

Watershed condition with percentages of land use types:

West Morristown Lake has a watershed of approximately 13,000 acres or 20 square miles which is primarily made up of privately owned agricultural land. Land use in the watershed is 60% cultivated cropland and 40% pasture and hayland. The immediate shoreline is composed of native grasses that are often heavily grazed.

Fishing access:

Shore fishing is the main source of fishing, but can be hindered during summer months by aquatic vegetation. Lake access is marginal due to no boat ramp.

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

The dam grade and spillway area is in good condition. There is no boat ramp at West Morristown and access is via a gravel road.

Field observations of aquatic vegetation condition:

Emergent vegetation is found in various locations around the shoreline and is composed of cattails and rushes. Little to no submergent vegetation was present at the time of survey.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No pollution problems were evident at the time of the survey. Water clarity was good with a secchi disc reading of 5.5 feet. Other water quality characteristics were measured in the field on June 4, 2013, using a HACH water quality kit and a Hanna multiparameter 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 West Morristown, Corson County, June 4, 2013.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond (µS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	60.3	5.62	59.8	223	567	9.09	1854	927	0.95	-295.0	5.5
A	12.0	59.4	5.30	44.8	380	509	9.44	1844	923	0.95	-295.8	

BIOLOGICAL DATA

Methods:

West Morristown was sampled on June 4-6, 2013, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. Two experimental gill nets were set during this survey period. The gill nets are 150ft x 6ft with 25ft panels of ½, ¾, 1, 1-1/4, 1-1/2, and 2 inch monofilament mesh. No electrofishing was done this survey period due to an early fall blizzard that dropped water temperatures and pushed fish off shore. On the evening of September 2, 2014, West Morristown Lake was electrofished for 40 minutes (4-ten minute transects) to sample the largemouth bass population. The boat was set up with 120 pulses per second of DC current at 340 volts with around 22-24 amps to electrofish the lake that had a conductivity of 1496 µS/cm with a water temperature of 68°F. 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 West Morristown, Corson County, June 4-6, 2013.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Yellow Perch	5	100	0.5	± 0.4	1.4	40	0	99

* One year (2011)

Gill Net Catch

Table 3. Total catch of ten, overnight ¾-inch frame nets at West Morristown, Corson County, June 4-6, 2013.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Yellow Perch	22	95.7	11.0	± 15.4	0.5	90	10	106
Largemouth Bass	1	4.3	0.5	± 1.5	0.0	--	--	108

* One year (2011)

Electrofishing Catch

Table 4. Total catch from four, ten-minute runs of fall nighttime electrofishing on West Morristown, Corson County, September 2, 2014.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Largemouth Bass	2,755	100	4,132.5	± 1806.9	152.4	67	63	132

* One year (2011)

Largemouth Bass

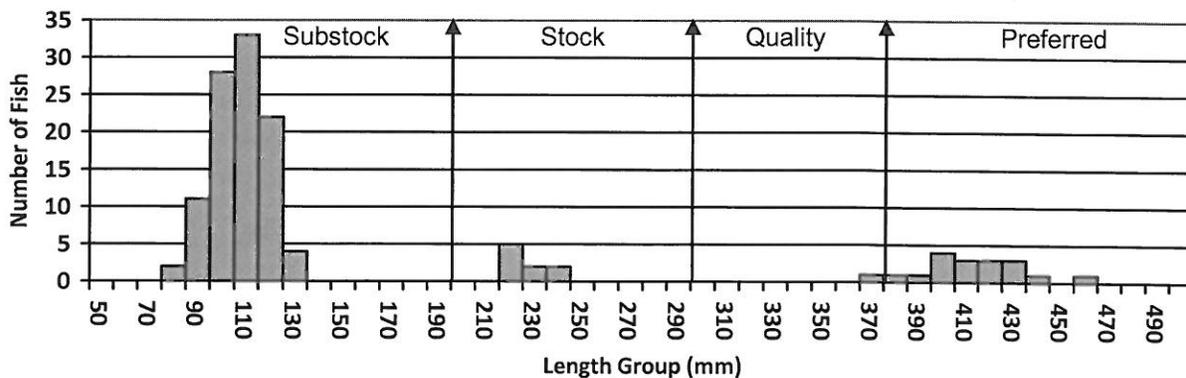
The largemouth bass population in West Morristown continues to thrive. The CPUE for electrofishing was extremely high at 4132.5 fish per hour (Table 4). This number is just unheard of. It towers above the 152.4 fish per hour from the 2011 survey. The population is dominated by young fish with the vast majority being age 0 fish (Table 5). Figure 1 illustrates the length frequency histogram for the fish sampled this survey. Growth is great with means above statewide, regional and SLI means (Table 5). Condition is good with a mean W_r of 132. The only down fall to this population that will have to be monitored is that they do not continue at this rate and start to over populate and stunt. Some manual removal for stockings in other public waters is advised.

Table 5. Average back-calculated lengths (mm) for each age class of largemouth bass sampled from West Morristown Lake, Corson County, 2014.

Year Class	Age	N	Back-calculated Age					
			1	2	3	4	5	6
2014	0	100						
2013	1	9	100					
2011	3	1	101	200	318			
2010	4	7	72	234	308	373		
2009	5	9	112	248	338	373	401	
2008	6	1	94	171	325	380	398	424
All Classes		127	96	213	322	375	399	424
Statewide Mean			96	182	250	305	342	
Region II Mean			105	183	246	296	328	
SLI* Mean			99	183	246	299	332	

*Small Lakes and Impoundments

Figure 1. Length frequency histogram for largemouth bass sampled from West Morristown Lake, Corson County, 2014.



Yellow Perch

The yellow perch population in West Morristown continues to improve. The trap net CPUE of 05 is below the 1.4 from the 2010 survey, but a big cold front could have played a role in the catches this survey. The gill net CPUE of 11.0 is well above the 0.5 from the 2010 survey. So it appears that the population is increasing. Size structure is about the same with a PSD of 90 and an RSD-P of 10, for the gill nets, compared to the 100 and 29, respectively, from the 2010 survey. Figures 2 and 3 illustrate the length frequency histograms for the last two surveys. They show not a lot of change in the main grouping of fish. The biggest difference is that in 2013 there are a couple fish in the memorable category as well as a couple fish in the substock to indicate that there is some reproduction going on. Further evidence of natural reproduction is seen in the growth table of Table 6. Growth is a little slow with means below statewide, regional and SLI means (Table 6). Condition is good with a mean Wr of 103.

Table 6. Average back-calculated lengths (mm) for each age class of yellow perch sampled from West Morristown, Corson County, 2013.

Year Class	Age	N	Back-calculated Age									
			1	2	3	4	5	6	7	8	9	
2012	1	1	87									
2011	2	24	120	199								
2005	8	1	85	110	126	142	217	286	296	319		
2004	9	1	74	124	145	198	237	258	304	312	320	
All Classes		27	92	144	136	170	227	272	300	315	320	
Statewide Mean			86	145	190	220	242					
Region II Mean			91	152	196	219	242					
SLI* Mean			87	142	185	205	219					

* Small Lakes and Impoundments

Figure 2. Length frequency histogram for yellow perch sampled from West Morristown, Corson County, 2013.

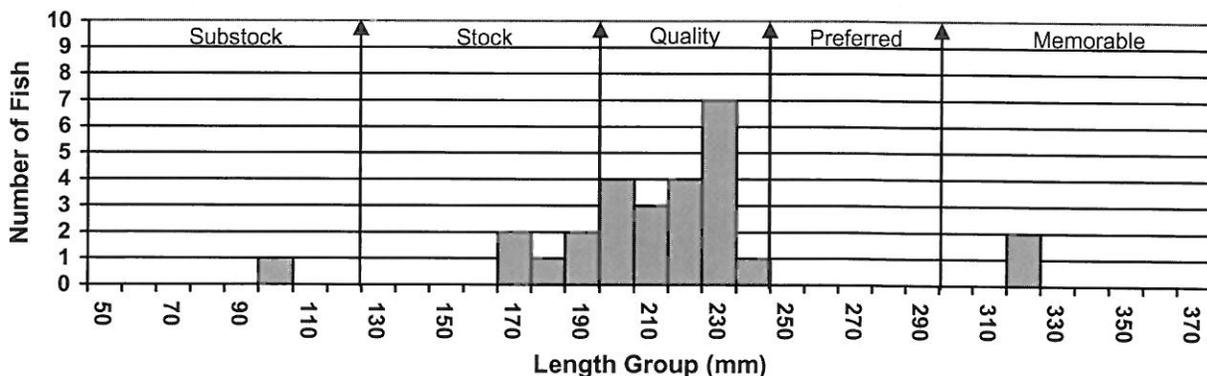
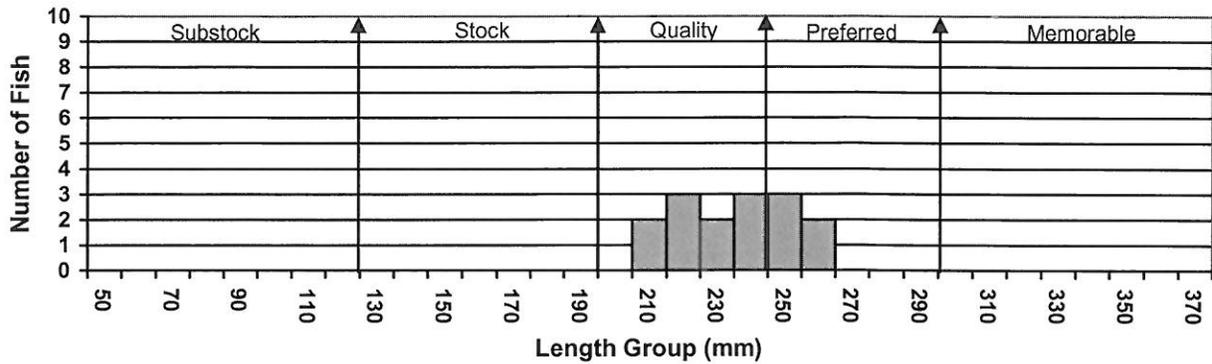


Figure 3. Length frequency histogram for yellow perch sampled from West Morristown, Corson County, 2011.



Other species

One largemouth bass was the only other species sampled this survey. Not much can be said about the population. Hopefully next sampling season, West Morristown can be electrofished to monitor the largemouth bass population.

Black bullhead, black crappie, northern pike and smallmouth bass were the species not sampled this survey that had been in past surveys (Table 8). This is a good thing as none of these species have been restocked since the lake filled after being completely dry.

Table 7. Stocking records for the last ten years for West Morristown, Corson County.

Year	Number	Species	Size
2009	31,200	Largemouth Bass	Small Fingerling
2010	250	Yellow Perch	Adult
2010	11,420	Largemouth Bass	Fingerling

RECOMMENDATIONS

1. Resurvey in 2016 to monitor the fish populations.
2. Monitor the largemouth bass population and remove fish as necessary to avoid stunting and over populating.

Table 8. Gill net (GN), trap net (TN), and electrofishing (EF) CPUE for all fish species sampled from West Morristown since survey records started.

Species	1981	1986	1994	1995	1997	1999	2002	2005	2009	2011	2013	2014
BLB (GN)	--	--	--	--	--	142.5	268.0	--	--	--	--	--
BLB (TN)	--	--	0.6	0.3	66.8	14.9	2577.7	--	--	--	--	--
BLC (GN)	--	--	--	--	--	0.5	--	--	--	--	--	--
BLC (TN)	7.8	2.8	0.1	--	--	0.3	0.5	--	--	--	--	--
YEP (GN)	10.0	--	--	--	34.0	8.0	--	--	--	0.5	11.0	--
YEP (TN)	1.4	0.3	--	0.6	1.0	0.3	--	--	--	1.4	0.5	--
LMB (EF)	--	--	--	--	--	--	--	--	--	152.4	--	4132.5
LMB (GN)	--	--	--	--	--	--	--	--	--	--	0.5	--
LMB (TN)	--	--	--	--	--	--	--	--	--	0.1	--	--
NOP (GN)	13.0	2.0	--	--	4.0	9.5	7.0	--	--	--	--	--
NOP (TN)	4.9	0.9	--	4.0	2.0	2.5	1.1	--	--	--	--	--
SMB (GN)	--	--	--	--	--	--	--	--	--	--	--	--
SMB (TN)	--	--	--	--	--	--	--	--	--	0.2	--	--

BLB – Black Bullhead, BLC – Black Crappie, YEP – Yellow Perch, LMB – Largemouth Bass, NOP – Northern Pike, SMB – Smallmouth Bass