

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-47

Name: Lantry Dam **County:** Dewey
Legal Description: T12N-R22W-Sec. 9 **GPS:** 45°01'12.61"N 101°27'33.37"W
Location from nearest town: 1½ miles west of Lantry

Date of present survey: June 9-11, 2014 (netting); September 15, 2014 (electrofishing)
Date of last survey: July 11-13, 2011 (netting)
Most recent lake management plan: F-21-R-45 (January 1, 2013 to December 31, 2017)
Management classification: Warmwater Semi-Permanent

Primary Game Species	Secondary and Other Species
Northern Pike	Black Bullhead
Yellow Perch	Black Crappie
Bluegill	
Largemouth Bass	

PHYSICAL DATA

Surface Area: 70 acres **Watershed:** 17,523 acres
Maximum Depth: 18 feet **Mean Depth:** 7 feet
Lake elevation at time of survey (field observations): 1 foot low
Contour map: No **Date:** NA

Ownership of lake and adjacent lakeshore properties:

Lantry Dam is a 70-acre impoundment on Little Bear Creek just west of the town of Lantry in western Dewey County. The Chicago, Milwaukee, St. Paul and Pacific Railroad constructed the earthen dam that created the lake in 1910. The lake was named due to its proximity to the town of Lantry. The lake file does not contain any information regarding ownership of Lantry Dam. There are also no records of public use easements or water rights permits to the State of South Dakota or the Department of Game, Fish and Parks. Since 1982, the Wildlife Division of the State of South Dakota Department of Game, Fish and Parks has managed the fishery in Lantry Dam.

Watershed condition with percentages of land use types:

The watershed of Lantry Dam is 17,523 acres or nearly 27.5 square miles, which is made up entirely privately owned agricultural land and land held in trust by the Cheyenne River Sioux Tribe. Land use percentages in the watershed are approximately 69% cultivated cropland consisting mostly of small grains and 31% native grassland utilized as pasture and hay crops.

Fishing access:

An old dirt trail leads to Lantry Dam, but may become impassible during wet conditions. There is no formal boat ramp at the end of the trail, but the bottom is hard enough so that a smaller boat can be launched. Some shoreline fishing opportunity does exist in areas around the dam but may be hampered by the submergent vegetation found throughout the lake.

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

Lantry’s dam and spillway appear to be in good condition. Access is provided by a dirt trail on the lake’s west side. Lantry has no boat ramp, but small boats can be launched.

Field observations of aquatic vegetation condition:

Emergent vegetation is present along the entire shoreline and consists of cattails, rushes, and sedges. Large amounts of terrestrial vegetation and woody debris were observed along the shoreline. Submergent vegetation fills a large portion of Lantry Dam and consists of sago and clasping leaf pondweeds and also common milfoil along with possibly others.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No pollution problems were evident during the lake survey. Water clarity was fine with a secchi disc reading of 2 feet. Other water quality characteristics were measured in the field on June 9, 2014, 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 Lantry Dam, Dewey County, July 11, 2011.

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	66.7	5.60	28.6	137	244	9.19	720	360	0.35	-176.6	2.0
A	16	65.9	3.50	20.2	148	234	8.23	769	384	0.38	-173.0	

BIOLOGICAL DATA

Methods:

Lantry Dam was sampled on June 9-11, 2014, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. No experimental gill nets were used during this survey. On the evening of September 15, 2014, Lantry Dam was electrofished for 60 minutes (6-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 10-11 amps to electrofish the lake that had a conductivity of 635 µS/cm with a water temperature of 57.8°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 Lantry Dam, Dewey County, June 9-11, 2014.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Black Crappie	355	36.9	35.5	± 12.5	7.7	3	0	97
Black Bullhead	342	35.6	34.2	± 12.1	131.3	41	0	98
Bluegill	161	16.7	16.1	± 3.9	28.7	39	1	100
Yellow Perch	101	10.5	10.1	± 2.7	2.9	72	10	83
Largemouth Bass	3	0.3	0.3	± 0.2	0.7	--	--	98

* Nine years (1982, 1988, 1992, 1996, 1999, 2002, 2005, 2009, 2011)

Electrofishing Catch

Table 3. Total catch from six, ten minute transects of fall nighttime electrofishing on Lantry Dam, Dewey County, September 15, 2014.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Largemouth Bass	69	100	69.0	± 22.7	5.9	55	28	104

* Three years (1999, 2002, 2005)

Largemouth Bass

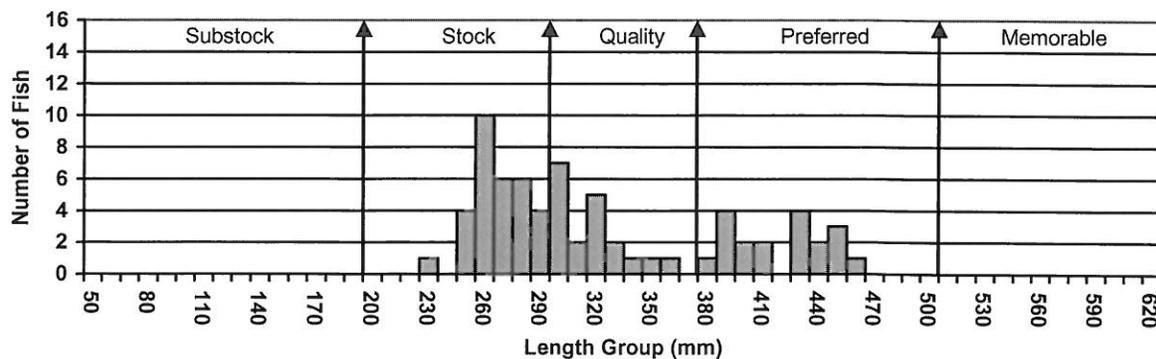
Lantry Dam contains a good largemouth bass population. The fall electrofishing CPUE was 69 fish per hour, which is well above the 4.0 from the 2005 survey (Table 9) as well as the three year mean of 5.9 (Table 3). Figure 1 illustrates the length frequency histogram for the fish sampled this survey and it shows that a pretty good size distribution does exist. The good size distribution can also be seen with the PSD of 55 and an RSD-P of 28. Growth is good with a means right on with statewide, regional and SLI means (Table 4). Condition is good with a mean Wr of 104. There have not been a lot of electrofishing surveys done on this population, but as of this survey things appear to be headed in the right direction.

Table 4. Average back-calculated lengths (mm) for each age class of largemouth bass sampled from Lantry Dam, Dewey County, 2014.

Year Class	Age	N	Back-calculated Age																	
			1	2	3	4	5	6	7	8	9	10								
2012	2	1	94	146																
2011	3	40	91	173	224															
2010	4	5	88	193	234	264														
2009	5	3	100	180	251	292	316													
2008	6	8	117	187	248	313	355	385												
2007	7	6	83	178	240	297	340	367	392											
2006	8	4	90	176	238	290	331	359	384	411										
2005	9	1	73	136	201	268	323	348	367	386	411									
2004	10	1	56	121	189	251	309	347	365	394	414	431								
All Classes		69	88	166	228	282	329	361	377	397	413	431								
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 Lantry Dam, Dewey County, 2014.



Bluegill

Lantry Dam continues to contain a good bluegill population. The CPUE of 16.1 is above the 8.7 from the 2011 survey (Table 9) but is still below the 28.7 nine year mean (Table 2). Figures 2 through 7 illustrate the length frequency histograms for the last six surveys to show the size distributions of the fish sampled. These show pretty well the changes and cycles that the population goes through. The population right now is dominated by smaller fish with a PSD of 39 and an RSD-P of 1. Growth is good with a means right on with statewide, regional and SLI means (Table 5). Condition is good with a mean Wr of 100.

Table 5. Average back-calculated lengths (mm) for each age class of bluegill sampled from Lantry Dam, Dewey County, 2014.

Year Class	Age	N	Back-calculated Age				
			1	2	3	4	5
2011	3	81	47	91	134		
2010	4	16	43	93	143	163	
2009	5	3	49	94	155	184	193
All Classes		100	46	93	144	174	193
Statewide Mean			55	103	141	166	180
Region II Mean			52	97	134	164	180
SLI* Mean			53	101	138	163	180

* Small Lakes and Impoundments

Figure 2. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2014.

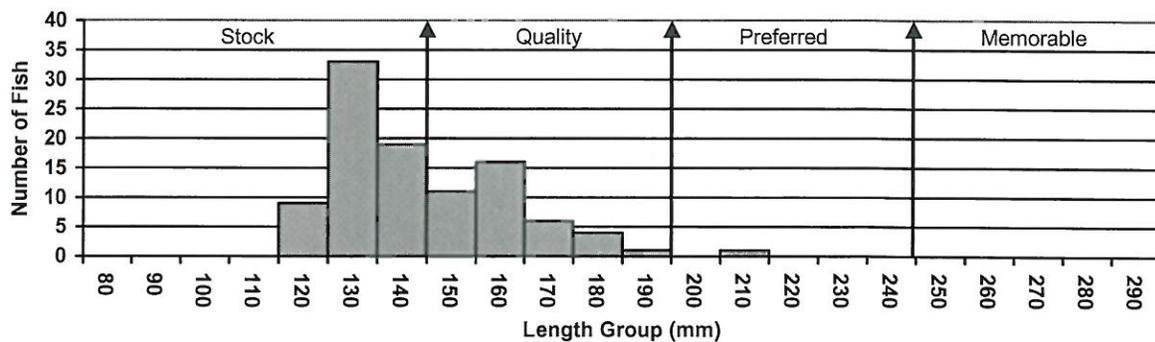


Figure 3. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2011.

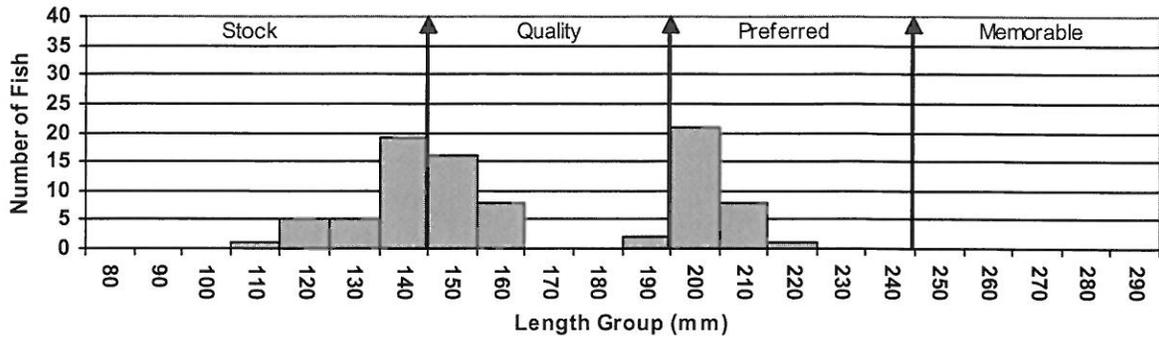


Figure 4. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2009.

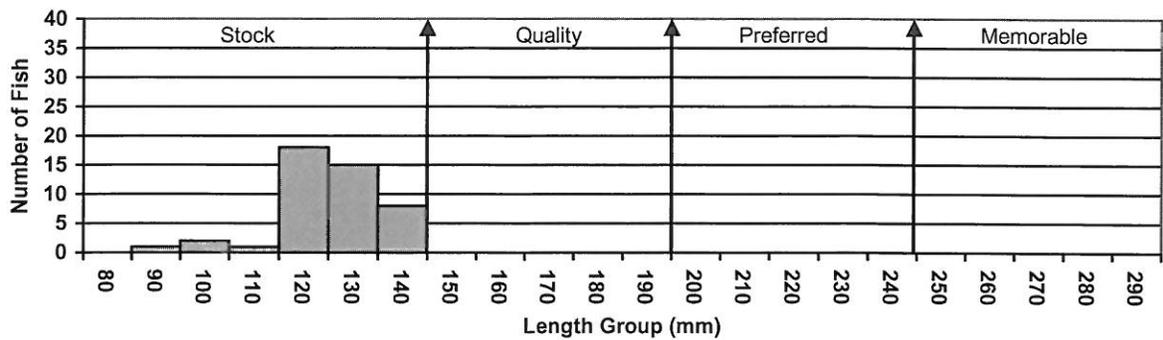


Figure 5. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2005.

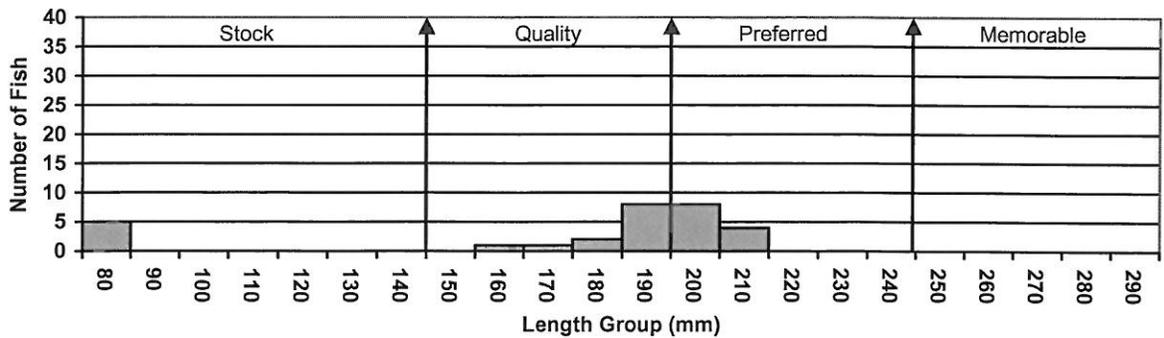


Figure 6. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2002.

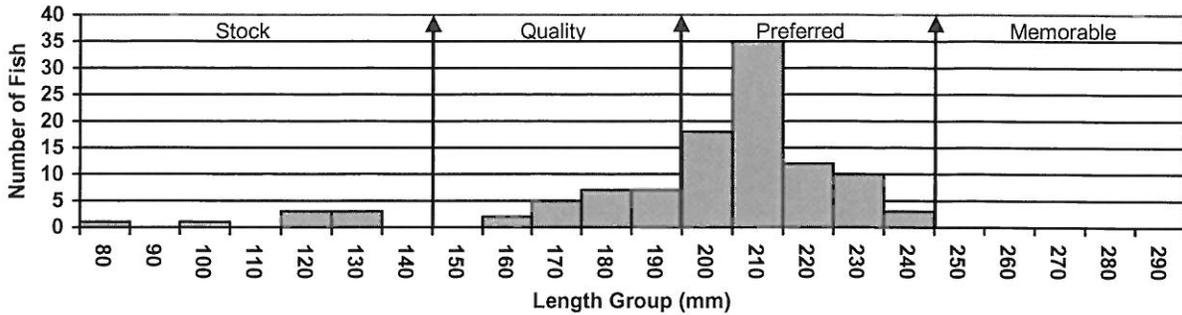
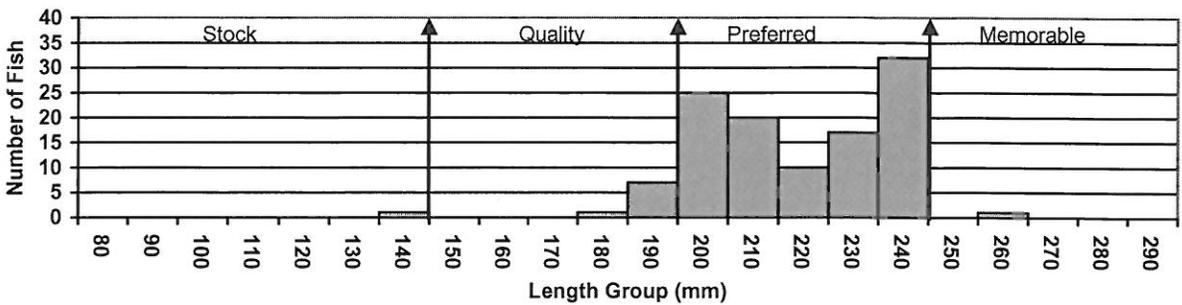


Figure 7. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 1999.



Black Bullhead

The black bullhead numbers in Lantry Dam have declines this survey. The CPUE of 34.2 is well below the 723.5 from the 2011 survey (Table 9) as well as the 131.3 nine year mean (Table 2). Figures 8 through 12 illustrate the length frequency histograms for the last five surveys. The last two are dominated by small fish and had the highest CPUEs in the last few surveys. Condition is good with a mean Wr of 98. Hopefully the numbers in CPUE will continue to trend down with a trend up in the size categories with the good bass and crappie populations that exist.

Figure 8. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2014.

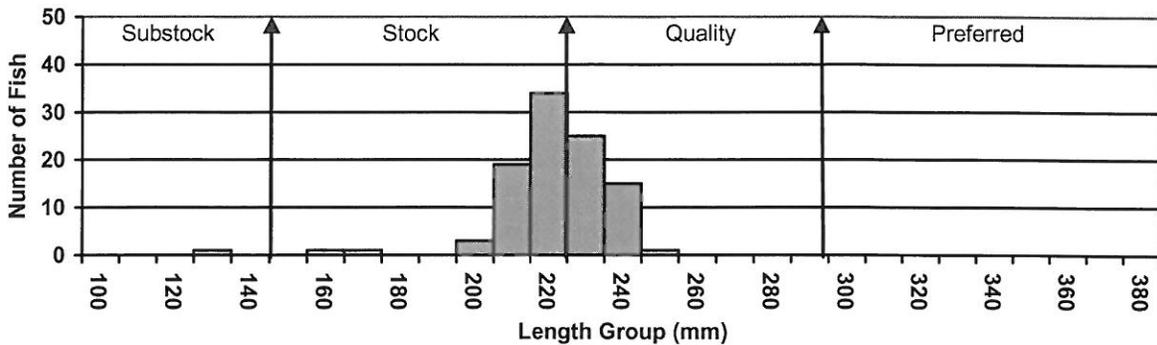


Figure 9. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2011.

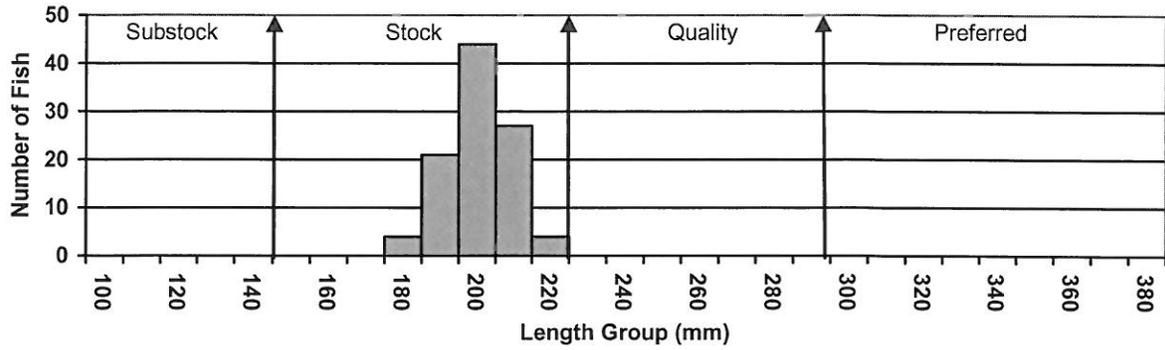


Figure 10. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2009.

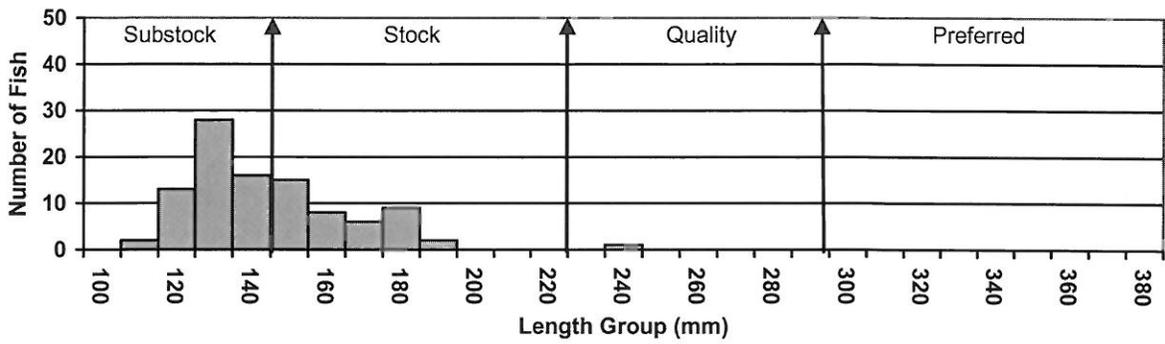


Figure 11. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2005.

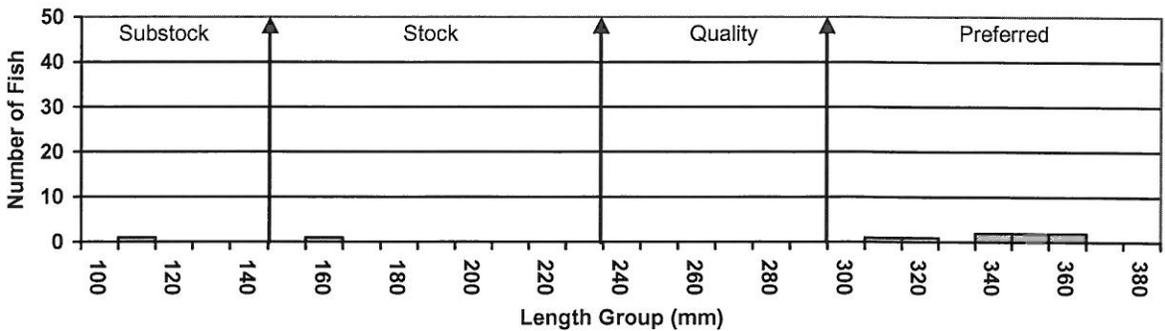
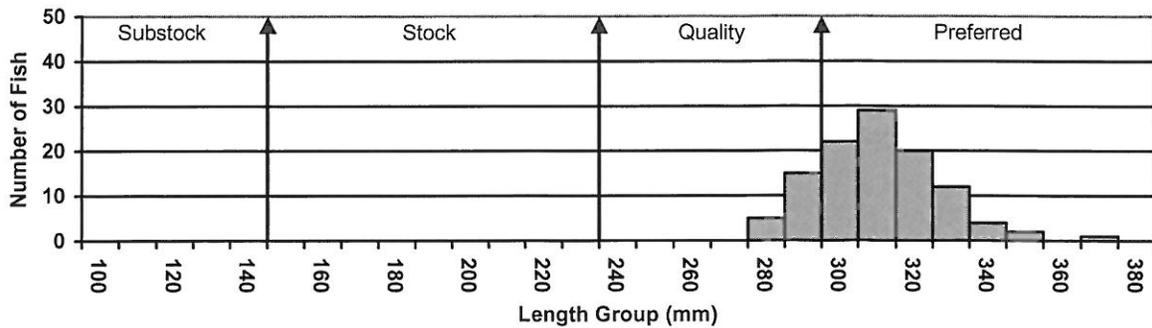


Figure 12. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2002.



Yellow Perch

Yellow perch numbers in Lantry Dam are on the rise again this survey. The CPUE of 10.1 is above the 1.2 from the 2011 survey (Table 9) as well as the 2.9 from the nine year mean (Table 2). This population is a lot more balanced in sizes as can be seen with a PSD of 72 with an RSD-P of 10. The balance can also be seen by looking at Figure 13. Figures 13 through 16 illustrate the length frequency histograms for the last four surveys with the current one being the best looking. Growth is good with means right on with statewide, regional and SLI means (Table 6). Condition is fine with a mean Wr of 83.

Table 6. Average back-calculated lengths (mm) for each age class of yellow perch sampled from Lantry Dam, Dewey County, 2014.

Year Class	Age	N	Back-calculated Age							
			1	2	3	4	5	6	7	
2011	3	64	94	158	191					
2010	4	24	102	178	218	232				
2009	5	11	88	152	203	232	249			
2007	7	1	89	149	201	239	257	280	294	
All Classes		100	94	159	203	234	253	280	294	
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 13. Length frequency histogram for yellow perch sampled from Lantry Dam, Dewey County, 2014.

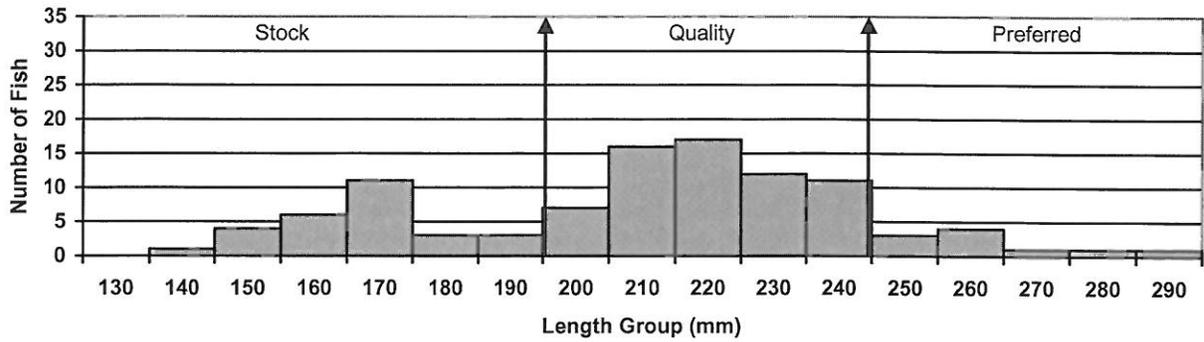


Figure 14. Length frequency histogram for yellow perch sampled from Lantry Dam, Dewey County, 2011.

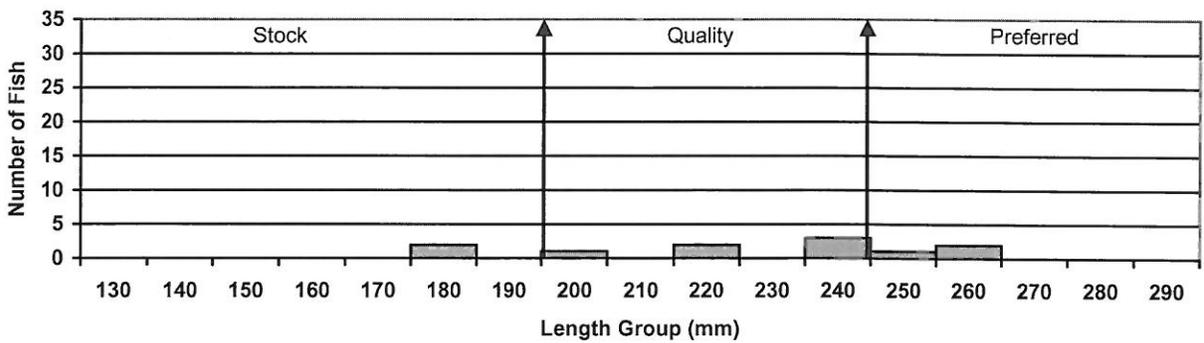


Figure 15. Length frequency histogram for yellow perch sampled from Lantry Dam, Dewey County, 2009.

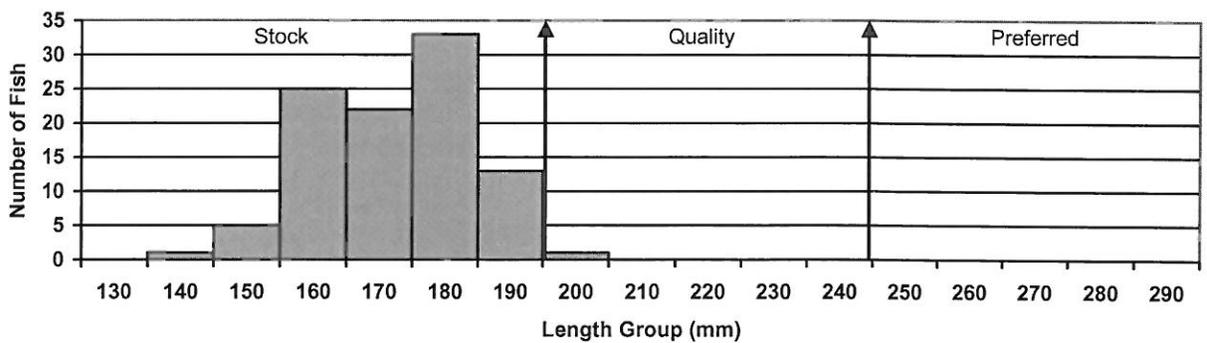
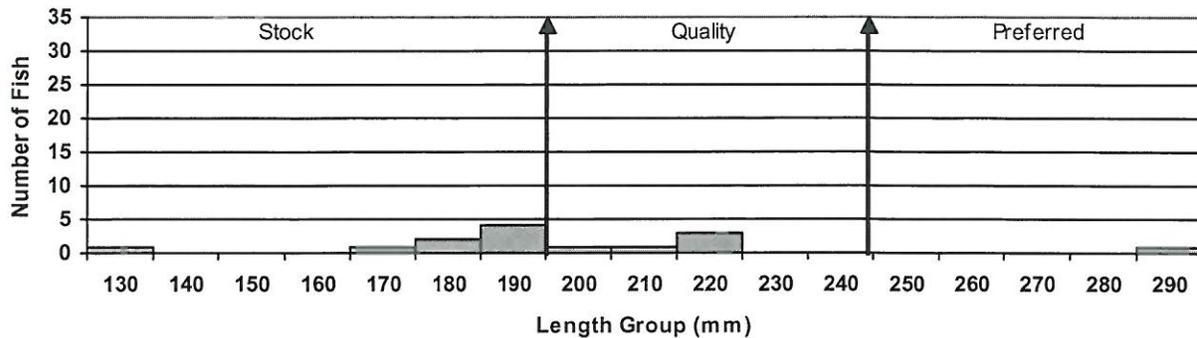


Figure 16. Length frequency histogram for yellow perch sampled from Lantry Dam, Dewey County, 2005.



Black Crappie

The black crappie population in Lantry Dam is the biggest surprise of the survey. They have become the dominant species sampled this year. The CPUE of 35.5 is well above the 2.0 from the 2011 survey (Table 9) as well as the 7.7 nine year mean (Table 2). Figures 17 and 18 illustrate the length frequency histograms for the last two surveys. Most of the time crappies are in too low of numbers to make any inferences about their population. Growth is fine with means right at or just slightly below statewide, regional and SLI means (Table 7). Condition is good with a mean W_r of 97. This population along with the largemouth bass will be able to control the black bullhead population along with the other abundant panfish species present.

Table 7. Average back-calculated lengths (mm) for each age class of black crappie sampled from Lantry Dam, Dewey County, 2014.

Year Class	Age	N	Back-calculated Age				
			1	2	3	4	5
2012	2	2	64	122			
2011	3	73	78	114	143		
2010	4	24	61	115	160	182	
2009	5	1	87	129	169	205	212
All Classes		100	73	120	157	193	212
Statewide Mean			83	147	195	229	249
Region II Mean			75	132	177	209	235
SLI* Mean			78	134	180	209	226

* Small Lakes and Impoundments

Figure 17. Length frequency histogram for black crappie sampled from Lantry Dam, Dewey County, 2014.

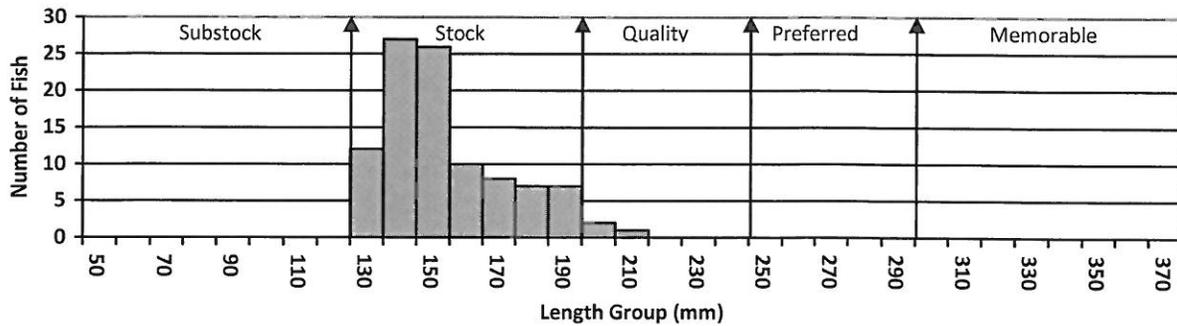
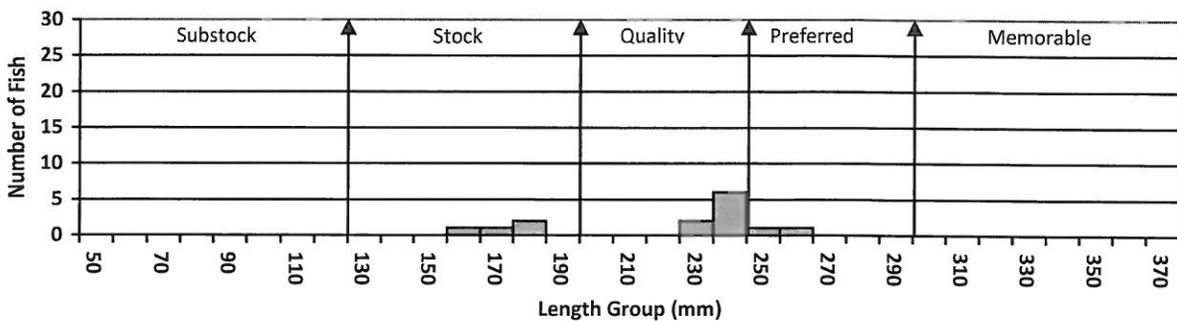


Figure 18. Length frequency histogram for black crappie sampled from Lantry Dam, Dewey County, 2011.



Other Species

No other species were sampled that have not already been discussed. Northern pike was the only species not sampled that had been in past surveys (Table 9).

Table 8. Stocking records for the last ten years for Lantry Dam, Dewey County.

Year	Number	Species	Size
2005	100	Largemouth Bass	Juvenile
2005	8,060	Largemouth Bass	Fingerling
2008	8,000	Largemouth Bass	Fingerling

A few other stockings were made in 2008 after Lantry refilled by the Cheyenne River Sioux Tribal Game and Fish Department to help get this lake going again.

RECOMMENDATIONS

1. Resurvey again in 2011 to check the status of the fish populations in Lantry Dam.

Table 9. Trap net (TN) and electrofishing (EF) CPUE for all fish species sampled in Lantry Dam since surveys records started in 1982.

Species	1982	1988	1992	1996	1999	2002	2005	2009	2011	2014
BLB (TN)	--	0.1	0.8	2.5	1.3	18.8	1.7	433.0	723.5	34.2
BLC (TN)	10.6	31.4	6.8	7.4	0.3	9.7	0.5	1.1	2.0	35.5
YEP (TN)	0.8	1.1	3.0	3.1	0.3	1.5	2.3	12.6	1.2	10.1
LMB (EF)	--	--	--	--	13.8	0.0	4.0	--	--	69.0
LMB (TN)	--	--	--	--	--	--	--	6.4	0.1	0.3
NOP (TN)	0.9	1.3	0.8	1.0	3.0	1.9	0.5	--	--	--
BLG (TN)	20.6	91.9	69.5	5.0	34.5	18.5	4.8	4.5	8.7	16.1

BLB – Black bullhead, BLC – Black crappie, YEP – Yellow perch, LMB – Largemouth bass, NOP – Northern pike, BLG - Bluegill