Complete Report

Results of a Fisheries Lake Assessment in the Black River Channel Lake Unit, Navigation Pool 8 of the upper Mississippi River, Fall 2010.

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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 crappie in the Black River Channel (BRC) Lake Unit. A secondary purpose is to estimate length and size distributions of other game fishes caught incidentally.

Methods

The BRC Lake Unit is located in Navigation Pool 8 of the upper Mississippi River (Figure 1). This lake unit has a total water surface area of 1687 acres.

Standard Upper Mississippi River Conservation Committee (UMRCC) fyke nets were set by fisheries 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 fish species typical of backwaters from September 13 through September 16, 2010 (Figure 2). A total of 12 locations where chosen, with 1 fyke net at each. These nets fished a total of 33.75 net-days and were emptied every day.

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 45 runs were done during 7.52 hours of sampling (Figure 3 and Table 1) during five days from October 13 through October 21, 2010. For both gears, all fish were counted, identified to species, measured by total length and returned to the river.

We calculated Proportional Size Structures for selected quality (PSS_Q) and preferred (PSS_P) game fishes as well as catch per effort for these size categories. Because our fyke nets had bar mesh greater than 0.5 inches, we calculated PSS_Q and PSS_P for bluegill and pumpkinseed using a four-inch stock size rather a three-inch stock size and then converted these two metrics to three-inch PSS using the following formulas (Wisconsin Department of Natural Resources, 2010):

$$PSS_{Q3} = -4.10 + 0.97\ (PSS_{Q4})$$
$$PSS_{P3} = -\ 0.41 + 0.76\ (PSS_{P4}).$$

Statistical tests were done using SAS® (2002-2003) software for Windows version 9.13's General linear models (ANOVA) and were done at the alpha=0.05 level. For catch per effort calculations, tests were done on geometric means.

Findings

The mean daily ambient water temperatures during 2010 sampling was 16.5°C and declined over the eight days of sampling (Table 2). During sampling, the water surface elevation measured at the Dam 7 tailwater gage changed as much as 5.0 feet and generally increased. The mean daily flow in cubic feet per second taken from Dam 7 was 50,790, and fluctuated as much as 46,000 cubic feet per second. Flows and elevations were higher during electro shocking than fyke netting.

Fyke Netting Catch Per Effort

A total of 23 fish species were recorded from 1646 fish captured in fyke nets (Table 3). The most common was bluegill followed by black crappie, yellow perch and longnose gar. Mean catch per net-day for these four fish species was 32.02, 5.32, 3.46 and 1.24, respectively. The mean catch per net-day for all species combined was 48.44 (standard deviation = 35.68, n=34).

Electro Shocking Catch Per Effort

A total of 43 fish species were recorded from 3554 fish captured during electro shocking (Table 4). The most common was bluegill followed by largemouth bass, yellow perch, and emerald shiner. Mean catch per hour for these four fish species was 219.16, 139.99, 33.00, and 17.03, respectively. The mean catch per hour for all species combined was 472.92 (standard deviation = 381.72, n=45).

Length Distribution from Fyke Netting

The frequency distribution of total length in inches for bluegill, black crappie and yellow perch from fyke nets are given in Figures 4 to 6. The mean lengths of selected fish species are given in Table 5. A total of 47.75 percent of the black crappie was greater than 9 inches. For bluegill, a total of 14.2 percent was greater than 7 inches. A total of 42.61 percent of yellow perch was larger than 7 inches while 29.57 percent was larger than 8 inches.

We also calculated Proportional Size Structures (PSS) for fish (Guy, et al., 2006) using values from (Gabelhouse, 1984) (Table 6). The PSS_Q and PSS_P by species are presented in Table 7. The "acceptable" value of PSS_Q for bluegill is 40 to 60 and is 40 for crappie (Wisconsin Department of Natural Resources, 2010). No guidance is provided for yellow perch. Black crappie PSS_Q from the fall 2010 BRC fyke netting data was 65.1, well above the state level for "acceptable". For bluegill the PSS_Q was 44.8, within the "acceptable" range. The "acceptable" value of PSS_P for bluegill and crappie is 5. Black crappie greatly exceeded this (19.4), but bluegill (0.04) did not. This suggests that black crappie population size structure during fall 2010 sampling at BRC was "acceptable", but standards for bluegill were only partially met.

Length Distribution from Electro Shocking

The frequency distribution for total length in inches for bluegill, bowfin, common carp, emerald shiner, gizzard shad, largemouth bass, northern pike, spotted sucker and yellow perch are given in Figures 7 to 15. The mean lengths of fish species measured are given in Table 8. A total of 1.94 percent of the bluegill was greater than 7 inches. A total of 9.13 percent of the largemouth bass was larger than 14 inches. A total of 23.68 percent of northern pike was greater than 21 inches. A total of 17.34 percent of yellow perch was larger than 7 inches and 10.89 percent was greater than 8 inches.

The PSS_Q and PSS_P for electro shocked species are presented in Table 9. PSS_Q for bluegill (14.63) was below "acceptable" (40-60) and was 45.85 for largemouth bass. Bluegill (0.17) was below the "acceptable" standard for preferred fish (5.0). This suggests that electro shocked bluegill did not meet "acceptable" state standards for quality and preferred fish.

Comparisons with Other Lake Units and Time Periods, Fyke Netting

Fyke netting data from the BRC Lake Unit was compared to 20 other upper Mississippi River lake units sampled during the falls of 2007-2010 (Figure 1). Catch per net-day for all fish combined was greatest in Harpers (77.38) (Table 10) and least in Upper Pool 6 (10.46). BRC (48.44) was statistically the same as 13 other lake units and was greater than the remaining seven lake units.

Similarly, we tested mean catch per day for all fish combined among all five lake units sampled in 2010 (Table 11). BRC and Lower Pool 5A had the highest catch rates and BRC was statistically higher than the remaining three 2010 lake units.

Catch per net-day for selected target species combined is presented in Table 12. Target species included black crappie, bluegill, largemouth bass, northern pike, smallmouth bass, pumpkinseed, white crappie, rock bass and yellow perch. For these species combined, BRC (42.89 fish per net-day) was the same as 13 lake units and

was greater than the remaining 7 lake units (about 12.2). Similarly, we tested mean catch per day for target fish combined among all five 2010 lake units and found BRC was different from three lake units (about 15.8 fish per net-day) and was not different from one (Table 13).

We compared mean total length of selected individual species caught with fyke nets among five other lake units sampled in 2010 (Table 14). BRC black crappie (8.61 inches) were the same size as the Bussy Lake/Glen Haven Lake Unit in Pool 10 (8.10), and were larger than those from the remaining three lake units (about 7.4 inches). BRC bluegill (5.49 inches) were smaller than those from the Bussy Lake/Glen Haven Lake Unit (5.77 inches) and were larger than bluegill from the remaining three lake units (about 4.9 inches). Mean length of BRC yellow perch was statistically the same as the other four 2010 lake units.

Comparisons with Other Lake Units, Electro Shocking

Electro shocking data from the BRC Lake Unit was compared to 20 other upper Mississippi River lake units sampled in the fall of 2007-2010. Catch per hour for all target fish combined was the same in BRC (402.93) as 8 other lake units (Table 15). BRC had a statistically higher catch rate than all of the remaining 12 lake units.

Similarly, we tested mean catch per hour for all fish combined among all five lake units sampled in 2010 (Table 16). BRC had the highest catch rates and was statistically higher than the remaining four 2010 lake units.

We compared mean total length of individual species caught with electro shocking among five 2010 lake units (Table 17). Mean total length of BRC bluegill (2.70 inches) was smaller than all four other lake units (about 4.4 inches). Largemouth bass from BRC (6.50 inches) were smaller than two other lake units: Cassville Slough Area (8.12 inches) and Lower Pool 5a (8.01 inches); where larger than Bussy Lake/Glenn Haven (5.02 inches), and the same as the Black River Mouth (6.05 inches). Northern pike were the same at all 2010 lake units. Mean size of BRC yellow perch (5.84 inches) was smaller than those from two other lake units (about 7.2 inches) and larger than those from the Black River Mouth Lake Unit (4.22 inches).

Conclusions

The BRC Lake Unit generally had a statistically higher catch rate than other Mississippi River lake units. For the four comparisons made among gears and species groups, this lake unit always ranked in the upper two-fifths of catch rates for units sampled since 2007.

Sizes of fish captured in the BRC Lake Unit were similar or smaller compared to other lake units sampled in 2010. Fyke netted black crappie and bluegill were slightly larger than other lake units. Electro shocked fish were smaller. Black crappie exceeded recommended Proportional Size Structures. Bluegill generally did not meet these recommended standards.

In Navigation Pool 8 of the Mississippi River bordering Minnesota, Wisconsin fishing regulations limit harvest to 25 of yellow perch, rock bass and crappie in total, with no size limit. Bluegill and pumpkinseed are limited to 25 in total with no size limit. White bass and yellow bass are also restricted to 25 in total and no size limit. Largemouth bass and smallmouth bass are limited to 5 in total with a 14 inch minimum size limit. All these fish species 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.

Literature Cited

Gabelhouse, D. W., Jr. 1984. A length categorization system to assess fish stocks. North American Journal of Fisheries Management 4:371–384.

Guy, Christopher S., Robert M. Neumann and David W. Willis. 2006. New Terminology for Proportional Stock Density (PSD) and Relative Stock Density (RSD): Proportional Size Structure (PSS). Opinion: Fisheries Forum. Fisheries 31(2): 86-87**.**

SAS Institute Inc. 2002-2003. SAS® software for Windows version 9.13. SAS Institute Inc., Cary, NC, USA.

Wisconsin Department of Natural Resources. 2010. Fish Management Handbook 3605.9. Wisconsin Department of Natural Resources, Madison, WI. 239 pp.

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)

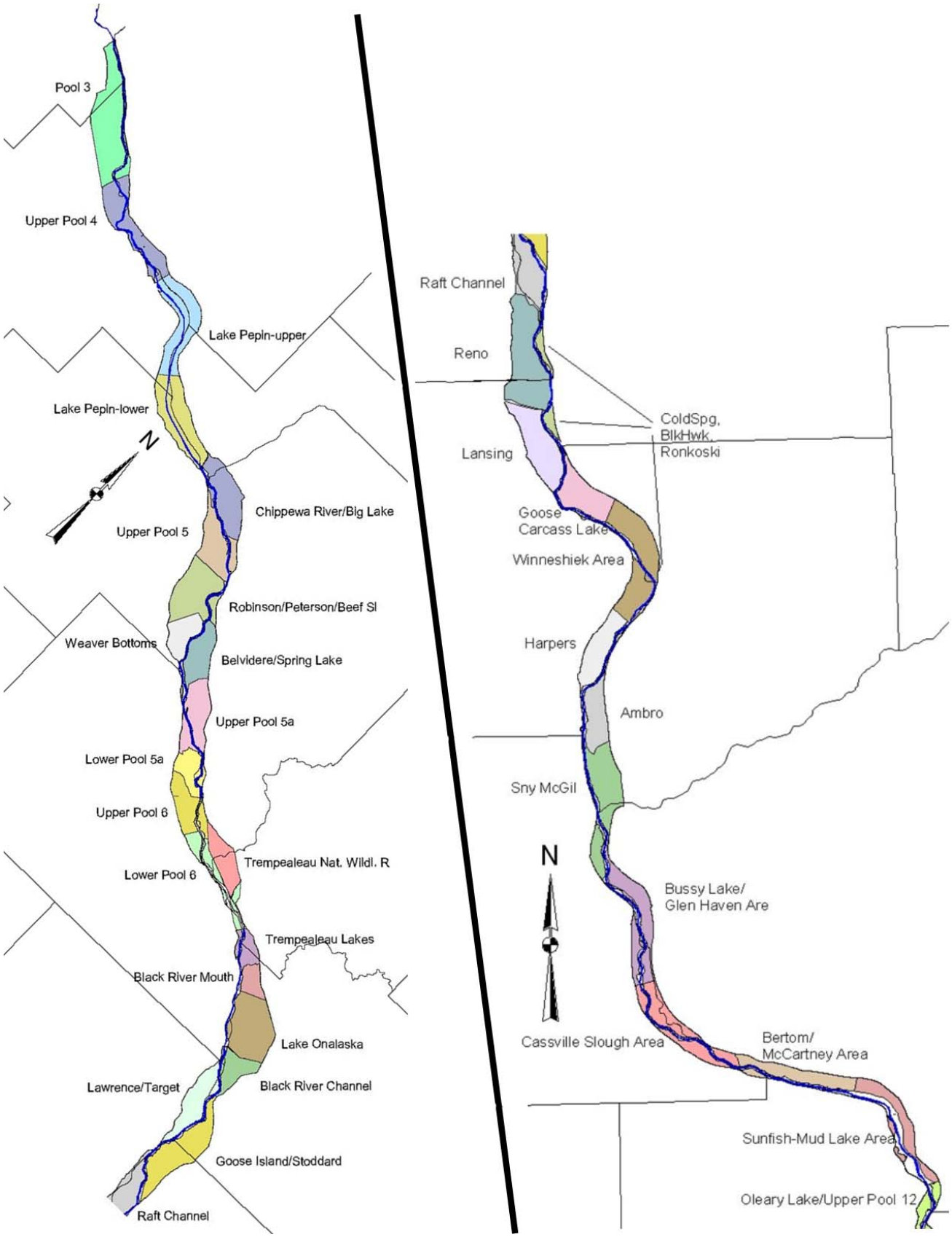
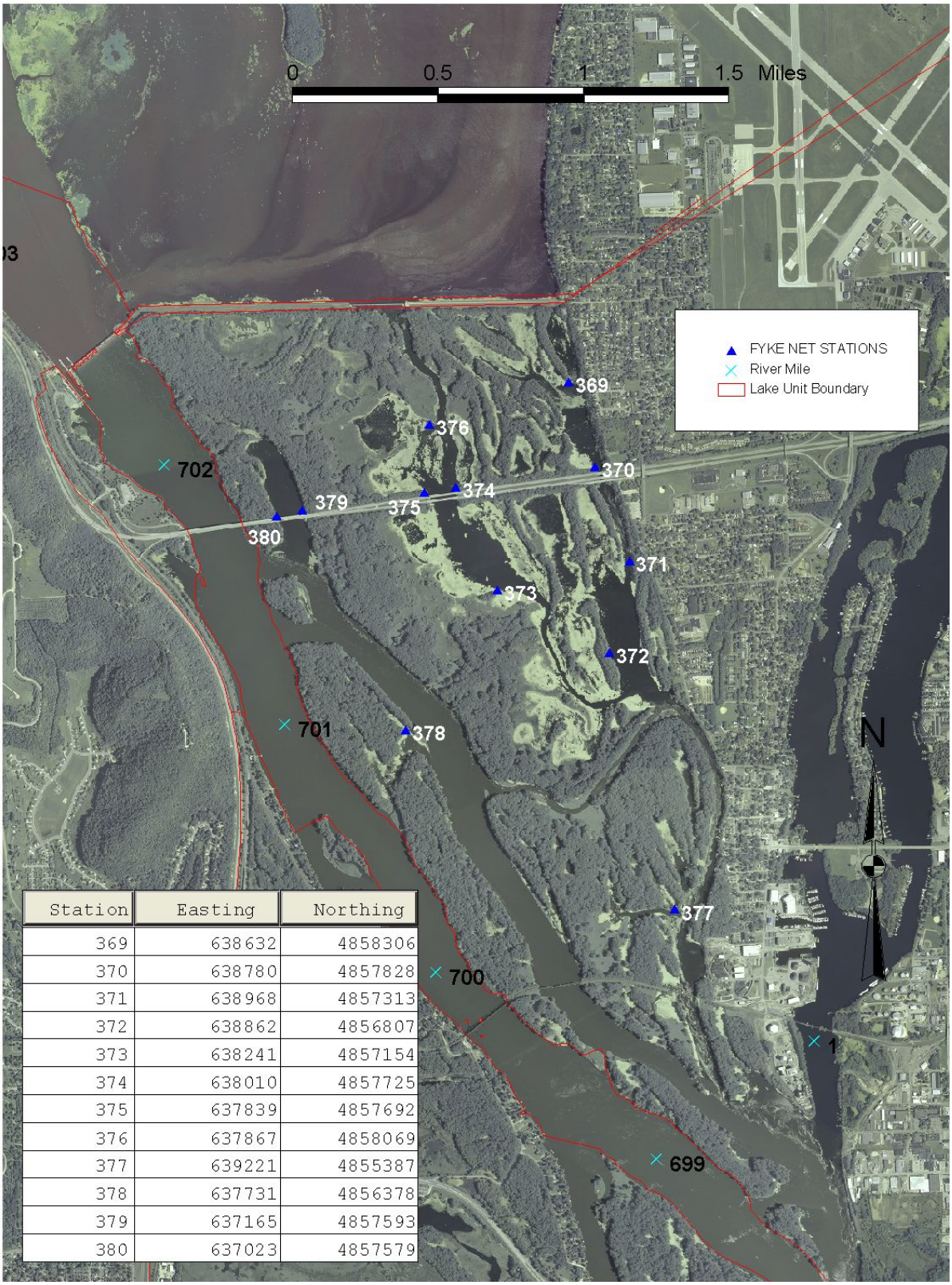


FIGURE 2. FALL 2010 FYKE NET LOCATIONS, BRC LAKE UNIT. (2010 NAIP PHOTO).



Station	Easting	Northing
369	638632	4858306
370	638780	4857828
371	638968	4857313
372	638862	4856807
373	638241	4857154
374	638010	4857725
375	637839	4857692
376	637867	4858069
377	639221	4855387
378	637731	4856378
379	637165	4857593
380	637023	4857579

FIGURE 3. FALL 2010 ELECTROSHOCKING RUNS, BRC LAKE UNIT. (2010 NAIP Photo).

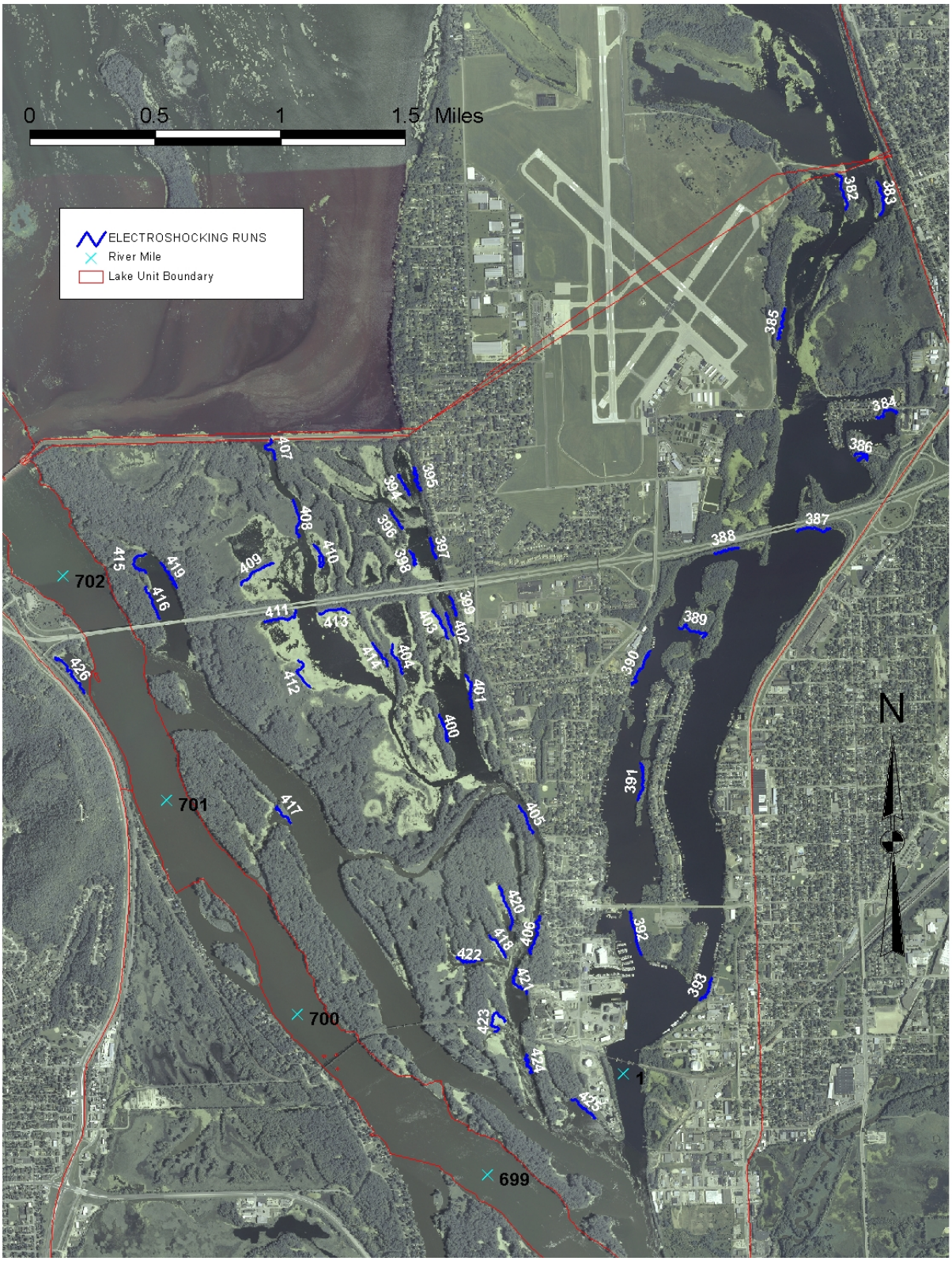


TABLE 1. ELECTRO SHOCKING STATION LOCATIONS, LENGTHS (M) AND WATERBODIES, FALL 2010 BRC LAKE UNIT.

STATION	UTM15STX	UTM15STY	UTM15EDX	UTM15EDY	WATERBDY	LENGTH (m)
382	641350	4860418	641414	4860192	BLACK R CHANNEL (TWENTY-TWO)	314
383	641612	4860371	641632	4860159	BLACK R CHANNEL	317
384	641612	4858864	641736	4858888	BLACK R CHANNEL	258
385	641024	4859556	640974	4859368	BLACK R CHANNEL	315
386	641469	4858614	641490	4858589	BLACK R CHANNEL	359
387	641099	4858129	641314	4858148	BLACK R CHANNEL	273
388	640728	4858025	640569	4857989	RICHMOND BAY	292
389	640340	4857509	640492	4857450	RICHMOND BAY	291
390	640161	4857362	640044	4857145	RICHMOND BAY	341
391	640098	4856647	640078	4856406	RICHMOND BAY	460
392	640034	4855693	640103	4855417	RICHMOND BAY	322
393	640555	4855268	640477	4855125	BLACK R CHANNEL	250
394	638550	4858492	638616	4858361	FRENCH L	244
395	638645	4858541	638682	4858392	FRENCH L	297
396	638492	4858271	638575	4858151	FRENCH L	251
397	638751	4858089	638789	4857957	FRENCH L	264
398	638618	4858007	638655	4857922	FRENCH L	258
399	638873	4857714	638914	4857587	FRENCH L	218
400	638809	4856959	638862	4856782	FRENCH L	291
401	638978	4857210	639021	4856996	FRENCH L	277
402	638852	4857610	638899	4857465	FRENCH L	223
403	638768	4857631	638866	4857440	FRENCH L	296
404	638509	4857409	638574	4857218	FRENCH L	301
405	639319	4856373	639406	4856192	FRENCH SLOUGH	243
406	639449	4855669	639393	4855424	FRENCH SLOUGH	357
407	637729	4858718	637757	4858589	FRENCH ISLAND SPILLWAY CHANNEL	265
408	637870	4858334	637905	4858091	FRENCH ISLAND SPILLWAY CHANNEL	275
409	637746	4857928	637539	4857786	ROUND L	277
410	638001	4858046	638034	4857970	ROUND L	257
411	637886	4857625	637685	4857557	ROUND L	277
412	637904	4857303	637982	4857129	ROUND L	252
413	638038	4857603	638231	4857609	ROUND L	248
414	638473	4857267	638379	4857414	ROUND L	211
415	636930	4857865	636928	4857984	EAST CHANNEL	275
416	637015	4857571	636925	4857774	EAST CHANNEL	285
417	637853	4856260	637766	4856370	EAST CHANNEL	242
418	639230	4855401	639128	4855540	FRENCH SLOUGH	223
419	637024	4857930	637123	4857766	EAST CHANNEL	301
420	639262	4855582	639193	4855858	FRENCH SLOUGH	343
421	639302	4855330	639370	4855168	FRENCH SLOUGH	260
422	638919	4855403	639082	4855383	FRENCH SLOUGH	225
423	639228	4854984	639162	4854928	FRENCH SLOUGH	288
424	639368	4854778	639404	4854666	FRENCH SLOUGH	293
425	639658	4854489	639807	4854373	FRENCH SLOUGH	255
426	636535	4857096	636351	4857312	I-90 BAY	401

TABLE 2. MEAN TEMPERATURE, WATER SURFACE ELEVATION AND FLOW DURING FALL 2010 BRC LAKE UNIT SAMPLING.

DATE	MEAN DAILY TEMPERATURE ºC	WATER SURFACE ELEVATION (ft), DAM 7 TAILWATER	FLOW (cfs) DAM 7
09/14/2010	20.8	632.76	35300
09/15/2010	19.6	632.72	34700
09/16/2010	18.5	632.97	40100
10/13/2010	17.3	637.71	80700
10/14/2010	16.4	637.39	76500
10/19/2010	13.8	635.16	60200
10/20/2010	12.6	634.75	54900
10/21/2010	12.5	634.26	52500
MEAN (by date, station)	16.5	634.3	50790

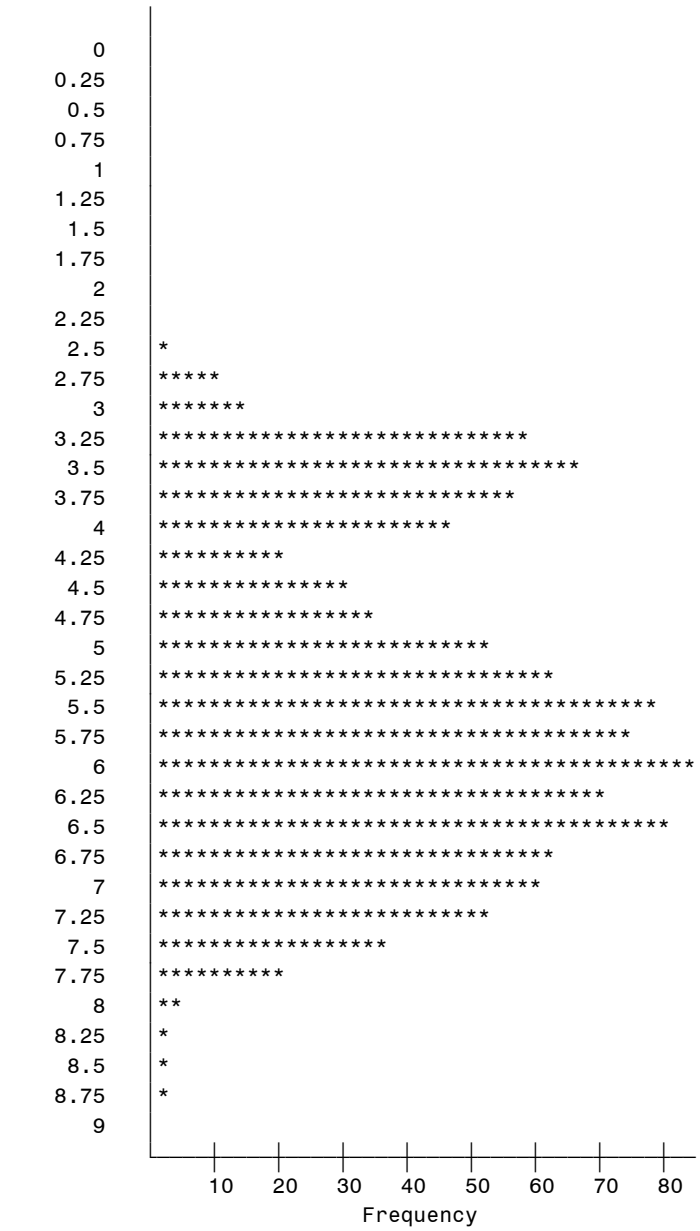
TABLE 3. RELATIVE ABUNDANCE, MEAN CATCH PER NET-DAY, FYKE NETS, FALL 2010, BRC LAKE UNIT.

	SPECIES	FREQUENCY	PERCENT	MEAN	STANDARD DEV.	MIN.	MAX.	NET-DAYS
1	black crappie	178	11.01	5.32	5.74	0	21.30	33.75
2	bluegill	1064	65.84	32.02	30.15	0	139.65	33.75
3	bowfin	18	1.11	0.52	0.83	0	2.89	33.75
4	channel catfish	17	1.05	0.51	1.08	0	5.40	33.75
5	common carp	32	1.98	0.93	1.50	0	5.09	33.75
6	flathead catfish	6	0.37	0.18	0.46	0	2.00	33.75
7	freshwater drum	10	0.62	0.28	0.65	0	2.92	33.75
8	gizzard shad	10	0.62	0.29	0.76	0	3.04	33.75
9	green sunfish x bluegill	1	0.06	0.03	0.17	0	1.01	33.75
10	largemouth bass	8	0.5	0.24	0.51	0	2.19	33.75
11	longnose gar	42	2.6	1.24	3.89	0	21.80	33.75
12	northern pike	30	1.86	0.91	0.93	0	3.97	33.75
13	pumpkinseed	21	1.3	0.63	1.13	0	4.20	33.75
14	pumpkinseed x bluegill	9	0.56	0.27	0.57	0	2.09	33.75
15	quillback	1	0.06	0.03	0.18	0	1.07	33.75
16	river carpsucker	1	0.06	0.03	0.17	0	0.99	33.75
17	rock bass	1	0.06	0.03	0.16	0	0.96	33.75
18	shortnose gar	3	0.19	0.08	0.28	0	0.99	33.75
19	silver redhorse	29	1.79	0.85	1.66	0	7.80	33.75
20	spotted sucker	6	0.37	0.18	0.57	0	2.97	33.75
21	walleye	4	0.25	0.12	0.34	0	1.10	33.75
22	white crappie	10	0.62	0.30	0.68	0	3.04	33.75
23	yellow perch	115	7.12	3.46	4.40	0	21.41	33.75
	ALL SPECIES	1616	100.00	48.44	35.68	2.959	171.25	33.75

TABLE 4. RELATIVE ABUNDANCE, MEAN CATCH PER HOUR, ELECTRO SHOCKING, FALL 2010, BRC LAKE UNIT.

	SPECIES	FREQ.	PERCENT	MEAN PER HR	STANDARD DEV.	MIN.	MAX.	NO. OF RUNS	TOTAL HRS
1	bigmouth buffalo	2	0.06	0.27	1.25	0.00	5.99	45	7.52
2	black crappie	7	0.20	0.93	3.12	0.00	17.96	45	7.52
3	bluegill	1647	46.34	219.16	314.01	0.00	1502.99	45	7.52
4	bowfin	25	0.70	3.33	8.03	0.00	35.93	45	7.52
5	brook silverside	6	0.17	0.80	3.28	0.00	17.96	45	7.52
6	bullhead minnow	6	0.17	0.80	3.96	0.00	23.95	45	7.52
7	central mudminnow	1	0.03	0.13	0.89	0.00	5.99	45	7.52
8	channel catfish	1	0.03	0.13	0.89	0.00	5.99	45	7.52
9	common carp	28	0.79	3.73	7.14	0.00	29.94	45	7.52
10	common shiner	12	0.34	1.60	4.67	0.00	23.95	45	7.52
11	emerald shiner	128	3.60	17.03	37.74	0.00	209.58	45	7.52
12	flathead catfish	1	0.03	0.13	0.89	0.00	5.99	45	7.52
13	freshwater drum	2	0.06	0.27	1.25	0.00	5.99	45	7.52
14	gizzard shad	103	2.90	13.71	55.32	0.00	323.35	45	7.52
15	golden redhorse	23	0.65	3.06	9.08	0.00	47.90	45	7.52
16	golden shiner	4	0.11	0.53	2.15	0.00	11.98	45	7.52
17	green sunfish	1	0.03	0.13	0.89	0.00	5.99	45	7.52
18	green sunfish x bluegill	1	0.03	0.13	0.89	0.00	5.99	45	7.52
19	largemouth bass	1052	29.60	139.99	110.79	17.96	502.99	45	7.52
20	logperch	2	0.06	0.27	1.79	0.00	11.98	45	7.52
21	longnose gar	1	0.03	0.13	0.89	0.00	5.99	45	7.52
22	minnows	9	0.25	1.20	3.74	0.00	17.96	45	7.52
23	northern pike	38	1.07	5.06	6.87	0.00	23.95	45	7.52
24	orangespotted sunfish	1	0.03	0.13	0.89	0.00	5.99	45	7.52
25	pirate perch	3	0.08	0.40	1.98	0.00	11.98	45	7.52
26	pumpkinseed	20	0.56	2.66	5.19	0.00	23.95	45	7.52
27	pumpkinseed x warmouth	1	0.03	0.13	0.89	0.00	5.99	45	7.52
28	quillback	10	0.28	1.33	5.55	0.00	35.93	45	7.52
29	river carpsucker	1	0.03	0.13	0.89	0.00	5.99	45	7.52
30	rock bass	5	0.14	0.67	2.29	0.00	11.98	45	7.52
31	sauger	13	0.37	1.73	5.80	0.00	35.93	45	7.52
32	shiners	40	1.13	5.32	21.06	0.00	137.73	45	7.52
33	shorthead redhorse	19	0.53	2.53	6.57	0.00	35.93	45	7.52
34	shortnose gar	2	0.06	0.27	1.25	0.00	5.99	45	7.52
35	silver redhorse	9	0.25	1.20	4.16	0.00	23.95	45	7.52
36	smallmouth bass	11	0.31	1.46	3.86	0.00	17.96	45	7.52
37	smallmouth buffalo	1	0.03	0.13	0.89	0.00	5.99	45	7.52
38	spottail shiner	13	0.37	1.73	3.75	0.00	17.96	45	7.52
39	spotted sucker	45	1.27	5.99	8.07	0.00	35.93	45	7.52
40	tadpole madtom	4	0.11	0.53	3.57	0.00	23.95	45	7.52
41	walleye	7	0.20	0.93	2.84	0.00	11.98	45	7.52
42	warmouth	1	0.03	0.13	0.89	0.00	5.99	45	7.52
43	yellow perch	248	6.98	33.00	45.65	0.00	209.58	45	7.52
	ALL SPECIES	3554	100.00	472.92	381.72	65.87	1796.41	45	7.52

FIGURE 4. FALL 2010 BLUEGILL LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT FYKE NETTING.



fish total length in inches	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
0.25	0	0	0.00	0.00
0.5	0	0	0.00	0.00
0.75	0	0	0.00	0.00
1	0	0	0.00	0.00
1.25	0	0	0.00	0.00
1.5	0	0	0.00	0.00
1.75	0	0	0.00	0.00
2	0	0	0.00	0.00
2.25	0	0	0.00	0.00
2.5	1	1	0.09	0.09
2.75	9	10	0.85	0.94
3	13	23	1.22	2.16
3.25	58	81	5.45	7.61
3.5	65	146	6.11	13.72
3.75	55	201	5.17	18.89
4	46	247	4.32	23.21
4.25	19	266	1.79	25.00
4.5	29	295	2.73	27.73
4.75	33	328	3.10	30.83
5	52	380	4.89	35.71
5.25	62	442	5.83	41.54
5.5	78	520	7.33	48.87
5.75	73	593	6.86	55.73
6	84	677	7.89	63.63
6.25	70	747	6.58	70.21
6.5	80	827	7.52	77.73
6.75	62	889	5.83	83.55
7	59	948	5.55	89.10
7.25	51	999	4.79	93.89
7.5	36	1035	3.38	97.27
7.75	20	1055	1.88	99.15
8	4	1059	0.38	99.53
8.25	2	1061	0.19	99.72
8.5	1	1062	0.09	99.81
8.75	2	1064	0.19	100.00
9	0	1064	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
1064	5.4860724	1.3445929	2.5590000	8.7010000

FIGURE 5. FALL 2010 BLACK CRAPPIE LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT FYKE NETTING.

fish total length in inches	Freq	Cum. Freq	Percent	Cum. Percent
4	0	0	0.00	0.00
4.25	0	0	0.00	0.00
4.5	0	0	0.00	0.00
4.75	1	1	0.56	0.56
5	7	8	3.93	4.49
5.25	3	11	1.69	6.18
5.5	2	13	1.12	7.30
5.75	0	13	0.00	7.30
6	0	13	0.00	7.30
6.25	1	14	0.56	7.87
6.5	4	18	2.25	10.11
6.75	5	23	2.81	12.92
7	8	31	4.49	17.42
7.25	10	41	5.62	23.03
7.5	12	53	6.74	29.78
7.75	9	62	5.06	34.83
8	4	66	2.25	37.08
8.25	4	70	2.25	39.33
8.5	4	74	2.25	41.57
8.75	13	87	7.30	48.88
9	15	102	8.43	57.30
9.25	15	117	8.43	65.73
9.5	10	127	5.62	71.35
9.75	15	142	8.43	79.78
10	8	150	4.49	84.27
10.25	6	156	3.37	87.64
10.5	7	163	3.93	91.57
10.75	2	165	1.12	92.70
11	2	167	1.12	93.82
11.25	4	171	2.25	96.07
11.5	3	174	1.69	97.75
11.75	4	178	2.25	100.00
12	0	178	0.00	100.00
12.25	0	178	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
178	8.6149270	1.6263230	4.8430000	11.8500000

FIGURE 6. FALL 2010 YELLOW PERCH LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT FYKE NETTING.

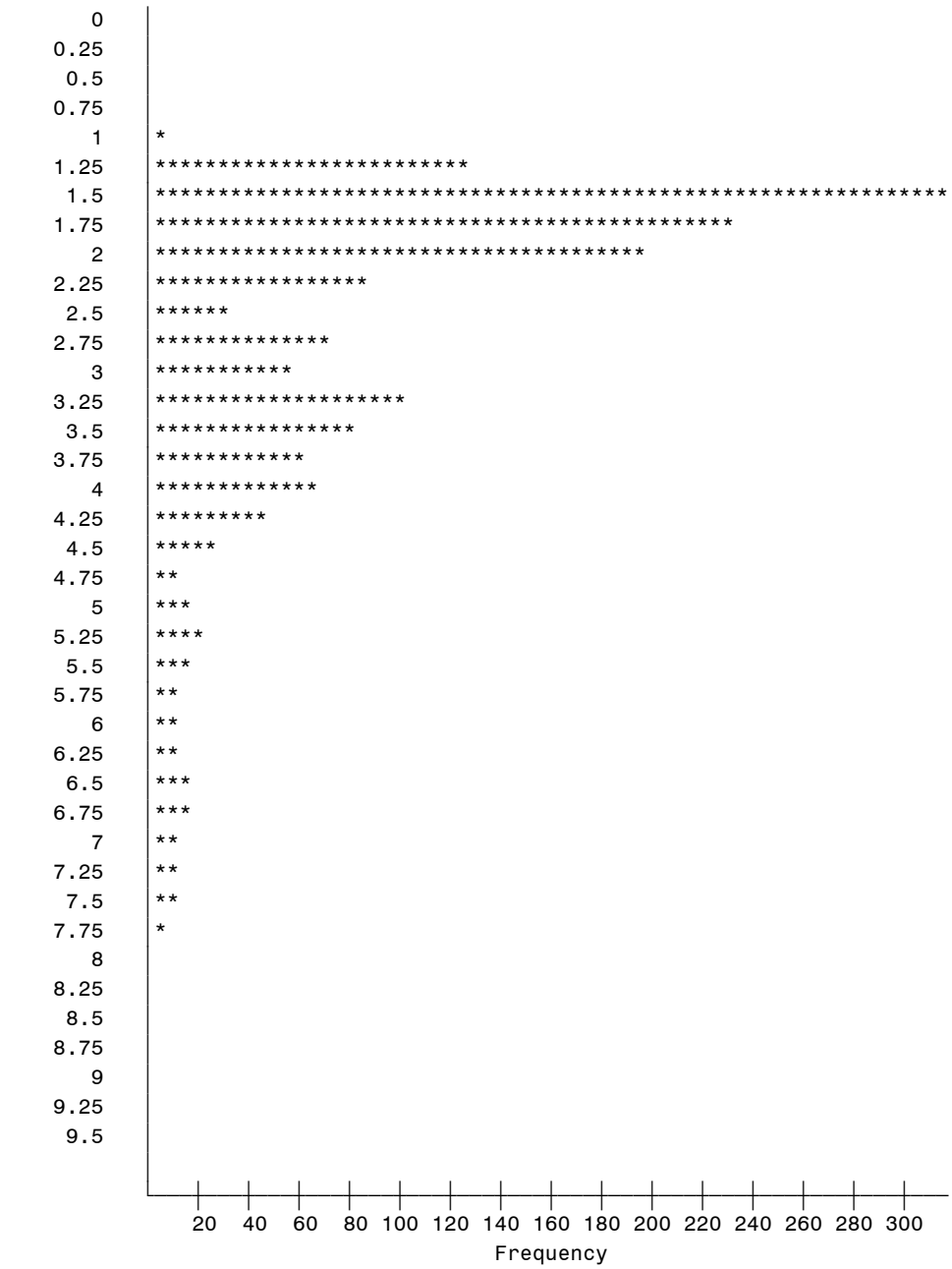
```
fish total length in inches                                                          Cum.              Cum.
                                                                              Freq   Freq   Percent   Percent
      4  |                                                                      0      0      0.00      0.00
   4.25  |                                                                      0      0      0.00      0.00
    4.5  |                                                                      0      0      0.00      0.00
   4.75  |*****                                                                 1      1      0.87      0.87
      5  |***************                                                       3      4      2.61      3.48
   5.25  |******************************                                        6     10      5.22      8.70
    5.5  |**************************************************                   10     20      8.70     17.39
   5.75  |*******************************************************************  13     33     11.30     28.70
      6  |************************************                                  7     40      6.09     34.78
   6.25  |**************************************************                   10     50      8.70     43.48
    6.5  |******************************                                        6     56      5.22     48.70
   6.75  |************************************                                  7     63      6.09     54.78
      7  |***************                                                       3     66      2.61     57.39
   7.25  |******************************                                        6     72      5.22     62.61
    7.5  |**********                                                            2     74      1.74     64.35
   7.75  |******************************                                        6     80      5.22     69.57
      8  |********************                                                  4     84      3.48     73.04
   8.25  |********************                                                  4     88      3.48     76.52
    8.5  |**************************************************                   10     98      8.70     85.22
   8.75  |*************************                                             5    103      4.35     89.57
      9  |*****                                                                 1    104      0.87     90.43
   9.25  |***************                                                       3    107      2.61     93.04
    9.5  |                                                                      0    107      0.00     93.04
   9.75  |*****                                                                 1    108      0.87     93.91
     10  |*****                                                                 1    109      0.87     94.78
  10.25  |***************                                                       3    112      2.61     97.39
   10.5  |                                                                      0    112      0.00     97.39
  10.75  |**********                                                            2    114      1.74     99.13
     11  |*****                                                                 1    115      0.87    100.00
  11.25  |                                                                      0    115      0.00    100.00
   11.5  |                                                                      0    115      0.00    100.00
  11.75  |                                                                      0    115      0.00    100.00
         +----+----+----+----+----+----+----+----+----+----+----+----+----+
              1    2    3    4    5    6    7    8    9   10   11   12   13
                                   Frequency
```

N	Mean	Std Dev	Minimum	Maximum
115	7.0523826	1.5011128	4.7640000	10.9060000

TABLE 5. MEAN LENGTH IN INCHES FOR SELECTED SPECIES, FALL 2010, BRC LAKE UNIT, FYKE NETTING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
black crappie	8.61	1.63	4.84	11.85	178
bluegill	5.49	1.34	2.56	8.7	1064
common carp	23.68	2.9	17.84	32.48	32
longnose gar	26.93	2.79	23.23	35.43	42
northern pike	22.05	9.05	3.35	34.57	30
pumpkinseed	5.14	0.7	3.54	6.22	21
silver redhorse	21.21	1.36	18.78	24.02	29
yellow perch	7.05	1.5	4.76	10.91	115

FIGURE 7. FALL 2010 BLUEGILL LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.



fish total length in inches	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
0.25	0	0	0.00	0.00
0.5	0	0	0.00	0.00
0.75	1	1	0.06	0.06
1	3	4	0.18	0.24
1.25	126	130	7.65	7.89
1.5	316	446	19.19	27.08
1.75	231	677	14.03	41.11
2	193	870	11.72	52.82
2.25	84	954	5.10	57.92
2.5	30	984	1.82	59.74
2.75	68	1052	4.13	63.87
3	57	1109	3.46	67.33
3.25	98	1207	5.95	73.28
3.5	81	1288	4.92	78.20
3.75	60	1348	3.64	81.85
4	66	1414	4.01	85.85
4.25	46	1460	2.79	88.65
4.5	27	1487	1.64	90.29
4.75	11	1498	0.67	90.95
5	15	1513	0.91	91.86
5.25	19	1532	1.15	93.02
5.5	14	1546	0.85	93.87
5.75	12	1558	0.73	94.60
6	10	1568	0.61	95.20
6.25	9	1577	0.55	95.75
6.5	17	1594	1.03	96.78
6.75	13	1607	0.79	97.57
7	12	1619	0.73	98.30
7.25	8	1627	0.49	98.79
7.5	11	1638	0.67	99.45
7.75	7	1645	0.43	99.88
8	1	1646	0.06	99.94
8.25	0	1646	0.00	99.94
8.5	0	1646	0.00	99.94
8.75	0	1646	0.00	99.94
9	0	1646	0.00	99.94
9.25	0	1646	0.00	99.94
9.5	1	1647	0.06	100.00

N	Mean	Std Dev	Minimum	Maximum
1647	2.6972465	1.4697242	0.6690000	9.4490000

FIGURE 8. FALL 2010 BOWFIN LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.

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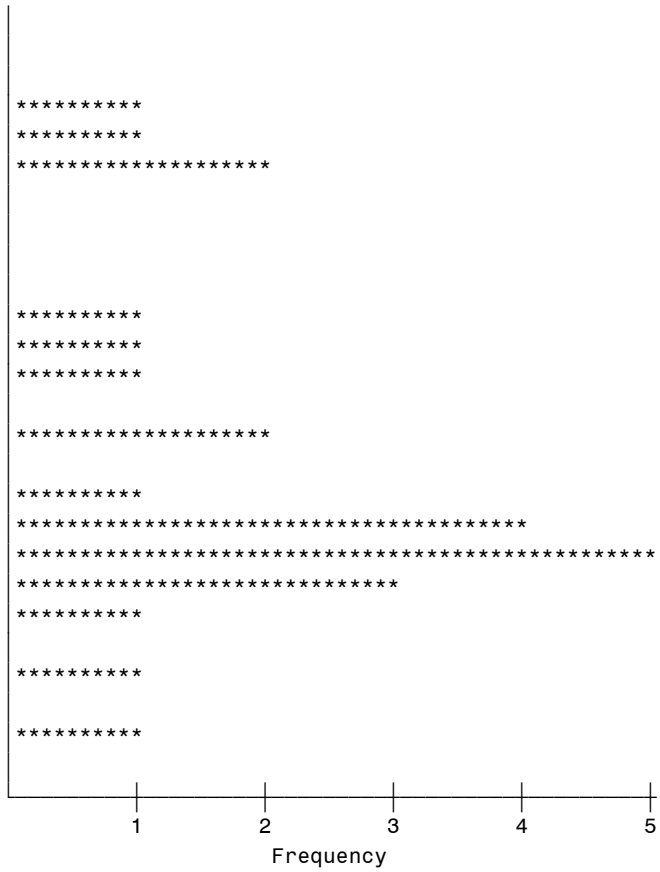
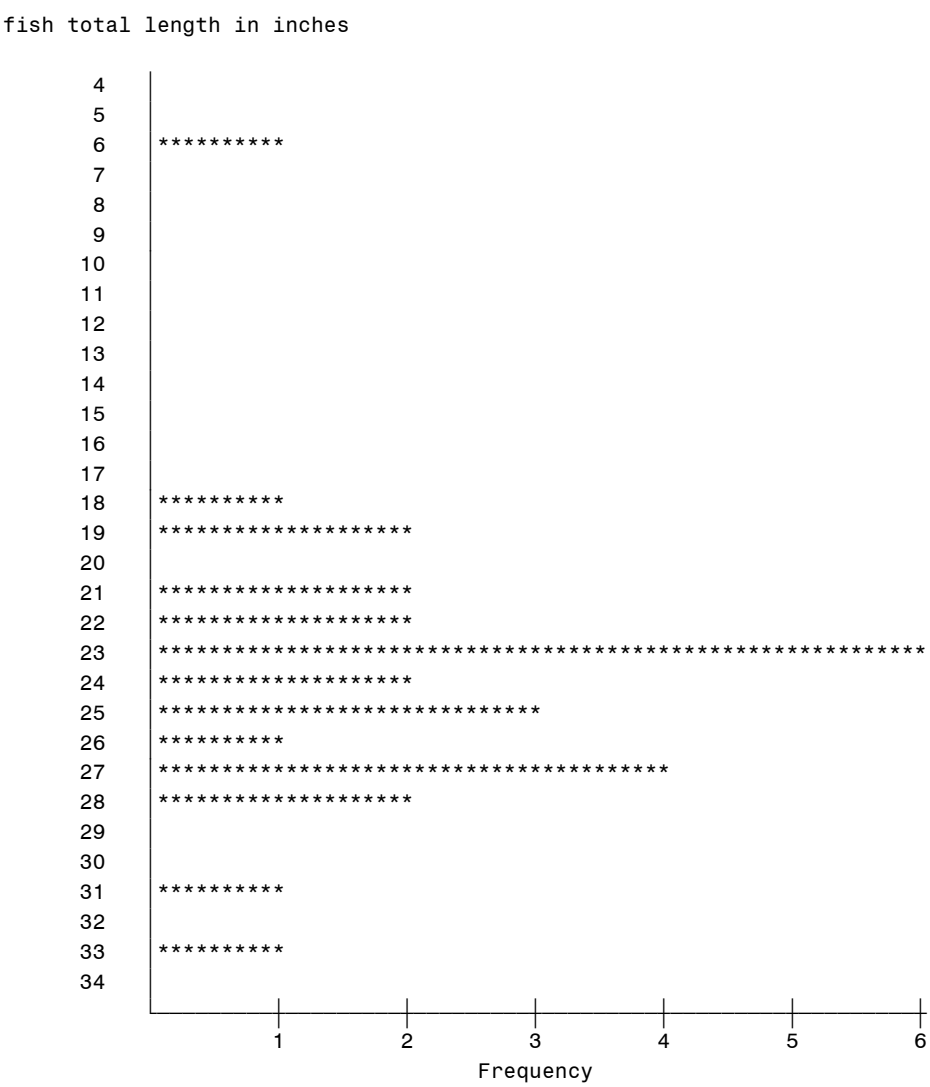
fish total length in inches
```



	Freq	Cum. Freq	Percent	Cum. Percent
5	0	0	0.00	0.00
6	0	0	0.00	0.00
7	0	0	0.00	0.00
8	1	1	4.00	4.00
9	1	2	4.00	8.00
10	2	4	8.00	16.00
11	0	4	0.00	16.00
12	0	4	0.00	16.00
13	0	4	0.00	16.00
14	0	4	0.00	16.00
15	1	5	4.00	20.00
16	1	6	4.00	24.00
17	1	7	4.00	28.00
18	0	7	0.00	28.00
19	2	9	8.00	36.00
20	0	9	0.00	36.00
21	1	10	4.00	40.00
22	4	14	16.00	56.00
23	5	19	20.00	76.00
24	3	22	12.00	88.00
25	1	23	4.00	92.00
26	0	23	0.00	92.00
27	1	24	4.00	96.00
28	0	24	0.00	96.00
29	1	25	4.00	100.00
30	0	25	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
25	19.9794400	5.6713062	7.7560000	28.5430000

FIGURE 9. FALL 2010 COMMON CARP LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.



fish total length in inches	Freq	Cum. Freq	Percent	Cum. Percent
4	0	0	0.00	0.00
5	0	0	0.00	0.00
6	1	1	3.57	3.57
7	0	1	0.00	3.57
8	0	1	0.00	3.57
9	0	1	0.00	3.57
10	0	1	0.00	3.57
11	0	1	0.00	3.57
12	0	1	0.00	3.57
13	0	1	0.00	3.57
14	0	1	0.00	3.57
15	0	1	0.00	3.57
16	0	1	0.00	3.57
17	0	1	0.00	3.57
18	1	2	3.57	7.14
19	2	4	7.14	14.29
20	0	4	0.00	14.29
21	2	6	7.14	21.43
22	2	8	7.14	28.57
23	6	14	21.43	50.00
24	2	16	7.14	57.14
25	3	19	10.71	67.86
26	1	20	3.57	71.43
27	4	24	14.29	85.71
28	2	26	7.14	92.86
29	0	26	0.00	92.86
30	0	26	0.00	92.86
31	1	27	3.57	96.43
32	0	27	0.00	96.43
33	1	28	3.57	100.00
34	0	28	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
28	23.6627857	4.9438576	5.6300000	32.9130000

FIGURE 10. FALL 2010 EMERALD SHINER LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.

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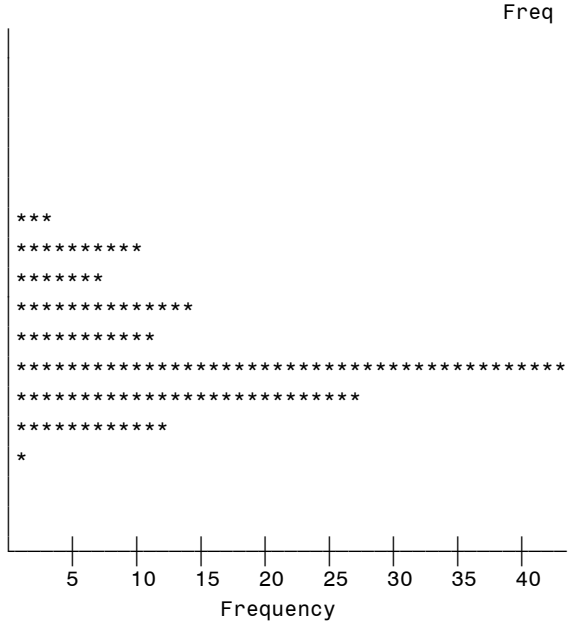
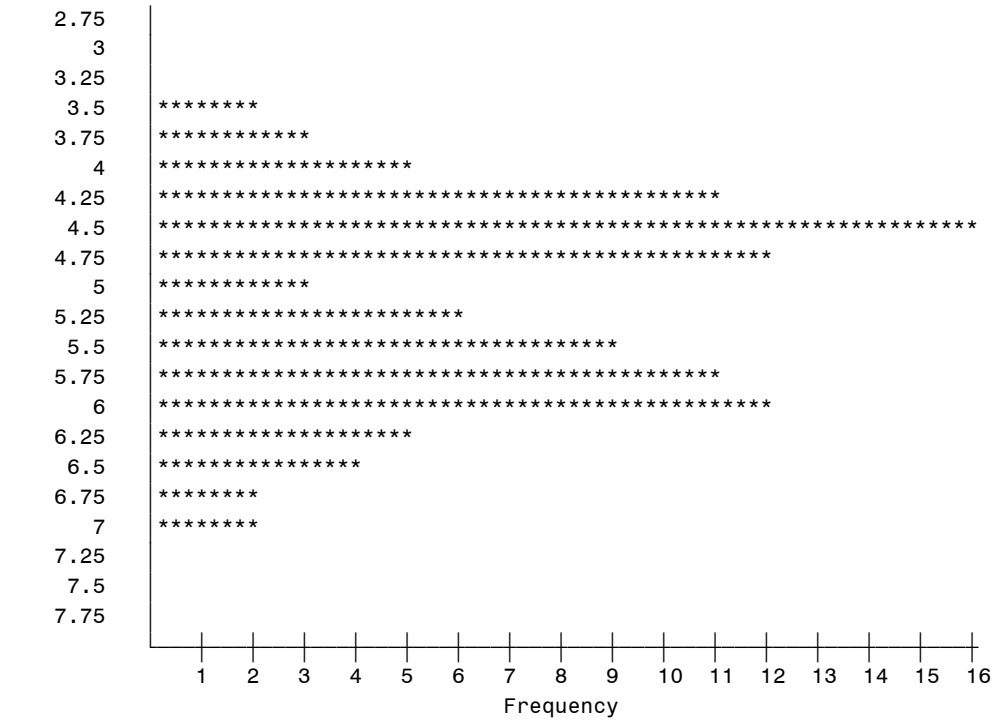
fish total length in inches
```



	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
0.25	0	0	0.00	0.00
0.5	0	0	0.00	0.00
0.75	0	0	0.00	0.00
1	0	0	0.00	0.00
1.25	0	0	0.00	0.00
1.5	3	3	2.34	2.34
1.75	10	13	7.81	10.16
2	7	20	5.47	15.63
2.25	14	34	10.94	26.56
2.5	11	45	8.59	35.16
2.75	43	88	33.59	68.75
3	27	115	21.09	89.84
3.25	12	127	9.38	99.22
3.5	1	128	0.78	100.00
3.75	0	128	0.00	100.00
4	0	128	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
128	2.6467031	0.4552624	1.5750000	3.5040000

FIGURE 11. FALL 2010 GIZZARD SHAD LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.



	Freq	Cum. Freq	Percent	Cum. Percent
2.75	0	0	0.00	0.00
3	0	0	0.00	0.00
3.25	0	0	0.00	0.00
3.5	2	2	1.94	1.94
3.75	3	5	2.91	4.85
4	5	10	4.85	9.71
4.25	11	21	10.68	20.39
4.5	16	37	15.53	35.92
4.75	12	49	11.65	47.57
5	3	52	2.91	50.49
5.25	6	58	5.83	56.31
5.5	9	67	8.74	65.05
5.75	11	78	10.68	75.73
6	12	90	11.65	87.38
6.25	5	95	4.85	92.23
6.5	4	99	3.88	96.12
6.75	2	101	1.94	98.06
7	2	103	1.94	100.00
7.25	0	103	0.00	100.00
7.5	0	103	0.00	100.00
7.75	0	103	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
103	5.1490971	0.8566294	3.4650000	6.8900000

FIGURE 12. FALL 2010 LARGEMOUTH BASS LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.

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fish total length in inches
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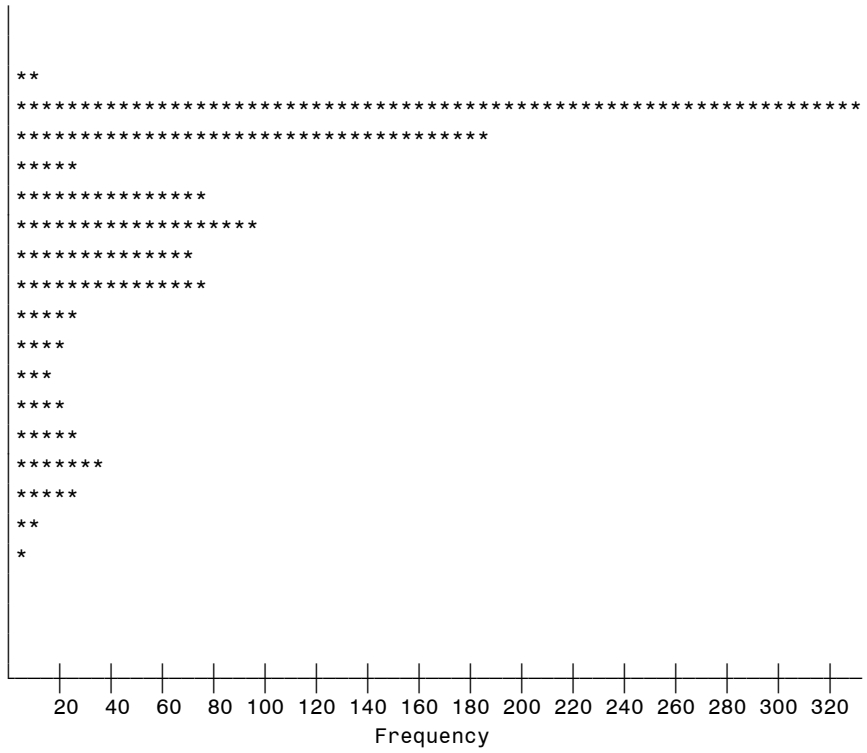
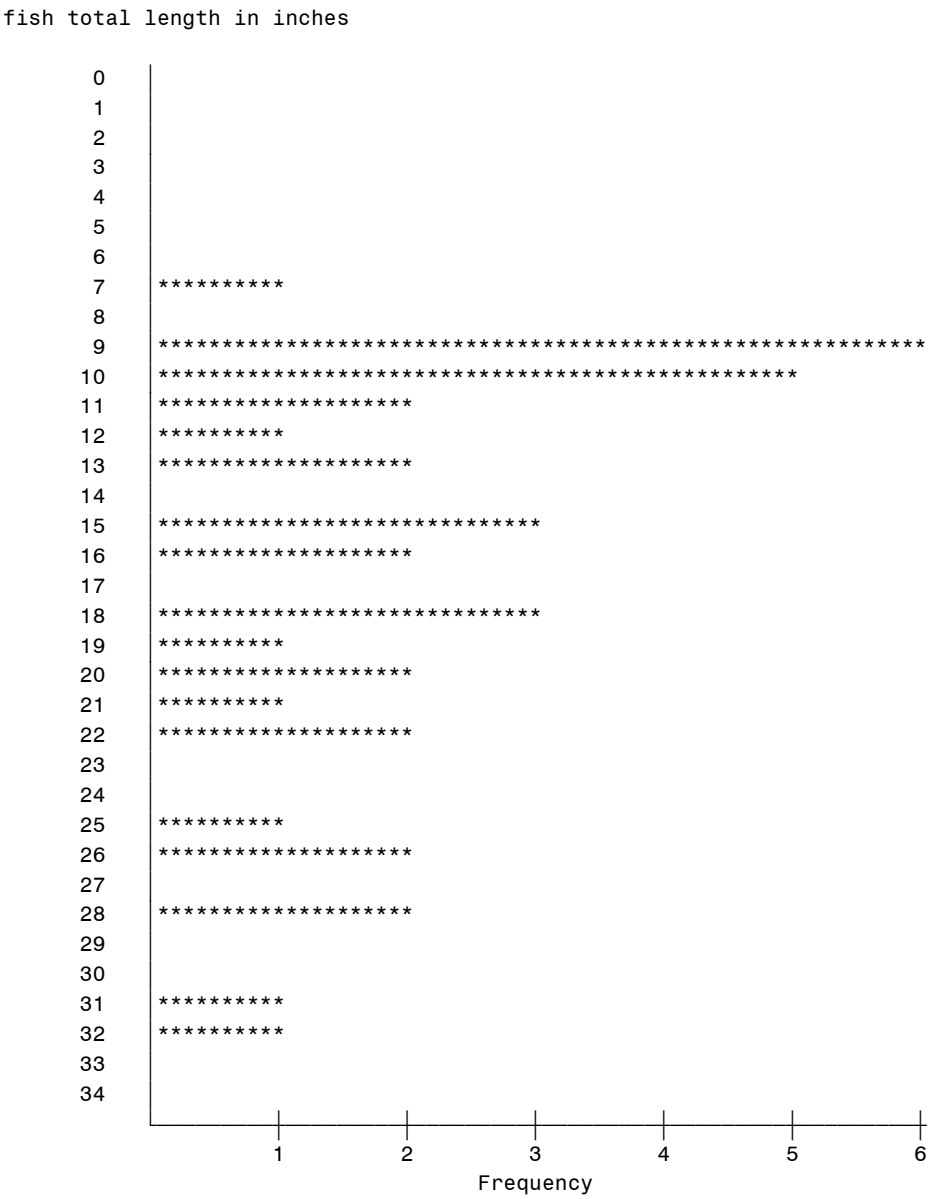


	Freq	Cum. Freq	Percent	Cum. Percent
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	8	8	0.76	0.76
3	332	340	31.56	32.32
4	187	527	17.78	50.10
5	23	550	2.19	52.28
6	73	623	6.94	59.22
7	93	716	8.84	68.06
8	68	784	6.46	74.52
9	75	859	7.13	81.65
10	26	885	2.47	84.13
11	22	907	2.09	86.22
12	14	921	1.33	87.55
13	22	943	2.09	89.64
14	27	970	2.57	92.21
15	36	1006	3.42	95.63
16	27	1033	2.57	98.19
17	10	1043	0.95	99.14
18	6	1049	0.57	99.71
19	2	1051	0.19	99.90
20	1	1052	0.10	100.00
21	0	1052	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
1052	6.4973622	4.0090105	1.6140000	19.5280000

FIGURE 13. FALL 2010 NORTHERN PIKE LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.



fish total length in 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	0	0	0.00	0.00
4	0	0	0.00	0.00
5	0	0	0.00	0.00
6	0	0	0.00	0.00
7	1	1	2.63	2.63
8	0	1	0.00	2.63
9	6	7	15.79	18.42
10	5	12	13.16	31.58
11	2	14	5.26	36.84
12	1	15	2.63	39.47
13	2	17	5.26	44.74
14	0	17	0.00	44.74
15	3	20	7.89	52.63
16	2	22	5.26	57.89
17	0	22	0.00	57.89
18	3	25	7.89	65.79
19	1	26	2.63	68.42
20	2	28	5.26	73.68
21	1	29	2.63	76.32
22	2	31	5.26	81.58
23	0	31	0.00	81.58
24	0	31	0.00	81.58
25	1	32	2.63	84.21
26	2	34	5.26	89.47
27	0	34	0.00	89.47
28	2	36	5.26	94.74
29	0	36	0.00	94.74
30	0	36	0.00	94.74
31	1	37	2.63	97.37
32	1	38	2.63	100.00
33	0	38	0.00	100.00
34	0	38	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
38	16.3633947	7.0424960	7.2050000	32.2830000

FIGURE 14. FALL 2010 SPOTTED SUCKER LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.

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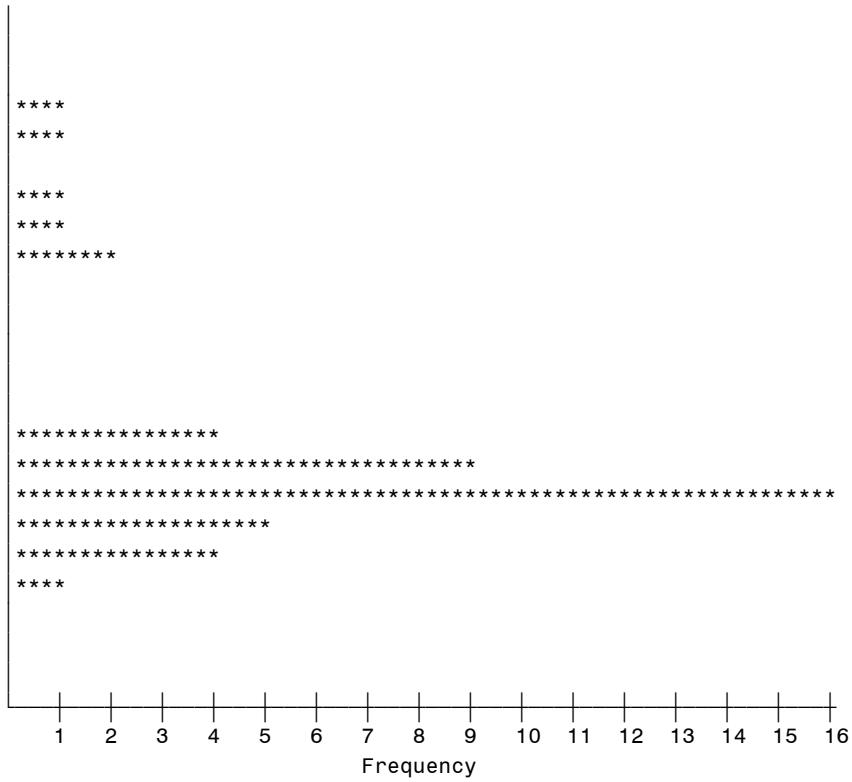
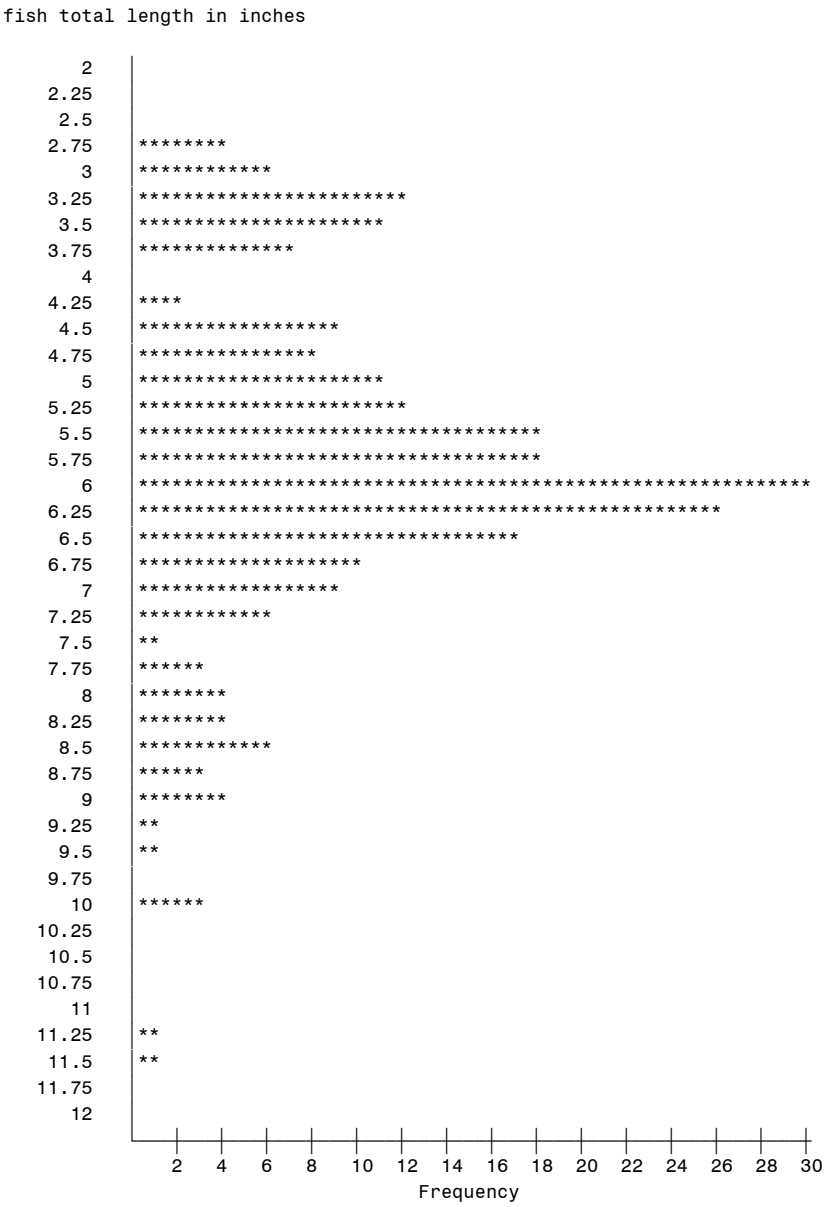
fish total length in inches
```



	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	2.22	2.22
4	1	2	2.22	4.44
5	0	2	0.00	4.44
6	1	3	2.22	6.67
7	1	4	2.22	8.89
8	2	6	4.44	13.33
9	0	6	0.00	13.33
10	0	6	0.00	13.33
11	0	6	0.00	13.33
12	0	6	0.00	13.33
13	0	6	0.00	13.33
14	4	10	8.89	22.22
15	9	19	20.00	42.22
16	16	35	35.56	77.78
17	5	40	11.11	88.89
18	4	44	8.89	97.78
19	1	45	2.22	100.00
20	0	45	0.00	100.00
21	0	45	0.00	100.00
22	0	45	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
45	14.6028000	3.7202366	3.0710000	19.1340000

FIGURE 15. FALL 2010 YELLOW PERCH LENGTH DISTRIBUTION (INCHES), BRC LAKE UNIT ELECTRO SHOCKING.



fish total length in inches	Freq	Cum. Freq	Percent	Cum. Percent
2	0	0	0.00	0.00
2.25	0	0	0.00	0.00
2.5	0	0	0.00	0.00
2.75	4	4	1.61	1.61
3	6	10	2.42	4.03
3.25	12	22	4.84	8.87
3.5	11	33	4.44	13.31
3.75	7	40	2.82	16.13
4	0	40	0.00	16.13
4.25	2	42	0.81	16.94
4.5	9	51	3.63	20.56
4.75	8	59	3.23	23.79
5	11	70	4.44	28.23
5.25	12	82	4.84	33.06
5.5	18	100	7.26	40.32
5.75	18	118	7.26	47.58
6	30	148	12.10	59.68
6.25	26	174	10.48	70.16
6.5	17	191	6.85	77.02
6.75	10	201	4.03	81.05
7	9	210	3.63	84.68
7.25	6	216	2.42	87.10
7.5	1	217	0.40	87.50
7.75	3	220	1.21	88.71
8	4	224	1.61	90.32
8.25	4	228	1.61	91.94
8.5	6	234	2.42	94.35
8.75	3	237	1.21	95.56
9	4	241	1.61	97.18
9.25	1	242	0.40	97.58
9.5	1	243	0.40	97.98
9.75	0	243	0.00	97.98
10	3	246	1.21	99.19
10.25	0	246	0.00	99.19
10.5	0	246	0.00	99.19
10.75	0	246	0.00	99.19
11	0	246	0.00	99.19
11.25	1	247	0.40	99.60
11.5	1	248	0.40	100.00
11.75	0	248	0.00	100.00
12	0	248	0.00	100.00

N	Mean	Std Dev	Minimum	Maximum
248	5.8425000	1.6167540	2.7560000	11.6140000

TABLE 6. LIST OF STOCK SIZE, QUALITY SIZE (PSS_Q) AND PREFERRED SIZE (PSS_P) IN INCHES FOR SELECTED FISH SPECIES.

FISH SPECIES	PSS SOURCE	STOCK	QUALITY	PREFERRED
black crappie	Gabelhouse (1984)	5.0	8.0	10.0
bluegill	Gabelhouse (1984)	3.0	6.0	8.0
largemouth bass	Gabelhouse (1984)	8.0	12.0	15.0
northern pike	Gabelhouse (1984)	14.0	21.0	28.0
pumpkinseed	Gabelhouse (1984)	3.0	6.0	8.0
sauger	Gabelhouse (1984)	8.0	12.0	15.0
smallmouth bass	Gabelhouse (1984)	7.0	11.0	14.0
walleye	Gabelhouse (1984)	10.0	15.0	20.0
warmouth	Gabelhouse (1984)	3.0	6.0	8.0
white crappie	Gabelhouse (1984)	5.0	8.0	10.0
yellow perch	Gabelhouse (1984)	5.0	8.0	10.0

TABLE 7. COMPARISON OF MEAN CATCH PER DAY AND PSS FOR SELECTED SPECIES OF SELECTED SIZES IN BRC UNIT, FYKE NETTING, FALL 2010.

SPECIES	MEAN CPD	STD. DEV. CPD	N	# OF STOCK	PSS_Q	PSS_P
BLACK CRAPPIE				175	65.14	19.43
QUALITY (≥ 8 INCHES)	3.40	4.86	35			
PREFERRED (≥ 10 INCHES)	1.02	1.47	35			
BLUEGILL				838	44.75	0.04
QUALITY (≥ 6 INCHES)	12.59	15.03	35			
PREFERRED (≥ 8 INCHES)	0.15	0.74	35			
YELLOW PERCH				114	29.82	5.26
QUALITY(≥ 8 INCHES)	1.03	1.13	35			
PREFERRED (≥ 10 INCHES)	0.18	0.48	35			

TABLE 8. MEAN LENGTH IN INCHES FOR SELECTED SPECIES, FALL 2010, BRC LAKE UNIT, ELECTRO SHOCKING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
bluegill	2.7	1.47	0.67	9.45	1647
bowfin	19.98	5.67	7.76	28.54	25
common carp	23.66	4.94	5.63	32.91	28
emerald shiner	2.65	0.46	1.58	3.50	128
gizzard shad	5.15	0.86	3.47	6.89	103
largemouth bass	6.5	4.01	1.61	19.53	1052
northern pike	16.36	7.04	7.21	32.28	38
spotted sucker	14.6	3.72	3.07	19.13	45
yellow perch	5.84	1.62	2.76	11.61	248

TABLE 9. COMPARISON OF MEAN CATCH PER HOUR AND PSS FOR SELECTED SPECIES OF SELECTED SIZES IN BRC LAKE UNIT. ELECTRO SHOCKING, FALL 2010.

SPECIES	MEAN CPH	STD. DEV. CPH	N	# OF STOCK	PSS_Q	PSS_P
BLUEGILL				574	14.63	0.17
QUALITY (≥ 6 INCHES)	11.18	21.88	45			
PREFERRED (≥ 8 INCHES)	0.13	0.89	45			
LARGEMOUTH BASS				301	45.85	17.94
QUALITY (≥ 12 INCHES)	18.36	26.05	45			
PREFERRED (≥ 15 INCHES)	7.19	11.53	45			
YELLOW PERCH				185	14.59	2.16
QUALITY(≥ 8 INCHES)	3.59	7.38	45			
PREFERRED (≥ 10 INCHES)	0.53	1.72	45			

TABLE 10. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL SPECIES COMBINED AMONG TWENTY-ONE LAKE UNITS, FALL 2007-2010.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)					
77.38	101.02	32	2007 HARPERS	A					
51.24	30.76	32	2007 GOOSE ISLAND/STODDARD	A	B				
50.82	40.96	30	2008 SNY MCGIL	A	B	C	D		
48.44	35.68	34	2010 BLACK RIVER CHANNEL	A	B	C			
48.39	29.01	30	2007 COLD SPRG/BLKHWK/RONK	A	B				
43.98	29.99	24	2007 AMBRO	A	B	C	D		
36.08	34.22	33	2008 TREMPEALEAU LAKES	A	B	C	D	E	F
34.06	21.40	32	2007 UPPER POOL 5	A	B	C	D	E	
33.90	38.44	32	2007 UPPER POOL 5A	A	B	C	D	E	F
33.00	18.07	32	2010 LOWER POOL 5A	A	B	C	D	E	
27.29	22.66	35	2008 LAKE ONALASKA	A	B	C	D	E	F
26.43	26.07	32	2008 GOOSE CARCASS LAKE	G	B	C	D	E	F
25.84	30.34	35	2009 LAWRENCE/TARGET	G		C	D	E	F
25.47	27.01	16	2008 BELVIDERE/SPRING LAKE	G			D	E	F
23.92	33.63	24	2010 BUSSY LAKE/GLEN HAVEN	G				E	F
23.62	20.25	39	2010 CASSVILLE SLOUGH AREA	G		C	D	E	F
21.68	29.97	32	2008 ROBINSON/PETERSON/BEE	G					F
17.39	23.28	23	2009 BERTOM/MCCARTNEY AREA	G				E	F
15.75	15.40	34	2010 BLACK RIVER MOUTH	G					F
15.36	14.74	34	2009 LANSING	G					F
10.46	8.32	32	2009 UPPER POOL 6	G					
32.94	**37.98**	**647**	**ALL**						

TABLE 11. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL SPECIES COMBINED AMONG FIVE LAKE UNITS, FALL 2010.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)		
48.44	35.68	34	2010 BLACK RIVER CHANNEL	A		
33.00	18.07	32	2010 LOWER POOL 5A	A	B	
23.92	33.63	24	2010 BUSSY LAKE/GLEN HAVEN			C
23.62	20.25	39	2010 CASSVILLE SLOUGH AREA		B	C
15.75	15.40	34	2010 BLACK RIVER MOUTH			C
29.04	**27.52**	**163**	**ALL**			

TABLE 12. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL TARGET SPECIES COMBINED AMONG TWENTY-ONE LAKE UNITS, FALL 2007-2010.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)							
42.89	35.31	34	2010 BLACK RIVER CHANNEL	A	B						
41.41	28.39	32	2007 GOOSE ISLAND/STODDARD	A							
37.59	30.17	32	2007 HARPERS	A	B						
31.85	30.67	33	2008 TREMPEALEAU LAKES	A	B	C	D	E	F		
30.58	37.27	30	2008 SNY MCGIL	A	B	C	D	E	F		
30.26	20.63	30	2007 COLD SPRG/BLKHWK/RONK	A	B	C	D				
29.19	17.05	32	2010 LOWER POOL 5A	A	B	C					
26.85	38.73	32	2007 UPPER POOL 5A	A	B	C	D	E	F	G	
25.95	16.13	32	2007 UPPER POOL 5	A	B	C	D	E			
25.03	22.18	35	2008 LAKE ONALASKA	A	B	C	D	E	F		
24.93	23.11	24	2007 AMBRO	A	B	C	D	E	F		
23.15	27.08	16	2008 BELVIDERE/SPRING LAKE	A	B	C	D	E	F	G	H
22.24	28.21	35	2009 LAWRENCE/TARGET	A	B	C	D	E	F	G	H
20.78	24.12	32	2008 GOOSE CARCASS LAKE		B	C	D	E	F	G	H
18.06	26.59	24	2010 BUSSY LAKE/GLEN HAVEN	I		C	D	E	F	G	H
17.13	18.82	39	2010 CASSVILLE SLOUGH AREA	I			D	E	F	G	H
12.52	13.56	34	2009 LANSING	I				E	F	G	H
12.23	14.94	34	2010 BLACK RIVER MOUTH	I					F	G	H
11.98	25.89	32	2008 ROBINSON/PETERSON/BEE	I							H
7.53	6.79	32	2009 UPPER POOL 6	I						G	H
5.72	5.64	23	2009 BERTOM/MCCARTNEY AREA	I							
23.92	**26.65**	**647**	**ALL**								

TABLE 13. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL TARGET SPECIES COMBINED AMONG FIVE LAKE UNITS, FALL 2010.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
42.89	35.31	34	2010 BLACK RIVER CHANNEL	A	
29.19	17.05	32	2010 LOWER POOL 5A	A	
18.06	26.59	24	2010 BUSSY LAKE/GLEN HAVEN		B
17.13	18.82	39	2010 CASSVILLE SLOUGH AREA		B
12.23	14.94	34	2010 BLACK RIVER MOUTH		B
24.0	**25.78**	**163**	**ALL**		

TABLE 14. COMPARISON OF MEAN TOTAL LENGTH FOR SELECTED INDIVIDUAL SPECIES, AMONG FIVE LAKE UNITS, FYKE NETS, FALL 2010.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
BLACK CRAPPIE	8.61	1.63	178	2010 BLACK RIVER CHANNEL	A	
	8.10	2.43	68	2010 BUSSY LAKE/GLEN HAVEN	A	B
	7.50	2.1	140	2010 CASSVILLE SLOUGH AREA	C	B
	7.47	1.89	159	2010 LOWER POOL 5A	C	
	7.10	1.9	108	2010 BLACK RIVER MOUTH	C	
	7.79	**2.01**	**653**	**ALL**		
BLUEGILL	5.77	1.1	337	2010 BUSSY LAKE/GLEN HAVEN	A	
	5.49	1.34	1064	2010 BLACK RIVER CHANNEL	B	
	5	1.2	422	2010 CASSVILLE SLOUGH AREA	C	
	4.85	1.64	623	2010 LOWER POOL 5A	C	D
	4.7	1.28	242	2010 BLACK RIVER MOUTH		D
	5.23	**1.41**	**2688**	**ALL**		
YELLOW PERCH	8.43	1.82	15	2010 LOWER POOL 5A	A	
	7.86	1.02	30	2010 CASSVILLE SLOUGH AREA	A	
	7.36	0.37	4	2010 BUSSY LAKE/GLEN HAVEN	A	
	7.33	1.83	41	2010 BLACK RIVER MOUTH	A	
	7.05	1.5	115	2010 BLACK RIVER CHANNEL	A	
	7.33	**1.57**	**205**	**ALL**		

TABLE 15. COMPARISON OF MEAN CATCH PER HOUR FROM ELECTRO SHOCKING FOR ALL TARGET SPECIES COMBINED AMONG TWENTY-ONE LAKE UNITS, FALL 2007-2010.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)			
402.93	359.86	45	2010 BLACK RIVER CHANNEL	A			
296.67	303.22	25	2007 COLD SPRG/BLKHWK/RONK	A	B	C	D
251.81	189.69	38	2009 LAWRENCE/TARGET	A	B	C	
219.87	131.32	32	2008 TREMPEALEAU LAKES	A	B		
208.83	152.54	52	2007 GOOSE ISLAND/STODDARD	A	B	C	
197.61	127.12	25	2007 UPPER POOL 5A	A	B	C	D
187.17	145.07	31	2007 AMBRO	A	B	C	D
171.74	133.38	47	2008 LAKE ONALASKA	A	B	C	D
168.66	142.26	30	2008 GOOSE CARCASS LAKE	A	B	C	D
152.97	189.77	27	2009 BERTOM/MCCARTNEY AREA				D
151.15	205.44	33	2008 ROBINSON/PETERSON/BEE		B	C	D
149.88	126.11	33	2009 LANSING		B	C	D
147.22	161.21	29	2010 BUSSY LAKE/GLEN HAVEN		B	C	D
144.51	101.82	30	2009 UPPER POOL 6		B	C	D
143.27	80.23	27	2007 UPPER POOL 5		B	C	D
140.92	86.80	30	2010 LOWER POOL 5A		B	C	D
135.13	120.06	30	2007 HARPERS		B	C	D
116.24	91.03	30	2008 SNY MCGIL		B	C	D
110.35	73.99	33	2010 BLACK RIVER MOUTH		B	C	D
109.18	108.36	30	2008 BELVIDERE/SPRING LAKE		B	C	D
103.35	80.81	30	2010 CASSVILLE SLOUGH AREA			C	D
182.26	**182.04**	**687**	**ALL**				

TABLE 16. COMPARISON OF MEAN CATCH PER HOUR FOR ALL TARGET SPECIES COMBINED AMONG FIVE LAKE UNITS, FALL 2010.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)
402.93	359.86	45	2010 BLACK RIVER CHANNEL	A
147.22	161.21	29	2010 BUSSY LAKE/GLEN HAVEN	B
140.92	86.80	30	2010 LOWER POOL 5A	B
110.35	73.99	33	2010 BLACK RIVER MOUTH	B
103.35	80.81	30	2010 CASSVILLE SLOUGH AREA	B
199.83	**240.39**	**167**	**ALL**	

TABLE 17. COMPARISON OF MEAN TOTAL LENGTH FOR SELECTED INDIVIDUAL SPECIES, AMONG FIVE LAKE UNITS, ELECTRO SHOCKING, FALL 2010.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
BLUEGILL	5.09	1.26	308	2010 BUSSY LAKE/GLEN HAVEN	A	
	4.83	1.51	286	2010 LOWER POOL 5A	A	
	4.08	3.09	219	2010 CASSVILLE SLOUGH AREA	B	
	3.56	1.25	296	2010 BLACK RIVER MOUTH	C	
	2.70	1.47	1647	2010 BLACK RIVER CHANNEL	D	
	3.39	**1.87**	**2756**	**ALL**		
LARGEMOUTH BASS	8.12	4.38	231	2010 CASSVILLE SLOUGH AREA	A	
	8.01	4.28	296	2010 LOWER POOL 5A	A	
	6.50	4.01	1052	2010 BLACK RIVER CHANNEL	B	
	6.05	3.19	160	2010 BLACK RIVER MOUTH	B	
	5.02	2.89	282	2010 BUSSY LAKE/GLEN HAVEN	C	
	6.66	**4.02**	**2021**	**ALL**		
NORTHERN PIKE	17.33	6.93	40	2010 LOWER POOL 5A	A	
	16.53	6.61	16	2010 BLACK RIVER MOUTH	A	
	16.36	7.04	38	2010 BLACK RIVER CHANNEL	A	
	14.08	6.49	26	2010 BUSSY LAKE/GLEN HAVEN	A	
	13.34	4.27	18	2010 CASSVILLE SLOUGH AREA	A	
	15.84	**6.63**	**138**	**_ALL**		
YELLOW PERCH						
	7.33	2.04	21	2010 LOWER POOL 5A	A	
	7.08	1.62	55	2010 BUSSY LAKE/GLEN HAVEN	A	
	6.84	2.29	24	2010 CASSVILLE SLOUGH AREA	A	B
	5.84	1.62	248	2010 BLACK RIVER CHANNEL		B
	4.22	1.91	82	2010 BLACK RIVER MOUTH	C	
	5.82	**1.97**	**430**	**_ALL**		