

Appendix E1. Red Lakes walleye size groups, ages, lengths and weights.

<u>Fish #</u>	<u>Size Group</u>	<u>Age</u>	<u>Fork Length (mm)</u>	<u>Total Length (mm)</u>	<u>Weight (g)</u>
1	small	4	374	399	629.12
2	small	4	374	401	583.08
3	small	4	371	398	565.04
4	small	4	370	398	574.24
5	small	4	370	395	601.08
6	small	4	373	397	584.9
7	small	4	366	390	549.85
8	small	4	355	377	492.47
9	small	4	362	389	544.24
10	small	4	360	386	539.58
11	medium	4	385	413	635.15
12	medium	4	383	406	638.71
13	medium	4	389	412	637.34
14	medium	4	392	416	612.32
15	medium	4	380	408	623.35
16	medium	5	399	424	662.46
17	medium	4	378	404	588.78
18	medium	4	390	414	686.26
19	medium	5	407	440	808.96
20	medium	5	385	407	622.77
21	large	5	420	449	845.56
22	large	5	454	483	1061.97
23	large	4	413	445	851.37
24	large	5	420	452	897.71
25	large	5	425	453	821.92
26	large	5	421	451	816.39
27	large	5	414	440	795.98
28	large	5	416	448	843.75
29	large	5	437	462	890.53
30	large	5	459	486	1030.24

Appendix E2. Red Lakes walleye gonad and fecundity subsample weights, egg counts, egg weights and egg diameters.

<u>Fish #</u>	<u>Gonad Weight</u> (g)	<u>Fecundity</u> Subsample (g)	<u>#Eggs</u> counted	<u>Egg Weight</u> (g)	<u>Egg diameter</u> (mm)
1	71.37	6.53	2769	0.002358	1.36
2	78.61	6.98	3528	0.001978	1.28
3	73.22	5.53	2686	0.002059	1.29
4	74.08	6.44	2799	0.002301	1.34
5	87.62	8.59	4002	0.002146	1.32
6	75.03	7.53	3375	0.002231	1.35
7	74.44	6.43	2902	0.002216	1.35
8	71.79	5.5	2122	0.002592	1.34
9	74.67	6.92	2898	0.002388	1.35
10	77.1	7.08	3321	0.002132	1.29
11	76.18	8.42	3921	0.002147	1.43
12	70.09	8.07	3893	0.002073	1.26
13	74.02	7.82	3460	0.002260	1.36
14	78.42	7.22	3224	0.002239	1.35
15	77.5	7.58	3460	0.002191	1.35
16	95.39	8.19	3656	0.002240	1.38
17	66.32	5.96	2187	0.002725	1.42
18	84.65	7.71	3409	0.002262	1.32
19	137	12.29	4686	0.002623	1.43
20	81.08	6.54	2785	0.002348	1.41
21	125.68	11.13	4594	0.002423	1.38
22	125.79	10.27	4691	0.002189	1.25
23	112.14	9.85	4310	0.002285	1.34
24	143.09	10.51	4321	0.002432	1.36
25	120.14	8.11	3558	0.002279	1.4
26	114.76	7.62	3185	0.002392	1.37
27	98.95	7.53	3717	0.002026	1.33
28	134.4	10.81	4280	0.002526	1.37
29	133.4	9.95	3594	0.002769	1.4
30	122.14	8.72	3653	0.002387	1.33

Appendix E3. Red Lake walleye fecundity estimates, gonad and egg energy content, and egg lipid content.

<u>Fish #</u>	<u>Absolute Fecundity</u> <u>(#eggs)</u>	<u>Calories/g</u> <u>Gonad</u>	<u>Calories/Egg</u>	<u>% Lipid in</u> <u>Eggs</u>
1	30264	6593.5	15.55	34.2
2	39733	6614.8	13.09	41.7
3	35564	6687.9	13.77	41.1
4	32197	6637.9	15.27	14.1
5	40821	6490.4	13.93	34.3
6	33629	6693.5	14.93	52.8
7	33596	6601.9	14.63	34
8	27698	6587	17.07	12.1
9	31271	6590.5	15.74	35.5
10	36165	6611.6	14.10	28.6
11	35475	- -	- -	24.6
12	33812	- -	- -	47.3
13	32751	- -	- -	32.8
14	35017	- -	- -	35.4
15	35376	- -	- -	59.2
16	42582	- -	- -	31.9
17	24336	- -	- -	45.1
18	37428	- -	- -	18
19	52236	- -	- -	36.1
20	34527	- -	- -	28.3
21	51875	6579.8	15.94	24.8
22	57457	6694.2	14.66	46.1
23	49068	6611.3	15.11	31.4
24	58829	6549.1	15.93	37.2
25	52708	6510.9	14.84	43
26	47967	6467.7	15.47	54.6
27	48844	6430.6	13.03	43.1
28	53213	6527	16.49	33.9
29	48185	6586.3	18.23	50.4
30	51167	6554.6	15.65	36.8

Appendix E4. Red Lakes walleye vitamin E (alpha-tocopherol) content in gonad and liver tissue.

<u>Fish #</u>	<u>µg Vitamin E/g Gonad</u>	<u>µg Vitamin E/Egg</u>	<u>µg Vitamin E/g Liver</u>
1	7.09	0.0167	- -
2	6.06	0.0120	6.94
3	8.83	0.0182	- -
4	5.57	0.0128	5.95
5	6.97	0.0150	- -
6	7.93	0.0177	- -
7	8.27	0.0183	- -
8	7.65	0.0198	- -
9	6.49	0.0155	- -
10	4.91	0.0105	4.48
11	8.02	0.0172	- -
12	9.56	0.0198	- -
13	6.03	0.0136	- -
14	7.51	0.0168	- -
15	8.07	0.0177	- -
16	9.20	0.0206	- -
17	8.72	0.0238	- -
18	8.99	0.0203	9.93
19	9.61	0.0252	- -
20	11.74	0.0276	26.04
21	7.93	0.0192	- -
22	7.19	0.0157	- -
23	8.00	0.0183	- -
24	8.11	0.0197	- -
25	6.31	0.0144	- -
26	7.67	0.0184	- -
27	10.67	0.0216	- -
28	8.97	0.0227	- -
29	9.08	0.0251	12.71
30	9.18	0.0219	- -

Appendix F1. Lake of the Woods walleye size groups, ages, lengths and weights.

<u>Fish #</u>	<u>Size Group</u>	<u>Age</u>	<u>Fork Length</u> (mm)	<u>Total Length</u> (mm)	<u>Weight (g)</u>
1	small	7	484	520	1372.36
2	small	6	466	499	1356.64
3	small	7	448	475	1131.85
4	small	6	500	530	1590.64
5	small	6	475	505	1257.72
6	small	6	450	475	1051.1
7	small	6	467	500	1301.67
8	small	5	400	430	761.26
9	small	8	477	508	1380.62
10	small	6	466	498	1235.84
11	medium	10	563	602	2090
12	medium	8	521	555	1778.8
13	medium	10	520	555	1833.48
14	medium	6	515	542	1651
15	medium	6	504	534	1486.7
16	medium	10	551	587	2125
17	medium	7	515	546	1595.29
18	medium	8	542	579	2000
19	medium	11	531	571	2025
20	medium	7	523	554	1706.08
21	large	13	591	625	2500
22	large	14	653	687	4050
23	large	10	591	630	2540
24	large	15	675	708	3920
25	large	15	640	671	3550
26	large	10	565	603	2150
27	large	11	570	607	2275
28	large	13	592	624	2550
29	large	14	671	699	3550
30	large	11	565	603	2400

Appendix F2. Lake of the Woods walleye gonad and fecundity subsample weights, egg counts, egg weights and egg diameters.

<u>Fish #</u>	<u>Gonad</u> <u>Weight (g)</u>	<u>Fecundity</u> <u>Subsample (g)</u>	<u># Eggs</u> <u>Counted</u>	<u>Egg Weight (g)</u>	<u>Egg Diameter</u> <u>(mm)</u>
1	198.01	12.48	5957	0.002095	1.31
2	180.61	14.64	7369	0.001987	1.29
3	150.41	7.25	3630	0.001997	1.31
4	194.78	8.49	4289	0.001979	1.3
5	166.39	8.96	4374	0.002048	1.41
6	127.23	7.82	3497	0.002236	1.38
7	172.81	12.19	6155	0.001981	1.31
8	87.37	8.69	4178	0.002080	1.31
9	246.49	10.95	4485	0.002441	1.43
10	123.01	5.59	2636	0.002121	1.3
11	279.15	14.84	7712	0.001924	1.18
12	301.63	16.52	9262	0.001784	1.28
13	285.98	16.08	5006	0.003212	1.39
14	209.61	8.86	4750	0.001865	1.29
15	193.74	8.25	4212	0.001959	1.26
16	383.67	15.92	6578	0.002420	1.35
17	179.18	7.78	3885	0.002003	1.29
18	284.38	10.27	4793	0.002143	1.29
19	265.07	12.61	6296	0.002003	1.27
20	210.49	13.78	6722	0.002050	1.36
21	404.41	17.47	8066	0.002166	1.29
22	647.78	21.38	9424	0.002269	1.34
23	417.97	23.64	9386	0.002519	1.4
24	719.86	31.7	11792	0.002688	1.45
25	533.5	24.99	11666	0.002142	1.29
26	372.15	21.13	10508	0.002011	1.35
27	456.7	18.82	8671	0.002170	1.31
28	419.54	14.71	6026	0.002441	1.37
29	572.55	22.58	10850	0.002081	1.39
30	357.85	20.85	9597	0.002173	1.37

Appendix F3. Lake of the Woods walleye fecundity estimates, gonad and egg energy content, and egg lipid content.

<u>Fish #</u>	<u>Absolute Fecundity</u> <u>(# eggs)</u>	<u>Calories/g</u> <u>Gonad</u>	<u>Calories/Egg</u>	<u>% Lipid in Eggs</u>
1	94515	6600.7	13.83	26.7
2	90910	6690.7	13.29	29.7
3	75309	6690.6	13.36	29.6
4	98399	6578	13.02	32.9
5	81227	6624.1	13.57	14
6	56896	6611.6	14.78	16.9
7	87256	6710	13.29	40
8	42006	6600.4	13.73	42.7
9	100960	6548.6	15.99	27.5
10	58006	6651.7	14.11	31.9
11	145068	- -	- -	38.8
12	169110	- -	- -	20.6
13	89031	- -	- -	22.5
14	112376	- -	- -	24.9
15	98913	- -	- -	37.1
16	158529	- -	- -	27.3
17	89475	- -	- -	24.2
18	132720	- -	- -	30.6
19	132346	- -	- -	24.4
20	102679	- -	- -	56.4
21	186718	6486.5	14.05	19.9
22	285532	6490.7	14.73	27.3
23	165950	6552.4	16.50	39.5
24	267779	6574.7	17.67	28.4
25	249052	6596.8	14.13	46.9
26	185071	6625.2	13.32	26.7
27	210417	6472.8	14.05	33.3
28	171866	6530.7	15.94	38
29	275118	6554.5	13.64	34.5
30	164714	6675.3	14.50	37.6

FECUNDITY AND EGG QUALITY IN EXPLOITED
WALLEYE (STIZOSTEDION VITREUM VITREUM) POPULATIONS

A THESIS
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
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DESERAE LYNETTE BUSHONG

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