

Complete Report

Results of Lake Assessment in the Cold Springs, Blackhawk, Ronkoski Slough Lake Unit, Navigation Pool 9 of the upper Mississippi River, Fall 2007.

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20 April 2009

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 9 of the upper Mississippi River. A secondary purpose is to estimate length and size distributions of other game fishes caught incidentally.

Methods

The Cold Springs, Blackhawk, Ronkoski Slough (CBR) Lake Unit is located in three separate areas of the upper Mississippi River in Navigation Pool 9 (Figure 1). Each of these separate areas is shown in Figures 2, 3 and 4. The lake unit has a total water surface area of 850 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 (Figures 2-4). A total of 11 locations were chosen, with 1 fyke net at each. These nets fished a total of 30.06 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 25 runs were done during 4.224 hours of sampling (Figures 5-7) done on five days from September 25 through October 10, 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 21.0°C and generally declined over the 37 days of sampling (Table 1). During sampling, the water surface elevation measured at the Lansing, Iowa gage changed little. The mean daily flow in cubic feet per second was 23325 and changed little except for the last two days of sampling.

Fyke Netting Catch Per Effort

A total of 31 fishes were recorded from 1445 fish captured in fyke nets (Table 2). The most common was black crappie followed by bluegill, gizzard shad and shorthead redhorse. Mean catch per net-day for these four fishes was 14.79, 12.14, 8.10 and 3.02, respectively. The mean catch per net-day for all species combined was 48.39 (standard deviation = 29.01, n=30).

Electro Shocking Catch Per Effort

A total of 37 fishes and one hybrid were recorded from 5559 fish captured during electro shocking (Table 3). The most common was gizzard shad followed by largemouth bass, bluegill and common carp. Mean catch per hour for these four fishes was 960.62, 163.68, 112.93 and 12.09, respectively. The mean catch per hour for all species combined was 1318.05 (standard deviation = 936.21, n=25).

Length Distribution from Fyke Netting

The frequency distribution of total length in inches for black crappie, bluegill, northern pike and largemouth bass are given in Figures 8-16. The mean lengths of fishes measured are given in Table 4. A total of 25.34 percent of the black crappies were greater than 9 inches. For bluegill, a total of 12.22 percent were greater than 7 inches while 45 percent of largemouth bass were larger than 14 inches. A total of 74.07 percent of northern pike were greater than 21 inches.

Length Distribution from Electro Shocking

The frequency distribution for total length in inches for largemouth bass, bluegill, black crappie, smallmouth bass and largemouth bass are given in Figures 8-16. The mean lengths of fishes measured are given in Table 5. A total of 38.89 percent of the black crappies were greater than 9 inches. For bluegill, a total of 3.98 percent were greater than 7 inches while 3.92 percent of largemouth bass were larger than 14 inches. A total of 40.0 percent of northern pike were greater than 21 inches.

Comparisons with Other Lake Units, Fyke Netting

Fyke netting data from the CBR Lake Unit was compared to 5 other upper Mississippi River lake units sampled in the fall of 2007. These 5 lake units included Goose Island/Stoddard in Pool 8, 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 6) which was different from Upper Pool 5 and Upper Pool 5A (34.06 and 33.90, respectively). The CBR 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 7. 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 8. 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 Goose Island/Stoddard 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 9). 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 CBR 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 CBR, 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 CBR, 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 CBR 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 CBR Lake Unit was compared to 5 other upper Mississippi River lake units sampled in the fall of 2007. These included Goose Island/Stoddard in Pool 8, 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 CBR (302.80) (Table 10) which was different from Upper Pool 5 and Harpers (145.04 and 143.51, respectively). Catch per hour for the remaining lake units, Goose Island/Stoddard, Upper Pool 5A and Ambro (212.97, 203.11 and 193.36, respectively) were statistically the same as the CBR 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 11. 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 CBR the catch rate was the same as Goose Island/Stoddard and Ambro lake units (163.68) and higher than Upper Pool 5, Upper Pool 5A and Harpers (about 64). For sauger, the only significantly different catch rates were between Harpers and Upper Pool 5A (3.99 and 0.24 per hour, respectively). The CBR walleye and yellow perch catch rates (3.01 and 2.85, 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 12). For black crappie, there was no significant difference in mean size among all six lake units (about 8.7 inches). Mean total length of CBR Lake Unit bluegills (4.6 inches) was different only from Upper Pool 5, Upper Pool 5A and Ambro (about 5.4 inches) bluegills. Largemouth bass from CBR Lake Unit were the smallest of all lake units (9.03 inches versus about 10.7 inches).

Conclusions

The CBR 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 (31.33 fish per net-day). For all species combined, catch per net-day (48.39) differed only from the Harpers Lake Unit (77.38). Similarly, the electro shocking catch rate of target species from CBR Lake Unit (302.8 fish per hour) was the same as three other lake units and different from two.

From fyke netting, the mean size of pan fish in the CBR Lake Unit was smaller than the other lake units. Mean size of game fish was the same as other units. For all pan fishes (black crappie, bluegill and yellow perch), size ranked at or near the bottom among the six units. For game fishes (white bass, largemouth bass and northern pike) size ranked about the same among all six units.

Pan fish from 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 significantly smaller than all other lake units.

The reason for smaller pan fish size in the CBR Lake Unit is unknown. Smaller size could be related to angling pressure. Although we have no creel census information, it is commonly known that this lake unit receives heavy angling pressure. Up to 50 boats have been observed in the 32 acre Cold Springs area of the lake unit which is most heavily fished from late August through October. Pan fish appear to enter this area, presumably from lower Pool 9, during the fall searching for over wintering habitat. This area is also heavily ice fished, especially during the early winter. The Blackhawk area of the lake unit is also heavily fished. A large campground located on the river, attracts thousands of anglers during the summer and the immediate area contains five boat landings. It is not uncommon to see several hundred boats in the area during the summer. During winter, the area is periodically heavily fished, particularly in De Soto Bay and Green Lake. The Ronkoski Slough area of the lake unit appears to have average angling pressure. During the summer, crappie angling is popular because of the abundance of narrow sloughs containing shoreline cover.

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.

In the Cold Spring area of the CBR Lake Unit, general Wisconsin inland regulations apply. These bag limits are more restrictive than the Pool 9 limits. The bag limit for all pan fish combined (bluegill, pumpkinseed, crappies, yellow perch and sunfishes) is 25. There is no bag limit on rock bass, yellow bass or white bass. All these fish have continuous open seasons.

Recommendations

1. Continue to monitoring backwater fishes in Pool 9 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)

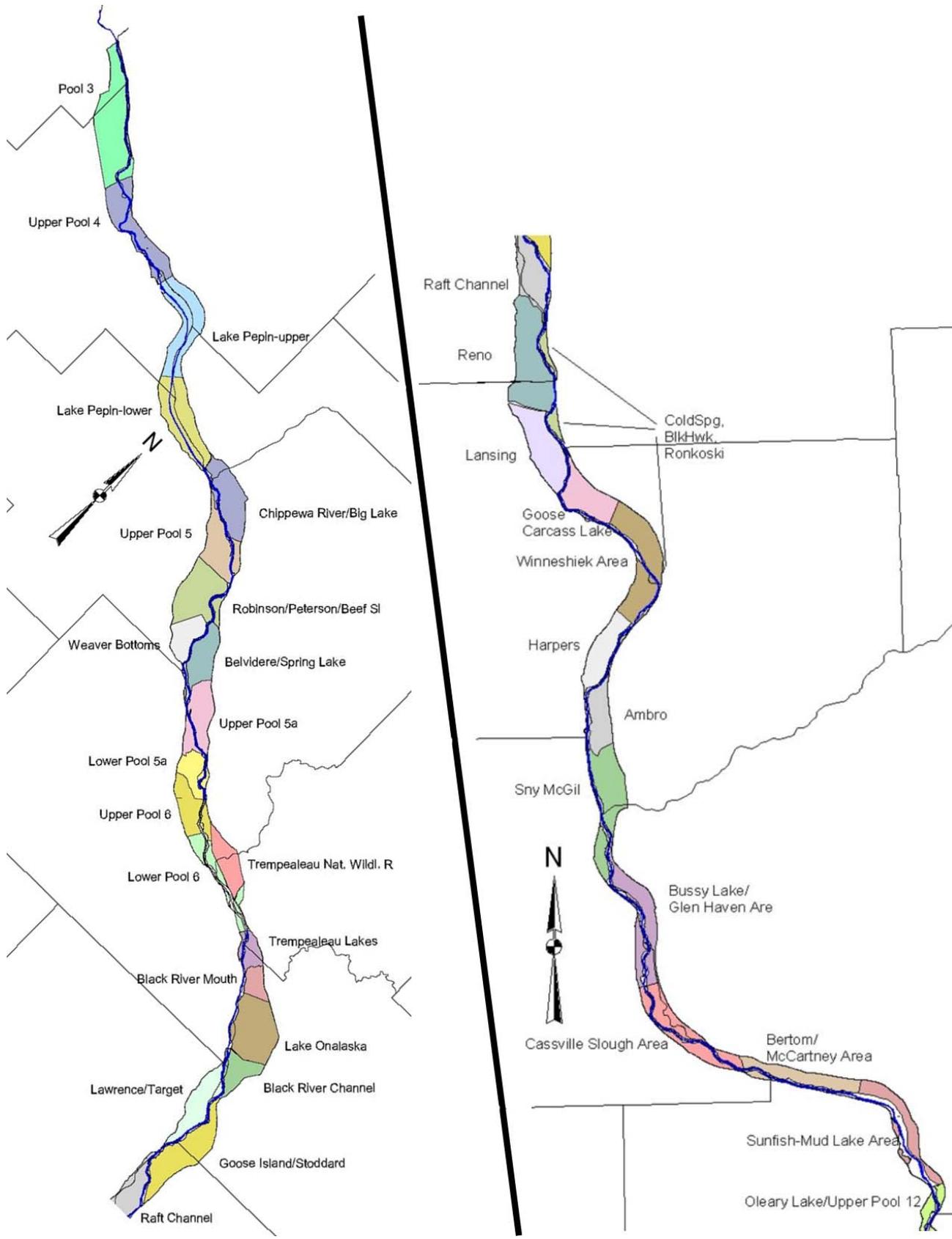


FIGURE 2. FALL 2007 FYKE NET LOCATIONS, THE RONKOSKI AREA OF THE COLD SPRINGS, BLACKHAWK, RONKOSKI SLOUGH LAKE UNIT.

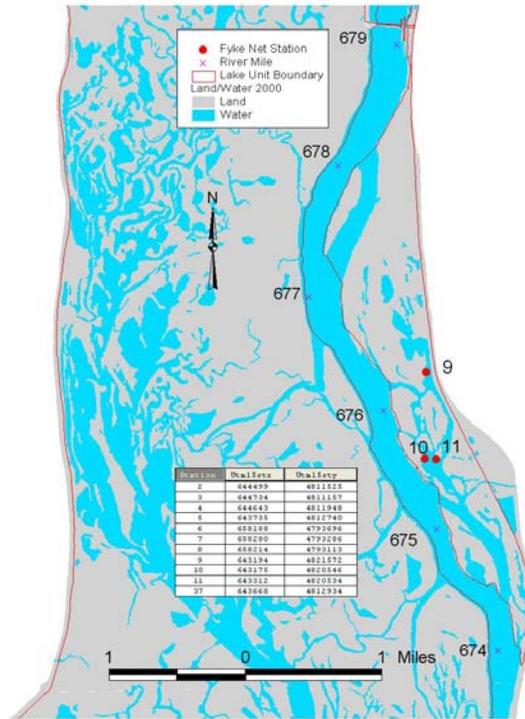


FIGURE 3. FALL 2007 FYKE NET LOCATIONS, THE BLACKHAWK AREA OF THE COLD SPRINGS, BLACKHAWK, RONKOSKI SLOUGH LAKE UNIT.

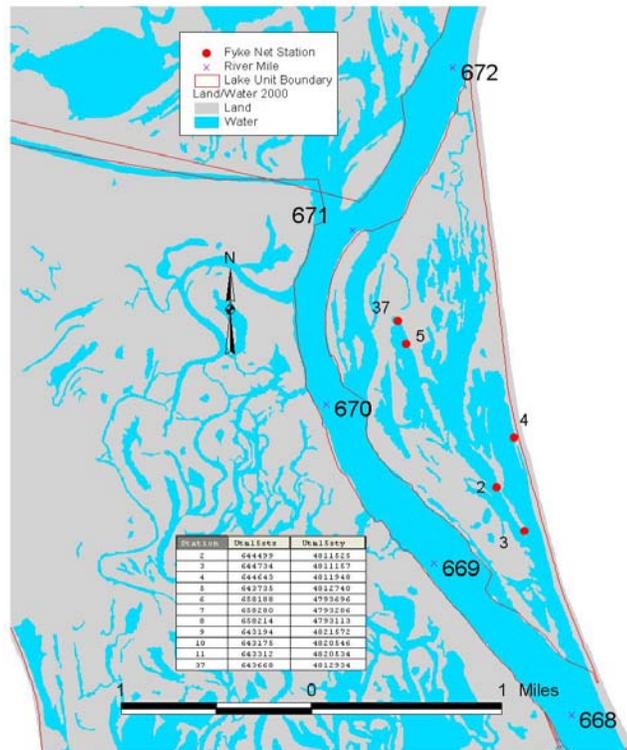


FIGURE 4. FALL 2007 FYKE NET LOCATIONS, THE COLD SPRINGS AREA OF THE COLD SPRINGS, BLACKHAWK, RONKOSKI SLOUGH LAKE UNIT.

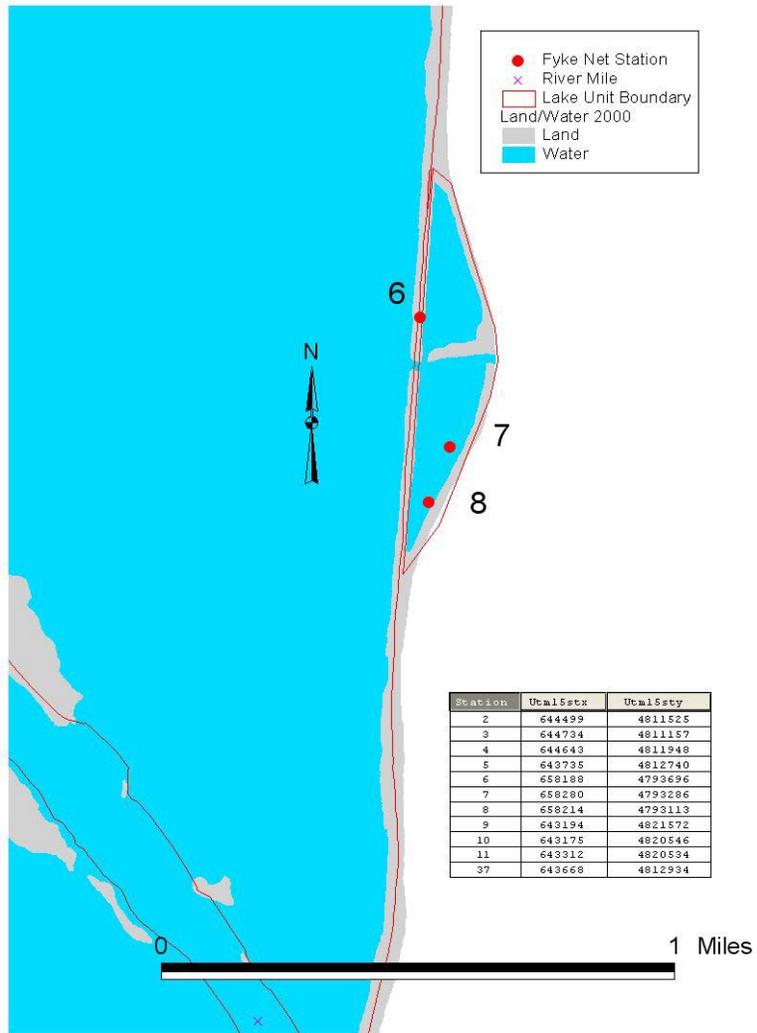


FIGURE 5. FALL 2007 ELECTROSHOCKING RUNS, THE RONKOSKI AREA OF THE COLD SPRINGS, BLACKHAWK, RONKOSKI SLOUGH LAKE UNIT.

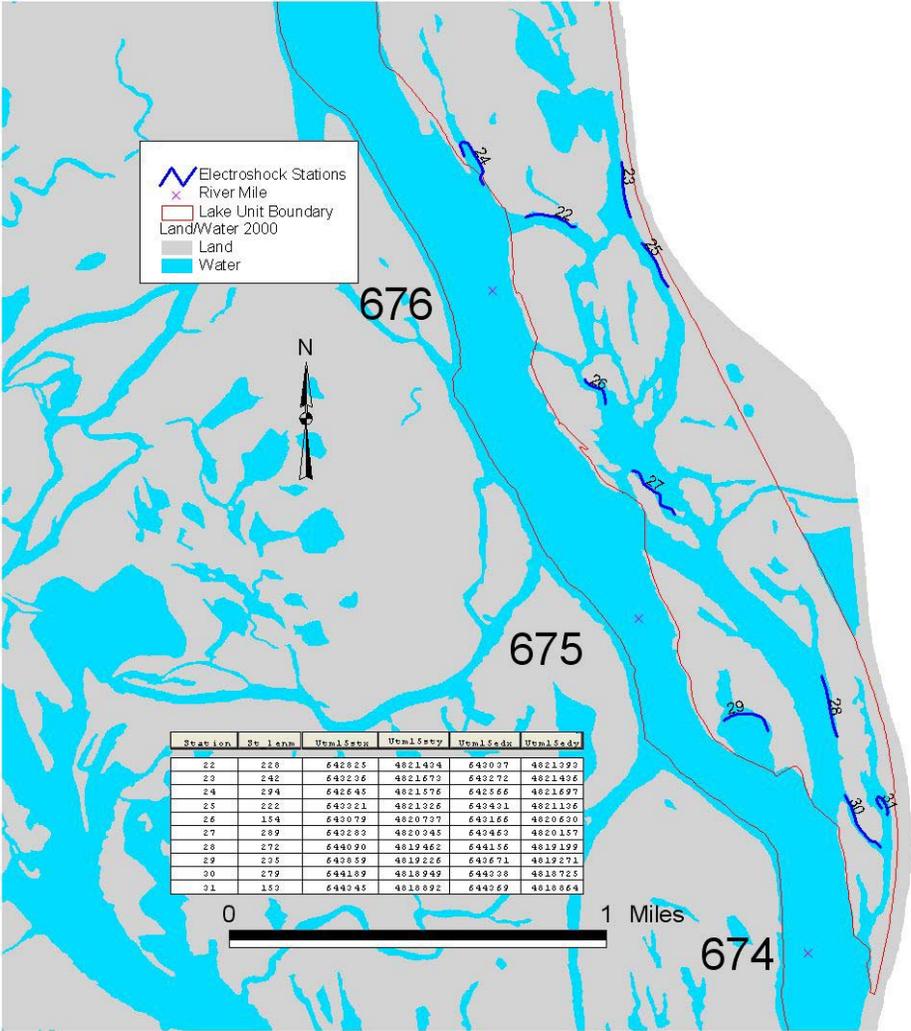


FIGURE 6. FALL 2007 ELECTROSHOCKING RUNS, THE BLACKHAWK AREA OF THE COLD SPRINGS, BLACKHAWK, RONKOSKI SLOUGH LAKE UNIT.

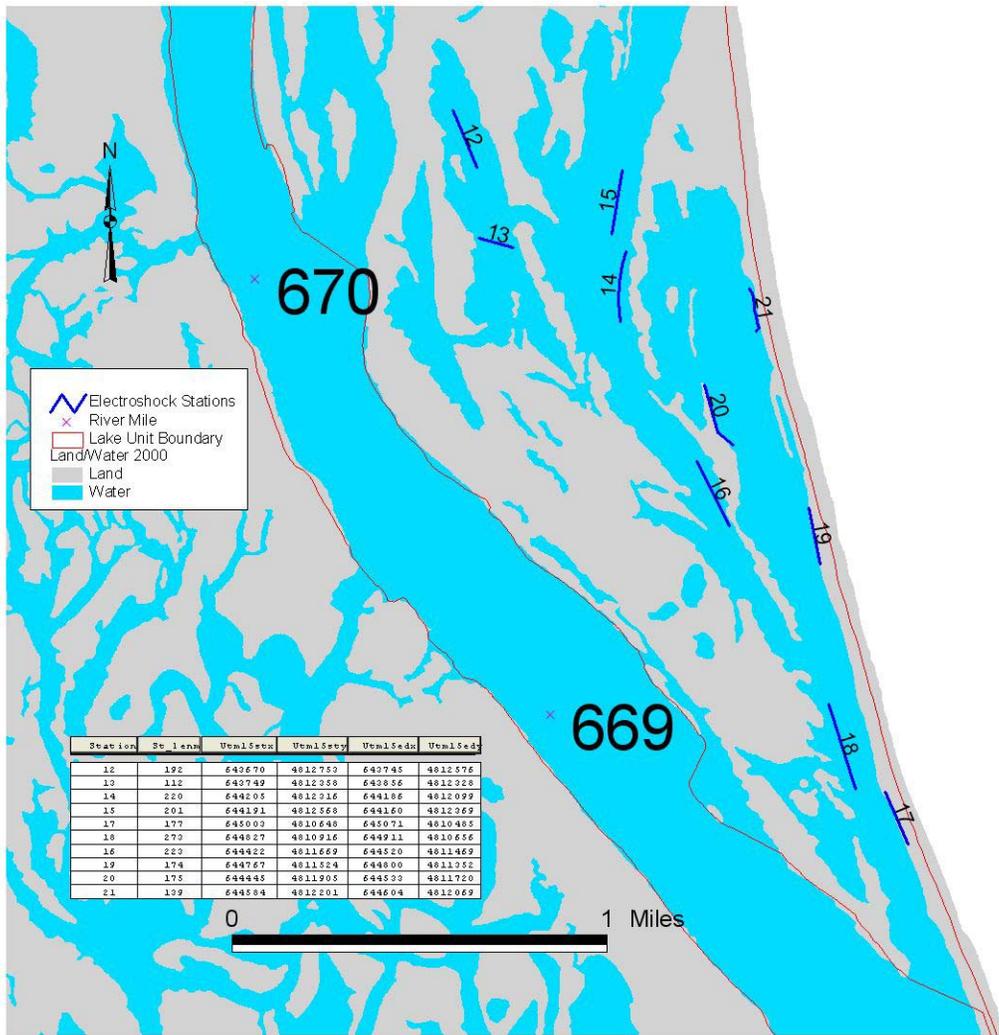


FIGURE 7. FALL 2007 ELECTROSHOCKING RUNS, THE COLD SPRINGS AREA OF THE COLD SPRINGS, BLACKHAWK, RONKOSKI SLOUGH LAKE UNIT.

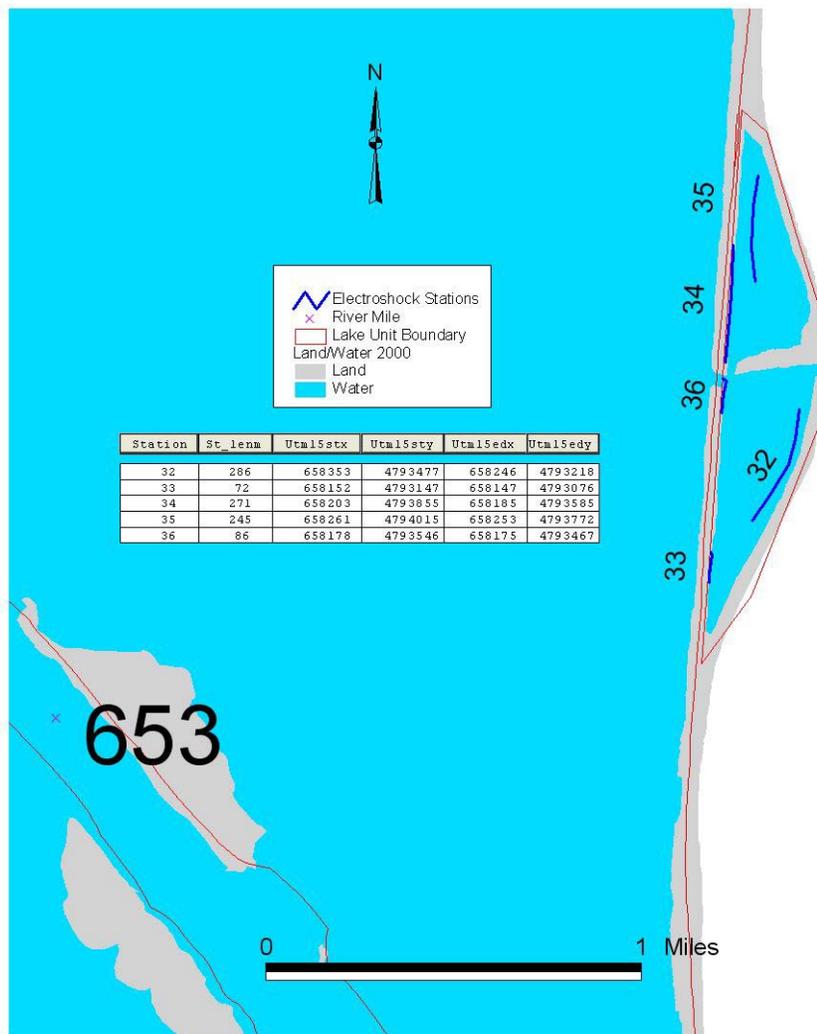


FIGURE 8. FALL 2007 BLACK CRAPPIE LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT FYKE NETTING.

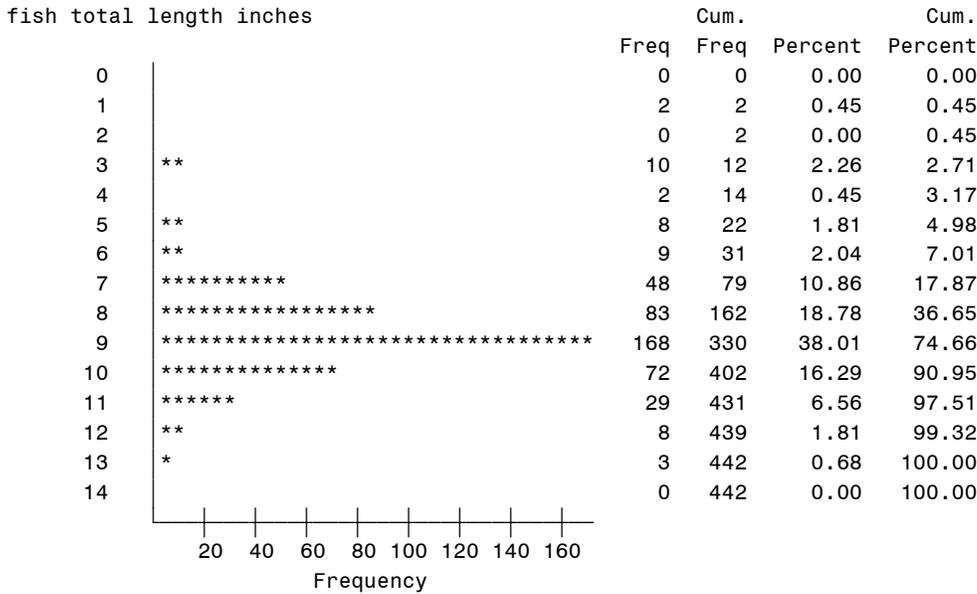


FIGURE 9. FALL 2007 BLACK CRAPPIE LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT ELECTRO SHOCKING.

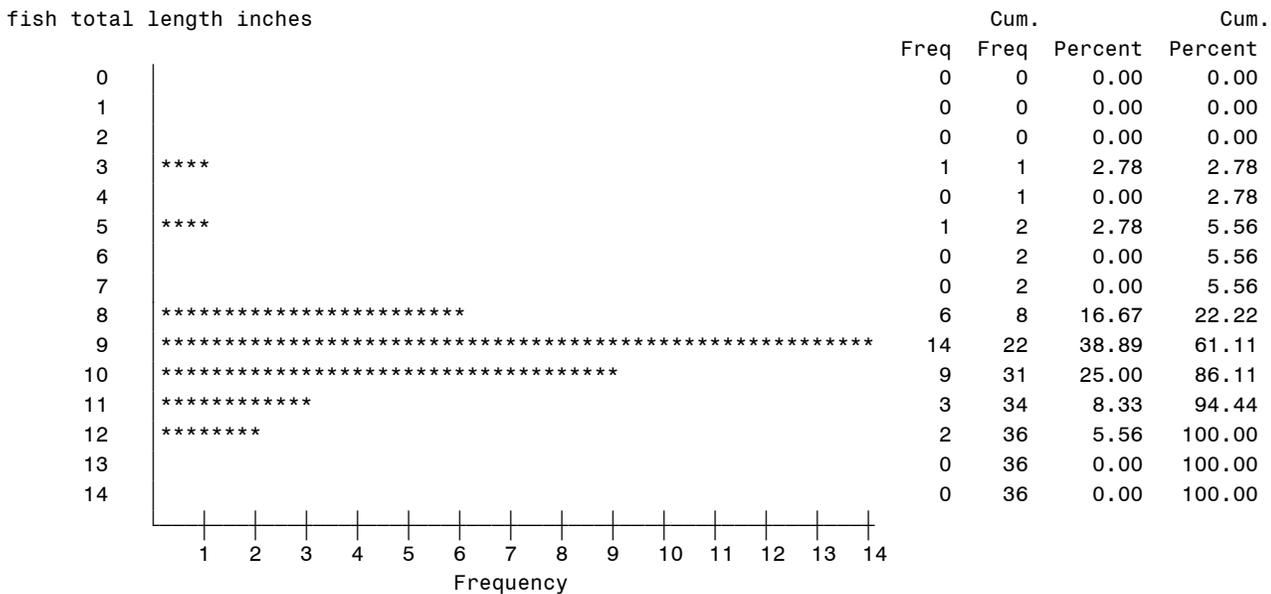


FIGURE 10. FALL 2007 BLUEGILL LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT FYKE NETTING.

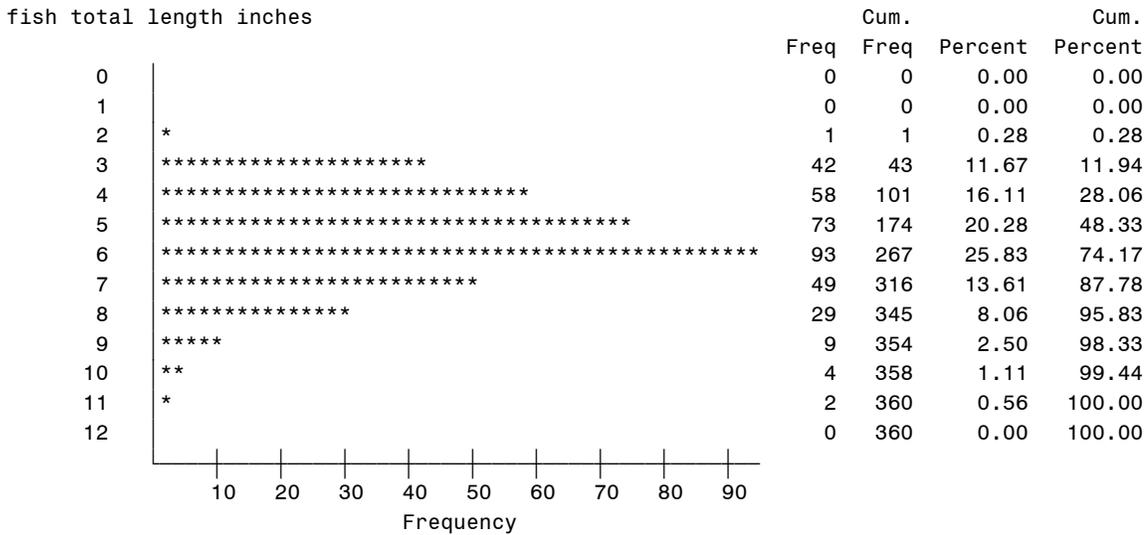


FIGURE 11. FALL 2007 BLUEGILL LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT ELECTRO SHOCKING.

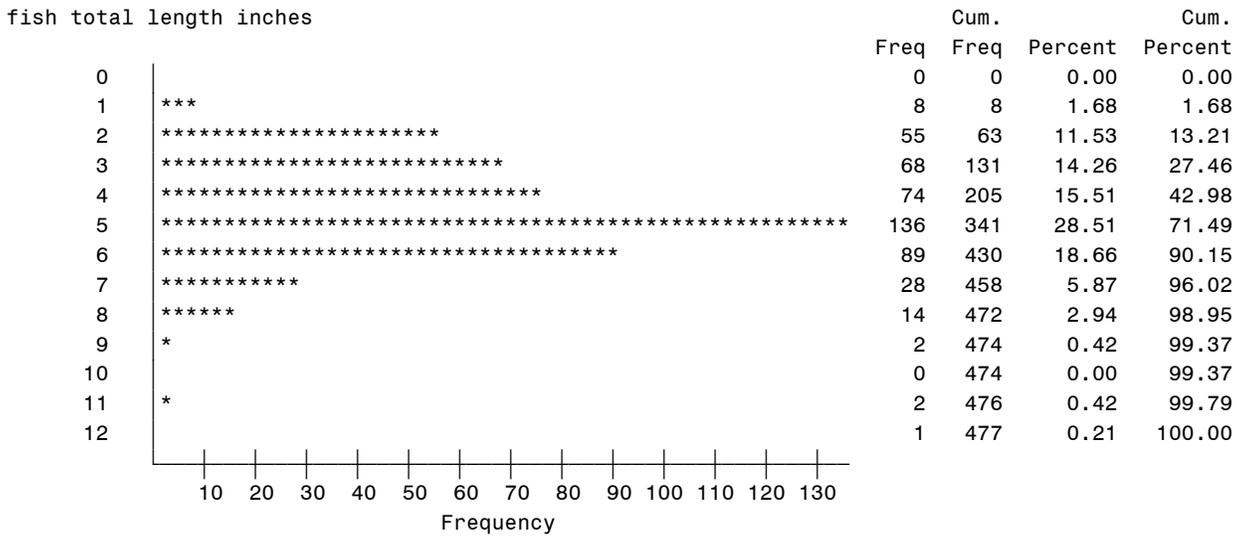


FIGURE 12. FALL 2007 NORTHERN PIKE LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT FYKE NETTING.

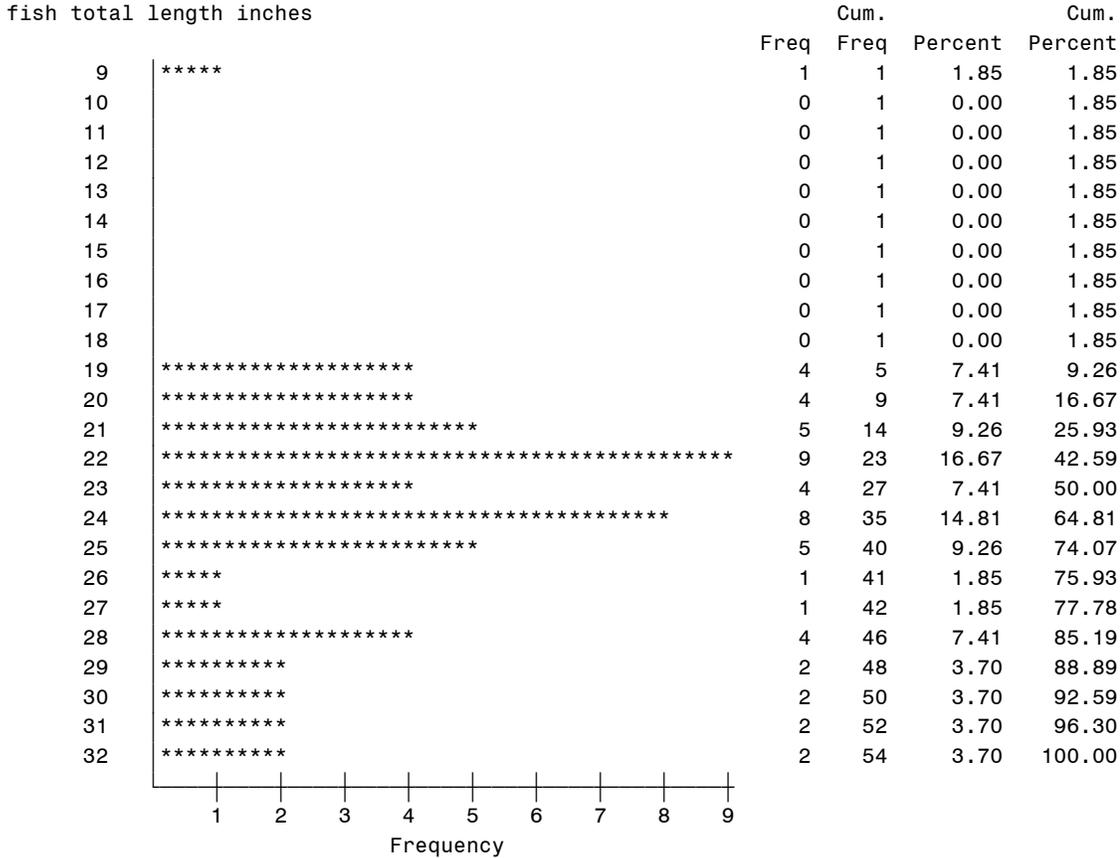


FIGURE 13. FALL 2007 NORTHERN PIKE LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT ELECTRO SHOCKING.

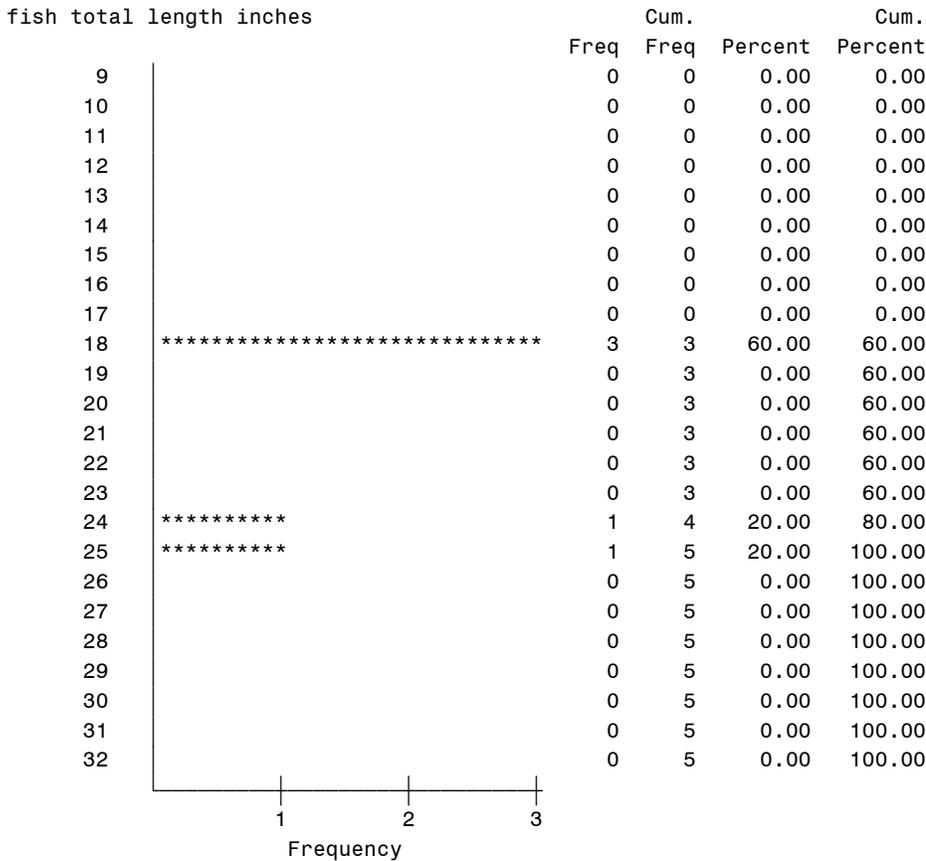


FIGURE 14. FALL 2007 LARGMOUTH BASS LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT FYKE NETTING.

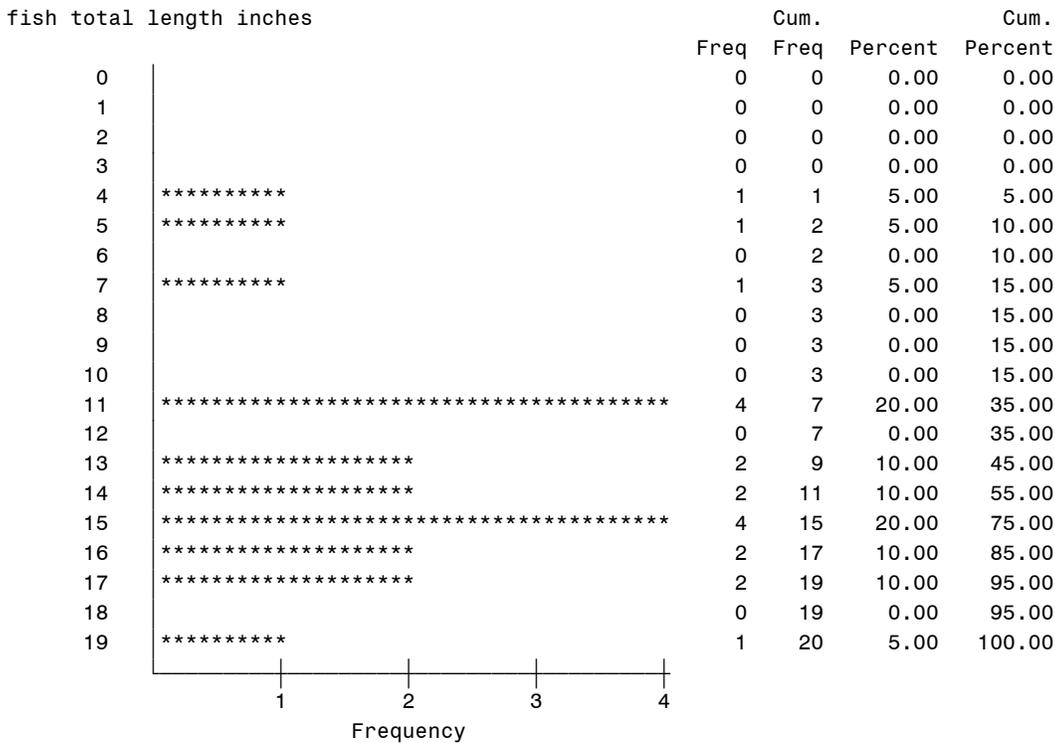


FIGURE 15. FALL 2007 LARGMOUTH BASS LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT ELECTRO SHOCKING.

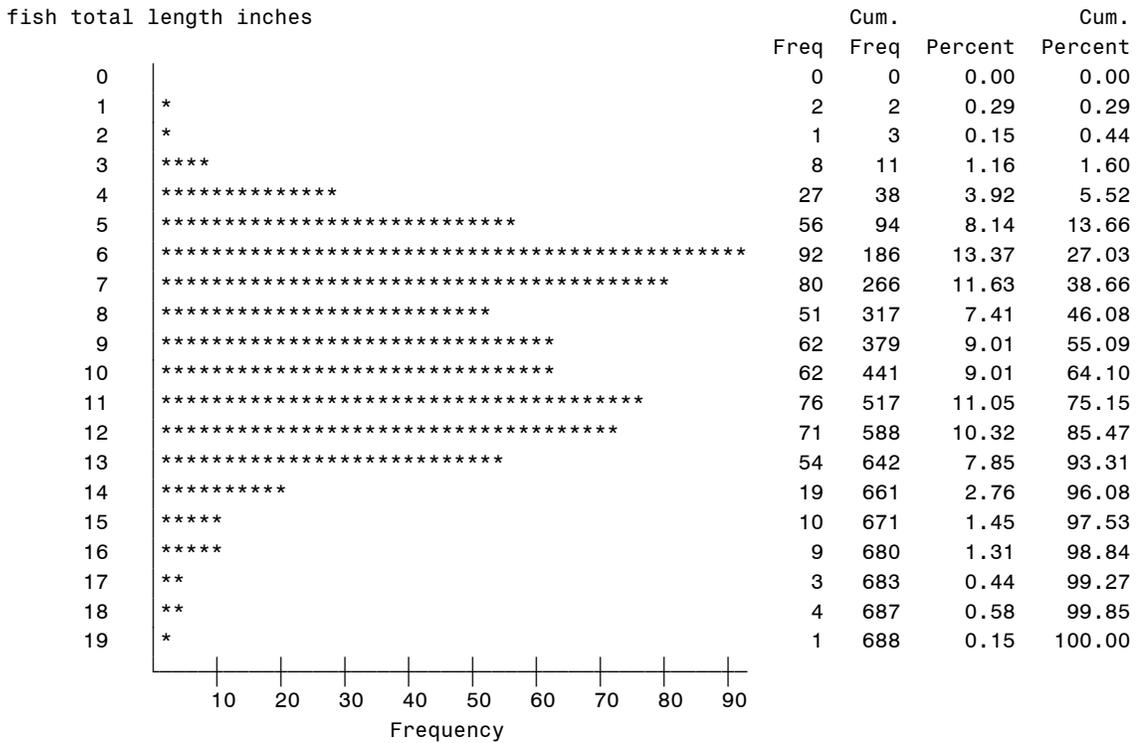


FIGURE 16. FALL 2007 SMALLMOUTH BASS LENGTH DISTRIBUTION (INCHES), CBR LAKE UNIT ELECTRO SHOCKING.

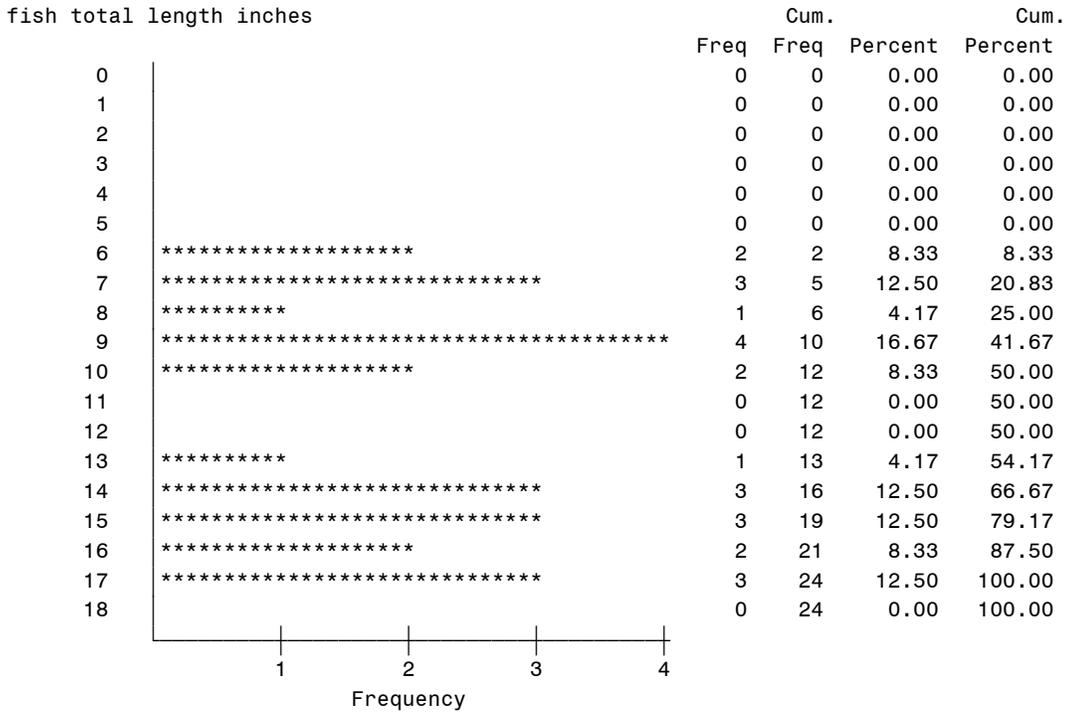


TABLE 1. MEAN TEMPERATURE, WATER SURFACE ELEVATION AND FLOW DURING FALL 2007 SAMPLING.

DATE	MEAN DAILY TEMPERA- TURE °C	WATER SURFACE ELEVATION (ft), LANSING	FLOW (cfs) DAM 9
09/04/07		620.08	16100
09/05/07	27.2	620.19	16300
09/06/07	25.2	620.27	16300
09/07/07	24.7	620.34	16800
09/10/07		620.52	23400
09/11/07	20.0	620.51	23700
09/12/07	20.0	620.34	21200
09/13/07	19.7	620.15	14400
09/14/07		620.05	11800
09/17/07		620.41	17000
09/18/07	17.8	620.40	18000
09/25/07	21.3	620.44	26800
09/26/07	20.8	620.36	26800
09/27/07	20.6	620.38	26800
10/03/07	18.3	620.92	37400
10/10/07	15.9	621.65	60400
MEAN	21.0	620.44	23325

TABLE 2. RELATIVE ABUNDANCE, MEAN CATCH PER NET-DAY, FYKE NETS, FALL 2007, CBR LAKE UNIT.

	SPECIES	FREQUENCY	PERCENT	MEAN	STANDARD DEV.	MIN.	MAX.	NET-DAYS
1	bigmouth buffalo	2	0.14	0.06	0.35	0.00	1.93	30.06
2	black crappie	442	30.59	14.79	15.64	0.00	55.29	30.06
3	bluegill	361	24.98	12.14	8.15	0.00	28.32	30.06
4	bowfin	12	0.83	0.40	0.75	0.00	2.85	30.06
5	brown bullhead	1	0.07	0.04	0.19	0.00	1.06	30.06
6	channel catfish	5	0.35	0.17	0.38	0.00	1.06	30.06
7	common carp	19	1.31	0.62	0.91	0.00	2.91	30.06
8	freshwater drum	14	0.97	0.46	0.71	0.00	2.85	30.06
9	gizzard shad	242	16.75	8.10	11.82	0.00	42.37	30.06
10	golden redhorse	16	1.11	0.54	2.02	0.00	11.03	30.06
11	golden shiner	10	0.69	0.39	1.95	0.00	10.65	30.06
12	largemouth bass	20	1.38	0.65	1.72	0.00	8.52	30.06
13	longnose gar	22	1.52	0.78	1.94	0.00	6.97	30.06
14	northern pike	54	3.74	1.78	2.49	0.00	10.67	30.06
15	orangespotted sunfish	1	0.07	0.03	0.17	0.00	0.95	30.06
16	pumpkinseed	10	0.69	0.39	1.95	0.00	10.65	30.06
17	quillback	1	0.07	0.03	0.18	0.00	0.99	30.06
18	river carpsucker	4	0.28	0.13	0.35	0.00	1.16	30.06
19	river redhorse	1	0.07	0.03	0.18	0.00	0.99	30.06
20	shorthead redhorse	93	6.44	3.02	9.87	0.00	52.68	30.06
21	shortnose gar	13	0.9	0.46	1.08	0.00	3.48	30.06
22	silver redhorse	12	0.83	0.37	0.96	0.00	4.13	30.06
23	smallmouth buffalo	1	0.07	0.04	0.19	0.00	1.06	30.06
24	spotted sucker	38	2.63	1.25	2.29	0.00	10.42	30.06
25	walleye	1	0.07	0.03	0.18	0.00	0.97	30.06
26	warmouth	2	0.14	0.08	0.29	0.00	1.18	30.06
27	white bass	15	1.04	0.52	1.36	0.00	6.04	30.06
28	white crappie	1	0.07	0.03	0.17	0.00	0.96	30.06
29	white sucker	2	0.14	0.06	0.35	0.00	1.90	30.06
30	yellow bullhead	15	1.04	0.52	1.03	0.00	4.46	30.06
31	yellow perch	15	1.04	0.48	0.66	0.00	2.53	30.06
	ALL SPECIES	1445	100.03	48.39	29.01	4.57	111.23	30.06

TABLE 3. RELATIVE ABUNDANCE, MEAN CATCH PER HOUR, ELECTRO SHOCKING, FALL 2007, CBR LAKE UNIT.

	SPECIES	FREQ.	PERCENT	MEAN PER HR	STANDARD DEV.	MIN.	MAX.	NO. OF RUNS	TOTAL HRS
1	banded darter	2	0.04	0.48	1.66	0	5.99	25	4.224
2	bigmouth buffalo	1	0.02	0.2	1	0	5	25	4.224
3	black crappie	36	0.65	8.58	10.96	0	35.93	25	4.224
4	bluegill	477	8.58	112.93	165.41	0	814.37	25	4.224
5	bowfin	9	0.16	2.06	4.35	0	17.96	25	4.224
6	brown bullhead	1	0.02	0.24	1.2	0	5.99	25	4.224
7	channel catfish	4	0.07	0.96	3.74	0	17.96	25	4.224
8	common carp	51	0.92	12.09	21.42	0	89.82	25	4.224
9	common shiner	1	0.02	0.24	1.2	0	5.99	25	4.224
10	emerald shiner	12	0.22	2.87	6.02	0	23.95	25	4.224
11	flathead catfish	2	0.04	0.44	1.53	0	5.99	25	4.224
12	freshwater drum	28	0.5	6.67	14.6	0	53.89	25	4.224
13	gizzard shad	4054	72.93	960.62	1008.8	0	3682.64	25	4.224
14	golden redhorse	19	0.34	4.53	6.97	0	23.95	25	4.224
15	golden shiner	27	0.49	6.47	27.49	0	137.73	25	4.224
16	green sunfish	3	0.05	0.72	2.63	0	11.98	25	4.224
17	green sunfish x bluegill	2	0.04	0.48	1.66	0	5.99	25	4.224
18	highfin carpsucker	1	0.02	0.24	1.2	0	5.99	25	4.224
19	largemouth bass	688	12.38	163.68	182.86	0	694.61	25	4.224
20	longnose gar	4	0.07	0.92	2.16	0	5.99	25	4.224
21	mooneye	2	0.04	0.48	2.4	0	11.98	25	4.224
22	northern pike	5	0.09	1.2	2.44	0	5.99	25	4.224
23	pumpkinseed	4	0.07	0.96	3.74	0	17.96	25	4.224
24	quillback	5	0.09	1.16	2.93	0	11.98	25	4.224
25	river redhorse	2	0.04	0.46	1.59	0	5.99	25	4.224
26	rock bass	3	0.05	0.72	2.63	0	11.98	25	4.224
27	Sauger	8	0.14	1.92	3.33	0	11.98	25	4.224
28	shorthead redhorse	20	0.36	4.79	11.07	0	47.9	25	4.224
29	silver redhorse	15	0.27	3.59	9.15	0	35.93	25	4.224
30	smallmouth bass	24	0.43	5.75	17.5	0	83.83	25	4.224
31	smallmouth buffalo	2	0.04	0.48	1.66	0	5.99	25	4.224
32	spottail shiner	1	0.02	0.24	1.2	0	5.99	25	4.224
33	spotted sucker	8	0.14	1.92	5.39	0	23.95	25	4.224
34	striped shiner	1	0.02	0.24	1.2	0	5.99	25	4.224
35	Walleye	13	0.23	3.01	4.71	0	16.39	25	4.224
36	Warmouth	7	0.13	1.68	6.36	0	29.94	25	4.224
37	white bass	5	0.09	1.2	3.87	0	17.96	25	4.224
38	yellow perch	12	0.22	2.85	5.75	0	23.95	25	4.224
	ALL SPECIES	5559	100.03	1318.05	936.21	311.377	3772.46	25	4.224

TABLE 4. MEAN LENGTH IN INCHES FOR MEASURED SPECIES, FALL 2007, CBR LAKE UNIT, FYKE NETTING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
black crappie	8.63	1.71	0.83	13.39	442
bluegill	5.54	1.64	2.17	11.3	360
channel catfish	20.5	2.24	17.32	23.11	5
largemouth bass	12.9	3.97	3.86	18.7	20
northern pike	23.75	4.13	8.58	31.89	54
pumpkinseed	4.18	0.58	3.54	5.59	10
warmouth	6.2	0.58	5.79	6.61	2
white bass	6.76	2.48	4.53	12.21	15
yellow bullhead	12.04	1.59	9.06	13.98	15
yellow perch	7.32	2.04	4.37	11.42	14

TABLE 5. MEAN LENGTH IN INCHES FOR MEASURED SPECIES, FALL 2007, CBR LAKE UNIT, ELECTRO SHOCKING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
black crappie	9.23	1.68	3.35	12.24	36
bluegill	4.6	1.66	1.18	11.61	477
channel catfish	14.01	1.00	12.56	14.72	4
flathead catfish	26.67	5.71	22.64	30.71	2
green sunfish	5.03	1.29	3.54	5.91	3
green sunfish x bluegill	4.7	2.53	2.91	6.5	2
largemouth bass	9.03	3.20	0.87	18.7	688
northern pike	20.72	3.53	17.72	24.92	5
pumpkinseed	5.17	0.62	4.53	5.83	4
rock bass	5.32	1.81	3.27	6.69	3
sauger	10.01	4.51	5.35	19.02	8
smallmouth bass	11.59	3.85	5.95	16.69	24
walleye	15.24	3.43	8.27	22.36	13
warmouth	4.49	0.87	3.03	5.59	7
white bass	9.34	6.24	4.65	18.98	5
yellow perch	6.45	2.17	2.91	9.65	12

TABLE 6. 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 7. 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 8. 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 9. 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 10. 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 11. 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 11. (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 12. 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