

Appendix A. Field Research Site Information

Table A1. General research site information.

Site	Stream Name	Stream Order	Watershed Area (km ²)	USGS 1:24,000 Map	Latitude	Longitude	Elevation (m NGVD29)	Average Baseflow Depth (cm)	Average Baseflow Width (m)
EL1	East Fork of the Little River	3	240	Floyd	36 58.492	80 18.857	655	44	22.66
EL2	East Fork of the Little River	3	240	Floyd	36 58.409	80 18.804	655	30	21.69
EL3	East Fork of the Little River	3	240	Floyd	36 58.347	80 18.940	655	63	19.42
EL4	East Fork of the Little River	3	240	Floyd	36 58.335	80 18.985	655	43	23.43
NR1	North Fork of the Roanoke River	3	110	Ironto	37 13.198	80 21.900	450	30	10.55
NR2	North Fork of the Roanoke River	3	111	Ironto	37 13.087	80 21.638	448	35	9.49
SC1	Sinking Creek	2	38	Craig Spring	37 24.737'	80 18.024'	705	44	9.11
SC2	Sinking Creek	2	42	Craig Spring	37 24.253'	80 18.595'	700	26	6.27
SC3	Sinking Creek	3	120	Newport	37 19.268'	80 26.990'	603	30	11.54
SC4	Sinking Creek	3	165	Eggleston	37 18.251'	80 30.302'	554	23	18.38
SC5	Sinking Creek	3	165	Eggleston	37 18.563'	80 30.313'	550	28	12.9
SC6	Sinking Creek	3	165	Eggleston	37 18.425'	80 30.132'	558	19	13.16
SC7	Sinking Creek	3	165	Eggleston	37 18.566'	80 30.327'	552	28	12.9
SR1	South Fork of Roanoke River	4	285	Ironto	37 09.196'	80 15.822'	411	68	24.95
SR3	South Fork of Roanoke River	4	322	Elliston	37 11.454'	80 14.361'	392	56	17.12
SR4	South Fork of Roanoke River	4	322	Elliston	37 11.448'	80 14.317'	393	26	18.67
ST1	Stroubles Creek	2	9	Blacksburg	37 13.345'	80 25.863'	613	19	4.4
ST2	Stroubles Creek	2	9	Blacksburg	37 13.101'	80 26.039'	612	10	3.44
ST3	Stroubles Creek	2	14	Blacksburg	37 12.410'	80 26.863'	605	20	3.23
ST4	Stroubles Creek	2	14	Blacksburg	37 12.410'	80 26.863'	605	20	3.25
TC1	Tom's Creek	2	35	Blacksburg	37 14.550'	80 27.912'	579	39	3.55
TC2	Tom's Creek	2	35	Blacksburg	37 14.289'	80 28.374'	576	31	7.58
TC4	Tom's Creek	3	95	Radford North	37 12.702'	80 32.992'	521	29	11.31
TC6	Tom's Creek	3	101	Radford North	37 12.349'	80 33.764'	515	12	13.38
TC7	Tom's Creek	3	101	Radford North	37 12.349'	80 33.895'	516	18	13.59



Figure A1. Site EL1 on the East Fork of the Little River.



Figure A2. Site EL2 on the East Fork of the Little River.



Figure A3. Site EL3 on the East Fork of the Little River.



Figure A4. Site EL4 on the East Fork of the Little River.



Figure A5. Site NR1 on the North Fork of the Roanoke River.



Figure A6. Site NR2 on the North Fork of the Roanoke River.



Figure A7. Site SC1 on Sinking Creek.



Figure A8. Site SC2 on Sinking Creek.



Figure A9. Site SC3 on Sinking Creek.



Figure A10. Site SC4 on Sinking Creek.



Figure A11. Site SC5 on Sinking Creek.



Figure A12. Site SC6 on Sinking Creek.



Figure A13. Site SC7 on Sinking Creek.



Figure A14. Site SR1 on the South Fork of the Roanoke River.



Figure A15. Site SR3 on the South Fork of the Roanoke River.



Figure A16. Site SR4 on the South Fork of the Roanoke River.



Figure A17. Site ST1 on Stroubles Creek.



Figure A18. Site ST2 on Stroubles Creek.



Figure A19. Site ST3 on Stroubles Creek.



Figure A20. Site ST4 on Stroubles Creek.



Figure A21. Site TC1 on Toms Creek.



Figure A22. Site TC2 on Toms Creek.



Figure A23. Site TC4 on Toms Creek.



Figure A24. Site TC6 on Toms Creek.



Figure A25. Site TC7 on Toms Creek.

Appendix B. Aboveground Vegetation

Table B1. Aboveground vegetation density.

Site	Buffer Type	Forb Dry Biomass (kg/ha)	Grass Dry Biomass (kg/ha)	Woody Dry Biomass (kg/ha)	Total Groundcover Dry Biomass (kg/ha)	Shrub Crown Volume (m ³ /ha)	Basal Stem Area (m ² /ha)	Tree Density (stems/ha)
EL1	Forested	433	333	13	780	1108	33	733
EL2	Herbaceous	250	3263	307	3820	0	0	0
EL3	Forested	1027	217	227	1470	501	53	600
EL4	Herbaceous	137	3257	280	3673	0	0	0
NR1	Forested	1290	57	7	1354	0	34	1733
NR2	Herbaceous	153	1100	0	1253	1020	11	233
SC1	Herbaceous	503	2183	303	2990	735	3	167
SC2	Herbaceous	200	1787	0	1987	990	0	0
SC3	Forested	1157	20	413	1590	735	19	700
SC4	Herbaceous	1300	1083	250	2633	1158	10	67
SC5	Forested	1740	970	50	2760	8318	40	333
SC6	Herbaceous	3213	720	237	4170	601	3	67
SC7	Forested	597	180	190	967	6260	60	933
SR1	Forested	160	237	180	577	3554	33	667
SR3	Forested	67	3	43	113	3204	33	2533
SR4	Forested	23	10	93	127	806	91	1167
ST1	Forested	67	357	53	477	8117	17	700
ST2	Forested	110	83	120	313	3511	30	333
ST3	Herbaceous	983	2587	0	3570	0	0	0
ST4	Herbaceous	2000	3270	0	5270	0	0	0
TC1	Herbaceous	2250	2162	0	4412	0	0	0
TC2	Forested	563	47	73	683	1261	39	933
TC4	Forested	177	37	187	400	5132	37	1500
TC6	Herbaceous	77	753	2277	3107	0	0	0
TC7	Forested	160	80	70	310	11035	34	1100

Table B2. Aboveground vegetation (vegetation identified to species, where possible; order not indicative of dominance).

Site	Buffer Type	Groundcover Species	Shrub Species	Tree Types
EL1	Forested	mixed cool season grasses, poison ivy (<i>Toxicodendron radicans</i>), wingstem (<i>Verbesina alternifolia</i>), jewelweed (<i>Impatiens capensis</i>), raspberry (<i>Rubus</i> sp.)	rose (<i>Rosa</i> sp.)	basswood (<i>Tilia americana</i>), hickory (<i>Carya</i> sp.), American hornbeam (<i>Carpinus caroliniana</i>), black locust (<i>Robinia pseudoacacia</i>), oak (<i>Quercus</i> sp.), shagbark hickory (<i>Carya ovata</i>)
EL2	Herbaceous	mixed cool season grasses, raspberry (<i>Rubus</i> sp.), wingstem (<i>Verbesina alternifolia</i>)	None	None
EL3	Forested	mixed cool season grasses, poison ivy (<i>Toxicodendron radicans</i>), wingstem (<i>Verbesina alternifolia</i>), jewelweed (<i>Impatiens capensis</i>), raspberry (<i>Rubus</i> sp.), rose (<i>Rosa</i> sp.), sorrel (<i>Oxalis</i> sp.)	dogwood (<i>Cornus</i> sp.), rose (<i>Rosa</i> sp.)	basswood (<i>Tilia americana</i>), hickory (<i>Carya</i> sp.), black walnut (<i>Juglans nigra</i>), oak (<i>Quercus</i> sp.), shagbark hickory (<i>Carya ovata</i>)
EL4	Herbaceous	mixed cool season grasses, ragweed (<i>Ambrosia</i> sp.), wingstem (<i>Verbesina alternifolia</i>), raspberry (<i>Rubus</i> sp.)	None	None
NR1	Forested	wingstem (<i>Verbesina alternifolia</i>), mixed cool season grasses, horsetail (<i>Equisetum</i> sp.)	None	box elder (<i>Acer negundo</i>), apple (<i>Malus</i> sp.), eastern red cedar (<i>Juniperus virginiana</i>), American sycamore (<i>Platanus occidentalis</i>), hickory (<i>Carya</i> sp.), black walnut (<i>Juglans nigra</i>), blackhaw (<i>Viburnum prunifolium</i>)
NR2	Herbaceous	mixed cool season grasses	box elder (<i>Acer negundo</i>)	box elder (<i>Acer negundo</i>), American sycamore (<i>Platanus occidentalis</i>)
SC1	Herbaceous	mixed cool season grasses, poison ivy (<i>Toxicodendron radicans</i>), jewelweed (<i>Impatiens capensis</i>)	None	shagbark hickory (<i>Carya ovata</i>), black locust (<i>Robinia pseudoacacia</i>)
SC2	Herbaceous	mixed cool season grasses	rose (<i>Rosa</i> sp.), smooth alder (<i>Alnus serrulata</i>)	None

Table B2, cont. Aboveground vegetation

Site	Buffer Type	Groundcover Species	Shrub Species	Tree Types
SC3	Forested	mixed cool season grasses, wingstem (<i>Verbesina alternifolia</i>), raspberry (<i>Rubus</i> sp.), poison ivy (<i>Toxicodendron radicans</i>)	raspberry (<i>Rubus</i> sp.), rose (<i>Rosa</i> sp.), spicebush (<i>Lindera benzoin</i>)	hawthorn (<i>Crataegus</i> sp.), hickory (<i>Carya</i> sp.), American sycamore (<i>Platanus occidentalis</i>), cherry (<i>Prunus</i> sp.), black locust (<i>Robinia pseudoacacia</i>), box elder (<i>Acer negundo</i>), black walnut (<i>Juglans nigra</i>)
SC4	Herbaceous	wingstem (<i>Verbesina alternifolia</i>), mixed grasses, thin-leafed coneflower (<i>Rudbeckia triloba</i>)	dogwood (<i>Cornus</i> sp.)	maple (<i>Acer</i> sp.), black walnut (<i>Juglans nigra</i>)
SC5	Forested	wingstem (<i>Verbesina alternifolia</i>), raspberry (<i>Rubus</i> sp.), mixed cool season grasses	box elder (<i>Acer negundo</i>), dogwood (<i>Cornus</i> sp.), poison ivy (<i>Toxicodendron radicans</i>), red mulberry (<i>Morus rubra</i>), rose (<i>Rosa</i> sp.), spicebush (<i>Lindera benzoin</i>)	box elder (<i>Acer negundo</i>), American sycamore (<i>Platanus occidentalis</i>), hickory (<i>Carya</i> sp.), maple (<i>Acer</i> sp.),
SC6	Herbaceous	wingstem (<i>Verbesina alternifolia</i>), mixed cool season grasses, jewelweed (<i>Impatiens capensis</i>)	poison ivy (<i>Toxicodendron radicans</i>), sweet buckeye (<i>Aesculus octandra</i>)	willow (<i>Salix</i> sp.)
SC7	Forested	stinging nettle (<i>Urtica dioica</i>), violet (<i>Viola</i> sp.)	box elder (<i>Acer negundo</i>), rose (<i>Rosa</i> sp.), spicebush (<i>Lindera benzoin</i>)	American elm (<i>Ulmus americana</i>), black walnut (<i>Juglans nigra</i>), yellow buckeye (<i>Aesculus flava</i>), American sycamore (<i>Platanus occidentalis</i>)
SR1	Forested	Virginia creeper (<i>Parthenocissus quinquefolia</i>), poison ivy (<i>Toxicodendron radicans</i>), mixed cool season grasses	grape (<i>Vitis</i> sp.), hickory (<i>Carya</i> sp.), poison ivy (<i>Toxicodendron radicans</i>)	American elm (<i>Ulmus americana</i>), buckeye (<i>Aesculus</i> sp.), hickory (<i>Carya</i> sp.), American sycamore (<i>Platanus occidentalis</i>), black walnut (<i>Juglans nigra</i>)
SR3	Forested	miscellaneous small forbs	box elder (<i>Acer negundo</i>), grape (<i>Vitis</i> sp.), spicebush (<i>Lindera benzoin</i>)	hickory (<i>Carya</i> sp.), box elder (<i>Acer negundo</i>), buckeye (<i>Aesculus</i> sp.), paw paw (<i>Asimina triloba</i>)
SR4	Forested	poison ivy (<i>Toxicodendron radicans</i>), common periwinkle (<i>Vinca minor</i>), Virginia creeper (<i>Parthenocissus quinquefolia</i>)	black locust (<i>Robinia pseudoacacia</i>), rose (<i>Rosa</i> sp.)	basswood (<i>Tilia americana</i>), box elder (<i>Acer negundo</i>), shagbark hickory (<i>Carya ovata</i>)

Table B2, cont. Aboveground vegetation

Site	Buffer Type	Groundcover Species	Shrub Species	Tree Types
ST1	Forested	Virginia creeper (<i>Parthenocissus quinquefolia</i>), poison ivy (<i>Toxicodendron radicans</i>), violet (<i>Viola</i> sp.), mixed cool season grasses	honeysuckle (<i>Lonicera</i> sp.), rose (<i>Rosa</i> sp.), privet (<i>Ligustrum</i> sp.)	box elder (<i>Acer negundo</i>), eastern red cedar (<i>Juniperus virginiana</i>), cherry (<i>Prunus</i> sp.), hickory (<i>Carya</i> sp.), willow (<i>Salix</i> sp.)
ST2	Forested	poison ivy (<i>Toxicodendron radicans</i>), mixed cool season grasses	dogwood (<i>Cornus</i> sp.), privet (<i>Ligustrum</i> sp.)	hickory (<i>Carya</i> sp.), black locust (<i>Robinia pseudoacacia</i>), maple (<i>Acer</i> sp.)
ST3	Herbaceous	mixed cool season grasses	None	None
ST4	Herbaceous	mixed cool season grasses, mint (<i>Mentha</i> sp.)	None	None
TC1	Herbaceous	mixed cool season grasses, wingstem (<i>Verbesina alternifolia</i>), thistle (<i>Cirsium</i> sp.), jewelweed (<i>Impatiens capensis</i>)	None	None
TC2	Forested	wingstem (<i>Verbesina alternifolia</i>), stinging nettle (<i>Urtica dioica</i>)	privet (<i>Ligustrum</i> sp.), rose (<i>Rosa</i> sp.), blackhaw (<i>Viburnum prunifolium</i>), spicebush (<i>Lindera benzoin</i>), Virginia creeper (<i>Parthenocissus quinquefolia</i>)	box elder (<i>Acer negundo</i>), oak (<i>Quercus</i> sp.), black walnut (<i>Juglans nigra</i>), buckeye (<i>Aesculus</i> sp.), maple (<i>Acer</i> sp.)
TC4	Forested	miscellaneous small forbs	spicebush (<i>Lindera benzoin</i>), rose (<i>Rosa</i> sp.)	buckeye (<i>Aesculus</i> sp.), hickory (<i>Carya</i> sp.), maple (<i>Acer</i> sp.), American hornbeam (<i>Carpinus caroliniana</i>), spicebush (<i>Lindera benzoin</i>), American sycamore (<i>Platanus occidentalis</i>)
TC6	Herbaceous	honeysuckle (<i>Lonicera</i> sp.), wingstem (<i>Verbesina alternifolia</i>), mint (<i>Mentha</i> sp.), jewelweed (<i>Impatiens capensis</i>)	None	None
TC7	Forested	poison ivy (<i>Toxicodendron radicans</i>), wingstem (<i>Verbesina alternifolia</i>), Virginia creeper (<i>Parthenocissus quinquefolia</i>), mixed cool season grasses, raspberry (<i>Rubus</i> sp.)	box elder (<i>Acer negundo</i>), northern honeysuckle (<i>Lonicera involucrata</i>), rose (<i>Rosa</i> sp.), spicebush (<i>Lindera benzoin</i>), tall deerberry (<i>Vaccinium stamineum</i>)	green ash (<i>Fraxinus pennsylvanica</i>), box elder (<i>Acer negundo</i>), basswood (<i>Tilia americana</i>), black walnut (<i>Juglans nigra</i>), oak (<i>Quercus</i> sp.), sweet buckeye (<i>Aesculus octandra</i>), hickory (<i>Carya</i> sp.), American elm (<i>Ulmus americana</i>)