

BIOLOGICAL DATA

Methods:

The entire shoreline of Tripp Lake was sampled on May 29, 2012 by 40 minutes of nighttime electrofishing.

Results and Discussion:

Electrofishing Catch

Bluegill made up the majority of the electrofishing sample followed by largemouth bass, green sunfish and hybrid sunfish (Table 1). A large percentage of the bluegill and green sunfish samples were substock length fish (Table 2).

Table 1. Total catch from 45 minutes of nighttime electrofishing at Tripp Lake, Hutchinson County, May 29, 2012.

Species	No.	%	CPH ¹	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	118	83.7	177.0	<u>+38.4</u>	450.5	40	13	112
Largemouth Bass	11	7.8	16.5	<u>+1.9</u>	43.0	100	45	105
Green Sunfish	9	6.4	13.5	<u>+9.6</u>	31.3	--	--	--
Hybrid Sunfish	3	2.1	4.5	<u>+1.9</u>	59.0	--	--	--

* 5 years (1998, 2000, 2002, 2004, 2006)

Table 2. Catch per unit effort by length category for various fish species captured by electrofishing in Tripp Lake May 29, 2012.

Species	Substock	Stock	S-Q	Q-P	P+	All sizes	80% C.I.
Bluegill	154.5	22.5	13.5	6.0	3.0	177.0	<u>+38.4</u>
Largemouth Bass	--	16.5	--	9.0	7.5	16.5	<u>+1.9</u>
Green Sunfish	10.5	3.0	3.0	--	--	13.5	<u>+9.6</u>
Hybrid Sunfish*	--	--	--	--	--	4.5	<u>+1.9</u>

*No length categories established. Length categories can be found in Appendix A.

¹ See Appendix A for definitions of CPUE, PSD, and mean Wr.

Largemouth Bass

Management objective: Maintain a largemouth bass fishery with an electrofishing CPH of at least 20.

Largemouth bass electrofishing CPH declined in 2012 and is now below the management objective (Table 3). Bass growth lies between statewide and Region III averages although condition has improved since 2010. All the bass sampled ranged in length from 34-41 cm (13.4-16 in) (Figure 1) and none were less than 5 years old (Table 4). In the past, we have speculated that abundant vegetation may be affecting our ability to sample younger bass. However, looking at past length frequencies, it is more likely that recruitment has been very poor.

Table 3. Largemouth bass electrofishing catch per hour (CPH), PSD, RSD-P and mean Wr for Tripp Lake, Hutchinson County, 2000-2012.

	2000	2002	2004	2006	2010	2012	Mean*
CPH	19.0	45.0	45.0	49.0	33.0	16.5	38.2
PSD	100	43	100	38	61	100	68
RSD-P	100	43	96	15	15	45	54
Mean Wr	105	110	101	106	84	105	101

*5 years (2000, 2002, 2004, 2006, 2010)

Table 4. Average back-calculated lengths, in mm, for each age class of largemouth bass from Tripp Lake, Hutchinson County, May 29, 2012.

Year Class	Age	N	Back-calculation Age							
			1	2	3	4	5	6	7	8
2007	5	6	107	195	248	287	351			
2006	6	4	71	142	226	297	347	392		
2005	7	1	61	140	221	275	299	321	362	
All Classes		11	80	159	232	287	332	357	362	
Statewide Mean			96	182	250	305	342			
Region III Mean			111	212	287	347	383			
SLI* Mean			99	183	246	299	332			

*Small Lakes and Impoundments (<150 acres)

Bluegill

In addition to declining bluegill abundance, there has been a major decline in the abundance of larger fish as evidenced by decreases in PSD and RSD-18 as well as the length frequency of the population (Figure 2). On a positive note, if growth remains good, the abundant small fish in the population should quickly replace the larger fish that were lost.

Table 5. Bluegill electrofishing CPUE, PSD, RSD-P and mean Wr for Tripp Lake, Hutchinson County, 2002-2012.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
CPUE	53		1,144		406				265.3		177.0
PSD	0		3		39				79		40
RSD-18	0		0		6				43		20
RSD-P	0		0		0				8		13
Mean Wr	120		122		100				96		112

Other Species

No black bullheads were sampled in 2012 while green sunfish and hybrid sunfish abundance has increased since 2010 (Table 6). No channel catfish or yellow perch stocked in 2011 were sampled.

Table 6. Electrofishing CPH for all fish species sampled in Tripp Lake, Hutchinson County, 2004-2012.

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012
BLB	24.0		13.0				--		--
CCF	--		1.0				2.0		--
GSF	3.0		--				--		13.5
HYB	132.0		51.0				--		4.5
BLG	1,144.0		406.0				199.0		177.0
LMB	45.0		49.0				33.0		16.5

CCF (Channel Catfish), LMB (Largemouth Bass), BLG (Bluegill), GSF (Green Sunfish), HYB (Hybrid Sunfish), BLB (Black Bullhead),

MANAGEMENT RECOMMENDATIONS

1. Continue biennial electrofishing surveys to monitor the fish population.
2. Conduct periodic chemical treatments to reduce aquatic vegetation in areas accessible to shore anglers.
3. Stock yellow perch, if available, at the request of local anglers. Tripp Lake once supported a good yellow perch population.

Table 7. Stocking record for Tripp Lake, Hutchinson County, 1990-2012.

Year	Number	Species	Size
1992	2,800	Channel Catfish	Fingerling
	750	Largemouth Bass	Sml. Fingerling
2002	100	Largemouth Bass	Adult
2004	80	Channel Catfish	Adult
	100	Largemouth Bass	Adult
2011	100	Channel Catfish	Adult
	272	Yellow Perch	Adult

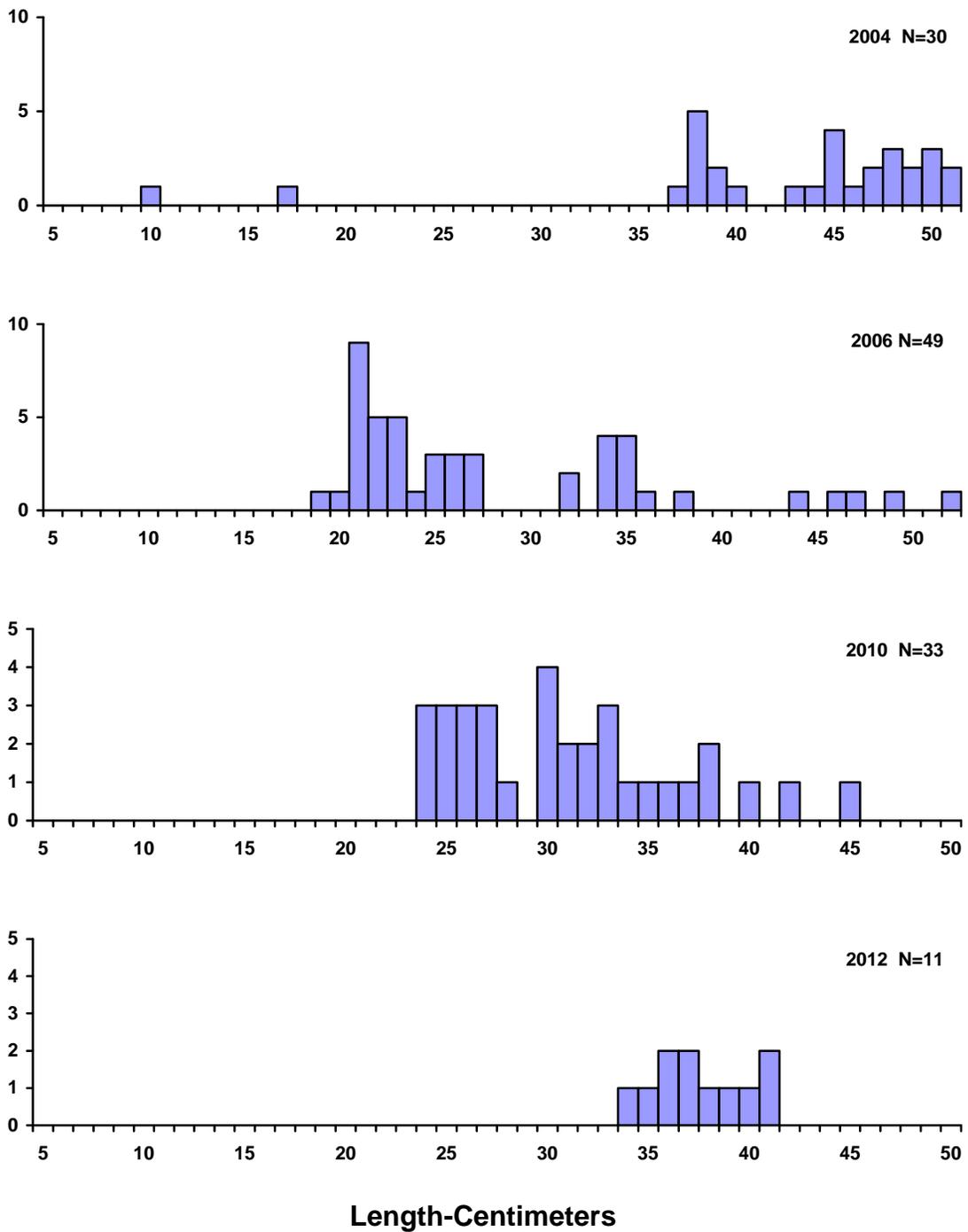


Figure 1. Length frequency histograms for largemouth bass sampled by electrofishing in Tripp Lake, Hutchinson County, 2004, 2006, 2010, and 2012.

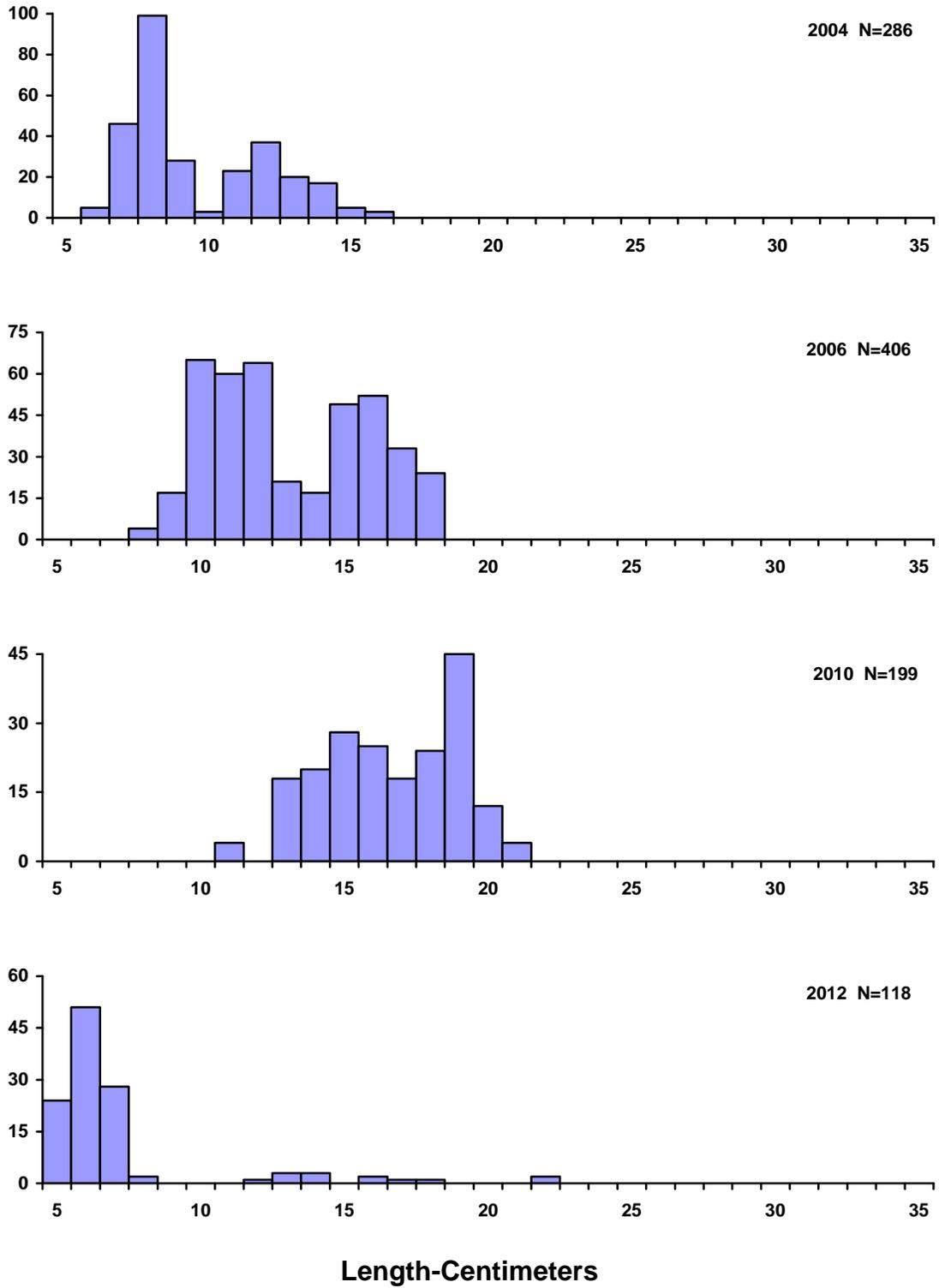


Figure 2. Length frequency histograms for bluegill sampled by electrofishing in Tripp Lake, Hutchinson County, 2004, 2006, 2010, and 2012.

Appendix A. A brief explanation of catch per unit effort (CPUE), proportional stock density (PSD), relative stock density (RSD) and relative weight (Wr).

Catch Per Unit Effort (CPUE) is the catch of animals in numbers or in weight taken by a defined period of effort. Can refer to trap-net nights of effort, gill-net nights of effort, catch per hour of electrofishing, etc.

Proportional Stock Density (PSD) is calculated by the following formula:

$$\text{PSD} = \frac{\text{Number of fish} > \text{quality length}}{\text{Number of fish} \geq \text{stock length}} \times 100$$

Relative Stock Density (RSD-P) is calculated by the following formula:

$$\text{RSD-P} = \frac{\text{Number of fish} > \text{preferred length}}{\text{Number of fish} \geq \text{stock length}} \times 100$$

PSD and RSD-P are unitless and usually calculated to the nearest whole digit.

Size categories for selected species found in Region 3 lake surveys, in centimeters. (inches in parenthesis).

Species	Stock	Quality	Preferred	Memorable	Trophy
Walleye	25 (10)	38 (15)	51 (20)	63 (25)	76 (30)
Yellow perch	13 (5)	20 (8)	25 (10)	30 (12)	38 (15)
Black crappie	13 (5)	20 (8)	25(10)	30 (12)	38 (15)
White crappie	13 (5)	20 (8)	25(10)	30 (12)	38 (15)
Bluegill	8 (3)	15 (6)	20 (8)	25 (10)	30 (12)
Largemouth bass	20 (8)	30 (12)	38 (15)	51 (20)	63 (25)
Smallmouth bass	18 (7)	28 (11)	35(14)	43 (17)	51 (20)
Northern pike	35 (14)	53 (21)	71 (28)	86 (34)	112 (44)
Channel catfish	28 (11)	41 (16)	61 (24)	71 (28)	91 (36)
Black bullhead	15 (6)	23 (9)	30 (12)	38 (15)	46 (18)
Common carp	28 (11)	41 (16)	53 (21)	66 (26)	84 (33)
Bigmouth buffalo	28 (11)	41 (16)	53 (21)	66 (26)	84 (33)

For most fish, 30-60 or 40-70 are typical objective ranges for “balanced” populations. Values less than the objective range indicate a population dominated by small fish while values greater than the objective range indicate a population comprised mainly of large fish.

Relative weight (Wr) is a condition index that quantifies fish condition (i.e., how much does a fish weigh for its length). A Wr range of 90-100 is a typical objective for most fish species. When mean Wr values are well below 100 for a size group, problems may exist in food and feeding relationships. When mean Wr values are well above 100 for a size group, fish may not be making the best use of available prey.