | X                           |                       | X                   |                       | X                   |
| Moxostoma duquesnei, Black redhorse          |                       |          | X                           |                       |                     |                       |                     |
| Moxostoma erythrum, Golden redhorse          | X                     | X        | X                           |                       | X                   |                       | X                   |
| Moxostoma macrolepidotum, Shorthead redhorse | X                     | X        | X                           | X                     | X                   |                       | X                   |
| <b>Ictaluridae</b>                           |                       |          |                             |                       |                     |                       |                     |
| Ictalurus furcatus, Blue catfish             |                       |          | X                           |                       |                     |                       |                     |
| Ictalurus melas, Black bullhead              |                       |          |                             | X                     |                     |                       |                     |
| Ictalurus natalis, Yellow bullhead           |                       |          | X                           |                       | X                   |                       |                     |
| Ictalurus nebulosus, Brown bullhead          |                       |          | X                           | X                     |                     |                       |                     |
| Ictalurus punctatus, Channel catfish         | X                     | X        | X                           | X                     | X                   | X                     | X                   |
| Noturus flavus, Stonecat                     |                       |          |                             |                       | X                   |                       |                     |
| Noturus gyrinus, Tadpole madtom              |                       |          |                             |                       | X                   |                       |                     |
| Noturus miurus, Brindled madtom              |                       |          | X                           |                       |                     |                       |                     |
| Pylodictis olivaris, Flathead catfish        | X                     |          | X                           | X                     | X                   | X                     | X                   |
| <b>Percopsidae</b>                           |                       |          |                             |                       |                     |                       |                     |
| Percopsis omiscomaycus, Trout-perch          | X                     | X        | X                           |                       | X                   |                       |                     |
| <b>Atherinidae</b>                           |                       |          |                             |                       |                     |                       |                     |
| Labidesthes sicculus, Brook silverside       | X                     | X        | X                           |                       | X                   |                       |                     |
| <b>Percichthyidae</b>                        |                       |          |                             |                       |                     |                       |                     |
| Morone chrysops, White bass                  |                       |          |                             | X                     | X                   | X                     | X                   |
| <b>Centrarchidae</b>                         |                       |          |                             |                       |                     |                       |                     |
| Ambloplites rupestris, Rock bass             |                       |          | X                           |                       | X                   | X                     | X                   |

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|                                             | <u>Addair</u>         |          | <u>Jenkins</u>              | <u>ORSANCO</u>        |                     | <u>West Virginia</u>  |                     |
|---------------------------------------------|-----------------------|----------|-----------------------------|-----------------------|---------------------|-----------------------|---------------------|
|                                             | Mainstem <sup>1</sup> | Winfield | Drainage basin <sup>2</sup> | Winfield <sup>3</sup> | London <sup>3</sup> | Winfield <sup>3</sup> | London <sup>3</sup> |
| Lepomis cyanellus, Green sunfish            |                       |          | X                           | X                     |                     |                       |                     |
| Lepomis gibbosus, Pumpkinseed               |                       |          | X                           |                       |                     |                       |                     |
| Lepomis gulosus, Warmouth                   |                       |          | X                           |                       |                     |                       |                     |
| Lepomis macrochirus, Bluegill fish          |                       |          | X                           | X                     | X                   | X                     | X                   |
| Lepomis megalotis, Longear sunfish          | X                     | X        | X                           | X                     | X                   | X                     | X                   |
| Lepomis microlophus, Redear sunfish         |                       |          |                             | X                     |                     |                       |                     |
| Micropterus dolomieu, Smallmouth bass       | X                     | X        | X                           |                       | X                   |                       | X                   |
| Micropterus punctulatus, Spotted bass       | X                     | X        | X                           | X                     | X                   | X                     | X                   |
| Micropterus salmoides, Largemouth bass      | X                     | X        | X                           |                       | X                   | X                     |                     |
| Pomoxis annularis, White crappie            | X                     |          | X                           | X                     | X                   |                       | X                   |
| Pomoxis nigromaculatus, Black crappie       |                       |          | X                           | X                     | X                   |                       | X                   |
| Percidae                                    |                       |          |                             |                       |                     |                       |                     |
| Ammocrypta pellucida, Eastern sand darter   | X                     |          | X                           |                       |                     |                       |                     |
| Etheostoma blennioides, Greenside darter    |                       |          | X                           |                       |                     |                       |                     |
| Etheostoma caeruleum, Rainbow darter        | X                     | X        | X                           |                       |                     |                       |                     |
| Etheostoma camurum, Bluebreast darter       |                       |          | X                           |                       |                     |                       |                     |
| Etheostoma flabellare, Fantail darter       |                       |          | X                           |                       |                     |                       |                     |
| Etheostoma maculatum, Spotted darter        |                       |          | X                           |                       |                     |                       |                     |
| Etheostoma nigrum, Johnny darter            | X                     | X        | X                           |                       |                     |                       |                     |
| Etheostoma osburni, Finescale saddle darter |                       |          | X                           |                       |                     |                       |                     |
| Etheostoma tippecanoe, Tippecanoe darter    |                       |          | X                           |                       |                     |                       |                     |
| Etheostoma variatum, Variegated darter      |                       |          | X                           |                       |                     |                       |                     |
| Etheostoma zonale, Banded darter            |                       |          | X                           |                       |                     |                       |                     |

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|                                        | <u>Addair</u>         |          | <u>Jenkins</u>              | <u>ORSANCO</u>        |                     | <u>West Virginia</u>  |                     |
|----------------------------------------|-----------------------|----------|-----------------------------|-----------------------|---------------------|-----------------------|---------------------|
|                                        | Mainstem <sup>1</sup> | Winfield | Drainage basin <sup>2</sup> | Winfield <sup>3</sup> | London <sup>3</sup> | Winfield <sup>3</sup> | London <sup>3</sup> |
| Percina caprodes, Logperch             | X                     | X        | X                           |                       | X                   | X                     | X                   |
| Percina copelandi, Channel darter      | X                     |          |                             |                       |                     |                       |                     |
| Percina evides, Gilt darter            |                       |          | X                           |                       |                     |                       |                     |
| Percina macrocephala, Longhead darter  |                       |          | X                           |                       |                     |                       |                     |
| Percina maculata, Blackside darter     |                       |          | X                           |                       |                     |                       |                     |
| Percina oxyrhynca, Sharpnose darter    |                       |          | X                           |                       |                     |                       | X                   |
| Percina sciera, Dusky darter           |                       |          | X                           |                       |                     |                       |                     |
| Stizostedion canadense, Sauger         |                       |          | X                           | X                     | X                   | X                     | X                   |
| Stizostedion vitreum, Walleye          | X                     |          | X                           | X                     | X                   | X                     | X                   |
| Sciaenidae                             |                       |          |                             |                       |                     |                       |                     |
| Aplodinotus grunniens, Freshwater drum |                       |          | X                           | X                     | X                   | X                     | X                   |
| Cottidae                               |                       |          |                             |                       |                     |                       |                     |
| Cottus bairdi, Mottled sculpin         |                       |          | X                           |                       |                     |                       |                     |

<sup>1</sup> Kanawha River mainstem below Kanawha Falls.

<sup>2</sup> Based on five sampling locations in the Winfield Pool

<sup>3</sup> One lock sampled at each indicated location.

Table A9.2.1 Total catch and relative abundance of fish species capture at Upper Winfield (RM 66-67), Kanawha River, October 20-24, 1982.

| Species            | <u>Electroshock</u> |    |    |     | <u>Gill Net</u> |   |   |   | <u>Seine</u> |    |    |   | <u>Total</u> |      |
|--------------------|---------------------|----|----|-----|-----------------|---|---|---|--------------|----|----|---|--------------|------|
|                    | 1                   | 2  | 3  | 4   | 1               | 2 | 3 | 4 | 1            | 2  | 3  | 4 | Number       | %    |
| Longnose gar       |                     |    |    |     |                 | 1 |   |   |              |    |    |   | 1            | 0.2  |
| Gizzard shad       | 68                  | 22 | 27 | 58  | 1               |   |   |   | 1            |    |    | 2 | 179          | 37.8 |
| Common carp        |                     |    | 4  |     |                 |   |   |   |              |    |    |   | 4            | 0.8  |
| Emerald shiner     |                     |    |    | 106 |                 |   |   |   | 7            | 33 | 41 | 7 | 194          | 41.0 |
| River shiner       |                     |    |    | 6   |                 |   |   |   |              |    |    |   | 6            | 1.3  |
| Spotfin shiner     |                     |    |    | 3   |                 |   |   |   |              | 1  |    | 5 | 9            | 1.9  |
| Sand shiner        |                     |    |    | 1   |                 |   |   |   |              |    |    |   | 1            | 0.2  |
| Mimic shiner       |                     |    |    | 5   |                 |   |   |   |              | 5  |    | 5 | 15           | 3.2  |
| Bluntnose minnow   |                     |    |    | 1   |                 |   |   |   |              |    |    |   | 1            | 0.2  |
| Silver redhorse    |                     |    |    |     | 2               |   | 2 |   |              |    |    |   | 4            | 0.8  |
| Golden redhorse    |                     | 3  | 2  |     |                 |   |   | 1 |              |    |    |   | 6            | 1.3  |
| Shorthead redhorse | 5                   | 2  | 1  |     | 1               |   |   |   |              |    |    |   | 9            | 1.9  |
| Channel catfish    |                     |    |    |     |                 |   | 4 |   |              |    |    |   | 4            | 0.8  |
| White bass         |                     |    |    |     | 1               |   |   |   |              |    |    |   | 1            | 0.2  |
| Rock bass          |                     |    |    | 1   | 1               | 1 |   |   |              |    |    |   | 3            | 0.6  |
| Bluegill           | 2                   |    |    | 1   |                 |   |   |   |              |    |    |   | 3            | 0.6  |
| Longear sunfish    |                     |    |    | 1   |                 |   |   |   |              |    |    |   | 1            | 0.2  |
| Smallmouth bass    | 8                   | 4  | 5  | 4   |                 |   |   |   | 1            |    |    |   | 22           | 4.7  |
| Spotted bass       | 1                   | 1  | 2  | 1   |                 |   |   |   |              |    |    |   | 5            | 1.1  |
| White crappie      | 1                   |    |    |     |                 |   |   |   |              |    |    |   | 1            | 0.2  |
| Sauger             |                     |    |    |     | 2               | 1 |   |   |              |    |    |   | 3            | 0.6  |
| Walleye            | 1                   |    |    |     |                 |   |   |   |              |    |    |   | 1            | 0.2  |
| <b>Total</b>       |                     |    |    |     |                 |   |   |   |              |    |    |   | <b>473</b>   |      |

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Table A9.2.2. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, October 20-24, 1983.

| Species            | Electroshock |    |    |     | Gill Net |   |   |   | Minnow Shock |    |     |    | Total  |      |
|--------------------|--------------|----|----|-----|----------|---|---|---|--------------|----|-----|----|--------|------|
|                    | 1            | 2  | 3  | 4   | 1        | 2 | 3 | 4 | 1            | 2  | 3   | 4  | Number | %    |
| Gizzard shad       | 8            | 20 | 24 | 2   | 9        | 5 | 4 | 3 | 150          | 1  | 148 |    | 374    | 25.5 |
| Common carp        |              | 1  |    | 2   | 1        |   |   |   |              |    |     |    | 4      | 0.3  |
| Silver chub        |              |    |    | 1   |          |   |   |   | 1            |    |     |    | 2      | 0.1  |
| Emerald shiner     | 23           | 62 | 88 | 118 |          |   |   |   | 95           | 29 | 136 | 29 | 805    | 54.9 |
| River shiner       | 1            |    |    |     |          |   |   |   | 59           | 2  | 10  | 1  | 73     | 5.0  |
| Spotfin shiner     |              |    |    |     |          |   |   |   | 1            |    | 1   | 3  | 5      | 0.3  |
| Sand shiner        |              |    |    |     |          |   |   |   | 1            |    |     |    | 1      | 0.07 |
| Mimic shiner       |              |    |    |     |          |   |   |   | 15           | 1  | 14  |    | 30     | 2.0  |
| Bluntnose minnow   |              | 1  |    | 3   |          |   |   |   | 11           | 1  | 11  | 31 | 58     | 4.0  |
| Smallmouth buffalo |              |    | 5  |     | 1        |   |   | 1 |              |    |     |    | 7      | 0.5  |
| Spotted sucker     |              | 1  | 1  |     |          |   |   |   |              |    |     |    | 2      | 0.1  |
| Golden redhorse    |              |    | 1  |     |          |   |   |   |              |    |     |    | 1      | 0.07 |
| Channel catfish    |              |    |    |     | 3        | 4 | 7 | 3 |              |    |     |    | 17     | 1.2  |
| Flathead catfish   |              |    |    |     | 3        |   | 1 |   |              |    |     |    | 4      | 0.3  |
| White bass         |              |    |    | 2   |          |   |   |   |              |    |     |    | 2      | 0.1  |
| Pumpkinseed        |              | 1  |    |     |          |   |   |   | 1            |    |     |    | 2      | 0.1  |
| Bluegill           | 13           | 2  |    | 3   | 1        |   |   |   |              |    |     |    | 19     | 1.3  |
| Longear sunfish    | 4            |    | 6  | 8   |          |   |   |   |              |    | 1   | 1  | 20     | 1.4  |
| Redear sunfish     | 2            |    |    |     |          |   |   |   |              |    |     |    | 2      | 0.1  |
| Smallmouth bass    |              |    | 3  |     |          |   |   |   |              |    |     |    | 3      | 0.1  |
| Spotted bass       | 2            |    |    |     |          |   |   |   |              |    |     |    | 2      | 0.1  |
| Largemouth bass    | 2            | 1  | 1  | 4   |          |   |   |   |              |    |     |    | 8      | 0.5  |
| White crappie      |              |    |    | 2   |          |   |   |   |              |    |     |    | 2      | 0.1  |
| Black crappie      |              |    |    |     | 2        |   |   |   |              |    |     |    | 2      | 0.1  |
| Sauger             |              |    |    |     | 7        |   |   | 4 |              |    |     |    | 11     | 0.8  |
| Freshwater drum    |              |    | 1  | 2   | 4        |   | 3 |   |              |    |     |    | 10     | 0.7  |
| Total              |              |    |    |     |          |   |   |   |              |    |     |    | 1466   |      |

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Table A9.2.3. Total catch and relative abundance of fish species captured at Upper Gallipolis (RM 29-31), Kanawha River, October 20-24, 1983.

| Species                | Electroshock |    |    |    | Gill Net |    |    |   | Minnow Shock |     |    |     | Total  |      |
|------------------------|--------------|----|----|----|----------|----|----|---|--------------|-----|----|-----|--------|------|
|                        | 1            | 2  | 3  | 4  | 1        | 2  | 3  | 4 | 1            | 2   | 3  | 4   | Number | %    |
| American brook lamprey |              | 1  |    |    |          |    |    |   |              |     |    |     | 1      | 0.06 |
| Longnose gar           |              |    |    |    | 9        | 1  |    |   |              |     |    |     | 10     | 0.6  |
| Skipjack herring       |              |    |    |    | 2        | 1  |    |   |              |     |    |     | 3      | 0.2  |
| Gizzard shad           | 56           | 41 | 9  | 14 | 8        | 7  | 6  | 2 |              | 37  | 8  |     | 188    | 10.5 |
| Mooneye                |              |    |    |    | 1        |    |    |   |              |     |    |     | 1      | 0.06 |
| Muskellunge            |              |    |    |    |          | 1  |    |   |              |     |    |     | 1      | 0.06 |
| Common carp            | 1            | 1  |    |    | 2        |    |    |   |              |     |    |     | 4      | 0.2  |
| Emerald shiner         | 41           | 15 | 21 | 26 |          |    |    |   | 89           | 657 | 25 | 478 | 1352   | 75.6 |
| River shiner           |              |    | 1  |    |          |    |    |   | 5            | 14  |    | 26  | 46     | 2.6  |
| Ghost shiner           |              |    |    |    |          |    |    |   |              | 1   |    |     | 1      | 0.06 |
| Spotfin shiner         |              |    |    |    |          |    |    |   | 1            | 1   |    | 1   | 3      | 0.2  |
| Sand shiner            |              | 1  |    |    |          |    |    |   |              |     |    |     | 1      | 0.06 |
| Mimic shiner           |              |    |    |    |          |    |    |   | 7            | 9   | 2  | 39  | 57     | 3.2  |
| Bluntnose minnow       |              |    |    |    |          |    |    |   | 1            | 1   |    | 20  | 22     | 1.2  |
| Bullhead minnow        |              |    |    |    |          |    |    |   |              | 1   |    |     | 1      | 0.06 |
| Northern hogsucker     |              | 2  |    |    |          |    |    |   |              |     |    |     | 2      | 0.2  |
| Smallmouth buffalo     |              |    |    |    | 1        |    |    |   |              |     |    |     | 1      | 0.06 |
| Silver redhorse        |              |    |    |    |          |    |    | 1 |              |     |    |     | 1      | 0.06 |
| Golden redhorse        |              |    |    |    | 2        | 2  | 1  |   |              |     |    |     | 5      | 0.3  |
| Shorthead redhorse     |              |    |    |    |          |    |    | 1 |              |     |    |     | 1      | 0.06 |
| Channel catfish        |              |    |    | 1  |          | 18 | 13 | 5 |              |     |    |     | 37     | 2.1  |
| Flathead catfish       |              |    |    |    |          |    |    | 1 |              |     |    |     | 1      | 0.06 |
| White bass             |              |    |    |    | 2        | 2  | 1  |   |              |     |    |     | 5      | 0.3  |
| Bluegill               |              |    | 1  |    |          |    |    |   | 2            |     |    | 1   | 4      | 0.2  |
| Smallmouth bass        |              |    | 1  |    |          |    | 1  | 1 |              |     |    |     | 3      | 0.2  |
| Spotted bass           |              | 1  | 8  | 5  |          |    |    |   |              |     |    | 3   | 18     | 1.0  |
| Largemouth bass        | 1            |    |    |    |          |    |    |   |              |     |    |     | 1      | 0.06 |
| Banded darter          |              |    |    |    |          |    |    |   |              |     | 1  |     | 1      | 0.06 |
| Sauger                 |              | 1  | 1  |    | 1        | 1  | 4  |   |              |     |    |     | 8      | 0.4  |
| Freshwater drum        | 2            | 2  |    | 1  |          |    | 1  |   | 1            |     |    |     | 7      | 0.4  |
| Total                  |              |    |    |    |          |    |    |   |              |     |    |     | 1786   |      |

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Table A9.2.4. Total catch and relative abundance of fish species capture at Upper Winfield (RM 66-67), Kanawha River, November 18-20, 1982.

| Species             | Electroshock |   |    |    | Gill Net |   |   |   | Minnow Shock |    |    |     | Total  |      |
|---------------------|--------------|---|----|----|----------|---|---|---|--------------|----|----|-----|--------|------|
|                     | 1            | 2 | 3  | 4  | 1        | 2 | 3 | 4 | 1            | 2  | 3  | 4   | Number | %    |
| Gizzard shad        | 26           | 8 | 13 | 29 |          |   |   |   |              |    |    |     | 76     | 8.2  |
| Muskellunge         |              |   |    | 1  |          |   |   |   |              |    |    |     | 1      | 0.1  |
| Goldfish            | 1            |   |    |    |          |   |   |   |              |    |    |     | 1      | 0.1  |
| Common carp         | 1            |   |    |    |          |   |   |   |              |    |    |     | 1      | 0.1  |
| Emerald shiner      |              |   | 13 |    |          |   |   |   | 10           | 30 | 77 | 533 | 663    | 71.6 |
| River shiner        |              |   |    |    |          |   |   |   |              | 1  |    | 3   | 4      | 0.4  |
| Spotfin shiner      | 1            |   |    |    |          |   |   |   | 2            |    | 2  | 9   | 14     | 1.5  |
| Mimic shiner        |              |   |    |    |          |   |   |   | 3            | 4  | 10 | 44  | 61     | 6.6  |
| Bluntnose minnow    |              |   |    |    |          |   |   |   |              |    |    | 2   | 2      | 0.2  |
| UID Cyprinidae      |              |   |    |    |          |   |   |   | 1            |    |    |     | 1      | 0.1  |
| Quillback           |              |   | 1  | 1  |          |   |   |   |              |    |    |     | 2      | 0.2  |
| Northern hog sucker |              |   | 1  |    |          |   |   |   |              |    |    |     | 1      | 0.1  |
| Smallmouth buffalo  |              |   | 1  |    |          |   |   |   |              |    |    |     | 1      | 0.1  |
| Silver redhorse     |              |   | 2  |    |          |   | 1 |   |              |    |    |     | 3      | 0.3  |
| Black redhorse      | 1            | 1 | 1  |    |          |   |   |   |              |    |    |     | 3      | 0.3  |
| Golden redhorse     | 1            |   | 1  | 2  |          |   |   |   |              |    |    |     | 4      | 0.4  |
| Shorthead redhorse  | 6            | 1 |    | 3  |          |   |   |   |              |    |    |     | 10     | 1.1  |
| Rock bass           | 2            |   |    |    |          |   |   |   |              |    |    |     | 2      | 0.2  |
| Bluegill            |              |   |    | 1  |          |   |   |   |              |    |    |     | 1      | 0.1  |
| Longear sunfish     | 4            |   | 3  | 4  |          |   |   |   |              |    |    |     | 11     | 1.2  |
| Smallmouth bass     | 16           | 9 | 6  | 8  |          |   |   |   |              |    |    |     | 39     | 4.2  |
| Spotted bass        | 6            |   | 2  | 8  |          | 1 |   |   |              |    |    |     | 17     | 1.8  |
| Sauger              | 1            |   |    |    | 3        | 1 | 1 | 2 |              |    |    |     | 8      | 0.9  |
| Total               |              |   |    |    |          |   |   |   |              |    |    |     | 926    |      |

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Table A9.2.5. Total catch and relative abundance of fish species capture at Lower Winfield (RM 33-34), Kanawha River, November 18-20, 1982.

| Species            | Electroshock |    |     |   | Gill Net |   |   |   | Minnow Shock |     |    |    | Total  |      |
|--------------------|--------------|----|-----|---|----------|---|---|---|--------------|-----|----|----|--------|------|
|                    | 1            | 2  | 3   | 4 | 1        | 2 | 3 | 4 | 1            | 2   | 3  | 4  | Number | %    |
| Gizzard shad       | 22           | 11 | 29  | 9 |          | 1 |   | 1 |              |     |    |    | 73     | 15.3 |
| Common carp        | 1            |    |     |   |          |   |   |   |              |     |    |    | 1      | 0.2  |
| Emerald shiner     | 13           | 2  | 105 |   |          |   |   |   | 29           | 108 | 57 | 36 | 350    | 73.5 |
| River shiner       |              |    |     |   |          |   |   |   |              | 4   |    |    | 4      | 0.8  |
| Spotfin shiner     |              |    |     |   |          |   |   |   |              | 1   |    |    | 1      | 0.2  |
| Bluntnose minnow   |              |    | 1   |   |          |   |   |   |              | 1   | 1  | 1  | 4      | 0.8  |
| Smallmouth buffalo |              | 1  | 1   |   |          |   |   |   |              |     |    |    | 2      | 0.4  |
| Black buffalo      |              |    | 1   |   |          |   |   |   |              |     |    |    | 1      | 0.2  |
| Spotted sucker     | 1            |    |     |   |          |   |   |   |              |     |    |    | 1      | 0.2  |
| Silver redhorse    |              |    |     |   | 1        |   | 1 |   |              |     |    |    | 2      | 0.4  |
| Black bullhead     |              |    |     |   |          |   | 1 |   |              |     |    |    | 1      | 0.2  |
| Brown bullhead     |              |    |     |   | 1        |   |   |   |              |     |    |    | 1      | 0.2  |
| Channel catfish    |              |    |     |   | 1        | 9 | 6 |   |              |     |    |    | 16     | 3.4  |
| Rock bass          |              |    |     |   |          |   | 1 |   |              |     |    |    | 1      | 0.2  |
| Bluegill           |              |    | 1   | 1 |          |   |   |   |              |     |    |    | 2      | 0.4  |
| Longear sunfish    |              |    |     | 1 |          |   |   |   |              |     |    |    | 1      | 0.2  |
| Smallmouth bass    |              |    |     | 1 |          |   |   |   |              |     |    |    | 1      | 0.2  |
| Spotted bass       |              | 1  |     |   |          |   |   |   |              |     |    |    | 1      | 0.2  |
| Largemouth bass    |              |    | 2   |   |          |   |   |   |              |     |    |    | 2      | 0.4  |
| Sauger             |              |    |     |   | 3        | 1 |   | 3 |              |     |    |    | 7      | 1.5  |
| Freshwater drum    |              |    |     |   | 1        |   | 2 | 1 |              |     |    |    | 4      | 0.8  |
| Total              |              |    |     |   |          |   |   |   |              |     |    |    | 476    |      |

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Table A9.2.6. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, December 16-18, 1982.

| Species            | Electroshock |     |    |   | Gill Net |    |    |    | Minnow Shock |   |    |    | Total  |      |
|--------------------|--------------|-----|----|---|----------|----|----|----|--------------|---|----|----|--------|------|
|                    | 1            | 2   | 3  | 4 | 1        | 2* | 3* | 4* | 1            | 2 | 3  | 4  | Number | %    |
| Gizzard shad       | 2            | 1   |    | 2 |          |    |    |    |              |   |    |    | 5      | 1.3  |
| Emerald shiner     | 37           | 192 | 42 |   |          |    |    |    | 1            | 2 | 18 | 64 | 356    | 91.0 |
| Spotfin shiner     |              |     |    |   |          |    |    |    |              | 2 |    |    | 2      | 0.5  |
| Bullhead minnow    |              | 2   | 1  |   |          |    |    |    |              |   |    |    | 3      | 0.8  |
| River carpsucker   |              |     | 1  |   |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Smallmouth buffalo |              |     | 1  |   |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Silver redhorse    |              |     | 1  |   |          |    |    |    |              |   |    |    | 1      | 0.3  |
| River redhorse     |              |     |    | 1 |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Black redhorse     |              | 1   |    |   |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Golden redhorse    |              | 1   |    |   |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Shorthead redhorse |              | 5   |    |   |          |    |    |    |              |   |    |    | 5      | 1.3  |
| Longear sunfish    |              |     |    | 3 |          |    |    |    |              |   |    |    | 3      | 0.8  |
| Smallmouth bass    |              |     |    | 2 |          |    |    |    |              |   |    |    | 2      | 0.5  |
| Spotted bass       |              | 1   |    | 2 |          |    |    |    |              |   |    |    | 3      | 0.8  |
| Largemouth bass    |              |     |    | 2 |          |    |    |    |              |   |    |    | 2      | 0.5  |
| Sauger             |              |     |    | 1 | 1        |    |    |    |              |   |    |    | 2      | 0.5  |
| Total              |              |     |    |   |          |    |    |    |              |   |    |    | 384    |      |

\*Nets 2, 3, and 4 were destroyed by high water.

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Table A9.2.7. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, December 16-18, 1982.

| Species            | Electroshock |     |   |   | Gill Net |    |    |    | Minnow Shock |     |    |    | Total  |      |
|--------------------|--------------|-----|---|---|----------|----|----|----|--------------|-----|----|----|--------|------|
|                    | 1            | 2   | 3 | 4 | 1        | 2* | 3* | 4* | 1            | 2   | 3  | 4  | Number | %    |
| Gizzard shad       | 12           | 1   | 5 | 2 |          |    |    |    |              | 1   |    |    | 21     | 1.4  |
| Common carp        | 1            | 1   |   |   |          |    |    |    |              |     |    |    | 2      | 0.1  |
| Emerald shiner     | 2            | 331 | 1 | 1 |          |    |    |    | 5            | 833 | 73 | 60 | 1306   | 88.4 |
| River shiner       |              | 2   |   |   |          |    |    |    |              |     |    |    | 2      | 0.13 |
| Spotfin shiner     |              | 10  |   |   |          |    |    |    |              | 28  |    | 4  | 42     | 2.8  |
| Sand shiner        |              |     |   |   |          |    |    |    |              | 26  |    | 3  | 29     | 2.0  |
| Mimic shiner       |              |     |   |   |          |    |    |    | 1            | 1   |    |    | 2      | 0.1  |
| Bluntnose minnow   |              | 9   | 3 | 1 |          |    |    |    | 2            | 9   | 9  | 4  | 37     | 2.5  |
| UID Cyprinidae     |              |     |   |   |          |    |    |    |              |     |    | 7  | 7      | 0.5  |
| Smallmouth buffalo | 2            |     | 3 | 3 |          |    |    |    |              |     |    |    | 8      | 0.5  |
| Spotted sucker     |              | 1   | 1 |   |          |    |    |    |              |     |    |    | 2      | 0.1  |
| Bluegill           |              | 2   | 1 |   |          |    |    |    | 1            |     |    |    | 4      | 0.3  |
| Longear sunfish    |              | 1   | 5 | 1 |          |    |    |    |              | 2   | 1  |    | 10     | 0.7  |
| Spotted bass       |              |     | 1 |   |          |    |    |    |              |     |    |    | 1      | 0.07 |
| White crappie      |              |     | 2 |   |          |    |    |    |              |     |    |    | 2      | 0.1  |
| Freshwater drum    |              |     |   |   | 2        |    |    |    |              |     |    |    | 2      | 0.1  |
| Total              |              |     |   |   |          |    |    |    |              |     |    |    | 1477   |      |

\*Net 2 was filled with debris by high water; nets 3 and 4 were not set.

Table A9.2.8. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, February 16-18, 1983.

| Species            | Electroshock |   |    |   | Gill Net |   |   |   | Minnow Shock |    |    |   | Total  |      |
|--------------------|--------------|---|----|---|----------|---|---|---|--------------|----|----|---|--------|------|
|                    | 1            | 2 | 3  | 4 | 1        | 2 | 3 | 4 | 1            | 2  | 3  | 4 | Weight | %    |
| Common carp        |              |   | 10 |   |          |   |   |   |              |    |    |   | 10     | 9.2  |
| Emerald shiner     |              |   |    |   |          |   |   |   |              | 20 | 35 | 2 | 57     | 52.3 |
| River shiner       |              |   |    |   |          |   |   |   |              |    |    | 1 | 1      | 0.9  |
| Spotfin shiner     |              |   |    |   |          |   |   |   |              |    |    | 1 | 1      | 0.9  |
| Mimic shiner       |              |   |    |   |          |   |   |   |              | 2  |    |   | 2      | 1.8  |
| Bluntnose minnow   |              |   |    |   |          |   |   |   |              | 1  |    |   | 1      | 0.9  |
| Quillback          |              |   | 1  |   |          |   |   |   |              |    |    |   | 1      | 0.9  |
| Smallmouth buffalo |              | 1 | 22 |   |          |   |   |   |              |    |    |   | 23     | 21.1 |
| Silver redhorse    |              | 1 |    |   |          |   |   |   |              |    |    |   | 1      | 0.9  |
| River redhorse     |              |   |    | 1 |          |   |   |   |              |    |    |   | 1      | 0.9  |
| Black redhorse     | 1            |   |    |   |          |   |   |   |              |    |    |   | 1      | 0.9  |
| Golden redhorse    |              |   |    | 1 |          |   |   |   |              |    |    |   | 1      | 0.9  |
| Shorthead redhorse |              |   |    | 1 |          |   |   |   |              |    |    |   | 1      | 0.9  |
| Rock bass          | 1            |   |    |   |          |   |   |   |              |    |    |   | 1      | 0.9  |
| Longear sunfish    | 1            | 1 |    |   |          |   |   |   |              |    |    |   | 2      | 1.8  |
| Smallmouth bass    | 1            | 1 |    |   |          |   |   |   |              |    |    |   | 2      | 1.8  |
| Sauger             | 1            |   | 1  |   |          | 1 |   |   |              |    |    |   | 3      | 2.7  |
| Total              |              |   |    |   |          |   |   |   |              |    |    |   | 109    |      |

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Table A9.2.9. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, February 16-18, 1983.

| Species            | Electroshock |   |   |   | Gill Net |   |   |   | Minnow Shock |     |   |   | Total  |      |
|--------------------|--------------|---|---|---|----------|---|---|---|--------------|-----|---|---|--------|------|
|                    | 1            | 2 | 3 | 4 | 1        | 2 | 3 | 4 | 1            | 2   | 3 | 4 | Number | %    |
| Gizzard shad       |              |   | 1 |   |          |   |   |   | 2            |     |   |   | 3      | 1.2  |
| Common carp        |              |   | 1 | 2 |          |   |   |   |              |     |   |   | 3      | 1.2  |
| Emerald shiner     |              | 7 | 1 |   |          |   |   |   |              | 207 |   | 2 | 217    | 88.6 |
| River shiner       |              | 1 |   |   |          |   |   |   |              | 2   |   |   | 3      | 1.2  |
| Spotfin shiner     |              |   |   |   |          |   |   |   |              | 3   |   |   | 3      | 1.2  |
| Mimic shiner       |              |   |   |   |          |   |   |   |              | 2   |   |   | 2      | 0.8  |
| Bluntnose minnow   | 1            | 1 | 1 |   |          |   |   |   |              | 1   |   |   | 4      | 1.6  |
| UID Cyprinidae     |              |   |   |   |          |   |   |   |              |     |   | 1 | 1      | 0.4  |
| Smallmouth buffalo |              |   | 5 | 1 |          |   |   |   |              |     |   |   | 6      | 2.4  |
| Spotted sucker     |              |   |   | 1 |          |   |   |   |              |     |   |   | 1      | 0.4  |
| Longear sunfish    |              |   | 2 |   |          |   |   |   |              |     |   |   | 2      | 0.8  |
| Total              |              |   |   |   |          |   |   |   |              |     |   |   | 245    |      |

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Table A9.2.10. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, March 15-18, 1983.

| Species            | Electroshock |   |    |    | Gill Net |   |   |   | Minnow Shock |    |    |   | Total  |      |
|--------------------|--------------|---|----|----|----------|---|---|---|--------------|----|----|---|--------|------|
|                    | 1            | 2 | 3  | 4  | 1        | 2 | 3 | 4 | 1            | 2  | 3  | 4 | Number | %    |
| Ohio lamprey       |              |   |    | 1  |          |   |   |   |              |    |    |   | 1      | 0.3  |
| Longnose gar       |              |   | 1  |    |          |   |   |   |              |    |    |   | 1      | 0.3  |
| Gizzard shad       | 3            | 2 | 2  | 10 |          |   |   |   |              |    |    |   | 17     | 5.7  |
| Common carp        | 2            |   | 12 |    |          |   |   |   |              |    |    |   | 14     | 4.7  |
| Silver chub        |              |   |    |    |          |   | 1 |   |              |    |    |   | 1      | 0.3  |
| Emerald shiner     | 1            | 7 | 1  | 1  |          |   |   |   | 86           | 77 | 13 |   | 186    | 62.8 |
| Striped shiner     |              |   |    |    |          |   |   |   | 1            |    | 1  |   | 2      | 0.7  |
| Mimic shiner       |              | 4 |    |    |          |   |   |   | 3            | 5  |    |   | 12     | 4.1  |
| Creek chub         |              |   |    |    |          |   |   |   |              |    |    | 2 | 2      | 0.7  |
| Northern hogsucker |              |   |    | 1  |          |   |   |   |              |    |    |   | 1      | 0.3  |
| Smallmouth buffalo |              | 2 | 2  |    |          |   |   |   |              |    |    |   | 4      | 1.4  |
| Black buffalo      |              |   | 1  |    |          |   |   |   |              |    |    |   | 1      | 0.3  |
| Silver redhorse    |              | 2 | 1  | 4  |          |   |   |   |              |    |    |   | 7      | 2.4  |
| River redhorse     |              |   | 1  | 1  |          |   |   |   |              |    |    |   | 2      | 0.7  |
| Shorthead redhorse | 1            |   |    |    | 1        |   |   | 1 |              |    |    |   | 3      | 1.0  |
| Rock bass          |              |   |    |    |          | 1 |   |   |              |    |    |   | 1      | 0.3  |
| Longear sunfish    | 3            |   | 1  | 3  |          |   |   |   |              |    |    | 1 | 8      | 2.7  |
| Smallmouth bass    | 10           |   | 1  | 1  |          |   |   |   |              |    |    |   | 12     | 4.1  |
| Spotted bass       | 1            | 4 | 3  | 2  |          |   |   |   |              |    |    |   | 10     | 3.4  |
| Largemouth bass    |              |   | 1  |    |          |   |   |   |              |    |    |   | 1      | 0.3  |
| Dusky darter       | 1            |   |    | 1  |          |   |   |   |              |    |    |   | 2      | 0.7  |
| Sauger             |              |   |    |    |          | 2 | 2 | 4 |              |    |    |   | 8      | 2.7  |
| Total              |              |   |    |    |          |   |   |   |              |    |    |   | 296    |      |

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Table A9.2.11. Total catch and relative abundance of fish species capture at Lower Winfield (RM 33-34), Kanawha River, March 15-18, 1983.

| Species            | Electroshock |   |    |   | Gill Net |   |   |   | Minnow Shock |     |   |    | Total  |      |
|--------------------|--------------|---|----|---|----------|---|---|---|--------------|-----|---|----|--------|------|
|                    | 1            | 2 | 3  | 4 | 1        | 2 | 3 | 4 | 1            | 2   | 3 | 4  | Number | %    |
| Gizzard shad       | 22           | 6 | 44 |   |          |   |   |   |              |     |   |    | 72     | 19.6 |
| Common carp        |              |   |    | 3 |          |   |   |   |              |     |   |    | 3      | 0.8  |
| Emerald shiner     |              |   |    |   |          |   |   |   | 16           | 214 | 9 | 34 | 273    | 74.4 |
| Bluntnose minnow   |              |   |    |   |          |   |   |   | 2            |     | 1 |    | 3      | 0.8  |
| Smallmouth buffalo | 1            |   | 1  | 1 |          |   |   |   |              |     |   |    | 3      | 0.8  |
| Spotted sucker     |              | 2 |    |   |          |   |   |   |              |     |   |    | 2      | 0.5  |
| Channel catfish    |              |   |    |   |          |   | 1 |   |              |     |   |    | 1      | 0.3  |
| Pumpkinseed        | 1            |   |    |   |          |   |   |   |              |     |   |    | 1      | 0.3  |
| Bluegill           | 2            |   | 2  |   |          |   |   |   | 2            |     |   |    | 6      | 1.6  |
| Longear sunfish    | 1            |   |    |   |          |   |   |   |              |     |   |    | 1      | 0.3  |
| Redear sunfish     | 1            |   |    |   |          |   |   |   |              |     |   |    | 1      | 0.3  |
| Spotted bass       |              |   |    |   |          |   |   |   | 1            |     |   |    | 1      | 0.3  |
| Total              |              |   |    |   |          |   |   |   |              |     |   |    | 367    |      |

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Table A9.2.12. Total catch and relative abundance of fish species captured at Upper Gallipolis (RM 29-31), Kanawha River, March 15-18, 1983.

| Species            | Electroshock |    |     |    | Gill Net |   |   |   | Minnow Shock |     |     |     | Total  |      |
|--------------------|--------------|----|-----|----|----------|---|---|---|--------------|-----|-----|-----|--------|------|
|                    | 1            | 2  | 3   | 4  | 1        | 2 | 3 | 4 | 1            | 2   | 3   | 4   | Number | %    |
| Longnose gar       |              |    |     |    | 45       |   |   |   |              |     |     |     | 45     | 3.3  |
| Gizzard shad       |              |    | 5   | 1  |          |   |   |   |              | 1   |     |     | 7      | 0.5  |
| Common carp        | 1            |    |     |    |          | 1 |   |   |              |     |     |     | 2      | 0.1  |
| Emerald shiner     | 270          | 35 | 100 | 99 |          |   |   |   | 195          | 255 | 193 | 101 | 1248   | 91.7 |
| River shiner       |              |    | 1   |    |          |   |   |   | 2            |     | 1   | 9   | 13     | 1.0  |
| Spotfin shiner     |              |    |     |    |          |   |   |   | 3            |     |     |     | 3      | 0.2  |
| Mimic shiner       |              |    |     |    |          |   |   |   | 2            |     |     |     | 2      | 0.1  |
| Bluntnose minnow   |              |    |     | 1  |          |   |   |   |              |     |     | 1   | 2      | 0.1  |
| White sucker       |              |    |     |    | 1        |   |   |   |              |     |     |     | 1      | 0.07 |
| Smallmouth buffalo |              |    | 1   |    |          |   |   |   |              |     |     |     | 1      | 0.07 |
| Silver redhorse    |              |    |     |    | 1        |   |   |   |              |     |     |     | 1      | 0.07 |
| Golden redhorse    |              | 1  |     |    | 1        |   | 1 |   |              |     |     |     | 3      | 0.2  |
| Shorthead redhorse |              |    |     |    | 3        |   |   |   |              |     |     |     | 3      | 0.2  |
| Pumpkinseed        |              |    | 1   |    |          |   |   |   |              |     |     |     | 1      | 0.07 |
| Bluegill           |              |    |     | 2  |          |   |   |   |              |     |     |     | 2      | 0.1  |
| Longear sunfish    |              |    | 1   |    |          |   |   |   |              |     | 1   |     | 2      | 0.1  |
| Smallmouth bass    |              |    | 2   |    | 1        |   |   |   |              |     |     |     | 3      | 0.2  |
| Spotted bass       |              | 2  |     |    |          |   |   |   |              |     |     |     | 2      | 0.2  |
| Largemouth bass    |              | 1  |     | 1  |          |   |   |   |              |     |     |     | 2      | 0.2  |
| White crappie      |              |    |     | 1  |          |   |   |   |              |     |     |     | 1      | 0.07 |
| Sauger             |              |    |     |    | 11       | 2 | 2 |   |              |     |     |     | 15     | 1.1  |
| Walleye            |              |    |     |    |          |   | 2 |   |              |     |     |     | 2      | 0.2  |
| Total              |              |    |     |    |          |   |   |   |              |     |     |     | 1361   |      |

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Table A9.2.13. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, April 20-22, 1983.

| Species            | Electroshock |    |    |    | Gill Net |   |   |   | Minnow Shock |    |    |     | Total  |      |
|--------------------|--------------|----|----|----|----------|---|---|---|--------------|----|----|-----|--------|------|
|                    | 1            | 2  | 3  | 4  | 1        | 2 | 3 | 4 | 1            | 2  | 3  | 4   | Number | %    |
| Longnose gar       |              | 1  |    | 2  |          |   |   |   |              |    |    |     | 3      | 0.6  |
| Gizzard shad       | 8            | 31 | 15 | 58 |          | 2 |   |   |              |    |    |     | 114    | 21.6 |
| Common carp        |              |    | 1  | 1  |          |   |   |   |              |    |    |     | 2      | 0.4  |
| Silver chub        |              | 1  |    |    |          |   |   |   |              |    |    |     | 1      | 0.2  |
| Emerald shiner     |              | 6  |    | 4  |          |   |   |   | 89           | 94 | 44 | 117 | 354    | 67.2 |
| Silver shiner      |              |    |    |    |          |   |   |   |              |    |    | 1   | 1      | 0.2  |
| Mimic shiner       |              | 1  |    |    |          |   |   |   |              | 1  |    |     | 2      | 0.4  |
| Smallmouth buffalo |              | 2  |    |    |          |   |   |   |              |    |    |     | 2      | 0.4  |
| Silver redhorse    |              | 2  |    | 2  | 1        | 1 |   |   |              |    |    |     | 6      | 1.1  |
| Black redhorse     |              |    | 1  |    | 1        | 2 |   |   |              |    |    |     | 4      | 0.8  |
| Golden redhorse    |              |    |    | 1  |          |   |   |   |              |    |    |     | 1      | 0.2  |
| Shorthead redhorse | 1            |    |    |    |          | 1 |   |   |              |    |    |     | 2      | 0.4  |
| Channel catfish    |              |    |    |    |          |   | 2 |   |              |    |    |     | 2      | 0.4  |
| Bluegill           |              |    |    |    |          |   |   |   |              |    | 1  |     | 1      | 0.2  |
| Redear sunfish     |              |    |    |    |          |   |   |   | 2            |    |    |     | 2      | 0.4  |
| Smallmouth bass    |              |    |    | 1  |          |   |   |   | 6            | 1  | 1  | 1   | 10     | 1.9  |
| Spotted bass       |              |    |    |    |          |   |   |   | 4            | 1  |    |     | 5      | 0.9  |
| White crappie      |              |    |    |    |          | 1 |   |   |              |    |    |     | 1      | 0.2  |
| Dusky darter       |              |    |    |    |          |   |   |   |              |    |    | 1   | 1      | 0.2  |
| Sauger             |              |    |    |    | 5        | 5 | 1 |   |              |    |    |     | 11     | 2.1  |
| Walleye            |              |    |    |    |          | 1 |   |   |              |    | 1  |     | 2      | 0.4  |
| Total              |              |    |    |    |          |   |   |   |              |    |    |     | 527    |      |

Table A9.2.14. Total catch and relative abundance of fish species captured at Lower Winfield (RM33-34), Kanawha River, April 20-22, 1983.

| Species            | Electroshock |    |    |   | Gill Net |   |   |   | Minnow Shock |     |   |    | Total  |      |
|--------------------|--------------|----|----|---|----------|---|---|---|--------------|-----|---|----|--------|------|
|                    | 1            | 2  | 3  | 4 | 1        | 2 | 3 | 4 | 1            | 2   | 3 | 4  | Number | %    |
| Gizzard shad       | 28           | 26 | 30 | 1 |          |   |   |   |              |     |   |    | 85     | 25.1 |
| Common carp        | 1            |    |    |   |          |   | 1 |   |              |     |   |    | 2      | 0.6  |
| Emerald shiner     |              |    |    |   |          |   |   |   | 25           | 133 | 5 | 33 | 196    | 58.0 |
| River shiner       |              |    |    |   |          |   |   |   | 1            |     |   |    | 1      | 0.3  |
| Spotfin shiner     |              |    |    |   |          |   |   |   | 1            | 16  | 2 |    | 19     | 5.6  |
| Steelcolor shiner  |              |    |    |   |          |   |   |   | 1            |     |   |    | 1      | 0.3  |
| Smallmouth buffalo |              |    | 1  | 4 |          |   |   |   |              |     |   |    | 5      | 1.5  |
| Spotted sucker     |              |    |    |   |          |   |   |   | 1            |     |   |    | 1      | 0.3  |
| Channel catfish    |              |    |    |   |          | 2 | 3 |   |              |     |   |    | 5      | 1.5  |
| Pumpkinseed        |              |    |    |   |          |   |   |   |              |     | 1 |    | 1      | 0.3  |
| Bluegill           | 1            |    | 4  |   |          |   |   |   | 2            |     |   |    | 7      | 2.1  |
| Longear sunfish    |              |    | 1  |   |          |   |   |   | 1            |     | 2 |    | 4      | 1.2  |
| Hybrid sunfish     | 1            |    |    |   |          |   |   |   |              |     |   |    | 1      | 0.3  |
| Spotted bass       |              | 1  |    |   |          |   |   |   |              |     |   |    | 1      | 0.3  |
| Largemouth bass    |              | 1  | 1  |   |          |   |   |   |              | 1   | 1 |    | 4      | 1.2  |
| Sauger             |              |    |    |   | 2        |   | 1 |   |              |     |   |    | 3      | 0.9  |
| Freshwater drum    | 1            |    |    |   | 1        |   |   |   |              |     |   |    | 2      | 0.6  |
| Total              |              |    |    |   |          |   |   |   |              |     |   |    | 338    |      |

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Table A9.2.15. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, May 17-19, 1983.

| Species         | Electroshock |    |    |    | Gill Net* |   |   |   | Minnow Shock |     |    |     | Total  |      |
|-----------------|--------------|----|----|----|-----------|---|---|---|--------------|-----|----|-----|--------|------|
|                 | 1            | 2  | 3  | 4  | 1         | 2 | 3 | 4 | 1            | 2   | 3  | 4   | Number | %    |
| Longnose gar    |              | 3  |    |    |           |   |   |   |              |     |    |     | 3      | 0.2  |
| Gizzard shad    | 81           | 52 | 88 | 83 |           |   |   |   |              |     |    |     | 304    | 20.7 |
| Common carp     |              | 2  | 1  | 1  |           |   |   |   |              |     |    |     | 4      | 0.3  |
| Emerald shiner  |              |    |    |    |           |   |   |   | 98           | 108 | 30 | 694 | 930    | 63.4 |
| River shiner    |              |    |    |    |           |   |   |   |              |     |    | 3   | 3      | 0.2  |
| Rosyface shiner |              |    |    |    |           |   |   |   |              |     |    | 1   | 1      | 0.07 |
| Spotfin shiner  |              |    |    |    |           |   |   |   |              | 1   |    | 3   | 4      | 0.3  |
| Sand shiner     |              |    |    |    |           |   |   |   |              |     |    | 2   | 2      | 0.1  |
| Mimic shiner    |              |    |    |    |           |   |   |   | 7            | 55  | 4  | 125 | 191    | 13.0 |
| UID Notropis    |              |    |    |    |           |   |   |   |              |     |    | 2   | 2      | 0.1  |
| Creek chub      |              |    |    |    |           |   |   |   |              |     |    | 2   | 2      | 0.1  |
| River redhorse  |              | 1  |    |    |           |   |   |   |              |     |    |     | 1      | 0.07 |
| Black redhorse  |              |    | 1  |    |           |   |   |   |              |     |    |     | 1      | 0.07 |
| White bass      |              | 1  |    |    |           |   |   |   |              |     |    |     | 1      | 0.07 |
| Bluegill        | 1            |    |    |    |           |   |   |   | 2            |     |    |     | 3      | 0.2  |
| Smallmouth bass | 4            |    |    | 1  |           |   |   |   | 3            |     |    |     | 8      | 0.6  |
| Spotted bass    | 2            |    |    |    |           |   |   |   | 1            |     |    |     | 3      | 0.2  |
| Sauger          |              | 1  |    |    |           |   |   |   | 2            |     |    |     | 3      | 0.2  |
| Freshwater drum |              |    |    |    |           |   |   |   | 1            |     |    |     | 1      | 0.07 |
| Total           |              |    |    |    |           |   |   |   |              |     |    |     | 1467   |      |

\* Gill nets were not set due to high water

Table A9.2.16. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, May 17-19, 1983.

| Species            | Electroshock |    |    |    | Gill Net |   |   |   | Minnow Shock |    |    |    | Total  |      |
|--------------------|--------------|----|----|----|----------|---|---|---|--------------|----|----|----|--------|------|
|                    | 1            | 2  | 3  | 4  | 1        | 2 | 3 | 4 | 1            | 2  | 3  | 4  | Number | %    |
| Longnose gar       |              |    |    |    | 1        |   |   |   |              |    |    |    | 1      | 0.2  |
| Gizzard shad       | 17           | 40 | 20 | 24 |          |   |   |   |              |    |    |    | 101    | 21.8 |
| Common carp        |              | 1  |    |    |          |   |   |   |              |    |    |    | 1      | 0.2  |
| Golden shiner      | 1            |    |    |    |          |   |   |   |              |    |    |    | 1      | 0.2  |
| Emerald shiner     | 9            | 16 | 2  | 12 |          |   |   |   | 22           | 64 | 44 | 60 | 229    | 49.4 |
| River shiner       |              |    |    | 1  |          |   |   |   |              | 10 |    |    | 16     | 3.4  |
| Spotfin shiner     | 1            | 2  |    | 1  |          |   |   |   | 1            | 20 | 2  | 8  | 35     | 7.5  |
| Mimic shiner       |              |    |    |    |          |   |   |   |              | 2  |    | 2  | 4      | 0.9  |
| Steelcolor shiner  |              |    |    |    |          |   |   |   |              | 5  | 1  | 1  | 7      | 1.5  |
| Bluntnose minnow   |              |    | 1  | 1  |          |   |   |   | 1            | 2  | 1  |    | 6      | 1.3  |
| Smallmouth buffalo |              |    |    | 1  |          |   |   |   | 2            |    |    |    | 3      | 0.6  |
| Spotted sucker     | 3            |    |    |    |          |   |   |   |              |    |    |    | 3      | 0.6  |
| Yellow bullhead    | 1            |    |    |    |          |   |   |   |              |    |    |    | 1      | 0.2  |
| Channel catfish    | 1            | 2  | 1  |    |          |   |   |   |              |    |    |    | 4      | 0.9  |
| White bass         |              |    |    |    | 1        |   |   |   |              |    |    |    | 1      | 0.2  |
| Pumpkinseed        | 1            |    | 2  | 1  |          |   |   |   | 1            |    |    |    | 5      | 1.1  |
| Bluegill           | 5            | 4  | 1  | 3  |          |   |   |   | 2            |    |    |    | 15     | 3.2  |
| Longear sunfish    | 5            | 5  | 2  | 1  |          |   |   |   | 2            |    |    |    | 15     | 3.2  |
| Smallmouth bass    |              |    |    |    |          |   |   |   | 1            |    |    |    | 1      | 0.2  |
| Spotted bass       | 1            |    | 1  |    |          |   |   |   |              |    |    |    | 2      | 0.4  |
| Largemouth bass    | 1            | 1  |    |    |          |   |   |   | 1            |    |    |    | 3      | 0.6  |
| Sauger             |              |    |    | 1  | 2        |   |   |   | 1            |    |    |    | 4      | 0.9  |
| Freshwater drum    |              |    |    | 1  |          |   |   |   | 5            |    |    |    | 6      | 1.3  |
| Total              |              |    |    |    |          |   |   |   |              |    |    |    | 464    |      |

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Table A9.2.17. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, June 21-23, 1983.

| Species             | Electroshock |    |    |    | Gill Net |   |   |   | Minnow Shock |    |    |     | Total  |      |
|---------------------|--------------|----|----|----|----------|---|---|---|--------------|----|----|-----|--------|------|
|                     | 1            | 2  | 3  | 4  | 1        | 2 | 3 | 4 | 1            | 2  | 3  | 4   | Number | %    |
| Longnose gar        | 1            | 1  |    |    |          |   |   |   |              |    |    |     | 2      | 0.3  |
| Gizzard shad        | 74           | 39 | 40 | 68 | 2        | 6 | 1 |   |              |    |    |     | 230    | 38.3 |
| Emerald shiner      | 2            | 15 | 3  |    |          |   |   |   | 23           | 73 | 42 | 132 | 290    | 48.3 |
| River shiner        |              |    |    |    |          |   |   |   |              |    |    | 7   | 7      | 1.2  |
| Spotfin shiner      | 1            |    |    |    |          |   |   |   |              |    |    | 3   | 4      | 0.7  |
| Sand shiner         |              |    |    |    |          |   |   |   |              |    |    | 1   | 1      | 0.2  |
| Mimic shiner        |              |    |    |    |          |   |   |   |              |    |    | 9   | 9      | 1.5  |
| UID Notropis        |              |    |    |    |          |   |   |   |              |    | 1  |     | 1      | 0.2  |
| Northern hog sucker |              |    |    |    |          |   |   |   |              |    |    | 1   | 1      | 0.2  |
| Silver redhorse     |              | 1  |    |    |          |   |   |   |              |    |    |     | 1      | 0.2  |
| Golden redhorse     |              | 1  |    |    |          |   |   |   |              |    | 1  |     | 2      | 0.3  |
| Shorthead redhorse  |              | 2  |    | 1  |          | 2 |   | 1 |              |    |    |     | 6      | 1.0  |
| Channel catfish     | 2            |    |    |    | 3        | 2 | 2 |   |              |    |    |     | 9      | 1.5  |
| Flathead catfish    |              |    |    |    |          |   |   |   | 1            |    |    |     | 1      | 0.2  |
| White bass          | 1            |    |    |    |          |   |   |   |              |    |    |     | 1      | 0.2  |
| Rock bass           |              |    |    |    |          | 1 |   |   |              |    |    |     | 1      | 0.2  |
| Bluegill            |              |    |    | 1  |          |   |   |   |              |    |    | 2   | 3      | 0.5  |
| Longear sunfish     |              |    |    | 1  |          |   |   |   |              |    |    |     | 1      | 0.2  |
| Smallmouth bass     | 1            | 1  | 2  | 7  | 1        |   |   |   |              |    |    | 2   | 14     | 2.3  |
| Spotted bass        | 1            |    |    | 1  | 1        |   |   |   |              |    |    |     | 3      | 0.5  |
| Largemouth bass     |              |    |    |    |          |   |   |   |              |    |    | 1   | 1      | 0.2  |
| White crappie       |              |    |    | 1  |          | 1 |   |   |              |    |    |     | 2      | 0.3  |
| Sauger              |              | 1  |    |    |          | 3 |   |   |              |    | 1  | 2   | 7      | 1.2  |
| Walleye             |              |    |    |    | 1        |   |   |   |              |    |    |     | 1      | 0.2  |
| Freshwater drum     |              |    | 1  |    | 2        |   |   |   |              |    |    |     | 3      | 0.5  |
| Total               |              |    |    |    |          |   |   |   |              |    |    |     | 601    |      |

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Table A9.2.18. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, June 21-23, 1983.

| Species            | Electroshock |   |    |    | Gill Net |   |   |   | Minnow Shock |   |   |    | Total  |      |
|--------------------|--------------|---|----|----|----------|---|---|---|--------------|---|---|----|--------|------|
|                    | 1            | 2 | 3  | 4  | 1        | 2 | 3 | 4 | 1            | 2 | 3 | 4  | Number | %    |
| Gizzard shad       | 20           | 8 | 10 | 23 | 3        |   |   | 1 |              |   |   |    | 65     | 54.2 |
| Common carp        | 1            |   |    |    |          |   |   |   | 1            |   |   |    | 2      | 1.7  |
| Emerald shiner     |              |   |    | 1  |          |   |   |   |              |   | 6 | 11 | 18     | 15.0 |
| River shiner       |              |   |    |    |          |   |   |   |              |   |   | 1  | 1      | 0.8  |
| Steelcolor shiner  |              |   |    |    |          |   |   |   |              |   |   | 2  | 2      | 1.7  |
| Quillback          |              |   |    |    | 1        |   |   |   |              |   |   |    | 1      | 0.8  |
| Smallmouth buffalo |              |   | 2  |    |          |   |   |   |              |   |   |    | 2      | 1.7  |
| Channel catfish    |              |   |    |    | 4        | 1 |   | 8 |              |   |   |    | 13     | 10.8 |
| Flathead catfish   |              |   |    |    | 1        |   |   |   |              |   |   |    | 1      | 0.8  |
| Pumpkinseed        | 1            | 1 |    |    |          |   |   |   |              |   |   |    | 2      | 1.7  |
| Bluegill           | 1            | 1 |    | 1  |          |   |   |   |              |   |   |    | 3      | 2.5  |
| Spotted bass       |              |   |    |    |          |   |   |   |              |   |   | 1  | 1      | 0.8  |
| Largemouth bass    | 2            |   |    |    |          |   |   |   |              |   |   | 1  | 3      | 2.5  |
| Freshwater drum    |              |   |    |    |          | 2 | 2 | 2 |              |   |   |    | 6      | 5.0  |
| Total              |              |   |    |    |          |   |   |   |              |   |   |    | 120    |      |

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Table A9.2.19. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, July 19-22, 1983.

| Species            | Electroshock |   |    |    | Gill Net |   |   |   | Minnow Shock |   |    |   | Total      |      |
|--------------------|--------------|---|----|----|----------|---|---|---|--------------|---|----|---|------------|------|
|                    | 1            | 2 | 3  | 4  | 1        | 2 | 3 | 4 | 1            | 2 | 3  | 4 | Number     | %    |
| Longnose gar       |              |   |    |    | 2        |   | 1 |   |              |   |    |   | 3          | 1.2  |
| Skipjack herring   |              |   |    |    | 1        |   |   |   |              |   |    |   | 1          | 0.4  |
| Gizzard shad       | 4            | 1 |    | 8  |          | 1 | 3 | 1 |              |   |    |   | 18         | 7.2  |
| Emerald shiner     | 3            |   | 50 | 30 |          |   |   |   | 1            | 9 | 20 | 1 | 114        | 45.4 |
| River shiner       |              |   | 4  |    |          |   |   |   |              |   | 2  |   | 6          | 2.4  |
| Spotfin shiner     | 2            |   | 4  |    |          |   |   |   | 3            |   |    |   | 9          | 3.6  |
| Mimic shiner       |              |   | 1  |    |          |   |   |   |              | 1 |    |   | 2          | 0.8  |
| Quillback          |              |   |    |    |          |   | 1 |   |              |   |    |   | 1          | 0.4  |
| Northern hogsucker |              |   | 1  | 1  |          |   |   |   |              |   |    |   | 2          | 0.8  |
| Smallmouth buffalo |              |   |    |    |          |   |   | 1 |              |   |    |   | 1          | 0.4  |
| Silver redhorse    |              |   |    |    |          | 1 | 2 |   |              |   |    |   | 3          | 1.2  |
| Golden redhorse    |              |   |    |    | 7        |   | 2 | 1 |              |   |    |   | 10         | 4.0  |
| Shorthead redhorse |              |   |    |    | 10       |   | 7 | 2 |              |   |    |   | 19         | 7.6  |
| Channel catfish    |              |   |    |    | 7        | 2 | 7 | 5 |              |   |    |   | 21         | 8.4  |
| Flathead catfish   |              |   |    |    | 1        |   |   | 2 |              |   |    |   | 3          | 1.2  |
| White bass         |              |   |    |    | 5        |   |   | 1 |              |   |    |   | 6          | 2.4  |
| Rock bass          |              |   |    |    |          | 2 |   |   |              |   |    |   | 2          | 0.8  |
| Bluegill           |              |   | 1  |    |          |   |   |   |              |   |    |   | 1          | 0.4  |
| Longear sunfish    | 1            |   |    | 3  |          | 1 |   |   |              |   |    |   | 5          | 2.0  |
| Smallmouth bass    | 3            |   |    | 1  |          |   |   |   |              |   |    |   | 4          | 1.6  |
| Spotted bass       |              |   |    |    |          |   | 1 |   |              |   |    |   | 1          | 0.4  |
| White crappie      |              |   |    |    | 1        |   | 1 | 1 |              |   |    |   | 3          | 1.2  |
| Logperch           |              |   |    | 1  |          |   |   |   |              |   |    |   | 1          | 0.4  |
| Sauger             |              |   |    |    |          |   |   | 3 |              |   |    |   | 3          | 1.2  |
| Freshwater drum    |              |   |    |    | 2        | 2 |   | 8 |              |   |    |   | 12         | 4.8  |
| <b>Total</b>       |              |   |    |    |          |   |   |   |              |   |    |   | <b>251</b> |      |

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Table A9.2.20. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, July 19-22, 1983.

| Species            | Electroshock |   |   |   | Gill Net |   |   |    | Minnow Shock |   |   |   | Total  |      |
|--------------------|--------------|---|---|---|----------|---|---|----|--------------|---|---|---|--------|------|
|                    | 1            | 2 | 3 | 4 | 1        | 2 | 3 | 4  | 1            | 2 | 3 | 4 | Number | %    |
| Skipjack herring   |              |   |   |   | 1        |   | 2 |    |              |   |   |   | 3      | 0.5  |
| Gizzard shad       | 5            | 8 | 3 |   | 8        | 2 | 1 | 9  | 388          |   |   |   | 424    | 66.9 |
| Emerald shiner     |              |   |   |   |          |   |   |    | 23           |   |   |   | 23     | 3.6  |
| Spotfin shiner     |              |   |   |   |          |   |   |    |              | 2 |   | 2 | 4      | 0.6  |
| Steelcolor shiner  |              |   |   |   |          |   |   |    | 1            |   |   |   | 1      | 0.2  |
| Bluntnose minnow   |              |   |   |   |          |   |   |    | 1            |   |   |   | 1      | 0.2  |
| UID Cyprinidae     |              |   |   |   |          |   |   |    | 93           |   |   |   | 93     | 14.7 |
| River carpsucker   |              |   |   |   | 1        |   |   |    |              |   |   |   | 1      | 0.2  |
| Quillback          |              |   |   |   |          |   |   | 1  |              |   |   |   | 1      | 0.2  |
| Smallmouth buffalo |              |   |   |   | 3        |   |   |    |              |   |   |   | 3      | 0.5  |
| Yellow bullhead    |              | 1 |   |   |          |   |   |    |              |   |   |   | 1      | 0.2  |
| Brown bullhead     |              | 1 |   |   |          |   |   | 1  |              |   |   |   | 2      | 0.3  |
| Channel catfish    |              |   |   |   | 2        | 5 | 4 | 13 | 1            |   |   |   | 25     | 3.9  |
| Flathead catfish   |              |   |   |   |          |   | 1 |    |              |   |   |   | 1      | 0.2  |
| Rock bass          |              |   |   |   |          |   | 1 |    |              |   |   |   | 1      | 0.2  |
| Bluegill           | 6            | 2 | 2 | 5 |          |   |   |    |              |   |   | 3 | 18     | 2.8  |
| Longear sunfish    |              |   |   |   |          |   |   |    |              |   |   | 3 | 3      | 0.5  |
| Redear sunfish     |              |   |   |   |          |   |   |    |              |   |   | 1 | 1      | 0.2  |
| Spotted bass       |              | 1 | 1 |   |          |   |   |    |              |   |   | 1 | 3      | 0.5  |
| Largemouth bass    |              |   |   | 1 |          |   |   |    |              |   |   |   | 1      | 0.2  |
| White crappie      |              |   |   |   | 1        |   |   |    |              |   |   |   | 1      | 0.2  |
| Black crappie      |              |   |   |   | 1        |   |   |    |              |   |   |   | 1      | 0.2  |
| Logperch           |              |   |   |   |          |   |   |    |              |   | 1 |   | 1      | 0.2  |
| Sauger             |              |   |   |   | 1        | 1 | 1 | 2  |              |   |   |   | 5      | 0.8  |
| Freshwater drum    |              |   |   |   | 4        | 1 | 4 | 7  |              |   |   |   | 16     | 2.5  |
| Total              |              |   |   |   |          |   |   |    |              |   |   |   | 634    |      |

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Table A9.2.21. Total catch and relative abundance of fish species captured at Upper Gallipolis (RM 29-31), Kanawha River, July 19-22, 1983.

| Species            | Electroshock |   |   |   | Gill Net |   |    |    | Minnow Shock |   |   |    | Total  |      |
|--------------------|--------------|---|---|---|----------|---|----|----|--------------|---|---|----|--------|------|
|                    | 1            | 2 | 3 | 4 | 1        | 2 | 3  | 4  | 1            | 2 | 3 | 4  | Number | %    |
| Longnose gar       |              |   |   | 1 |          |   | 2  | 5  |              |   |   |    | 8      | 3.0  |
| Gizzard shad       | 10           | 8 | 1 | 3 | 6        | 2 | 6  | 9  |              |   |   |    | 45     | 16.7 |
| Common carp        |              |   |   | 1 | 1        | 1 | 1  |    |              |   |   |    | 4      | 1.5  |
| Emerald shiner     |              | 3 |   |   |          |   |    |    | 1            | 2 |   | 27 | 33     | 12.2 |
| River shiner       | 15           |   | 1 |   |          |   |    |    | 6            |   |   |    | 22     | 8.1  |
| Spotfin shiner     | 1            |   |   | 1 |          |   |    |    | 5            | 2 | 2 |    | 11     | 4.1  |
| Steelcolor shiner  | 1            |   |   |   |          |   |    |    |              |   |   |    | 1      | 0.4  |
| Bluntnose minnow   |              |   |   |   |          |   |    |    | 3            |   |   |    | 3      | 1.1  |
| Notropis spp.      |              |   |   |   |          |   |    |    | 2            |   |   |    | 2      | 0.7  |
| Quillback          |              |   |   |   |          |   | 1  | 1  |              |   |   |    | 2      | 0.7  |
| Northern hogsucker |              |   |   |   |          |   |    | 1  |              |   |   |    | 1      | 0.4  |
| Smallmouth buffalo |              |   |   |   |          | 1 | 5  | 2  |              |   |   |    | 8      | 3.0  |
| Silver redhorse    |              |   |   |   | 3        | 2 |    | 2  |              |   |   |    | 7      | 2.6  |
| Black redhorse     |              |   |   |   | 1        |   | 1  |    |              |   |   |    | 2      | 0.7  |
| Golden redhorse    |              |   |   |   | 4        | 2 | 2  | 3  |              |   |   |    | 11     | 4.1  |
| Shorthead redhorse |              |   |   |   | 1        |   |    |    |              |   |   |    | 1      | 0.4  |
| Channel catfish    |              |   |   |   | 38       | 8 | 17 | 17 |              |   |   |    | 80     | 29.6 |
| Flathead catfish   |              |   |   |   |          |   | 1  | 1  |              |   |   |    | 2      | 0.7  |
| White bass         |              |   |   |   |          |   | 1  | 6  |              |   |   |    | 7      | 2.6  |
| Bluegill           |              |   |   | 1 |          |   |    |    |              |   |   |    | 1      | 0.4  |
| Spotted bass       | 1            |   | 2 |   | 2        |   | 1  |    |              |   |   |    | 6      | 2.2  |
| Largemouth bass    |              | 1 |   | 2 |          |   |    |    |              |   |   |    | 3      | 1.1  |
| Freshwater drum    |              |   |   |   | 1        | 2 | 2  | 5  |              |   |   |    | 10     | 3.7  |
| Total              |              |   |   |   |          |   |    |    |              |   |   |    | 270    |      |

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Table A9.2.22. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, August 22-24, 1983.

| Species            | Electroshock |   |   |   | Gill Net |   |   |    | Minnow Shock |   |    |     | Total  |      |
|--------------------|--------------|---|---|---|----------|---|---|----|--------------|---|----|-----|--------|------|
|                    | 1            | 2 | 3 | 4 | 1        | 2 | 3 | 4* | 1            | 2 | 3  | 4   | Number | %    |
| Longnose gar       |              |   |   |   |          | 1 |   |    |              |   |    |     | 1      | 0.4  |
| Gizzard shad       | 4            | 3 |   | 4 |          |   | 4 |    |              |   |    |     | 15     | 6.2  |
| Mooneye            |              |   |   |   |          | 2 |   |    |              |   |    |     | 2      | 0.8  |
| Emerald shiner     |              |   | 7 | 1 |          |   |   |    |              |   | 26 | 124 | 158    | 65.7 |
| River shiner       |              |   |   |   |          |   |   |    |              |   | 8  | 5   | 13     | 5.4  |
| Spotfin shiner     |              |   |   |   |          |   |   |    |              |   | 2  | 2   | 4      | 1.7  |
| Mimic shiner       |              |   |   |   |          |   |   |    |              |   | 3  | 9   | 12     | 5.0  |
| Bluntnose minnow   |              |   |   |   |          |   |   |    |              |   | 1  | 1   | 2      | 0.8  |
| Notropis spp.      |              |   |   |   |          |   |   |    |              |   |    | 1   | 1      | 0.4  |
| Silver redhorse    |              |   |   |   |          |   | 1 |    |              |   |    |     | 1      | 0.4  |
| Black redhorse     |              |   |   |   |          |   | 1 |    |              |   |    |     | 1      | 0.4  |
| Golden redhorse    |              |   |   |   |          | 1 | 1 |    |              |   |    |     | 2      | 0.8  |
| Shorthead redhorse |              |   |   |   | 2        |   | 3 |    |              |   |    |     | 5      | 2.1  |
| Channel catfish    |              |   |   |   | 6        | 2 | 4 |    |              |   |    |     | 12     | 5.0  |
| Rock bass          |              |   |   |   |          | 1 | 2 |    |              |   |    |     | 3      | 1.2  |
| Bluegill           |              |   | 1 |   |          |   |   |    | 1            |   |    |     | 2      | 0.8  |
| Smallmouth bass    |              |   |   |   |          |   | 1 |    |              |   | 1  |     | 2      | 0.8  |
| Spotted bass       | 1            |   |   |   |          |   |   |    |              |   |    |     | 1      | 0.4  |
| White crappie      |              |   |   |   |          | 1 | 1 |    |              |   |    |     | 2      | 0.8  |
| Sauger             |              |   |   |   | 1        |   |   |    |              |   |    |     | 1      | 0.4  |
| Freshwater drum    |              |   |   |   | 1        |   |   |    |              |   |    |     | 1      | 0.4  |

997 Total 241

\* Gill Net #4 was lost.



Table A9.2.23. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, August 22-24, 1983.

| Species            | Electroshock |     |    |   | Gill Net |    |    |    | Minnow Shock |    |   |    | Total  |      |
|--------------------|--------------|-----|----|---|----------|----|----|----|--------------|----|---|----|--------|------|
|                    | 1            | 2   | 3  | 4 | 1        | 2  | 3  | 4  | 1            | 2  | 3 | 4  | Number | %    |
| Longnose gar       |              |     |    |   |          |    | 1  |    |              |    |   |    | 1      | 0.2  |
| Gizzard shad       | 4            | 173 | 4  |   | 12       | 14 | 5  | 38 |              |    |   |    | 250    | 48.3 |
| Common carp        |              | 1   |    | 1 | 1        |    | 2  | 1  |              |    |   |    | 6      | 1.2  |
| Emerald shiner     |              | 1   |    | 1 |          |    |    |    | 32           | 2  |   | 4  | 40     | 7.7  |
| River shiner       |              |     |    |   |          |    |    |    | 1            | 1  |   | 1  | 3      | 0.6  |
| Spotfin shiner     |              |     |    |   |          |    |    |    | 2            | 7  | 6 | 3  | 18     | 3.5  |
| Steelcolor shiner  |              |     |    |   |          |    |    |    |              | 1  |   | 1  | 2      | 0.4  |
| Bluntnose minnow   |              |     |    | 1 |          |    |    |    | 9            | 16 |   | 13 | 39     | 7.5  |
| Notropis spp.      |              |     |    |   |          |    |    |    |              |    |   | 10 | 10     | 1.9  |
| River carpsucker   |              |     |    |   | 1        |    |    |    |              |    |   |    | 1      | 0.2  |
| Smallmouth buffalo |              |     |    |   |          | 1  |    | 3  |              |    |   |    | 4      | 0.8  |
| Yellow bullhead    |              |     | 1  |   |          |    |    |    |              |    |   |    | 1      | 0.2  |
| Channel catfish    |              |     |    |   | 9        | 8  | 6  | 13 |              |    |   |    | 36     | 6.9  |
| Flathead catfish   |              |     |    |   |          | 1  |    |    |              |    |   |    | 1      | 0.2  |
| White bass         |              |     |    | 3 |          |    |    | 1  |              |    |   |    | 4      | 0.8  |
| Bluegill           | 10           | 1   | 14 | 7 |          |    |    |    |              |    |   |    | 32     | 6.2  |
| Longear sunfish    |              |     | 6  |   |          |    |    |    |              |    |   |    | 6      | 1.1  |
| Redear sunfish     | 2            |     |    |   |          |    |    |    | 1            |    |   |    | 3      | 0.6  |
| Spotted bass       |              |     |    |   | 1        |    | 1  | 1  |              |    |   |    | 3      | 0.6  |
| White crappie      |              |     |    |   | 1        | 1  | 2  | 3  |              |    |   |    | 7      | 1.4  |
| Black crappie      |              |     |    |   | 1        | 1  |    | 1  |              |    |   |    | 3      | 0.6  |
| Logperch           |              |     |    |   |          |    |    |    |              |    | 1 |    | 1      | 0.2  |
| Sauger             |              |     |    |   | 2        | 1  | 3  | 1  |              |    |   |    | 7      | 1.4  |
| Freshwater drum    |              |     |    |   | 13       | 6  | 11 | 9  |              |    |   |    | 39     | 7.5  |
| Total              |              |     |    |   |          |    |    |    |              |    |   |    | 517    |      |

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Table A9.2.24. Total catch and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, September 12-14, 1983.

| Species            | Electroshock |   |   |   | Gill Net |   |   |   | Minnow Shock |     |    |    | Total  |      |
|--------------------|--------------|---|---|---|----------|---|---|---|--------------|-----|----|----|--------|------|
|                    | 1            | 2 | 3 | 4 | 1        | 2 | 3 | 4 | 1            | 2   | 3  | 4  | Number | %    |
| Longnose gar       |              |   |   |   |          | 1 | 1 |   |              |     |    |    | 2      | 0.3  |
| American eel       |              |   |   |   |          |   |   |   | 1            |     |    |    | 1      | 0.2  |
| Skipjack herring   |              |   |   |   | 2        | 3 | 1 |   |              |     |    |    | 6      | 1.0  |
| Gizzard shad       | 1            | 1 | 5 | 4 | 2        | 1 | 5 | 1 |              |     | 1  | 1  | 22     | 3.6  |
| Common carp        |              |   | 2 |   |          |   |   |   |              |     |    |    | 2      | 0.3  |
| Streamline chub    |              |   |   |   |          |   |   |   |              |     | 1  |    | 1      | 0.2  |
| Emerald shiner     |              |   |   |   |          |   |   |   | 105          | 108 | 37 | 71 | 321    | 52.5 |
| River shiner       |              |   |   |   |          |   |   |   |              |     | 2  | 2  | 4      | 0.7  |
| Spotfin shiner     |              |   |   |   |          |   |   |   | 15           |     | 10 | 13 | 38     | 6.2  |
| Sand shiner        |              |   |   |   |          |   |   |   |              |     |    | 1  | 1      | 0.2  |
| Mimic shiner       |              |   |   |   |          |   |   |   | 7            |     | 32 | 35 | 74     | 12.1 |
| Steelcolor shiner  |              |   |   |   |          |   |   |   | 1            |     |    | 2  | 3      | 0.5  |
| Bluntnose minnow   |              |   |   |   |          |   |   |   |              |     | 2  | 6  | 8      | 1.3  |
| Notropis spp.      |              |   |   |   |          |   |   |   |              |     |    | 20 | 20     | 3.3  |
| Cyprinidae         |              |   |   |   |          |   |   |   | 8            |     |    |    | 8      | 1.3  |
| River carpsucker   |              | 1 |   |   |          |   |   |   |              |     |    |    | 1      | 0.2  |
| Northern hogsucker |              |   | 2 |   |          |   |   |   |              |     | 1  |    | 3      | 0.5  |
| Smallmouth buffalo |              |   |   |   |          | 2 |   |   |              |     |    |    | 2      | 0.3  |
| Silver redhorse    |              |   |   |   | 1        |   | 2 | 1 |              |     |    |    | 4      | 0.7  |
| Black redhorse     |              |   |   |   |          |   | 1 |   |              |     |    | 1  | 2      | 0.3  |
| Golden redhorse    |              |   |   |   | 1        | 1 | 3 | 3 |              |     |    |    | 10     | 1.6  |
| Shorthead redhorse |              |   | 1 |   | 2        |   | 8 | 1 |              |     |    | 2  | 12     | 2.0  |
| Channel catfish    |              |   |   |   | 11       | 6 | 1 | 2 |              |     |    |    | 20     | 3.3  |
| Flathead catfish   |              |   |   |   |          |   |   |   | 2            |     |    |    | 2      | 0.3  |
| Brook silversides  |              |   |   |   |          |   |   |   |              |     |    | 1  | 1      | 0.2  |
| White bass         |              |   |   |   |          |   |   | 1 |              |     |    |    | 1      | 0.2  |
| Rock bass          |              |   |   |   |          |   |   |   | 1            |     |    |    | 1      | 0.2  |
| Bluegill           |              |   |   |   |          |   |   |   | 2            |     |    | 1  | 3      | 0.5  |
| Longear sunfish    |              |   |   |   |          |   |   |   | 6            |     |    | 2  | 8      | 1.3  |
| Smallmouth bass    |              | 4 | 2 |   |          |   |   |   | 6            | 1   | 1  |    | 14     | 2.3  |
| Spotted bass       |              |   |   |   |          |   | 1 | 1 |              |     |    | 3  | 5      | 0.8  |
| Bluebreast darter  |              |   |   |   |          |   |   |   |              |     |    | 1  | 1      | 0.2  |
| Banded darter      |              |   |   |   |          |   |   |   |              |     | 1  | 3  | 4      | 0.7  |
| Etheostoma spp     |              |   |   |   |          |   |   |   | 1            |     |    |    | 1      | 0.2  |
| Logperch           |              |   |   |   |          |   |   |   | 2            |     | 1  |    | 3      | 0.5  |
| Walleye            |              |   |   |   | 1        |   |   |   |              |     |    |    | 1      | 0.2  |
| Freshwater drum    |              |   |   |   |          |   |   | 2 |              |     |    |    | 2      | 0.3  |
| Total              |              |   |   |   |          |   |   |   |              |     |    |    | 612    |      |

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Table A9.2.25. Total catch and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, September 12-14, 1983.

| Species            | Electroshock |   |    |   | Gill Net |    |    |    | Minnow Shock |   |    |    | Total  |      |
|--------------------|--------------|---|----|---|----------|----|----|----|--------------|---|----|----|--------|------|
|                    | 1            | 2 | 3  | 4 | 1        | 2  | 3  | 4  | 1            | 2 | 3  | 4  | Number | %    |
| Gizzard shad       |              | 2 |    | 2 | 26       | 11 | 4  | 14 |              |   |    |    | 59     | 15.5 |
| Common carp        | 1            |   | 1  | 1 |          |    |    | 1  |              |   |    |    | 4      | 1.1  |
| Silver chub        |              |   |    |   |          |    |    |    |              |   | 1  |    | 1      | 0.3  |
| Emerald shiner     |              |   |    | 1 |          |    |    |    | 3            | 5 | 4  | 29 | 42     | 11.0 |
| River shiner       |              |   |    | 1 |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Spotfin shiner     |              |   | 2  | 2 |          |    |    |    |              | 1 | 19 | 45 | 69     | 18.1 |
| Mimic shiner       |              |   |    |   |          |    |    |    |              | 1 |    | 20 | 21     | 5.5  |
| Steelcolor shiner  |              |   |    |   |          |    |    |    |              |   | 5  | 5  | 10     | 2.6  |
| Bluntnose minnow   |              |   |    | 6 |          |    |    |    |              | 4 | 1  | 5  | 16     | 4.2  |
| Smallmouth buffalo |              |   |    |   |          | 1  |    | 9  |              |   |    |    | 10     | 2.6  |
| Spotted sucker     |              |   |    |   | 1        | 1  |    | 2  |              |   |    |    | 3      | 0.8  |
| Golden redborse    |              |   |    |   |          |    |    |    |              |   | 1  |    | 1      | 0.3  |
| Yellow bullhead    | 2            |   | 1  |   |          |    |    |    |              |   |    |    | 3      | 0.8  |
| Channel catfish    |              |   |    |   | 15       | 10 | 10 | 10 |              | 1 |    |    | 46     | 12.1 |
| Flathead catfish   |              |   |    |   | 1        | 1  |    | 2  |              |   |    |    | 4      | 1.1  |
| White bass         |              |   |    |   | 3        |    | 1  | 1  |              |   |    |    | 5      | 1.3  |
| Pumpkinseed        |              |   | 1  |   |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Bluegill           | 10           | 9 | 14 | 9 |          |    |    |    | 3            |   | 2  | 2  | 49     | 12.9 |
| Longear sunfish    | 2            | 2 | 4  | 1 |          |    |    |    |              |   |    |    | 9      | 2.4  |
| Smallmouth bass    |              |   |    | 1 |          |    |    |    |              |   |    |    | 1      | 0.3  |
| Largemouth bass    | 1            |   |    |   |          |    |    |    |              |   |    |    | 1      | 0.3  |
| White crappie      |              |   |    |   | 2        | 1  |    | 2  |              |   |    |    | 5      | 1.3  |
| Sauger             |              |   |    |   | 3        | 1  |    |    |              |   |    |    | 4      | 1.1  |
| Freshwater drum    |              |   |    |   | 5        | 1  | 7  | 3  |              |   |    |    | 16     | 4.2  |
| Total              |              |   |    |   |          |    |    |    |              |   |    |    | 381    |      |

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Table A9.3.1. Total weights (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, October 20-24, 1982.

| Species            | Electroshock |      |      |      | Gill Net |     |      |     | Seine |    |    |     | Total  |       |
|--------------------|--------------|------|------|------|----------|-----|------|-----|-------|----|----|-----|--------|-------|
|                    | 1            | 2    | 3    | 4    | 1        | 2   | 3    | 4   | 1     | 2  | 3  | 4   | Weight | %     |
| Longnose gar       |              |      |      |      |          | 119 |      |     |       |    |    |     | 119    | 0.2   |
| Gizzard shad       | 8990         | 3159 | 3622 | 8451 | 126      |     |      |     | 115   |    |    | 237 | 24,700 | 49.9  |
| Common carp        |              |      | 9540 |      |          |     |      |     |       |    |    |     | 9,540  | 19.3  |
| Emerald shiner     |              |      |      | 213  |          |     |      |     | 10    | 73 | 45 | 7   | 348    | 0.7   |
| River shiner       |              |      |      | 18   |          |     |      |     |       |    |    |     | 18     | 0.04  |
| Spotfin shiner     |              |      |      | 7    |          |     |      |     |       | 2  |    | 8   | 17     | 0.03  |
| Sand shiner        |              |      |      | 3    |          |     |      |     |       |    |    |     | 3      | 0.006 |
| Mimic shiner       |              |      |      | 7    |          |     |      |     |       | 5  |    | 5   | 17     | 0.03  |
| Bluntnose minnow   |              |      |      | 3    |          |     |      |     |       |    |    |     | 3      | 0.006 |
| Silver redhorse    |              |      |      |      | 1370     |     | 1399 |     |       |    |    |     | 2,769  | 5.6   |
| Golden redhorse    |              | 1447 | 665  |      |          |     |      | 455 |       |    |    |     | 2,567  | 5.2   |
| Shorthead redhorse | 1202         | 412  | 77   |      | 369      |     |      |     |       |    |    |     | 2,060  | 4.2   |
| Channel catfish    |              |      |      |      |          |     | 3034 |     |       |    |    |     | 3,034  | 6.1   |
| White bass         |              |      |      |      | 725      |     |      |     |       |    |    |     | 725    | 1.5   |
| Rock bass          |              |      |      | 79   | 95       | 83  |      |     |       |    |    |     | 257    | 0.5   |
| Bluegill           | 76           |      |      | 16   |          |     |      |     |       |    |    |     | 92     | 0.2   |
| Longear sunfish    |              |      |      | 22   |          |     |      |     |       |    |    |     | 22     | 0.04  |
| Smallmouth bass    | 770          | 359  | 302  | 242  |          |     |      |     | 51    |    |    |     | 1,724  | 3.5   |
| Spotted bass       | 85           | 77   | 120  | 126  |          |     |      |     |       |    |    |     | 408    | 0.8   |
| White crappie      | 151          |      |      |      |          |     |      |     |       |    |    |     | 151    | 0.3   |
| Sauger             |              |      |      |      | 199      | 160 |      |     |       |    |    |     | 359    | 0.7   |
| Walleye            | 565          |      |      |      |          |     |      |     |       |    |    |     | 565    | 1.1   |
| Total              |              |      |      |      |          |     |      |     |       |    |    |     | 49,498 |       |

Table A9.3.2. Total weights (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, October 20-24, 1982.

| Species            | Electroshock |      |      |      | Gill Net |      |      |      | Seine |    |      |    | Total  |       |
|--------------------|--------------|------|------|------|----------|------|------|------|-------|----|------|----|--------|-------|
|                    | 1            | 2    | 3    | 4    | 1        | 2    | 3    | 4    | 1     | 2  | 3    | 4  | Weight | %     |
| Gizzard shad       | 1252         | 1757 | 1800 | 91   | 794      | 731  | 610  | 200  | 5682  | 5  | 2700 |    | 15,622 | 26.2  |
| Common carp        |              | 2020 |      | 6050 | 1030     |      |      |      |       |    |      |    | 9100   | 15.3  |
| Silver chub        |              |      |      | 16   |          |      |      |      | 18    |    |      |    | 34     | 0.06  |
| Emerald shiner     | 38           | 135  | 163  | 211  |          |      |      |      | 115   | 49 | 991  | 60 | 1762   | 3.0   |
| River shiner       | 0.1          |      |      |      |          |      |      |      | 66    | 2  | 19   | 1  | 88     | 0.1   |
| Spotfin shiner     |              |      |      |      |          |      |      |      | 2     |    | 2    | 7  | 11     | 0.02  |
| Sand shiner        |              |      |      |      |          |      |      |      | 1     |    |      |    | 1      | 0.002 |
| Mimic shiner       |              |      |      |      |          |      |      |      | 15    | 1  | 20   |    | 36     | 0.06  |
| Bluntnose minnow   |              | 1    |      | 10   |          |      |      |      | 15    | 2  | 21   | 64 | 113    | 0.2   |
| Smallmouth buffalo |              |      | 7940 |      | 1360     |      |      | 206  |       |    |      |    | 9506   | 16.0  |
| Spotted sucker     |              | 192  | 303  |      |          |      |      |      |       |    |      |    | 495    | 0.8   |
| Golden redhorse    |              |      | 514  |      |          |      |      |      |       |    |      |    | 514    | 0.9   |
| Channel catfish    |              |      |      |      | 1119     | 1751 | 3467 | 1173 |       |    |      |    | 7510   | 12.6  |
| Flathead catfish   |              |      |      |      | 2020     |      | 870  |      |       |    |      |    | 2890   | 4.8   |
| White bass         |              |      |      | 83   |          |      |      |      |       |    |      |    | 83     | 0.1   |
| Pumpkinseed        |              | 33   |      |      |          |      |      |      | 47    |    |      |    | 80     | 0.1   |
| Bluegill           | 241          | 25   |      |      | 44       |      |      |      |       |    |      |    | 379    | 0.6   |
| Longear sunfish    | 94           |      | 161  | 172  |          |      |      |      |       |    | 36   | 64 | 527    | 0.9   |
| Redear sunfish     | 38           |      |      |      |          |      |      |      |       |    |      |    | 38     | 0.06  |
| Smallmouth bass    |              |      | 159  |      |          |      |      |      |       |    |      |    | 159    | 0.3   |
| Spotted bass       | 37           |      |      |      |          |      |      |      |       |    |      |    | 37     | 0.06  |
| Largemouth bass    | 98           | 140  | 48   | 919  |          |      |      |      |       |    |      |    | 1205   | 2.0   |
| White crappie      |              |      |      | 130  |          |      |      |      |       |    |      |    | 130    | 0.2   |
| Black crappie      |              |      |      |      | 368      |      |      |      |       |    |      |    | 368    | 0.6   |
| Sauger             |              |      |      |      | 5595     |      |      | 1381 |       |    |      |    | 6976   | 11.7  |
| Freshwater drum    |              |      | 495  | 150  | 1121     |      | 157  |      |       |    |      |    | 1923   | 3.2   |
| Total              |              |      |      |      |          |      |      |      |       |    |      |    | 59,587 |       |

Table A9.3.3. Total weight (g) and relative abundance of fish species captured at Upper Gallipolis (RM 29-31), Kanawha River, October 20-24, 1982.

| Species                | Electroshock |      |     |      | Gill Net |      |      |      | Minnow Shock |      |     |      | Total  |        |
|------------------------|--------------|------|-----|------|----------|------|------|------|--------------|------|-----|------|--------|--------|
|                        | 1            | 2    | 3   | 4    | 1        | 2    | 3    | 4    | 1            | 2    | 3   | 4    | Weight | %      |
| American brook lamprey |              | 7    |     |      |          |      |      |      |              |      |     |      | 7      | 0.01   |
| Longnose gar           |              |      |     |      | 4483     | 321  |      |      |              |      |     |      | 4,804  | 7.3    |
| Skipjack herring       |              |      |     |      | 553      | 167  |      |      |              |      |     |      | 720    | 1.1    |
| Gizzard shad           | 4543         | 1787 | 741 | 758  | 923      | 1139 | 755  | 294  | 2917         | 315  |     |      | 14,172 | 21.6   |
| Mooneye                |              |      |     |      | 269      |      |      |      |              |      |     |      | 269    | 0.4    |
| Muskellunge            |              |      |     |      |          | 1980 |      |      |              |      |     |      | 1,980  | 3.0    |
| Common carp            | 2960         | 4260 |     |      | 4430     |      |      |      |              |      |     |      | 11,650 | 17.7   |
| Emerald shiner         | 78           | 30   | 42  | 49   |          |      |      |      | 207          | 1572 | 60  | 939  | 2,977  | 4.5    |
| River shiner           |              |      | 3   |      |          |      |      |      | 11           | 14   |     | 61   | 89     | 0.1    |
| Ghost shiner           |              |      |     |      |          |      |      |      |              | 1    |     |      | 1      | 0.001  |
| Spotfin shiner         |              |      |     |      |          |      |      |      | 3            | 2    |     | 1    | 6      | 0.009  |
| Sand shiner            |              | 2    |     |      |          |      |      |      |              |      |     |      | 2      | 0.003  |
| Mimic shiner           |              |      |     |      |          |      |      |      | 13           | 12   | 2   | 42   | 69     | 0.1    |
| Bluntnose minnow       |              |      |     |      |          |      |      |      | 1            | 2    |     | 55.3 | 58.3   | 0.09   |
| Bullhead minnow        |              |      |     |      |          |      |      |      |              | 0.4  |     |      | 0.4    | 0.0006 |
| Northern hogsucker     |              | 220  |     |      |          |      |      |      |              |      |     |      | 220    | 0.3    |
| Smallmouth buffalo     |              |      |     |      | 187      |      |      |      |              |      |     |      | 187    | 0.3    |
| Silver redhorse        |              |      |     |      |          |      |      | 1090 |              |      |     |      | 1,090  | 1.7    |
| Golden redhorse        |              |      |     |      | 1178     | 1030 | 543  |      |              |      |     |      | 2,751  | 4.2    |
| Shorthead redhorse     |              |      |     |      |          |      |      | 705  |              |      |     |      | 705    | 1.1    |
| Channel catfish        |              |      |     | 1420 |          | 7190 | 7381 | 2047 |              |      |     |      | 18,038 | 27.4   |
| Flathead catfish       |              |      |     |      |          |      |      | 374  |              |      |     |      | 374    | 0.6    |
| White bass             |              |      |     |      | 310      | 495  | 73   |      |              |      |     |      | 878    | 1.3    |
| Bluegill               |              |      | 20  |      |          |      |      |      | 193          |      | 0.4 |      | 213    | 0.3    |
| Smallmouth bass        |              |      | 36  |      |          |      | 610  | 382  |              |      |     |      | 1,028  | 1.6    |
| Spotted bass           | 30           | 532  | 80  |      |          |      |      | 175  |              |      |     | 39   | 856    | 1.3    |
| Largemouth bass        | 402          |      |     |      |          |      |      |      |              |      |     |      | 402    | 0.6    |
| Banded darter          |              |      |     |      |          |      |      |      |              |      | 1   |      | 1      | 0.001  |
| Sauger                 |              | 215  | 245 |      | 228      | 333  | 1003 |      |              |      |     |      | 2,024  | 3.1    |
| Freshwater drum        | 9            | 8    |     | 5    |          |      | 133  |      | 6            |      |     |      | 161    | 0.2    |
| Total                  |              |      |     |      |          |      |      |      |              |      |     |      | 65,732 |        |

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Table A9.3.4. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, November 18-20, 1982.

| Species            | Electroshock |      |      |      | Gill Net |     |     |     | Minnow Shock |     |     |     | Total  |       |
|--------------------|--------------|------|------|------|----------|-----|-----|-----|--------------|-----|-----|-----|--------|-------|
|                    | 1            | 2    | 3    | 4    | 1        | 2   | 3   | 4   | 1            | 2   | 3   | 4   | Weight | %     |
| Gizzard shad       | 3999         | 1193 | 1656 | 4935 |          |     |     |     |              |     |     |     | 11,783 | 36.2  |
| Muskellunge        |              |      |      | 189  |          |     |     |     |              |     |     |     | 189    | 0.6   |
| Goldfish           | 198          |      |      |      |          |     |     |     |              |     |     |     | 198    | 0.6   |
| Common carp        | 1405         |      |      |      |          |     |     |     |              |     |     |     | 1,405  | 4.3   |
| Emerald shiner     |              |      | 32   |      |          |     |     |     | 13           | 38  | 113 | 648 | 844    | 2.6   |
| River shiner       |              |      |      |      |          |     |     |     |              | 0.5 |     | 5   | 6      | 0.02  |
| Spotfin shiner     | 1            |      |      |      |          |     |     |     | 1            |     | 2   | 9   | 13     | 0.04  |
| Mimic shiner       |              |      |      |      |          |     |     |     | 2            | 4   | 8   | 33  | 47     | 0.1   |
| Bluntnose minnow   |              |      |      |      |          |     |     |     |              |     |     | 1   | 1      | 0.003 |
| UID Cyprinidae     |              |      |      |      |          |     |     |     | 2            |     |     |     | 2      | 0.006 |
| Quillback          |              |      | 571  | 840  |          |     |     |     |              |     |     |     | 1,411  | 4.3   |
| Northern hogsucker |              |      | 70   |      |          |     |     |     |              |     |     |     | 70     | 0.2   |
| Smallmouth buffalo |              |      | 1340 |      |          |     |     |     |              |     |     |     | 1,340  | 4.1   |
| Silver redhorse    |              |      | 1524 |      |          | 820 |     |     |              |     |     |     | 2,344  | 7.2   |
| Black redhorse     | 132          | 537  | 81   |      |          |     |     |     |              |     |     |     | 750    | 2.3   |
| Golden redhorse    | 521          |      | 170  | 1136 |          |     |     |     |              |     |     |     | 1,827  | 5.6   |
| Shorthead redhorse | 1637         | 191  |      | 676  |          |     |     |     |              |     |     |     | 2,504  | 7.7   |
| Rock bass          | 116          |      |      |      |          |     |     |     |              |     |     |     | 116    | 0.4   |
| Bluegill           |              |      |      | 33   |          |     |     |     |              |     |     |     | 33     | 0.1   |
| Longear sunfish    | 120          |      | 110  | 101  |          |     |     |     |              |     |     |     | 331    | 1.0   |
| Smallmouth bass    | 1343         | 637  | 471  | 558  |          |     |     |     |              |     |     |     | 3,009  | 9.2   |
| Spotted bass       | 346          |      | 182  | 477  |          | 156 | 268 | 769 |              |     |     |     | 1,161  | 3.6   |
| Sauger             | 538          |      |      |      | 1329     | 250 |     |     |              |     |     |     | 3,154  | 9.7   |
| Total              |              |      |      |      |          |     |     |     |              |     |     |     | 32,538 |       |

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Table A9.3.5. Total weights (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, November 18-20, 1982.

| Species            | Electroshock |      |      |      | Gill Net |      |      |     | Minnow Shock |    |    |    | Total     |       |
|--------------------|--------------|------|------|------|----------|------|------|-----|--------------|----|----|----|-----------|-------|
|                    | 1            | 2    | 3    | 4    | 1        | 2    | 3    | 4   | 1            | 2  | 3  | 4  | Weight(g) | %     |
| Gizzard shad       | 2939         | 1576 | 3218 | 829  |          | 181  |      | 56  |              |    |    |    | 8799      | 34.5  |
| Common carp        | 1900         |      |      |      |          |      |      |     |              |    |    |    | 1900      | 7.5   |
| Emerald shiner     | 27           | 4    | 228  |      |          |      |      |     | 34           | 60 | 42 | 31 | 426       | 1.7   |
| River shiner       |              |      |      |      |          |      |      |     |              | 1  |    |    | 1         | 0.004 |
| Spotfin shiner     |              |      |      |      |          |      |      |     |              | 1  |    |    | 1         | 0.004 |
| Bluntnose minnow   |              |      | 4    |      |          |      |      |     |              | 2  | 2  | 4  | 12        | 0.05  |
| Smallmouth buffalo |              | 1290 | 1085 |      |          |      |      |     |              |    |    |    | 2375      | 9.3   |
| Black buffalo      |              |      | 700  |      |          |      |      |     |              |    |    |    | 700       | 2.7   |
| Spotted sucker     | 331          |      |      |      |          |      |      |     |              |    |    |    | 331       | 1.3   |
| Silver redhorse    |              |      |      |      | 276      |      | 265  |     |              |    |    |    | 541       | 2.1   |
| Black bullhead     |              |      |      |      |          |      | 178  |     |              |    |    |    | 178       | 0.7   |
| Brown bullhead     |              |      |      |      | 314      |      |      |     |              |    |    |    | 314       | 1.2   |
| Channel catfish    |              |      |      |      | 120      | 2526 | 2458 |     |              |    |    |    | 5104      | 20.0  |
| Rock bass          |              |      |      |      |          |      | 116  |     |              |    |    |    | 116       | 0.5   |
| Bluegill           |              |      |      | 1334 |          |      |      |     |              |    |    |    | 47        | 0.2   |
| Longear sunfish    |              |      |      | 35   |          |      |      |     |              |    |    |    | 35        | 0.1   |
| Smallmouth bass    |              |      |      | 2    |          |      |      |     |              |    |    |    | 2         | 0.008 |
| Spotted bass       |              | 343  |      |      |          |      |      |     |              |    |    |    | 343       | 1.3   |
| Largemouth bass    |              |      | 164  |      |          |      |      |     |              |    |    |    | 164       | 0.6   |
| Sauger             |              |      |      |      | 2375     | 231  | 995  |     |              |    |    |    | 3601      | 14.1  |
| Freshwater drum    |              |      |      |      | 154      |      | 227  | 121 |              |    |    |    | 502       | 2.0   |
| Total              |              |      |      |      |          |      |      |     |              |    |    |    | 25,492    |       |

474

0.00

0.00

0.00



Table A9.3.6. Total weight (g) and relative abundance of fish species capture at Upper Winfield (RM 66-67), Kanawha River, December 16-18, 1982.

| Species            | Electroshock |      |     |     | Gill Net |   |   |   | Minnow Shock |   |    |     | Total  |      |
|--------------------|--------------|------|-----|-----|----------|---|---|---|--------------|---|----|-----|--------|------|
|                    | 1            | 2    | 3   | 4   | 1        | 2 | 3 | 4 | 1            | 2 | 3  | 4   | Number | %    |
| Gizzard shad       | 390          | 208  |     | 331 |          |   |   |   |              |   |    |     | 929    | 12.1 |
| Emerald shiner     | 110          | 389  | 107 |     |          |   |   |   | 3            | 2 | 38 | 141 | 790    | 10.3 |
| Spotfin shiner     |              |      |     |     |          |   |   |   |              | 1 |    |     | 1      | 0.01 |
| Bullhead minnow    |              | 2    | 2   |     |          |   |   |   |              |   |    |     | 4      | 0.05 |
| River carpsucker   |              |      | 860 |     |          |   |   |   |              |   |    |     | 860    | 11.2 |
| Smallmouth buffalo |              |      | 955 |     |          |   |   |   |              |   |    |     | 955    | 12.5 |
| Silver redhorse    |              |      | 520 |     |          |   |   |   |              |   |    |     | 520    | 6.8  |
| River redhorse     |              |      |     | 166 |          |   |   |   |              |   |    |     | 166    | 2.2  |
| Black redhorse     |              | 148  |     |     |          |   |   |   |              |   |    |     | 148    | 1.9  |
| Golden redhorse    |              | 384  |     |     |          |   |   |   |              |   |    |     | 384    | 5.0  |
| Shorthead redhorse |              | 1871 |     |     |          |   |   |   |              |   |    |     | 1871   | 24.4 |
| Longear sunfish    |              |      |     | 69  |          |   |   |   |              |   |    |     | 69     | 0.9  |
| Smallmouth bass    |              |      |     | 111 |          |   |   |   |              |   |    |     | 111    | 1.4  |
| Spotted bass       |              | 105  |     | 125 |          |   |   |   |              |   |    |     | 230    | 3.0  |
| Largemouth bass    |              |      |     | 61  |          |   |   |   |              |   |    |     | 61     | 0.8  |
| Sauger             |              |      |     | 435 | 125      |   |   |   |              |   |    |     | 560    | 7.3  |
| Total              |              |      |     |     |          |   |   |   |              |   |    |     | 7659   |      |

Nets 2, 3, and 4 were destroyed by high water.

Table A9.3.7. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, December 16-18, 1982.

| Species            | Electroshock |      |      |      | Gill Net |   |   |   | Minnow Shock |     |     |    | Total  |       |
|--------------------|--------------|------|------|------|----------|---|---|---|--------------|-----|-----|----|--------|-------|
|                    | 1            | 2    | 3    | 4    | 1        | 2 | 3 | 4 | 1            | 2*  | 3*  | 4* | Weight | %     |
| Gizzard shad       | 1885         | 3    | 1132 | 232  |          |   |   |   |              | 13  |     |    | 3,265  | 15.2  |
| Common carp        | 2990         | 1930 |      |      |          |   |   |   |              |     |     |    | 4,920  | 22.8  |
| Emerald shiner     | 4            | 265  | 1    | 2    |          |   |   |   | 13           | 573 | 230 | 52 | 1,140  | 5.3   |
| River shiner       |              | 2    |      |      |          |   |   |   |              | 15  |     | 5  | 2      | 0.009 |
| Spotfin shiner     |              | 13   |      |      |          |   |   |   |              | 15  |     | 2  | 33     | 0.2   |
| Sand shiner        |              |      |      |      |          |   |   |   |              | 15  |     |    | 17     | 0.08  |
| Mimic shiner       |              |      |      |      |          |   |   |   | 0.4          | 1   |     |    | 1      | 0.005 |
| Bluntnose minnow   |              | 18   | 9    | 3    |          |   |   |   | 8            | 13  | 26  | 14 | 91     | 0.4   |
| UID Cyprinidae     |              |      |      |      |          |   |   |   |              |     |     | 2  | 2      | 0.009 |
| Smallmouth buffalo | 2535         |      | 3720 | 4665 |          |   |   |   |              |     |     |    | 10,920 | 50.7  |
| Spotted sucker     |              | 91   | 273  |      |          |   |   |   |              |     |     |    | 364    | 1.7   |
| Bluegill           |              | 32   | 13   |      |          |   |   |   | 16           |     |     |    | 61     | 0.3   |
| Longear sunfish    |              | 12   | 67   | 46   |          |   |   |   |              | 10  | 15  |    | 150    | 0.7   |
| Spotted bass       |              |      | 209  |      |          |   |   |   |              |     |     |    | 209    | 1.0   |
| White crappie      |              |      | 92   |      |          |   |   |   |              |     |     |    | 92     | 0.4   |
| Freshwater drum    |              |      |      | 284  |          |   |   |   |              |     |     |    | 284    | 1.3   |
| Total              |              |      |      |      |          |   |   |   |              |     |     |    | 21,551 |       |

\*Net 2 was filled with debris by high water; nets 3 and 4 were not set.

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Table A9.3.8. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, February 16-18, 1983.

| Species            | Electroshock |     |       |      | Gill Net |     |   |   | Minnow Shock |    |     |   | Total  |       |
|--------------------|--------------|-----|-------|------|----------|-----|---|---|--------------|----|-----|---|--------|-------|
|                    | 1            | 2   | 3     | 4    | 1        | 2   | 3 | 4 | 1            | 2  | 3   | 4 | Weight | %     |
| Common carp        |              |     | 22400 |      |          |     |   |   |              |    |     |   | 22,400 | 35.6  |
| Emerald shiner     |              |     |       |      |          |     |   |   | 22           | 44 | 0.9 |   | 67     | 0.1   |
| River shiner       |              |     |       |      |          |     |   |   |              |    | 0.7 |   | 0.7    | 0.001 |
| Spotfin shiner     |              |     |       |      |          |     |   |   |              |    | 0.5 |   | 0.5    | 0.008 |
| Mimic shiner       |              |     |       |      |          |     |   |   | 2            |    |     |   | 2      | 0.003 |
| Bluntnose minnow   |              |     |       |      |          |     |   |   | 2            |    |     |   | 2      | 0.003 |
| Quillback          |              |     | 575   |      |          |     |   |   |              |    |     |   | 575    | 0.9   |
| Smallmouth buffalo |              | 898 | 33508 |      |          |     |   |   |              |    |     |   | 34,406 | 54.7  |
| Silver redhorse    |              | 435 |       |      |          |     |   |   |              |    |     |   | 435    | 0.7   |
| River redhorse     |              |     |       | 1078 |          |     |   |   |              |    |     |   | 1,078  | 1.7   |
| Black redhorse     | 497          |     |       |      |          |     |   |   |              |    |     |   | 497    | 0.8   |
| Shorthead redhorse |              |     |       | 925  |          |     |   |   |              |    |     |   | 925    | 1.5   |
| Rock bass          | 259          |     |       |      |          |     |   |   |              |    |     |   | 259    | 0.4   |
| Longear sunfish    | 17           | 21  |       |      |          |     |   |   |              |    |     |   | 38     | 0.06  |
| Smallmouth bass    | 55           | 195 |       |      |          |     |   |   |              |    |     |   | 250    | 0.4   |
| Sauger             | 399          |     | 771   |      |          | 369 |   |   |              |    |     |   | 1,539  | 2.4   |
| Golden redhorse    |              |     |       | 461  |          |     |   |   |              |    |     |   | 461    | 0.7   |
| Total              |              |     |       |      |          |     |   |   |              |    |     |   | 62,935 |       |

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Table A9.3.9. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 66-67), Kanawha River, February 16-18, 1983.

| Species            | Electroshock |     |       |       | Gill Net |   |   |   | Minnow Shock |   |   |     | Total  |        |
|--------------------|--------------|-----|-------|-------|----------|---|---|---|--------------|---|---|-----|--------|--------|
|                    | 1            | 2   | 3     | 4     | 1        | 2 | 3 | 4 | 1            | 2 | 3 | 4   | Weight | %      |
| Gizzard shad       |              |     | 242   |       |          |   |   |   | 146          |   |   |     | 388    | 2.6    |
| Common carp        |              |     | 1,950 | 4,350 |          |   |   |   |              |   |   |     | 6,300  | 42.2   |
| Emerald shiner     |              | 4   | 1     |       |          |   |   |   | 98           |   |   | 0.6 | 104    | 0.7    |
| River shiner       |              | 0.3 |       |       |          |   |   |   | 0.4          |   |   |     | 0.7    | 0.005  |
| Spotfin shiner     |              |     |       |       |          |   |   |   | 1            |   |   |     | 1      | 0.007  |
| Mimic shiner       |              |     |       |       |          |   |   |   | 0.4          |   |   |     | 0.4    | 0.003  |
| Bluntnose minnow   | 1            | 0.9 | 3     |       |          |   |   |   | 0.3          |   |   |     | 5      | 0.03   |
| UID Cyprinidae     |              |     |       |       |          |   |   |   |              |   |   | 0.1 | 0.1    | 0.0007 |
| Smallmouth buffalo |              |     | 5,950 | 1,250 |          |   |   |   |              |   |   |     | 7,200  | 48.3   |
| Spotted sucker     |              |     |       | 900   |          |   |   |   |              |   |   |     | 900    | 6.0    |
| Longear sunfish    |              |     | 23    |       |          |   |   |   |              |   |   |     | 23     | 0.2    |
| Total              |              |     |       |       |          |   |   |   |              |   |   |     | 14,922 |        |

Table A9.3.10. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, March 15-17, 1983.

| Species            | Electroshock |      |       |      | Gill Net |     |     |     | Minnow Shock |     |    |    | Total Weight | %    |
|--------------------|--------------|------|-------|------|----------|-----|-----|-----|--------------|-----|----|----|--------------|------|
|                    | 1            | 2    | 3     | 4    | 1        | 2   | 3   | 4   | 1            | 2   | 3  | 4  |              |      |
| Ohio lamprey       |              |      |       | 81   |          |     |     |     |              |     |    |    | 81           | 0.2  |
| Longnose gar       |              |      | 370   |      |          |     |     |     |              |     |    |    | 370          | 0.7  |
| Gizzard shad       | 598          | 299  | 436   | 1881 |          |     |     |     |              |     |    |    | 3,214        | 6.3  |
| Common carp        | 4850         |      | 22000 |      |          |     |     |     |              |     |    |    | 26,850       | 52.9 |
| Silver chub        |              |      |       |      |          |     |     | 34  |              |     |    |    | 34           | 0.07 |
| Emerald shiner     | 1            | 18   | 4     | 5    |          |     |     |     | 213          | 303 | 48 |    | 592          | 1.2  |
| Striped shiner     |              |      |       |      |          |     |     |     | 12           |     | 8  |    | 20           | 0.04 |
| Mimic shiner       |              | 7    |       |      |          |     |     |     | 4            | 8   |    |    | 19           | 0.04 |
| Creek chub         |              |      |       |      |          |     |     |     |              |     |    | 49 | 49           | 0.1  |
| Northern hogsucker |              |      |       | 78   |          |     |     |     |              |     |    |    | 78           | 0.2  |
| Smallmouth buffalo |              | 2575 | 2182  |      |          |     |     |     |              |     |    |    | 4,757        | 9.4  |
| Black buffalo      |              |      | 1200  |      |          |     |     |     |              |     |    |    | 1,200        | 2.4  |
| Silver redhorse    |              | 1548 | 940   | 3161 |          |     |     |     |              |     |    |    | 5,649        | 11.1 |
| River redhorse     |              |      | 625   | 738  |          |     |     |     |              |     |    |    | 1,363        | 2.7  |
| Shorthead redhorse | 339          |      |       |      | 376      |     |     | 81  |              |     |    |    | 796          | 1.6  |
| Rock bass          |              |      |       |      |          | 119 |     |     |              |     |    |    | 119          | 0.2  |
| Longear sunfish    | 122          |      | 47    | 101  |          |     |     |     |              |     |    | 16 | 286          | 0.6  |
| Smallmouth bass    | 1260         |      | 88    | 66   |          |     |     |     |              |     |    |    | 1,414        | 2.8  |
| Spotted bass       | 372          | 223  | 235   | 159  |          |     |     |     |              |     |    |    | 989          | 1.9  |
| Largemouth bass    |              |      | 380   |      |          |     |     |     |              |     |    |    | 380          | 0.7  |
| Dusky darter       | 4            |      |       | 4    |          |     |     |     |              |     |    |    | 8            | 0.02 |
| Sauger             |              |      |       |      |          | 936 | 617 | 935 |              |     |    |    | 2,488        | 4.9  |
| Total              |              |      |       |      |          |     |     |     |              |     |    |    | 50,756       |      |

Table A9.3.11. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, March 15-17, 1983.

| Species            | Electroshock |      |      |      | Gill Net |   |     |   | Minnow Shock |    |   |    | Total Weight | %    |
|--------------------|--------------|------|------|------|----------|---|-----|---|--------------|----|---|----|--------------|------|
|                    | 1            | 2    | 3    | 4    | 1        | 2 | 3   | 4 | 1            | 2  | 3 | 4  |              |      |
| Gizzard shad       | 4275         | 2444 | 8377 |      |          |   |     |   |              |    |   |    | 15,096       | 49.7 |
| Common carp        |              |      |      | 9943 |          |   |     |   |              |    |   |    | 9,943        | 32.7 |
| Emerald shiner     |              |      |      |      |          |   |     |   | 10           | 89 | 8 | 32 | 139          | 0.6  |
| Bluntnose minnow   |              |      |      |      |          |   |     |   | 6            |    | 5 |    | 11           | 0.04 |
| Smallmouth buffalo | 956          |      | 1250 | 820  |          |   |     |   |              |    |   |    | 3,026        | 10.0 |
| Spotted sucker     |              | 1319 |      |      |          |   |     |   |              |    |   |    | 1,319        | 4.3  |
| Channel catfish    |              |      |      |      |          |   | 117 |   |              |    |   |    | 117          | 0.4  |
| Pumpkinseed        | 57           |      |      |      |          |   |     |   |              |    |   |    | 57           | 0.2  |
| Bluegill           | 179          |      | 40   |      |          |   |     |   | 93           |    |   |    | 312          | 1.0  |
| Longear sunfish    | 41           |      |      |      |          |   |     |   |              |    |   |    | 41           | 0.1  |
| Redear sunfish     | 15           |      |      |      |          |   |     |   |              |    |   |    | 15           | 0.05 |
| Spotted bass       |              |      |      |      |          |   |     |   | 315          |    |   |    | 315          | 1.0  |
| Total              |              |      |      |      |          |   |     |   |              |    |   |    | 30,391       |      |

Table A9.3.12. Total weight (g) and relative abundance of fish species captured at Upper Gallipolis (RM 29-31), Kanawha River, March 15-17, 1983.

| Species            | Electroshock |      |      |     | Gill Net |      |      |   | Minnow Shock |     |     |     | Total Weight | %     |
|--------------------|--------------|------|------|-----|----------|------|------|---|--------------|-----|-----|-----|--------------|-------|
|                    | 1            | 2    | 3    | 4   | 1        | 2    | 3    | 4 | 1            | 2   | 3   | 4   |              |       |
| Longnose gar       |              |      |      |     | 23411    |      |      |   |              |     |     |     | 23,411       | 44.8  |
| Gizzard shad       |              |      | 825  | 184 |          |      |      |   |              | 5   |     |     | 1,014        | 1.9   |
| Common carp        | 3250         |      |      |     |          | 3400 |      |   |              |     |     |     | 6,650        | 12.7  |
| Emerald shiner     | 745          | 76   | 295  | 311 |          |      |      |   | 273          | 573 | 408 | 189 | 2,870        | 5.5   |
| River shiner       |              |      | 2    |     |          |      |      |   | 1            |     | 1   | 8   | 12           | 0.02  |
| Spotfin shiner     |              |      |      |     |          |      |      |   | 1            |     |     |     | 1            | 0.002 |
| Mimic shiner       |              |      |      |     |          |      |      |   | 1            |     |     |     | 1            | 0.002 |
| Bluntnose minnow   |              |      |      | 4   |          |      |      |   |              |     |     | 2   | 6            | 0.01  |
| White sucker       |              |      |      |     | 215      |      |      |   |              |     |     |     | 215          | 0.4   |
| Smallmouth buffalo |              |      | 2000 |     |          |      |      |   |              |     |     |     | 2,000        | 3.8   |
| Silver redhorse    |              |      |      |     | 537      |      |      |   |              |     |     |     | 537          | 1.0   |
| Golden redhorse    |              | 370  |      |     | 323      |      | 448  |   |              |     |     |     | 1,141        | 2.2   |
| Shorthead redhorse |              |      |      |     | 2047     |      |      |   |              |     |     |     | 2,047        | 3.9   |
| Pumpkinseed        |              |      | 50   |     |          |      |      |   |              |     |     |     | 50           | 0.1   |
| Bluegill           |              |      |      | 88  |          |      |      |   |              |     |     |     | 88           | 0.2   |
| Longear sunfish    |              |      | 13   |     |          |      |      |   |              |     | 43  |     | 56           | 0.1   |
| Smallmouth bass    |              |      | 692  |     | 361      |      |      |   |              |     |     |     | 1,053        | 2.0   |
| Spotted bass       |              | 248  |      |     |          |      |      |   |              |     |     |     | 248          | 0.5   |
| Largemouth bass    |              | 1350 |      | 410 |          |      |      |   |              |     |     |     | 1,760        | 3.4   |
| White crappie      |              |      |      | 138 |          |      |      |   |              |     |     |     | 138          | 0.3   |
| Sauger             |              |      |      |     | 5826     | 1063 | 710  |   |              |     |     |     | 7,599        | 14.6  |
| Walleye            |              |      |      |     |          |      | 1310 |   |              |     |     |     | 1,310        | 2.5   |
| Total              |              |      |      |     |          |      |      |   |              |     |     |     | 52,207       |       |

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Table A9.3.13. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, April 20-22, 1983.

| Species            | Electroshock |      |      |      | Gill Net |      |     |   | Minnow Shock |     |     |     | Total  |       |
|--------------------|--------------|------|------|------|----------|------|-----|---|--------------|-----|-----|-----|--------|-------|
|                    | 1            | 2    | 3    | 4    | 1        | 2    | 3   | 4 | 1            | 2   | 3   | 4   | Weight | %     |
| Longnose gar       |              | 190  |      | 456  |          |      |     |   |              |     |     |     | 646    | 1.9   |
| Gizzard shad       | 952          | 4324 | 1502 | 5272 |          | 290  |     |   |              |     |     |     | 12,340 | 35.5  |
| Common carp        |              |      | 1700 | 2275 |          |      |     |   |              |     |     |     | 3,975  | 11.5  |
| Silver chub        |              | 26   |      |      |          |      |     |   |              |     |     |     | 26     | 0.07  |
| Emerald shiner     |              | 22   |      | 16   |          |      |     |   | 281          | 367 | 154 | 448 | 1,288  | 3.7   |
| Silver shiner      |              |      |      |      |          |      |     |   |              |     |     | 1   | 1      | 0.003 |
| Mimic shiner       |              | 1    |      |      |          |      |     |   |              | 1   |     |     | 2      | 0.006 |
| Smallmouth buffalo |              | 2600 |      |      |          |      |     |   |              |     |     |     | 2,600  | 7.5   |
| Silver redhorse    |              | 1390 |      | 1596 | 1018     | 942  |     |   |              |     |     |     | 4,946  | 14.2  |
| Black redhorse     |              |      | 100  |      | 120      | 682  |     |   |              |     |     |     | 902    | 2.6   |
| Golden redhorse    |              |      |      | 520  |          |      |     |   |              |     |     |     | 520    | 1.5   |
| Shorthead redhorse | 602          |      |      |      |          | 360  |     |   |              |     |     |     | 962    | 2.8   |
| Channel catfish    |              |      |      |      |          |      | 390 |   |              |     |     |     | 390    | 1.1   |
| Bluegill           |              |      |      |      |          |      |     |   |              |     | 74  |     | 74     | 0.2   |
| Redear sunfish     |              |      |      |      |          |      |     |   | 40           |     |     |     | 40     | 0.1   |
| Smallmouth bass    |              |      |      | 52   |          |      |     |   | 328          | 706 | 108 | 36  | 1,230  | 3.5   |
| Spotted bass       |              |      |      |      |          |      |     |   | 128          | 126 |     |     | 254    | 0.7   |
| White crappie      |              |      |      |      |          | 258  |     |   |              |     |     |     | 258    | 0.7   |
| Dusky darter       |              |      |      |      |          |      |     |   |              |     |     | 6   | 6      | 0.02  |
| Sauger             |              |      |      |      | 1220     | 2118 | 60  |   |              |     |     |     | 3,398  | 9.8   |
| Walleye            |              |      |      |      |          | 776  |     |   |              |     | 82  |     | 858    | 2.5   |
| Total              |              |      |      |      |          |      |     |   |              |     |     |     | 34,716 |       |

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Table A9.3.14. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, April 20-22, 1983.

| Species            | Electroshock |      |      |      | Gill Net |     |      |   | Minnow Shock |     |     |    | Total  |        |
|--------------------|--------------|------|------|------|----------|-----|------|---|--------------|-----|-----|----|--------|--------|
|                    | 1            | 2    | 3    | 4    | 1        | 2   | 3    | 4 | 1            | 2   | 3   | 4  | Weight | %      |
| Gizzard shad       | 4402         | 4877 | 4353 | 579  |          |     |      |   |              |     |     |    | 14,211 | 50.9   |
| Common carp        | 1250         |      |      |      |          |     | 2100 |   |              |     |     |    | 3,350  | 12.0   |
| Emerald shiner     |              |      |      |      |          |     |      |   | 33           | 42  | 3   | 36 | 114    | 0.4    |
| River shiner       |              |      |      |      |          |     |      |   | 0.1          |     |     |    | 0.1    | 0.0004 |
| Spotfin shiner     |              |      |      |      |          |     |      |   | 1            | 8   | 1   |    | 10     | 0.04   |
| Steelcolor shiner  |              |      |      |      |          |     |      |   | 1            |     |     |    | 1      | 0.004  |
| Smallmouth buffalo |              |      | 720  | 4458 |          |     |      |   |              |     |     |    | 5,178  | 18.5   |
| Spotted sucker     |              |      |      |      |          |     |      |   | 76           |     |     |    | 76     | 0.3    |
| Channel catfish    |              |      |      |      |          | 381 | 1635 |   |              |     |     |    | 2,016  | 7.2    |
| Pumpkinseed        |              |      |      |      |          |     |      |   |              |     | 70  |    | 70     | 0.3    |
| Bluegill           | 120          |      | 128  |      |          |     |      |   | 46           |     |     |    | 294    | 1.1    |
| Longear sunfish    |              |      | 36   |      |          |     |      |   | 43           |     | 102 |    | 181    | 0.6    |
| Hybrid sunfish     | 20           |      |      |      |          |     |      |   |              |     |     |    | 20     | 0.07   |
| Spotted bass       |              | 364  |      |      |          |     |      |   |              |     |     |    | 364    | 1.3    |
| Largemouth bass    |              | 389  | 216  |      |          |     |      |   |              | 292 | 242 |    | 1,139  | 4.1    |
| Sauger             |              |      |      |      | 321      |     | 468  |   |              |     |     |    | 789    | 2.8    |
| Freshwater drum    | 68           |      |      |      | 44       |     |      |   |              |     |     |    | 112    | 0.4    |
| Total              |              |      |      |      |          |     |      |   |              |     |     |    | 27,925 |        |

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Table A9.3.15. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, May 17-19, 1983.

| Species         | Electroshock |      |      |      | Gill Net* |   |   |   | Minnow Shock |     |    |      | Total  |       |
|-----------------|--------------|------|------|------|-----------|---|---|---|--------------|-----|----|------|--------|-------|
|                 | 1            | 2    | 3    | 4    | 1         | 2 | 3 | 4 | 1            | 2   | 3  | 4    | Weight | %     |
| Longnose gar    |              | 518  |      |      |           |   |   |   |              |     |    |      | 518    | 1.1   |
| Gizzard shad    | 8311         | 5595 | 8527 | 9960 |           |   |   |   |              |     |    |      | 32,393 | 66.9  |
| Common carp     |              | 4050 | 2625 | 1550 |           |   |   |   |              |     |    |      | 8,225  | 17.0  |
| Emerald shiner  |              |      |      |      |           |   |   |   | 150          | 162 | 45 | 1185 | 1,542  | 3.2   |
| River shiner    |              |      |      |      |           |   |   |   |              |     |    | 11   | 11     | 0.02  |
| Rosyface shiner |              |      |      |      |           |   |   |   |              |     |    | 2    | 2      | 0.004 |
| Spotfin shiner  |              |      |      |      |           |   |   |   |              | 4   |    | 10   | 14     | 0.03  |
| Sand shiner     |              |      |      |      |           |   |   |   |              |     |    | 3    | 3      | 0.006 |
| Mimic shiner    |              |      |      |      |           |   |   |   | 9            | 80  | 5  | 186  | 280    | 0.6   |
| UID Notropis    |              |      |      |      |           |   |   |   |              |     |    | 2    | 2      | 0.004 |
| Creek chub      |              |      |      |      |           |   |   |   |              |     |    | 2    | 2      | 0.004 |
| River redhorse  |              | 880  |      |      |           |   |   |   |              |     |    |      | 880    | 1.8   |
| Black redhorse  |              |      | 318  |      |           |   |   |   |              |     |    |      | 318    | 0.7   |
| White bass      |              | 230  |      |      |           |   |   |   |              |     |    |      | 230    | 0.5   |
| Bluegill        | 29           |      |      |      |           |   |   |   | 127          |     |    |      | 156    | 0.3   |
| Smallmouth bass | 1804         |      |      | 210  |           |   |   |   | 299          |     |    |      | 2,313  | 4.8   |
| Spotted bass    | 177          |      |      |      |           |   |   |   | 330          |     |    |      | 507    | 1.0   |
| Sauger          |              | 168  |      |      |           |   |   |   | 163          |     |    |      | 331    | 0.7   |
| Freshwater drum |              |      |      |      |           |   |   |   | 685          |     |    |      | 685    | 1.4   |
| Total           |              |      |      |      |           |   |   |   |              |     |    |      | 48,412 |       |

\*Gill nets were not set due to high water.

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Table A9.3.16. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, May 17-19, 1983.

| Species            | Electroshock |      |      |      | Gill Net |   |   |   | Minnow Shock |     |     |    | Total  |       |
|--------------------|--------------|------|------|------|----------|---|---|---|--------------|-----|-----|----|--------|-------|
|                    | 1            | 2    | 3    | 4    | 1        | 2 | 3 | 4 | 1            | 2   | 3   | 4  | Weight | %     |
| Longnose gar       |              |      |      |      | 1175     |   |   |   |              |     |     |    | 1,175  | 4.4   |
| Gizzard shad       | 1171         | 7704 | 2096 | 2813 |          |   |   |   |              |     |     |    | 13,784 | 51.3  |
| Common carp        |              | 1450 |      |      |          |   |   |   |              |     |     |    | 1,450  | 5.4   |
| Golden shiner      | 22           |      |      |      |          |   |   |   |              |     |     |    | 22     | 0.08  |
| Emerald shiner     | 20           | 52   | 10   | 44   |          |   |   |   | 67           | 66  | 104 | 89 | 452    | 1.7   |
| River shiner       |              |      |      | 2    |          |   |   |   |              | 8   |     | 10 | 20     | 0.07  |
| Spotfin shiner     | 1            | 5    |      | 4    |          |   |   |   | 2            | 14  | 7   | 9  | 42     | 0.2   |
| Mimic shiner       |              |      |      |      |          |   |   |   |              | 0.3 |     | 1  | 1      | 0.004 |
| Steelcolor shiner  |              |      |      |      |          |   |   |   |              | 3   | 2   | 1  | 6      | 0.02  |
| Bluntnose minnow   |              |      | 2    | 6    |          |   |   |   | 3            | 3   | 2   |    | 16     | 0.06  |
| Smallmouth buffalo |              |      |      | 818  |          |   |   |   | 2580         |     |     |    | 3,398  | 12.6  |
| Spotted sucker     | 1194         |      |      |      |          |   |   |   |              |     |     |    | 1,194  | 4.4   |
| Yellow bullhead    | 190          |      |      |      |          |   |   |   |              |     |     |    | 190    | 0.7   |
| Channel catfish    | 25           | 607  | 25   |      |          |   |   |   |              |     |     |    | 657    | 2.4   |
| White bass         |              |      |      |      | 544      |   |   |   |              |     |     |    | 544    | 2.0   |
| Pumpkinseed        | 40           |      | 24   | 21   |          |   |   |   | 10           |     |     |    | 95     | 0.4   |
| Bluegill           | 320          | 161  | 26   | 66   |          |   |   |   | 96           |     |     |    | 669    | 2.5   |
| Longear sunfish    | 282          | 179  | 107  | 32   |          |   |   |   | 78           |     |     |    | 678    | 2.5   |
| Smallmouth bass    |              |      |      |      |          |   |   |   | 50           |     |     |    | 50     | 0.2   |
| Spotted bass       | 150          |      | 111  |      |          |   |   |   |              |     |     |    | 261    | 1.0   |
| Largemouth bass    | 65           | 136  |      |      |          |   |   |   | 30           |     |     |    | 231    | 0.9   |
| Sauger             |              |      |      |      | 434      |   |   |   | 700          |     |     |    | 1,371  | 5.1   |
| Freshwater drum    |              |      |      | 220  |          |   |   |   | 337          |     |     |    | 557    | 2.1   |
| Total              |              |      |      |      |          |   |   |   |              |     |     |    | 26,863 |       |

485

Table A9.3.17. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, June 21-23, 1983.

| Species             | Electroshock |      |      |      | Gill Net |     |     |     | Minnow Shock |    |     |     | Total  |        |
|---------------------|--------------|------|------|------|----------|-----|-----|-----|--------------|----|-----|-----|--------|--------|
|                     | 1            | 2    | 3    | 4    | 1        | 2   | 3   | 4   | 1            | 2  | 3   | 4   | Weight | %      |
| Longnose gar        | 185          | 355  |      |      |          |     |     |     |              |    |     |     | 540    | 1.5    |
| Gizzard shad        | 9050         | 4126 | 3796 | 6732 | 227      | 339 | 90  |     |              |    |     |     | 24,360 | 65.6   |
| Emerald shiner      | 1            | 34   | 6    |      |          |     |     |     | 32           | 99 | 74  | 206 | 452    | 1.2    |
| River shiner        |              |      |      |      |          |     |     |     |              |    |     | 24  | 24     | 0.06   |
| Spotfin shiner      | 3            |      |      |      |          |     |     |     |              |    |     | 2   | 5      | 0.01   |
| Sand shiner         |              |      |      |      |          |     |     |     |              |    |     | 0.3 | 0.3    | 0.0008 |
| Mimic shiner        |              |      |      |      |          |     |     |     |              |    |     | 16  | 16     | 0.04   |
| UID <i>Notropis</i> |              |      |      |      |          |     |     |     |              |    | 2   |     | 2      | 0.005  |
| Northern hogsucker  |              |      |      |      |          |     |     |     |              |    |     | 60  | 60     | 0.2    |
| Silver redhorse     |              | 354  |      |      |          |     |     |     |              |    |     |     | 354    | 1.0    |
| Golden redhorse     |              | 471  |      |      |          |     |     |     |              |    |     | 487 | 958    | 2.6    |
| Shorthead redhorse  |              | 498  |      | 340  |          | 582 |     | 265 |              |    |     |     | 1,685  | 4.5    |
| Channel catfish     | 606          |      |      |      | 465      | 214 | 904 |     |              |    |     |     | 2,189  | 5.9    |
| Flathead catfish    |              |      |      |      |          |     |     |     | 136          |    |     |     | 136    | 0.4    |
| White bass          | 230          |      |      |      |          |     |     |     |              |    |     |     | 230    | 0.6    |
| Rock bass           |              |      |      |      |          | 31  |     |     |              |    |     |     | 31     | 0.08   |
| Bluegill            |              |      |      | 6    |          |     |     |     |              |    |     | 61  | 67     | 0.2    |
| Longear sunfish     |              |      |      | 40   |          |     |     |     |              |    |     |     | 40     | 0.1    |
| Smallmouth bass     | 252          | 52   | 206  | 2664 | 64       |     |     |     |              |    |     | 353 | 3,591  | 9.7    |
| Spotted bass        | 81           |      |      | 116  | 96       |     |     |     |              |    |     |     | 293    | 0.8    |
| Largemouth bass     |              |      |      |      |          |     |     |     |              |    |     | 178 | 178    | 0.5    |
| White crappie       |              |      |      | 56   |          | 87  |     |     |              |    |     |     | 143    | 0.4    |
| Sauger              |              | 102  |      |      |          | 409 |     |     |              |    | 168 | 210 | 889    | 2.4    |
| Walleye             |              |      |      |      | 398      |     |     |     |              |    |     |     | 398    | 1.1    |
| Freshwater drum     |              |      | 44   |      | 440      |     |     |     |              |    |     |     | 484    | 1.3    |
| Total               |              |      |      |      |          |     |     |     |              |    |     |     | 37,125 |        |

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Table A9.3.18. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, June 21-23, 1983.

| Species            | Electroshock |     |      |      | Gill Net |     |      |      | Minnow Shock |   |    |     | Total  |      |
|--------------------|--------------|-----|------|------|----------|-----|------|------|--------------|---|----|-----|--------|------|
|                    | 1            | 2   | 3    | 4    | 1        | 2   | 3    | 4    | 1            | 2 | 3  | 4   | Weight | %    |
| Gizzard shad       | 1106         | 409 | 576  | 1196 | 490      |     |      | 128  |              |   |    |     | 3,905  | 22.3 |
| Common carp        | 525          |     |      |      |          |     |      |      | 1490         |   |    |     | 2,015  | 11.5 |
| Emerald shiner     |              |     |      | 4    |          |     |      |      |              |   | 19 | 16  | 39     | 0.2  |
| River shiner       |              |     |      |      |          |     |      |      |              |   |    | 5   | 5      | 0.03 |
| Steelcolor shiner  |              |     |      |      |          |     |      |      |              |   |    | 4   | 4      | 0.02 |
| Quillback          |              |     |      |      | 717      |     |      |      |              |   |    |     | 717    | 4.1  |
| Smallmouth buffalo |              |     | 1250 |      |          |     |      |      |              |   |    |     | 1,250  | 7.2  |
| Channel catfish    |              |     |      |      | 2462     | 142 |      | 3819 |              |   |    |     | 6,423  | 36.8 |
| Flathead catfish   |              |     |      |      | 790      |     |      |      |              |   |    |     | 790    | 4.5  |
| Pumpkinseed        | 25           | 24  |      |      |          |     |      |      |              |   |    |     | 49     | 0.3  |
| Bluegill           | 32           | 45  |      | 43   |          |     |      |      |              |   |    |     | 120    | 0.7  |
| Spotted bass       |              |     |      |      |          |     |      |      |              |   |    | 42  | 42     | 0.2  |
| Largemouth bass    | 424          |     |      |      |          |     |      |      |              |   |    | 250 | 674    | 3.9  |
| Freshwater drum    |              |     |      |      |          | 129 | 1111 | 202  |              |   |    |     | 1,442  | 8.3  |
| Total              |              |     |      |      |          |     |      |      |              |   |    |     | 17,475 |      |

Table A9.3.19. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, July 19-22, 1983.

| Species            | Electroshock |     |    |     | Gill Net |     |      |      | Minnow Shock |    |    |   | Total  |       |
|--------------------|--------------|-----|----|-----|----------|-----|------|------|--------------|----|----|---|--------|-------|
|                    | 1            | 2   | 3  | 4   | 1        | 2   | 3    | 4    | 1            | 2  | 3  | 4 | Weight | %     |
| Longnose gar       |              |     |    |     | 590      |     | 258  |      |              |    |    |   | 848    | 2.3   |
| Skipjack herring   |              |     |    |     | 245      |     |      |      |              |    |    |   | 245    | 0.7   |
| Gizzard shad       | 407          | 544 |    | 859 |          | 212 | 401  | 200  |              |    |    |   | 2,623  | 7.2   |
| Emerald shiner     | 3            |     | 68 | 41  |          |     |      |      | 1            | 10 | 29 | 1 | 153    | 0.4   |
| River shiner       |              |     | 9  |     |          |     |      |      |              |    | 6  |   | 15     | 0.04  |
| Spotfin shiner     | 3            |     | 7  |     |          |     |      |      | 7            |    |    |   | 17     | 0.05  |
| Mimic shiner       |              |     | 2  |     |          |     |      |      |              | 1  |    |   | 3      | 0.008 |
| Quillback          |              |     |    |     |          |     | 720  |      |              |    |    |   | 720    | 2.0   |
| Northern hogsucker |              |     | 49 | 100 |          |     |      |      |              |    |    |   | 149    | 0.4   |
| Smallmouth buffalo |              |     |    |     |          |     |      | 911  |              |    |    |   | 911    | 2.5   |
| Silver redhorse    |              |     |    |     |          | 672 | 1144 |      |              |    |    |   | 1,816  | 5.0   |
| Golden redhorse    |              |     |    |     | 2856     |     | 794  | 422  |              |    |    |   | 4,072  | 11.2  |
| Shorthead redhorse |              |     |    |     | 2760     |     | 1592 | 720  |              |    |    |   | 5,072  | 14.0  |
| Channel catfish    |              |     |    |     | 4104     | 186 | 3854 | 1135 |              |    |    |   | 9,279  | 25.6  |
| Flathead catfish   |              |     |    |     | 459      |     |      | 2329 |              |    |    |   | 2,788  | 7.7   |
| White bass         |              |     |    |     | 1181     |     |      | 540  |              |    |    |   | 1,721  | 4.7   |
| Rock bass          |              |     |    |     |          | 147 |      |      |              |    |    |   | 147    | 0.4   |
| Bluegill           |              |     | 13 |     |          |     |      |      |              |    |    |   | 13     | 0.04  |
| Longear sunfish    | 19           |     |    | 82  |          | 37  |      |      |              |    |    |   | 138    | 0.4   |
| Smallmouth bass    | 404          |     |    | 92  |          |     |      |      |              |    |    |   | 496    | 1.4   |
| Spotted bass       |              |     |    |     |          |     | 138  |      |              |    |    |   | 138    | 0.4   |
| White crappie      |              |     |    |     | 313      |     | 100  | 81   |              |    |    |   | 494    | 1.4   |
| Logperch           |              |     |    | 17  |          |     |      |      |              |    |    |   | 17     | 0.05  |
| Sauger             |              |     |    |     |          |     |      | 791  |              |    |    |   | 791    | 2.2   |
| Freshwater drum    |              |     |    |     | 1301     | 504 |      | 1840 |              |    |    |   | 3,645  | 10.0  |
| Total              |              |     |    |     |          |     |      |      |              |    |    |   | 36,311 |       |

Table A9.3.20. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, July 19-22, 1983.

| Species            | Electroshock |     |     |     | Gill Net |      |      |      | Minnow Shock |   |     |   | Total           |        |
|--------------------|--------------|-----|-----|-----|----------|------|------|------|--------------|---|-----|---|-----------------|--------|
|                    | 1            | 2   | 3   | 4   | 1        | 2    | 3    | 4    | 1            | 2 | 3   | 4 | Weight          | %      |
| Skipjack herring   |              |     |     |     | 202      |      | 584  |      |              |   |     |   | 786             | 2.7    |
| Gizzard shad       | 470          | 533 | 336 |     | 476      | 376  | 66   | 1141 | 142          |   |     |   | 3,540           | 12.1   |
| Emerald shiner     |              |     |     |     |          |      |      |      | 3            |   |     |   | 3               | 0.01   |
| Spotfin shiner     |              |     |     |     |          |      |      |      |              | 3 |     | 3 | 6               | 0.02   |
| Steelcolor shiner  |              |     |     |     |          |      |      |      | 3            |   |     |   | 3               | 0.01   |
| Bluntnose minnow   |              |     |     |     |          |      |      |      | 0.2          |   |     |   | 0.2             | 0.0007 |
| UID Cyprinidae     |              |     |     |     |          |      |      |      | 2            |   |     |   | 2               | 0.006  |
| River carpsucker   |              |     |     |     | 456      |      |      |      |              |   |     |   | 456             | 1.6    |
| Quillback          |              |     |     |     |          |      |      | 460  |              |   |     |   | 460             | 1.6    |
| Smallmouth buffalo |              |     |     |     | 1871     |      |      |      |              |   |     |   | 1,871           | 6.4    |
| Yellow bullhead    |              | 196 |     |     |          |      |      |      |              |   |     |   | 196             | 0.7    |
| Brown bullhead     |              | 179 |     |     |          |      |      |      |              |   |     |   | 401             | 1.4    |
| Channel catfish    |              |     |     |     | 412      | 2333 | 1601 | 5604 | 0.3          |   |     |   | 9,950.3         | 33.9   |
| Flathead catfish   |              |     |     |     |          |      | 4050 |      |              |   |     |   | 4,050           | 13.8   |
| Rock bass          |              |     |     |     |          |      | 62   |      |              |   |     |   | 62              | 0.2    |
| Bluegill           | 345          | 121 | 79  | 344 |          |      |      |      |              |   | 159 |   | 1,048           | 3.6    |
| Longear sunfish    |              |     |     |     |          |      |      |      |              |   | 128 |   | 128             | 0.4    |
| Redear sunfish     |              |     |     |     |          |      |      |      |              |   | 41  |   | 41              | 0.1    |
| Spotted bass       |              | 273 | 56  |     |          |      |      |      |              |   | 214 |   | 543             | 1.9    |
| Largemouth bass    |              |     |     | 929 |          |      |      |      |              |   |     |   | 929             | 3.2    |
| White crappie      |              |     |     |     | 33       |      |      |      |              |   |     |   | 33              | 0.1    |
| Black crappie      |              |     |     |     | 52       |      |      |      |              |   |     |   | 52              | 0.2    |
| Logperch           |              |     |     |     |          |      |      |      |              |   | 10  |   | 10              | 0.03   |
| Sauger             |              |     |     |     | 368      | 290  | 204  | 651  |              |   |     |   | 1,513           | 5.2    |
| Freshwater drum    |              |     |     |     | 1080     | 64   | 566  | 1518 |              |   |     |   | 3,228           | 11.0   |
| <b>Total</b>       |              |     |     |     |          |      |      |      |              |   |     |   | <b>29,311.5</b> |        |

Table A9.3.21. Total weight (g) and relative abundance of fish species captured at Upper Gallipolis (RM 29-31), Kanawha River, July 19-22, 1983.

| Species            | Electroshock |     |     |      | Gill Net |      |       |      | Minnow Shock |     |   |    | Total Weight | %      |
|--------------------|--------------|-----|-----|------|----------|------|-------|------|--------------|-----|---|----|--------------|--------|
|                    | 1            | 2   | 3   | 4    | 1        | 2    | 3     | 4    | 1            | 2   | 3 | 4  |              |        |
| Longnose gar       |              |     |     | 796  |          |      | 838   | 2390 |              |     |   |    | 4,024        | 5.2    |
| Gizzard shad       | 1033         | 767 | 78  | 280  | 1416     | 299  | 1060  | 1781 |              |     |   |    | 6,714        | 8.7    |
| Common carp        |              |     |     | 2550 | 1425     | 4500 | 2000  |      |              |     |   |    | 10,475       | 13.6   |
| Emerald shiner     |              | 4   |     |      |          |      |       |      | 0.1          | 0.4 |   | 38 | 42.5         | 0.06   |
| River shiner       | 38           |     | 5   |      |          |      |       |      | 13           |     |   |    | 56           | 0.07   |
| Spotfin shiner     | 3            |     |     | 2    |          |      |       |      | 6            | 4   | 3 |    | 18           | 0.02   |
| Steelcolor shiner  | 5            |     |     |      |          |      |       |      |              |     |   |    | 5            | 0.007  |
| Bluntnose minnow   |              |     |     |      |          |      |       |      | 5            |     |   |    | 5            | 0.007  |
| Notropis spp.      |              |     |     |      |          |      |       |      | 0.2          |     |   |    | 0.2          | 0.0003 |
| Quillback          |              |     |     |      |          |      | 868   | 632  |              |     |   |    | 1,500        | 2.0    |
| Northern hogsucker |              |     |     |      |          |      |       | 321  |              |     |   |    | 321          | 0.4    |
| Smallmouth buffalo |              |     |     |      |          | 863  | 3139  | 1438 |              |     |   |    | 5,440        | 7.1    |
| Silver redhorse    |              |     |     |      | 1144     | 1465 |       | 804  |              |     |   |    | 3,413        | 4.4    |
| Black redhorse     |              |     |     |      | 350      |      | 288   |      |              |     |   |    | 638          | 0.8    |
| Golden redhorse    |              |     |     |      | 1526     | 1187 | 614   | 1667 |              |     |   |    | 4,994        | 6.5    |
| Shorthead redhorse |              |     |     |      | 78       |      |       |      |              |     |   |    | 78           | 0.1    |
| Channel catfish    |              |     |     |      | 8773     | 2696 | 10930 | 7764 |              |     |   |    | 30,163       | 39.3   |
| Flathead catfish   |              |     |     |      |          |      | 790   | 726  |              |     |   |    | 1,516        | 2.0    |
| White bass         |              |     |     |      |          |      | 333   | 1913 |              |     |   |    | 2,246        | 2.9    |
| Bluegill           |              |     |     | 64   |          |      |       |      |              |     |   |    | 64           | 0.08   |
| Spotted bass       | 25           |     | 217 |      | 184      |      | 154   |      |              |     |   |    | 580          | 0.8    |
| Largemouth bass    |              | 639 |     | 762  |          |      |       |      |              |     |   |    | 1,401        | 1.8    |
| Freshwater drum    |              |     |     |      | 415      | 611  | 808   | 1246 |              |     |   |    | 3,080        | 4.0    |
| Total              |              |     |     |      |          |      |       |      |              |     |   |    | 76,774       |        |

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Table A9.3.22. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, August 22-24, 1983.

| Species            | Electroshock |     |    |     | Gill Net |     |      |    | Minnow Shock |   |    |    | Total  |      |
|--------------------|--------------|-----|----|-----|----------|-----|------|----|--------------|---|----|----|--------|------|
|                    | 1            | 2   | 3  | 4   | 1        | 2   | 3    | 4* | 1            | 2 | 3  | 4  | Weight | %    |
| Longnose gar       |              |     |    |     |          | 370 |      |    |              |   |    |    | 370    | 3.5  |
| Gizzard shad       | 485          | 340 |    | 420 |          |     | 747  |    |              |   |    |    | 1,992  | 19.0 |
| Mooneye            |              |     |    |     |          | 246 |      |    |              |   |    |    | 246    | 2.4  |
| Emerald shiner     |              |     | 11 | 2   |          |     |      |    |              |   | 29 | 63 | 105    | 1.0  |
| River shiner       |              |     |    |     |          |     |      |    |              |   | 14 | 9  | 23     | 0.2  |
| Spotfin shiner     |              |     |    |     |          |     |      |    |              |   | 2  | 3  | 5      | 0.05 |
| Mimic shiner       |              |     |    |     |          |     |      |    |              |   | 2  | 7  | 9      | 0.9  |
| Bluntnose minnow   |              |     |    |     |          |     |      |    |              |   | 1  | 1  | 2      | 0.2  |
| Notropis spp.      |              |     |    |     |          |     |      |    |              |   |    | 1  | 1      | 0.01 |
| Silver redhorse    |              |     |    |     |          |     | 423  |    |              |   |    |    | 423    | 4.0  |
| Black redhorse     |              |     |    |     |          |     | 247  |    |              |   |    |    | 247    | 2.4  |
| Golden redhorse    |              |     |    |     |          | 691 | 428  |    |              |   |    |    | 1,119  | 10.7 |
| Shorthead redhorse |              |     |    |     | 505      |     | 698  |    |              |   |    |    | 1,203  | 11.4 |
| Channel catfish    |              |     |    |     | 1740     | 272 | 1090 |    |              |   |    |    | 3,102  | 29.7 |
| Rock bass          |              |     |    |     |          | 60  | 157  |    |              |   |    |    | 217    | 2.1  |
| Bluegill           |              |     | 18 |     |          |     |      |    | 15           |   |    |    | 33     | 0.3  |
| Smallmouth bass    |              |     |    |     |          |     | 94   |    |              |   | 2  |    | 96     | 0.9  |
| Spotted bass       | 150          |     |    |     |          |     |      |    |              |   |    |    | 150    | 1.4  |
| White crappie      |              |     |    |     |          | 180 | 162  |    |              |   |    |    | 342    | 3.3  |
| Sauger             |              |     |    |     | 108      |     |      |    |              |   |    |    | 108    | 1.0  |
| Freshwater drum    |              |     |    |     | 669      |     |      |    |              |   |    |    | 669    | 6.4  |
| Total              |              |     |    |     |          |     |      |    |              |   |    |    | 10,462 |      |

\*Gill net #4 was lost.

Table A9.3.23. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, August 22-24, 1983.

| Species            | Electroshock |      |     |      | Gill Net |      |      |      | Minnow Shock |     |    |     | Total  |       |
|--------------------|--------------|------|-----|------|----------|------|------|------|--------------|-----|----|-----|--------|-------|
|                    | 1            | 2    | 3   | 4    | 1        | 2    | 3    | 4    | 1            | 2   | 3  | 4   | Weight | %     |
| Longnose gar       |              |      |     |      |          |      | 1375 |      |              |     |    |     | 1,375  | 2.6   |
| Gizzard shad       | 517          | 1419 | 647 |      | 1323     | 2587 | 1196 | 5388 |              |     |    |     | 13,077 | 24.7  |
| Common carp        |              | 1500 |     | 1450 | 2400     |      | 3625 | 1525 |              |     |    |     | 10,500 | 19.9  |
| Emerald shiner     |              | 1    |     | 2    |          |      |      |      | 5            | 6   |    | 1   | 15     | 0.03  |
| River shiner       |              |      |     |      |          |      |      |      | 1            | 1   |    |     | 2      | 0.004 |
| Spotfin shiner     |              |      |     |      |          |      |      |      | 3            | 9   | 15 | 0.4 | 27.4   | 0.05  |
| Steelcolor shiner  |              |      |     |      |          |      |      |      |              | 0.3 |    | 0.3 | 0.6    | 0.001 |
| Bluntnose minnow   |              |      |     | 1    |          |      |      |      | 11           | 16  |    | 13  | 41     | 0.08  |
| Notropis spp.      |              |      |     |      |          |      |      |      |              |     |    | 1   | 1      | 0.002 |
| River carpsucker   |              |      |     |      | 330      |      |      |      |              |     |    |     | 330    | 0.6   |
| Smallmouth buffalo |              |      |     |      |          | 720  |      | 1973 |              |     |    |     | 2,693  | 5.1   |
| Yellow bullhead    |              |      | 83  |      |          |      |      |      |              |     |    |     | 83     | 0.2   |
| Channel catfish    |              |      |     |      | 2224     | 2150 | 3007 | 5060 |              |     |    |     | 12,441 | 23.5  |
| Flathead catfish   |              |      |     |      |          | 463  |      |      |              |     |    |     | 463    | 0.9   |
| White bass         |              |      |     | 25   |          |      |      | 246  |              |     |    |     | 271    | 0.5   |
| Bluegill           | 434          | 22   | 580 | 342  |          |      |      |      |              |     |    |     | 1,378  | 2.6   |
| Longear sunfish    |              |      | 186 |      |          |      |      |      |              |     |    |     | 186    | 0.4   |
| Redear sunfish     | 88           |      |     |      |          |      |      |      | 2            |     |    |     | 90     | 0.2   |
| Spotted bass       |              |      |     |      | 44       |      | 155  | 173  |              |     |    |     | 372    | 0.7   |
| White crappie      |              |      |     |      | 25       | 178  | 141  | 617  |              |     |    |     | 961    | 1.8   |
| Black crappie      |              |      |     |      | 40       | 338  |      | 241  |              |     |    |     | 619    | 1.2   |
| Logperch           |              |      |     |      |          |      |      |      |              |     | 4  |     | 4      | 0.008 |
| Sauger             |              |      |     |      | 1614     | 811  | 939  | 185  |              |     |    |     | 3,549  | 6.7   |
| Freshwater drum    |              |      |     |      | 1319     | 871  | 932  | 1287 |              |     |    |     | 4,409  | 8.3   |
| Total              |              |      |     |      |          |      |      |      |              |     |    |     | 52,888 |       |

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Table A9.3.24. Total weight (g) and relative abundance of fish species captured at Upper Winfield (RM 66-67), Kanawha River, September 12-14, 1983.

| Species            | Electroshock |      |      |     | Gill Net |      |      |      | Minnow Shock |     |     |     | Total  |       |
|--------------------|--------------|------|------|-----|----------|------|------|------|--------------|-----|-----|-----|--------|-------|
|                    | 1            | 2    | 3    | 4   | 1        | 2    | 3    | 4    | 1            | 2   | 3   | 4   | Weight | %     |
| Longnose gar       |              |      |      |     |          | 376  | 676  |      |              |     |     |     | 1,052  | 3.5   |
| American eel       |              |      |      |     |          |      |      |      | 142          |     |     |     | 142    | 0.5   |
| Skipjack herring   |              |      |      |     | 147      | 938  | 415  |      |              |     |     |     | 1,500  | 5.0   |
| Gizzard shad       | 184          | 123  | 709  | 600 | 384      | 110  | 854  | 165  |              |     | 194 | 151 | 3,474  | 11.6  |
| Common carp        |              |      | 2750 |     |          |      |      |      |              |     |     |     | 2,750  | 9.2   |
| Streamline chub    |              |      |      |     |          |      |      |      |              |     | 3   |     | 3      | 0.01  |
| Emerald shiner     |              |      |      |     |          |      |      |      | 56           | 67  | 23  | 53  | 199    | 0.7   |
| River shiner       |              |      |      |     |          |      |      |      |              |     | 4   | 8   | 12     | 0.04  |
| Spotfin shiner     |              |      |      |     |          |      |      |      | 17           |     | 4   | 7   | 28     | 0.09  |
| Sand shiner        |              |      |      |     |          |      |      |      |              |     |     | 1   | 1      | 0.003 |
| Mimic shiner       |              |      |      |     |          |      |      |      | 4            |     | 23  | 21  | 48     | 0.2   |
| Steelcolor shiner  |              |      |      |     |          |      |      |      | 2            |     |     | 1   | 3      | 0.01  |
| Bluntnose minnow   |              |      |      |     |          |      |      |      |              |     | 2   | 4   | 6      | 0.02  |
| Notropis sp.       |              |      |      |     |          |      |      |      |              |     |     | 2   | 2      | 0.01  |
| UID Cyprinidae     |              |      |      |     |          |      |      |      | 0.4          |     |     |     | 0.4    | 0.001 |
| River carpsucker   |              | 1052 |      |     |          |      |      |      |              |     |     |     | 1,052  | 3.5   |
| Northern hogsucker |              |      | 96   |     |          |      |      |      |              |     | 80  |     | 176    | 0.6   |
| Smallmouth buffalo |              |      |      |     |          | 1148 |      |      |              |     |     |     | 1,148  | 3.8   |
| Silver redhorse    |              |      |      |     | 204      |      | 1268 | 692  |              |     |     |     | 2,164  | 7.2   |
| Black redhorse     |              |      |      |     |          |      | 304  |      |              |     |     | 257 | 561    | 1.9   |
| Golden redhorse    |              |      |      |     | 202      | 552  | 1471 | 1063 |              |     |     | 8   | 3,296  | 11.0  |
| Shorthead redhorse |              |      | 215  |     | 542      |      | 2370 | 244  |              |     |     |     | 3,371  | 11.3  |
| Channel catfish    |              |      |      |     | 2105     | 1847 | 373  | 1053 |              |     |     |     | 5,378  | 18.0  |
| Flathead catfish   |              |      |      |     |          |      |      |      | 100          |     |     |     | 100    | 0.3   |
| Brook silversides  |              |      |      |     |          |      |      |      |              |     |     | 1   | 1      | 0.003 |
| White bass         |              |      |      |     |          |      |      | 428  |              |     |     |     | 428    | 1.4   |
| Rock bass          |              |      |      |     |          |      |      |      | 60           |     |     |     | 60     | 0.2   |
| Bluegill           |              |      |      |     |          |      |      |      | 52           |     |     | 19  | 71     | 0.2   |
| Longear sunfish    |              |      |      |     |          |      |      |      | 245          |     |     | 44  | 289    | 1.0   |
| Smallmouth bass    |              | 579  | 86   |     |          |      |      |      | 201          | 130 | 158 |     | 1,154  | 3.9   |
| Spotted bass       |              |      |      |     |          |      | 175  | 142  |              |     |     | 163 | 480    | 1.6   |
| Bluebreast darter  |              |      |      |     |          |      |      |      |              |     |     |     | 2      | 0.01  |
| Banded darter      |              |      |      |     |          |      |      |      |              |     | 1   | 2   | 3      | 0.01  |
| Etheostoma spp     |              |      |      |     |          |      |      |      | 1            |     |     |     | 1      | 0.003 |
| Logperch           |              |      |      |     |          |      |      |      | 42           |     | 18  |     | 60     | 0.2   |
| Walleye            |              |      |      |     | 456      |      |      |      |              |     |     |     | 456    | 1.5   |
| Freshwater drum    |              |      |      |     |          |      |      | 425  |              |     |     |     | 425    | 1.4   |
| Total              |              |      |      |     |          |      |      |      |              |     |     |     | 29,896 |       |

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Table A9.3.25. Total weight (g) and relative abundance of fish species captured at Lower Winfield (RM 33-34), Kanawha River, September 12-14, 1983.

| Species            | Electroshock |     |     |      | Gill Net |      |      |      | Minnow Shock |     |    |    | Total    |       |
|--------------------|--------------|-----|-----|------|----------|------|------|------|--------------|-----|----|----|----------|-------|
|                    | 1            | 2   | 3   | 4    | 1        | 2    | 3    | 4    | 1            | 2   | 3  | 4  | Weight   | %     |
| Gizzard shad       |              | 350 |     | 312  | 2754     | 1484 | 507  | 2565 |              |     |    |    | 7,972    | 16.6  |
| Common carp        | 1200         |     | 671 | 1700 |          |      |      | 1350 |              |     |    |    | 4,921    | 10.2  |
| Silver chub        |              |     |     |      |          |      |      |      |              |     | 4  |    | 4        | 0.01  |
| Emerald shiner     |              |     |     | 1    |          |      |      |      | 3            | 3   | 5  | 8  | 20       | 0.04  |
| River shiner       |              |     |     | 1    |          |      |      |      |              |     |    |    | 1        | 0.002 |
| Spotfin shiner     |              |     | 4   | 3    |          |      |      |      |              | 1   | 60 | 25 | 93       | 0.2   |
| Mimic shiner       |              |     |     |      |          |      |      |      |              | 0.2 |    | 7  | 7.2      | 0.01  |
| Steelcolor shiner  |              |     |     |      |          |      |      |      |              |     | 14 | 2  | 16       | 0.03  |
| Bluntnose minnow   |              |     |     | 11   |          |      |      |      |              | 7   | 1  | 7  | 26       | 0.05  |
| Smallmouth buffalo |              |     |     |      |          | 549  |      | 5813 |              |     |    |    | 6,362    | 13.2  |
| Spotted sucker     |              |     |     |      | 139      |      |      | 1180 |              |     |    |    | 1,319    | 2.7   |
| Golden redhorse    |              |     |     |      |          |      |      |      |              |     | 7  |    | 7        | 0.01  |
| Yellow bullhead    | 480          |     | 138 |      |          |      |      |      |              |     |    |    | 618      | 1.3   |
| Channel catfish    |              |     |     |      | 5794     | 5114 | 3559 | 2296 |              | 2   |    |    | 16,765   | 34.9  |
| Flathead catfish   |              |     |     |      | 1420     | 372  |      | 831  |              |     |    |    | 2,623    | 5.5   |
| White bass         |              |     |     |      | 347      |      | 37   | 39   |              |     |    |    | 423      | 0.9   |
| Pumpkinseed        |              |     | 20  |      |          |      |      |      |              |     |    |    | 20       | 0.04  |
| Bluegill           | 588          | 602 | 524 | 566  |          |      |      |      | 9            |     | 9  | 8  | 2,306    | 4.8   |
| Longear sunfish    | 29           | 66  | 103 | 54   |          |      |      |      |              |     |    |    | 252      | 0.5   |
| Smallmouth bass    |              |     |     | 14   |          |      |      |      |              |     |    |    | 14       | 0.03  |
| Largemouth bass    | 18           |     |     |      |          |      |      |      |              |     |    |    | 18       | 0.04  |
| White crappie      |              |     |     |      | 330      | 65   |      | 313  |              |     |    |    | 708      | 1.5   |
| Sauger             |              |     |     |      | 869      | 491  |      |      |              |     |    |    | 1,360    | 2.8   |
| Freshwater drum    |              |     |     |      | 860      | 91   | 910  | 317  |              |     |    |    | 2,178    | 4.5   |
| Total              |              |     |     |      |          |      |      |      |              |     |    |    | 48,033.2 |       |

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Table A9.4.1. Stomach contents of gizzard shad taken from the Kanawha River, October 1982-September 1983.

| Month | No. examined |       | Stomach contents (percent of volume) |                |                |                   |              |
|-------|--------------|-------|--------------------------------------|----------------|----------------|-------------------|--------------|
|       | With food    | Empty | Inorganic                            | Detritus       | Diatoms        | Filamentous Algae | Higher plant |
| Oct   | 55           | 5     | 42.8                                 | 56.7<br>(99.0) | 0.6<br>(1.0)   | ---               | --           |
| Nov   | 40           | 0     | 37.0                                 | 58.5<br>(92.9) | 4.2<br>(6.7)   | 0.3<br>(0.5)      | --           |
| Dec   | 22           | 2     | 39.9                                 | 52.2<br>(86.9) | 6.9<br>(11.5)  | 1.0<br>(1.7)      | --           |
| Feb   | 3            | 0     | 8.3                                  | 91.7<br>(100)  | ---            | ---               | --           |
| Mar   | 43           | 0     | 26.4                                 | 54.3<br>(73.8) | 19.0<br>(25.8) | 0.3<br>(0.4)      | --           |
| Apr   | 40           | 10    | 37.4                                 | 54.9<br>(87.7) | 4.9<br>(7.8)   | 2.8<br>(4.5)      | --           |
| May   | 40           | 0     | 42.1                                 | 47.8<br>(82.6) | 6.0<br>(10.4)  | ---               | 4.1<br>(7.1) |
| June  | 30           | 0     | 44.0                                 | 53.2<br>(95.0) | 2.8<br>(5.0)   | ---               | --           |
| July  | 58           | 0     | 51.0                                 | 48.8<br>(99.6) | 0.2<br>(0.4)   | ---               | --           |
| Aug   | 35           | 0     | 47.2                                 | 51.8<br>(98.1) | 1.0<br>(1.9)   | ---               | --           |
| Sept  | 40           | 0     | 44.8                                 | 54.8<br>(99.3) | 0.4<br>(0.7)   | 0.1<br>( $<0.1$ ) | --           |

( ) indicates percentage excluding inorganic fraction

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Table A9.4.2. Stomach contents of emerald shiners taken from the Kanawha River, October 1982 - September 1983.

| Month | No. examined |       | Stomach contents            |        |                         |
|-------|--------------|-------|-----------------------------|--------|-------------------------|
|       | With food    | Empty | Food item                   | Number | Percent of total volume |
| Oct.  | 100          | 15    | Oligochaeta                 | 2      | 0.9                     |
|       |              |       | Diptera larvae:             |        |                         |
|       |              |       | Chironomidae                | 1      | 0.1                     |
|       |              |       | Insect parts                | -      | 31.7                    |
|       |              |       | Algae (filamentous)         | -      | 18.9                    |
|       |              |       | Sand                        | -      | 1.4                     |
|       |              |       | UID remains                 | -      | 47.0                    |
| Nov.  | 50           | 2     | Insect parts                | -      | 2.3                     |
|       |              |       | Algae (filamentous)         | -      | 57.1                    |
|       |              |       | UID remains                 | -      | 40.6                    |
| Dec.  | 50           | 31    | Statoblasts                 | 15     | 3.1                     |
|       |              |       | Oligochaeta                 | 1      | 1.0                     |
|       |              |       | Diptera larvae              | 2      | 4.6                     |
|       |              |       | Diptera pupae               | 1      | 0.8                     |
|       |              |       | Insect parts                | -      | 37.0                    |
|       |              |       | Terrestrial Chilopoda       | 1      | 3.1                     |
|       |              |       | Terrestrial arthropod parts | -      | 4.1                     |
|       |              |       | Fish scales                 | 11     | 1.0                     |
|       |              |       | Algae (filamentous)         | -      | 5.1                     |
|       |              |       | UID remains                 | -      | 40.1                    |
| Feb.  | 50           | 33    | Oligochaeta                 | 3      | 7.8                     |
|       |              |       | Ephemeroptera nymph         | 1      | 3.1                     |
|       |              |       | Insect parts                | -      | 85.4                    |
|       |              |       | Invertebrate eggs           | 20     | 0.6                     |
|       |              |       | UID remains                 | -      | 3.1                     |
| Mar.  | 75           | 3     | Statoblasts                 | 4      | 0.1                     |
|       |              |       | Ephemeroptera nymph         | 1      | 0.3                     |
|       |              |       | Coleoptera larvae           | 1      | 0.2                     |
|       |              |       | Coleoptera adult            | 5      | 2.6                     |
|       |              |       | Diptera larvae:             |        |                         |
|       |              |       | Chironomidae                | 1      | < 0.1                   |
|       |              |       | Diptera pupae               | 1      | 0.3                     |
|       |              |       | Diptera adult               | 1      | 0.3                     |
|       |              |       | Insect parts                | -      | 37.7                    |
|       |              |       | Terrestrial Isopoda         | 1      | 1.0                     |
|       |              |       | Terrestrial Chilopoda       | 1      | 0.2                     |
|       |              |       | UID remains                 | -      | 57.2                    |

| Month | No. examined |       | Stomach contents               |        |                         |
|-------|--------------|-------|--------------------------------|--------|-------------------------|
|       | With food    | Empty | Food item                      | Number | Percent of total volume |
| Apr.  | 50           | 0     | Ephemeroptera nymph            | 2      | 1.8                     |
|       |              |       | Diptera larvae:                |        |                         |
|       |              |       | Chironomidae                   | 2      | 0.1                     |
|       |              |       | Syrphidae                      | 1      | 3.0                     |
|       |              |       | Terrestrial lepidoptera larvae | 2      | 3.0                     |
|       |              |       | Terrestrial insects            | 3      | 4.3                     |
|       |              |       | Insect parts                   | -      | 11.6                    |
|       |              |       | UID remains                    | -      | 76.1                    |
| May   | 50           | 2     | Oligochaeta                    | 2      | 1.0                     |
|       |              |       | Hemiptera                      | 2      | 0.6                     |
|       |              |       | Terrestrial lepidoptera larvae | 1      | 2.0                     |
|       |              |       | Terrestrial insect parts       | -      | 2.0                     |
|       |              |       | Insect parts                   | -      | 16.7                    |
|       |              |       | Invertebrate eggs              | -      | 5.4                     |
|       |              |       | Algae (filamentous)            | -      | 10.6                    |
|       |              |       | UID remains                    | -      | 61.6                    |
| June  | 42           | 0     | Cladocera                      | 873    | 9.7                     |
|       |              |       | Ephemeroptera nymph            | 1      | 2.9                     |
|       |              |       | Hemiptera                      | 1      | 0.4                     |
|       |              |       | Terrestrial Coleoptera         | -      | 0.6                     |
|       |              |       | Insect parts                   | -      | 31.1                    |
|       |              |       | Algae (filamentous)            | -      | 17.3                    |
|       |              |       | UID remains                    | -      | 38.1                    |
| July  | 60           | 17    | Cladocera                      | 1293   | 21.2                    |
|       |              |       | Terrestrial Insect parts       | -      | 39.4                    |
|       |              |       | Insect parts                   | -      | 22.9                    |
|       |              |       | Algae (filamentous)            | -      | 0.6                     |
|       |              |       | UID remains                    | -      | 15.9                    |
| Aug.  | 50           | 0     | Cladocera                      | 742    | 59.0                    |
|       |              |       | Chironomidae larvae            | -      | 0.2                     |
|       |              |       | Terrestrial insect parts       | -      | 7.6                     |
|       |              |       | Insect parts                   | -      | 19.7                    |
|       |              |       | UID remains                    | -      | 13.6                    |
| Sept. | 50           | 8     | Statoblasts                    | 18     | 1.0                     |
|       |              |       | Cladocera                      | 281    | 13.3                    |
|       |              |       | Terrestrial insect parts       | -      | 1.0                     |
|       |              |       | Insect parts                   | -      | 2.0                     |
|       |              |       | UID remains                    | -      | 65.3                    |
|       |              |       | Inorganic matter               | -      | 17.3                    |

Table A9.4.3. Stomach contents of omnivorous fish species taken from the Kanawha River, October 20-24, 1982.

| Species             | No. examined |       | Stomach contents           |        |                    |                         |
|---------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                     | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Common carp         | 10           | 2     | Diptera larvae:            |        |                    |                         |
|                     |              |       | Chironomidae               | 54     | 50                 | < 0.1                   |
|                     |              |       | Diptera pupae              | 1      | 10                 | < 0.1                   |
|                     |              |       | Amphipoda                  | 1      | 10                 | < 0.1                   |
|                     |              |       | Pelecypoda remains         | -      | 50                 | 62.7                    |
|                     |              |       | Algae (filamentous)        | -      | 20                 | 7.3                     |
|                     |              |       | Allochthonous plant matter | -      | 40                 | 8.4                     |
|                     |              |       | UID Remains                | -      | 60                 | 19.5                    |
| Smallmouth buffalo  | 6            | 2     | Sand                       | -      | 50                 | 2.1                     |
|                     |              |       | Diptera larvae:            |        |                    |                         |
|                     |              |       | Chironomidae               | 125    | 33                 | < 0.1                   |
|                     |              |       | Amphipoda parts            | -      | 17                 | < 0.1                   |
|                     |              |       | Cladocera                  | 140    | 17                 | < 0.1                   |
|                     |              |       | Copepoda                   | 80     | 17                 | < 0.1                   |
|                     |              |       | Ostracoda                  | 3      | 17                 | < 0.1                   |
|                     |              |       | Algae (filamentous)        | -      | 50                 | 71.2                    |
| Golden redbreast    | 11           | 0     | UID Remains                | -      | 50                 | 22.7                    |
|                     |              |       | Silt                       | -      | 17                 | 6.1                     |
|                     |              |       | Diptera larvae:            |        |                    |                         |
|                     |              |       | Chironomidae               | 412    | 64                 | 4.0                     |
|                     |              |       | Amphipoda parts            | -      | 9                  | 1.6                     |
|                     |              |       | Ostracoda                  | 1      | 9                  | < 0.1                   |
|                     |              |       | Gastropoda:                |        |                    |                         |
|                     |              |       | Ancylidae                  | 1      | 9                  | < 0.1                   |
| Shorthead redbreast | 9            | 1     | Pelecypoda remains         | -      | 73                 | 32.8                    |
|                     |              |       | Algae (filamentous)        | -      | 9                  | 0.8                     |
|                     |              |       | Allochthonous plant matter | -      | 18                 | 2.8                     |
|                     |              |       | UID Remains                | -      | 36                 | 54.5                    |
|                     |              |       | Sand/Silt                  | -      | 55                 | 3.6                     |
|                     |              |       | Diptera larvae:            |        |                    |                         |
|                     |              |       | Chironomidae               | 153    | 89                 | 3.0                     |
|                     |              |       | Diptera pupae              | 16     | 33                 | < 0.1                   |
| Shorthead redbreast | 9            | 1     | Algae (filamentous)        | -      | 44                 | 59.1                    |
|                     |              |       | Allochthonous plant matter | -      | 22                 | 22.7                    |
|                     |              |       | UID Remains                | -      | 33                 | 12.1                    |
|                     |              |       | Sand/Silt                  | -      | 33                 | 3.0                     |
|                     |              |       |                            |        |                    |                         |



| Species         | No. examined |       | Stomach contents           |        |                    |                         |
|-----------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Channel catfish | 21           | 34    | Fish                       | 8      | 38                 | 30.8                    |
|                 |              |       | Decapoda                   | 3      | 14                 | 9.8                     |
|                 |              |       | Ephemeroptera nymph        | 1      | 5                  | 1.3                     |
|                 |              |       | Odonata nymph:             |        |                    |                         |
|                 |              |       | Zygoptera                  | 1      | 5                  | < 0.1                   |
|                 |              |       | Diptera larvae:            |        |                    |                         |
|                 |              |       | Chironomidae               | 2      | 5                  | < 0.1                   |
|                 |              |       | Algae (filamentous)        | -      | 5                  | 7.9                     |
|                 |              |       | Allochthonous plant matter | -      | 14                 | 0.9                     |
|                 |              |       | UID Remains                | -      | 33                 | 40.4                    |
|                 |              |       | Sand/Stone                 | -      | 19                 | 8.9                     |
| Bluegill        | 21           | 0     | Fish                       | 1      | 5                  | 5.5                     |
|                 |              |       | Coleoptera adult           | 1      | 5                  | < 0.1                   |
|                 |              |       | Trichoptera larvae:        |        |                    |                         |
|                 |              |       | Polycentropodidae          | 6      | 14                 | < 0.1                   |
|                 |              |       | Diptera larvae:            |        |                    |                         |
|                 |              |       | Chironomidae               | 241    | 71                 | 6.3                     |
|                 |              |       | Diptera pupae              | 211    | 24                 | 9.5                     |
|                 |              |       | UID Insect parts           | -      | 10                 | < 0.1                   |
|                 |              |       | Amphipoda                  | 19     | 14                 | 3.0                     |
|                 |              |       | Gastropoda                 | 3      | 10                 | < 0.1                   |
|                 |              |       | Pelecypoda remains         | -      | 10                 | 15.5                    |
|                 |              |       | Statoblasts                | 385    | 19                 | 6.8                     |
|                 |              |       | Algae (filamentous)        | -      | 57                 | 46.6                    |
|                 |              |       | Allochthonous plant matter | -      | 10                 | 2.7                     |
|                 |              |       | UID Remains                | -      | 5                  | 4.1                     |
| Longear sunfish | 19           | 2     | Fish                       | 2      | 11                 | 12.9                    |
|                 |              |       | Lepidoptera larvae         | 1      | 5                  | < 0.1                   |
|                 |              |       | Diptera larvae:            |        |                    |                         |
|                 |              |       | Chironomidae               | 413    | 63                 | 23.7                    |
|                 |              |       | Diptera pupae              | 5      | 16                 | < 0.1                   |
|                 |              |       | Terrestrial Insect Parts   | -      | 21                 | 18.0                    |
|                 |              |       | UID Insect Parts           | -      | 11                 | 3.9                     |
|                 |              |       | Amphipoda                  | 28     | 21                 | 12.9                    |
|                 |              |       | Gastropoda                 | 3      | 11                 | < 0.1                   |
|                 |              |       | Pelecypoda remains         | -      | 11                 | < 0.1                   |
|                 |              |       | Algae                      | -      | 21                 | 10.4                    |
|                 |              |       | UID remains                | -      | 11                 | 2.6                     |

Table A9.4.4. Stomach contents of fish species considered invertivores from the Kanawha River, October 20-24, 1982.

| Species            | No. examined |       | Stomach contents         |        |                    |                         |
|--------------------|--------------|-------|--------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                | Number | Percent occurrence | Percent of total volume |
| Skipjack herring   | 1            | 1     | UID Insect Parts         | -      | 100                | 100.0                   |
| Mooneye            | 1            | 0     | Terrestrial Insect Parts | -      | 100                | 100.0                   |
| Silver chub        | 2            | 0     | Pelecypoda remains       | -      | 100                | 100.0                   |
| Northern hogsucker | 2            | 0     | Diptera larvae:          |        |                    |                         |
|                    |              |       | Chironomidae             | 65     | 100                | 8.2                     |
|                    |              |       | Diptera pupae            | 1      | 50                 | < 0.1                   |
|                    |              |       | Pelecypoda remains       | -      | 50                 | < 0.1                   |
|                    |              |       | UID Remains              | -      | 100                | 91.8                    |
| Spotted sucker     | 2            | 0     | Diptera larvae:          |        |                    |                         |
|                    |              |       | Chironomidae             | 2      | 50                 | < 0.1                   |
|                    |              |       | UID Remains              | -      | 100                | 100                     |
|                    |              |       | Sand                     | -      | 50                 | < 0.1                   |
| Silver redhorse    | 5            | 0     | Ephemeroptera nymphs:    |        |                    |                         |
|                    |              |       | Heptageniidae            | 3      | 20                 | < 0.1                   |
|                    |              |       | Diptera larvae:          |        |                    |                         |
|                    |              |       | Chironomidae             | 1      | 20                 | < 0.1                   |
|                    |              |       | Diptera pupae            | 2      | 20                 | < 0.1                   |
|                    |              |       | Pelecypoda remains       | -      | 80                 | 5.0                     |
|                    |              |       | UID remains              | -      | 100                | 95.0                    |
|                    |              |       | Sand                     | -      | 20                 | < 0.1                   |
| Rock bass          | 1            | 2     | Decapoda                 | 1      | 100                | 100                     |
| Pumpkinseed        | 1            | 1     | Diptera larvae           |        |                    |                         |
|                    |              |       | Ceratopogonidae          | 1      | 100                | < 0.1                   |
|                    |              |       | Chironomidae             | 15     | 100                | 50                      |
|                    |              |       | Amphipoda                | 5      | 100                | 50                      |
| Redear sunfish     | 1            | 1     | Diptera larvae           |        |                    |                         |
|                    |              |       | Chironomidae             | 15     | 100                | 50.0                    |
|                    |              |       | Pelecypoda remains       | -      | 100                | 50.0                    |
| Smallmouth bass    | 16           | 11    | Fish:                    |        |                    |                         |
|                    |              |       | Cyprinidae               | 4      | 19                 | 25.1                    |
|                    |              |       | UID fish                 | 4      | 25                 | 6.8                     |
|                    |              |       | Decapoda                 | 9      | 44                 | 68.1                    |
|                    |              |       | Diptera pupae            | 9      | 6                  | < 0.1                   |

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| Species         | No. examined |       | Stomach contents |        |                    |                         |
|-----------------|--------------|-------|------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item        | Number | Percent occurrence | Percent of total volume |
| Freshwater drum | 8            | 7     | Decapoda         | 2      | 25                 | 66.7                    |
|                 |              |       | Odonata nymphs:  |        |                    |                         |
|                 |              |       | Anisoptera       | 1      | 12                 | 27.3                    |
|                 |              |       | Diptera larvae:  |        |                    |                         |
|                 |              |       | Chironomidae     | 59     | 63                 | 6.1                     |
|                 |              |       | Amphipoda        | 1      | 12                 | < 0.1                   |

Table A9.4.5. Stomach contents of piscivorous fish species taken from the Kanawha River, October 20-24, 1982.

| Species          | No. examined |       | Stomach contents   |        |                    |                         |
|------------------|--------------|-------|--------------------|--------|--------------------|-------------------------|
|                  | With food    | Empty | Food item          | Number | Percent occurrence | Percent of total volume |
| Longnose gar     | 5            | 6     | Fish: cyprinidae   | 5      | 60                 | 89                      |
|                  |              |       | UID fish           | 1      | 20                 | 9                       |
|                  |              |       | UID remains        | -      | 20                 | 2                       |
| Muskellunge      | 1            | 0     | Fish: gizzard shad | 1      | 100                | 100                     |
| Flathead catfish | 4            | 1     | Fish:              |        |                    |                         |
|                  |              |       | Cyprinidae         | 1      | 25                 | 9.1                     |
|                  |              |       | Bluegill           | 1      | 25                 | 11.8                    |
|                  |              |       | Crappie            | 1      | 25                 | 16.4                    |
|                  |              |       | UID                | 3      | 75                 | 62.7                    |
| White bass       | 4            | 4     | Fish:              |        |                    |                         |
|                  |              |       | Cyprinidae         | 2      | 50                 | 83                      |
|                  |              |       | UID                | 2      | 50                 | 17                      |
| Spotted bass     | 11           | 14    | Fish:              |        |                    |                         |
|                  |              |       | Cyprinidae         | 3      | 27                 | 31.1                    |
|                  |              |       | UID                | 7      |                    | 68.9                    |
|                  |              |       | Amphipoda:         |        |                    |                         |
|                  |              |       | Gammaridae         | 1      | 9                  | *                       |
| Largemouth bass  | 7            | 2     | Fish:              |        |                    |                         |
|                  |              |       | Cyprinidae         | 4      | 57                 | 25.2                    |
|                  |              |       | UID                | 3      | 43                 | 3.5                     |
|                  |              |       | Decapoda           | 2      | 29                 | 71.3                    |
| White crappie    | 3            | 0     | Fish               | 2      | 67                 | 100.0                   |
|                  |              |       | Diptera larvae:    |        |                    |                         |
|                  |              |       | Chironomidae       | 2      | 33                 | <0.1                    |
|                  |              |       | Diptera pupae      | 1      | 33                 | <0.1                    |
| Black crappie    | 1            | 1     | UID remains        | -      | 100                | 100.0                   |
| Sauger           | 10           | 11    | Fish:              |        |                    |                         |
|                  |              |       | Cyprinidae         | 6      | 40                 | 74.1                    |
|                  |              |       | UID                | 9      | 60                 | 23.4                    |
|                  |              |       | UID remains        | -      | 20                 | 2.5                     |
| Walleye          | 0            | 1     | --                 | -      | --                 | --                      |

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Table A9.4.6. Stomach contents of omnivorous fish species taken from the Kanawha River, November 18-20, 1982.

| Species            | No. examined |       | Stomach contents           |        |                    |                         |
|--------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Goldfish           | 1            | 0     | Algae (filamentous)        | -      | 100                | 100.0                   |
|                    |              |       | Silt                       | -      | 100                | < 0.1                   |
| Common carp        | 2            | 0     | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 70     | 50                 | < 0.1                   |
|                    |              |       | Pelecypoda remains         | -      | 50                 | < 0.1                   |
|                    |              |       | Algae (filamentous)        | -      | 100                | 95.8                    |
|                    |              |       | Allochthonous plant matter | -      | 50                 | < 0.1                   |
|                    |              |       | Silt                       | -      | 50                 | 4.2                     |
| Quillback          | 2            | 0     | Annelida                   | 1      | 50                 | < 0.1                   |
|                    |              |       | Sand                       | -      | 100                | 62.5                    |
|                    |              |       | UID remains                | -      | 100                | 37.5                    |
| Northern hogsucker | 1            | 0     | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases     | 1      | 100                |                         |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 13     | 100                |                         |
|                    |              |       | Ceratopogonidae            | 1      | 100                |                         |
|                    |              |       | Algae (filamentous)        | -      | 100                |                         |
|                    |              |       | Sand                       | -      | 100                |                         |
| Smallmouth buffalo | 3            | 0     | Annelida                   | 1      | 33                 | < 0.1                   |
|                    |              |       | Cladocera                  | 5      | 33                 | < 0.1                   |
|                    |              |       | Copepoda:                  |        |                    |                         |
|                    |              |       | Harpacticoida              | 3815   | 33                 | 7.8                     |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 2      | 33                 | < 0.1                   |
|                    |              |       | Statoblasts                | 1      | 33                 | < 0.1                   |
|                    |              |       | Algae (filamentous)        | -      | 100                | 64.9                    |
|                    |              |       | Allochthonous plant matter | -      | 67                 | 3.9                     |
|                    |              |       | Sand                       | -      | 100                | 3.9                     |
|                    |              |       | UID remains                | -      | 67                 | 19.5                    |
| Black buffalo      | 0            | 1     |                            |        |                    |                         |

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| Species            | No. examined |       | Stomach contents       |        |                    |                         |
|--------------------|--------------|-------|------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item              | Number | Percent occurrence | Percent of total volume |
| Silver redhorse    | 4            | 1     | Annelida               | 50     | 100                | 33.3                    |
|                    |              |       | Diptera larvae         |        |                    |                         |
|                    |              |       | Chironomidae           | 10     | 50                 | < 0.1                   |
|                    |              |       | Pelecypoda remains     | -      | 25                 | < 0.1                   |
|                    |              |       | Algae (filamentous)    | -      | 50                 | < 0.1                   |
|                    |              |       | Sand                   | -      | 25                 | < 0.1                   |
|                    |              |       | UID Remains            | -      | 50                 | 66.7                    |
| Shorthead redhorse | 10           | 0     | Annelida               | 13     | 40                 | 3.8                     |
|                    |              |       | Trichoptera larvae:    |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases | 124    | 60                 | 7.5                     |
|                    |              |       | Diptera larvae:        |        |                    |                         |
|                    |              |       | Chironomidae           | 429    | 90                 | 17.5                    |
|                    |              |       | Diptera pupae          | 4      | 20                 | < 0.1                   |
|                    |              |       | Diptera adult          | 1      | 10                 | < 0.1                   |
|                    |              |       | Algae (filamentous)    | -      | 40                 | 47.5                    |
|                    |              |       | Sand & Silt            | -      | 20                 | < 0.1                   |
|                    |              |       | UID Remains            | -      | 40                 | 23.8                    |
| Black bullhead     | 0            | 1     |                        |        |                    |                         |
| Brown bullhead     | 0            | 1     |                        |        |                    |                         |

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Table A9.4.7. Stomach contents of fish species considered invertivores from the Kanawha River, November 18-20, 1982.

| Species         | No. examined |       | Stomach contents           |        |                    |                         |
|-----------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Spotted sucker  | 0            | 1     |                            |        |                    |                         |
| Black redhorse  | 3            | 0     | Trichoptera larvae:        |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases     | 2      | 33                 | < 0.1                   |
|                 |              |       | Diptera larvae:            |        |                    |                         |
|                 |              |       | Chironomidae               | 144    | 100                | 50.0                    |
|                 |              |       | Diptera pupae              | 1      | 33                 | < 0.1                   |
|                 |              |       | UID Insect parts           | -      | 33                 | < 0.1                   |
|                 |              |       | Pelecypoda remains         | -      | 33                 | < 0.1                   |
|                 |              |       | Statoblasts                | 1      | 33                 | < 0.1                   |
|                 |              |       | UID Remains                | -      | 67                 | 50.0                    |
| Golden redhorse | 4            | 0     | Amphipoda                  | 44     | 25                 | 8.3                     |
|                 |              |       | Diptera larvae:            |        |                    |                         |
|                 |              |       | Chironomidae               | 7      | 25                 | < 0.1                   |
|                 |              |       | Diptera pupae              | 1      | 25                 | < 0.1                   |
|                 |              |       | UID Insect parts           | -      | 50                 | 4.2                     |
|                 |              |       | Pelecypoda remains         | -      | 75                 | 45.8                    |
|                 |              |       | Allochthonous plant matter | -      | 25                 | < 0.1                   |
|                 |              |       | UID remains                | -      | 75                 | 41.7                    |
| Rock bass       | 2            | 1     | Crayfish                   | 2      | 50                 | 96.8                    |
|                 |              |       | UID Insect parts           | -      | 50                 | 3.2                     |
| Bluegill        | 2            | 0     | Amphipoda                  | 1      | 50                 | < 0.1                   |
|                 |              |       | Trichoptera larvae:        |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases     | 2      | 100                | < 0.1                   |
|                 |              |       | UID Trichoptera            | 1      | 50                 | < 0.1                   |
|                 |              |       | Diptera larvae:            |        |                    |                         |
|                 |              |       | Chironomidae               | 136    | 100                | 80.0                    |
|                 |              |       | Gastropoda                 | 7      | 50                 | 20.0                    |
|                 |              |       | Statoblasts                | 41     | 100                | < 0.1                   |
| Longear sunfish | 7            | 3     | Amphipoda                  | 4      | 29                 | 4.0                     |
|                 |              |       | Ephemeroptera nymph        | 1      | 14                 | 4.0                     |
|                 |              |       | Odonata nymph              |        |                    |                         |
|                 |              |       | Petaluridae                | 1      | 14                 | 31.7                    |
|                 |              |       | Diptera larvae             |        |                    |                         |
|                 |              |       | Chironomidae               | 52     | 29                 | 15.9                    |
|                 |              |       | Syrphidae                  | 3      | 14                 | 15.9                    |
|                 |              |       | UID Insect parts           | -      | 29                 | < 0.1                   |
|                 |              |       | Pelecypoda remains         | -      | 14                 | < 0.1                   |
|                 |              |       | Gastropoda                 | 1      | 14                 | < 0.1                   |
|                 |              |       | Allochthonous plant matter | -      | 1                  | 7.9                     |

UID Remains

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20.6

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Table A9.4.8. Stomach contents of piscivorous fish species taken from the Kanawha River, November 18-20, 1982.

| Species         | No. examined |       | Stomach contents           |        |                    |                         |
|-----------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Muskellunge     | 1            | 0     | Fish:<br>Gizzard shad      | 1      | 100                | 100.0                   |
| Channel catfish | 4            | 12    | Fish                       | 2      | 50                 | 95.4                    |
|                 |              |       | Insect parts               | -      | 25                 | 0.9                     |
|                 |              |       | UID remains                | -      | 25                 | 3.7                     |
| Smallmouth bass | 17           | 23    | Fish:                      |        |                    |                         |
|                 |              |       | Emerald shiner             | 1      | 6                  | 1.7                     |
|                 |              |       | Notropis sp.               | 1      | 6                  | 1.1                     |
|                 |              |       | UID fish                   | 6      | 29                 | 9.1                     |
|                 |              |       | Crayfish                   | 10     | 17                 | 87.5                    |
|                 |              |       | Diptera pupae              | 2      | 6                  | < 0.1                   |
|                 |              |       | Insect parts               | -      | 6                  | < 0.1                   |
|                 |              |       | UID remains                | -      | 6                  | 0.6                     |
| Spotted bass    | 3            | 15    | Fish                       | 1      | 33                 | 14.3                    |
|                 |              |       | Crayfish                   | 1      | 33                 | 71.4                    |
|                 |              |       | UID remains                | -      | 33                 | 14.3                    |
| Largemouth bass | 1            | 1     | Fish                       | 1      | 100                | 100.0                   |
| Sauger          | 6            | 9     | Fish:                      |        |                    |                         |
|                 |              |       | Catfish                    | 1      | 17                 | 9.3                     |
|                 |              |       | Drum                       | 1      | 17                 | 65.4                    |
|                 |              |       | UID fish                   | 4      | 67                 | 24.6                    |
|                 |              |       | Allochthonous plant matter | -      | 17                 | 0.7                     |
| Freshwater drum | 0            | 4     |                            |        |                    |                         |

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Table A9.4.9. Stomach contents of omnivorous fish species taken from the Kanawha River, December 16-18, 1982.

| Species     | No. examined |       | Stomach contents |        |                    |                         |
|-------------|--------------|-------|------------------|--------|--------------------|-------------------------|
|             | With food    | Empty | Food item        | Number | Percent occurrence | Percent of total volume |
| Common carp | 0            | 2     |                  |        |                    |                         |

Table A9.4.10. Stomach contents of fish species considered invertivores from the Kanawha River, December 16-18, 1982.

| Species            | No. examined |       | Stomach contents       |        |                    |                         |
|--------------------|--------------|-------|------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item              | Number | Percent occurrence | Percent of total volume |
| River carpsucker   | 0            | 1     |                        |        |                    |                         |
| Smallmouth buffalo | 1            | 8     | Amphipoda              | 14     | 100                | < 0.1                   |
|                    |              |       | Trichoptera larvae:    |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases | 2      | 100                | < 0.1                   |
|                    |              |       | Diptera larvae:        |        |                    |                         |
|                    |              |       | Chironomidae           | 3      | 100                | < 0.1                   |
|                    |              |       | Diptera pupae          | 2      | 100                | < 0.1                   |
|                    |              |       | UID Remains            | -      | 100                | 100.0                   |
| Spotted sucker     | 2            | 0     | UID Remains            | -      | 100                | 100.0                   |
| Silver redhorse    | 1            | 0     | Annelida               | 3      | 100                | < 0.1                   |
|                    |              |       | Diptera larvae:        |        |                    |                         |
|                    |              |       | Chironomidae           | 7      | 100                | < 0.1                   |
|                    |              |       | UID Remains            | -      | 100                | 100.0                   |
| River redhorse     | 1            | 0     | Amphipoda              | 8      | 100                | 33.3                    |
|                    |              |       | Trichoptera larve:     |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases | 10     | 100                | 16.7                    |
|                    |              |       | Diptera larvae:        |        |                    |                         |
|                    |              |       | Chironomidae           | 112    | 100                | 33.3                    |
|                    |              |       | UID Insect parts       | -      | 100                | 16.7                    |
| Black redhorse     | 1            | 0     | Amphipoda              | 2      | 100                | < 0.1                   |
|                    |              |       | Trichoptera larvae:    |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases | 50     | 100                | 100.0                   |
| Golden redhorse    | 1            | 0     | Amphipoda              | 45     | 100                | 12.5                    |
|                    |              |       | Ephemeroptera nymphs:  |        |                    |                         |
|                    |              |       | Caenidae               | 1      | 100                | < 0.1                   |
|                    |              |       | Trichoptera larvae:    |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases | 72     | 100                | 25.0                    |
|                    |              |       | Diptera larvae:        |        |                    |                         |
|                    |              |       | Chironomidae           | 60     | 100                | < 0.1                   |
|                    |              |       | Diptera pupae          | 2      | 100                | < 0.1                   |
|                    |              |       | Pelecypoda remains     | -      | 100                | < 0.1                   |
|                    |              |       | UID remains            | -      | 100                | 62.5                    |

| Species            | No. examined |       | Stomach contents       |        |                    |                         |
|--------------------|--------------|-------|------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item              | Number | Percent occurrence | Percent of total volume |
| Shorthead redhorse | 4            | 1     | Trichoptera larvae:    |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases | 319    | 100                | 80.0                    |
|                    |              |       | Diptera larvae:        |        |                    |                         |
|                    |              |       | Chironomidae           | 120    | 50                 | 10.0                    |
|                    |              |       | UID larvae             | 1      | 25                 | < 0.1                   |
|                    |              |       | Diptera pupae          | 5      | 25                 | < 0.1                   |
|                    |              |       | UID Insect             | 2      | 25                 | < 0.1                   |
|                    |              |       | Pelecypoda remains     | 3      | 50                 | < 0.1                   |
|                    |              |       | UID Remains            | -      | 25                 | 10.0                    |
| Bluegill           | 3            | 0     | Isopoda                | 1      | 33                 | 26.3                    |
|                    |              |       | Amphipoda              | 15     | 100                | 73.7                    |
| Longear sunfish    | 2            | 5     | Amphipoda              | 2      | 50                 | < 0.1                   |
|                    |              |       | Diptera larvae:        |        |                    |                         |
|                    |              |       | Chironomidae           | 4      | 50                 | < 0.1                   |

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Table A9.4.11. Stomach contents of piscivorous fish species taken from the Kanawha River, December 16-18, 1982.

| Species         | No. examined |       | Stomach contents |        |                    |                         |
|-----------------|--------------|-------|------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item        | Number | Percent occurrence | Percent of total volume |
| Smallmouth bass | 1            | 1     | Crayfish         | 1      | 100                | 100                     |
| Spotted bass    | 1            | 3     | UID insect parts | -      | 100                | 100                     |
| Largemouth bass | 0            | 2     |                  |        |                    |                         |
| White crappie   | 0            | 2     |                  |        |                    |                         |
| Sauger          | 1            | 1     | Fish remains     | 1      | 100                | 100                     |
| Freshwater drum | 0            | 2     |                  |        |                    |                         |

Table A9.4.12. Stomach contents of omnivorous fish species taken from the Kanawha River, February 16-18, 1983.

| Species     | No. examined |       | Stomach contents           |        |                    |                         |
|-------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|             | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Common carp | 3            | 10    | Diptera larvae:            |        |                    |                         |
|             |              |       | Psychodidae                | 1      | 33                 | < 0.1                   |
|             |              |       | Diptera pupae              | 2      | 33                 | < 0.1                   |
|             |              |       | Allochthonous plant matter | -      | 33                 | 16.7                    |
|             |              |       | UID remains                | -      | 67                 | 83.3                    |

Table A9.4.13. Stomach contents of fish species considered invertivores from the Kanawha River, February 16-18, 1983.

| Species            | No. examined |       | Stomach contents           |        |                    |                         |
|--------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Quillback          | 0            | 1     |                            |        |                    |                         |
| Smallmouth buffalo | 1            | 28    | Amphipoda                  | 1      | 100                | < 0.1                   |
|                    |              |       | Diptera larvae             | 4      | 100                | < 0.1                   |
|                    |              |       | Diptera adult              | 1      | 100                | < 0.1                   |
|                    |              |       | Allochthonous plant matter | -      | 100                | 50.0                    |
|                    |              |       | UID remains                | -      | 100                | 50.0                    |
| Spotted sucker     | 0            | 1     |                            |        |                    |                         |
| Silver redhorse    | 0            | 1     |                            |        |                    |                         |
| River redhorse     | 1            | 0     | Annelida                   | 6      | 100                | 11.1                    |
|                    |              |       | Allochthonous plant matter | -      | 100                | 66.7                    |
|                    |              |       | UID Remains                | -      | 100                | 22.2                    |
| Black redhorse     | 1            | 0     | Amphipoda                  | 4      | 100                | 7.7                     |
|                    |              |       | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases     | 4      | 100                | 7.7                     |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 10     | 100                | 7.7                     |
|                    |              |       | UID Remains                | -      | 100                | 76.9                    |
| Golden redhorse    | 1            | 0     | Annelida                   | 1      | 100                |                         |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 6      | 100                |                         |
|                    |              |       | Ceratopogonidae            | 2      | 100                |                         |
|                    |              |       | Diptera pupae              | 4      | 100                |                         |
|                    |              |       | UID Insect Parts           | -      | 100                |                         |
|                    |              |       | UID Remains                | -      |                    |                         |
| Shorthead redhorse | 1            | 0     | Annelida                   | 13     | 100                | 100.0                   |
|                    |              |       | Amphipoda                  | 3      | 100                | < 0.1                   |
|                    |              |       | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases     | 1      | 100                | < 0.1                   |
| Rock bass          | 1            | 0     | Isopoda                    | 3      | 100                | 100.0                   |
| Longear sunfish    | 0            | 2     |                            |        |                    |                         |

Table A9.4.14. Stomach contents of piscivorous fish species taken from the Kanawha River, February 16-18, 1983.

| Species         | No. examined |       | Stomach contents |        |                    |                         |
|-----------------|--------------|-------|------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item        | Number | Percent occurrence | Percent of total volume |
| Smallmouth bass | 0            | 2     |                  |        |                    |                         |
| Sauger          | 1            | 2     | Fish             | 1      | 100                | 100                     |



Table A9.4.15. Stomach contents of omnivorous fish species taken from the Kanawha River, March 15-17, 1983.

| Species            | No. examined |       | Stomach contents   |        |                    |                         |
|--------------------|--------------|-------|--------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item          | Number | Percent occurrence | Percent of total volume |
| Common carp        | 16           | 3     | Eggs (fish)        | 24     | 6                  | 0.5                     |
|                    |              |       | Amphipoda remains  | --     | 6                  | 1.4                     |
|                    |              |       | Crayfish remains   | --     | 6                  | 2.1                     |
|                    |              |       | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 8      | 19                 | 0.3                     |
|                    |              |       | UID Insect parts   | --     | 13                 | <0.1                    |
|                    |              |       | Pelecypoda remains | --     | 25                 | 18.5                    |
|                    |              |       | Plant matter       | --     | 38                 | 6.6                     |
|                    |              |       | Paper              | --     | 6                  | 0.7                     |
|                    |              |       | Silt and sand      | --     | 38                 | 0.2                     |
|                    |              |       | UID remains        | --     | 81                 | 69.6                    |
| Smallmouth buffalo | 3            | 5     | Amphipoda          | 2      | 33                 | <0.1                    |
|                    |              |       | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 7      | 33                 | <0.1                    |
|                    |              |       | Pelecypoda remains | --     | 33                 | <0.1                    |
|                    |              |       | Plant matter       | --     | 33                 | <0.1                    |
|                    |              |       | Sand               | --     | 33                 | <0.1                    |
|                    |              |       | UID remains        | --     | 100                | 100                     |
| Black buffalo      | 1            | 0     | UID remains        | --     | 100                | 100                     |
| Channel catfish    | 0            | 1     |                    |        |                    |                         |

Table A9.4.16. Stomach contents of fish species considered invertivores from the Kanawha River, March 15-17, 1983.

| Species            | No. examined |       | Stomach contents   |        |                    |                         |
|--------------------|--------------|-------|--------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item          | Number | Percent occurrence | Percent of total volume |
| Silver chub        | 1            | 1     | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 1      | 100                | 8.3                     |
|                    |              |       | Coleoptera adult   | 1      | 100                | 33.3                    |
|                    |              |       | Pelecypoda remains | --     | 100                | 41.7                    |
|                    |              |       | UID remains        | --     | 100                | 16.7                    |
| White sucker       | 1            | 0     | Oligochaeta        | 1      | 100                | <0.1                    |
|                    |              |       | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 6      | 100                | <0.1                    |
|                    |              |       | Diptera adult      | 1      | 100                | <0.1                    |
|                    |              |       | Sand               | --     | 100                | <0.1                    |
|                    |              |       | UID remains        | --     | 100                | 100                     |
| Northern hogsucker | 1            | 0     | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 6      | 100                | <0.1                    |
|                    |              |       | UID remains        | --     | 100                | 100                     |
| Spotted sucker     | 2            | 1     | Oligochaeta        | 11     | 100                | 16.7                    |
|                    |              |       | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 1      | 50                 | <0.1                    |
|                    |              |       | Pelecypoda         | 1      | 50                 | <0.1                    |
|                    |              |       | UID remains        | --     | 50                 | 83.3                    |
| Silver redhorse    | 7            | 1     | Oligochaeta        | 33     | 71                 | 6.0                     |
|                    |              |       | Amphipoda          | 1      | 14                 | <0.1                    |
|                    |              |       | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 3      | 14                 | <0.1                    |
|                    |              |       | Pelecypoda remains | --     | 14                 | <0.1                    |
|                    |              |       | Sand               | --     | 29                 | 3.0                     |
|                    |              |       | UID remains        |        |                    | 91.0                    |
| River redhorse     | 2            | 0     | Oligochaeta        | 1      | 50                 | <0.1                    |
|                    |              |       | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 1      | 50                 | <0.1                    |
|                    |              |       | Insect parts       | --     | 50                 | 22.2                    |
|                    |              |       | Pelecypoda remains | --     | 50                 | 22.2                    |
|                    |              |       | Seeds              | 8      | 50                 | <0.1                    |
|                    |              |       | UID remains        | --     | 100                | 55.6                    |
|                    |              |       |                    |        |                    |                         |
| Golden redhorse    | 2            | 1     | Oligochaeta        | 2      | 50                 | 12.5                    |
|                    |              |       | Amphipoda          | 8      | 50                 | 25.0                    |
|                    |              |       | Diptera larvae:    |        |                    |                         |
|                    |              |       | Chironomidae       | 62     | 100                | 20.0                    |
|                    |              |       | Diptera pupa       | 1      | 50                 | <0.1                    |
|                    |              |       | UID remains        | --     | 100                | 42.5                    |

| Species            | No. examined |       | Stomach contents         |        |                    |                         |
|--------------------|--------------|-------|--------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                | Number | Percent occurrence | Percent of total volume |
| Shorthead redhorse | 2            | 3     | Amphipoda                | 1      | 50                 | <0.1                    |
|                    |              |       | Diptera larvae:          |        |                    |                         |
|                    |              |       | Chironomidae             | 230    | 100                | 50.0                    |
|                    |              |       | Diptera pupae            | 10     | 00                 | 1.7                     |
|                    |              |       | Diptera adults           | 1      | 50                 | <0.1                    |
|                    |              |       | Trichoptera larvae:      |        |                    |                         |
|                    |              |       | Hydroptilidae with cases | 13     | 50                 | 5.0                     |
| Pumpkinseed        | 1            | 1     | UID remains              | --     | 100                | 43.3                    |
|                    |              |       | Amphipoda, Gammaridae    | 7      | 100                | 75.0                    |
|                    |              |       | Trichoptera larvae:      |        |                    |                         |
|                    |              |       | Hydroptilidae with cases | 1      | 100                | <0.1                    |
| Bluegill           | 7            | 1     | Insect parts             | --     | 100                | 25.0                    |
|                    |              |       | Amphipoda, Gammaridae    | 41     | 100                | 63.0                    |
|                    |              |       | Diptera larvae:          |        |                    |                         |
|                    |              |       | Chironomidae             | 65     | 43                 | 3.3                     |
|                    |              |       | Tabanidae                | 1      | 14                 | 4.3                     |
|                    |              |       | Diptera pupae            | 1      | 14                 | <0.1                    |
|                    |              |       | Ephemeroptera:           |        |                    |                         |
|                    |              |       | Leptophlebiidae          | 1      | 14                 | 0.9                     |
|                    |              |       | Spider                   | 2      | 14                 | 0.9                     |
|                    |              |       | Gastropodia              | 2      | 28                 | 13.0                    |
|                    |              |       | Seed                     | 1      | 14                 | <0.1                    |
|                    |              |       | UID remains              | --     | 43                 | 14.6                    |
| Longear sunfish    | 9            | 2     | Amphipoda                | 20     | 56                 | 11.0                    |
|                    |              |       | Isopoda:                 |        |                    |                         |
|                    |              |       | Aquatic                  | 2      | 22                 | 11.0                    |
|                    |              |       | Terrestrial              | 1      | 11                 | 2.7                     |
|                    |              |       | Diptera larvae:          |        |                    |                         |
|                    |              |       | Chironomidae             | 7      | 44                 | 8.2                     |
|                    |              |       | Tipulidae                | 3      | 11                 | 4.1                     |
|                    |              |       | Ephemeroptera nymph      |        |                    |                         |
|                    |              |       | Ephemeridae              | 1      | 11                 | 27.4                    |
|                    |              |       | Trichoptera nymph:       |        |                    |                         |
|                    |              |       | Hydroptilidae with cases | 1      | 11                 | <0.1                    |
|                    |              |       | UID nymph                | 2      | 11                 | <0.1                    |
|                    |              |       | Terrestrial insect parts | --     | 11                 | 20.5                    |
|                    |              |       | UID Insect               | 2      | 22                 | 1.4                     |
|                    |              |       | Plant matter             | --     | 11                 | 6.8                     |
|                    |              |       | UID remains              | --     | 11                 | 6.8                     |

| Species        | No. examined |       | Stomach contents      |        |                    |                         |
|----------------|--------------|-------|-----------------------|--------|--------------------|-------------------------|
|                | With food    | Empty | Food item             | Number | Percent occurrence | Percent of total volume |
| Redear sunfish | 1            | 0     | Amphipoda, Gammaridae | 3      | 100                | 100                     |
|                |              |       | Diptera larvae:       |        |                    |                         |
|                |              |       | Chironomidae          | 1      | 100                | <0.1                    |
|                |              |       | Pelecypoda            | 1      | 100                | <0.1                    |

Table A9.4.17. Stomach contents of piscivorous fish species taken from the Kanawha River, March 15-17, 1983.

| Species         | No. examined |       | Stomach contents    |        |                    |                         |
|-----------------|--------------|-------|---------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item           | Number | Percent occurrence | Percent of total volume |
| Longnose gar    | 0            | 20    |                     |        |                    |                         |
| Rock bass       | 1            | 0     | Crayfish            | 3      | 100                | 100                     |
| Smallmouth bass | 5            | 10    | Crayfish            | 11     | 100                | 98.4                    |
|                 |              |       | Fish backbone       | 1      | 20                 | 1.6                     |
| Spotted bass    | 5            | 8     | Crayfish            | 9      | 80                 | 93.9                    |
|                 |              |       | Fish:               |        |                    |                         |
|                 |              |       | Emerald shiner      | 1      | 20                 | 4.2                     |
| Largemouth bass | 2            | 1     | Backbone            | 2      | 40                 | 1.8                     |
|                 |              |       | Fish:               |        |                    |                         |
|                 |              |       | Channel catfish     | 1      | 50                 | 68.4                    |
| White crappie   | 1            | 0     | Remains             | --     | 50                 | 31.6                    |
|                 |              |       |                     |        |                    |                         |
| Sauger          | 6            | 18    | Fish                | 1      | 100                | 100                     |
|                 |              |       | Fish:               |        |                    |                         |
|                 |              |       | Lamprey             | 1      | 16.7               | 56.7                    |
|                 |              |       | Notropis sp.        | 1      | 16.7               | 4.3                     |
|                 |              |       | Catfish             | 1      | 16.7               | 17.0                    |
|                 |              |       | UID                 | 1      | 16.7               | 17.0                    |
|                 |              |       | Ephemeroptera nymph | 1      | 16.7               | 0.7                     |
| Walleye         | 1            | 1     | UID remains         | --     | 16.7               | 4.3                     |
|                 |              |       | Fish                | 2      | 100                | 2.0                     |

Table A9.4.18. Stomach contents of omnivorous fish species taken from the Kanawha River, April 20-22, 1983.

| Species            | No. examined |       | Stomach Contents            |        |                    |                         |
|--------------------|--------------|-------|-----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                   | Number | Percent occurrence | Percent of total volume |
| Common carp        | 2            | 2     | Diptera larvae              |        |                    |                         |
|                    |              |       | Chironomidae                | 26     | 100                | <0.1                    |
|                    |              |       | Diptera pupae               | 2      | 50                 | <0.1                    |
|                    |              |       | Silt, sand & UID Remains    |        | 100                | 100                     |
| Smallmouth buffalo | 3            | 4     | Diptera larvae:             |        |                    |                         |
|                    |              |       | Chironomidae                | 25     | 33                 | <0.1                    |
|                    |              |       | Terrestrial plant matter    |        | 67                 | 3.6                     |
|                    |              |       | Silt & UID Remains          |        | 67                 | 96.4                    |
| Spotted sucker     | 1            | 0     | Silt & UID Remains          |        | 100                | 100                     |
| Silver redhorse    | 6            | 0     | Oligochaeta                 | 285    | 83                 | 33.3                    |
|                    |              |       | Diptera larvae:             |        |                    |                         |
|                    |              |       | Chironomidae                | 46     | 67                 | 1.7                     |
|                    |              |       | Pelecypoda                  | 1      | 17                 | <0.1                    |
|                    |              |       | Terrestrial plant matter    |        | 17                 | 3.3                     |
|                    |              |       | Sand                        |        | 17                 | 3.3                     |
|                    |              |       | UID Remains                 |        | 83                 | 58.3                    |
| Black redhorse     | 4            | 0     | Oligochaeta                 | 5      | 50                 | <0.1                    |
|                    |              |       | Amphipoda                   | 4      | 50                 | 3.1                     |
|                    |              |       | Ephemeroptera nymph         | 2      | 25                 | <0.1                    |
|                    |              |       | Trichoptera larvae:         |        |                    |                         |
|                    |              |       | Hydroptilidae w/case        | 7      | 50                 | <0.1                    |
|                    |              |       | Diptera larvae:             |        |                    |                         |
|                    |              |       | Chironomidae                | 410    | 100                | 25.0                    |
|                    |              |       | Diptera pupae               | 42     | 75                 | <0.1                    |
|                    |              |       | Insect parts                |        | 50                 | 6.3                     |
|                    |              |       | UID Remains                 |        | 75                 | 65.6                    |
| Golden redhorse    | 0            | 1     |                             |        |                    |                         |
| Channel catfish    | 5            | 2     | Fish: backbone              | 1      | 20                 | 1.8                     |
|                    |              |       | Coleoptera adult            | 1      | 20                 | 5.3                     |
|                    |              |       | Diptera larvae:             |        |                    |                         |
|                    |              |       | Tipulidae                   | 1      | 20                 | 1.8                     |
|                    |              |       | Insect parts                |        | 40                 | 7.0                     |
|                    |              |       | Allochothonous plant matter |        | 20                 | 33.3                    |
|                    |              |       | Sand                        |        | 40                 | 24.6                    |
|                    |              |       | UID Remains                 |        | 40                 | 26.3                    |

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Table A9.4.19. Stomach contents of fish species considered invertivores from the Kanawha River, April 20-22, 1983.

| Species            | No. examined |       | Stomach Contents           |        |                    |                         |
|--------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Shorthead redhorse | 2            | 0     | Amphipoda                  | 146    | 50                 | 53.4                    |
|                    |              |       | Ephemeroptera nymphs       | 17     | 50                 | 2.9                     |
|                    |              |       | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/case       | 1      | 50                 | <0.1                    |
|                    |              |       | UID Trichoptera            | 1      | 50                 | <0.1                    |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 34     | 100                | 2.0                     |
|                    |              |       | Diptera pupae              | 334    | 100                | 10.3                    |
|                    |              |       | Allochthonous plant matter |        | 50                 | 8.6                     |
|                    |              |       | UID Remains                |        |                    | 22.9                    |
| Pumpkinseed        | 2            | 0     | Amphipoda:                 |        |                    |                         |
|                    |              |       | Gammaridae                 | 22     | 100                | 90.0                    |
|                    |              |       | Insect parts               | 1      | 50                 | 10.0                    |
| Bluegill           | 6            | 1     | Amphipoda:                 |        |                    |                         |
|                    |              |       | Gammaridae                 | 6      | 50                 | 56.3                    |
|                    |              |       | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/case       | 1      | 17                 | <0.1                    |
|                    |              |       | UID Trichoptera            | 1      | 17                 | <0.1                    |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 216    |                    | 17.6                    |
|                    |              |       | Diptera pupae              | 2      | 17                 | <0.1                    |
|                    |              |       | Diptera adult              | 1      | 17                 | <0.1                    |
|                    |              |       | Insect parts               |        | 17                 | <0.1                    |
|                    |              |       | Algae                      |        | 17                 | 1.4                     |
|                    |              |       | Detrital plant matter      |        | 17                 | 7.0                     |
|                    |              |       | Paper                      |        | 17                 | 7.0                     |
|                    |              |       | UID Remains                |        | 50                 | 10.6                    |
| Longear sunfish    | 3            | 1     | Fish                       | 2      | 33                 | 69.1                    |
|                    |              |       | Isopoda                    | 2      | 33                 | 3.6                     |
|                    |              |       | Amphipoda                  |        |                    |                         |
|                    |              |       | Gammaridae                 | 11     | 100                | 14.5                    |
|                    |              |       | Odonata nymphs:            |        |                    |                         |
|                    |              |       | Anisoptera parts           |        | 33                 | 9.1                     |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 2      | 33                 | <0.1                    |
|                    |              |       | Terrestrial insect         | 1      | 33                 | 1.8                     |
|                    |              |       | UID Remains                |        | 33                 | 1.8                     |

| Species         | No. examined |       | Stomach Contents   |        |                    |                         |
|-----------------|--------------|-------|--------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item          | Number | Percent occurrence | Percent of total volume |
| White crappie   | 1            | 0     | Amphipoda          | 1      | 100                | <0.1                    |
|                 |              |       | Lepidoptera larvae | 1      | 100                | 75.0                    |
|                 |              |       | Diptera larvae     |        |                    |                         |
|                 |              |       | Chironomidae       | 8      | 100                | <0.1                    |
|                 |              |       | UID Remains        |        | 100                | 25.0                    |
| Freshwater drum | 1            | 1     | Diptera larvae     |        |                    |                         |
|                 |              |       | Chironomidae       | 8      | 100                | 100                     |



Table A9.4.20. Stomach contents of piscivorous fish species taken from the Kanawha River, April 20-22, 1983.

| Species         | No. examined |       | Food item      | Stomach Contents |                    |                         |
|-----------------|--------------|-------|----------------|------------------|--------------------|-------------------------|
|                 | With food    | Empty |                | Number           | Percent occurrence | Percent of total volume |
| Longnose gar    | 0            | 3     |                |                  |                    |                         |
| Smallmouth bass | 1            | 6     | Insect Parts   |                  | 100                | 100                     |
| Spotted bass    | 2            | 4     | Crayfish       | 2                | 100                | 37.2                    |
|                 |              |       | Fish:          |                  |                    |                         |
|                 |              |       | Emerald shiner | 1                | 50                 | 62.8                    |
| Largemouth bass | 3            | 0     | Crayfish       | 1                | 33                 | 30.1                    |
|                 |              |       | Fish:          |                  |                    |                         |
|                 |              |       | Gizzard Shad   | 1                | 33                 | 18.1                    |
|                 |              |       | UID fish       | 5                | 67                 | 50.6                    |
|                 |              |       | UID Remains    |                  | 33                 | 1.2                     |
| Sauger          | 2            | 12    | Fish           | 2                | 100                | 100                     |
| Walleye         | 1            | 1     | Fish:          |                  |                    |                         |
|                 |              |       | Gizzard shad   | 1                | 100                | 100                     |

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Table A9.4.21. Stomach contents of omnivorous fish species taken from the Kanawha River, May 17-19, 1983.

| Species            | No. examined |       | Stomach contents               |        |                    |                         |
|--------------------|--------------|-------|--------------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                      | Number | Percent occurrence | Percent of total volume |
| Common carp        | 5            | 0     | Insect parts                   | --     | 20                 | <0.1                    |
|                    |              |       | Allochthonous plant matter     | --     | 80                 | 82.8                    |
|                    |              |       | Sand                           | --     | 20                 | <0.1                    |
|                    |              |       | UID remains                    | --     | 60                 | 17.2                    |
| Smallmouth buffalo | 3            | 0     | Diptera larvae: Chironomidae   | 12     | 33                 | <0.1                    |
|                    |              |       | Allochthonous plant matter     | --     | 33                 | 5.0                     |
|                    |              |       | Silt and UID remains           | --     | 100                | 95.0                    |
|                    |              |       |                                |        |                    |                         |
| River redhorse     | 1            | 0     | Ephemeroptera nymphs           | 12     | 100                | 7.9                     |
|                    |              |       | Insect parts                   | --     | 100                | 13.2                    |
|                    |              |       | Pelecypoda remains             | --     | 100                | 26.3                    |
|                    |              |       | Allochthonous plant matter     | --     | 100                | 7.9                     |
|                    |              |       | Sand                           | --     | 100                | <0.1                    |
|                    |              |       | UID remains                    | --     | 100                | 44.7                    |
| Yellow bullhead    | 1            | 0     | Decapoda parts                 | --     | 100                | 11.1                    |
|                    |              |       | Terrestrial Coleoptera         | 1      | 100                | 22.2                    |
|                    |              |       | Insect parts                   | --     | 100                | 11.1                    |
|                    |              |       | Bird feathers                  | 1      | 100                | 3.7                     |
|                    |              |       | UID remains                    | --     | 100                | 51.9                    |
| Channel catfish    | 4            | 0     | Terrestrial Lepidoptera larvae | 1      | 25                 | 0.8                     |
|                    |              |       | Terrestrial Coleoptera         | 2      | 25                 | <0.1                    |
|                    |              |       | Diptera pupae                  | 8      | 50                 | 0.2                     |
|                    |              |       | Insect parts                   | --     | 25                 | <0.1                    |
|                    |              |       | Seeds                          | 14     | 75                 | <0.1                    |
|                    |              |       | Sand                           | --     | 25                 | <0.1                    |
|                    |              |       | Baby bird                      | 1      | 25                 | 97.6                    |
|                    |              |       | UID remains                    | --     | 75                 | 1.4                     |

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Table A9.4.22. Stomach contents of fish species considered invertivores from the Kanawha River, May 17-19, 1983.

| Species        | No. examined |       | Stomach contents                |        |                    |                         |
|----------------|--------------|-------|---------------------------------|--------|--------------------|-------------------------|
|                | With food    | Empty | Food item                       | Number | Percent occurrence | Percent of total volume |
| Spotted sucker | 2            | 1     | Diptera larvae:<br>Chironomidae | 2      | 50                 | <0.1                    |
|                |              |       | Sand                            | --     | 50                 | <0.1                    |
|                |              |       | UID remains                     | --     | 100                | 100                     |
| Black redhorse | 1            | 0     | Insect parts                    | --     | 100                | 12.5                    |
|                |              |       | Pelecypoda remains              | --     | 100                | 12.5                    |
|                |              |       | UID remains                     | --     | 100                | 75.0                    |
| Pumpkinseed    | 4            | 1     | Decapoda remains                | --     | 25                 | <0.1                    |
|                |              |       | Diptera larvae:<br>Chironomidae | 28     | 50                 | 28.6                    |
|                |              |       | Diptera pupae                   | 3      | 50                 | <0.1                    |
|                |              |       | Pelecypoda remains              | --     | 50                 | 71.4                    |
| Bluegill       | 15           | 2     | Terrestrial Oligochaeta         | 1      | 7                  | 30.6                    |
|                |              |       | Terrestrial Chilopoda           | 1      | 7                  | <0.1                    |
|                |              |       | Terrestrial Isopoda             | 3      | 13                 | 0.5                     |
|                |              |       | Amphipoda:                      |        |                    |                         |
|                |              |       | Gammaridae                      | 9      | 40                 | 4.7                     |
|                |              |       | Ephemeroptera nymphs:           |        |                    |                         |
|                |              |       | Baetiscidae                     | 1      | 7                  | <0.1                    |
|                |              |       | Parts                           | --     | 7                  | <0.1                    |
|                |              |       | Odonata nymphs:                 |        |                    |                         |
|                |              |       | Anisoptera                      | 1      | 7                  | 1.0                     |
|                |              |       | Coleoptera adults:              |        |                    |                         |
|                |              |       | Parts                           | --     | 7                  | <0.1                    |
|                |              |       | Diptera larvae:<br>Chironomidae | 280    | 53                 | 5.6                     |
|                |              |       | Diptera pupae                   | 11     | 20                 | <0.1                    |
|                |              |       | Terrestrial Hymenoptera:        |        |                    |                         |
|                |              |       | Ichneumon wasp                  | 1      | 7                  | <0.1                    |
|                |              |       | Insect parts                    | --     | 27                 | 11.2                    |
|                |              |       | Insect cases                    | --     | 7                  | 1.0                     |
|                |              |       | Seeds                           | 92     | 20                 | 9.2                     |
|                |              |       | Fish                            | 1      | 7                  | 4.1                     |
|                |              |       | UID remains                     | --     | 60                 | 32.0                    |

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| Species         | No. examined |       | Stomach contents               |        |                    |                         |
|-----------------|--------------|-------|--------------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                      | Number | Percent occurrence | Percent of total volume |
| Longear sunfish | 10           | 4     | Terrestrial Oligochaeta        | --     | 30                 | 7.5                     |
|                 |              |       | Terrestrial Araneida           | 1      | 10                 | <0.1                    |
|                 |              |       | Terrestrial Isopoda            | 4      | 10                 | 4.0                     |
|                 |              |       | Amphipoda:                     |        |                    |                         |
|                 |              |       | Gammaridae                     | 6      | 50                 | 4.0                     |
|                 |              |       | Ephemeroptera nymphs           | 2      | 10                 | <0.1                    |
|                 |              |       | Odonata nymphs:                |        |                    |                         |
|                 |              |       | Anisoptera                     | 1      | 10                 | 2.5                     |
|                 |              |       | Terrestrial Lepidoptera larvae | 1      | 10                 | 5.0                     |
|                 |              |       | Diptera larva:                 |        |                    |                         |
|                 |              |       | Chironomidae                   | 30     | 40                 | 0.7                     |
|                 |              |       | Tipulidae                      | 1      | 10                 | <0.1                    |
|                 |              |       | Diptera pupae                  | 26     | 50                 | 0.7                     |
|                 |              |       | Insect parts                   | --     | 30                 | 2.5                     |
|                 |              |       | Pelecypoda                     | 5      | 10                 | 1.2                     |
|                 |              |       | Fish                           | 1      | 10                 | 49.8                    |
|                 |              |       | Allochthonous plant matter     | --     | 20                 | 17.4                    |
|                 |              |       | UID remains                    | --     | 30                 | 5.0                     |
| Freshwater drum | 5            | 2     | Terrestrial Oligochaeta pieces | --     | 20                 | 67.9                    |
|                 |              |       | Terrestrial Chilopoda pieces   | --     | 20                 | 7.5                     |
|                 |              |       | Amphipoda                      | 3      | 20                 | 1.9                     |
|                 |              |       | Diptera larvae:                |        |                    |                         |
|                 |              |       | Chironomidae                   | 19     | 60                 | 1.9                     |
|                 |              |       | Diptera pupae                  | 1      | 20                 | <0.1                    |
|                 |              |       | Allochthonous plant matter     | --     | 20                 | 3.8                     |
|                 |              |       | Silt                           | --     | 20                 | <0.1                    |
|                 |              |       | UID remains                    | --     | 60                 | 17.0                    |

Table A9.4.23. Stomach contents of piscivorous fish species taken from the Kanawha River, May 17-19, 1983.

| Species         | No. examined |       | Stomach contents           |        |                    |                         |
|-----------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Longnose gar    | 4            | 0     | Fish:                      |        |                    |                         |
|                 |              |       | Notropis spp.              | 6      | 25                 | 11.8                    |
|                 |              |       | Cyprinidae                 | 6      | 50                 | 12.1                    |
|                 |              |       | UID Fish                   | 2      | 25                 | 76.1                    |
| White bass      | 1            | 1     | Fish:                      |        |                    |                         |
|                 |              |       | Notropis spp.              | 3      | 100                | 100                     |
| Smallmouth bass | 6            | 3     | Fish:                      |        |                    |                         |
|                 |              |       | Cyprinidae                 | 4      | 17                 | 6.9                     |
|                 |              |       | UID Fish                   | 3      | 50                 | 78.3                    |
|                 |              |       | Decapoda parts             | --     | 50                 | 9.0                     |
|                 |              |       | Odonata nymphs:            |        |                    |                         |
|                 |              |       | Gomphidae                  | 1      | 17                 | 0.7                     |
|                 |              |       | Anisoptera                 | 1      | 17                 | 1.0                     |
|                 |              |       | Diptera larvae:            |        |                    |                         |
|                 |              |       | Tipulidae                  | 2      | 17                 | 4.1                     |
| Spotted bass    | 3            | 2     | Fish                       | 2      | 67                 | 24.5                    |
|                 |              |       | Decapoda                   | 2      | 67                 | 71.4                    |
|                 |              |       | Odonata nymph:             |        |                    |                         |
|                 |              |       | Anisoptera parts           | 1      | 33                 | 4.1                     |
| Largemouth bass | 1            | 2     | Decapoda parts             | --     | 100                | 66.7                    |
|                 |              |       | Allochthonous plant matter | --     | 100                | 33.3                    |
| Sauger          | 4            | 2     | Fish:                      |        |                    |                         |
|                 |              |       | Notropis spp.              | 12     | 50                 | 70.5                    |
|                 |              |       | Cyprinidae                 | 4      | 25                 | 8.9                     |
|                 |              |       | Fish remains               | --     | 25                 | 20.6                    |

Table A9.4.24. Stomach contents of omnivorous fish species taken from the Kanawha River, June 21-23, 1983.

| Species            | No. examined |       | Stomach contents        |        |                    |                         |
|--------------------|--------------|-------|-------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item               | Number | Percent occurrence | Percent of total volume |
| Common carp        | 2            | 0     | Sand and Plant detritus | --     | 50                 | 33.3                    |
|                    |              |       | UID remains             | --     | 100                | 66.7                    |
| Quillback          | 1            | 0     | Plant detritus          | --     | 100                | 50.0                    |
|                    |              |       | Sand and silt           | --     | 100                | 50.0                    |
| Smallmouth buffalo | 1            | 1     | Diptera larvae:         |        |                    |                         |
|                    |              |       | Chrionomidae            | 35     | 100                | <0.1                    |
|                    |              |       | Algae (filamentous)     | --     | 100                | 97.5                    |
|                    |              |       | Plant detritus          | --     | 100                | 2.5                     |
| Silver redhorse    | 1            | 0     | UID remains             | --     | 100                | 100                     |
| Golden redhorse    | 2            | 0     | Pelecypoda remains      | --     | 50                 | <0.1                    |
|                    |              |       | Plant detritus          | --     | 50                 | 7.1                     |
|                    |              |       | UID remains             | --     | 100                | 92.9                    |
| Shorthead redhorse | 6            | 0     | Oligochaeta             | 3      | 17                 | 2.4                     |
|                    |              |       | Trichoptera larvae:     |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases  | 3      | 17                 | <0.1                    |
|                    |              |       | Diptera larvae:         |        |                    |                         |
|                    |              |       | Chironomidae            | 68     | 33                 | 2.4                     |
|                    |              |       | Diptera pupae           | 3      | 17                 | <0.1                    |
|                    |              |       | Insect parts            | --     | 17                 | 1.2                     |
|                    |              |       | Algae (filamentous)     | --     | 67                 | 36.6                    |
|                    |              |       | Plant detritus          | --     | 50                 | 9.8                     |
|                    |              |       | Sand                    | --     | 17                 | 2.4                     |
|                    |              |       | UID remains             | --     | 67                 | 45.1                    |

| Species         | No. examined |       | Stomach contents                             |        |                    |                         |
|-----------------|--------------|-------|----------------------------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                                    | Number | Percent occurrence | Percent of total volume |
| Channel catfish | 17           | 4     | Fish                                         |        |                    |                         |
|                 |              |       | Remains from dead fish                       | --     | 35                 | 53.4                    |
|                 |              |       | Vertebrate remains: flesh & bones - not fish | --     | 6                  | 4.2                     |
|                 |              |       | Terrestrial Isopoda                          | 1      | 6                  | 0.3                     |
|                 |              |       | Terrestrial Coleoptera                       | 1      | 6                  | 3.0                     |
|                 |              |       | Terrestrial Hymenoptera                      | 1      | 6                  | 0.3                     |
|                 |              |       | Terrestrial Insect parts                     | --     | 6                  | 0.3                     |
|                 |              |       | Ephemeroptera nymph                          | 3      | 12                 | 1.5                     |
|                 |              |       | Odonata nymph:                               |        |                    |                         |
|                 |              |       | Aeschnidae                                   | 1      | 6                  | 0.4                     |
|                 |              |       | Diptera larvae:                              |        |                    |                         |
|                 |              |       | Chironomidae                                 | 6      | 12                 | <0.1                    |
|                 |              |       | Diptera pupae                                | 1      | 6                  | <0.1                    |
|                 |              |       | Insect parts                                 | --     | 6                  | 0.9                     |
|                 |              |       | Algae (filamentous)                          | --     | 18                 | 13.4                    |
|                 |              |       | Allochthonous plant matter                   | --     | 18                 | 0.7                     |
|                 |              |       | Paper                                        | --     | 6                  | 5.4                     |
|                 |              |       | Plastic pieces                               | --     | 6                  | 1.8                     |
|                 |              |       | UID remains                                  | --     | 29                 | 14.3                    |

Table A9.4.25. Stomach contents of fish species considered invertivores from the Kanawha River, June 21-23, 1983.

| Species            | No. examined |       | Stomach contents           |        |                    |                         |
|--------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Northern hogsucker | 0            | 1     |                            |        |                    |                         |
| Rock bass          | 1            | 0     | Terrestrial isopoda        | 1      | 100                | 8.3                     |
|                    |              |       | Decapoda                   | 1      | 100                | 91.7                    |
| Pumpkinseed        | 2            | 0     | Decapoda parts             | --     | 50                 | 100                     |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 37     | 100                | <0.1                    |
|                    |              |       | Diptera pupae              | 1      | 50                 | <0.1                    |
| Bluegill           | 5            | 0     | Amphipoda:                 |        |                    |                         |
|                    |              |       | Gammaridae                 | 14     | 40                 | 9.6                     |
|                    |              |       | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases     | 6      | 40                 | <0.1                    |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 134    | 80                 | 4.8                     |
|                    |              |       | UID larvae                 | 1      | 20                 | 28.8                    |
|                    |              |       | Diptera pupae              | 3      | 40                 | <0.1                    |
|                    |              |       | Terrestrial Hymenoptera    | 3      | 20                 | 48.1                    |
|                    |              |       | Insect parts               | --     | 20                 | 5.8                     |
|                    |              |       | UID remains                | --     | 20                 | 2.9                     |
| Longear sunfish    | 1            | 0     | Terrestrial isopoda        | 1      | 100                | <0.1                    |
|                    |              |       | Pelecypoda                 | 2      | 100                | <0.1                    |
|                    |              |       | Plant detritus             | --     | 100                | <0.1                    |
|                    |              |       | UID remains                | --     | 100                | 100                     |
| Freshwater drum    | 8            | 1     | Fish                       | 1      | 13                 | 4.5                     |
|                    |              |       | Terrestrial Oligochaeta    |        |                    |                         |
|                    |              |       | pieces                     | --     | 13                 | 3.0                     |
|                    |              |       | Amphipoda                  | 3      | 25                 | <0.1                    |
|                    |              |       | Decapoda                   | 2      | 25                 | 62.1                    |
|                    |              |       | Ephemeroptera nymph        | 2      | 13                 | <0.1                    |
|                    |              |       | Odonata nymph              |        |                    |                         |
|                    |              |       | Anisoptera                 | 3      | 38                 | 6.0                     |
|                    |              |       | Trichoptera cases          | 3      | 13                 | <0.1                    |
|                    |              |       | Diptera larvae             |        |                    |                         |
|                    |              |       | Chironomidae               | 73     | 38                 | 2.1                     |
|                    |              |       | Tabanidae                  | 1      | 13                 | <0.1                    |
|                    |              |       | Terrestrial Diptera Adult  | 1      | 13                 | 3.0                     |
|                    |              |       | Insect parts               | --     | 13                 | 9.0                     |
|                    |              |       | UID Object                 | --     | 13                 | 9.0                     |
|                    |              |       | Allochthonous plant matter | --     | 25                 | 1.5                     |



Table A9.4.26. Stomach contents of piscivorous fish species taken from the Kanawha River, June 21-23, 1983.

| Species          | No. examined |       | Stomach contents       |        |                    |                         |
|------------------|--------------|-------|------------------------|--------|--------------------|-------------------------|
|                  | With food    | Empty | Food item              | Number | Percent occurrence | Percent of total volume |
| Longnose gar     | 1            | 1     | Fish:                  |        |                    |                         |
|                  |              |       | Emerald shiner         | 4      | 100                | 47.8                    |
|                  |              |       | Cyprinidae             | 5      | 100                | 52.2                    |
| Flathead catfish | 2            | 0     | Fish:                  |        |                    |                         |
|                  |              |       | Cyprinidae             | 1      | 50                 | 1.6                     |
|                  |              |       | Remains from dead fish | -      | 50                 | 97.6                    |
|                  |              |       | Decapoda               | 1      | 50                 | 0.8                     |
| White bass       | 1            | 0     | Fish                   | 1      | 100                | 100                     |
| Smallmouth bass  | 6            | 8     | Fish                   | 1      | 17                 | 19.0                    |
|                  |              |       | Decapoda               | 5      | 83                 | 77.8                    |
|                  |              |       | UID remains            | -      | 17                 | 3.2                     |
| Spotted bass     | 3            | 1     | Decapoda               | 2      | 67                 | 96.8                    |
|                  |              |       | Emphemeroptera nymph:  |        |                    |                         |
|                  |              |       | Ephemeraidae           | 1      | 33                 | 3.2                     |
| Largemouth bass  | 2            | 1     | Fish                   | 3      | 100                | 100                     |
| White crappie    | 2            | 0     | Fish:                  |        |                    |                         |
|                  |              |       | Cyprinidae             | 1      | 50                 | 70.6                    |
|                  |              |       | UID fish               | 1      | 50                 | 29.4                    |
| Sauger           | 4            | 3     | Fish:                  |        |                    |                         |
|                  |              |       | Bluntnose minnow       | 2      | 25                 | 77.3                    |
|                  |              |       | Cyprinidae             | 1      | 25                 | 20.2                    |
|                  |              |       | UID fish               | 1      | 25                 | 1.7                     |
|                  |              |       | UID remains            | -      | 25                 | 0.8                     |
| Walleye          | 0            | 1     |                        |        |                    |                         |

Table A9.4.27. Stomach contents of omnivorous fish species taken from the Kanawha River, July 19-22, 1983.

| Species            | No. examined |       | Stomach contents           |        |                    |                         |
|--------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Common carp        | 1            | 0     | Amphipoda                  | 16     | 100                | 2.0                     |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 15     | 100                | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 100                | 90.0                    |
|                    |              |       | Allochthonous plant matter | --     | 100                | 8.0                     |
| River carpsucker   | 1            | 0     | Cladocera                  | 1750   | 100                | 50.0                    |
|                    |              |       | Sand & silt                | --     | 100                | 50.0                    |
| Quillback          | 1            | 1     | Plant detritus             | --     | 100                | 25.0                    |
|                    |              |       | Sand & silt                | --     | 100                | 75.0                    |
| Smallmouth buffalo | 3            | 1     | Cladocera                  | 1435   | 67                 | 13.3                    |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 14     | 33                 | <0.1                    |
|                    |              |       | Diptera pupae              | 2      | 33                 | <0.1                    |
|                    |              |       | Sand & UID remains         | --     | 67                 | 86.7                    |
| Silver redhorse    | 3            | 0     | UID remains                | --     | 100                | 100                     |
| Shorthead redhorse | 11           | 2     | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases     | 26     | 27                 | <0.1                    |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 73     | 55                 | <0.1                    |
|                    |              |       | Diptera pupae              | 5      | 36                 | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 18                 | 6.1                     |
|                    |              |       | Algae (filamentous)        | --     | 18                 | 18.1                    |
|                    |              |       | Plant detritus             | --     | 18                 | 2.4                     |
|                    |              |       | Sand                       | --     | 9                  | <0.1                    |
|                    |              |       | UID remains                | --     | 100                | 73.3                    |
| Yellow bullhead    | 1            | 0     | Decapoda                   | 1      | 100                | 100                     |
| Brown bullhead     | 1            | 1     | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 1      | 100                | <0.1                    |
|                    |              |       | Allochthonous plant matter | --     | 100                | <0.1                    |
|                    |              |       | UID remains                | --     | 100                | 100                     |

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| Species         | No. examined |       | Stomach contents            |        |                    |                         |
|-----------------|--------------|-------|-----------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                   | Number | Percent occurrence | Percent of total volume |
| Channel catfish | 32           | 12    | Fish:                       |        |                    |                         |
|                 |              |       | Gizzard shad                | 4      | 13                 | 43.9                    |
|                 |              |       | UID                         | 2      | 6                  | 1.4                     |
|                 |              |       | Remains from dead fish      | --     | 6                  | 4.7                     |
|                 |              |       | Remains                     | --     | 6                  | 1.5                     |
|                 |              |       | Decapoda parts              | --     | 16                 | 2.9                     |
|                 |              |       | Odonata nymphs              |        |                    |                         |
|                 |              |       | Zygoptera                   | 1      | 3                  | 0.1                     |
|                 |              |       | Trichoptera larvae:         |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases      | 5      | 9                  | <0.1                    |
|                 |              |       | Diptera larvae:             |        |                    |                         |
|                 |              |       | Chironomidae                | 64     | 19                 | <0.1                    |
|                 |              |       | Chaoboridae                 | 6      | 6                  | <0.1                    |
|                 |              |       | Terrestrial Isopoda         | 2      | 3                  | <0.1                    |
|                 |              |       | Terrestrial Diplopoda parts | --     | 3                  | 2.7                     |
|                 |              |       | Terrestrial Coleoptera      | 1      | 3                  | 1.1                     |
|                 |              |       | Terrestrial Insect parts    | --     | 13                 | 1.9                     |
|                 |              |       | Insect parts                | --     | 9                  | 0.3                     |
|                 |              |       | Algae (filamentous)         | --     | 34                 | 21.1                    |
|                 |              |       | Algae                       | --     | 3                  | 0.2                     |
|                 |              |       | Allochthonous plant matter  | --     | 25                 | 5.6                     |
|                 |              |       | Sand & Silt                 | --     | 6                  | 0.5                     |
|                 |              |       | UID remains                 |        | 38                 | 12.4                    |

Table A9.4.28. Stomach contents of fish species considered invertivores from the Kanawha River, July 19-22, 1983.

| Species            | No. examined |       | Stomach contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                     |                                                                                                                                |                                                                                                                                                                            |
|--------------------|--------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | With food    | Empty | Food item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Number                                                                                                                                              | Percent occurrence                                                                                                             | Percent of total volume                                                                                                                                                    |
| Northern hogsucker | 1            | 0     | Diptera larvae:<br>Chironomidae<br>UID remains                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 9<br>--                                                                                                                                             | 100<br>100                                                                                                                     | <0.1<br>100                                                                                                                                                                |
| Golden redhorse    | 9            | 1     | Ephemeroptera nymph<br>Trichoptera larvae<br>Diptera larvae:<br>Chironomidae<br>Diptera pupae<br>Insect parts<br>Pelecypoda remains<br>Algae (filamentous)<br>Plant detritus<br>Sand<br>UID remains                                                                                                                                                                                                                                                                                                                                                                                              | 8<br>11<br>397<br>32<br>--<br>--<br>--<br>--<br>--                                                                                                  | 22<br>11<br>22<br>22<br>33<br>67<br>11<br>22<br>22<br>78                                                                       | <0.1<br><0.1<br>6.3<br><0.1<br>2.1<br>62.5<br><0.1<br>4.2<br><0.1<br>25.0                                                                                                  |
| Bluegill           | 18           | 0     | Cladocera<br>Amphipoda<br>Odonata nymph<br>Trichoptera larvae:<br>Hydroptilidae w/ cases<br>Diptera larvae:<br>Chironomidae<br>Diptera pupae<br>Insect parts<br>Gastropoda remains<br>Pelecypoda remains<br>Terrestrial Araneidae<br>Terrestrial Diplopoda<br>Terrestrial Chilopoda parts<br>Terrestrial Hemiptera<br>Terrestrial Homoptera<br>Terrestrial Coleoptera<br>Terrestrial Lepidoptera larvae<br>Terrestrial Diptera<br>Terrestrial Hymenoptera<br>Terrestrial Insect parts<br>Algae (filamentous)<br>Aquatic plant matter<br>Allochthonous plant matter<br>Fish scales<br>UID remains | 1<br>38<br>1<br>12<br>432<br>6<br>--<br>--<br>--<br>1<br>2<br>--<br>1<br>1<br>3<br>6<br>1<br>18<br>--<br>--<br>--<br>--<br>6<br>--<br>--<br>6<br>-- | 6<br>33<br>6<br>11<br>78<br>17<br>17<br>11<br>11<br>6<br>11<br>6<br>6<br>17<br>22<br>6<br>28<br>17<br>28<br>6<br>11<br>6<br>39 | <0.1<br>3.7<br>1.9<br>0.9<br>7.5<br><0.1<br>6.9<br>0.9<br>0.7<br>0.6<br>6.0<br>0.6<br>3.7<br><0.1<br>5.6<br>4.5<br>3.7<br>7.3<br>7.5<br>13.1<br>6.6<br>3.7<br><0.1<br>14.4 |

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| Species         | No. examined |       | Stomach contents       |        |                    |                         |
|-----------------|--------------|-------|------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item              | Number | Percent occurrence | Percent of total volume |
| Longear sunfish | 4            | 1     | Fish                   | 5      | 50                 | 30.0                    |
|                 |              |       | Trichoptera larvae     |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases | 2      | 50                 | <0.1                    |
|                 |              |       | Diptera larvae         |        |                    |                         |
|                 |              |       | Chironomidae           | 33     | 75                 | 10.0                    |
|                 |              |       | Insect parts           | --     | 25                 | 10.0                    |
|                 |              |       | Pelecypoda remains     | --     | 25                 | 30.0                    |
|                 |              |       | Terrestrial Diptera    | --     | 25                 | 14.0                    |
| Redear sunfish  | 1            | 0     | Coal                   | --     | 25                 | 6.0                     |
|                 |              |       | Diptera larvae:        |        |                    |                         |
|                 |              |       | Chironomidae           | 8      | 100                | <0.1                    |
| Freshwater drum | 11           | 16    | Pelecypoda remains     | --     | 100                | 100                     |
|                 |              |       | Amphipoda              | 7      | 9                  | 2.9                     |
|                 |              |       | Decapoda               | 1      | 9                  | 75.8                    |
|                 |              |       | Ephemeroptera nymph    | 22     | 18                 | 5.8                     |
|                 |              |       | Odonata nymph:         |        |                    |                         |
|                 |              |       | Anisoptera             | 5      | 18                 | 5.1                     |
|                 |              |       | Trichoptera larvae     |        |                    |                         |
|                 |              |       | Leptoceridae w/ case   | 3      | 9                  | 0.7                     |
|                 |              |       | Diptera larvae:        |        |                    |                         |
|                 |              |       | Chironomidae           | 12     | 9                  | 0.9                     |
|                 |              |       | Chaoboridae            | 6      | 9                  | <0.1                    |
|                 |              |       | Terrestrial Homoptera  | 1      | 9                  | 1.5                     |
|                 |              |       | Insect parts           | --     | 9                  | 1.5                     |
|                 |              |       | Silt & UID remains     | --     | 27                 | 5.8                     |

Table A9.4.29. Stomach contents of piscivorous fish species taken from the Kanawha River, July 19-22, 1983.

| Species          | No. examined |       | Stomach contents           |        |                    |                         |
|------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                  | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Longnose gar     | 2            | 2     | Fish:                      |        |                    |                         |
|                  |              |       | Notropis spp.              | 2      | 50                 | 54.9                    |
|                  |              |       | Cyprinidae                 | 2      | 50                 | 27.5                    |
|                  |              |       | UID                        | 1      | 50                 | 15.7                    |
|                  |              |       | Insect parts               | --     | 50                 | 2.0                     |
| Skipjack herring | 3            | 0     | Fish:                      |        |                    |                         |
|                  |              |       | Gizzard shad               | 1      | 33                 | 12.7                    |
|                  |              |       | Notropis spp               | 4      | 33                 | 62.0                    |
|                  |              |       | UID                        | 2      | 67                 | 25.4                    |
| Flathead catfish | 1            | 3     | Silt & UID remains         | --     | 100                | 100                     |
| White bass       | 3            | 3     | Fish                       | 2      | 67                 | 44.0                    |
|                  |              |       | Decapoda                   | 1      | 33                 | 52.0                    |
|                  |              |       | Ephemeroptera nymphs:      |        |                    |                         |
|                  |              |       | Baetidae                   | 3      | 33                 | 4.0                     |
| Rock bass        | 2            | 1     | Decapoda                   | 2      | 100                | 93.8                    |
|                  |              |       | Insect parts               | --     | 50                 | 6.2                     |
| Smallmouth bass  | 3            | 1     | Fish:                      |        |                    |                         |
|                  |              |       | Notropis spp.              | 2      | 33                 | 10.1                    |
|                  |              |       | Decapoda                   | 6      | 100                | 89.9                    |
| Spotted bass     | 7            | 0     | Fish                       | 2      | 29                 | 16.8                    |
|                  |              |       | Decapoda                   | 7      | 71                 | 83.2                    |
| Largemouth bass  | 3            | 1     | Fish:                      |        |                    |                         |
|                  |              |       | Catfish                    | 2      | 33                 | 22.2                    |
|                  |              |       | UID                        | 1      | 33                 | 48.9                    |
|                  |              |       | Decapoda                   | 1      | 33                 | 16.7                    |
|                  |              |       | Allochthonous plant matter | --     | 33                 | 11.1                    |
|                  |              |       | UID remains                | --     | 33                 | 1.1                     |
| White crappie    | 3            | 1     | Fish                       | 1      | 33                 | 87.0                    |
|                  |              |       | Diptera larvae:            |        |                    |                         |
|                  |              |       | Chaoboridae                | 37     | 33                 | 4.3                     |
|                  |              |       | UID remains                | --     | 66                 | 8.7                     |
| Black crappie    | 1            | 0     | Fish:                      |        |                    |                         |
|                  |              |       | Gizzard shad               | 3      | 100                | 68.8                    |
|                  |              |       | UID                        | 2      | 100                | 31.2                    |
| Sauger           | 2            | 2     | Fish                       | 1      | 50                 | 80.0                    |
|                  |              |       | UID remains                | --     | 50                 | 20.0                    |

Table A9.4.30. Stomach contents of omnivorous fish species taken from the Kanawha River, August 23-24, 1983.

| Species            | No. examined |       | Stomach contents                              |        |                    |                         |
|--------------------|--------------|-------|-----------------------------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                                     | Number | Percent occurrence | Percent of total volume |
| Common carp        | 5            | 1     | Diptera larvae:<br>Chironomidae               | 114    | 20                 | 3.8                     |
|                    |              |       | Terrestrial Lepidoptera larvae                | 1      | 20                 | 3.8                     |
|                    |              |       | UID remains                                   | 5      | 100                | 92.5                    |
| River carpsucker   | 1            | 0     | Sand & UID remains                            | --     | 100                | 100                     |
| Smallmouth buffalo | 3            | 1     | UID remains                                   | --     | 100                | 100                     |
| Shorthead redhorse | 4            | 0     | Trichoptera larvae:<br>Hydroptilidae w/ cases | 40     | 50                 | 25.0                    |
|                    |              |       | Diptera larvae:<br>Chironomidae               | 113    | 50                 | 50.0                    |
|                    |              |       | Diptera pupae                                 | 27     | 50                 | 12.5                    |
|                    |              |       | Algae (filamentous)                           | --     | 25                 | <0.1                    |
|                    |              |       | Sand                                          | --     | 25                 | 12.5                    |
|                    |              |       | UID remains                                   | --     | 50                 | <0.1                    |
| Yellow bullhead    | 0            | 1     |                                               |        |                    |                         |
| Channel catfish    | 27           | 21    | Fish:                                         |        |                    |                         |
|                    |              |       | Gizzard shad                                  | 1      | 4                  | 32.2                    |
|                    |              |       | Cyprinidae                                    | 1      | 4                  | 1.6                     |
|                    |              |       | UID Fish                                      | 5      | 15                 | 14.5                    |
|                    |              |       | Scales                                        | --     | 7                  | 0.5                     |
|                    |              |       | UID Flesh                                     | --     | 4                  | 0.3                     |
|                    |              |       | Crayfish                                      | 2      | 7                  | 3.5                     |
|                    |              |       | Trichoptera larvae:<br>Hydroptilidae w/ cases | 1      | 4                  | <0.1                    |
|                    |              |       | Diptera larvae:<br>Chaoboridae                | 1      | 4                  | <0.1                    |
|                    |              |       | Chironomidae                                  | 81     | 7                  | <0.1                    |
|                    |              |       | Diptera pupae                                 | 1      | 4                  | <0.1                    |
|                    |              |       | Terrestrial Orthoptera                        | 1      | 4                  | 0.7                     |
|                    |              |       | Terrestrial Homoptera                         | 1      | 4                  | 0.2                     |
|                    |              |       | Terrestrial Coleoptera                        | 39     | 19                 | 3.1                     |
|                    |              |       | Terrestrial Diptera adult                     | 1      | 4                  | <0.1                    |
|                    |              |       | Insect Parts                                  | --     | 11                 | 0.6                     |
|                    |              |       | Pelecypoda remains                            | --     | 4                  | <0.1                    |
|                    |              |       | Algae (filamentous)                           | --     | 26                 | 39.1                    |
|                    |              |       | Allochthonous plant matter                    | --     | 19                 | 2.6                     |
|                    |              |       | Seed                                          | 1      | 4                  | 0.2                     |
|                    |              |       | Paper                                         | --     | 4                  | 0.2                     |
|                    |              |       | Silt, sand, & stones                          | --     | 19                 | 0.1                     |
|                    |              |       | UID Remains                                   | --     | 19                 | 0.5                     |

Table A9.4.31. Stomach contents of fish species considered invertivores from the Kanawha River, August 23-24, 1983.

| Species         | No. examined |       | Stomach contents               |        |                    |                         |
|-----------------|--------------|-------|--------------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                      | Number | Percent occurrence | Percent of total volume |
| Mooneye         | 2            | 0     | Terrestrial Coleoptera parts   | --     | 50                 | 37.7                    |
|                 |              |       | Terrestrial Insect parts       | --     | 100                | 62.3                    |
| Silver redhorse | 1            | 0     | Ephemeroptera nymph            | 1      | 100                | <0.1                    |
|                 |              |       | Diptera larvae:                |        |                    |                         |
|                 |              |       | Chironomidae                   | 5      | 100                | <0.1                    |
|                 |              |       | Diptera pupae                  | 1      | 100                | <0.1                    |
|                 |              |       | Pelecypoda remains             | --     | 100                | 80.0                    |
|                 |              |       | Sand                           | --     | 100                | <0.1                    |
| Black redhorse  | 1            | 0     | UID remains                    | --     | 100                | 20.0                    |
|                 |              |       | Diptera larvae:                |        |                    |                         |
|                 |              |       | Chironomidae                   | 2      | 100                | <0.1                    |
|                 |              |       | Pelecypoda remains             | --     | 100                | 50.0                    |
| Golden redhorse | 2            | 0     | UID remains                    | --     | 100                | 50.0                    |
|                 |              |       | Terrestrial Insect parts       | --     | 50                 | 6.3                     |
|                 |              |       | Pelecypoda remains             | --     | 50                 | 56.3                    |
| Bluegill        | 24           | 10    | Sand & UID remains             | --     | 100                | 37.5                    |
|                 |              |       | Trichoptera larvae:            |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases         | 7      | 13                 | <0.1                    |
|                 |              |       | Psychomyiidae                  | 5      | 4                  | <0.1                    |
|                 |              |       | UID                            | 8      | 17                 | 0.7                     |
|                 |              |       | Diptera larvae:                |        |                    |                         |
|                 |              |       | Chironomidae                   | 501    | 58                 | 12.2                    |
|                 |              |       | Diptera pupae                  | 5      | 17                 | <0.1                    |
|                 |              |       | Terrestrial Isopoda            | 1      | 4                  | <0.1                    |
|                 |              |       | Terrestrial Diplopoda parts    | --     | 4                  | <0.1                    |
|                 |              |       | Terrestrial Araneidae          | 1      | 4                  | <0.1                    |
|                 |              |       | Terrestrial Coleoptera         | 7      | 25                 | 7.2                     |
|                 |              |       | Terrestrial Lepidoptera larvae | 6      | 17                 | 19.9                    |
|                 |              |       | Terrestrial Hymenoptera        | 20     | 25                 | 6.8                     |
|                 |              |       | Terrestrial Insect parts       | --     | 21                 | 22.4                    |
|                 |              |       | Insect parts                   | --     | 8                  | <0.1                    |
|                 |              |       | Pelecypoda remains             | --     | 4                  | 0.7                     |
|                 |              |       | Algae (filamentous)            | --     | 13                 | 2.0                     |
|                 |              |       | Allochthomous plant matter     | --     | 21                 | 7.7                     |
|                 |              |       | Plant matter                   | --     | 8                  | 5.4                     |
|                 |              |       | UID remains                    | --     | 42                 | 14.9                    |



| Species         | No. examined |       | Stomach contents         |        |                    |                         |
|-----------------|--------------|-------|--------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                | Number | Percent occurrence | Percent of total volume |
| Longear sunfish | 3            | 3     | Amphipoda                | 2      | 33                 | 10.0                    |
|                 |              |       | Trichoptera larvae:      |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases   | 1      | 33                 | <0.1                    |
|                 |              |       | Diptera larvae           |        |                    |                         |
|                 |              |       | Chironomidae             | 5      | 33                 | <0.1                    |
|                 |              |       | Terrestrial insect parts | --     | 33                 | 50.0                    |
|                 |              |       | Pelecypoda remains       | --     | 33                 | 10.0                    |
|                 |              |       | Plant remains            | --     | 67                 | 20.0                    |
|                 |              |       | UID remains              | --     | 33                 | 10.0                    |
|                 |              |       | Amphipoda                | 1      | 50                 | <0.1                    |
| Redear sunfish  | 2            | 0     | Terrestrial Isopoda      | 1      | 50                 | <0.1                    |
|                 |              |       | Diptera larvae:          |        |                    |                         |
|                 |              |       | Chironomidae             | 15     | 100                | <0.1                    |
|                 |              |       | Pelecypoda remains       | --     | 100                | 100.0                   |
|                 |              |       |                          |        |                    |                         |
| Freshwater drum | 11           | 29    | Fish                     | 3      | 18                 | 42.3                    |
|                 |              |       | Odonata nymph            |        |                    |                         |
|                 |              |       | Anisoptera               | 1      | 9                  | 3.8                     |
|                 |              |       | Diptera larvae           |        |                    |                         |
|                 |              |       | Chaoboridae              | 47     | 36                 | 1.9                     |
|                 |              |       | Chironomidae             | 3      | 18                 | <0.1                    |
|                 |              |       | Pelecypoda remains       | --     | 9                  | 42.3                    |
|                 |              |       | UID remains              | --     | 27                 | 9.6                     |

Table A9.4.32. Stomach contents of piscivorous fish species taken from the Kanawha River, August 23-24, 1983.

| Species          | No. examined |       | Stomach contents           |        |                    |                         |
|------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                  | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Longnose gar     | 1            | 1     | Fish:<br>Gizzard shad      | 1      | 100                | 100                     |
| Flathead catfish | 0            | 1     |                            |        |                    |                         |
| White bass       | 0            | 1     |                            |        |                    |                         |
| Rock bass        | 1            | 2     | Decapoda Parts             | --     | 100                | 66.7                    |
|                  |              |       | Insect parts               | --     | 100                | 33.3                    |
| Smallmouth bass  | 1            | 0     | Decapoda                   | 1      | 100                | 100                     |
| Spotted bass     | 1            | 3     | Decapoda                   | 1      | 100                | 100                     |
| White crappie    | 8            | 1     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 1      | 13                 | 3.3                     |
|                  |              |       | UID Fish                   | 1      | 13                 | 60.0                    |
|                  |              |       | Fish remains               | --     | 25                 | 13.3                    |
|                  |              |       | Ephemeroptera nymphs       | 6      | 13                 | 2.3                     |
|                  |              |       | Diptera larvae:            |        |                    |                         |
|                  |              |       | Chaoboridae                | 29     | 13                 | 3.3                     |
|                  |              |       | Chironomidae               | 1      | 13                 | <0.1                    |
|                  |              |       | Diptera pupae              | 47     | 38                 | 6.7                     |
|                  |              |       | UID remains                | --     | 50                 | 11.0                    |
| Black crappie    | 2            | 1     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 1      | 50                 | 100                     |
|                  |              |       | UID remains                | --     | 50                 | <0.1                    |
| Sauger           | 3            | 5     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 1      | 33                 | 23.8                    |
|                  |              |       | UID Fish                   | 1      | 33                 | 61.9                    |
|                  |              |       | UID remains                | --     | 33                 | 14.3                    |
|                  |              |       | Terrestrial Orthoptera     | 1      | 4                  | 0.7                     |
|                  |              |       | Terrestrial Homoptera      | 1      | 4                  | 0.2                     |
|                  |              |       | Terrestrial Coleoptera     | 39     | 19                 | 3.1                     |
|                  |              |       | Terrestrial Diptera adult  | 1      | 4                  | <0.1                    |
|                  |              |       | Insect parts               | --     | 11                 | 0.6                     |
|                  |              |       | Pelecypoda remains         | --     | 4                  | <0.1                    |
|                  |              |       | Algae (filamentous)        | --     | 26                 | 39.1                    |
|                  |              |       | Allochthonous plant matter | --     | 19                 | 2.6                     |
|                  |              |       | Seed                       | 1      | 4                  | 0.2                     |
|                  |              |       | Paper                      | --     | 4                  | 0.2                     |
|                  |              |       | Silt, sand & stones        | --     | 19                 | 0.1                     |
|                  |              |       | UID remains                | --     | 19                 | 0.5                     |

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Table A9.4.33. Stomach contents of omnivorous fish species taken from the Kanawha River, September 12-15, 1983.

| Species            | No. examined |       | Stomach contents           |        |                    |                         |
|--------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Common carp        | 5            | 1     | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 3      | 20                 | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 40                 | 52.0                    |
|                    |              |       | Algae (filamentous)        | --     | 40                 | 26.8                    |
|                    |              |       | Allochthonous plant matter | --     | 40                 | 3.4                     |
|                    |              |       | UID remains                | --     | 60                 | 17.8                    |
| River carpsucker   | 1            | 0     | Detritus                   | --     | 100                | 45.5                    |
|                    |              |       | Sand & Silt                | --     | 100                | 45.5                    |
|                    |              |       | UID remains                | --     | 100                | 9.1                     |
| Smallmouth buffalo | 6            | 6     | Detritus                   | --     | 17                 | 5.0                     |
|                    |              |       | UID remains                | --     | 100                | 95.0                    |
| Yellow bullhead    | 1            | 2     | Decapoda parts             | --     | 100                | 60.0                    |
|                    |              |       | Odonata nymph              |        |                    |                         |
|                    |              |       | Anisoptera                 | 1      | 100                | 40.0                    |
| Channel catfish    | 35           | 29    | Decapoda                   | 2      | 6                  | 3.9                     |
|                    |              |       | Decapoda parts             | --     | 14                 | 2.2                     |
|                    |              |       | Fish:                      |        |                    |                         |
|                    |              |       | UID fish                   | 1      | 3                  | 1.6                     |
|                    |              |       | Remains                    | --     | 3                  | 0.6                     |
|                    |              |       | Scales                     | 13     | 9                  | 0.4                     |
|                    |              |       | Ephemeroptera nymph        | 6      | 14                 | <0.1                    |
|                    |              |       | Hemiptera parts            | --     | 3                  | 0.4                     |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 73     | 9                  | <0.1                    |
|                    |              |       | Chaoboridae                | 1      | 3                  | <0.1                    |
|                    |              |       | Terrestrial Coleoptera     | 9      | 20                 | 0.5                     |
|                    |              |       | Terrestrial Insect parts   | --     | 9                  | 1.5                     |
|                    |              |       | Insect Parts               | --     | 6                  | 0.1                     |
|                    |              |       | Statoblasts                | 378    | 14                 | <0.1                    |
|                    |              |       | Algae (filamentous)        | --     | 34                 | 77.2                    |
|                    |              |       | Allochthonous plant matter | --     | 23                 | 4.8                     |
|                    |              |       | Plant matter               | --     | 3                  | 0.2                     |
|                    |              |       | Stone                      | 1      | 3                  | <0.1                    |
|                    |              |       | UID remains                | --     | 40                 | 6.4                     |

Table A9.4.34. Stomach contents of fish species considered invertivores from the Kanawha River, September 12-15, 1983.

| Species            | No. examined |       | Stomach contents           |        |                    |                         |
|--------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                    | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Northern hogsucker | 3            | 0     | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases     | 1      | 33                 | 16.7                    |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 95     | 100                | <0.1                    |
|                    |              |       | Diptera Pupae              | 8      | 100                | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 67                 | 25.0                    |
|                    |              |       | UID remains                | --     | 100                | 58.3                    |
| Spotted sucker     | 1            | 2     | UID remains                | --     | 100                | 100                     |
| Silver redhorse    | 4            | 0     | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 21     | 50                 | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 25                 | <0.1                    |
|                    |              |       | Sand                       | --     | 25                 | <0.1                    |
|                    |              |       | UID remains                | --     | 75                 | 100                     |
| Black redhorse     | 2            | 0     | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 104    | 100                | 18.2                    |
|                    |              |       | Diptera pupae              | 1      | 50                 | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 50                 | <0.1                    |
|                    |              |       | UID remains                | --     | 50                 | 81.8                    |
| Golden redhorse    | 7            | 0     | Trichoptera larvae         | 1      | 14                 | <0.1                    |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 126    | 57                 | 5.2                     |
|                    |              |       | Terrestrial Coleoptera     | 2      | 29                 | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 57                 | 24.7                    |
|                    |              |       | Allochthonous plant matter | --     | 14                 | 2.1                     |
|                    |              |       | Coal                       | --     | 14                 | <0.1                    |
|                    |              |       | UID remains                | --     | 86                 | 68.0                    |
| Shorthead redhorse | 10           | 1     | Oligochaeta                | 14     | 20                 | 2.4                     |
|                    |              |       | Trichoptera larvae:        |        |                    |                         |
|                    |              |       | Hydroptilidae w/ cases     | 35     | 30                 | 1.5                     |
|                    |              |       | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 762    | 60                 | 36.8                    |
|                    |              |       | Diptera pupae              | 31     | 20                 | <0.1                    |
|                    |              |       | Insect parts               | --     | 10                 | <0.1                    |
|                    |              |       | Pelecypoda remains         | --     | 10                 | <0.1                    |
|                    |              |       | Algae (filamentous)        | --     | 10                 | 2.9                     |
|                    |              |       | Sand                       | --     | 20                 | <0.1                    |
|                    |              |       | UID remains                | --     | 100                | 56.5                    |
| Pumpkinseed        | 1            | 0     | Diptera larvae:            |        |                    |                         |
|                    |              |       | Chironomidae               | 62     | 100                | 100                     |

| Species         | No. examined |       | Stomach contents               |        |                    |                         |
|-----------------|--------------|-------|--------------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item                      | Number | Percent occurrence | Percent of total volume |
| Bluegill        | 42           | 2     | Fish                           | 2      | 5                  | 9.0                     |
|                 |              |       | Amphipoda                      | 2      | 5                  | <0.1                    |
|                 |              |       | Odonata nymph:                 |        |                    |                         |
|                 |              |       | Anisoptera                     | 1      | 2                  | 1.0                     |
|                 |              |       | Hemiptera:                     |        |                    |                         |
|                 |              |       | Gerridae                       | 2      | 2                  | <0.1                    |
|                 |              |       | Trichoptera larvae:            |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases         | 28     | 10                 | 0.5                     |
|                 |              |       | UID                            | 3      | 7                  | <0.1                    |
|                 |              |       | Diptera larvae:                |        |                    |                         |
|                 |              |       | Chironomidae                   | 172    | 67                 | 10.2                    |
|                 |              |       | Diptera pupae                  | 39     | 19                 | <0.1                    |
|                 |              |       | Terrestrial Isopoda            | 1      | 2                  | 0.3                     |
|                 |              |       | Terrestrial Diplopoda          | --     | 2                  | 0.4                     |
|                 |              |       | Terrestrial Araneidae          | 1      | 2                  | 1.0                     |
|                 |              |       | Terrestrial Coleoptera parts   | --     | 10                 | 1.0                     |
|                 |              |       | Terrestrial Lepidoptera larvae | 7      | 14                 | 14.0                    |
|                 |              |       | Terrestrial Diptera adult      | 2      | 5                  | <0.1                    |
|                 |              |       | Terrestrial Hymenoptera        | 4      | 7                  | 2.0                     |
|                 |              |       | Terrestrial Insect parts       | --     | 12                 | 7.2                     |
|                 |              |       | Insect parts                   | --     | 17                 | 1.1                     |
|                 |              |       | Statoblasts                    | 79     | 12                 | <0.1                    |
|                 |              |       | Gastropoda                     | 1      | 2                  | <0.1                    |
|                 |              |       | Pelecypoda remains             | --     | 7                  | 2.3                     |
|                 |              |       | Algae (filamentous)            | --     | 26                 | 12.8                    |
|                 |              |       | Allochthonous plant matter     | --     | 19                 | 6.7                     |
|                 |              |       | UID remains                    | --     | 40                 | 30.5                    |
| Longear sunfish | 16           | 1     | Trichoptera larvae:            |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases         | 11     | 19                 | <0.1                    |
|                 |              |       | UID                            | 1      | 6                  | <0.1                    |
|                 |              |       | Coleoptera larvae              | 1      | 6                  | <0.1                    |
|                 |              |       | Coleoptera adult               | 3      | 13                 | 26.1                    |
|                 |              |       | Diptera larvae:                |        |                    |                         |
|                 |              |       | Chironomidae                   | 233    | 69                 | 8.2                     |
|                 |              |       | Tipulidae                      | 11     | 13                 | 2.2                     |
|                 |              |       | Diptera pupae                  | 4      | 13                 | <0.1                    |
|                 |              |       | Odonata adult (terrestrial)    | 1      | 6                  | 4.9                     |
|                 |              |       | Terrestrial Lepidoptera        | 1      | 6                  | 3.7                     |
|                 |              |       | Terrestrial Hymenoptera        | 2      | 13                 | 2.6                     |
|                 |              |       | Terrestrial Insect parts       | --     | 31                 | 15.7                    |
|                 |              |       | Terrestrial Chilopoda          | 1      | 6                  | 3.7                     |
|                 |              |       | Insect parts                   | --     | 6                  | 3.7                     |
|                 |              |       | Gastropoda                     | 2      | 13                 | <0.1                    |
|                 |              |       | Pelecypoda                     | 1      | 6                  | 0.7                     |
|                 |              |       | Algae (filamentous)            | --     | 6                  | 0.7                     |
|                 |              |       | UID remains                    | --     | 38                 | 27.6                    |

| Species         | No. examined |       | Stomach contents       |        |                    |                         |
|-----------------|--------------|-------|------------------------|--------|--------------------|-------------------------|
|                 | With food    | Empty | Food item              | Number | Percent occurrence | Percent of total volume |
| Logperch        | 3            | 0     | Ephemeroptera nymph    | 3      | 33                 | 25.0                    |
|                 |              |       | Odonata nymph          | 2      | 67                 | <0.1                    |
|                 |              |       | Trichoptera larvae:    |        |                    |                         |
|                 |              |       | Hydroptilidae w/ cases | 1      | 33                 | <0.1                    |
|                 |              |       | UID                    | 6      | 100                | 25.0                    |
|                 |              |       | Diptera larvae:        |        |                    |                         |
| Freshwater drum | 5            | 12    | Chironomidae           | 51     | 100                | 50.0                    |
|                 |              |       | Ephemeroptera nymph:   |        |                    |                         |
|                 |              |       | Ephemeridae            | 1      | 20                 | 28.6                    |
|                 |              |       | Heptageniidae          | 2      | 20                 | <0.1                    |
|                 |              |       | Odonata nymph:         |        |                    |                         |
|                 |              |       | Cordulegasteridae      | 1      | 20                 | 20.0                    |
|                 |              |       | Anisoptera             | 1      | 20                 | 28.6                    |
|                 |              |       | Diptera larvae:        |        |                    |                         |
|                 |              |       | Chironomidae           | 25     | 40                 | 14.3                    |
|                 |              |       | Insect parts           | --     | 20                 | 8.5                     |

Table A9.4.35. Stomach contents of piscivorous fish species taken from the Kanawha River, September 12-15, 1983.

| Species          | No. examined |       | Stomach contents           |        |                    |                         |
|------------------|--------------|-------|----------------------------|--------|--------------------|-------------------------|
|                  | With food    | Empty | Food item                  | Number | Percent occurrence | Percent of total volume |
| Longnose gar     | 2            | 0     | Fish:                      |        |                    |                         |
|                  |              |       | Emerald shiner             | 4      | 50                 | 18.4                    |
|                  |              |       | Cyprinidae                 | 12     | 100                | 81.6                    |
| American eel     | 1            | 0     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 2      | 100                | 100                     |
| Skipjack herring | 4            | 1     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 24     | 75                 | 85.5                    |
|                  |              |       | UID fish                   | 10     | 25                 | 13.7                    |
|                  |              |       | Ephemeroptera nymph        | 1      | 25                 | 0.8                     |
| Flathead catfish | 4            | 2     | Decapoda                   | 2      | 50                 | 2.7                     |
|                  |              |       | Fish                       | 2      | 50                 | 93.3                    |
|                  |              |       | Sand & Silt                | --     | 25                 | 2.0                     |
|                  |              |       | UID remains                | --     | 25                 | 2.0                     |
| White bass       | 3            | 3     | Fish                       | 2      | 67                 | 94.1                    |
|                  |              |       | UID remains                | --     | 33                 | 5.9                     |
| Rock bass        | 1            | 0     | Decapoda                   | 2      | 100                | 100                     |
| Smallmouth bass  | 8            | 2     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 2      | 13                 | 6.7                     |
|                  |              |       | UID fish                   | 6      | 50                 | 22.7                    |
|                  |              |       | Decapoda                   | 1      | 13                 | 43.7                    |
|                  |              |       | Hemiptera adult            | 1      | 13                 | 23.5                    |
|                  |              |       | UID remains                | --     | 25                 | 3.4                     |
| Spotted bass     | 2            | 1     | Fish                       | 2      | 50                 | 13.6                    |
|                  |              |       | Decapoda                   | 2      | 50                 | 86.4                    |
|                  |              |       | Allochthonous plant matter | --     | 50                 | <0.1                    |
| Largemouth bass  | 0            | 1     |                            |        |                    |                         |
| White crappie    | 4            | 1     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 2      | 25                 | 35.1                    |
|                  |              |       | UID fish                   | 4      | 75                 | 64.9                    |
| Sauger           | 1            | 3     | Fish:                      |        |                    |                         |
|                  |              |       | Freshwater drum            | 1      | 100                | 48.1                    |
|                  |              |       | UID fish                   | 1      | 100                | 51.9                    |
| Walleye          | 1            | 0     | Fish:                      |        |                    |                         |
|                  |              |       | Cyprinidae                 | 5      | 100                | 38.1                    |
|                  |              |       | Freshwater drum            | 1      | 100                | 61.9                    |

Table A9.5.1. Annual average length and weight at age for selected fish species taken from the Kanawha River, October, 1982 - September, 1983.

| Species         | Age | Number | Average Length | Average Weight |
|-----------------|-----|--------|----------------|----------------|
| Bluegill        | 0   | 8      | 73.3           | 7.7            |
|                 | 1   | 36     | 100.8          | 20.2           |
|                 | 2   | 84     | 131.0          | 47.2           |
|                 | 3   | 29     | 150.9          | 68.7           |
|                 | 4   | 4      | 163.5          | 83.8           |
| Channel Catfish | 1   | 16     | 221.4          | 92.7           |
|                 | 2   | 76     | 267.4          | 156.6          |
|                 | 3   | 71     | 336.3          | 339.1          |
|                 | 4   | 65     | 410.5          | 658.0          |
|                 | 5   | 14     | 453.8          | 862.3          |
|                 | 6   | 1      | 450.0          | 1175.0         |
| Carp            | 3   | 3      | 451.3          | 1107.0         |
|                 | 4   | 3      | 486.3          | 1375.0         |
|                 | 5   | 27     | 513.4          | 1794.4         |
|                 | 6   | 17     | 542.7          | 2210.9         |
|                 | 7   | 7      | 560.9          | 2530.0         |
|                 | 8   | 3      | 674.7          | 4181.0         |
| Freshwater Drum | 0   | 5      | 75.4           | 4.7            |
|                 | 1   | 12     | 186.0          | 70.0           |
|                 | 2   | 79     | 222.1          | 123.1          |
|                 | 3   | 20     | 289.3          | 284.5          |
|                 | 4   | 9      | 339.8          | 486.6          |
|                 | 5   | 2      | 379.0          | 618.5          |
| Golden Redhorse | 6   | 1      | 404.0          | 682.0          |
|                 | 2   | 7      | 286.4          | 247.0          |
|                 | 3   | 19     | 326.4          | 412.0          |
|                 | 4   | 27     | 353.9          | 502.1          |
|                 | 5   | 1      | 385.0          | 761.0          |
| Largemouth Bass | 0   | 1      | 81.0           | 7.0            |
|                 | 1   | 11     | 161.0          | 62.9           |
|                 | 2   | 5      | 245.6          | 190.0          |
|                 | 3   | 11     | 296.5          | 360.3          |
|                 | 4   | 4      | 356.0          | 732.5          |



| Species            | Age | Number | Average Length | Average Weight |
|--------------------|-----|--------|----------------|----------------|
| Longear Sunfish    | 0   | 2      | 62.5           | 5.1            |
|                    | 1   | 23     | 84.8           | 13.9           |
|                    | 2   | 52     | 112.1          | 30.9           |
|                    | 3   | 25     | 129.7          | 50.0           |
|                    | 4   | 1      | 147.0          | 70.0           |
| Smallmouth Buffalo | 1   | 1      | 247.0          | 206.0          |
|                    | 2   | 8      | 297.8          | 386.3          |
|                    | 3   | 29     | 397.4          | 863.9          |
|                    | 4   | 36     | 447.9          | 1126.3         |
|                    | 5   | 12     | 496.6          | 1757.1         |
|                    | 6   | 1      | 554.0          | 2100.0         |
| Sauger             | 0   | 1      | 226.0          | 125.0          |
|                    | 1   | 39     | 286.6          | 198.8          |
|                    | 2   | 44     | 339.6          | 326.0          |
|                    | 3   | 17     | 421.9          | 666.4          |
|                    | 4   | 6      | 456.3          | 995.3          |
|                    | 5   | 1      | 542.0          | 1500.0         |
| Smallmouth Bass    | 0   | 5      | 94.0           | 8.8            |
|                    | 1   | 59     | 175.1          | 67.4           |
|                    | 2   | 54     | 211.1          | 124.9          |
|                    | 3   | 10     | 317.5          | 469.2          |
|                    | 4   | 1      | 448.0          | 1275.0         |
|                    | 5   | 1      | 381.0          | 706.0          |
| Spotted Bass       | 0   | 16     | 95.1           | 12.8           |
|                    | 1   | 25     | 167.0          | 62.6           |
|                    | 2   | 35     | 196.7          | 109.9          |
|                    | 3   | 12     | 238.7          | 187.6          |
|                    | 4   | 2      | 298.0          | 368.0          |
| Shorthead Redhorse | 1   | 10     | 206.9          | 98.7           |
|                    | 2   | 26     | 280.3          | 238.3          |
|                    | 3   | 27     | 322.3          | 324.1          |
|                    | 4   | 10     | 389.3          | 598.0          |
|                    | 5   | 1      | 403.0          | 602.0          |
| White Crappie      | 0   | 1      | 93.0           | 8.1            |
|                    | 1   | 5      | 182.4          | 78.0           |
|                    | 2   | 15     | 202.9          | 110.9          |
|                    | 3   | 3      | 247.3          | 200.7          |
|                    | 4   | 1      | 330.0          | 410.0          |
|                    | 5   | 1      | 295.0          | 313.0          |

| Species         | Age | Number | Average Length | Average Weight |
|-----------------|-----|--------|----------------|----------------|
| White Bass      | 0   | 6      | 143.0          | 43.7           |
|                 | 1   | 8      | 241.3          | 233.5          |
|                 | 2   | 13     | 268.7          | 272.6          |
|                 | 3   | 2      | 348.0          | 545.0          |
|                 | 4   | 2      | 349.0          | 495.0          |
| Silver Redhorse | 2   | 5      | 324.8          | 376.6          |
|                 | 3   | 14     | 360.8          | 524.6          |
|                 | 4   | 19     | 407.6          | 729.4          |
|                 | 5   | 1      | 528.0          | 1475.0         |

Table A9.5.2. Annual average length and weight at age for emerald shiners and gizzard shad (aged by length frequency) taken from the Kanawha River, October, 1982 - September, 1983.

| Species        | Age | Number Measured | Average Length | Number Weighed | Average Weight |
|----------------|-----|-----------------|----------------|----------------|----------------|
| Emerald Shiner | 0   | 1398            | 36.09          | 452            | 0.49           |
|                | 1   | 6789            | 58.71          | 1054           | 1.51           |
|                | 2   | 1482            | 77.07          | 310            | 3.39           |
| Gizzard Shad   | 0   | 443             | 77.70          | 260            | 7.20           |
|                | 1   | 935             | 180.70         | 408            | 64.94          |
|                | 2   | 863             | 246.99         | 445            | 142.82         |
|                | 3   | 208             | 299.37         | 176            | 236.69         |
|                | 4   | 10              | 348.00         | 10             | 417.30         |

Table A10.1.1. Total numbers of larval fish collected using bongo nets in the Winfield Pool, Kanawha River. Percentages of totals in parentheses.

| Taxa                                              | May 1-2      | May 24-25     | Numbers collected |                 | July 27-28    | August 9-10    |
|---------------------------------------------------|--------------|---------------|-------------------|-----------------|---------------|----------------|
|                                                   |              |               | June 14-15        | July 5-6        |               |                |
| <u>Ictiobus-Carpiodes</u>                         |              | 4<br>(18.2)   | 48<br>( 3.4)      | 4<br>( 0.2)     |               | 1<br>(0.5)     |
| <u>Lepomis</u>                                    |              |               | 7<br>( 0.5)       | 6<br>( 0.3)     | 2<br>( 9.1)   |                |
| <u>Ambloplites rupestris</u>                      |              |               | 1<br>( 0.1)       |                 |               |                |
| <u>Pomoxis</u>                                    |              |               | 4<br>( 0.3)       | 6<br>( 0.3)     |               |                |
| <u>Clupeidae</u>                                  |              |               | 721<br>(50.8)     | 364<br>(16.3)   | 2<br>( 9.1)   | 13<br>(6.7)    |
| <u>Cyprinus carpio</u>                            |              | 2<br>( 9.1)   | 52<br>( 3.7)      | 52<br>( 2.3)    | 2<br>( 9.1)   |                |
| <u>Cyprinidae</u><br>(excluding <u>Cyprinus</u> ) |              | 3<br>(13.6)   | 442<br>(31.2)     | 828<br>(37.1)   | 14<br>(63.6)  | 149<br>(76.4)  |
| <u>Ictalurus punctatus</u>                        |              |               |                   |                 | 1<br>( 4.5)   |                |
| <u>Percidae</u>                                   | 3<br>(100.0) | 13<br>(59.1)  | 14<br>( 1.0)      | 11<br>( 0.5)    |               | 1<br>( 0.5)    |
| <u>Aplodinotus grunniens</u>                      |              |               | 118<br>( 8.3)     | 934<br>(41.9)   | 1<br>( 4.5)   | 30<br>(15.4)   |
| <u>Unidentified</u>                               |              |               | 11<br>( 0.8)      | 25<br>( 1.1)    |               | 1<br>( 0.5)    |
| Total                                             | 3<br>(100.0) | 22<br>(100.0) | 1418<br>(100.0)   | 2230<br>(100.0) | 22<br>(100.0) | 195<br>(100.0) |

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Table A10.1.2. Total numbers of larval fish collected using push nets in the Winfield Pool, Kanawha River. Percentages of totals in parentheses.

| Taxa                                              | Numbers collected |                   |                 |                 |
|---------------------------------------------------|-------------------|-------------------|-----------------|-----------------|
|                                                   | May 1-2           | July 14-15        | July 27-28      | August 9-10     |
| <u>Ictiobus-Carpiodes</u>                         |                   | 1<br>( 0.0)       |                 |                 |
| <u>Lepomis</u>                                    |                   | 32<br>( 0.2)      | 21<br>( 1.8)    | 34<br>( 1.1)    |
| <u>Ambloplites rupestris</u>                      |                   |                   |                 |                 |
| <u>Pomoxis</u>                                    |                   | 3<br>( 0.0)       |                 |                 |
| <u>Clupeidae</u>                                  |                   | 782<br>( 5.6)     | 291<br>(25.1)   | 24<br>( 0.7)    |
| <u>Cyprinus carpio</u>                            |                   | 47<br>( 0.3)      |                 |                 |
| <u>Cyprinidae</u><br>(excluding <u>Cyprinus</u> ) |                   | 12,211<br>(88.1)  | 824<br>(71.0)   | 3138<br>(97.9)  |
| <u>Ictalurus punctatus</u>                        |                   |                   |                 |                 |
| <u>Percidae</u>                                   | 23<br>(100.0)     | 45<br>( 0.3)      | 24<br>( 2.1)    | 5<br>( 0.2)     |
| <u>Aplodinotus grunniens</u>                      |                   | 734<br>( 5.3)     | 1<br>( 0.1)     | 2<br>( 0.1)     |
| <u>Unidentified</u>                               |                   | 2<br>( 0.0)       |                 | 2<br>( 0.1)     |
| Total                                             | 23<br>(100.0)     | 13,857<br>(100.0) | 1161<br>(100.0) | 3205<br>(100.0) |

Table A10.2.1. Densities of larval fish collected using bongo nets in the Upper Winfield site during daylight.

| Taxa                         | Number/100m <sup>3</sup> |           |            |          |            |             |
|------------------------------|--------------------------|-----------|------------|----------|------------|-------------|
|                              | May 1-2                  | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <u>Ictiobus-Carpiodes</u>    |                          | 0.08      | 0.23       |          |            | 0.07        |
| <u>Lepomis</u>               |                          |           | 0.08       | 0.08     | 0.08       |             |
| <u>Ambloplites rupestris</u> |                          |           |            |          |            |             |
| <u>Pomoxis</u>               |                          |           | 0.31       | 0.34     |            |             |
| <u>Clupeidae</u>             |                          |           | 6.48       | 3.75     | 0.08       | 0.79        |
| <u>Cyprinus carpio</u>       |                          |           | 1.17       | 0.67     |            |             |
| <u>Cyprinidae</u>            |                          |           |            |          |            |             |
| (excluding <u>Cyprinus</u> ) |                          |           | 4.62       | 3.76     | 0.52       | 6.78        |
| <u>Ictalurus punctatus</u>   |                          |           |            |          |            |             |
| <u>Percidae</u>              | 0.06                     | 0.07      | 0.30       | 0.21     |            |             |
| <u>Aplodinotus grunniens</u> |                          |           | 5.67       | 18.08    |            | 1.35        |
| <u>Unidentified</u>          |                          |           | 0.47       | 0.21     |            |             |
| <u>Total</u>                 | 0.06                     | 0.14      | 19.32      | 27.08    | 0.68       | 8.98        |

Table A10.2.2. Densities of larval fish collected using bongo nets at lower Winfield Pool site during daylight.

| Taxa                         | May 1-2 | May 24-25 | Number/100m <sup>3</sup> | July 5-6 | July 27-28 | August 9-10 |
|------------------------------|---------|-----------|--------------------------|----------|------------|-------------|
|                              |         |           | June 14-15               |          |            |             |
| <u>Ictiobus-Carpiodes</u>    |         | 0.12      | 0.42                     | 0.06     |            |             |
| <u>Lepomis</u>               |         |           | 0.24                     | 0.17     | 0.07       |             |
| <u>Ambloplites rupestris</u> |         |           |                          |          |            |             |
| <u>Pomoxis</u>               |         |           |                          |          |            |             |
| <u>Clupeidae</u>             |         |           | 22.47                    | 14.23    | 0.06       | 0.06        |
| <u>Cyprinus carpio</u>       |         | 0.12      |                          | 0.53     | 0.06       |             |
| <u>Cyprinidae</u>            |         |           |                          |          |            |             |
| (excluding <u>Cyprinus</u> ) |         | 0.12      | 2.98                     | 18.80    | 0.33       | 2.48        |
| <u>Ictalurus punctatus</u>   |         |           |                          |          |            |             |
| <u>Percidae</u>              |         | 0.53      | 0.56                     | 0.43     |            | 0.06        |
| <u>Aplodinotus grunniens</u> |         |           | 0.97                     | 28.50    | 0.06       | 0.69        |
| <u>Unidentified</u>          |         |           | 0.11                     |          | 0.63       | 0.08        |
| Total                        | 0.00    | 0.89      | 27.75                    | 63.33    | 0.58       | 3.37        |

Table A10.2.3. Densities of larval fish collected using bongo nets at lower Winfield Pool site at night.

| Taxa                         | May 1-2 | May 24-25 | Number/100m <sup>3</sup> |          |            |             |
|------------------------------|---------|-----------|--------------------------|----------|------------|-------------|
|                              |         |           | June 14-15               | July 5-6 | July 27-28 | August 9-10 |
| <u>Ictiobus-Carpiodes</u>    |         | 0.06      | 2.32                     | 0.16     |            |             |
| <u>Lepomis</u>               |         |           | 0.12                     | 0.11     |            |             |
| <u>Ambloplites rupestris</u> |         |           | 0.07                     |          |            |             |
| <u>Pomoxis</u>               |         |           |                          | 0.06     |            |             |
| <u>Clupeidae</u>             |         |           | 16.39                    | 3.49     |            | 0.06        |
| <u>Cyprinus carpio</u>       |         |           | 2.24                     | 1.85     | 0.06       |             |
| <u>Cyprinidae</u>            |         |           |                          |          |            |             |
| (excluding <u>Cyprinus</u> ) |         | 0.06      | 20.65                    | 25.72    | 0.12       | 0.75        |
| <u>Ictalurus punctatus</u>   |         |           |                          |          | 0.07       |             |
| <u>Percidae</u>              | 0.11    | 0.17      | 0.07                     | 0.06     |            |             |
| <u>Aplodinotus grunniens</u> |         |           | 1.82                     | 10.83    |            |             |
| <u>Unidentified</u>          |         |           | 0.19                     | 0.61     |            |             |
| Total                        | 0.10    | 0.28      | 43.87                    | 42.91    | 0.25       | 0.81        |

SS4



Table A10.2.4. Densities of larval fish collected using push nets near shore in the upper Winfield site during daylight.

| Taxa                         | May 1-2 | Number/100m <sup>3</sup> |            |             |
|------------------------------|---------|--------------------------|------------|-------------|
|                              |         | July 14-15               | July 27-28 | August 9-10 |
| <u>Ictiobus-Carpiodes</u>    |         |                          |            |             |
| <u>Lepomis</u>               |         | 0.65                     | 0.60       | 19.65       |
| <u>Ambloplites rupestris</u> |         |                          |            |             |
| <u>Pomoxis</u>               |         | 1.93                     |            |             |
| <u>Clupeidae</u>             |         | 39.24                    | 16.82      | 5.75        |
| <u>Cyprinus carpio</u>       |         |                          |            |             |
| <u>Cyprinidae</u>            |         | 273.08                   | 130.21     | 385.06      |
| <u>Ictalurus punctatus</u>   |         |                          |            |             |
| <u>Percidae</u>              | 5.92    | 2.64                     | 4.49       | 3.10        |
| <u>Aplodinotus grunniens</u> |         |                          |            | 0.65        |
| <u>Unidentified</u>          |         | 0.65                     |            | 1.35        |
| <u>Total</u>                 | 5.97    | 318.20                   | 152.12     | 415.58      |

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Table A10.2.5. Densities of larval fish collected using push nets near shore at lower Winfield site during daylight.

| Taxa                         | May 1-2 | Number/100m <sup>3</sup> |            | August 9-10 |
|------------------------------|---------|--------------------------|------------|-------------|
|                              |         | July 5-6                 | July 27-28 |             |
| <u>Ictiobus-Carpiodes</u>    |         |                          |            |             |
| <u>Lepomis</u>               |         | 5.17                     | 3.91       | 1.20        |
| <u>Ambloplites rupestris</u> |         |                          |            |             |
| <u>Pomoxis</u>               |         |                          |            |             |
| <u>Clupeidae</u>             |         | 341.04                   | 42.70      |             |
| <u>Cyprinus carpio</u>       |         |                          |            |             |
| <u>Cyprinidae</u>            |         | 1708.71                  | 110.41     | 230.55      |
| <u>Ictalurus punctatus</u>   |         |                          |            |             |
| <u>Percidae</u>              |         | 9.15                     | 5.92       |             |
| <u>Aplodinotus grunniens</u> |         |                          |            |             |
| <u>Unidentified</u>          |         |                          |            |             |
| Total                        |         | 2064.06                  | 162.94     | 231.75      |

Table A10.2.6. Densities of larval fish collected using push nets near shore at the lower Winfield site at night.

| taxa                         | May 1-2 | Number/100m <sup>3</sup><br>July 5-6 | July 27-28 | August 9-10 |
|------------------------------|---------|--------------------------------------|------------|-------------|
| <u>Ictiobus-Carpiodes</u>    |         | 0.57                                 |            |             |
| <u>Lepomis</u>               |         | 11.56                                | 9.14       | 1.30        |
| <u>Ambloplites rupestris</u> |         |                                      |            |             |
| <u>Pomoxis</u>               |         |                                      |            |             |
| <u>Clupeidae</u>             |         | 32.47                                | 127.71     | 9.98        |
| <u>Cyprinus carpio</u>       |         | 25.67                                |            |             |
| <u>Cyprinidae</u>            |         | 4551.82                              | 278.56     | 1416.80     |
| <u>Ictalurus punctatus</u>   |         |                                      |            |             |
| <u>Percidae</u>              | 9.47    | 13.28                                | 4.58       |             |
| <u>Aplodinotus grunniens</u> |         | 402.61                               | 0.64       | 0.61        |
| <u>Unidentified</u>          |         | 0.54                                 |            |             |
| Total                        | 9.47    | 5038.47                              | 420.62     | 1428.69     |

Table A10.3.1. Densities of all species of larval fish collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time        | <u>Number/100<sup>3</sup></u> |           |            |          |            |             |
|----------------------|-------------------------------|-----------|------------|----------|------------|-------------|
|                      | May 1-2                       | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>50% Surface</b>   |                               |           |            |          |            |             |
| Upper/Day            | 0.33                          | 0.39      | 7.05       | 18.72    | 0.92       | 11.37       |
| Lower/Day            |                               | 0.37      | 9.76       | 57.78    | 0.46       | 3.74        |
| Lower/Night          |                               | 0.38      | 32.47      | 33.06    | 0.42       | 0.84        |
| <b>50% Mid depth</b> |                               |           |            |          |            |             |
| Upper/Day            | -                             | -         | -          | -        | -          | -           |
| Lower/Day            |                               | 0.39      | 100.94     | 99.82    |            | 2.14        |
| Lower/Night          |                               |           | 32.08      | 24.97    |            | -           |
| <b>50% Bottom</b>    |                               |           |            |          |            |             |
| Upper/Day            |                               |           | 22.08      | 44.52    |            | 17.87       |
| Lower/Day            |                               |           | 18.68      | 66.12    |            | 3.85        |
| Lower/Night          | 0.37                          |           | 70.56      | 38.79    | 0.46       | 1.31        |
| <b>40% Surface</b>   |                               |           |            |          |            |             |
| Upper/Day            |                               |           | 8.59       | 16.08    |            | 4.82        |
| Lower/Day            |                               | 1.63      | 2.63       | 38.48    | 1.73       | 0.80        |
| Lower/Night          |                               |           | 31.81      | 45.19    | 0.44       | 1.33        |

| Location/time      | <u>Number/100<sup>3</sup></u> |           |            |          |            |             |
|--------------------|-------------------------------|-----------|------------|----------|------------|-------------|
|                    | May 1-2                       | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>40% Bottom</b>  |                               |           |            |          |            |             |
| Upper/Day          |                               | 0.45      | 29.83      | 44.72    | 0.46       | 4.20        |
| Lower/Day          |                               | 0.43      | 19.71      | 37.87    | 1.44       | 6.73        |
| Lower/Night        | 0.38                          |           | 35.28      | 51.38    |            |             |
| <b>20% Surface</b> |                               |           |            |          |            |             |
| Upper/Day          |                               |           | 21.94      | 21.25    | 2.19       | 7.36        |
| Lower/Day          |                               | 2.12      | 23.41      | 81.98    | 0.42       | 1.98        |
| Lower/Night        |                               | 1.17      | 37.84      | 15.68    |            | 1.34        |
| <b>20% Bottom</b>  |                               |           |            |          |            |             |
| Upper/Day          |                               |           | 26.43      | 17.21    | 0.48       | 8.25        |
| Lower/Day          |                               | 1.27      | 17.15      | 61.29    |            | 4.34        |
| Lower/Night        |                               | 0.41      | 67.04      | 91.28    | 0.42       | 0.84        |
| <b>Shoreline</b>   |                               |           |            |          |            |             |
| Upper/Day          | 5.97                          | -         | -          | 318.20   | 152.12     | 415.58      |
| Lower/Day          |                               | -         | -          | 2064.06  | 162.94     | 231.75      |
| Lower/Night        | 9.45                          | -         | -          | 5038.47  | 420.62     | 1428.69     |

Dash (-) indicates samples were not taken.

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Table A10.3.2. Densities of larval Ictiobus/Carpiodes collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time | <u>Number/100<sup>3</sup></u> |           |            |          |            |             |
|---------------|-------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                       | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 50% Surface   |                               |           |            |          |            |             |
| Upper/Day     |                               |           |            |          |            |             |
| Lower/Day     |                               |           |            |          |            |             |
| Lower/Night   |                               |           | 1.95       |          |            |             |
| 50% Mid depth |                               |           |            |          |            |             |
| Upper/Day     | -                             | -         | -          | -        | -          | -           |
| Lower/Day     |                               |           | 0.42       |          |            |             |
| Lower/Night   |                               |           | 2.60       |          |            |             |
| 50% Bottom    |                               |           |            |          |            |             |
| Upper/Day     |                               |           | 0.92       |          |            | 0.43        |
| Lower/Day     |                               |           | 0.87       |          |            |             |
| Lower/Night   |                               |           | 2.23       |          |            |             |
| 40% Surface   |                               |           |            |          |            |             |
| Upper/Day     |                               |           |            |          |            |             |
| Lower/Day     |                               | 0.42      |            |          |            |             |
| Lower/Night   |                               |           | 3.83       |          |            |             |

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| Location/time | <u>Number/100<sup>3</sup></u> |           |            |          |            |             |
|---------------|-------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                       | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 40% Bottom    |                               |           |            |          |            |             |
| Upper/Day     |                               | 0.45      | 0.48       |          |            |             |
| Lower/Day     |                               |           |            | 0.39     |            |             |
| Lower/Night   |                               |           | 0.85       | 0.40     |            |             |
| 20% Surface   |                               |           |            |          |            |             |
| Upper/Day     |                               |           |            |          |            |             |
| Lower/Day     |                               |           | 0.36       |          |            |             |
| Lower/Night   |                               | 0.39      | 2.09       | 0.34     |            |             |
| 20% Bottom    |                               |           |            |          |            |             |
| Upper/Day     |                               |           |            |          |            |             |
| Lower/Day     |                               | 0.42      | 1.30       |          |            |             |
| Lower/Night   |                               |           | 2.71       | 0.40     |            |             |
| Shoreline     |                               |           |            |          |            |             |
| Upper/Day     |                               | -         | -          |          |            |             |
| Lower/Day     |                               | -         | -          |          |            |             |
| Lower/Night   |                               | -         | -          | 0.57     |            |             |

Dash (-) indicates samples were not taken.

Table A10.3.3. Densities of larval Lepomis collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|---------------|--------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 50% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            |          | 0.47       |             |
| Lower/Day     |                                |           |            | 0.35     | 0.46       |             |
| Lower/Night   |                                |           |            |          |            |             |
| 50% Mid depth |                                |           |            |          |            |             |
| Upper/Day     | -                              | -         | -          | -        | -          | -           |
| Lower/Day     |                                |           | 0.87       |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 50% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            |          |            |             |
| Lower/Day     |                                |           |            | 0.42     |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 40% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            |          |            |             |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |

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| Location/time | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|---------------|--------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 40% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            | 0.45     |            |             |
| Lower/Day     |                                |           | 0.43       |          |            |             |
| Lower/Night   |                                |           |            | 0.40     |            |             |
| 20% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            |          |            |             |
| Lower/Day     |                                |           |            | 0.42     |            |             |
| Lower/Night   |                                |           | 0.41       |          |            |             |
| 20% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 0.46       |          |            |             |
| Lower/Day     |                                |           | 0.41       |          |            |             |
| Lower/Night   |                                |           | 0.43       | 0.40     |            |             |
| Shoreline     |                                |           |            |          |            |             |
| Upper/Day     |                                | -         | -          | 0.65     | 0.60       | 19.65       |
| Lower/Day     |                                | -         | -          | 5.17     | 3.91       | 1.20        |
| Lower/Night   |                                | -         | -          | 11.56    | 9.14       | 1.30        |

Dash (-) indicates samples were not taken.

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Table A10.3.4. Densities of larval Pomoxis collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|---------------|--------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 50% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 0.46       | 0.81     |            |             |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 50% Mid depth |                                |           |            |          |            |             |
| Upper/Day     | -                              | -         | -          | -        | -          | -           |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 50% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            | 0.38     |            |             |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 40% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            | 0.39     |            |             |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |

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| Location/time | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|---------------|--------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 40% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            | 0.45     |            |             |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 20% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 0.44       |          |            |             |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 20% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 0.94       |          |            |             |
| Lower/Day     |                                |           |            |          |            |             |
| Lower/Night   |                                |           |            | 0.44     |            |             |
| Shoreline     |                                |           |            |          |            |             |
| Upper/Day     |                                | -         | -          | 1.93     |            |             |
| Lower/Day     |                                | -         | -          |          |            |             |
| Lower/Night   |                                | -         | -          |          |            |             |

Dash (-) indicates samples were not taken.

Table A10.3.5. Densities of larval Clupeidae collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time        | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|----------------------|--------------------------------|-----------|------------|----------|------------|-------------|
|                      | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>50% Surface</b>   |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 4.00       | 3.66     |            | 1.22        |
| Lower/Day            |                                |           | 8.59       | 27.70    |            |             |
| Lower/Night          |                                |           | 15.29      | 1.10     |            |             |
| <b>50% Mid depth</b> |                                |           |            |          |            |             |
| Upper/Day            | -                              | -         | -          | -        | -          | -           |
| Lower/Day            |                                |           | 95.29      | 3.35     |            |             |
| Lower/Night          |                                |           | 16.01      | 1.33     |            |             |
| <b>50% Bottom</b>    |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 6.45       | 4.59     |            |             |
| Lower/Day            |                                |           | 9.12       | 3.74     |            |             |
| Lower/Night          |                                |           | 12.52      | 5.53     |            |             |
| <b>40% Surface</b>   |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 2.70       | 2.80     |            | 1.20        |
| Lower/Day            |                                |           | 2.63       | 12.02    | 0.43       |             |
| Lower/Night          |                                |           | 19.08      | 2.74     |            |             |

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| Location/time      | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|--------------------|--------------------------------|-----------|------------|----------|------------|-------------|
|                    | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>40% Bottom</b>  |                                |           |            |          |            |             |
| Upper/Day          |                                |           | 4.33       | 3.23     | 0.46       |             |
| Lower/Day          |                                |           | 10.31      | 4.39     |            |             |
| Lower/Night        |                                |           | 11.13      | 5.86     |            |             |
| <b>20% Surface</b> |                                |           |            |          |            |             |
| Upper/Day          |                                |           | 12.47      | 4.45     |            | 0.99        |
| Lower/Day          |                                |           | 23.81      | 42.21    |            | 0.40        |
| Lower/Night        |                                |           | 26.04      | 2.10     |            |             |
| <b>20% Bottom</b>  |                                |           |            |          |            |             |
| Upper/Day          |                                |           | 8.91       | 3.79     |            | 1.30        |
| Lower/Day          |                                |           | 7.54       | 6.17     |            |             |
| Lower/Night        |                                |           | 14.63      | 5.80     |            | 0.41        |
| <b>Shoreline</b>   |                                |           |            |          |            |             |
| Upper/Day          |                                | -         | -          | 39.24    | 16.82      | 5.75        |
| Lower/Day          |                                | -         | -          | 341.04   | 42.70      |             |
| Lower/Night        |                                | -         | -          | 32.47    | 127.71     | 9.98        |

Dash (-) indicates samples were not taken.

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Table A10.3.6. Densities of larval Cyprinus carpio collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time | <u>Number/100<sup>3</sup></u> |           |            |          |            |             |
|---------------|-------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                       | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 50% Surface   |                               |           |            |          |            |             |
| Upper/Day     |                               |           |            | 0.41     |            |             |
| Lower/Day     |                               |           |            |          |            |             |
| Lower/Night   |                               |           | 4.07       | 3.02     |            |             |
| 50% Mid depth |                               |           |            |          |            |             |
| Upper/Day     | -                             | -         | -          | -        | -          | -           |
| Lower/Day     |                               | 0.39      |            | 0.83     |            |             |
| Lower/Night   |                               |           | 1.77       |          |            |             |
| 50% Bottom    |                               |           |            |          |            |             |
| Upper/Day     |                               |           | 1.83       | 1.14     |            |             |
| Lower/Day     |                               |           |            | 1.64     |            |             |
| Lower/Night   |                               |           | 0.89       | 1.42     |            |             |
| 40% Surface   |                               |           |            |          |            |             |
| Upper/Day     |                               |           | 0.92       |          |            |             |
| Lower/Day     |                               |           |            |          |            |             |
| Lower/Night   |                               |           | 2.14       | 3.93     | 0.44       |             |

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|               | <u>Number/100<sup>3</sup></u> |           |            |          |            |             |
|---------------|-------------------------------|-----------|------------|----------|------------|-------------|
| Location/time | May 1-2                       | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <hr/>         |                               |           |            |          |            |             |
| 40% Bottom    |                               |           |            |          |            |             |
| Upper/Day     |                               |           | 3.36       | 1.25     |            |             |
| Lower/Day     |                               | 0.43      |            |          | 0.45       |             |
| Lower/Night   |                               |           | 0.85       | 0.40     |            |             |
| 20% Surface   |                               |           |            |          |            |             |
| Upper/Day     |                               |           |            | 0.80     |            |             |
| Lower/Day     |                               |           |            |          |            |             |
| Lower/Night   |                               |           | 4.24       | 0.38     |            |             |
| 20% Bottom    |                               |           |            |          |            |             |
| Upper/Day     |                               |           | 0.92       | 0.41     |            |             |
| Lower/Day     |                               |           |            | 1.23     |            |             |
| Lower/Night   |                               |           | 1.75       | 3.81     |            |             |
| Shoreline     |                               |           |            |          |            |             |
| Upper/Day     |                               | -         | -          |          |            |             |
| Lower/Day     |                               | -         | -          |          |            |             |
| Lower/Night   |                               | -         | -          | 25.67    |            |             |

Dash (-) indicates samples were not taken.

Table A10.3.7. Densities of larval Cyprinidae (excluding Cyprinus) collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time        | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|----------------------|--------------------------------|-----------|------------|----------|------------|-------------|
|                      | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>50% Surface</b>   |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 0.88       | 2.01     | 0.45       | 9.75        |
| Lower/Day            |                                |           | 0.39       | 9.89     |            | 3.74        |
| Lower/Night          |                                |           | 10.72      | 18.88    | 0.42       | 0.84        |
| <b>50% Mid depth</b> |                                |           |            |          |            |             |
| Upper/Day            | -                              | -         | -          | -        | -          | -           |
| Lower/Day            |                                |           | 3.90       | 7.29     |            | 1.68        |
| Lower/Night          |                                |           | 9.92       | 16.28    |            |             |
| <b>50% Bottom</b>    |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 4.14       | 6.92     |            | 10.63       |
| Lower/Day            |                                |           | 4.35       | 29.42    |            | 1.71        |
| Lower/Night          |                                |           | 50.46      | 26.66    |            | 1.31        |
| <b>40% Surface</b>   |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 3.59       | 2.84     |            | 3.62        |
| Lower/Day            |                                | 0.42      |            | 17.43    | 1.30       | 0.80        |
| Lower/Night          |                                |           | 6.75       | 26.86    |            | 1.33        |

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| Location/time      | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|--------------------|--------------------------------|-----------|------------|----------|------------|-------------|
|                    | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>40% Bottom</b>  |                                |           |            |          |            |             |
| Upper/Day          |                                |           | 9.14       | 5.09     |            | 3.77        |
| Lower/Day          |                                |           | 5.98       | 15.90    | 0.99       | 4.64        |
| Lower/Night        |                                |           | 20.77      | 27.60    |            |             |
| <b>20% Surface</b> |                                |           |            |          |            |             |
| Upper/Day          |                                |           | 4.74       | 2.33     | 2.19       | 6.37        |
| Lower/Day          |                                | 0.43      | 1.24       | 26.14    |            | 1.58        |
| Lower/Night        |                                | 0.39      | 3.75       | 12.08    |            | 1.34        |
| <b>20% Bottom</b>  |                                |           |            |          |            |             |
| Upper/Day          |                                |           | 5.21       | 3.35     | 0.48       | 6.37        |
| Lower/Day          |                                |           | 5.00       | 25.50    |            | 3.20        |
| Lower/Night        |                                |           | 42.17      | 51.95    | 0.42       | 0.43        |
| <b>Shoreline</b>   |                                |           |            |          |            |             |
| Upper/Day          |                                | -         | -          | 273.08   | 130.21     | 385.06      |
| Lower/Day          |                                | -         | -          | 1708.71  | 110.41     | 230.55      |
| Lower/Night        |                                | -         | -          | 4551.82  | 278.56     | 1416.80     |

Dash (-) indicates samples were not taken.

Table A10.3.8. Densities of larval Percidae collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|---------------|--------------------------------|-----------|------------|----------|------------|-------------|
|               | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| 50% Surface   |                                |           |            |          |            |             |
| Upper/Day     | 0.33                           | 0.39      |            |          |            |             |
| Lower/Day     |                                | 0.37      |            |          |            |             |
| Lower/Night   |                                | 0.38      |            |          |            |             |
| 50% Mid depth |                                |           |            |          |            |             |
| Upper/Day     | -                              | -         | -          | -        | -          | -           |
| Lower/Day     |                                |           | 0.45       |          |            |             |
| Lower/Night   |                                |           |            |          |            |             |
| 50% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 0.92       | 0.39     |            |             |
| Lower/Day     |                                |           | 1.74       |          |            | 0.44        |
| Lower/Night   | 0.37                           |           |            |          |            |             |
| 40% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           |            | 0.41     |            |             |
| Lower/Day     |                                | 0.79      |            | 1.35     |            |             |
| Lower/Night   |                                |           |            |          |            |             |

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| Location/time      | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|--------------------|--------------------------------|-----------|------------|----------|------------|-------------|
|                    | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>40% Bottom</b>  |                                |           |            |          |            |             |
| Upper/Day          |                                |           |            | 0.45     |            |             |
| Lower/Day          |                                |           | 0.86       |          |            |             |
| Lower/Night        | 0.38                           |           |            |          |            |             |
| <b>20% Surface</b> |                                |           |            |          |            |             |
| Upper/Day          |                                |           | 0.86       |          |            |             |
| Lower/Day          |                                | 1.69      |            | 0.81     |            |             |
| Lower/Night        |                                | 0.39      |            |          |            |             |
| <b>20% Bottom</b>  |                                |           |            |          |            |             |
| Upper/Day          |                                |           |            |          |            |             |
| Lower/Day          |                                | 0.85      | 0.84       | 0.82     |            |             |
| Lower/Night        |                                | 0.41      | 0.46       | 0.44     |            |             |
| <b>Shoreline</b>   |                                |           |            |          |            |             |
| Upper/Day          | 5.92                           | -         | -          | 2.64     | 4.49       | 3.10        |
| Lower/Day          |                                | -         | -          | 9.15     | 5.92       |             |
| Lower/Night        | 9.47                           | -         | -          | 13.28    | 4.58       |             |

Dash (-) indicates samples were not taken.

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Table A10.3.9. Densities of larval Aplodinotus grunniens collected from the Winfield Pool, Kanawha River, by date and location.

| Location/time        | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|----------------------|--------------------------------|-----------|------------|----------|------------|-------------|
|                      | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <b>50% Surface</b>   |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 1.72       | 11.46    |            | 0.41        |
| Lower/Day            |                                |           |            | 19.09    |            |             |
| Lower/Night          |                                |           | 0.44       | 9.67     |            |             |
| <b>50% Mid depth</b> |                                |           |            |          |            |             |
| Upper/Day            | -                              | -         | -          | -        | -          | -           |
| Lower/Day            |                                |           |            | 87.91    |            | 0.47        |
| Lower/Night          |                                |           | 0.89       | 7.37     |            |             |
| <b>50% Bottom</b>    |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 7.35       | 31.11    |            | 6.80        |
| Lower/Day            |                                |           | 2.60       | 30.08    |            | 1.71        |
| Lower/Night          |                                |           | 4.46       | 4.82     |            |             |
| <b>40% Surface</b>   |                                |           |            |          |            |             |
| Upper/Day            |                                |           | 0.92       | 9.63     |            |             |
| Lower/Day            |                                |           |            | 7.28     |            |             |
| Lower/Night          |                                |           |            | 10.86    |            |             |

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|               | <u>Number/100m<sup>3</sup></u> |           |            |          |            |             |
|---------------|--------------------------------|-----------|------------|----------|------------|-------------|
| Location/time | May 1-2                        | May 24-25 | June 14-15 | July 5-6 | July 27-28 | August 9-10 |
| <hr/>         |                                |           |            |          |            |             |
| 40% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 11.06      | 33.79    |            | 0.43        |
| Lower/Day     |                                |           | 2.13       | 16.02    |            | 2.08        |
| Lower/Night   |                                |           | 1.67       | 16.34    |            |             |
| 20% Surface   |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 3.43       | 12.83    |            |             |
| Lower/Day     |                                |           |            | 11.99    | 0.42       |             |
| Lower/Night   |                                |           | 0.87       | 0.71     |            |             |
| 20% Bottom    |                                |           |            |          |            |             |
| Upper/Day     |                                |           | 9.52       | 9.66     |            | 0.44        |
| Lower/Day     |                                |           | 2.07       | 27.15    |            | 0.57        |
| Lower/Night   |                                |           | 4.44       | 26.03    |            |             |
| Shoreline     |                                |           |            |          |            |             |
| Upper/Day     |                                | -         | -          |          |            | 0.65        |
| Lower/Day     |                                | -         | -          |          |            |             |
| Lower/Night   |                                | -         | -          | 402.61   | 0.64       | 0.61        |

Dash (-) indicates samples were not taken.

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