Evolutionary Ecology Research --- Volume 15 (2013)

Regressive evolution of the pelvic complex in stickleback fishes: a study of convergent evolution

APPENDIX

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Appendix table 1: Populations of threespine stickleback with pelvic reduction, showing location, map coordinates (decimal degrees), pelvic phenotype frequencies (%), and the mean and standard deviation (SD) of the pelvic score (see Materials and Methods) and the published source. The site numbers refer to numbers in **Fig. 2**. Populations are listed in descending order of latitude within each country.

Site no.	Site	Country	Latitude (N)	Longitude	Sample size	Pelvic phenotype			Pelvic score		Source
						Normal	Vestigial	Lost	Mean	SD	
1	Y Lake	USA	62.304	150.063W	258	0.0	38.4	61.6	0.61	0.97	Bell & Orti 1994
2	X Lake	USA	62.296	150.061W	65	1.5	41.5	56.9	0.97	1.62	Bell & Orti 1994
3	Trouble	USA	62.288	150.061W	73	11.0	57.6	31.5	2.56	2.76	Bell & Orti 1994
4	Tigger	USA	62.282	150.063W	98	90.8	4.1	5.1	7.32	2.17	Bell & Orti 1994
5	Sunshine, East	USA	62.181	150.036W	248	99.6	0.4	0.0	7.99	0.10	Bell & Orti 1994
6	Friend, south	USA	62.133	150.056W	250	98.8	1.2	0.0	7.98	0.22	Bell & Orti 1994
7	Kashwitna	USA	61.833	150.076W	250	99.6	0.4	0.0	7.99	0.10	Bell & Orti 1994
8	Unnamed lake 3	USA	61.721	150.035W	101	99.0	0.0	1.0	7.92	0.79	Bell & Orti 1994
9	Boot	USA	61.717	150.117W	2087	0.1	91.5	8.4	2.05	1.07	Bell & Orti 1994
10	Kelly, South	USA	61.714	150.01W	257	98.4	1.6	0.0	7.98	0.20	Bell & Orti 1994
11	Vera	USA	61.713	150.138W	115	0.0	87.0	13.0	2.24	1.55	Bell & Orti 1994
12	Honeybee	USA	61.712	150.055W	20	95.0	5.0	0.0	7.80	0.89	Bell & Orti 1994
13	Lynne	USA	61.712	150.053W	114	91.2	8.8	0.0	7.70	1.14	Bell & Orti 1994
14	Crystal	USA	61.710	150.100W	70	84.3	15.7	0.0	7.63	0.99	Bell & Orti 1994
15	L-shaped	USA	61.706	149.972W	123	31.7	68.3	0.0		0.00	Bell & Orti 1994
16	Lonely, Little	USA	61.701	150.125W	225	12.9	87.2	0.0	5.60	1.82	Bell & Orti 1994
17	Milo	USA	61.669	150.079W	3	66.7	33.3	0.0	7.67	0.57	Bell & Orti 1994
18	Zero	USA	61.647	149.805W	149						Bell, Khalef & Travis 2007
19	Prator	USA	61.621	149.733W	283	1.8	96.0	2.1	3.31	1.68	Bell & Orti 1994
20	Toad	USA	61.619	149.696W	257	0.0	91.6	8.6	1.75	0.75	Bell & Orti 1994
21	Visnaw	USA	61.619	149.677W	349	99.1	0.9	0.0	7.97	1.12	Bell & Orti 1994
22	Bear Paw	USA	61.614	149.756W	210	0.0	92.3	7.6	1.92	0.97	Bell & Orti 1994
23	Cloudy	USA	61.614	149.626W	461	99.6	0.4	0.0	7.99	0.14	Bell & Orti 1994
24	Bruce	USA	61.611	149.55W	272	1.8	93.6	4.4	4.27	1.81	Bell & Orti 1994
25	Lalen	USA	61.605	149.687W	105	99.1	1.0	0.0	7.98	0.20	Bell & Orti 1994
26	Morvro	USA	61.602	149.781W	62	40.3	54.9	4.8	5.23	2.82	Bell & Orti 1994
27	Kalmback	USA	61.601	149.571W	536	49.8	41.6	8.2	5.68	2.86	Bell & Orti 1994
28	Beaver, Little	USA	61.586	149.862W	290	98.3	1.7	0.0	7.98	0.14	Bell & Orti 1994

29	Beaver, Big	USA	61.583	149.828W	255	98.8	1.2	0.0	7.98	0.20	Bell & Orti 1994
30	Forest	USA	61.579	149.797W	1	0.0	100.0	0.0	2.00	0.00	Bell & Orti 1994
31	Twin	USA	61.574	149.781W	250	99.2	0.8	0.0	7.98	0.26	Bell & Orti 1994
32	Wallace	USA	61.574	149.572W	250	26.8	67.6	5.6	4.18	2.76	Bell & Orti 1994
33	Rocky	USA	61.556	149.825W	301	99.3	0.7	0.0	7.99	0.17	Bell & Orti 1994
34	Big	USA	61.553	149.888W	200	99.5	0.5	0.0	7.99	0.14	Bell & Orti 1994
35	Whale	USA	61.543	149.747W	233	0.0	60.2	39.9	0.94	0.89	Bell & Orti 1994
36	Weinee	USA	61.533	149.454W	250	99.2	0.8	0.0	7.99	0.10	Bell & Orti 1994
37	Gonder, East	USA	61.51	149.881W	252	98.4	1.6	0.0	7.96	0.35	Bell & Orti 1994
38	Marion	USA	61.51	149.906W	199	99.0	1.0	0.0	7.99	0.17	Bell & Orti 1994
39	Gonder, West	USA	61.508	149.889W	141	99.3	0.7	0.0	7.99	0.10	Bell & Orti 1994
40	Jewell	USA	61.453	150.011W	94	97.9	2.2	0.0	7.95	0.37	Bell & Orti 1994
41	Cann	USA	61.441	150.000W	222	80.6	19.5	0.0	7.41	1.46	Bell & Orti 1994
42	Carpenter	USA	61.435	150.03W	173	61.9	38.2	0.0	6.56	2.17	Bell & Orti 1994
43	Lorraine	USA	61.294	149.95W	123	95.9	4.1	0.0	7.93	0.36	Bell & Orti 1994
44	Salmo	USA	60.804	150.985W	126	99.2	0.8	0.0	7.94	0.62	Bell & Orti 1994
45	Jeep	USA	60.776	151.176W	164	98.8	1.2	0.0	7.97	0.32	Bell & Orti 1994
46	Nowack	USA	60.771	151.134W	106	3.8	96.2	0.0	5.46	1.20	Bell & Orti 1994
47	Hump	USA	60.769	151.167W	743	0.1	84.8	14.9		0.00	Bell & Orti 1994
48	Suneva	USA	60.763	151.197W	242	99.6	0.4	0.0	7.99	0.14	Bell & Orti 1994
49	Padd	USA	60.760	150.493W	150	99.3	0.7	0.0	7.99	0.17	Bell & Orti 1994
50	Arrow	USA	60.753	150.49W	22	0.0	68.2	31.8	1.14	0.89	Bell & Orti 1994
51	Nest	USA	60.736	150.572W	250	99.6	0.4	0.0	7.98	0.24	Bell & Orti 1994
52	Coyote	USA	60.735	150.444W	361	0.0	67.4	32.7	1.13	0.95	Bell & Orti 1994
53	Portage	USA	60.732	150.542W	74	47.3	52.8	0.0	6.73	1.53	Bell & Orti 1994
54	Kivi	USA	60.725	151.238W	235	93.6	6.4	0.0	7.92	0.35	Bell & Orti 1994
55	Stickleback	USA	60.724	150.558W	107	99.1	0.9	0.0	7.98	0.20	Bell & Orti 1994
56	Barbara	USA	60.721	151.187W	303	54.8	45.2	0.0	7.24	0.89	Bell & Orti 1994
57	Barr	USA	60.721	151.219W	251	94.8	5.2	0.0	7.92	0.39	Bell & Orti 1994
58	Dolomite	USA	60.721	151.133W	255	0.0	99.7	0.4	2.78	1.41	Bell & Orti 1994
59	Georgina	USA	60.719	151.222W	202	1.5	98.6	0.0	5.99	0.55	Bell & Orti 1994
60	Wik	USA	60.719	151.25WW	36	97.2	2.8	0.0	7.97	0.17	Bell & Orti 1994
61	Moreland	USA	60.717	151.292W	55	74.6	25.6	0.0	7.44	1.10	Bell & Orti 1994
62	Medico	USA	60.708	151.287W	254	98.8	1.2	0.0	7.98	0.22	Bell & Orti 1994
63	Char-vic	USA	60.706	151.269W	256	2.3	97.6	0.0	5.47	1.00	Bell & Orti 1994
64	Tirmore	USA	60.703	151.236W	112	96.4	3.6	0.0	7.95	0.30	Bell & Orti 1994

65	Community Club	USA	60.702	151.383W	341	69.2	28.2	2.6	6.76	2.22	Bell & Orti 1994
66	Long Pine	USA	60.701	151.222W	250	76.4	23.6	0.0	7.56	0.88	Bell & Orti 1994
67	Bernice	USA	60.693	151.353W	81	95.1	4.9	0.0	7.94	0.28	Bell & Orti 1994
68	Duck	USA	60.682	151.224W	315	99.7	0.3	0.0	7.99	0.10	Bell & Orti 1994
69	Cabin	USA	60.672	151.328W	58	93.1	6.9	0.0	7.93	0.26	Bell & Orti 1994
70	Douglas	USA	60.671	151.224W	180	40.0	60.0	0.0	6.73	1.39	Bell & Orti 1994
71	Puddle	USA	60.668	151.321W	184	88.0	11.9	0.0	7.78	0.66	Bell & Orti 1994
72	Kidney	USA	60.665	151.268W	136	17.7	82.3	0.0	6.55	0.79	Bell & Orti 1994
73	Salmatof	USA	60.651	151.294W	275	84.7	15.3	0.0	7.50	1.30	Bell & Orti 1994
74	Salmatof, Lower	USA	60.629	151.358W	250	91.2	8.8	0.0	7.61	1.34	Bell & Orti 1994
75	Sunken Island	USA	60.593	150.886W	54	79.6	20.4	0.0	7.48	1.10	Bell & Orti 1994
76	Picnic	USA	60.550	150.274W	251	99.2	0.8	0.0	7.99	0.14	Bell & Orti 1994
77	Union	USA	60.522	151.029W	191	99.0	1.0	0.0	7.94	0.57	Bell & Orti 1994
78	Whisper	USA	60.518	150.908W	287	99.6	0.4	0.0	7.99	0.10	Bell & Orti 1994
79	Bottenintnin	USA	60.514	150.554W	198	98.0	2.0	0.0	7.97	0.22	Bell & Orti 1994
80	Bible Camp	USA	60.508	150.946W	203	16.8	66.5	16.8	3.69	2.77	Bell & Orti 1994
81	Longmere	USA	60.508	150.908W	268	98.1	2.0	0.0	7.96	0.36	Bell & Orti 1994
82	Jean	USA	60.506	151.171W	178	10.5	89.5	0.0	5.69	1.62	Bell & Orti 1994
83	Unnamed lake 2	USA	60.498	151.032W	251	99.6	0.4	0.0	7.99	0.10	Bell & Orti 1994
84	Headquarters	USA	60.461	151.054W	92	96.7	3.3	0.0	7.95	0.32	Bell & Orti 1994
85	Echo	USA	60.438	151.161W	783	9.9	89.4	0.7		0.00	Bell & Orti 1994
86	Reflection	USA	60.394	151.19W	252	62.3	37.7	0.0	7.19	1.09	Bell & Orti 1994
87	Joseph, North	USA	60.393	151.178W	233	0.9	99.1	0.0	5.83	0.59	Bell & Orti 1994
88	Orphia	USA	60.386	150.2W	41	2.4	97.5	0.0	5.15	1.30	Bell & Orti 1994
89	Mclains	USA	60.358	151.247W	120	93.3	6.6	0.0	7.83	0.85	Bell & Orti 1994
90	Aqua-linda	USA	60.333	151.229W	131	96.2	3.9	0.0	7.84	0.85	Bell & Orti 1994
91	Unnamed lake 1	USA	60.331	151.259W	106	89.6	10.4	0.0	7.66	1.08	Bell & Orti 1994
92	Pollard, Lower	USA	60.321	151.239W	153	96.1	4.1	0.0	7.90	0.64	Bell & Orti 1994
93	Virginia	USA	60.285	151.288W	107	85.1	15.0	0.0	7.73	0.76	Bell & Orti 1994
94	Swan	USA	60.278	151.353W	90	81.1	18.9	0.0	7.67	0.78	Bell & Orti 1994
95	Encelewski	USA	60.257	151.308W	289	14.2	85.8	0.0	6.36	0.96	Bell & Orti 1994
96	Alamo Creek	USA	35.327	120.451W	275	96.7	3.3	0.0			Bell 1987
97	Serendipidy Lake	Canada	54.068	131.748W	13	84.6	13.4	0.0			Bell 1987
98	Boulton Lake	Canada	53.784	132.101W	221						Moodie & Reimchen 1976
98	Boulton Lake	Canada	53.784	132.101W	9094	16.9	83.1	0.0			Reimchen 1980
98	Boulton Lake	Canada	53.784	132.101W	92	1.1	98.9	0.0			Bell 1987

99	Little Quarry Lake	Canada	49.826	124.464W							Gow et al. 2008
100	Paxton Lake	Canada	49.708	124.525W	67	34.3	37.3	28.3			Bell 1974
100	Paxton Lake	Canada	49.708	124.525W	202	18.8	13.3	67.8			Bell 1987
100	Paxton Lake	Canada	49.708	124.525W	310						McPhail 1992
101	Lac Croche	Canada	47.797	68.788W	38	2.6	97.5	0.0			Edge & Coad 1983
102	Lac Rond 1980-81	Canada	47.745	68.734W	82	0.0	98.8	1.2			Edge & Coad 1983
102	Lac Rond 2010	Canada	47.745	68.734W	29	29.0	0.0	61.0			Lacasse & Aubin-Horth 2012
103	Vífilsstadvatn	Iceland	64.068	31.912W	199	12.6	85.9	1.5			Shapiro et al. 2004
104	Lochan on Bogach Maari 1980	Scotland	57.627	7.263W							Giles 1983
104	Lochan on Bogach Maari 2010-12	Scotland	57.627	7.263W	41	0.0	9.5	90.5	0.46	1.10	Present study
105	Loch Fada 1980	Scotland	57.617	7.237W	339	0.3					Giles 1987
105	Loch Fada	Scotland	57.617	7.237W							Coyle et al. 2007
105	Loch Fada 2010-12	Scotland	57.617	7.237W	16	0.0	0.0	100	0.00	0.00	Present study
106	Loch nan Geadh 1980	Scotland	57.616	7.215W							Giles 1983
106	Loch nan Geadh 2010-12	Scotland	57.616	7.215W	44	0.0	6.8	93.2	0.91	0.36	Present study
107	Loch na Maghdein 1980	Scotland	57.601	7.202W							Giles 1983
107	Loch na Maghdein 2010-12	Scotland	57.601	7.202W	47	0.0	100.0	0.0	2.40	1.06	Present study
108	Loch Scadavay 1980	Scotland	57.599	7.257W							Giles 1983
108	Loch Scadavay 2010-12	Scotland	57.599	7.257W	61	0.0	98.4	1.6	2.05	0.69	Present study
109	Loch nan Eun 1980	Scotland	57.586	7.302W							Giles 1983
109	Loch nan Eun 2010-12	Scotland	57.586	7.302W	17	0.0	100.0	0.0	2.00	0.00	Present study
110	Loch an Daimh 1980	Scotland	57.585	7.218W	383	97.4					Giles 1987
111	Loch Deòireabhat	Scotland	57.579	7.200W							C. Smith pers. com.
112	Loch a Bhuird 1980	Scotland	57.578	7.224W							Giles 1983
112	Loch a Bhuird 2010-12	Scotland	57.578	7.224W	98	5.1	28.6	66.3	2.05	0.33	Present study

113	Loch nan Ceitir Elean	Scotland	57.578	07.257W	7	0.0	100.0	0.0	5.86	0.38	Present study
114	Loch Huna 1980	Scotland	57.577	7.336W							Giles 1983
114	Loch Huna 2010-12	Scotland	57.577	7.336W	10	0.0	50.0	50.0	1.00	1.05	Present study
115	Loch na Moracha 1980	Scotland	57.577	7.277W							Giles 1983
115	Loch na Moracha 2010-12	Scotland	57.577	7.277W	47	0.0	76.6	23.4	1.49	0.88	Present study
116	Loch a Bharpa 1980	Scotland	57.576	7.294W	350	3.1					Giles 1987
116	Loch a Bharpa	Scotland	57.576	7.294W	45	20.0	80.0	0.0			Bell 1987
116	Loch a Bharpa 2010-12	Scotland	57.576	7.294W	115	1.7	97.4	0.9	2.14	0.51	Present study
117	Loch Calder	Scotland	58.521	3.595W							Campell 1989 (unpubl.)
118	Loch Losganan	Scotland	57.206	4.483W							Campell 1989 (unpubl.)
119	Loch Oligney	Scotland	58.494	3.564W							Campell 1989 (unpubl.)
120	Loch Ruthven	Scotland	57.320	4.303W							Campell 1989 (unpubl.)
121	Guov'dagarja'r	Norway	70.453	28.022E	25	92.0	4.0	4.0	7.65		Klepaker & Østbye 2008
122	Storvatnet 1989	Norway	68.781	15.166E	44	30.2	69.8	0.0	5.20		Klepaker & Østbye 2008
122	Storvatnet 2007-9	Norway	68.781	15.166E	2325	44.0	55.9	0.0	6.20		Klepaker et al. 2012
123	Snåsavatn	Norway	64.202	12.087E	25	84.0	16.0	0.0	7.26		Klepaker & Østbye 2008
124	Geitungvatn	Norway	60.397	5.071E	46	8.7	91.3	0.0	5.08	1.82	Present study
125	Klokkarvatn	Norway	60.267	5.364E	34	70.6	26.4	2.9	7.75		Klepaker & Østbye 2008
126	Nesavatn	Norway	59.553	5.441E	353	0.0	13.9	86.1	0.28	0.78	Present study.
127	Liavatn	Norway	59.552	5.416E	710	26.3	32.3	41.3	3.08	3.39	Present study
128	Vigdarvatn	Norway	59.520	5.363E	492	92.3	5.9	1.8	7.63	1.48	Present study

Appendix table 2: Populations of ninespine and brook sticklebacks with pelvic reduction, showing location, map coordinates (decimal degrees), pelvic phenotype frequencies (%), and the mean and standard deviation of the pelvic score (see Methods and Materials) and the published source. The site numbers refer to numbers in **Fig. 2**. Populations are listed in descending order of latitude within each country (except for *C. inconstans* in Alberta, which are listed by descending longitude).

Site no.	Site	Country	Latitude (N)	Longitude	Sample size	Pelvic phenotype			Source
						Normal	Vestigial	Lost	
Pungitius spp.									
129	Music	USA	60.726N	150.560W					Bell unpubl. in von Hippel 2008
130	Stickleback	USA	60.724N	150.558W					Bell unpubl. in von Hippel 2008
131	Timberlost	USA	60.697N	151.147W					Bell unpubl. in von Hippel 2008
132	Dogbone	USA	60.595N	151.286W					Heins et al. in von Hippel 2008
133	Weinee	USA	61.533N	149.219W					Bell unpubl. in von Hippel 2008
134	Anna	USA	61.468N	149.961W					Bell unpubl. in von Hippel 2008
135	Headquarters	USA	60.461N	151.054W					Bell unpubl. in von Hippel 2008
136	Unnamed creek	USA	61.314N	150.030W					Shapiro et al. 2006
137	Brine Creek	Canada	59.950N	112.283W	142	66.2	23.2	11.3	Nelson 1971
138	Fox Hole Lake 1971	Canada	60.064N	112.382W	512	0.0	1.8	98.2	Nelson & Paetz 1972
138	Fox Holes Lake	Canada	60.064N	112.382W	142	0.0	0.0	100.0	Nelson 1971
139	Klewy sinkhole	Canada,	60.204N	113.708W	2	0.0	0.0	100.0	Nelson & Paetz 1972
140	Lane Lake	Canada	59.351N	112.145W	10	10.0	20.0	70.0	Nelson & Paetz 1972
141	Pine Lake 1969	Canada	59.544N	112.246W	455	66.4	29.9	3.7	Nelson 1971
141	Pine Lake 1970	Canada	59.544N	112.246W	1986	64.2	32.3	3.5	Nelson 1971
141	Pine Lake 1971	Canada	59.544N	112.246W	18	55.5	38.9	5.6	Nelson & Paetz 1972
142	Salt River	Canada	60.016N	112.354W	38	79.9	7.9	13.2	Nelson & Paetz 1972
142	Salt River No 10 1970	Canada	60.016N	112.354W	142	66.2	22.5	11.3	Nelson & Paetz 1972
142	Salt River No 10 1971	Canada	60.016N	112.354W	221	53.0	33.9	13.1	Nelson & Paetz 1972
142	Salt River No 11 1970	Canada	60.016N	112.354W	27	100.0	0.0	0.0	Nelson & Paetz 1972
142	Salt River No 11 1971	Canada	60.016N	112.354W	404	61.4	33.6	5.0	Nelson & Paetz 1972
142	Salt River No 7 1971	Canada	60.016N	112.354W	74	68.9	10.8	20.3	Nelson & Paetz 1972
142	Salt River No 8 1970	Canada	60.016N	112.354W	36	94.4	0.0	5.6	Nelson & Paetz 1972
142	Salt River No 9 1971	Canada	60.016N	112.354W	7	42.8	42.9	14.3	Nelson & Paetz 1972
143	O'Keefe's Lake	Canada	46.250N	62.815W		2.0	70.0	28.0	Blouw & Boyd 1991
144	Lough Sheelin	Ireland	53.807N	7.326W	33	12.1	15.2	72.7	Nelson 1971

145	Lough Derravaragh	Irland	53.657N	7.378W	29	3.4	0.0	96.6	Nelson 1971
146	River Brosna System	Ireland	53.292N	7.703W	35	0.0	5.7	94.3	Nelson 1971
147	River Suck System	Ireland	53.279N	8.108W	12	25.0	0.0	75.0	Nelson 1971
148	Hansmyrtjärn	Sweden	64.550N	19.167E					Hertzeg et al. 2010
149	Bynästjärnen	Sweden	64.465N	19.450E	30	0.0	100.0	0.0	Mobley et al. 2011
150	Rytilampi	Finland	66.383N	29.317E	33	0.0	100.0	0.0	Hertzeg et al. 2010
151	Kirkasvetinenlampi	Finland	66.433N	29.133E					Hertzeg et al. 2010
152	Marshinnoie Lake	Russia	66.299N	33.424E	540	0.0	0.0	100.0	Ziuganov & Zotin 1995
153	Bolotnoje Lake	Russia	66.298N	33.436E	100	76.0	12.0	12.0	Ziuganov & Zotin 1995
154	Krestovoie Lake	Russia	66.294N	33.479E	123	0.0	0.0	100.0	Ziuganov & Zotin 1995
155	Levin Navolok Creek	Russia	66.289N	33.431E	300	0.0	0.0	100.0	Ziuganov & Zotin 1995
156	Bezymyannoie Lake	Russia	66.286N	33.453E	260	0.0	0.0	100.0	Ziuganov & Zotin 1995
157	Lille Ropelvsvatn	Norway	69.259N	31.184E	2	0.0	50.0	50.0	Present study
158	Sperichios Drainage	Greece	38.871N	22.377E	20	0.0			Keivany et al. 1997
159	Bettonga river	Japan	43.198N	145.424E	415	99.8			Takata et al. 1985
160	Ishikari River System	Japan	42.876N	141.587E	3271	89.9			Takata et al. 1985
Culaea inconstans									
161	Sass River 1970	Canada	60.073	113.311W	32	96.9	0.0	3.1	Nelson & Paetz 1972
162	Preble Creek 1970	Canada	60.033	113.200W	105	99.0	0.0	1.0	Nelson & Paetz 1972
163	Salt River	Canada	60.016	112.354W	23	95.7	4.3	0.0	Nelson & Paetz 1972
163	Salt River No 10 1970	Canada	60.016	112.354W	10	100.0	0.0	0.0	Nelson & Paetz 1972
163	Salt River No 10 1971	Canada	60.016	112.354W	27	93.6	7.4	0.0	Nelson & Paetz 1972
164	Rainbow Lake No 1 1970	Canada	59.804	112.156W	24	4.2	0.0	95.8	Nelson & Paetz 1972
164	Rainbow Lake No 1 1971	Canada	59.804	112.156W	72	0.0	0.0	100.0	Nelson & Paetz 1972
165	Rainbow Lake No 4 1971	Canada	59.800	112.173W	30	0.0	0.0	100.0	Nelson & Paetz 1972
166	Pine Lake	Canada	59.544	112.246W	19	0.0	0.0	100.0	Nelson & Paetz 1972
166	Pine Lake 1971	Canada	59.544	112.246W	3	0.0	0.0	100.0	Nelson & Paetz 1972
167	Unnamed sinkhole	Canada	59.431	112.081W	3	0.0	0.0	100.0	Nelson & Paetz 1972
168	Lane Lake	Canada	59.351	112.145W	60	0.0	0.0	100.0	Nelson & Paetz 1972
169	Victor lake	Canada	53.882	119.089W	25	20.0	16.0	66.0	Nelson & Paetz 1972
170	Pierre Grey Lake no1	Canada	53.910	118.606W	32	0.0	0.0	100.0	Nelson & Atton 1971
171	Pierre Grey Lake no2	Canada	53.903	118.591W	19	5.3	0.0	94.7	Nelson & Atton 1971

172	Goldeneye Lake	Canada	52.456	116.168W	51	0.0	9.8	90.2	Nelson & Atton 1971
173	Fish Lake	Canada	52.450	116.150W	185	78.4	18.4	3.2	Nelson & Atton 1971
174	Corbett Creek	Canada	54.286	115.236W	11	0.0	0.0	100.0	Nelson & Atton 1971
175	Hasse Lake*	Canada	53.354	114.173W	180	50	2	48	Nelson 1977
176	Spring Lake	Canada	53.517	114.141W	165	10.3	3.0	86.7	Nelson & Atton 1971
177	Muir Lake 1960	Canada	53.623	113.948W	88	25.0	1.1	73.9	Nelson & Atton 1971
177	Muir Lake 1968	Canada	53.623	113.948W	314	26.8	1.9	71.3	Nelson & Atton 1971
177	Muir Lake 1969	Canada	53.623	113.948W	80	23.8	2.5	73.8	Nelson & Atton 1971
178	Redwater River	Canada	54.045	113.669W	55	49.1	7.3	43.6	Nelson & Atton 1971
178	Redwater River	Canada	54.045	113.669W	576	69.8	5.9	24.3	Reist 1981
179	Wakomao Creek 1	Canada	54.214	113.591W	447	70.9	4.1	23.7	Reist 1981
180	Whitemud Creek	Canada	53.484	113.552W	56	52.0	1.8	46.2	Nelson & Atton 1971
181	Slough south of Wakomao Lake	Canada	54.139	113.547W	127	70.1	3.9	26.0	Reist 1981
182	Wakomao Lake	Canada	54.153	113.543W	2161	70.6	4.8	26.0	Reist 1981
183	Halfway Creek	Canada	54.155	113.531W	145	72.4	4.8	22.2	Reist 1981
184	Halfway Lake	Canada	54.155	113.531W	112	63.4	1.8	34.8	Reist 1981
185	Wakomao Creek 2	Canada	54.211	113.527W	337	73.3	2.2	24.6	Reist 1981
186	Creek south of Wakomao Lake	Canada	54.137	113.517W	271	70.1	6.2	23.6	Reist 1981
187	Fairydell Creek	Canada	54.065	113.492W	105	68.6	9.3	21.9	Reist 1981
188	West Bridges Lake	Canada	54.186	113.479W	288	71.2	2.8	26.0	Reist 1981
189	Overflow from un-named lake	Canada	54.103	113.475W	64	79.7	3.2	17.2	Reist 1981
190	Beaver Pond Creek	Canada	54.100	113.466W	806	76.5	4.2	19.2	Reist 1981
191	Bridges Creek	Canada	54.184	113.462W	283	72.4	5.7	21.9	Reist 1981
192	Duggans Creek	Canada	54.211	113.459W	305	74.1	5.9	20.0	Reist 1981
193	Outflow from Halfmoon Lake	Canada	54.072	113.395W	132	70.5	6.0	23.5	Reist 1981
194	Astotin Lake 1968	Canada	53.680	112.851W	2691	43.6	2.0	54.3	Nelson & Atton 1971
194	Astotin Lake 1969	Canada	53.680	112.851W	3294	59.0	4.8	36.2	Nelson & Atton 1971
195	Stony Creek	Canada	54.112	111.970W	58	60.3	0.0	39.7	Nelson & Atton 1971
196	Bonnie Lake*	Canada	54.153	111.858W	115	72	3	25	Nelson 1977
197	Cache Lake*	Canada	54.127	111.761W	89	73	2	25	Nelson 1977
198	Punk Creek Tribunary	Canada	54.534	111.231W	25	8.0	40.0	52.0	Nelson & Atton 1971
199	Cold Lake	Canada	54.544	110.072W	15	33.3	6.7	60.0	Nelson & Atton 1971

200	Matheson Lake	Canada	54.411	108.939W	51	57.6	3.9	39.2	Nelson & Atton 1971
201	Vivian Lake 1967	Canada	54.413	108.899W	89	0.0	2.2	97.8	Nelson & Atton 1971
202	Vivian Lake 1969	Canada	54.413	108.899W	56	1.8	1.8	96.7	Nelson & Atton 1971
203	Whiteswan Lake	Canada	54.033	105.167W	28	67.9	28.6	3.5	Nelson & Atton 1971
204	Piprell Lake 1960	Canada	54.140	104.903W	44	0.0	43.2	56.8	Nelson & Atton 1971
204	Piprell Lake 1969	Canada	54.140	104.903W	55	0.0	27.3	72.7	Nelson & Atton 1971
205	Gagnon Lake	Canada	49.628	84.579W	12	41.2	25.5	33.3	Nelson 1977
206	Lake no. 30	Canada	49.767	82.317W	26	7.7	61.5	30.8	Nelson 1977

*Phenotype distribution estimated from pie diagrams

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