Complete Report

Results of Lake Assessment in the Goose Island/Stoddard Lake Unit, Navigation Pool 8 of the upper Mississippi River, Fall 2007.

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Purpose

The purpose of this work is to monitor the fall population length frequency and catch per unit effort of sunfishes, yellow perch and crappies in parts of Navigation Pool 8 of the upper Mississippi River. A secondary purpose is to estimate length and size distributions of other game fishes caught incidentally.

Methods

The Goose Island/Stoddard (GIS) Lake Unit is located in Navigation Pool 8 of the upper Mississippi River (Figure 1). The lake unit has a total water surface area of 8145 acres.

Standard Upper Mississippi River Conservation Committee (UMRCC) fyke nets were set by WDNR personnel. These fyke nets had a 50ft floating lead line, 3ft high and 6ft wide frame, and had a 0.75 inch bar mesh. Nets were set at locations thought likely to catch centrarchids and other fishes typical of backwaters from September 4 through September 18, 2007 (Figure 2). A total of 11 locations where chosen, with 1 fyke net at each. These nets fished a total of 32.56 net-days and were emptied every day during which all fish were removed.

In addition to fyke netting, an 18 foot-long welded aluminum flat-bottomed maxi-boom electro shocking boat equipped with a Wisconsin Box was used on approximately 10 minute day-time runs. Two booms extended 8 feet from the bow and the box controls were adjusted to produce 16 amps. A total of 52 runs were done during 8.683 hours of sampling (Figure 3, Table 1) done on seven days from September 19 through October 12, 2007. For both gears, all fish were counted. Of these fish, all pan fish and game fish were measured by total length.

Findings

The mean daily ambient water temperatures during 2007 sampling was 19.0°C and generally declined over the 37 days of sampling (Table 2). During sampling, the water surface elevation measured at the La Crosse, Wisconsin gage changed as much as 2.6 feet. The mean daily flow in cubic feet per second was 32587 and fluctuated as much as 54000 cubic feet per second.

Fyke Netting Catch Per Effort

A total of 26 fishes were recorded from 1678 fish captured in fyke nets (Table 3). The most common was bluegill followed by black crappie, yellow perch and common carp. Mean catch per net-day for these four fishes was 28.13, 7.32, 4.0 and 2.04, respectively. The mean catch per net-day for all species combined was 51.24 (standard deviation = 30.76, n=32).

Electro Shocking Catch Per Effort

A total of 41 fishes and one hybrid were recorded from 7991 fish captured during electro shocking (Table 4). The most common was gizzard shad followed by largemouth bass, bluegill and common carp. Mean catch per hour for these four fishes was 647.67, 94.40, 92.18 and 11.63, respectively. The mean catch per hour for all species combined was 920.60 (standard deviation = 943.16, n=52).

Length Distribution from Fyke Netting

The frequency distribution of total length in inches for black crappie, bluegill, northern pike and yellow perch are given in Figures 4, 6, 8 and 14. The mean lengths of fishes measured are given in Table 5. A total of 26.64 percent of the black crappies were greater than 9 inches. For bluegill, a total of 6.73 percent were greater than 7 inches while 64.71 percent of northern pike were greater than 21 inches. A total of 55.91 percent of yellow perch were larger then 8 inches.

Length Distribution from Electro Shocking

The frequency distribution for total length in inches for black crappie, bluegill, northern pike, largemouth bass, smallmouth bass, rock bass, sauger and yellow perch are given in Figures 5, 7, 9-13 and 15. The mean lengths of fishes measured are given in Table 6. A total of 38.46 percent of the black crappies were greater than 9 inches. For bluegill, a total of 1.63 percent was greater than 7 inches while 11.5 percent of largemouth bass were larger than 14 inches. A total of 41.2 percent of northern pike was greater than 21 inches. A total of 35.2 percent of smallmouth bass was larger than 14 inches, while 8.3 percent of rock bass were larger than 7 inches. A total of 17.8 percent of yellow perch were larger then 8 inches.

Comparisons with Other Lake Units, Fyke Netting

Fyke netting data from the GIS Lake Unit was compared to 5 other upper Mississippi River lake units sampled in the fall of 2007. These 5 lake units included Cold Springs, Blackhawk, Ronkoski Slough in Pool 9, Ambro and Harpers in Pool 10, Upper Pool 5 and Upper Pool 5A (see Figure 1).

Catch per net-day for all fish combined was greatest in Harpers (77.38) (Table 7) which was different from Upper Pool 5 and Upper Pool 5A (34.06 and 33.90, respectively). The GIS Lake Unit was not different from any of the other 5 lake units sampled in 2007.

Catch per net-day for selected target species combined is presented in Table 8. Target species included black crappie, bluegill, largemouth bass, northern pike, smallmouth bass, pumpkinseed, white bass, white crappie, yellow bullhead, walleye, sauger and yellow perch. For these species combined, there were no differences in catch per net-day among the 6 lake units.

Catch per net-day for selected individual species is presented in Table 9. Black crappie, largemouth bass and white bass catch rates were the same for each of these species across all lake units. For both bluegill and yellow perch, the GIS Lake Unit had a higher catch rate than four other lake units.

We compared mean total length of individual species caught with fyke nets among lake units (Table 10). Overall, sizes of selected GIS fish were average compared to other lake units. For black crappie, the largest mean size was seen in the Upper Pool 5 Lake Unit (9.94 inches) and the smallest was seen in the Cold Springs, Blackhawk, Ronkoski Slough Lake Unit (8.63 inches). For bluegill, the largest mean size was seen in the Upper Pool 5A Lake Unit (6.51 inches) while the smallest were seen in Cold Springs, Blackhawk, Ronkoski Slough, Upper Pool 5 and Harpers lake units (about 5.5 inches). For largemouth bass, adequate numbers of fish caught by fyke nets were found only in the Cold Springs, Blackhawk, Ronkoski Slough, Ambro and Harpers lake units. Mean sizes from these three units were the same (about 12 inches). For northern pike, the two upstream-most lake units (Upper Pool 5 and Upper Pool 5A) had the greatest mean size (about 26.3 inches) but were only different from the Ambro Lake Unit (23.0 inches). For white bass, the mean size was the same for all five lake units that had this species represented. For yellow perch, the Cold Springs, Blackhawk, Ronkoski Slough Lake Unit had the smallest fish (7.32 inches) and was different from only the Harpers and Upper Pool 5 lake units (about 9.2 inches).

Comparisons with Other Lake Units, Electro Shocking

Electro shocking data from the GIS Lake Unit was compared to 5 other upper Mississippi River lake units sampled in the fall of 2007. These included Cold Springs, Blackhawk, Ronkoski Slough in Pool 9, Ambro and Harpers in Pool 10, Upper Pool 5 and Upper Pool 5A (see Figure 1).

Catch per hour for all target fish combined was greatest in Cold Springs, Blackhawk, Ronkoski Slough (302.80) (Table 11) which was different from Upper Pool 5 and Harpers (145.04 and 143.51, respectively). Catch per hour for the remaining lake units, GIS, Upper Pool 5A and Ambro (212.97, 203.11 and 193.36, respectively) were statistically the same as the Cold Springs, Blackhawk, Ronkoski Slough Lake Unit. Target species included black crappie, bluegill, largemouth bass, northern pike, smallmouth bass, pumpkinseed, white bass, white crappie, yellow bullhead, walleye, sauger and yellow perch.

Catch per hour for selected individual species is presented in Table 12. Black crappie, bluegill, northern pike and smallmouth bass catch rates were the same for each of these species across all lake units (about 8.5, 81, 3.0 and 3.9, respectively). For largemouth bass in the GIS Lake Unit, the catch rate was the same as all other lake units (94.4). For sauger, the only significantly different catch rates were between Harpers and Upper Pool 5A (3.99 and 0.24 per hour, respectively). For walleye and yellow perch, the GIS catch rates (1.38 and 5.17, respectively) were no different than any other lake units.

We compared mean total length of individual species caught with electro shocking among lake units (Table 13). For black crappie, there was no significant difference in mean size among all six lake units (about 8.7 inches). Mean total length of GIS Lake Unit bluegills (4.3 inches) was different only from Upper Pool 5, Upper Pool 5A and Ambro (about 5.4 inches) bluegills. Largemouth bass from Cold Springs, Blackhawk, Ronkoski Slough Lake Unit were the smallest of all lake units (9.03 inches versus about 10.7 inches). Largemouth bass in the GIS Lake Unit (9.9 inches) were smaller than those from Upper Pool 5, Upper Pool 5A and Ambro (about 11.1 inches).

Conclusions

The GIS Lake Unit appears generally similar in catch rates to the other five Mississippi River lake units surveyed during the fall of 2007. Fyke net target species catch rate for this lake unit was the same as the other five lake units (41.59 fish per net-day). For all species combined, catch per net-day (51.24) was the same as all other lake units (about 47.54). Similarly, the electro shocking catch rate of target species combined from the GIS Lake Unit (212.97 fish per hour) was the same as five other lake units (about 197.56).

From fyke netting, the mean size of pan fish in the GIS Lake Unit was similar other lake units. Mean size of black crappie, bluegill and yellow perch were in the middle of the range for all lake units. Mean size of game fish (northern pike and white bass) were similar to other units although the two upper pool lake units had larger northern pike than the remaining four.

Pan fish from GIS Lake Unit electro shocking showed a similar pattern for mean size. Black crappie and bluegill, the two pan fish we were able to measure, were the same or smaller than other lake units. For largemouth bass, the one game fish we were able to measure, the mean size was near the middle of all other lake units.

In Navigation Pool 9 of the Mississippi River, Wisconsin and Minnesota fishing regulations limit harvest to 25 of each of yellow perch, rock bass and crappie. Bluegill and pumpkinseed are limited to 25 in total. White bass and yellow bass are also restricted to 25 in total. All these fish have continuous open seasons.

Recommendations

1. Continue to monitoring backwater fishes in Pool 8 and other pools.
2. Using additional data, explore any longitudinal trends in mean total length or catch per effort along the Mississippi River bordering Wisconsin.

FIGURE 1. LOCATION OF 34 WDNR LAKE UNITS, UPPER MISSISSIPPI RIVER.
(based on 1989 Long Term Resource Monitoring Program Land/Water and Aquatic Area Coverage)

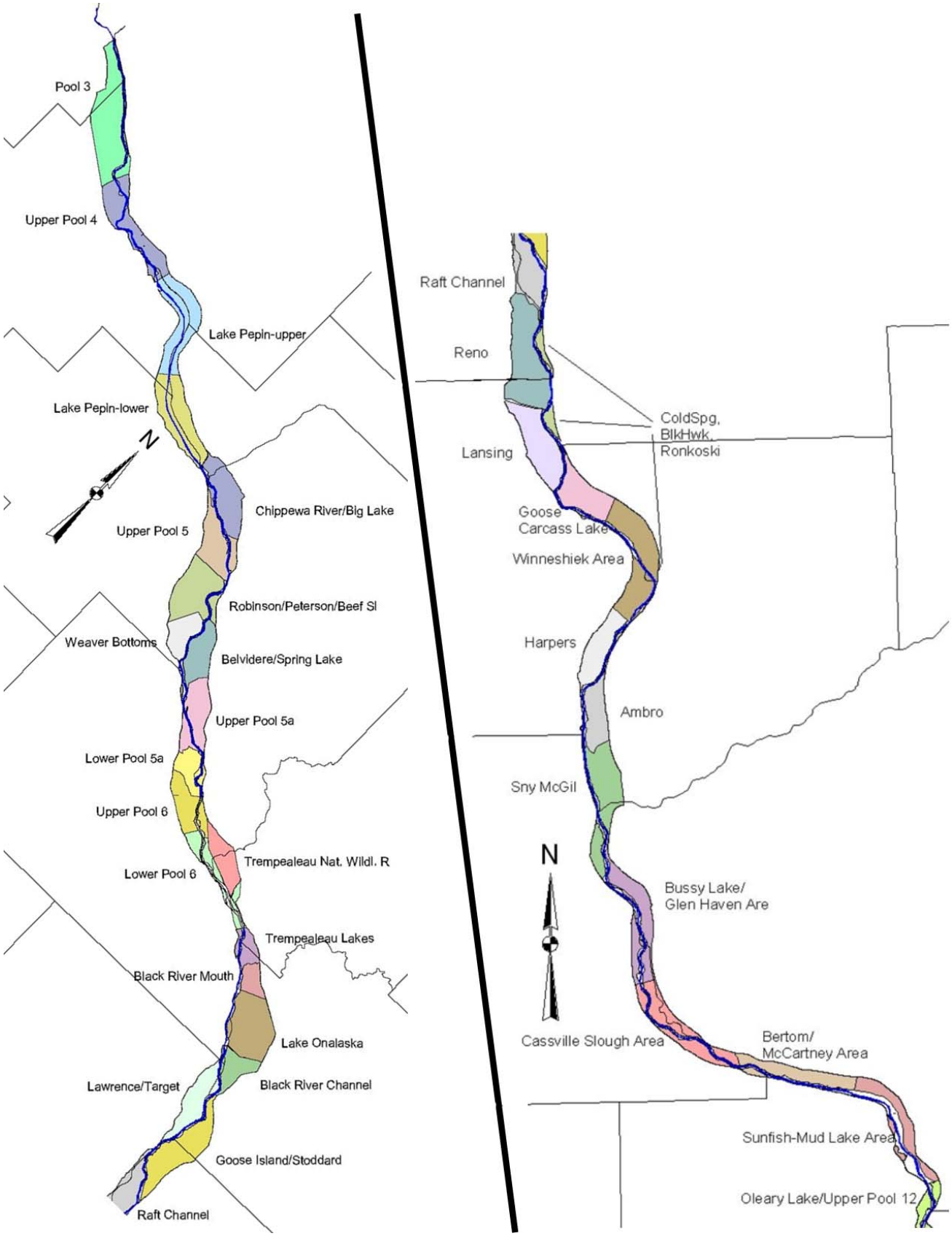
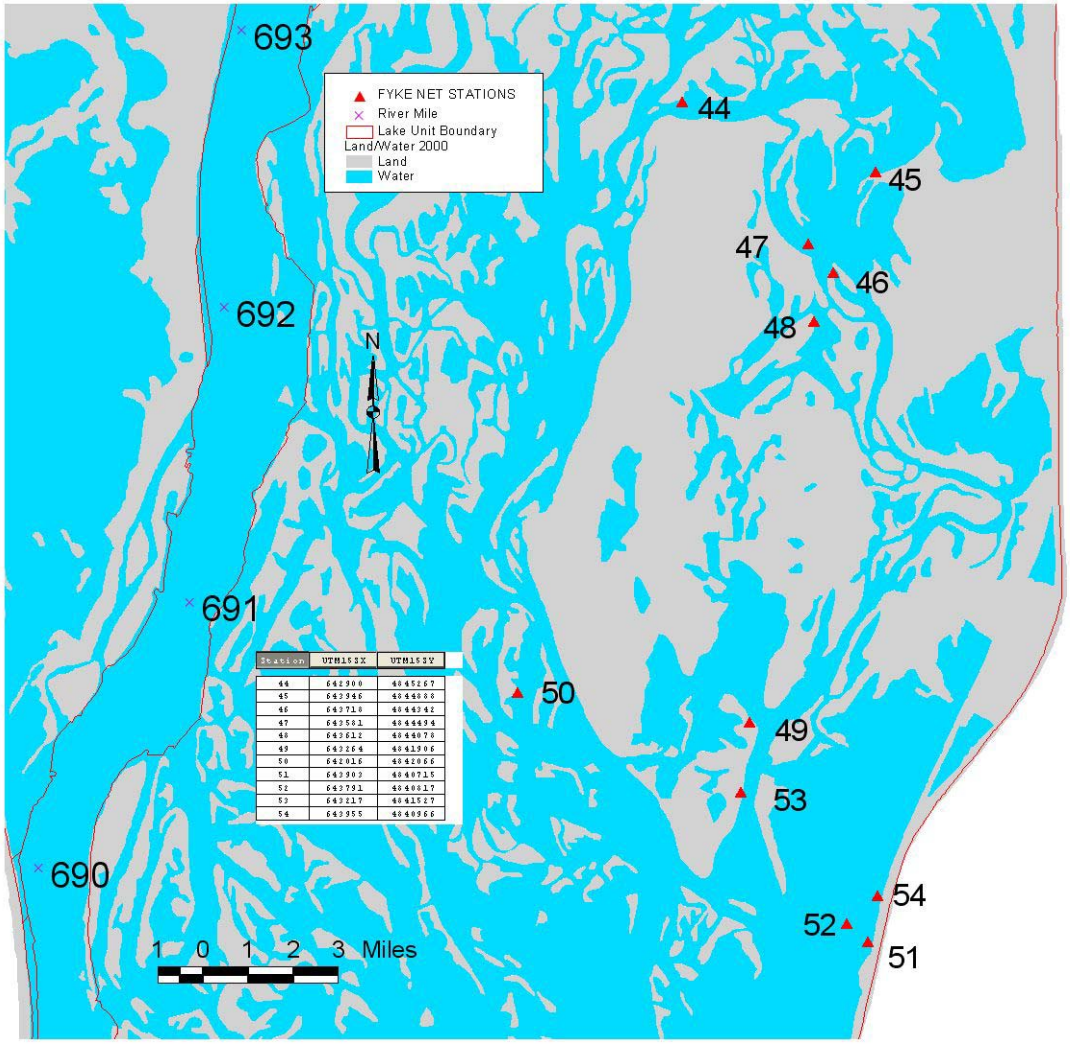


FIGURE 2. FALL 2007 FYKE NET LOCATIONS, GOOSE ISLAND/STODDARD LAKE UNIT.



Station	UTM15X	UTM15Y
44	642900	4645267
45	643946	4644888
46	643710	4644342
47	643501	4644494
48	643612	4644076
49	642264	4641906
50	642016	4642066
51	643902	4640715
52	643791	4640817
53	643217	4641527
54	643955	4640566

FIGURE 3. FALL 2007 ELECTROSHOCKING RUNS, GOOSE ISLAND/STODDARD LAKE UNIT.

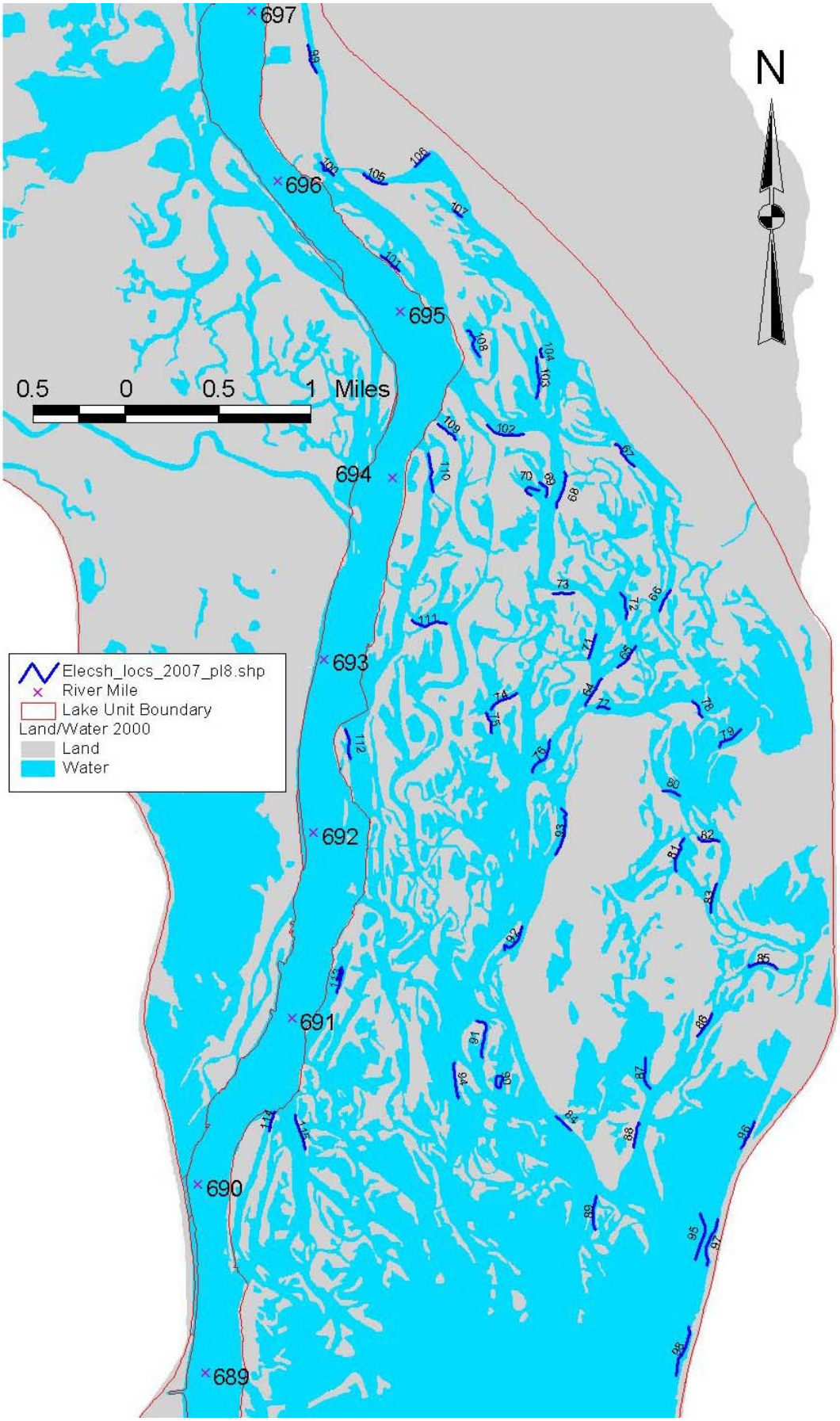


TABLE 1. ELECTRO SHOCKING STATION LOCATIONS AND LENGTH (M), FALL 2007 GOOSE ISLAND/STODDARD LAKE UNIT.

STATION	ST_LENM	UTM15STX	UTM15STY	UTM15EDX	UTM15EDY
64	280	642781	4845247	642922	4845484
65	252	643057	4845586	643221	4845768
66	212	643427	4846069	643522	4846254
67	275	643039	4847505	643210	4847319
68	328	642531	4846964	642597	4847272
69	167	642443	4847052	642385	4847183
70	195	642382	4847112	642311	4847073
71	215	642874	4845867	642805	4845664
72	236	643088	4846225	643134	4846005
73	187	642685	4846226	642500	4846221
74	279	642193	4845361	641962	4845216
75	189	641970	4845015	641924	4845192
76	341	642472	4844957	642321	4844677
77	110	642886	4845237	642992	4845222
78	181	643707	4845291	643791	4845150
79	263	644132	4845049	643947	4844891
80	159	643450	4844513	643598	4844473
81	307	643634	4844109	643567	4843824
82	206	643757	4844118	643946	4844084
83	251	643921	4843711	643871	4843467
84	177	642528	4841703	642658	4841584
85	238	644200	4843011	644448	4842977
86	238	643876	4842596	643749	4842399
87	282	643298	4842211	643343	4841943
88	227	643242	4841648	643199	4841433
89	300	642871	4841020	642866	4840724
90	259	642043	4841950	642051	4841953
91	390	641836	4842528	641888	4842210
92	309	642234	4843344	642084	4843141
93	435	642576	4844366	642522	4843964
94	317	641647	4842174	641684	4841862
95	420	643777	4840869	643737	4840469
96	263	644242	4841663	644130	4841428
97	431	643926	4840821	643839	4840412
98	457	643679	4839889	643569	4839460
99	260	640381	4850967	640453	4850723
100	177	640490	4849948	640600	4849834
101	216	641013	4849145	641173	4849005
102	354	641929	4847686	642250	4847602
103	361	642361	4848269	642361	4847911
104	93	642396	4848344	642414	4848267
105	247	640864	4849855	641059	4849763
106	167	641307	4849909	641432	4850020
107	91	641713	4849481	641636	4849528
108	280	641756	4848495	641863	4848269
109	219	641503	4847688	641659	4847544
110	341	641423	4847428	641467	4847094
111	327	641281	4845993	641580	4845963
112	268	640700	4845049	640745	4844791
113	354	640627	4842883	640628	4842767
114	176	640091	4841745	640043	4841578
115	316	640269	4841721	640351	4841418

TABLE 2. MEAN TEMPERATURE, WATER SURFACE ELEVATION AND FLOW DURING FALL 2007 SAMPLING.

DATE	MEAN DAILY TEMPERA-TURE ºC	WATER SURFACE ELEVATION (ft), LA CROSSE	FLOW (cfs) DAM 8
09/05/2007	27.6	630.92	16425
09/06/2007	26.3	631.04	16000
09/07/2007	25.0	631.17	16100
09/11/2007	18.9	631.01	20500
09/12/2007	19.6	631.02	17600
09/13/2007	17.9	631.15	10200
09/14/2007	14.5	631.22	9700
09/18/2007	17.8	630.99	17275
09/19/2007	19.0	631.01	15900
09/20/2007	19.6	631.13	16100
09/21/2007	21.2	631.23	18500
10/05/2007	18.6	632.73	48700
10/09/2007	19.2	633.35	59400
10/11/2007	14.0	633.53	63200
10/12/2007	13.7	633.34	63700
MEAN	**19.0**	**631.93**	**32587**

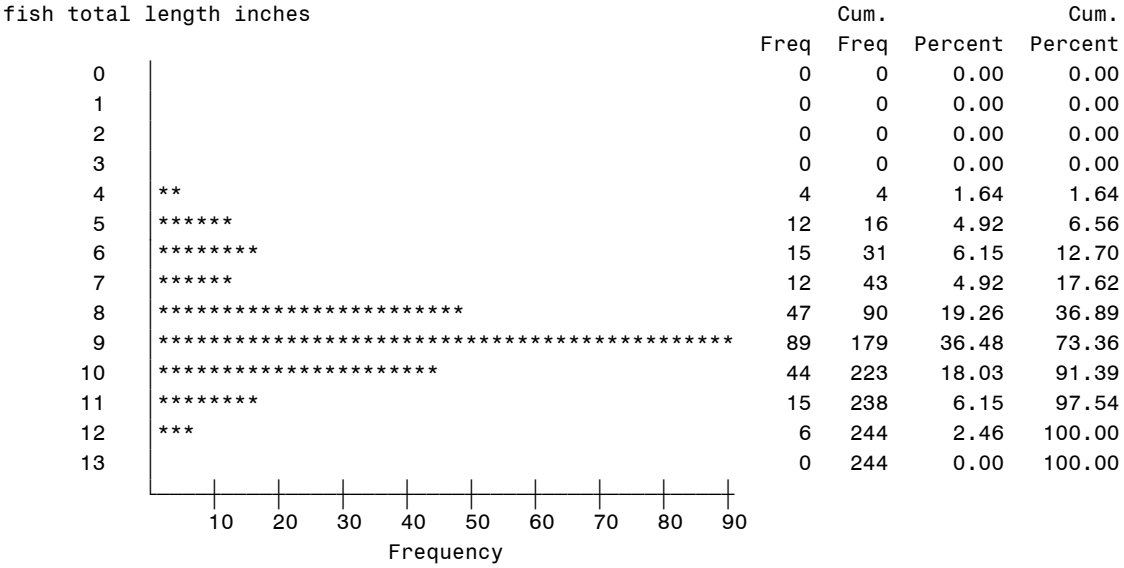
TABLE 3. RELATIVE ABUNDANCE, MEAN CATCH PER NET-DAY, FYKE NETS, FALL 2007, GIS LAKE UNIT.

	SPECIES	FREQUENCY	PERCENT	MEAN	STANDARD DEV.	MIN.	MAX.	NET-DAYS
1	black crappie	244	14.54	7.32	7.13	0.00	24.71	32.56
2	bluegill	921	54.89	28.13	22.36	0.00	76.86	32.56
3	bowfin	35	2.09	1.08	2.00	0.00	10.82	32.56
4	channel catfish	2	0.12	0.06	0.25	0.00	1.07	32.56
5	chestnut lamprey	1	0.06	0.03	0.18	0.00	1.00	32.56
6	common carp	66	3.93	2.04	2.63	0.00	12.85	32.56
7	freshwater drum	44	2.62	1.34	2.61	0.00	12.10	32.56
8	gizzard shad	27	1.61	0.83	1.69	0.00	6.81	32.56
9	golden redhorse	19	1.13	0.59	1.96	0.00	10.82	32.56
10	golden shiner	1	0.06	0.03	0.17	0.00	0.97	32.56
11	largemouth bass	3	0.18	0.09	0.28	0.00	1.01	32.56
12	longnose gar	3	0.18	0.09	0.30	0.00	1.09	32.56
13	northern pike	51	3.04	1.50	1.71	0.00	6.59	32.56
14	pumpkinseed	11	0.66	0.35	0.88	0.00	4.38	32.56
15	river carpsucker	1	0.06	0.03	0.16	0.00	0.88	32.56
16	river redhorse	1	0.06	0.03	0.18	0.00	1.00	32.56
17	rock bass	1	0.06	0.03	0.15	0.00	0.83	32.56
18	shorthead redhorse	10	0.60	0.30	0.77	0.00	3.68	32.56
19	shortnose gar	20	1.19	0.66	1.90	0.00	9.86	32.56
20	silver redhorse	39	2.32	1.18	1.89	0.00	8.83	32.56
21	smallmouth buffalo	1	0.06	0.03	0.15	0.00	0.84	32.56
22	spotted sucker	42	2.50	1.27	2.31	0.00	10.13	32.56
23	warmouth	1	0.06	0.03	0.18	0.00	1.00	32.56
24	white bass	2	0.12	0.06	0.26	0.00	1.08	32.56
25	yellow bullhead	5	0.30	0.15	0.43	0.00	1.96	32.56
26	yellow perch	127	7.57	4.00	5.34	0.00	24.00	32.56
	ALL SPECIES	**1678**	**100.00**	**51.24**	**30.76**	**8.52**	**110.42**	**32.56**

TABLE 4. RELATIVE ABUNDANCE, MEAN CATCH PER HOUR, ELECTRO SHOCKING, FALL 2007, GIS LAKE UNIT.

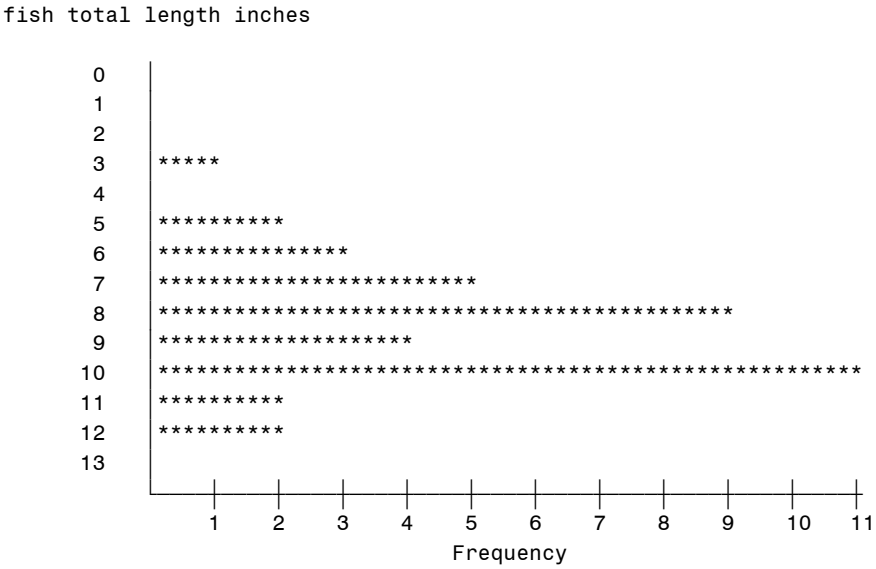
	SPECIES	FREQ.	PERCENT	MEAN PER HR	STANDARD DEV.	MIN.	MAX.	NO. OF RUNS	TOTAL HRS
1	bigmouth buffalo	1	0.01	0.11	0.76	0.00	5.46	52	8.683
2	black crappie	39	0.49	4.50	7.68	0.00	35.93	52	8.683
3	bluegill	798	9.99	92.18	91.04	0.00	419.16	52	8.683
4	bowfin	36	0.45	4.13	7.44	0.00	29.94	52	8.683
5	brook silverside	3	0.04	0.35	1.41	0.00	5.99	52	8.683
6	bullhead minnow	3	0.04	0.35	1.41	0.00	5.99	52	8.683
7	central mudminnow	1	0.01	0.12	0.83	0.00	5.99	52	8.683
8	channel catfish	7	0.09	0.81	2.66	0.00	11.98	52	8.683
9	common carp	101	1.26	11.63	19.36	0.00	83.83	52	8.683
10	common shiner	6	0.08	0.69	3.68	0.00	23.95	52	8.683
11	emerald shiner	59	0.74	6.78	12.33	0.00	59.88	52	8.683
12	freshwater drum	21	0.26	2.42	5.20	0.00	23.95	52	8.683
13	gizzard shad	5622	70.35	647.67	930.99	0.00	3892.22	52	8.683
14	golden redhorse	56	0.70	6.42	9.51	0.00	47.9	52	8.683
15	golden shiner	1	0.01	0.12	0.83	0.00	5.99	52	8.683
16	green sunfish	1	0.01	0.12	0.83	0.00	5.99	52	8.683
17	green sunfish x bluegill	3	0.04	0.35	1.41	0.00	5.99	52	8.683
18	largemouth bass	820	10.26	94.40	107.13	11.98	544.91	52	8.683
19	logperch	9	0.11	1.04	4.70	0.00	23.95	52	8.683
20	longnose gar	2	0.03	0.23	1.16	0.00	5.99	52	8.683
21	northern pike	34	0.43	3.92	5.80	0.00	23.95	52	8.683
22	pumpkinseed	1	0.01	0.12	0.83	0.00	5.99	52	8.683
23	quillback	8	0.10	0.92	5.22	0.00	35.93	52	8.683
24	river carpsucker	4	0.05	0.46	2.00	0.00	11.98	52	8.683
25	river redhorse	2	0.03	0.23	1.16	0.00	5.99	52	8.683
26	rock bass	36	0.45	4.17	9.02	0.00	47.9	52	8.683
27	sauger	15	0.19	1.72	4.48	0.00	23.95	52	8.683
28	shorthead redhorse	74	0.93	8.52	19.93	0.00	125.75	52	8.683
29	shortnose gar	1	0.01	0.12	0.83	0.00	5.99	52	8.683
30	silver redhorse	30	0.38	3.47	5.61	0.00	23.95	52	8.683
31	smallmouth bass	37	0.46	4.26	11.70	0.00	65.87	52	8.683
32	smallmouth buffalo	1	0.01	0.12	0.83	0.00	5.99	52	8.683
33	spottail shiner	24	0.30	2.76	7.45	0.00	41.92	52	8.683
34	spotted sucker	56	0.70	6.36	12.20	0.00	49.18	52	8.683
35	striped shiner	9	0.11	1.04	3.88	0.00	23.95	52	8.683
36	walleye	12	0.15	1.38	4.04	0.00	17.96	52	8.683
37	warmouth	1	0.01	0.12	0.83	0.00	5.99	52	8.683
38	weed shiner	1	0.01	0.12	0.83	0.00	5.99	52	8.683
39	white bass	9	0.11	1.04	4.39	0.00	29.94	52	8.683
40	white crappie	1	0.01	0.12	0.83	0.00	5.99	52	8.683
41	white sucker	1	0.01	0.12	0.83	0.00	5.99	52	8.683
42	yellow perch	45	0.56	5.17	9.41	0.00	35.93	52	8.683
	ALL SPECIES	**7991**	**100.00**	**920.60**	**943.16**	**137.73**	**4395.21**	**52**	**8.683**

FIGURE 4. FALL 2007 BLACK CRAPPIE LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT FYKE NETTING.



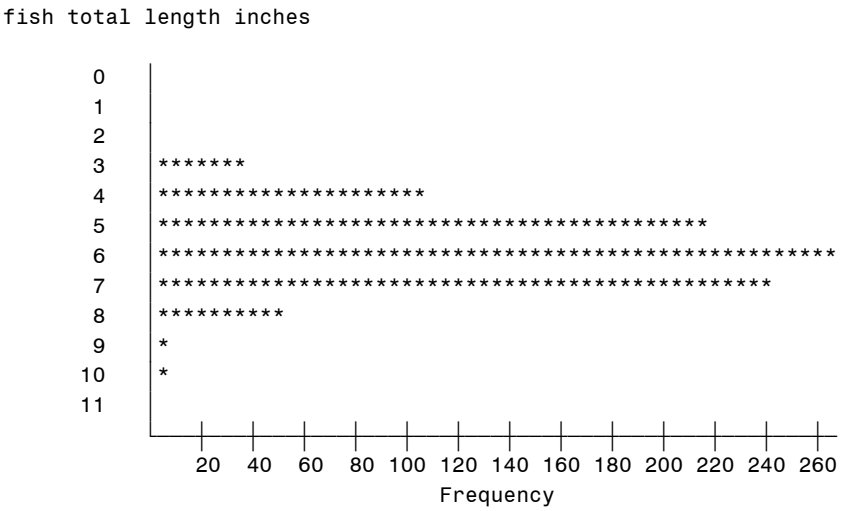
	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	0	0	0.00	0.00
3	0	0	0.00	0.00
4	4	4	1.64	1.64
5	12	16	4.92	6.56
6	15	31	6.15	12.70
7	12	43	4.92	17.62
8	47	90	19.26	36.89
9	89	179	36.48	73.36
10	44	223	18.03	91.39
11	15	238	6.15	97.54
12	6	244	2.46	100.00
13	0	244	0.00	100.00

FIGURE 5. FALL 2007 BLACK CRAPPIE LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTR0 SHOCKING.



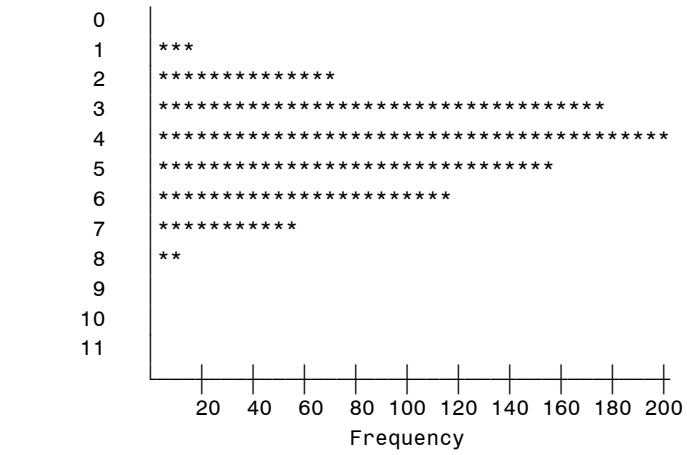
	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	0	0	0.00	0.00
3	1	1	2.56	2.56
4	0	1	0.00	2.56
5	2	3	5.13	7.69
6	3	6	7.69	15.38
7	5	11	12.82	28.21
8	9	20	23.08	51.28
9	4	24	10.26	61.54
10	11	35	28.21	89.74
11	2	37	5.13	94.87
12	2	39	5.13	100.00
13	0	39	0.00	100.00

FIGURE 6. FALL 2007 BLUEGILL LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT FYKE NETTING.



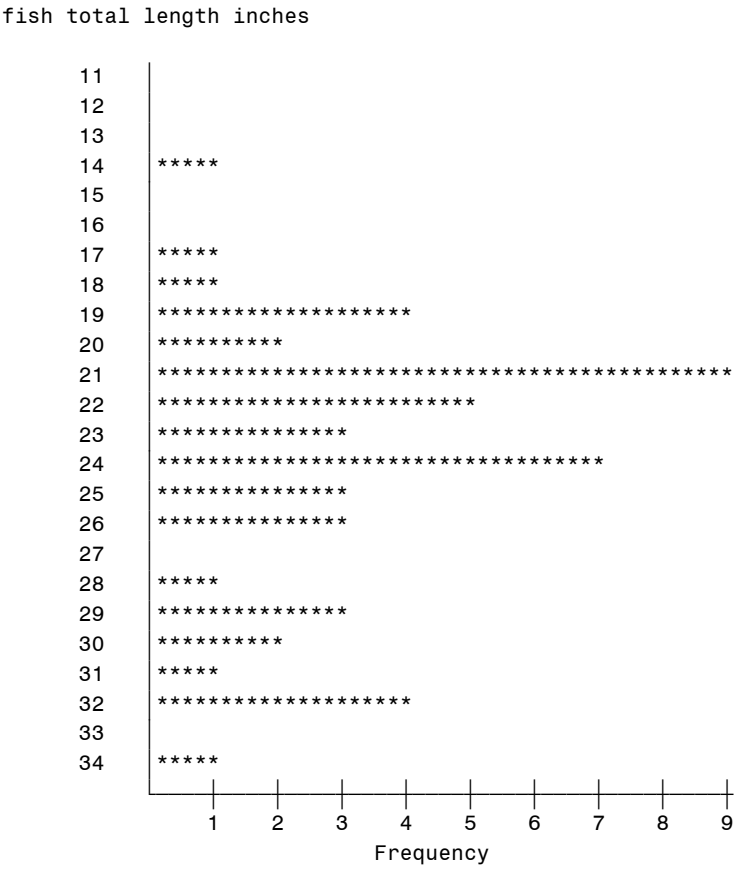
	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	0	0	0.00	0.00
3	33	33	3.58	3.58
4	107	140	11.62	15.20
5	214	354	23.24	38.44
6	263	617	28.56	66.99
7	242	859	26.28	93.27
8	49	908	5.32	98.59
9	7	915	0.76	99.35
10	4	919	0.43	99.78
11	2	921	0.22	100.00

FIGURE 7. FALL 2007 BLUEGILL LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTRO SHOCKING.



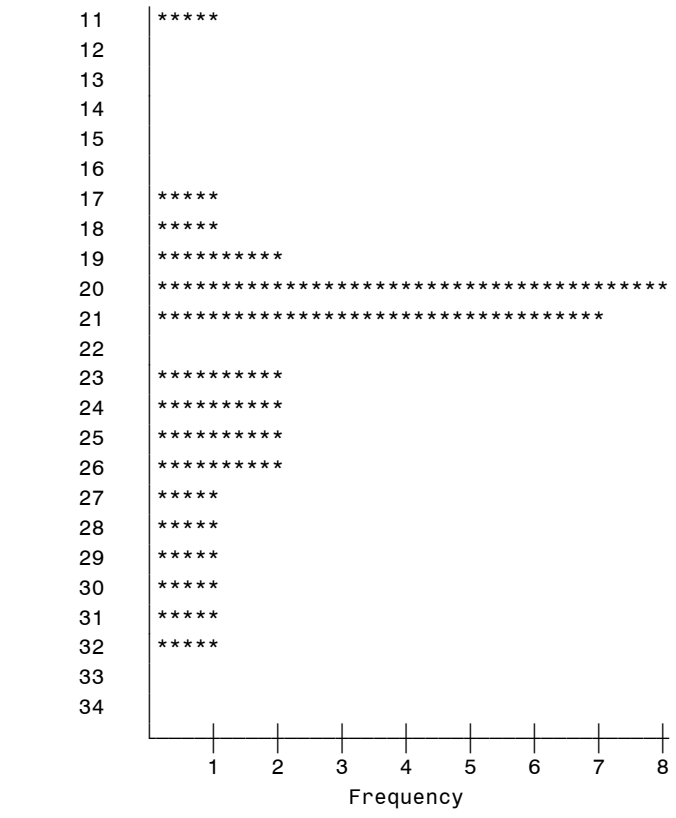
	Freq	Cum. Freq	Percent	Cum. Percent
0	1	1	0.13	0.13
1	13	14	1.63	1.75
2	68	82	8.52	10.28
3	175	257	21.93	32.21
4	201	458	25.19	57.39
5	155	613	19.42	76.82
6	117	730	14.66	91.48
7	55	785	6.89	98.37
8	11	796	1.38	99.75
9	2	798	0.25	100.00
10	0	798	0.00	100.00
11	0	798	0.00	100.00

FIGURE 8. FALL 2007 NORTHERN PIKE LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT FYKE NETTING.



	Freq	Cum. Freq	Percent	Cum. Percent
11	0	0	0.00	0.00
12	0	0	0.00	0.00
13	0	0	0.00	0.00
14	1	1	1.96	1.96
15	0	1	0.00	1.96
16	0	1	0.00	1.96
17	1	2	1.96	3.92
18	1	3	1.96	5.88
19	4	7	7.84	13.73
20	2	9	3.92	17.65
21	9	18	17.65	35.29
22	5	23	9.80	45.10
23	3	26	5.88	50.98
24	7	33	13.73	64.71
25	3	36	5.88	70.59
26	3	39	5.88	76.47
27	0	39	0.00	76.47
28	1	40	1.96	78.43
29	3	43	5.88	84.31
30	2	45	3.92	88.24
31	1	46	1.96	90.20
32	4	50	7.84	98.04
33	0	50	0.00	98.04
34	1	51	1.96	100.00

FIGURE 9. FALL 2007 NORTHERN PIKE LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTRO SHOCKING.



	Freq	Cum. Freq	Percent	Cum. Percent
11	1	1	2.94	2.94
12	0	1	0.00	2.94
13	0	1	0.00	2.94
14	0	1	0.00	2.94
15	0	1	0.00	2.94
16	0	1	0.00	2.94
17	1	2	2.94	5.88
18	1	3	2.94	8.82
19	2	5	5.88	14.71
20	8	13	23.53	38.24
21	7	20	20.59	58.82
22	0	20	0.00	58.82
23	2	22	5.88	64.71
24	2	24	5.88	70.59
25	2	26	5.88	76.47
26	2	28	5.88	82.35
27	1	29	2.94	85.29
28	1	30	2.94	88.24
29	1	31	2.94	91.18
30	1	32	2.94	94.12
31	1	33	2.94	97.06
32	1	34	2.94	100.00
33	0	34	0.00	100.00
34	0	34	0.00	100.00

FIGURE 10. FALL 2007 LARGMOUTH BASS LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTRO SHOCKING.

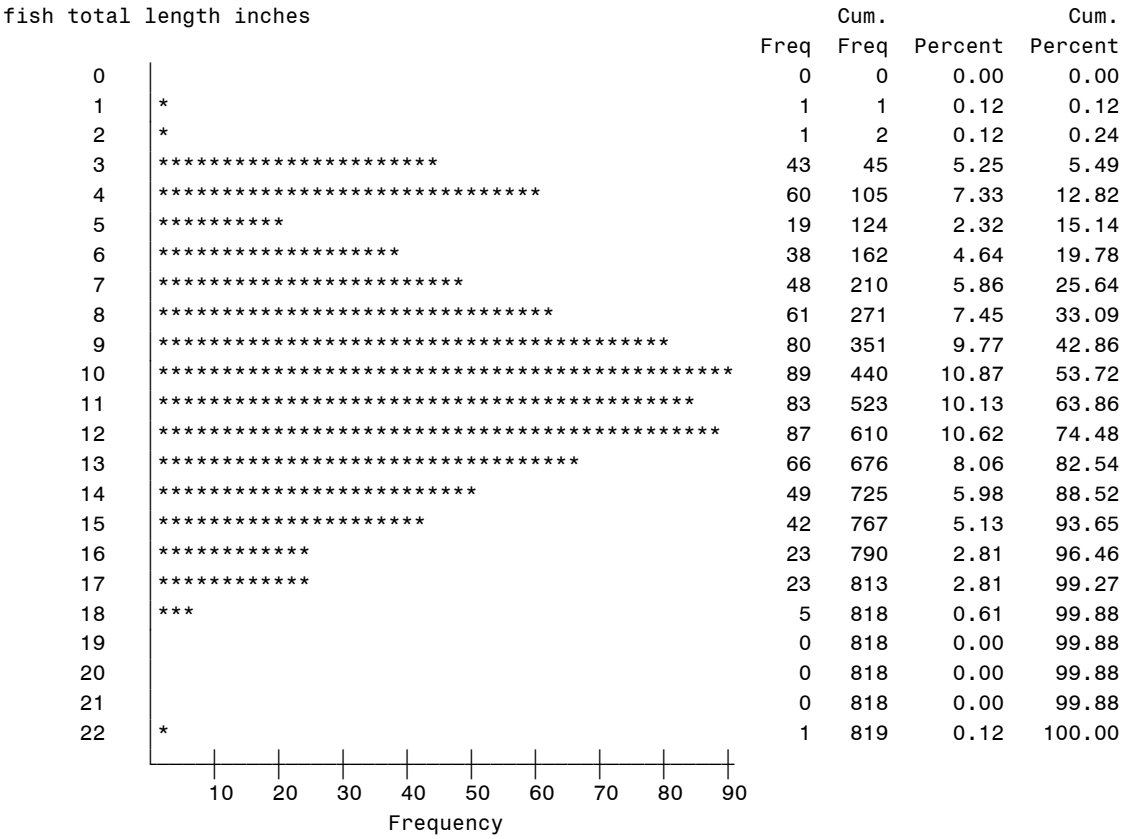
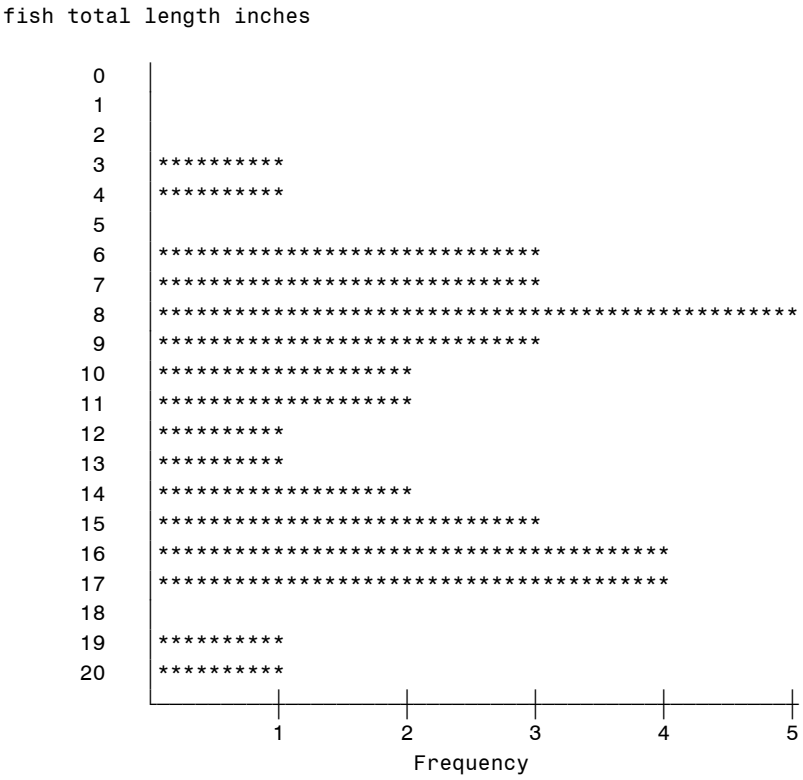
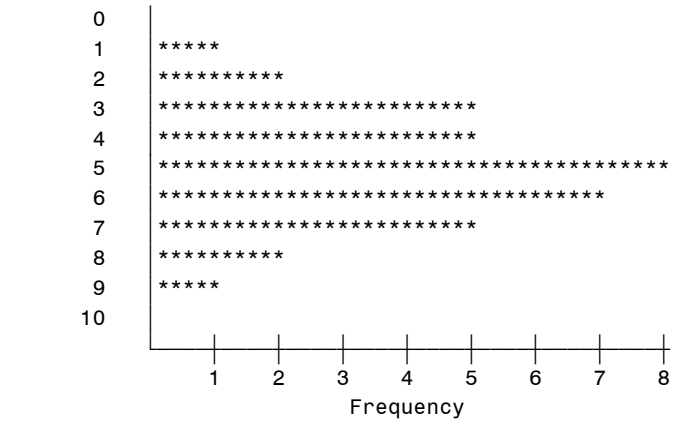


FIGURE 11. FALL 2007 SMALLMOUTH BASS LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTRO SHOCKING.



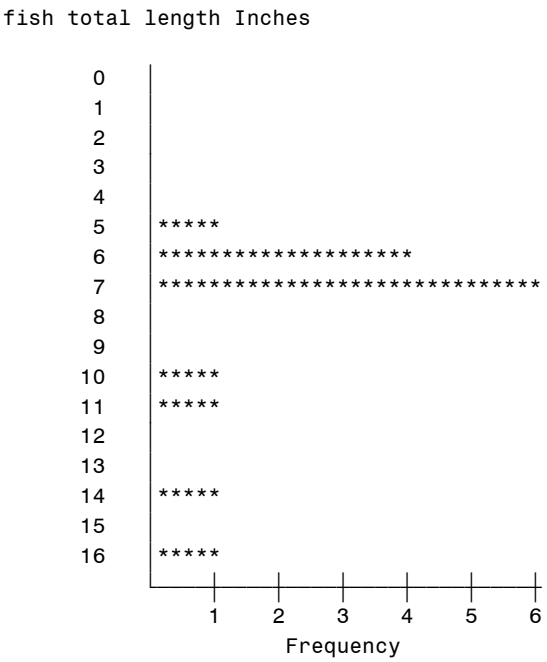
fish total length inches	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	0	0	0.00	0.00
3	1	1	2.70	2.70
4	1	2	2.70	5.41
5	0	2	0.00	5.41
6	3	5	8.11	13.51
7	3	8	8.11	21.62
8	5	13	13.51	35.14
9	3	16	8.11	43.24
10	2	18	5.41	48.65
11	2	20	5.41	54.05
12	1	21	2.70	56.76
13	1	22	2.70	59.46
14	2	24	5.41	64.86
15	3	27	8.11	72.97
16	4	31	10.81	83.78
17	4	35	10.81	94.59
18	0	35	0.00	94.59
19	1	36	2.70	97.30
20	1	37	2.70	100.00

FIGURE 12. FALL 2007 ROCK BASS LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTRO SHOCKING.



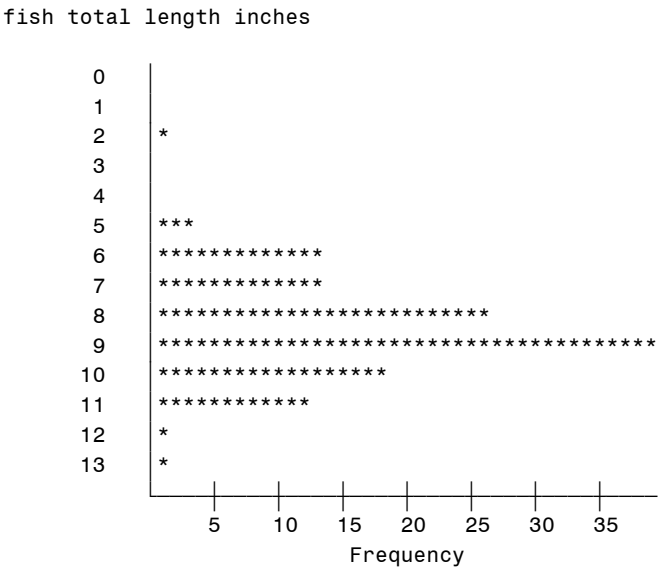
fish total length inches	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	1	1	2.78	2.78
2	2	3	5.56	8.33
3	5	8	13.89	22.22
4	5	13	13.89	36.11
5	8	21	22.22	58.33
6	7	28	19.44	77.78
7	5	33	13.89	91.67
8	2	35	5.56	97.22
9	1	36	2.78	100.00
10	0	36	0.00	100.00

FIGURE 13. FALL 2007 SAUGER LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTRO SHOCKING.



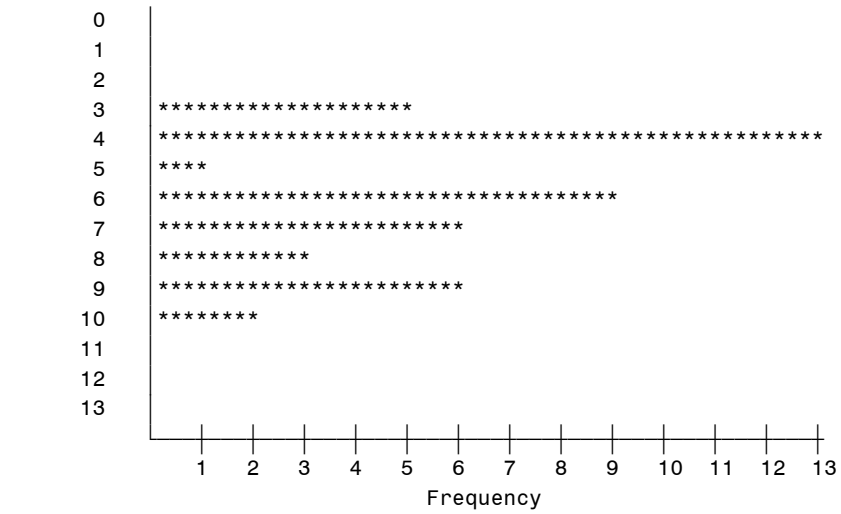
	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	0	0	0.00	0.00
3	0	0	0.00	0.00
4	0	0	0.00	0.00
5	1	1	6.67	6.67
6	4	5	26.67	33.33
7	6	11	40.00	73.33
8	0	11	0.00	73.33
9	0	11	0.00	73.33
10	1	12	6.67	80.00
11	1	13	6.67	86.67
12	0	13	0.00	86.67
13	0	13	0.00	86.67
14	1	14	6.67	93.33
15	0	14	0.00	93.33
16	1	15	6.67	100.00

FIGURE 14. FALL 2007 YELLOW PERCH LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT FYKE NETTING.



	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	1	1	0.79	0.79
3	0	1	0.00	0.79
4	0	1	0.00	0.79
5	3	4	2.36	3.15
6	13	17	10.24	13.39
7	13	30	10.24	23.62
8	26	56	20.47	44.09
9	39	95	30.71	74.80
10	18	113	14.17	88.98
11	12	125	9.45	98.43
12	1	126	0.79	99.21
13	1	127	0.79	100.00

FIGURE 15. FALL 2007 YELLOW PERCH LENGTH DISTRIBUTION (INCHES), GIS LAKE UNIT ELECTRO SHOCKING.



	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	0	0	0.00	0.00
3	5	5	11.11	11.11
4	13	18	28.89	40.00
5	1	19	2.22	42.22
6	9	28	20.00	62.22
7	6	34	13.33	75.56
8	3	37	6.67	82.22
9	6	43	13.33	95.56
10	2	45	4.44	100.00
11	0	45	0.00	100.00
12	0	45	0.00	100.00
13	0	45	0.00	100.00

TABLE 5. MEAN LENGTH IN INCHES FOR MEASURED SPECIES, FALL 2007, GIS LAKE UNIT, FYKE NETTING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
black crappie	8.65	1.59	3.74	12.44	244
bluegill	5.84	1.27	2.76	11.1	921
northern pike	24.01	4.51	13.98	33.66	51
pumpkinseed	5.32	1.1	3.54	6.81	11
yellow bullhead	11.58	3.34	6.89	15.55	5
yellow perch	8.51	1.69	1.97	12.52	127

TABLE 6. MEAN LENGTH IN INCHES FOR MEASURED SPECIES, FALL 2007, GIS LAKE UNIT, ELECTRO SHOCKING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
black crappie	8.59	1.99	3.07	11.77	39
bluegill	4.31	1.49	0.47	8.66	798
channel catfish	18.86	2.38	14.65	22.05	7
largemouth bass	9.93	3.76	1.18	21.73	819
northern pike	22.62	4.32	11.22	31.89	34
rock bass	5.08	1.88	1.5	9.49	36
sauger	8.01	3.18	5.24	15.83	15
smallmouth bass	11.4	4.48	2.84	19.69	37
walleye	11.13	6.05	6.1	22.05	12
white bass	4.21	0.92	2.28	5.59	9
yellow perch	5.86	2.15	2.91	10.04	45

TABLE 7. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL SPECIES COMBINED AMONG SIX LAKE UNITS, FALL 2007.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
77.38	101.02	32	HARPERS		A
51.24	30.76	32	GOOSE ISLAND/STODDARD	B	A
48.39	29.01	30	COLDSPG, BLKHWK, RONKOSKI	B	A
43.98	29.99	24	AMBRO	B	A
34.06	21.40	32	UPPER POOL 5	B	
33.90	38.44	32	UPPER POOL 5A	B	

TABLE 8. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL TARGET SPECIES COMBINED AMONG SIX LAKE UNITS, FALL 2007.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)
41.59	28.53	32	GOOSE ISLAND/STODDARD	A
38.38	30.0 8	32	HARPERS	A
31.33	20.81	30	COLDSPG, BLKHWK, RONKOSKI	A
27.33	38.57	32	UPPER POOL 5A	A
26.23	16.39	32	UPPER POOL 5	A
25.60	23.18	24	AMBRO	A

TABLE 9. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR SELECTED INDIVIDUAL SPECIES AMONG SIX LAKE UNITS, FALL 2007.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)		
BLACK CRAPPIE							
	15.51	14.43	32	UPPER POOL 5	A		
	15.19	17.62	32	HARPERS	A		
	14.79	15.63	30	COLDSPG, BLKHWK, RONKOSKI	A		
	11.09	14.01	24	AMBRO	A		
	10.65	20.42	32	UPPER POOL 5A	A		
	7.32	7.13	32	GOOSE ISLAND/STODDARD	A		
BLUEGILL							
	28.13	22.36	32	GOOSE ISLAND/STODDARD		A	
	16.44	16.86	32	HARPERS	B	A	
	14.17	20.65	32	UPPER POOL 5A	B		
	12.14	8.15	30	COLDSPG, BLKHWK, RONKOSKI	B		
	9.30	8.47	32	UPPER POOL 5	B		
	7.79	9.38	24	AMBRO	B		
LARGEMOUTH BASS							
	0.65	1.72	30	COLDSPG, BLKHWK, RONKOSKI	A		
	0.56	1.19	32	HARPERS	A		
	0.33	0.70	24	AMBRO	A		
	0.09	0.28	32	GOOSE ISLAND/STODDARD	A		
	0.03	0.16	32	UPPER POOL 5	A		
	0.00		32	UPPER POOL 5A	A		
NORTHERN PIKE							
	2.18	2.13	24	AMBRO		A	
	1.78	2.49	30	COLDSPG, BLKHWK, RONKOSKI	B	A	
	1.69	1.86	32	HARPERS	B	A	
	1.50	1.71	32	GOOSE ISLAND/STODDARD	B	A	C
	0.76	0.82	32	UPPER POOL 5A	B		C
	0.41	0.71	32	UPPER POOL 5			C
WHITE BASS							
	0.59	1.07	32	HARPERS	A		
	0.54	1.18	24	AMBRO	A		
	0.52	1.36	30	COLDSPG, BLKHWK, RONKOSKI	A		
	0.42	0.96	32	UPPER POOL 5A	A		
	0.06	0.26	32	GOOSE ISLAND/STODDARD	A		
	0.00		32	UPPER POOL 5	A		
YELLOW BULLHEAD							
	0.52	1.03	30	COLDSPG, BLKHWK, RONKOSKI		A	
	0.16	0.57	32	HARPERS	B	A	
	0.15	0.43	32	GOOSE ISLAND/STODDARD	B	A	
	0.12	0.42	32	UPPER POOL 5	B	A	
	0.00		24	AMBRO	B		
	0.00		32	UPPER POOL 5A	B		
YELLOW PERCH							
	4.00	5.34	32	GOOSE ISLAND/STODDARD		A	
	2.38	4.20	24	AMBRO	B	A	
	0.66	0.94	32	HARPERS	B		
	0.55	1.07	32	UPPER POOL 5	B		
	0.52	1.29	32	UPPER POOL 5A	B		
	0.48	0.66	30	COLDSPG, BLKHWK, RONKOSKI	B		

TABLE 10. COMPARISON OF MEAN TOTAL LENGTH FOR SELECTED INDIVIDUAL SPECIES, AMONG SIX LAKE UNITS, FYKE NETS, FALL 2007.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
BLACK CRAPPIE						
	9.94	1.11	504	UPPER POOL 5		A
	9.18	1.66	486	HARPERS		B
	8.91	1.52	264	AMBRO	C	B
	8.82	1.12	334	UPPER POOL 5A	C	
	8.65	1.59	244	GOOSE ISLAND/STODDARD	C	
	8.63	1.71	442	COLDSPG, BLKHWK, RONKOSKI	C	
BLUEGILL						
	6.51	1.11	446	UPPER POOL 5A	A	
	5.84	1.27	921	GOOSE ISLAND/STODDARD	B	
	5.82	1.29	186	AMBRO	B	
	5.54	1.64	360	COLDSPG, BLKHWK, RONKOSKI	C	
	5.49	1.51	305	UPPER POOL 5	C	
	5.37	1.22	526	HARPERS	C	
LARGEMOUTH BASS						
	12.90	3.97	20	COLDSPG, BLKHWK, RONKOSKI		A
	12.05	3.18	18	HARPERS	B	A
	11.14	2.83	8	AMBRO	B	A
NORTHERN PIKE						
	26.49	3.34	24	UPPER POOL 5A		A
	26.09	3.68	13	UPPER POOL 5		A
	24.53	4.06	54	HARPERS	B	A
	24.01	4.51	51	GOOSE ISLAND/STODDARD	B	A
	23.75	4.13	54	COLDSPG, BLKHWK, RONKOSKI	B	A
	23.02	3.75	52	AMBRO	B	
WHITE BASS						
	9.81	4.22	19	HARPERS	A	
	8.04	3.59	13	AMBRO	A	
	7.19	3.65	2	GOOSE ISLAND/STODDARD	A	
	6.76	2.48	15	COLDSPG, BLKHWK, RONKOSKI	A	
	5.26	0.84	13	UPPER POOL 5A	A	
YELLOW PERCH						
	9.44	1.34	18	UPPER POOL 5		A
	8.87	1.31	21	HARPERS		A
	8.51	1.69	127	GOOSE ISLAND/STODDARD	B	A
	8.21	1.83	57	AMBRO	B	A
	8.11	1.57	16	UPPER POOL 5A	B	A
	7.32	2.04	14	COLDSPG, BLKHWK, RONKOSKI	B	

TABLE 11. COMPARISON OF MEAN CATCH PER HOUR FROM ELECTRO SHOCKING FOR ALL TARGET SPECIES COMBINED AMONG SIX LAKE UNITS, FALL 2007.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
302.80	300.03	25	COLDSPG, BLKHWK, RONKOSKI		A
212.97	150.86	52	GOOSE ISLAND/STODDARD	B	A
203.11	125.55	25	UPPER POOL 5A	B	A
193.36	145.48	31	AMBRO	B	A
145.04	80.09	27	UPPER POOL 5	B	
143.51	120.08	30	HARPERS	B	

TABLE 12. COMPARISON OF MEAN CATCH PER HOUR FROM ELECTRO SHOCKING FOR SELECTED INDIVIDUAL SPECIES AMONG SIX LAKE UNITS, FALL 2007.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)		
BLACK CRAPPIE							
	13.89	14.01	25	UPPER POOL 5A	A		
	13.52	26.64	31	AMBRO	A		
	8.58	10.96	25	COLDSPG, BLKHWK, RONKOSKI	A		
	6.39	9.16	30	HARPERS	A		
	4.50	7.68	52	GOOSE ISLAND/STODDARD	A		
	4.21	4.93	27	UPPER POOL 5	A		
BLUEGILL							
	112.93	165.41	25	COLDSPG, BLKHWK, RONKOSKI	A		
	93.89	111.21	25	UPPER POOL 5A	A		
	92.18	91.04	52	GOOSE ISLAND/STODDARD	A		
	65.87	97.43	31	AMBRO	A		
	62.68	72.66	30	HARPERS	A		
	57.22	61.37	27	UPPER POOL 5	A		
LARGEMOUTH BASS							
	163.68	182.87	25	COLDSPG, BLKHWK, RONKOSKI		A	
	94.40	107.13	52	GOOSE ISLAND/STODDARD	B	A	
	92.91	60.10	31	AMBRO	B	A	
	78.56	79.37	25	UPPER POOL 5A	B		
	60.32	52.91	27	UPPER POOL 5	B		
	51.90	46.58	30	HARPERS	B		
NORTHERN PIKE							
	4.79	7.92	25	UPPER POOL 5A	A		
	3.99	6.64	27	UPPER POOL 5	A		
	3.92	5.80	52	GOOSE ISLAND/STODDARD	A		
	2.40	4.04	30	HARPERS	A		
	1.20	2.44	25	COLDSPG, BLKHWK, RONKOSKI	A		
	1.16	2.86	31	AMBRO	A		
SAUGER							
	3.99	6.91	30	HARPERS		A	
	1.92	3.33	25	COLDSPG, BLKHWK, RONKOSKI	B	A	
	1.72	4.48	52	GOOSE ISLAND/STODDARD	B	A	
	1.33	3.84	27	UPPER POOL 5	B	A	
	0.97	3.49	31	AMBRO	B	A	
	0.24	1.20	25	UPPER POOL 5A	B		
SMALLMOUTH BASS							
	9.31	24.26	27	UPPER POOL 5	A		
	5.75	17.50	25	COLDSPG, BLKHWK, RONKOSKI	A		
	4.26	11.70	52	GOOSE ISLAND/STODDARD	A		
	2.63	8.48	25	UPPER POOL 5A	A		
	1.20	3.98	30	HARPERS	A		
	0.39	1.50	31	AMBRO	A		
SAUGER							
	3.99	6.91	30	HARPERS		A	
	1.92	3.33	25	COLDSPG, BLKHWK, RONKOSKI	B	A	
	1.72	4.48	52	GOOSE ISLAND/STODDARD	B	A	
	1.33	3.84	27	UPPER POOL 5	B	A	
	0.97	3.49	31	AMBRO	B	A	
	0.24	1.20	25	UPPER POOL 5A	B		

TABLE 12. (CONTINUED)

WALLEYE							
	5.03	9.42	25	UPPER POOL 5A		A	
	3.01	4.71	25	COLDSPG, BLKHWK, RONKOSKI	B	A	
	2.90	5.55	31	AMBRO	B	A	
	1.38	4.04	52	GOOSE ISLAND/STODDARD	B	A	
	1.20	3.65	30	HARPERS	B	A	
	0.44	1.60	27	UPPER POOL 5	B		
YELLOW PERCH							
	6.43	7.23	27	UPPER POOL 5		A	
	5.17	9.41	52	GOOSE ISLAND/STODDARD	B	A	
	3.67	5.50	31	AMBRO	B	A	
	2.85	5.75	25	COLDSPG, BLKHWK, RONKOSKI	B	A	
	1.20	2.99	25	UPPER POOL 5A	B		
	1.00	2.27	30	HARPERS	B		

TABLE 13. COMPARISON OF MEAN TOTAL LENGTH FOR SELECTED INDIVIDUAL SPECIES, AMONG SIX LAKE UNITS, ELECTRO SHOCKING, FALL 2007.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
BLACK CRAPPIE						
	9.23	1.68	36	COLDSPG, BLKHWK, RONKOSKI	A	
	8.79	1.80	70	AMBRO	A	
	8.70	2.44	19	UPPER POOL 5	A	
	8.64	1.97	38	UPPER POOL 5A	A	
	8.59	1.99	39	GOOSE ISLAND/STODDARD	A	
	8.47	1.99	32	HARPERS	A	
BLUEGILL						
	5.52	1.13	341	AMBRO	A	
	5.37	1.37	392	UPPER POOL 5A	A	
	5.33	1.50	258	UPPER POOL 5	A	
	4.59	1.66	477	COLDSPG, BLKHWK, RONKOSKI	B	
	4.36	1.30	314	HARPERS	B	
	4.31	1.49	798	GOOSE ISLAND/STODDARD	B	
LARGEMOUTH BASS						
	11.68	3.53	328	UPPER POOL 5A		A
	11.0	3.41	272	UPPER POOL 5	B	A
	10.72	3.53	481	AMBRO	B	C
	10.06	3.97	260	HARPERS	D	C
	9.93	3.76	819	GOOSE ISLAND/STODDARD	D	
	9.03	3.20	688	COLDSPG, BLKHWK, RONKOSKI		E