

APPENDIX E.

**RESULTS OF MIXED MODEL ANALYSIS OF
VARIANCE FOR SEED PRODUCTION, STEM DENSITY, AND
PERCENT COVER OF
MOIST-SOIL PLANTS AT BACK BAY
NATIONAL WILDLIFE REFUGE**

Appendix E. Results of repeated measures mixed model analysis of variance for seed production, stem density, and percent cover of moist-soil plants in 2 freshwater impoundments, Back Bay National Wildlife Refuge, 1996-97.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Bidens cernua</i>												
Discing	1	139	0.02	0.875	1	139	0.17	0.684	1	12	0.05	0.821
Pool	1	12	0.81	0.386	1	12	0.92	0.357	1	12	0.57	0.463
Discing*Pool	1	139	0.00	0.955	1	139	0.10	0.756	1	12	0.13	0.724
Year	1	139	3.67	0.058	1	139	0.09	0.760	1	12	5.25	0.041
Year*Discing	1	139	0.14	0.708	1	139	0.00	0.954	1	12	0.38	0.548
Year*Pool	1	139	0.01	0.931	1	139	0.60	0.439	1	12	5.13	0.043
Year*Discing*Pool	1	139	5.64	0.019	1	139	8.33	0.005	1	12	0.33	0.575
Vegetation Height	1	139	1.06	0.304	1	139	1.02	0.314	-- ^a	--	--	--
<i>Carex albulotescens</i>												
Discing	1	139	0.33	0.568	1	139	0.33	0.568	-- ^b	--	--	--
Pool	1	12	0.77	0.398	1	12	0.77	0.398	--	--	--	--
Discing*Pool	1	139	1.02	0.315	1	139	1.02	0.315	--	--	--	--
Year	1	139	1.57	0.212	1	139	1.57	0.212	--	--	--	--
Year*Discing	1	139	0.94	0.335	1	139	0.94	0.335	--	--	--	--
Year*Pool	1	139	1.00	0.320	1	139	1.00	0.320	--	--	--	--
Year*Discing*Pool	1	139	1.07	0.302	1	139	1.07	0.302	--	--	--	--
Vegetation Height	1	139	1.27	0.262	1	139	1.27	0.262	--	--	--	--
<i>Carex tribuloides</i>												
Discing	1	139	1.57	0.212	1	139	1.57	0.212	--	--	--	--
Pool	1	12	0.80	0.389	1	12	0.80	0.389	--	--	--	--
Discing*Pool	1	139	0.99	0.322	1	139	0.99	0.322	--	--	--	--
Year	1	139	1.45	0.230	1	139	1.45	0.230	--	--	--	--
Year*Discing	1	139	1.05	0.306	1	139	1.05	0.306	--	--	--	--
Year*Pool	1	139	1.00	0.320	1	139	1.00	0.320	--	--	--	--
Year*Discing*Pool	1	139	0.94	0.334	1	139	0.94	0.334	--	--	--	--
Vegetation Height	1	139	0.88	0.350	1	139	0.88	0.350	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Cyperus erythrorhizos</i>												
Discing	1	139	2.31	0.131	1	139	6.17	0.014	1	12	0.00	0.985
Pool	1	12	4.66	0.052	1	12	6.04	0.030	1	12	2.94	0.112
Discing*Pool	1	139	0.35	0.556	1	139	0.27	0.606	1	12	0.01	0.931
Year	1	139	20.51	0.000	1	139	15.70	0.000	1	12	1.43	0.255
Year*Discing	1	139	0.12	0.728	1	139	1.71	0.194	1	12	0.25	0.624
Year*Pool	1	139	2.54	0.113	1	139	3.68	0.057	1	12	5.58	0.036
Year*Discing*Pool	1	139	0.57	0.453	1	139	0.18	0.668	1	12	1.17	0.301
Vegetation Height	1	139	10.06	0.002	1	139	12.75	0.001	--	--	--	--
<i>Cyperus esculentus</i>												
Discing	1	139	0.30	0.583	1	139	6.17	0.014	1	12	0.01	0.905
Pool	1	12	0.28	0.607	1	12	6.04	0.030	1	12	2.95	0.111
Discing*Pool	1	139	3.74	0.055	1	139	0.27	0.606	1	12	0.55	0.475
Year	1	139	4.49	0.036	1	139	15.70	0.000	1	12	12.84	0.004
Year*Discing	1	139	0.47	0.495	1	139	1.71	0.194	1	12	0.06	0.810
Year*Pool	1	139	0.70	0.405	1	139	3.68	0.057	1	12	1.84	0.200
Year*Discing*Pool	1	139	1.63	0.204	1	139	0.18	0.668	1	12	0.14	0.716
Vegetation Height	1	139	4.46	0.036	1	139	12.75	0.001	--	--	--	--
<i>Cyperus iria</i>												
Discing	1	139	3.24	0.074	1	139	2.40	0.124	1	12	0.31	0.588
Pool	1	12	5.57	0.036	1	12	4.90	0.047	1	12	3.99	0.069
Discing*Pool	1	139	0.97	0.326	1	139	0.98	0.323	1	12	4.34	0.059
Year	1	139	0.80	0.372	1	139	0.26	0.610	1	12	22.48	0.001
Year*Discing	1	139	1.36	0.245	1	139	2.25	0.136	1	12	0.06	0.815
Year*Pool	1	139	0.63	0.428	1	139	0.27	0.602	1	12	5.36	0.039
Year*Discing*Pool	1	139	3.53	0.063	1	139	3.14	0.079	1	12	5.76	0.034
Vegetation Height	1	139	2.02	0.158	1	139	1.30	0.255	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Cyperus spp.</i>												
Discing	1	139	1.25	0.265	1	139	1.25	0.265	--	--	--	--
Pool	1	12	0.79	0.393	1	12	0.79	0.393	--	--	--	--
Discing*Pool	1	139	0.91	0.341	1	139	0.91	0.341	--	--	--	--
Year	1	139	1.29	0.258	1	139	1.29	0.258	--	--	--	--
Year*Discing	1	139	1.04	0.309	1	139	1.04	0.309	--	--	--	--
Year*Pool	1	139	1.00	0.319	1	139	1.00	0.319	--	--	--	--
Year*Discing*Pool	1	139	0.96	0.329	1	139	0.96	0.329	--	--	--	--
Vegetation Height	1	139	0.43	0.515	1	139	0.43	0.515	--	--	--	--
<i>Dichromena colorata</i>												
Discing	1	139	0.56	0.456	1	139	0.66	0.419	1	12	0.54	0.476
Pool	1	12	1.55	0.237	1	12	1.61	0.228	1	12	9.01	0.011
Discing*Pool	1	139	0.79	0.375	1	139	0.66	0.419	1	12	0.54	0.476
Year	1	139	2.75	0.100	1	139	2.38	0.125	1	12	0.27	0.612
Year*Discing	1	139	4.18	0.043	1	139	3.48	0.064	1	12	0.02	0.895
Year*Pool	1	139	4.17	0.043	1	139	4.68	0.032	1	12	0.27	0.612
Year*Discing*Pool	1	139	3.95	0.049	1	139	4.56	0.035	1	12	0.02	0.895
Vegetation Height	1	139	0.60	0.441	1	139	0.36	0.552	--	--	--	--
<i>Distichlis spicata</i>												
Discing	1	139	1.97	0.162	1	139	2.30	0.131	1	12	0.11	0.742
Pool	1	12	3.08	0.105	1	12	3.02	0.108	1	12	7.07	0.021
Discing*Pool	1	139	2.26	0.135	1	139	2.46	0.119	1	12	0.11	0.742
Year	1	139	5.63	0.019	1	139	3.35	0.069	1	12	5.54	0.037
Year*Discing	1	139	3.09	0.081	1	139	2.11	0.149	1	12	0.22	0.646
Year*Pool	1	139	5.59	0.019	1	139	3.57	0.061	1	12	5.54	0.037
Year*Discing*Pool	1	139	3.08	0.081	1	139	2.11	0.149	1	12	0.22	0.646
Vegetation Height	1	139	0.19	0.667	1	139	0.02	0.884	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Echinochloa crus-galli</i>												
Discing	1	139	3.31	0.071	1	139	3.55	0.062	1	12	0.21	0.651
Pool	1	12	5.89	0.032	1	12	4.79	0.049	1	12	0.06	0.818
Discing*Pool	1	139	1.90	0.170	1	139	1.75	0.188	1	12	2.24	0.160
Year	1	139	0.02	0.878	1	139	0.02	0.875	1	12	3.24	0.097
Year*Discing	1	139	0.37	0.543	1	139	0.18	0.676	1	12	0.03	0.859
Year*Pool	1	139	0.10	0.756	1	139	0.42	0.516	1	12	0.40	0.537
Year*Discing*Pool	1	139	1.05	0.307	1	139	1.68	0.197	1	12	0.78	0.395
Vegetation Height	1	139	3.80	0.053	1	139	5.94	0.016	--	--	--	--
<i>Eleocharis obtusa</i>												
Discing	--	--	--	--	--	--	--	--	1	12	0.05	0.828
Pool	--	--	--	--	--	--	--	--	1	12	0.79	0.390
Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.00	0.995
Year	--	--	--	--	--	--	--	--	1	12	4.23	0.062
Year*Discing	--	--	--	--	--	--	--	--	1	12	0.01	0.933
Year*Pool	--	--	--	--	--	--	--	--	1	12	4.40	0.058
Year*Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.89	0.364
<i>Eleocharis quadrangulata</i>												
Discing	1	139	0.61	0.435	1	139	0.61	0.435	--	--	--	--
Pool	1	12	1.04	0.329	1	12	1.04	0.329	--	--	--	--
Discing*Pool	1	139	0.96	0.328	1	139	0.96	0.328	--	--	--	--
Year	1	139	0.73	0.394	1	139	0.73	0.394	--	--	--	--
Year*Discing	1	139	0.97	0.326	1	139	0.97	0.326	--	--	--	--
Year*Pool	1	139	1.00	0.319	1	139	1.00	0.319	--	--	--	--
Year*Discing*Pool	1	139	1.03	0.313	1	139	1.03	0.313	--	--	--	--
Vegetation Height	1	139	0.19	0.668	1	139	0.19	0.668	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Fimbristylis annua</i>												
Discing	1	139	4.86	0.029	1	139	3.96	0.049	1	12	3.22	0.098
Pool	1	12	0.79	0.390	1	12	0.91	0.359	1	12	2.23	0.161
Discing*Pool	1	139	3.66	0.058	1	139	2.63	0.108	1	12	1.18	0.298
Year	1	139	3.24	0.074	1	139	1.35	0.248	1	12	0.00	0.997
Year*Discing	1	139	3.01	0.085	1	139	4.91	0.028	1	12	0.50	0.495
Year*Pool	1	139	2.79	0.097	1	139	4.06	0.046	1	12	3.90	0.072
Year*Discing*Pool	1	139	0.62	0.433	1	139	0.05	0.819	1	12	0.11	0.742
Vegetation Height	1	139	6.33	0.013	1	139	6.81	0.010	--	--	--	--
<i>Fuirena squarrosa</i>												
Discing	1	139	1.02	0.314	1	139	0.51	0.477	1	12	5.05	0.044
Pool	1	12	5.40	0.039	1	12	4.55	0.054	1	12	12.38	0.004
Discing*Pool	1	139	7.37	0.008	1	139	4.58	0.034	1	12	5.05	0.044
Year	1	139	14.26	0.000	1	139	12.19	0.001	1	12	7.19	0.020
Year*Discing	1	139	0.71	0.401	1	139	0.46	0.498	1	12	4.67	0.052
Year*Pool	1	139	4.85	0.029	1	139	5.06	0.026	1	12	0.88	0.367
Year*Discing*Pool	1	139	7.46	0.007	1	139	5.53	0.020	1	12	4.67	0.052
Vegetation Height	1	139	0.20	0.659	1	139	0.53	0.468	--	--	--	--
<i>Juncus canadensis</i>												
Discing	1	139	0.05	0.831	1	139	0.05	0.817	1	12	0.28	0.604
Pool	1	12	5.42	0.038	1	12	4.13	0.065	1	12	6.29	0.028
Discing*Pool	1	139	0.01	0.936	1	139	0.08	0.772	1	12	0.16	0.693
Year	1	139	1.18	0.278	1	139	3.28	0.072	1	12	0.17	0.690
Year*Discing	1	139	1.92	0.168	1	139	1.54	0.216	1	12	0.17	0.685
Year*Pool	1	139	1.54	0.216	1	139	3.39	0.068	1	12	0.17	0.690
Year*Discing*Pool	1	139	2.00	0.160	1	139	1.52	0.220	1	12	0.17	0.685
Vegetation Height	1	139	0.17	0.676	1	139	0.03	0.872	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Juncus coriaceous</i>												
Discing	1	139	1.59	0.209	1	139	1.22	0.271	--	--	--	--
Pool	1	12	0.67	0.430	1	12	0.45	0.513	--	--	--	--
Discing*Pool	1	139	0.04	0.837	1	139	0.00	0.958	--	--	--	--
Year	1	139	0.79	0.375	1	139	1.21	0.274	--	--	--	--
Year*Discing	1	139	0.05	0.829	1	139	0.08	0.782	--	--	--	--
Year*Pool	1	139	0.13	0.721	1	139	0.08	0.775	--	--	--	--
Year*Discing*Pool	1	139	1.06	0.306	1	139	1.12	0.292	--	--	--	--
Vegetation Height	1	139	0.01	0.913	1	139	0.07	0.794	--	--	--	--
<i>Juncus marginatus</i>												
Discing	1	139	0.30	0.584	1	139	0.13	0.719	1	12	1.30	0.277
Pool	1	12	2.95	0.112	1	12	2.88	0.115	1	12	10.20	0.008
Discing*Pool	1	139	0.30	0.583	1	139	0.15	0.700	1	12	1.30	0.277
Year	1	139	2.90	0.091	1	139	2.71	0.102	1	12	3.85	0.074
Year*Discing	1	139	0.31	0.581	1	139	0.15	0.700	1	12	8.90	0.011
Year*Pool	1	139	3.02	0.085	1	139	2.91	0.090	1	12	3.85	0.074
Year*Discing*Pool	1	139	0.30	0.585	1	139	0.15	0.700	1	12	8.90	0.011
Vegetation Height	1	139	0.01	0.929	1	139	0.00	0.989	--	--	--	--
<i>Juncus megacephalus</i>												
Discing	1	139	0.00	0.992	1	139	0.33	0.568	1	12	0.06	0.815
Pool	1	12	3.37	0.091	1	12	1.60	0.230	1	12	17.37	0.001
Discing*Pool	1	139	3.42	0.066	1	139	2.88	0.092	1	12	0.11	0.741
Year	1	139	2.29	0.132	1	139	2.11	0.149	1	12	1.75	0.210
Year*Discing	1	139	0.12	0.731	1	139	0.11	0.740	1	12	0.38	0.550
Year*Pool	1	139	0.03	0.868	1	139	0.12	0.725	1	12	4.26	0.061
Year*Discing*Pool	1	139	3.64	0.058	1	139	2.78	0.098	1	12	0.02	0.902
Vegetation Height	1	139	0.64	0.427	1	139	0.52	0.472	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Juncus roemerianus</i>												
Discing	--	--	--	--	--	--	--	--	1	12	6.97	0.022
Pool	--	--	--	--	--	--	--	--	1	12	0.34	0.571
Discing*Pool	--	--	--	--	--	--	--	--	1	12	1.35	0.269
Year	--	--	--	--	--	--	--	--	1	12	1.29	0.278
Year*Discing	--	--	--	--	--	--	--	--	1	12	0.06	0.813
Year*Pool	--	--	--	--	--	--	--	--	1	12	2.91	0.114
Year*Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.66	0.432
<i>Juncus tenuis</i>												
Discing	1	139	2.10	0.149	1	139	2.10	0.149	--	--	--	--
Pool	1	12	0.70	0.419	1	12	0.70	0.419	--	--	--	--
Discing*Pool	1	139	0.99	0.322	1	139	0.99	0.322	--	--	--	--
Year	1	139	0.34	0.560	1	139	0.34	0.560	--	--	--	--
Year*Discing	1	139	0.92	0.339	1	139	0.92	0.339	--	--	--	--
Year*Pool	1	139	1.01	0.316	1	139	1.01	0.316	--	--	--	--
Year*Discing*Pool	1	139	1.11	0.294	1	139	1.11	0.294	--	--	--	--
Vegetation Height	1	139	2.31	0.131	1	139	2.31	0.131	--	--	--	--
<i>Leersia oryzoides</i>												
Discing	--	--	--	--	--	--	--	--	1	12	1.97	0.186
Pool	--	--	--	--	--	--	--	--	1	12	1.00	0.337
Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.40	0.538
Year	--	--	--	--	--	--	--	--	1	12	0.49	0.497
Year*Discing	--	--	--	--	--	--	--	--	1	12	0.11	0.745
Year*Pool	--	--	--	--	--	--	--	--	1	12	6.52	0.025
Year*Discing*Pool	--	--	--	--	--	--	--	--	1	12	1.22	0.291

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Miscellaneous species</i>												
Discing	--	--	--	--	--	--	--	--	1	12	0.10	0.758
Pool	--	--	--	--	--	--	--	--	1	12	1.75	0.211
Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.90	0.363
Year	--	--	--	--	--	--	--	--	1	12	0.30	0.596
Year*Discing	--	--	--	--	--	--	--	--	1	12	1.17	0.302
Year*Pool	--	--	--	--	--	--	--	--	1	12	0.17	0.687
Year*Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.00	0.953
<i>Panicum dichotomiflorum</i>												
Discing	1	139	4.71	0.032	1	139	2.94	0.089	1	12	4.10	0.066
Pool	1	12	5.08	0.044	1	12	6.87	0.022	1	12	2.06	0.177
Discing*Pool	1	139	0.80	0.372	1	139	2.07	0.153	1	12	2.19	0.165
Year	1	139	0.45	0.505	1	139	1.80	0.182	1	12	0.37	0.553
Year*Discing	1	139	0.42	0.520	1	139	0.68	0.411	1	12	0.88	0.367
Year*Pool	1	139	1.96	0.164	1	139	0.43	0.514	1	12	8.53	0.013
Year*Discing*Pool	1	139	0.37	0.543	1	139	0.41	0.521	1	12	0.00	0.950
Vegetation Height	1	139	1.80	0.182	1	139	2.67	0.105	--	--	--	--
<i>Panicum spp.</i>												
Discing	1	139	0.03	0.869	1	139	0.12	0.725	--	--	--	--
Pool	1	12	1.34	0.269	1	12	1.31	0.275	--	--	--	--
Discing*Pool	1	139	0.20	0.654	1	139	0.03	0.862	--	--	--	--
Year	1	139	6.79	0.010	1	139	6.64	0.011	--	--	--	--
Year*Discing	1	139	0.33	0.566	1	139	0.64	0.425	--	--	--	--
Year*Pool	1	139	1.68	0.198	1	139	1.66	0.200	--	--	--	--
Year*Discing*Pool	1	139	0.17	0.677	1	139	0.02	0.889	--	--	--	--
Vegetation Height	1	139	1.55	0.216	1	139	1.77	0.186	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Panicum virgatum</i>												
Discing	1	139	0.60	0.441	1	139	0.82	0.367	1	12	4.62	0.053
Pool	1	12	0.61	0.450	1	12	0.04	0.838	1	12	6.09	0.030
Discing*Pool	1	139	0.06	0.801	1	139	0.00	0.961	1	12	6.50	0.026
Year	1	139	1.17	0.280	1	139	1.64	0.203	1	12	3.36	0.092
Year*Discing	1	139	1.90	0.170	1	139	1.72	0.192	1	12	0.04	0.839
Year*Pool	1	139	0.29	0.591	1	139	0.44	0.509	1	12	0.28	0.608
Year*Discing*Pool	1	139	0.08	0.782	1	139	0.03	0.864	1	12	0.37	0.554
Vegetation Height	1	139	2.77	0.099	1	139	2.33	0.130	--	--	--	--
<i>Phragmites australis</i>												
Discing	--	--	--	--	--	--	--	--	1	12	0.58	0.462
Pool	--	--	--	--	--	--	--	--	1	12	0.41	0.534
Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.52	0.485
Year	--	--	--	--	--	--	--	--	1	12	0.12	0.739
Year*Discing	--	--	--	--	--	--	--	--	1	12	2.20	0.164
Year*Pool	--	--	--	--	--	--	--	--	1	12	0.71	0.417
Year*Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.09	0.767
<i>Pluchea purpurescens</i>												
Discing	--	--	--	--	--	--	--	--	1	12	0.95	0.348
Pool	--	--	--	--	--	--	--	--	1	12	13.78	0.003
Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.65	0.435
Year	--	--	--	--	--	--	--	--	1	12	0.05	0.835
Year*Discing	--	--	--	--	--	--	--	--	1	12	2.40	0.147
Year*Pool	--	--	--	--	--	--	--	--	1	12	2.08	0.174
Year*Discing*Pool	--	--	--	--	--	--	--	--	1	12	0.47	0.505

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Polygonum pensylvanicum</i>												
Discing	1	139	0.15	0.699	1	139	0.52	0.472	1	12	0.18	0.680
Pool	1	12	0.44	0.521	1	12	0.38	0.547	1	12	0.07	0.797
Discing*Pool	1	139	0.00	0.993	1	139	0.08	0.779	1	12	0.10	0.756
Year	1	139	1.64	0.202	1	139	1.24	0.268	1	12	0.44	0.519
Year*Discing	1	139	1.47	0.228	1	139	0.49	0.487	1	12	1.51	0.242
Year*Pool	1	139	0.00	0.969	1	139	0.08	0.773	1	12	3.09	0.104
Year*Discing*Pool	1	139	0.12	0.734	1	139	0.26	0.611	1	12	1.68	0.219
Vegetation Height	1	139	5.29	0.023	1	139	4.57	0.034	--	--	--	--
<i>Rhynchospora spp.</i>												
Discing	1	139	0.68	0.412	1	139	0.62	0.431	1	12	0.00	0.976
Pool	1	12	5.17	0.042	1	12	5.55	0.036	1	12	1.56	0.235
Discing*Pool	1	139	0.15	0.699	1	139	0.18	0.673	1	12	0.67	0.430
Year	1	139	0.33	0.568	1	139	1.11	0.295	1	12	3.06	0.106
Year*Discing	1	139	0.01	0.921	1	139	0.05	0.832	1	12	0.13	0.727
Year*Pool	1	139	0.02	0.878	1	139	0.50	0.481	1	12	0.39	0.544
Year*Discing*Pool	1	139	0.04	0.840	1	139	0.01	0.903	1	12	4.07	0.067
Vegetation Height	1	139	2.25	0.136	1	139	1.71	0.194	--	--	--	--
<i>Sacciolepis spp.</i>												
Discing	1	139	0.26	0.610	1	139	0.11	0.745	--	--	--	--
Pool	1	12	1.62	0.227	1	12	1.77	0.208	--	--	--	--
Discing*Pool	1	139	0.28	0.597	1	139	0.12	0.726	--	--	--	--
Year	1	139	0.28	0.596	1	139	0.12	0.734	--	--	--	--
Year*Discing	1	139	1.70	0.195	1	139	1.86	0.174	--	--	--	--
Year*Pool	1	139	0.29	0.589	1	139	0.13	0.721	--	--	--	--
Year*Discing*Pool	1	139	1.70	0.194	1	139	1.86	0.175	--	--	--	--
Vegetation Height	1	139	0.00	0.974	1	139	0.00	0.986	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Scirpus americanus</i>												
Discing	1	139	0.81	0.370	1	139	0.53	0.468	1	12	0.18	0.679
Pool	1	12	5.37	0.039	1	12	8.32	0.014	1	12	19.21	0.001
Discing*Pool	1	139	1.65	0.201	1	139	1.39	0.240	1	12	0.73	0.410
Year	1	139	0.00	0.964	1	139	0.03	0.869	1	12	0.32	0.584
Year*Discing	1	139	0.00	0.967	1	139	0.28	0.595	1	12	0.03	0.868
Year*Pool	1	139	0.95	0.330	1	139	0.07	0.793	1	12	1.97	0.186
Year*Discing*Pool	1	139	0.87	0.353	1	139	1.05	0.308	1	12	1.17	0.300
Vegetation Height	1	139	1.42	0.235	1	139	1.00	0.318	--	--	--	--
<i>Scirpus olneyi</i>												
Discing	1	139	0.04	0.851	1	139	0.10	0.756	1	12	0.01	0.937
Pool	1	12	6.30	0.027	1	12	5.66	0.035	1	12	8.19	0.014
Discing*Pool	1	139	0.00	0.987	1	139	0.03	0.869	1	12	0.01	0.937
Year	1	139	0.20	0.655	1	139	0.09	0.770	1	12	0.95	0.348
Year*Discing	1	139	3.61	0.060	1	139	3.18	0.077	1	12	1.09	0.318
Year*Pool	1	139	0.40	0.530	1	139	0.18	0.669	1	12	0.95	0.348
Year*Discing*Pool	1	139	3.62	0.059	1	139	3.19	0.076	1	12	1.09	0.318
Vegetation Height	1	139	0.40	0.529	1	139	0.23	0.632	--	--	--	--
<i>Scleria verticillata</i>												
Discing	1	139	0.17	0.682	1	139	0.04	0.836	--	--	--	--
Pool	1	12	2.01	0.182	1	12	2.38	0.149	--	--	--	--
Discing*Pool	1	139	0.20	0.652	1	139	0.06	0.801	--	--	--	--
Year	1	139	3.91	0.050	1	139	4.44	0.037	--	--	--	--
Year*Discing	1	139	0.41	0.522	1	139	0.12	0.730	--	--	--	--
Year*Pool	1	139	4.17	0.043	1	139	4.68	0.032	--	--	--	--
Year*Discing*Pool	1	139	0.42	0.518	1	139	0.13	0.724	--	--	--	--
Vegetation Height	1	139	0.01	0.933	1	139	0.01	0.903	--	--	--	--

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Setaria spp.</i>												
Discing	1	139	0.13	0.717	1	139	0.41	0.525	1	12	0.46	0.511
Pool	1	12	0.11	0.744	1	12	0.07	0.790	1	12	0.53	0.480
Discing*Pool	1	139	1.48	0.226	1	139	1.18	0.280	1	12	0.57	0.466
Year	1	139	0.10	0.752	1	139	0.08	0.774	1	12	1.42	0.256
Year*Discing	1	139	1.80	0.183	1	139	2.16	0.144	1	12	1.22	0.291
Year*Pool	1	139	3.17	0.077	1	139	1.29	0.258	1	12	3.83	0.074
Year*Discing*Pool	1	139	0.35	0.553	1	139	1.03	0.312	1	12	0.06	0.805
Vegetation Height	1	139	1.10	0.296	1	139	0.88	0.351	--	--	--	--
<i>Spartina patens</i>												
Discing	1	139	0.07	0.793	1	139	0.10	0.757	1	12	3.21	0.099
Pool	1	12	4.02	0.068	1	12	4.98	0.045	1	12	4.18	0.063
Discing*Pool	1	139	0.20	0.658	1	139	0.30	0.583	1	12	0.85	0.375
Year	1	139	0.14	0.705	1	139	0.03	0.864	1	12	12.11	0.005
Year*Discing	1	139	0.45	0.505	1	139	0.21	0.647	1	12	1.86	0.197
Year*Pool	1	139	3.44	0.066	1	139	4.12	0.044	1	12	19.69	0.001
Year*Discing*Pool	1	139	0.84	0.360	1	139	0.37	0.545	1	12	0.01	0.942
Vegetation Height	1	139	23.23	0.000	1	139	18.32	0.000	--	--	--	--
<i>Thelypteris thelypteroides</i>												
Discing	--	--	--	--	--	--	--	--	1	12	1.19	0.297
Pool	--	--	--	--	--	--	--	--	1	12	7.12	0.021
Discing*Pool	--	--	--	--	--	--	--	--	1	12	1.78	0.206
Year	--	--	--	--	--	--	--	--	1	12	1.38	0.263
Year*Discing	--	--	--	--	--	--	--	--	1	12	0.37	0.555
Year*Pool	--	--	--	--	--	--	--	--	1	12	0.40	0.539
Year*Discing*Pool	--	--	--	--	--	--	--	--	1	12	1.48	0.247

Appendix E. Cont'd.

Species and Factor	Seed Production				Stem Density				Percent Cover			
	Ndf	Ddf	F	P	Ndf	Ddf	F	P	Ndf	Ddf	F	P
<i>Xyris spp.</i>												
Discing	1	139	0.03	0.859	1	139	0.17	0.680	--	--	--	--
Pool	1	12	1.68	0.219	1	12	1.62	0.228	--	--	--	--
Discing*Pool	1	139	0.00	0.965	1	139	0.09	0.768	--	--	--	--
Year	1	139	1.58	0.211	1	139	1.51	0.222	--	--	--	--
Year*Discing	1	139	0.00	0.970	1	139	0.09	0.765	--	--	--	--
Year*Pool	1	139	2.00	0.159	1	139	1.91	0.170	--	--	--	--
Year*Discing*Pool	1	139	0.00	0.950	1	139	0.11	0.745	--	--	--	--
Vegetation Height	1	139	0.17	0.680	1	139	0.16	0.688	--	--	--	--

^a Vegetation Height was included as a covariate only in seed production and stem density models.

^b Species included in Seed Production and Stem Density analyses but not in the Percent Cover analysis accounted for <1% of total cover when ocular estimates were recorded. Species included in Percent Cover analysis but not shown separately for Seed Production or Stem Density either did not occur in any 0.0625 m² quadrats or were not included in seed production estimates because wildlife value of seeds was presumed to be low (e.g., *Phragmites australis*, *Pluchea purpurescens*).

VITA

Mark Huffman Sherfy was born on December 18, 1966 in Wabash, Indiana. He grew up in Pennsylvania, and graduated from Elizabethtown Area High School in 1984. He attended The College of William and Mary, where he graduated with a B.S. in Biology in 1988. During 1988-90, he attended a field school in Jackson, WY, worked as a medical school laboratory technician in Bethesda, MD, and served as a volunteer for the U.S. Fish and Wildlife Service in Devils Lake, ND. He met Elizabeth Ann Cost in 1988, and they were married on August 3, 1991. He conducted physiological research on sage grouse at the University of New Hampshire, and received his M.S. in Wildlife Ecology in 1992. He was employed by an environmental consulting firm in Salem, MA from 1992-1994, and was hired as a wildlife biologist by the U.S. Fish and Wildlife Service, Annapolis, MD in 1994. Mark continued his work for the Fish and Wildlife Service during his Ph.D. studies at Virginia Tech. Mark and Elizabeth have 2 children: Jacob Robert (May 16, 1997) and Braden Alexander (January 30, 1999).