

Fishing access:

There is an access trail from the highway to a fair boat ramp for water access. Although this trail may become impassable during wet periods. There is also ample shoreline access for shore fishing due to easements. No boat dock exists at the ramp area though.

Condition of all structures (i.e. spillway, boat ramps, level regulators, etc.):

The boat ramp is in fair condition but a lot of times is overgrown with vegetation. The dam and spillway are in good condition. And the access trail is a fair trail through a pasture.

Field observations of aquatic vegetation condition:

Submergent vegetation was observed around the entire shoreline to a depth of around 3ft and consisted of different species of pondweed. There was some emergent vegetation around sections of the shoreline that consisted of cattails, sedges and rushes.

CHEMICAL DATA**Field observations of water quality and pollution problems:**

No pollution problems were evident during the current survey. The water clarity is poor with a secchi disc reading of 1.5 feet. Cattle graze around the entire shoreline, which is probably affecting the water clarity. Other water quality characteristics were measured in the field on July 6, 2009 using a HACH water quality kit, an Oyster meter, and a YSI 55 meter. Results are found in Table 1.

Presence of a thermocline and depth from surface: No

Station for water chemistry located on attached map: Yes

Table 1. Water chemistry results from Mission Lake, Hyde County, July 6, 2009.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/l)	Hardness (mg/l)	pH	Secchi disc (ft)
A	Surface	75.9	9.70	20.4	131	354	8.01	1.5
A	12.0	72.3	3.05	41.6	154	370	7.36	

BIOLOGICAL DATA**Methods:**

Mission Lake was sampled on July 6-8, 2009, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and 3/4 inch knotted mesh. No gill netting or electrofishing was performed during this years sampling period. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of ten, overnight ¾-inch frame nets at Mission Lake, Hyde County, July 6-8, 2009.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Common Carp	48	57.1	4.8	± 2.0	1.0	46	23	77
Black Bullhead	33	39.3	3.3	± 1.8	42.6	100	21	88
Channel Catfish	2	2.4	0.2	± 0.3	3.1	--	--	90
Northern Pike	1	1.2	0.1	± 0.1	0.4	--	--	84

* Sixteen year mean (1962, 1963, 1968, 1971, 1976, 1981, 1983, 1986, 1988, 1990, 1992, 1994, 1997, 2000, 2003, 2006)

Black Bullhead

The black bullhead population in Mission Lake has decreased for the third straight survey. The CPUE of 3.3 is below the 10.0 from 2006 and well below the 49.9 fifteen year mean (Table 2). The size structure is still in good condition with a PSD of 100 and an RSD-P of 22, which has slightly decreased from the PSD of 67 with an RSD-P of 22 from 2006. Figures 1-5 illustrate these changes from the last two surveys as well as the past five surveys. Condition is on the low side with a mean Wr of 88. This population continues to be under control with no presence of a true predator like largemouth bass, northern pike or walleye. Although Mission Lake has historically had a very good channel catfish population.

Figure 1. Length frequency histogram for black bullhead sampled from Mission Lake, Hyde County, 2009.

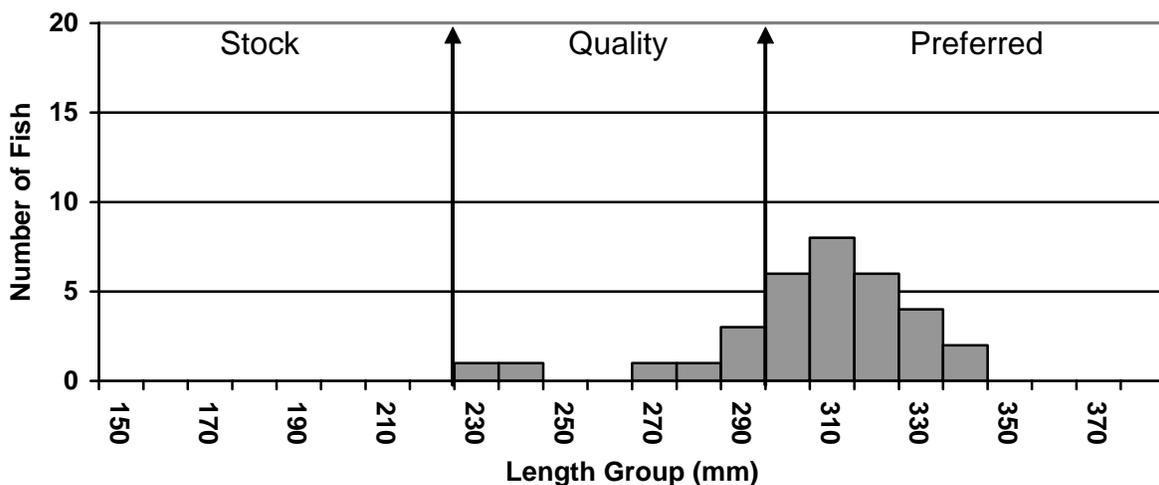


Figure 2. Length frequency histogram for black bullhead sampled from Mission Lake, Hyde County, 2006.

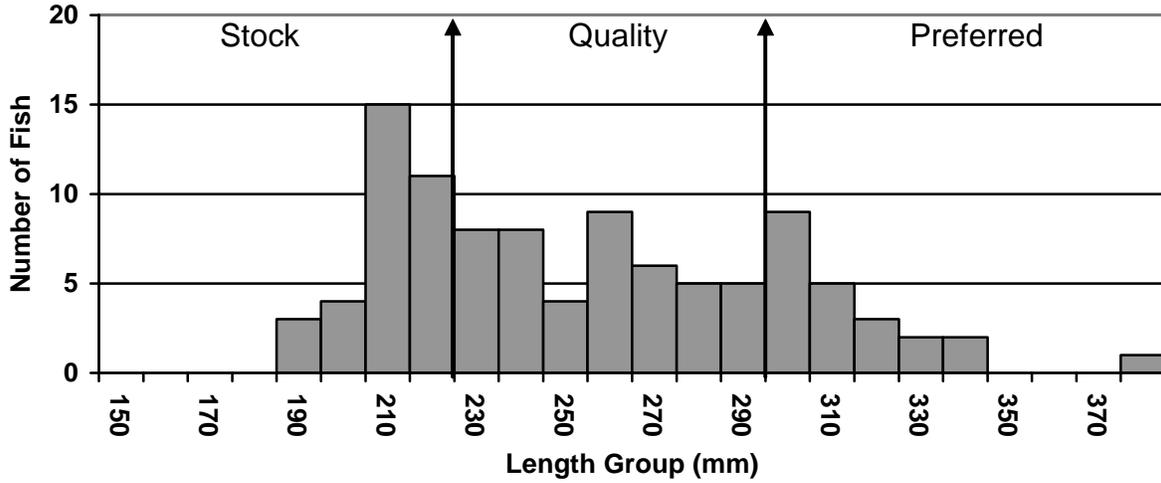


Figure 3. Length frequency histogram for black bullhead sampled from Mission Lake, Hyde County, 2003.

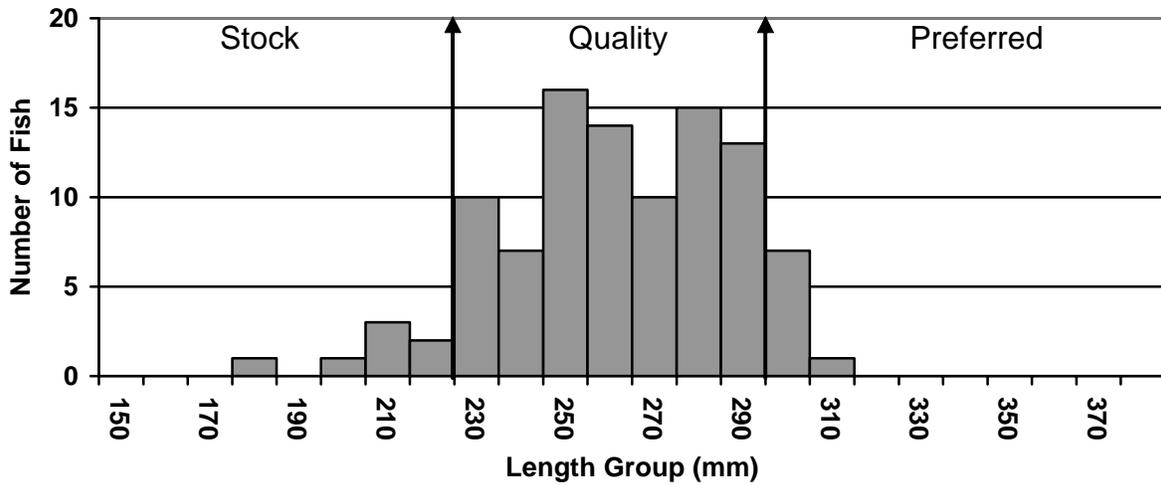


Figure 4. Length frequency histogram for black bullhead sampled from Mission Lake, Hyde County, 2000.

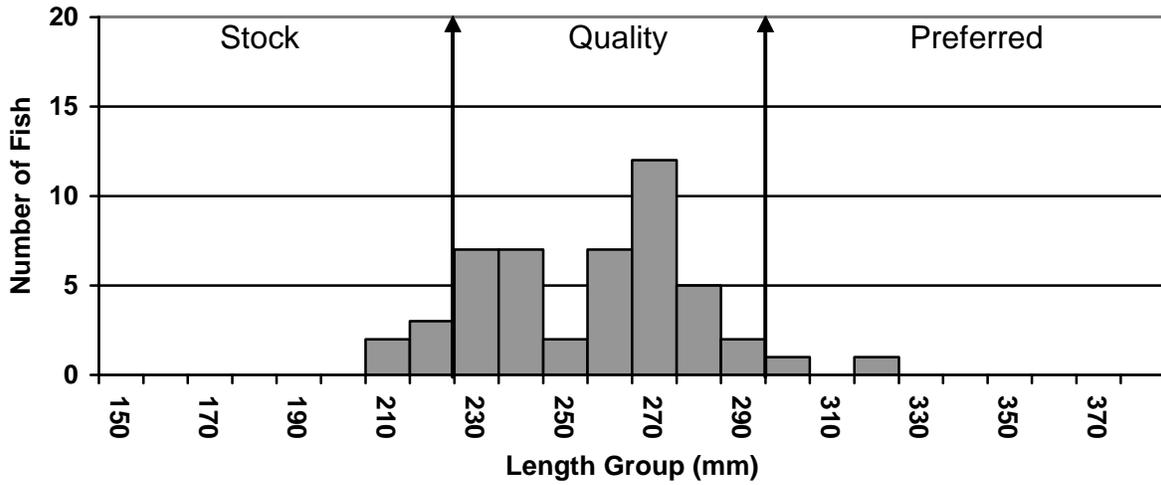
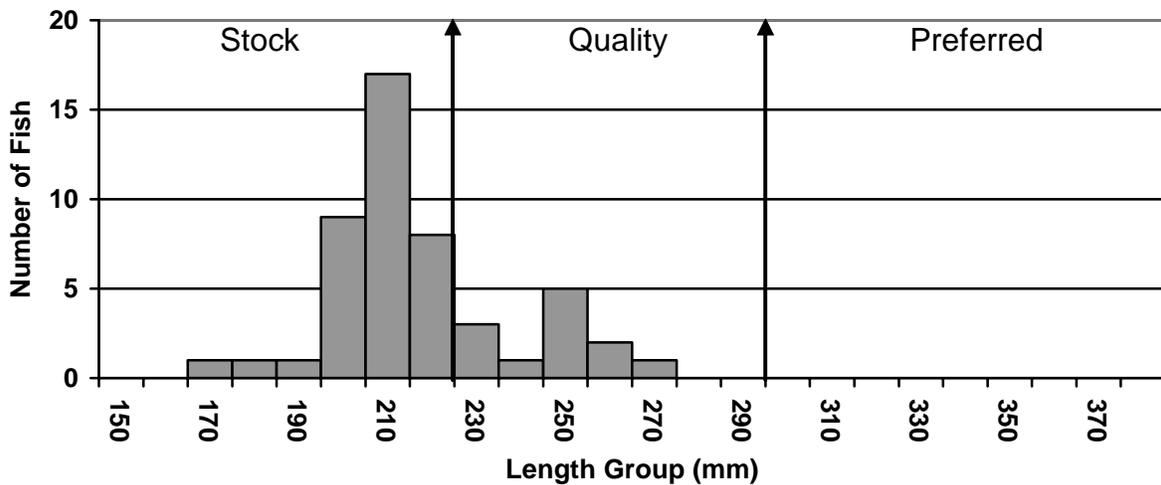


Figure 5. Length frequency histogram for black bullhead sampled from Mission Lake, Hyde County, 1997.



Channel Catfish

The channel catfish population in Mission Lake has declined to almost nothing for some reason. The current CPUE has dropped to 0.2 compared to the 5.4 from 2006 and the 3.1 from the fifteen year mean (Table 2). Table 4 shows the CPUE trend for the last fifteen surveys of the channel catfish population in Mission Lake. Figures 6-9 illustrate what the size structure of this population has looked like over the surveys from 1997 to 2006. There were only 2 catfish sampled this survey, which is not enough to plot on a graph. Condition of the two fish sampled was fine with a mean W_r of 90. The one problem that has plagued this population over the course of time as been the lack of natural reproduction as can be seen on Figures 6-9. Channel catfish have historically done well, so more will need to be stocked in the coming years to keep this population going.

Figure 6. Length frequency histogram for channel catfish sampled from Mission Lake, Hyde County, 2006.

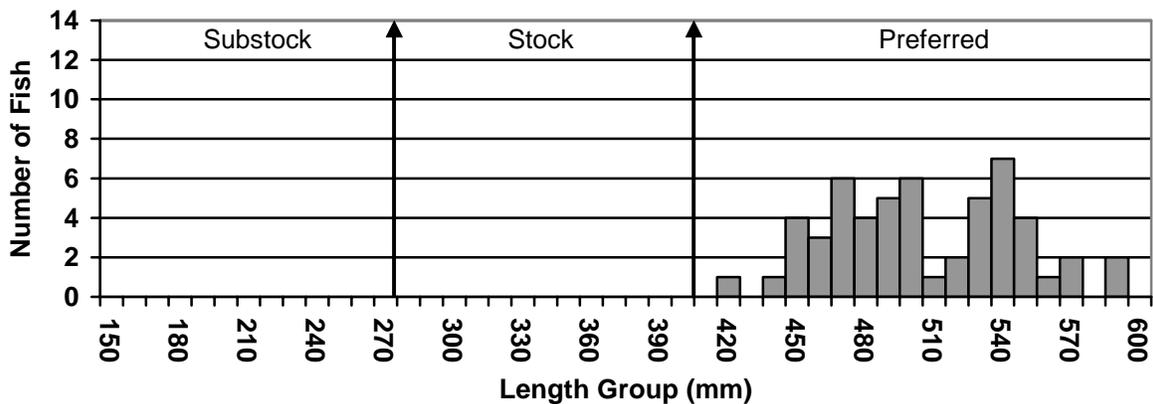


Figure 7. Length frequency histogram for channel catfish sampled from Mission Lake, Hyde County, 2003.

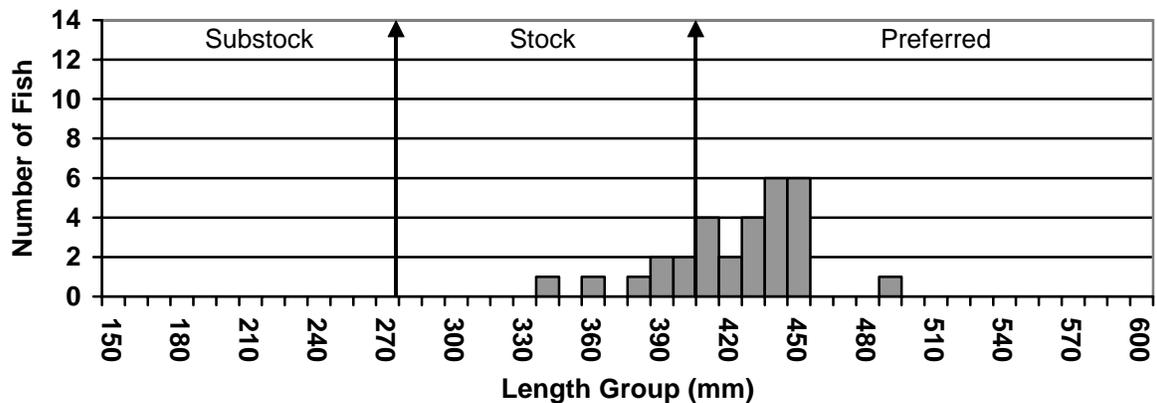


Figure 8. Length frequency histogram for channel catfish sampled from Mission Lake, Hyde County, 2000.

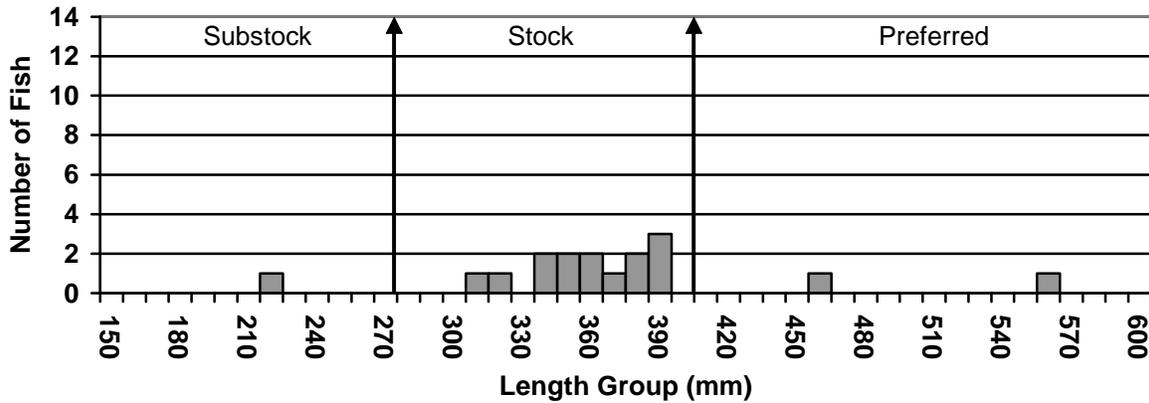
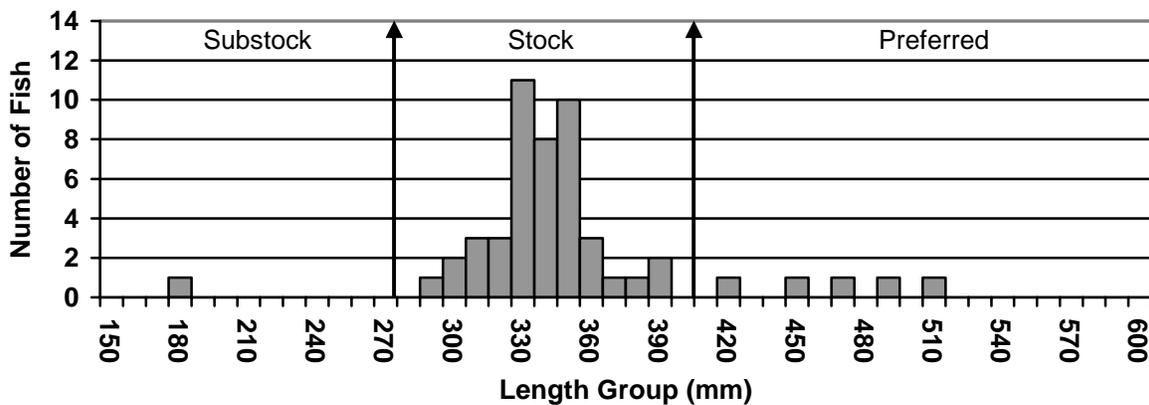


Figure 9. Length frequency histogram for channel catfish sampled from Mission Lake, Hyde County, 1997.



Other Species

Common carp and northern pike were the only other species sampled during this survey period (Table 2). Only one northern pike was sampled for a CPUE of 0.1, which is about right on with the fifteen year mean of 0.4. Mission Lake seems to always have a few pike but never very many.

The common carp population in Mission Lake has taken a big jump this survey. The current CPUE of 4.8 is above the 2.4 from 2006 and well above the 1.0 fifteen year mean (Table 2). The population contains a wide variety of sizes as can be seen in Figure 10. They have also taken over as the dominant species found in Mission Lake. Hopefully they do not get too far out of control.

White crappie, yellow perch, largemouth bass, white sucker, bluegill, and green sunfish were the species sampled in past survey that were not sampled this survey (Table 4).

Figure 10. Length frequency histogram for common carp sampled from Mission Lake, Hyde County, 2009.

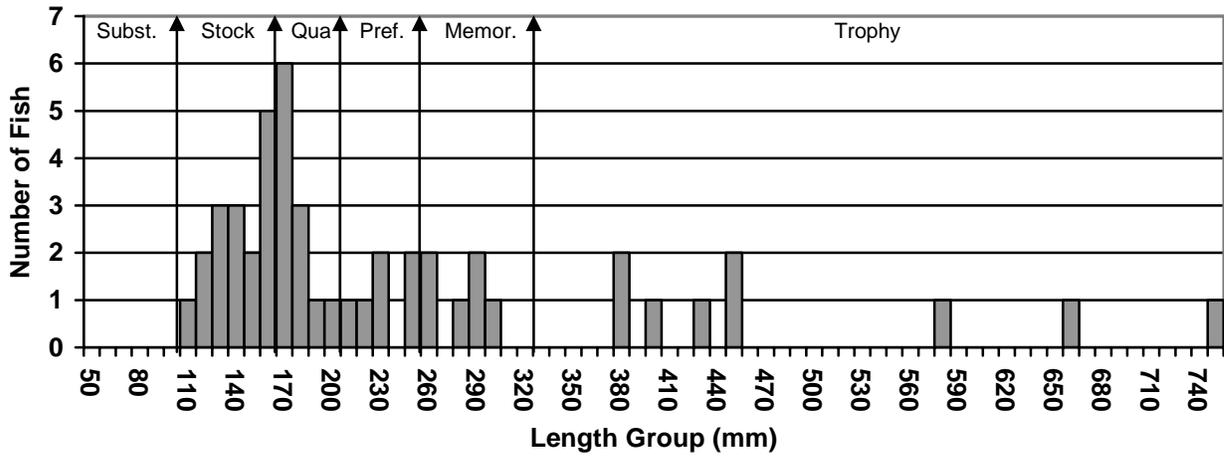


Table 3. Stocking records for 1991 to the present for Mission Lake, Hyde County.

Year	Number	Species	Size
1991	460	Black Crappie	Adult
1991	2,900	Northern Pike	Fingerling
1995	51	Northern Pike	Adult
1995	5,500	Northern Pike	Fingerling
2001	180	Largemouth Bass	Adult
2001	5,500	Largemouth Bass	Fingerling
2004	5,800	Walleye	Fingerling
2009	5,880	Largemouth Bass	Fingerling

RECOMMENDATIONS

1. Resurvey to monitor the fish population in 2012.
2. Stock walleye fingerlings to supplement the predator population.
3. Stock channel catfish to maintain the existing population.

Table 4. Gill net (GN), trap net (TN), and electrofishing (EF) CPUE for all fish species sampled in Mission Lake since surveys were started in 1962.

Species	1962	1963	1968	1971	1976	1981	1983	1986	1988	1990	1992	1994	1997	2000	2003	2006	2009
BLB (GN)	--	--	49.0	--	1.0	--	--	--	--	--	--	--	--	--	--	1.0	--
BLB (TN)	9.2	3.7	49.0	0.1	2.0	0.5	45.8	77.3	5.9	3.1	21.7	7.4	181.4	322.8	19.2	10.0	3.3
WHC (GN)	--	--	--	--	2.0	1.0	--	--	--	--	--	--	--	--	--	--	--
WHC (TN)	76.0	37.0	--	56.1	0.5	3.4	3.3	45.1	62.5	1.4	13.2	9.6	13.6	2.3	--	--	--
YEP (GN)	--	--	--	--	4.0	--	--	--	--	2.0	--	--	--	--	--	--	--
YEP (TN)	4.0	9.3	--	0.4	0.3	--	0.8	4.9	1.0	--	0.7	0.4	--	--	--	--	--
LMB (EF)	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0	--	--	--
LMB (GN)	--	--	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LMB (TN)	0.6	--	0.4	--	--	--	2.8	--	--	--	--	0.1	0.1	--	--	--	--
NOP (GN)	--	--	--	--	2.0	5.0	--	--	--	--	--	--	--	--	--	--	--
NOP (TN)	0.6	1.7	--	0.8	0.4	0.4	0.3	0.1	--	0.1	0.5	1.0	0.5	0.6	--	--	0.1
CCF (GN)	--	--	--	--	8.0	13.0	--	--	--	--	--	--	--	--	--	--	--
CCF (TN)	--	--	--	--	3.8	1.3	0.5	13.1	0.3	--	1.6	1.6	17.5	2.1	3.0	5.4	0.2
WHS (GN)	--	--	47.0	--	3.0	2.0	--	--	--	2.0	--	--	--	--	--	--	--
WHS (TN)	1.0	0.3	19.0	0.5	0.1	0.6	1.8	0.3	0.1	--	7.0	2.6	1.8	2.4	15.1	0.2	--
COC (GN)	--	--	--	--	--	2.0	--	--	--	1.0	--	--	--	--	--	--	--
COC (TN)	4.0	4.7	--	0.1	1.3	0.4	0.5	0.4	0.1	--	0.3	0.8	0.1	0.0	0.3	2.4	4.8
BLG (GN)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLG (TN)	--	--	--	0.1	--	--	--	--	--	--	--	--	3.1	2.4	--	--	--
GSF (GN)	--	--	29.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GSF (TN)	--	--	24.0	--	--	--	--	--	--	--	--	--	0.3	--	1.0	--	--

BLB-Black Bullhead, WHC-White Crappie, YEP-Yellow Perch, LMB-Largemouth Bass, NOP-Northern Pike, CCF-Channel Catfish, WHS-White Sucker, COC-Channel Catfish, BLG-Bluegill, GSF-Green Sunfish