

Complete Report

Results of Lake Assessment in the Trempealeau Lakes Lake Unit, Navigation Pool 7 of the upper Mississippi River, Fall 2008.

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

Methods

The Trempealeau Lakes (TL) Lake Unit is located in Navigation Pool 7 of the upper Mississippi River (Figure 1). The lake unit has a total water surface area of 1452 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 22 through September 26, 2008 (Figure 2). A total of 10 locations were chosen, with 1 fyke net at each. These nets fished a total of 33.07 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 32 runs were done during 5.327 hours of sampling (Figure 3) done on four days from October 7 through October 10, 2008. 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 2008 sampling was 17.0°C and generally declined over the eight days of sampling (Table 1). During sampling, the water surface elevation measured at the Lock and Dam 6 tailwater gage changed as much as 0.62 feet. The mean daily flow in cubic feet per second was 15111 and fluctuated as much as 9211 cubic feet per second.

Fyke Netting Catch Per Effort

A total of 17 fish species and three hybrids were recorded from 1192 fish captured in fyke nets (Table 2). The most common was bluegill followed by black crappie, pumpkinseed and yellow bullhead. Mean catch per net-day for these four fishes was 20.28, 8.07, 2.41 and 1.32, respectively. The mean catch per net-day for all species combined was 36.08 (standard deviation = 34.22, n=33).

Electro Shocking Catch Per Effort

A total of 28 species and three hybrids were recorded from 1720 fish captured during electro shocking (Table 3). The most common was bluegill followed by largemouth bass, spotted sucker and bowfin. Mean catch

per hour for these four fishes was 123.96, 60.74, 43.94, and 25.82, respectively. The mean catch per hour for all species combined was 322.94 (standard deviation = 167.94, n=32).

Length Distribution from Fyke Netting

The frequency distribution of total length in inches for black crappie, bluegill, pumpkinseed, northern pike, yellow perch and yellow bullhead from fyke nets are given in Figures 4, 6, 8, 11, 13 and 15. The mean lengths of measured fishes are given in Table 4. A total of 35.19 percent of the black crappies were greater than 9 inches. For bluegill, a total of 5.88 percent were greater than 7 inches while no pumpkinseeds were greater than 7 inches. A total of 75.00 percent of northern pike were greater than 21 inches. A total of 75.00 percent of yellow perch were larger than 8 inches while 97.73 percent of yellow bullheads were greater than 7 inches.

Length Distribution from Electro Shocking

The frequency distribution for total length in inches for black crappie, bluegill, northern pike, largemouth bass, pumpkinseed and yellow perch are given in Figures 5, 7, 9, 10, 12 and 14. The mean lengths of fishes measured are given in Table 5. A total of 17.14 percent of the black crappies were greater than 9 inches. For bluegill, a total of 0.60 percent was greater than 7 inches while 4.67 percent of largemouth bass were larger than 14 inches. A total of 25.0 percent of northern pike was greater than 21 inches. No pumpkinseeds were larger than 7 inches, while 3.88 percent of yellow perch were larger than 8 inches.

Comparisons with Other Lake Units, Fyke Netting

Fyke netting data from the TL Lake Unit was compared to 11 other upper Mississippi River lake units sampled in the fall of 2007 and 2008. These 11 lake units include Robinson/Peterson/Beef Slough in Pool 4, Upper Pool 5 and Belvidere/Spring Lake in Pool 5, Upper Pool 5A in Pool 5A, Lake Onalaska in Pool 7, Goose Island/Stoddard in Pool 8, Cold Springs, Blackhawk, Ronkoski Slough, Goose Carcass Lake in Pool 9 and Sny McGil, Ambro and Harpers in Pool 10 (see Figure 1).

Catch per net-day for all fish combined was greatest in Harpers (77.38) (Table 6) and TL (36.08) was different only from Harpers and was the same as the remaining ten.

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, TL did not differ from any of the 11 lake units.

Catch per net-day for selected individual species is presented in Table 8. For TL, black crappie, bluegill and spotted sucker catch rates were the same for each of these species across all lake units. For northern pike, the TL Lake Unit had a lower catch rate (0.48) than 3 other lake units (Harpers, Cold Springs, Blackhawk and Ronkoski, and Ambro). TL pumpkinseed catch rate (2.41) was higher than 8 other lake units while yellow perch catch rate (0.37) was lower than two other lake units.

We compared mean total length of individual species caught with fyke nets among five other lake units sampled in 2008 (Table 9). Overall, sizes of selected TL fish were average compared to other lake units. TL black crappie mean size (8.83 inches) was different only from Belvidere/Spring Lake (5.00 inches). TL had the largest bluegills (6.36 inches). Northern pike mean size was the same across all lake units (about 24.7 inches). TL yellow perch (10.5 inches) were larger than three other lake units (about 7.5 inches).

Comparisons with Other Lake Units, Electro Shocking

Electro shocking data from the TL Lake Unit was compared to 11 other upper Mississippi River lake units sampled in the fall of 2007 and 2008.

Catch per hour for all target fish combined was the same in TL (223.44) as all the other lake units (Table 10). 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. TL Black crappie, bluegill, northern pike, sauger and smallmouth bass catch rates were no different for each of these species across from any other of the 12 lake units (about 5.9, 72.6, 3.6, 2.3 and 3.9, respectively). For largemouth bass in the TL

Lake Unit, the catch rate (60.7) was the same as ten other lake units. For yellow perch, the TL catch rate (19.5) was higher than seven other lake units.

We compared mean total length of individual species caught with electro shocking among lake units (Table 12). For each of TL black crappie and northern pike, there was no difference in mean size with other lake units (6.48 and 14.11 inches, respectively). Mean total length of TL bluegills (4.78 inches) was greater only in two other lake units. Largemouth bass from TL (7.6 inches) were smaller than three other lake units but larger than one. Mean total length of TL yellow perch (4.5 inches) were smaller than only those from Belvidere/Spring Lake.

Conclusions

The TL Lake Unit appears generally similar in catch rates to the other five Mississippi River lake units surveyed during the fall of 2008. Fyke net target species catch rate for this lake unit was the same as the other five lake units (33.25 fish per net-day). For all species combined, catch per net-day (36.08) was the same as all other lake units (about 30.34). Similarly, the electro shocking catch rate of target species combined from the TL Lake Unit (223.44 fish per hour) was the same as five other 2008 lake units (about 149.34).

From fyke netting, the mean size of target fish in the TL Lake Unit was similar to other lake units. Mean size of black crappie and northern pike were in the middle of the range for all lake units. TL bluegills were larger than all other lake units while yellow perch were larger than three of the 2008 lake units.

Pan fish from TL Lake Unit electro shocking showed a similar pattern for mean size. Black crappie, Bluegill and yellow perch were the same or a little larger than other lake units. For largemouth bass and northern pike, the mean size was near the middle or smaller than other lake units.

In Navigation Pool 7 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 7 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)

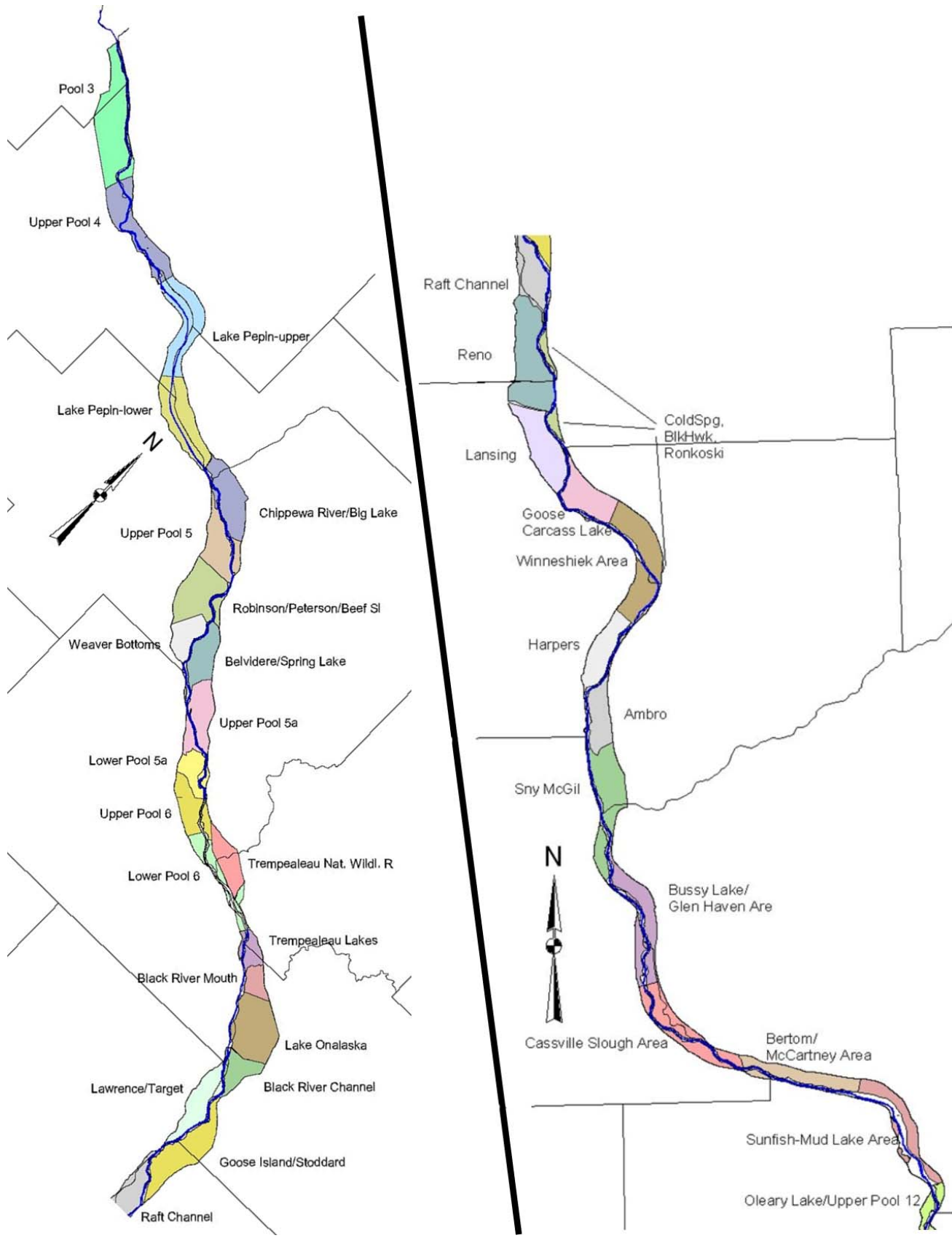


FIGURE 2. FALL 2008 FYKE NET LOCATIONS, TREMPPEALEAU LAKES LAKE UNIT. (2008 NAIP Photo).

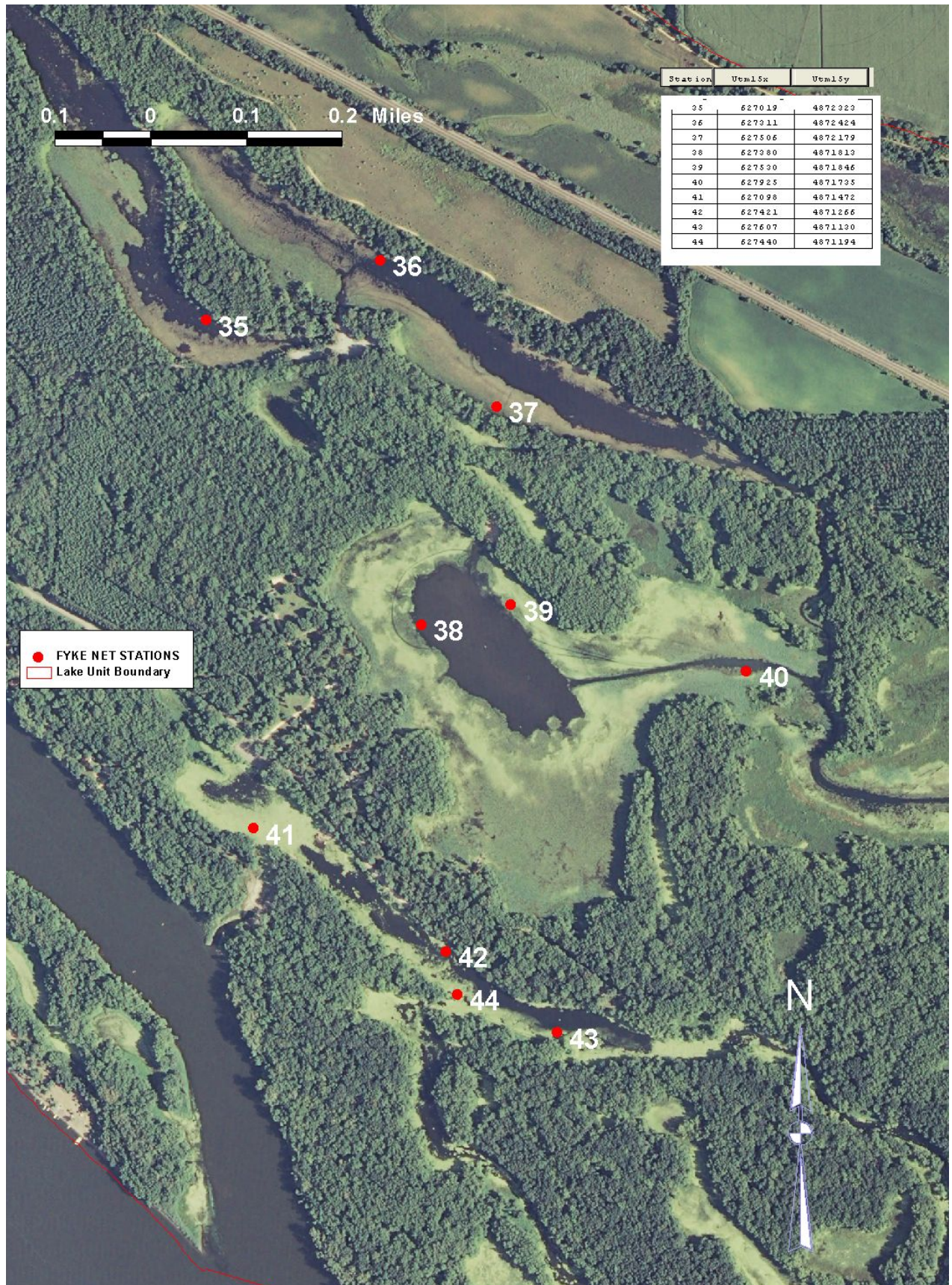


FIGURE 3. FALL 2008 ELECTROSHOCKING RUNS, TREMPEALEAU LAKES LAKE UNIT. (2008 NAIP Photo).

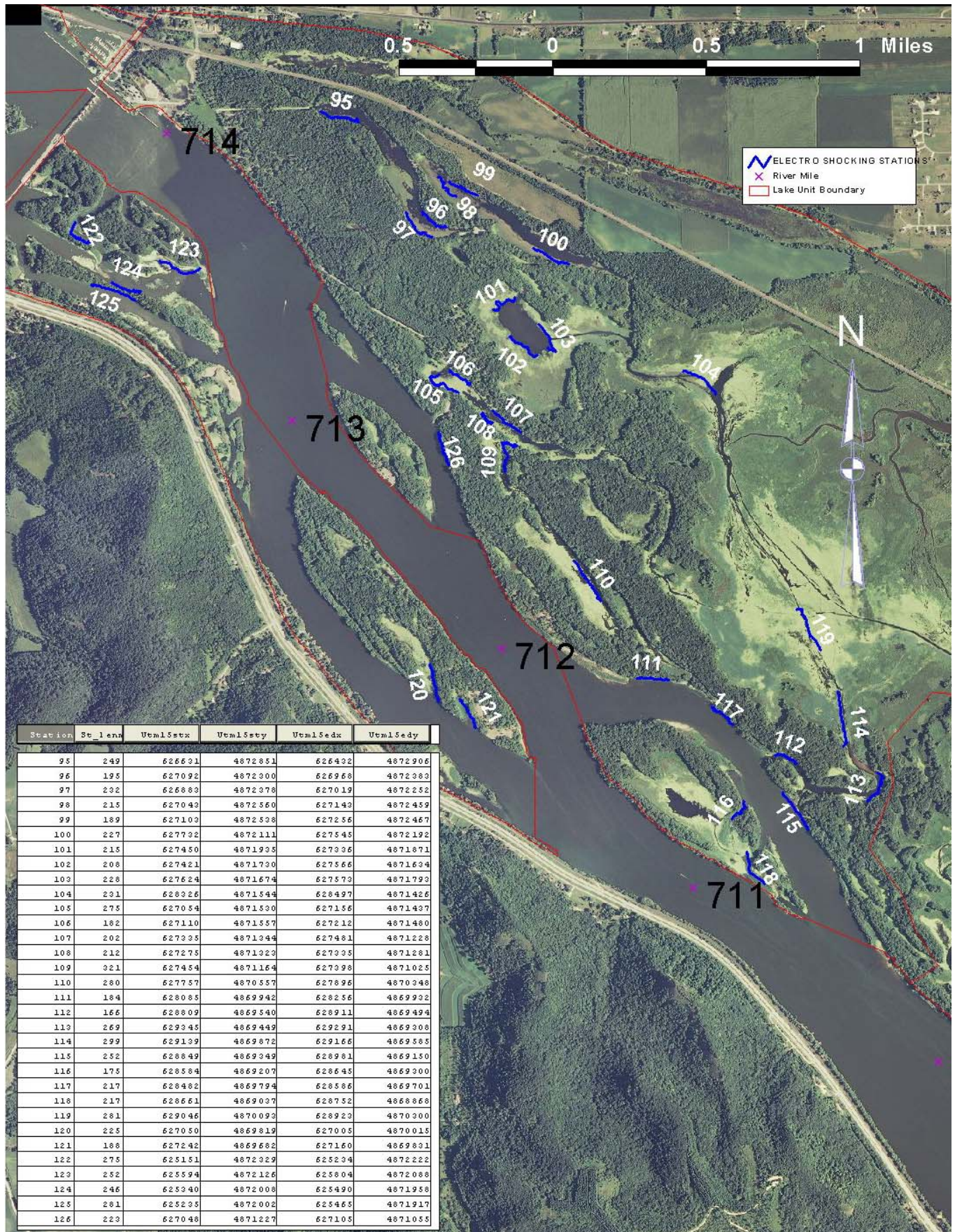


TABLE 1. MEAN TEMPERATURE, WATER SURFACE ELEVATION AND FLOW DURING FALL 2008 TL SAMPLING.

DATE	MEAN DAILY TEMPERA- TURE °C	WATER SURFACE ELEVATION (ft), DAM 6 TAILWATER	FLOW (cfs) DAM 6
9/23/2008	19.9	639.52	13500
9/24/2008	20.4	639.48	12900
9/25/2008	19.2	639.39	13600
9/26/2008	19.0	639.39	13600
10/7/2008	14.5	639.22	11489
10/8/2008	15.0	639.34	15600
10/9/2008	13.7	639.52	20700
10/10/2008	14.0	639.84	19500
MEAN	17.0	639.46	15111

TABLE 2. RELATIVE ABUNDANCE, MEAN CATCH PER NET-DAY, FYKE NETS, FALL 2008, TL LAKE UNIT.

	SPECIES	FREQUENCY	PERCENT	MEAN	STANDARD DEV.	MIN.	MAX.	NET-DAYS
1	black crappie	270	22.65	8.07	7.24	0.00	24.29	33.07
2	bluegill	664	55.70	20.28	27.18	0.00	99.26	33.07
3	bowfin	27	2.27	0.82	1.14	0.00	5.24	33.07
4	brown bullhead	5	0.42	0.16	0.37	0.00	1.06	33.07
5	common carp	4	0.34	0.12	0.55	0.00	3.04	33.07
6	freshwater drum	6	0.50	0.18	0.46	0.00	1.98	33.07
7	golden redhorse	1	0.08	0.03	0.18	0.00	1.05	33.07
8	largemouth bass	7	0.59	0.21	0.53	0.00	2.03	33.07
9	northern pike	16	1.34	0.48	0.70	0.00	2.11	33.07
10	pumpkinseed	81	6.80	2.41	6.47	0.00	31.19	33.07
11	pumpkinseed x bluegill	1	0.08	0.03	0.16	0.00	0.90	33.07
12	pumpkinseed x warmouth	1	0.08	0.03	0.17	0.00	0.99	33.07
13	silver redhorse	1	0.08	0.03	0.16	0.00	0.90	33.07
14	spotted sucker	38	3.19	1.13	1.43	0.00	5.96	33.07
15	walleye	2	0.17	0.06	0.32	0.00	1.86	33.07
16	warmouth	10	0.84	0.31	0.74	0.00	3.06	33.07
17	warmouth x bluegill	1	0.08	0.03	0.17	0.00	0.99	33.07
18	white crappie	1	0.08	0.03	0.17	0.00	1.00	33.07
19	yellow bullhead	44	3.69	1.32	4.17	0.00	23.72	33.07
20	yellow perch	12	1.01	0.37	1.27	0.00	6.96	33.07
21	ALL SPECIES	1192	99.99	36.08	34.22	0.00	132.41	33.07

TABLE 3. RELATIVE ABUNDANCE, MEAN CATCH PER HOUR, ELECTRO SHOCKING, FALL 2008, TL LAKE UNIT.

	SPECIES	FREQ.	PERCENT	MEAN PER HR	STANDARD DEV.	MIN.	MAX.	NO. OF RUNS	TOTAL HRS
1	black crappie	35	2.03	6.57	9.42	0.00	35.93	32	5.327
2	bluegill	662	38.49	123.96	119.80	5.99	485.03	32	5.327
3	bowfin	138	8.02	25.82	76.09	0.00	377.25	32	5.327
4	brook silverside	2	0.12	0.37	2.12	0.00	11.98	32	5.327
5	brown bullhead	3	0.17	0.56	2.34	0.00	11.98	32	5.327
6	channel catfish	2	0.12	0.37	1.47	0.00	5.99	32	5.327
7	common carp	12	0.7	2.25	5.21	0.00	17.96	32	5.327
8	emerald shiner	37	2.15	6.92	36.03	0.00	203.59	32	5.327
9	freshwater drum	25	1.45	4.68	16.50	0.00	89.82	32	5.327
10	gizzard shad	1	0.06	0.19	1.06	0.00	5.99	32	5.327
11	golden redhorse	5	0.29	0.94	2.68	0.00	11.98	32	5.327
12	green sunfish x bluegill	1	0.06	0.19	1.06	0.00	5.99	32	5.327
13	green sunfish x pumpkinseed	1	0.06	0.19	1.06	0.00	5.99	32	5.327
14	largemouth bass	322	18.72	60.74	39.89	5.99	153.33	32	5.327
15	logperch	10	0.58	1.89	5.16	0.00	23.95	32	5.327
16	northern pike	16	0.93	2.99	6.27	0.00	29.94	32	5.327
17	pirate perch	5	0.29	0.94	3.08	0.00	11.98	32	5.327
18	pumpkinseed	20	1.16	3.74	12.14	0.00	53.89	32	5.327
19	pumpkinseed x bluegill	1	0.06	0.19	1.06	0.00	5.99	32	5.327
20	rock bass	11	0.64	2.16	6.16	0.00	33.33	32	5.327
21	sauger	15	0.87	2.83	7.30	0.00	29.94	32	5.327
22	shiners	15	0.87	2.81	10.09	0.00	53.89	32	5.327
23	shorthead redhorse	13	0.76	2.58	8.92	0.00	46.67	32	5.327
24	silver redhorse	7	0.41	1.31	3.31	0.00	11.98	32	5.327
25	spottail shiner	1	0.06	0.19	1.06	0.00	5.99	32	5.327
26	spotted sucker	234	13.6	43.94	75.08	0.00	311.38	32	5.327
27	walleye	2	0.12	0.37	1.47	0.00	5.99	32	5.327
28	warmouth	17	0.99	3.18	7.90	0.00	35.93	32	5.327
29	white crappie	1	0.06	0.19	1.06	0.00	5.99	32	5.327
30	yellow bullhead	2	0.12	0.37	2.12	0.00	11.98	32	5.327
31	yellow perch	104	6.05	19.50	35.07	0.00	149.70	32	5.327
32	ALL SPECIES	1720	100.01	322.94	167.94	59.88	652.70	32	5.327

FIGURE 4. FALL 2008 BLACK CRAPPIE LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT FYKE NETTING.

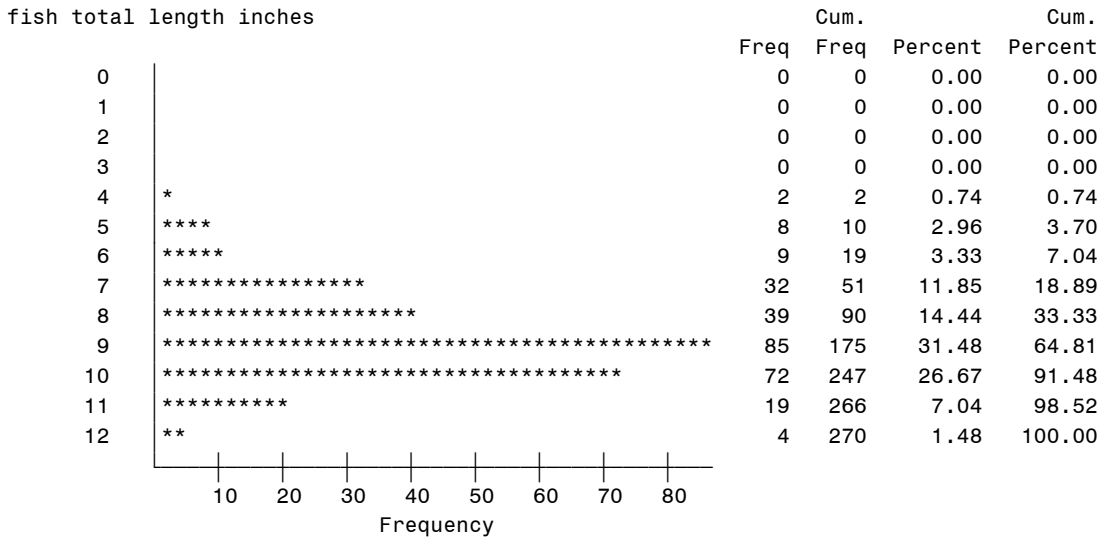


FIGURE 5. FALL 2008 BLACK CRAPPIE LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT ELECTRO SHOCKING.

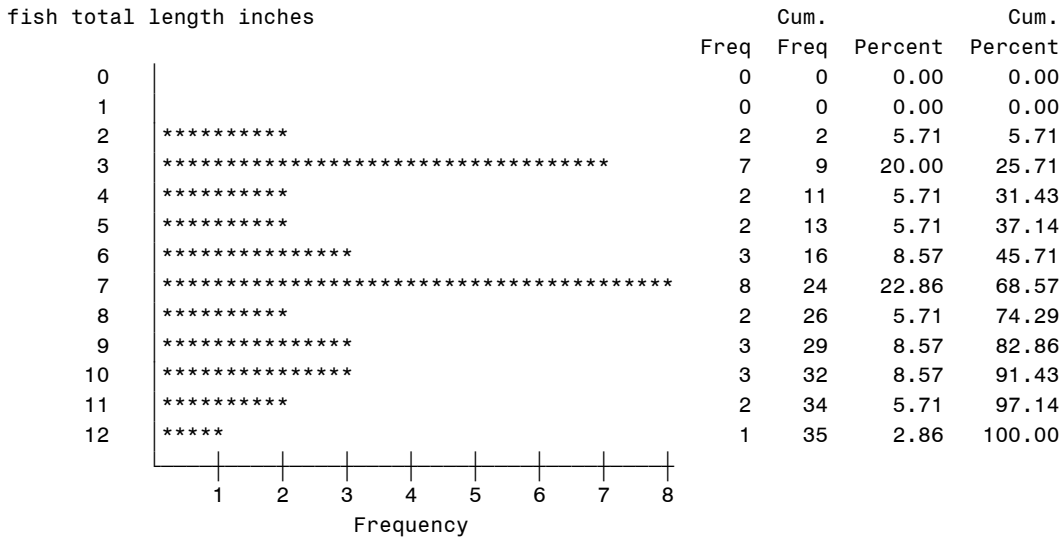


FIGURE 6. FALL 2008 BLUEGILL LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT FYKE NETTING.

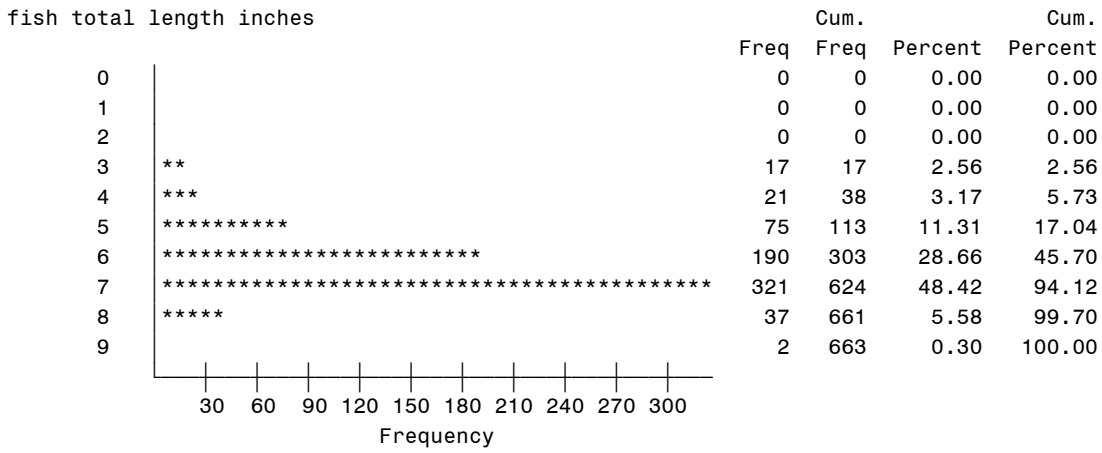


FIGURE 7. FALL 2008 BLUEGILL LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT ELECTRO SHOCKING.



FIGURE 8. FALL 2008 NORTHERN PIKE LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT FYKE NETTING.

fish total length inches

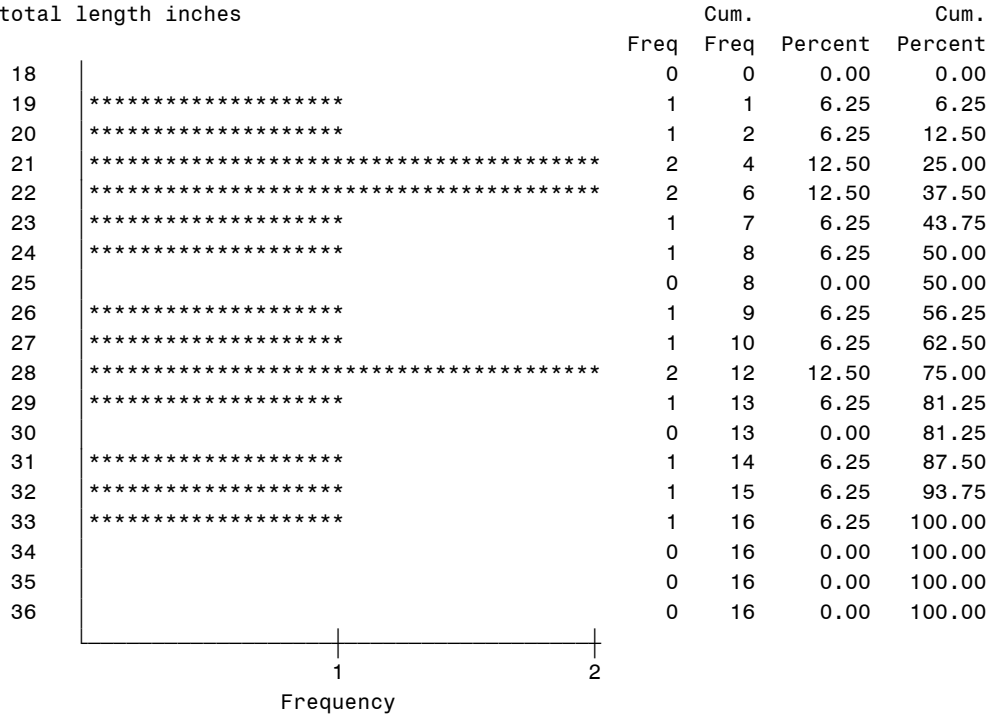


FIGURE 9. FALL 2008 NORTHERN PIKE LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT ELECTRO SHOCKING.

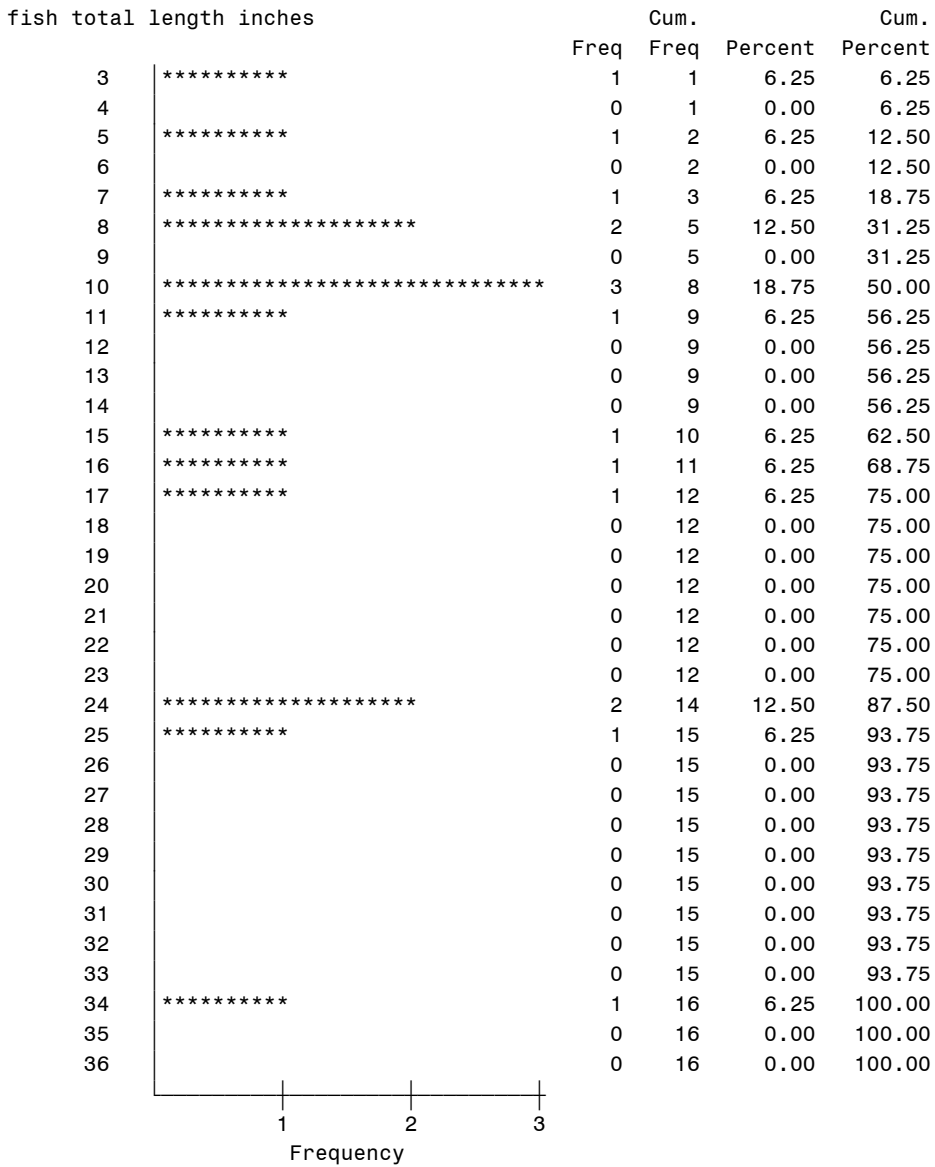


FIGURE 10. FALL 2008 LARGEMOUTH BASS LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT ELECTRO SHOCKING.

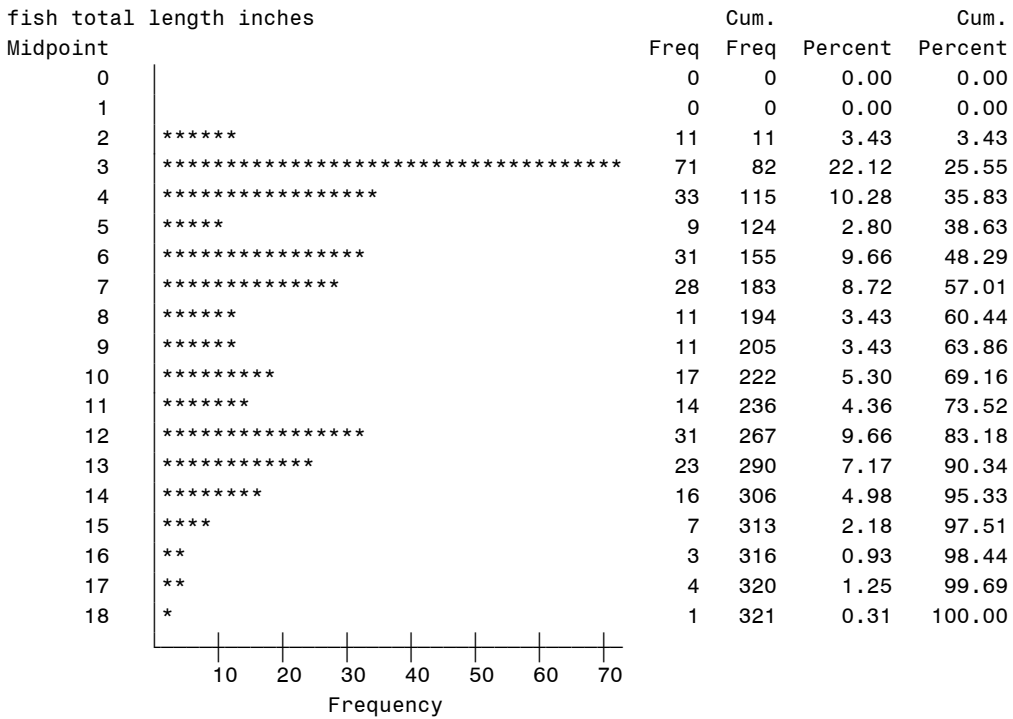


FIGURE 11. FALL 2008 PUMPKINSEED LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT FYKE NETTING.

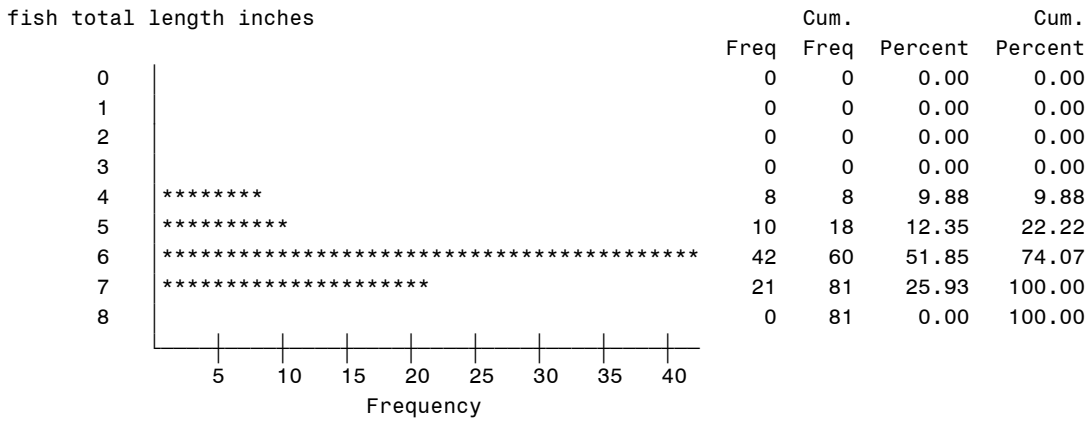


FIGURE 12. FALL 2008 PUMPKINSEED LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT ELECTRO SHOCKING.

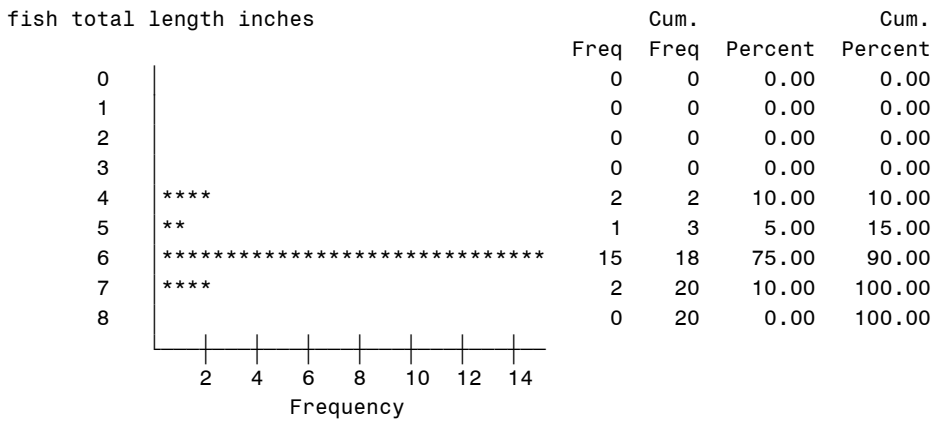


FIGURE 13. FALL 2008 YELLOW PERCH LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT FYKE NETTING.

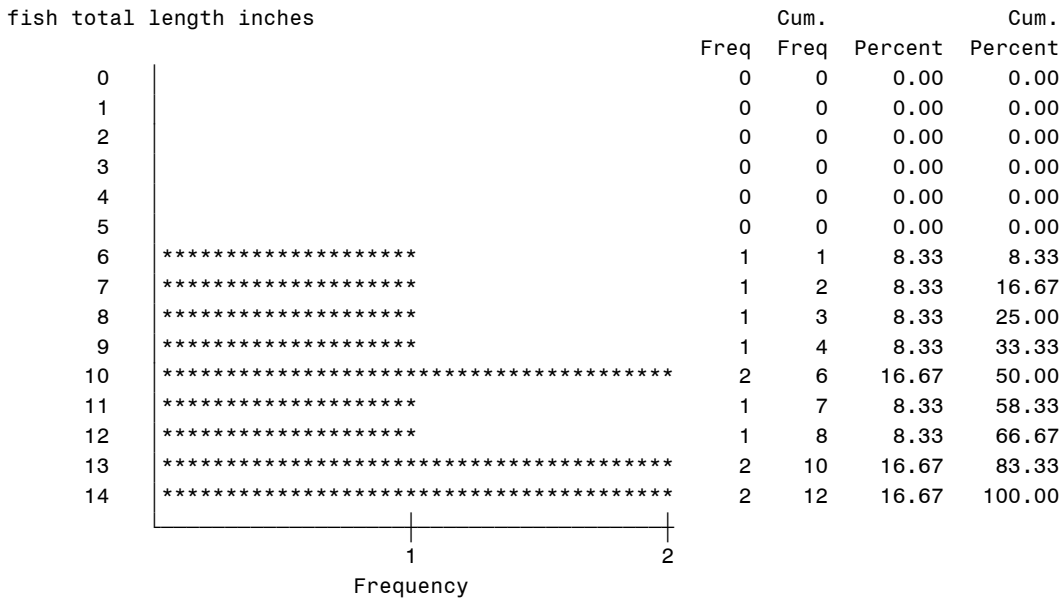


FIGURE 14. FALL 2008 YELLOW PERCH LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT ELECTRO SHOCKING.

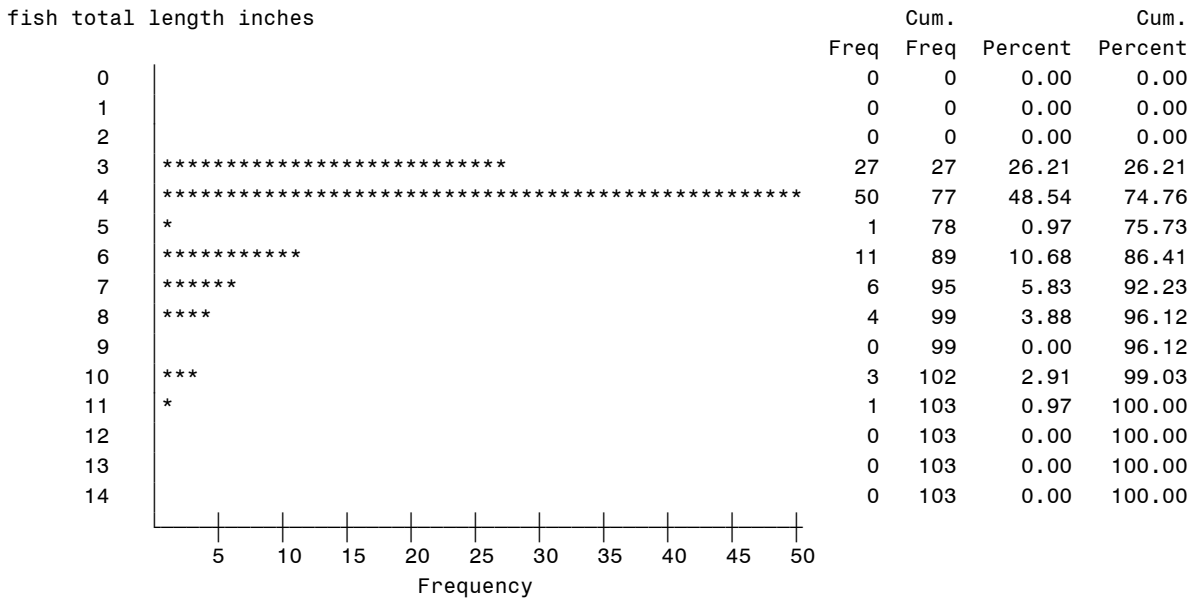


FIGURE 15. FALL 2008 YELLOW BULLHEAD LENGTH DISTRIBUTION (INCHES), TL LAKE UNIT FYKE NETTING.

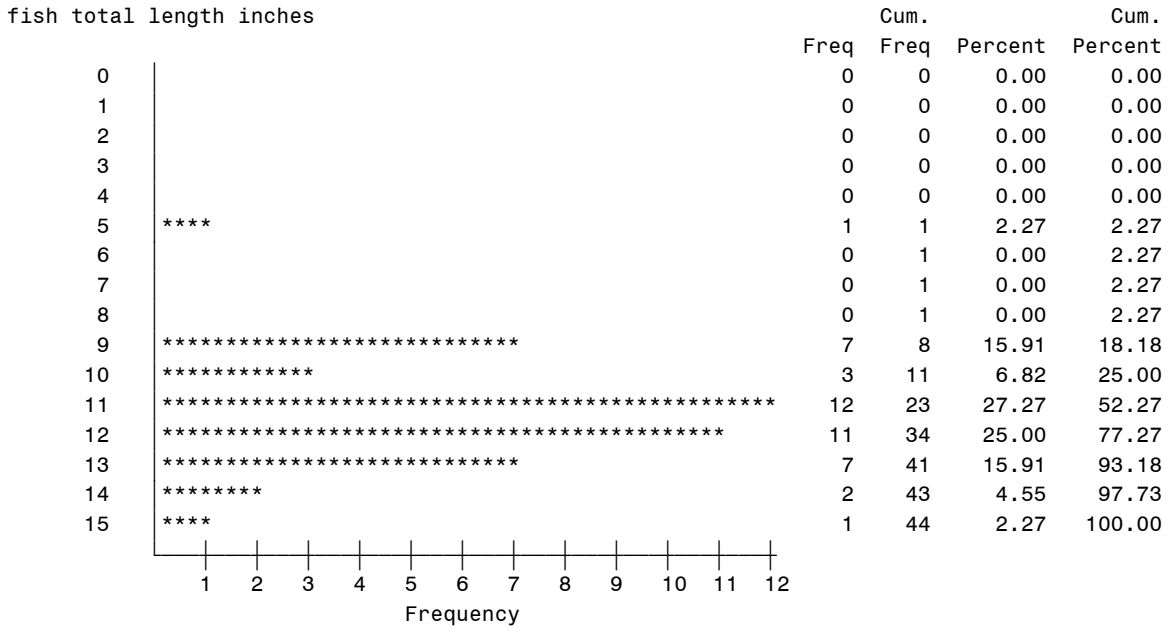


TABLE 4. MEAN LENGTH IN INCHES FOR MEASURED SPECIES, FALL 2008, TL LAKE UNIT, FYKE NETTING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
black crappie	8.83	1.47	4.45	11.77	270
bluegill	6.36	1.02	2.52	8.94	663
brown bullhead	12.56	1.31	10.71	14.06	5
largemouth bass	6.57	3.84	4.02	14.13	6
northern pike	25.40	4.43	19.06	32.68	16
pumpkinseed	5.98	0.83	3.62	7.01	81
warmouth	6.52	0.91	5.20	7.52	10
yellow bullhead	11.25	1.71	5.20	14.92	44
yellow perch	10.50	2.69	5.59	13.86	12

TABLE 5. MEAN LENGTH IN INCHES FOR MEASURED SPECIES, FALL 2008, TL LAKE UNIT, ELECTRO SHOCKING.

SPECIES	MEAN LENGTH	STANDARD DEV.	MIN.	MAX.	N
black crappie	6.48	2.86	2.32	11.58	35
bluegill	4.78	1.55	0.79	7.91	662
largemouth bass	7.59	4.22	2.01	17.72	321
northern pike	14.11	8.82	2.99	34.45	16
pumpkinseed	5.84	0.74	3.86	6.61	20
rock bass	5.15	2.15	1.54	7.36	11
sauger	8.66	1.70	5.67	10.83	15
warmouth	5.03	0.65	4.17	6.10	17
yellow perch	4.49	1.76	2.95	11.14	103

TABLE 6. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL SPECIES COMBINED AMONG TWELVE LAKE UNITS, FALL 2007 AND 2008.

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	B	A
50.82	40.96	30	2008 SNY MCGIL	B	A
48.39	29.01	30	2007 COLDSPG, BLKHWK, RONKOSKI	B	A
43.98	29.99	24	2007 AMBRO	B	A
36.08	34.22	33	2008 TREMPPEALEAU LAKES	B	
34.06	21.40	32	2007 UPPER POOL 5	B	
33.90	38.44	32	2007 UPPER POOL 5A	B	
27.29	22.66	35	2008 LAKE ONALASKA	B	
26.43	26.07	32	2008 GOOSE CARCASS LAKE	B	
25.47	27.01	16	2008 BELVIDERE/SPRING LAKE	B	
21.68	29.97	32	2008 ROBINSON/PETERSON/BEEF SL	B	

TABLE 7. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR ALL TARGET SPECIES COMBINED AMONG TWELVE LAKE UNITS, FALL 2007 AND 2008.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
41.59	28.53	32	2007 GOOSE ISLAND/STODDARD		41.59
38.38	30.08	32	2007 HARPERS		38.38
33.22	32.83	33	2008 TREMPPEALEAU LAKES	B	33.22
31.33	20.82	30	2007 COLDSPG, BLKHWK, RONKOSKI	B	31.33
31.02	37.16	30	2008 SNY MCGIL	B	31.02
27.33	38.57	32	2007 UPPER POOL 5A	B	27.33
26.23	16.39	32	2007 UPPER POOL 5	B	26.23
25.60	23.18	24	2007 AMBRO	B	25.60
25.01	22.17	35	2008 LAKE ONALASKA	B	25.01
24.64	27.27	16	2008 BELVIDERE/SPRING LAKE	B	24.64
21.64	24.03	32	2008 GOOSE CARCASS LAKE	B	21.64
12.52	26.35	32	2008 ROBINSON/PETERSON/BEEF SL	B	12.52

TABLE 8. COMPARISON OF MEAN CATCH PER FYKE NET-DAY FOR SELECTED INDIVIDUAL SPECIES AMONG TWELVE LAKE UNITS, FALL 2007 AND 2008.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)				
BLACK CRAPPIE									
	15.51	14.43	32	2007 UPPER POOL 5				A	
	15.19	17.62	32	2007 HARPERS				A	
	14.79	15.63	30	2007 COLDSPG, BLKHWK, RONKOSKI		B		A	
	11.09	14.01	24	2007 AMBRO		B		A	C
	10.65	20.42	32	2007 UPPER POOL 5A		B	D	A	C
	8.07	7.24	33	2008 TREMPLEALEAU LAKES	E	B	D	A	C
	7.32	7.13	32	2007 GOOSE ISLAND/STODDARD	E	B	D	A	C
	6.37	6.34	32	2008 GOOSE CARCASS LAKE	E	B	D	A	C
	4.80	7.07	30	2008 SNY MCGIL	E	B	D		C
	2.97	4.06	32	2008 ROBINSON/PETERSON/BEEF SL	E		D		C
	0.74	1.26	35	2008 LAKE ONALASKA	E		D		
	0.52	0.85	16	2008 BELVIDERE/SPRING LAKE	E				
BLUEGILL									
	28.13	22.36	32	2007 GOOSE ISLAND/STODDARD		A			
	23.83	36.79	30	2008 SNY MCGIL	B	A			
	20.89	26.84	16	2008 BELVIDERE/SPRING LAKE	B	A			
	20.28	27.18	33	2008 TREMPLEALEAU LAKES	B	A			
	18.62	19.81	35	2008 LAKE ONALASKA	B	A			
	16.44	16.86	32	2007 HARPERS	B	A			
	14.17	20.65	32	2007 UPPER POOL 5A	B	A			
	12.73	20.12	32	2008 GOOSE CARCASS LAKE	B	A			
	12.14	8.15	30	2007 COLDSPG, BLKHWK, RONKOSKI	B	A			
	9.30	8.47	32	2007 UPPER POOL 5	B				
	7.79	9.38	24	2007 AMBRO	B				
	6.80	20.99	32	2008 ROBINSON/PETERSON/BEEF SL	B				
GIZZARD SHAD									
	34.47	99.92	32	2007 HARPERS		A			
	17.11	31.61	30	2008 SNY MCGIL	B	A			
	9.52	10.08	24	2007 AMBRO	B	A			
	8.10	11.82	30	2007 COLDSPG, BLKHWK, RONKOSKI	B	A			
	3.49	13.45	32	2008 ROBINSON/PETERSON/BEEF SL	B				
	2.97	5.94	32	2007 UPPER POOL 5A	B				
	0.83	1.69	32	2007 GOOSE ISLAND/STODDARD	B				
	0.80	3.03	32	2008 GOOSE CARCASS LAKE	B				
	0.38	0.62	32	2007 UPPER POOL 5	B				
	0.03	0.17	35	2008 LAKE ONALASKA	B				
	0.00	0.00	16	2008 BELVIDERE/SPRING LAKE	B				
	0.00	0.00	33	2008 TREMPLEALEAU LAKES	B				

TABLE 8 (CONTINUED)

NORTHERN PIKE								
	2.18	2.13	24	2007 AMBRO			A	
	1.78	2.49	30	2007 COLDSPG, BLKHWK, RONKOSKI	B		A	
	1.69	1.86	32	2007 HARPERS	B		A	C
	1.50	1.71	32	2007 GOOSE ISLAND/STODDARD	B	D	A	C
	0.76	0.82	32	2007 UPPER POOL 5A	B	D		E C
	0.76	1.55	32	2008 ROBINSON/PETERSON/BEEF SL	B	D		E C
	0.64	0.89	16	2008 BELVIDERE/SPRING LAKE	B	D		E C
	0.63	0.93	30	2008 SNY MCGIL	B	D		E C
	0.52	0.78	32	2008 GOOSE CARCASS LAKE		D		E C
	0.48	0.70	33	2008 TREMPLEALEU LAKES		D		E
	0.41	0.71	32	2007 UPPER POOL 5		D		E
	0.25	0.49	35	2008 LAKE ONALASKA				E
PUMPKINSEED								
	3.98	3.80	35	2008 LAKE ONALASKA			A	
	2.41	6.47	33	2008 TREMPLEALEU LAKES	B		A	
	0.39	1.95	30	2007 COLDSPG, BLKHWK, RONKOSKI	B			C
	0.35	0.88	32	2007 GOOSE ISLAND/STODDARD	B			C
	0.23	0.83	32	2008 ROBINSON/PETERSON/BEEF SL				C
	0.22	0.61	32	2008 GOOSE CARCASS LAKE				C
	0.07	0.27	16	2008 BELVIDERE/SPRING LAKE				C
	0.06	0.25	32	2007 UPPER POOL 5A				C
	0.03	0.18	32	2007 UPPER POOL 5				C
	0.03	0.18	32	2007 HARPERS				C
	0.03	0.17	30	2008 SNY MCGIL				C
	0.00	0.00	24	2007 AMBRO				C
SILVER REDHORSE								
	2.55	5.31	32	2008 ROBINSON/PETERSON/BEEF SL			A	
	2.38	3.10	32	2007 UPPER POOL 5	B		A	
	1.18	1.89	32	2007 GOOSE ISLAND/STODDARD	B		A	C
	0.81	1.06	32	2007 UPPER POOL 5A	B			C
	0.37	0.96	30	2007 COLDSPG, BLKHWK, RONKOSKI				C
	0.35	1.10	32	2008 GOOSE CARCASS LAKE				C
	0.25	0.77	16	2008 BELVIDERE/SPRING LAKE				C
	0.08	0.36	35	2008 LAKE ONALASKA				C
	0.03	0.16	33	2008 TREMPLEALEU LAKES				C
	0.00	0.00	24	2007 AMBRO				C
	0.00	0.00	32	2007 HARPERS				C
	0.00	0.00	30	2008 SNY MCGIL				C
SPOTTED SUCKER								
	2.80	6.83	24	2007 AMBRO			A	
	2.58	3.85	32	2007 UPPER POOL 5	B		A	
	1.27	2.31	32	2007 GOOSE ISLAND/STODDARD	B		A	C
	1.25	2.29	30	2007 COLDSPG, BLKHWK, RONKOSKI	B		A	C
	1.13	1.43	33	2008 TREMPLEALEU LAKES	B		A	C
	0.56	1.19	32	2007 HARPERS	B			C
	0.47	0.85	32	2007 UPPER POOL 5A				C
	0.45	0.82	35	2008 LAKE ONALASKA				C
	0.31	0.65	32	2008 GOOSE CARCASS LAKE				C
	0.28	0.47	30	2008 SNY MCGIL				C
	0.19	0.54	32	2008 ROBINSON/PETERSON/BEEF SL				C
	0.13	0.35	16	2008 BELVIDERE/SPRING LAKE				C

TABLE 8 (CONTINUED)

YELLOW PERCH									
	4.00	5.34	32	2007 GOOSE ISLAND/STODDARD		A			
	2.38	4.20	24	2007 AMBRO	B	A			
	1.16	1.45	35	2008 LAKE ONALASKA	B		C		
	0.85	1.46	16	2008 BELVIDERE/SPRING LAKE	B		C		
	0.66	0.94	32	2007 HARPERS	B		C		
	0.55	1.07	32	2007 UPPER POOL 5	B		C		
	0.52	1.29	32	2007 UPPER POOL 5A	B		C		
	0.51	0.93	32	2008 ROBINSON/PETERSON/BEEF SL	B		C		
	0.48	0.66	30	2007 COLDSPG, BLKHWK, RONKOSKI			C		
	0.42	0.92	30	2008 SNY MCGIL			C		
	0.37	1.27	33	2008 TREMPLEAU LAKES			C		
	0.31	0.72	32	2008 GOOSE CARCASS LAKE			C		

TABLE 9. COMPARISON OF MEAN TOTAL LENGTH FOR SELECTED INDIVIDUAL SPECIES, AMONG SIX LAKE UNITS, FYKE NETS, FALL 2008.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)		
BLACK CRAPPIE							
	9.97	1.82	93	ROBINSON/PETERSON/BEEF SL		A	
	9.57	1.91	204	GOOSE CARCASS LAKE	B	A	
	8.83	1.47	270	TREMPEALEAU LAKES	B	A	C
	8.39	2.12	26	LAKE ONALASKA	B		C
	8.12	2.20	140	SNY MCGIL			C
	5.00	1.70	8	BELVIDERE/SPRING LAKE		D	
BLUEGILL	6.36	1.02	663	TREMPEALEAU LAKES	A		
	6.09	1.44	408	GOOSE CARCASS LAKE	B		
	6.00	1.35	211	ROBINSON/PETERSON/BEEF SL	B		
	5.51	1.16	661	LAKE ONALASKA	C		
	4.53	1.34	623	SNY MCGIL	C		
	4.12	1.19	320	BELVIDERE/SPRING LAKE	E		
NORTHERN PIKE							
	26.15	2.92	18	SNY MCGIL	A		
	25.50	3.79	24	ROBINSON/PETERSON/BEEF SL	A		
	25.40	4.43	16	TREMPEALEAU LAKES	A		
	25.26	7.82	9	LAKE ONALASKA	A		
	24.28	3.59	17	GOOSE CARCASS LAKE	A		
	21.60	4.04	10	BELVIDERE/SPRING LAKE	A		
PUMPKINSEED							
	5.98	0.83	81	TREMPEALEAU LAKES	A		
	5.61	0.93	141	LAKE ONALASKA	A		
YELLOW PERCH							
	10.50	2.69	12	TREMPEALEAU LAKES		A	
	9.58	2.09	10	GOOSE CARCASS LAKE	B	A	
	9.49	1.35	16	ROBINSON/PETERSON/BEEF SL	B	A	
	8.34	1.79	13	BELVIDERE/SPRING LAKE	B		
	8.12	1.46	41	LAKE ONALASKA	B		
	6.08	0.88	12	SNY MCGIL		C	

TABLE 10. COMPARISON OF MEAN CATCH PER HOUR FROM ELECTRO SHOCKING FOR ALL TARGET SPECIES COMBINED AMONG TWELVE LAKE UNITS, FALL 2007 AND 2008.

MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)	
302.80	300.03	25	2007 COLDSPG, BLKHWK, RONKOSKI		A
223.44	130.92	32	2008 TREMPEALEAU LAKES	B	A
212.97	150.86	52	2007 GOOSE ISLAND/STODDARD	B	A
203.11	125.55	25	2007 UPPER POOL 5A	B	A
193.36	145.48	31	2007 AMBRO	B	A
178.44	140.45	30	2008 GOOSE CARCASS LAKE	B	A
173.14	132.79	47	2008 LAKE ONALASKA	B	
153.33	204.82	33	2008 ROBINSON/PETERSON/BEEF SL	B	
145.04	80.09	27	2007 UPPER POOL 5	B	
143.51	120.08	30	2007 HARPERS	B	
131.01	92.65	30	2008 SNY MCGIL	B	
110.78	107.69	30	2008 BELVIDERE/SPRING LAKE	B	

TABLE 11. COMPARISON OF MEAN CATCH PER HOUR FROM ELECTRO SHOCKING FOR SELECTED INDIVIDUAL SPECIES AMONG TWELVE LAKE UNITS, FALL 2007 AND 2008.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)		
BLACK CRAPPIE							
	13.89	14.01	25	2007 UPPER POOL 5A		A	
	13.52	26.64	31	2007 AMBRO		A	
	8.58	10.96	25	2007 COLDSPG, BLKHWK, RONKOSKI	B	A	
	6.57	9.42	32	2008 TREMPEALEAU LAKES	B	A	
	6.39	9.16	30	2007 HARPERS	B	A	
	4.50	7.68	52	2007 GOOSE ISLAND/STODDARD	B		
	4.33	8.89	47	2008 LAKE ONALASKA	B		
	4.21	4.93	27	2007 UPPER POOL 5	B		
	3.08	5.63	33	2008 ROBINSON/PETERSON/BEEF SL	B		
	2.59	6.61	30	2008 GOOSE CARCASS LAKE	B		
	2.02	3.30	30	2008 SNY MCGIL	B		
	1.00	2.76	30	2008 BELVIDERE/SPRING LAKE	B		
BLUEGILL							
	123.96	119.80	32	2008 TREMPEALEAU LAKES	A		
	112.93	165.41	25	2007 COLDSPG, BLKHWK, RONKOSKI	A		
	93.89	111.21	25	2007 UPPER POOL 5A	A		
	92.18	91.04	52	2007 GOOSE ISLAND/STODDARD	A		
	65.87	97.43	31	2007 AMBRO	A		
	64.05	190.83	33	2008 ROBINSON/PETERSON/BEEF SL	A		
	62.68	88.68	47	2008 LAKE ONALASKA	A		
	62.68	72.66	30	2007 HARPERS	A		
	57.22	61.37	27	2007 UPPER POOL 5	A		
	55.29	93.12	30	2008 GOOSE CARCASS LAKE	A		
	41.34	46.20	30	2008 SNY MCGIL	A		
	38.52	94.31	30	2008 BELVIDERE/SPRING LAKE	A		
LARGEMOUTH BASS							
	163.68	182.87	25	2007 COLDSPG, BLKHWK, RONKOSKI	A		
	94.40	107.13	52	2007 GOOSE ISLAND/STODDARD	B		
	93.01	60.27	30	2008 GOOSE CARCASS LAKE	B		
	92.91	60.10	31	2007 AMBRO	B		
	79.88	55.00	47	2008 LAKE ONALASKA	B		
	78.56	79.37	25	2007 UPPER POOL 5A	B		
	62.79	52.18	30	2008 SNY MCGIL	B		
	60.74	39.89	32	2008 TREMPEALEAU LAKES	B		
	60.32	52.91	27	2007 UPPER POOL 5	B		
	53.53	50.68	33	2008 ROBINSON/PETERSON/BEEF SL	B		
	51.90	46.58	30	2007 HARPERS	B		
	51.10	38.83	30	2008 BELVIDERE/SPRING LAKE	B		
NORTHERN PIKE							
	6.79	7.16	30	2008 BELVIDERE/SPRING LAKE		A	
	6.35	10.58	33	2008 ROBINSON/PETERSON/BEEF SL		A	
	5.19	6.04	30	2008 GOOSE CARCASS LAKE	B	A	
	4.79	7.92	25	2007 UPPER POOL 5A	B	A	
	3.99	6.64	27	2007 UPPER POOL 5	B	A	
	3.92	5.80	52	2007 GOOSE ISLAND/STODDARD	B	A	
	2.99	6.27	32	2008 TREMPEALEAU LAKES	B	A	
	2.42	6.07	47	2008 LAKE ONALASKA	B	A	
	2.40	4.04	30	2007 HARPERS	B	A	
	2.05	2.96	30	2008 SNY MCGIL	B	A	
	1.20	2.44	25	2007 COLDSPG, BLKHWK, RONKOSKI	B		
	1.16	2.86	31	2007 AMBRO	B		

TABLE 11 (CONTINUED)

SAUGER							
	6.06	7.04	30	2008 SNY MCGIL		A	
	5.99	12.78	30	2008 GOOSE CARCASS LAKE	B	A	
	3.99	6.91	30	2007 HARPERS	B	A	C
	2.83	7.30	32	2008 TREMPEALEAU LAKES	B	A	C
	1.92	3.33	25	2007 COLDSPG, BLKHWK, RONKOSKI	B	A	C
	1.72	4.48	52	2007 GOOSE ISLAND/STODDARD	B	A	C
	1.33	3.84	27	2007 UPPER POOL 5	B		C
	1.27	3.27	33	2008 ROBINSON/PETERSON/BEEF SL			C
	1.00	2.27	30	2008 BELVIDERE/SPRING LAKE			C
	0.97	3.49	31	2007 AMBRO			C
	0.38	1.94	47	2008 LAKE ONALASKA			C
	0.24	1.20	25	2007 UPPER POOL 5A			C
SMALLMOUTH BASS							
	9.31	24.26	27	2007 UPPER POOL 5A	A		
	8.89	15.13	33	2008 ROBINSON/PETERSON/BEEF SL	A		
	5.75	17.50	25	2007 COLDSPG, BLKHWK, RONKOSKI	A		
	5.39	8.66	30	2008 BELVIDERE/SPRING LAKE	A		
	4.39	8.46	30	2008 GOOSE CARCASS LAKE	A		
	4.26	11.70	52	2007 GOOSE ISLAND/STODDARD	A		
	2.63	8.48	25	2007 UPPER POOL 5A	A		
	2.55	16.60	47	2008 LAKE ONALASKA	A		
	1.55	4.47	30	2008 SNY MCGIL	A		
	1.20	3.98	30	2007 HARPERS	A		
	0.39	1.50	31	2007 AMBRO	A		
	0.00	0.00	32	2008 TREMPEALEAU LAKES	A		
YELLOW PERCH							
	19.50	35.07	32	2008 TREMPEALEAU LAKES		A	
	12.10	28.29	47	2008 LAKE ONALASKA	B	A	
	11.25	12.32	33	2008 ROBINSON/PETERSON/BEEF SL	B	A	
	6.59	12.91	30	2008 GOOSE CARCASS LAKE	B	A	
	6.43	7.23	27	2007 UPPER POOL 5	B	A	
	5.17	9.41	52	2007 GOOSE ISLAND/STODDARD	B		
	4.30	13.19	30	2008 SNY MCGIL	B		
	3.67	5.50	31	2007 AMBRO	B		
	3.59	5.36	30	2008 BELVIDERE/SPRING LAKE	B		
	2.85	5.75	25	2007 COLDSPG, BLKHWK, RONKOSKI	B		
	1.20	2.99	25	2007 UPPER POOL 5A	B		
	1.00	2.27	30	2007 HARPERS	B		

TABLE 12. COMPARISON OF MEAN TOTAL LENGTH FOR SELECTED INDIVIDUAL SPECIES, AMONG SIX LAKE UNITS, ELECTRO SHOCKING, FALL 2008.

SPECIES	MEAN	STD. DEV.	N	LAKE UNIT	DIFFERENT (means with the same letter are not Sign. Different)		
BLACK CRAPPIE							
	7.84	4.14	13	GOOSE CARCASS LAKE		A	
	6.91	2.60	10	SNY MCGIL	B	A	
	6.86	3.70	5	BELVIDERE/SPRING LAKE	B	A	
	6.48	2.86	35	TREMPEALEAU LAKES	B	A	
	5.53	3.42	17	ROBINSON/PETERSON/BEEF SL	B	A	
	4.22	2.49	34	LAKE ONALASKA	B		
BLUEGILL							
	4.87	1.49	197	SNY MCGIL		A	
	4.78	1.55	662	TREMPEALEAU LAKES	B	A	
	4.59	1.56	277	GOOSE CARCASS LAKE	B	A	C
	4.49	1.40	353	ROBINSON/PETERSON/BEEF SL	B		C
	4.29	1.38	193	BELVIDERE/SPRING LAKE			C
	3.43	1.77	491	LAKE ONALASKA		D	
LARGEMOUTH BASS							
	11.30	3.61	296	SNY MCGIL		A	
	9.48	5.08	295	ROBINSON/PETERSON/BEEF SL		B	
	8.70	5.13	256	BELVIDERE/SPRING LAKE	C	B	
	8.27	4.83	466	GOOSE CARCASS LAKE	C	D	
	7.59	4.22	321	TREMPEALEAU LAKES		D	
	5.29	3.60	627	LAKE ONALASKA		E	
NORTHERN PIKE							
	22.21	5.58	10	SNY MCGIL		A	
	20.55	7.4	26	GOOSE CARCASS LAKE	B	A	
	17.62	6.08	34	BELVIDERE/SPRING LAKE	B	A	C
	14.11	8.82	16	TREMPEALEAU LAKES	B	D	C
	12.77	7.11	35	ROBINSON/PETERSON/BEEF SL		D	C
	10.93	7.92	19	LAKE ONALASKA		D	
YELLOW PERCH							
	7.58	3.01	18	BELVIDERE/SPRING LAKE	A		
	5.72	2.77	33	GOOSE CARCASS LAKE	B		
	5.55	2.54	62	ROBINSON/PETERSON/BEEF SL	B		
	5.45	2.20	21	SNY MCGIL	B		
	5.10	2.35	95	LAKE ONALASKA	B		
	4.49	1.76	103	TREMPEALEAU LAKES	B		