

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-42

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: July 13-15, 2009 (netting)

Date of last survey: July 5-7, 2005 (netting), October 13, 2005 (electrofishing)

Most recent lake management plan: F-21-R-38 (January 1, 2006 to December 31, 2010)

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): Full

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 at the time of the survey and consisted 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 excellent with a secchi disc reading of 9.5 feet. Other water quality characteristics were measured in the field on July 13, 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 Lantry Dam, Dewey County, July 13, 2009.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/l)	Hardness (mg/l)	pH	Secchi disc (ft)
A	Surface	72.5	8.00	21.2	132	255	8.01	9.5
A	16	66.5	4.97	39.9	164	268	7.31	

BIOLOGICAL DATA

Methods:

Lantry Dam was sampled on July 13-15, 2009, 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 or electrofishing was done during this survey. 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, July 13-15, 2009.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Black Bullhead	4,330	94.6	433.0	± 474.0	3.6	2	0	88
Yellow Perch	126	2.8	12.6	± 7.0	1.7	1	0	108
Largemouth Bass	64	1.4	6.4	± 4.4	0.0	0	0	107
Bluegill	45	1.0	4.5	± 3.6	35.0	0	0	123
Black Crappie	11	0.2	1.1	± 0.6	9.5	--	--	109

* Seven years (1982, 1988, 1992, 1996, 1999, 2002, 2005)

Bluegill

The bluegill population in Lantry Dam is dominated by one age class of young fish that is more than likely from the stocking of fish made by the Cheyenne River Tribal Game and Fish Department in 2008. The lake was almost completely dry and refilled in the spring of 2008. They had extra fish and helped the State Game and Fish by completing a couple stockings. The CPUE was 4.5, which is below the seven year mean of 35.0 (Table 2). The low density was expected. Growth is fine with means right on with statewide, regional and SLI means (Table 3). Condition is good with a mean Wr of 123 (Table 2). Figure 1 illustrates the size structure of the current population. Figures 2-4 illustrate what Lantry has been able to produce for sizes of bluegills in the past. This population will continue to be monitored but appears to be on the right track.

Table 3. Average back-calculated lengths (mm) for each age class of bluegill sampled from Lantry Dam, Dewey County, 2009.

Year Class	Age	N	Back-calculated Age	
			1	2
2007	2	45	48	92
All Classes		45	48	92
Statewide Mean			55	103
Region II Mean			52	92
SLI* Mean			53	101

* Small Lakes and Impoundments

Figure 1. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2009.

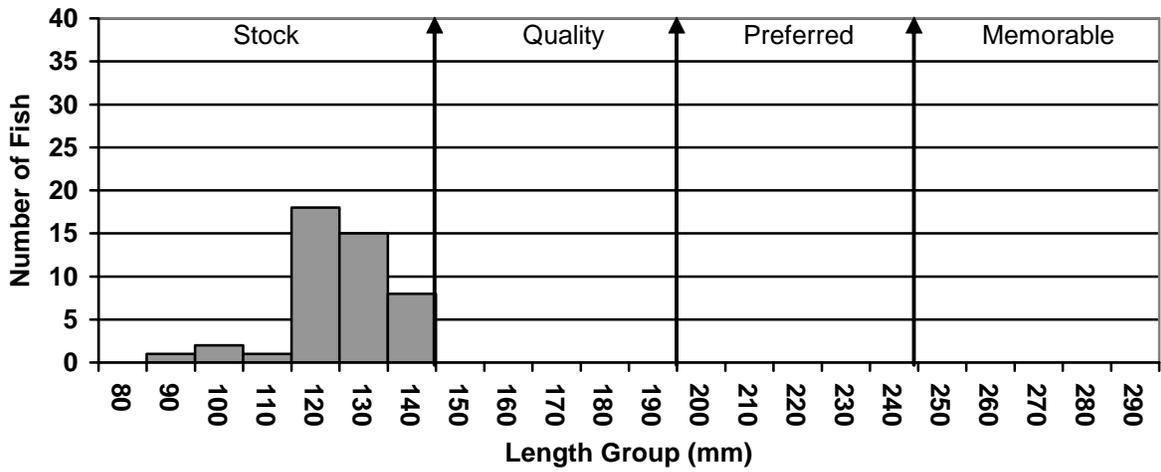


Figure 2. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2005.

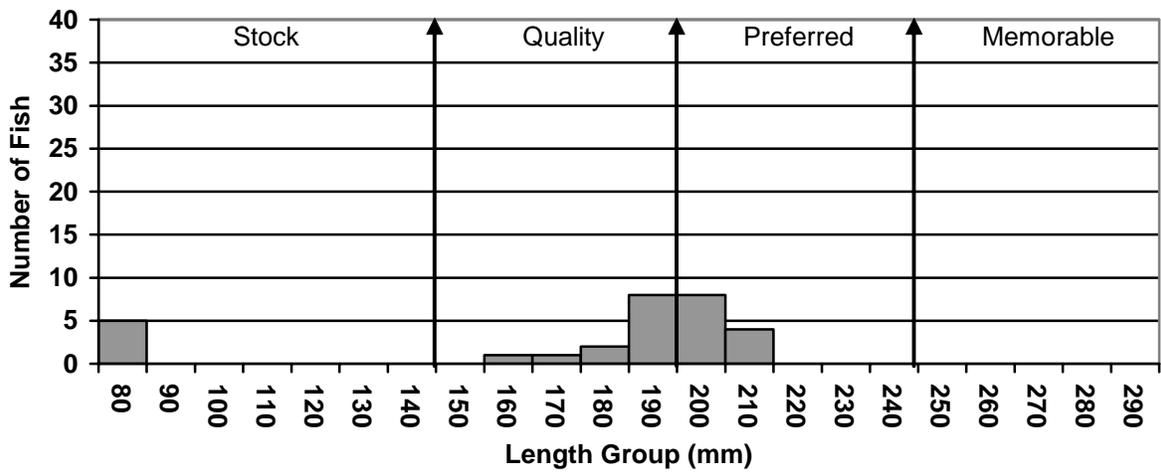


Figure 3. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 2002.

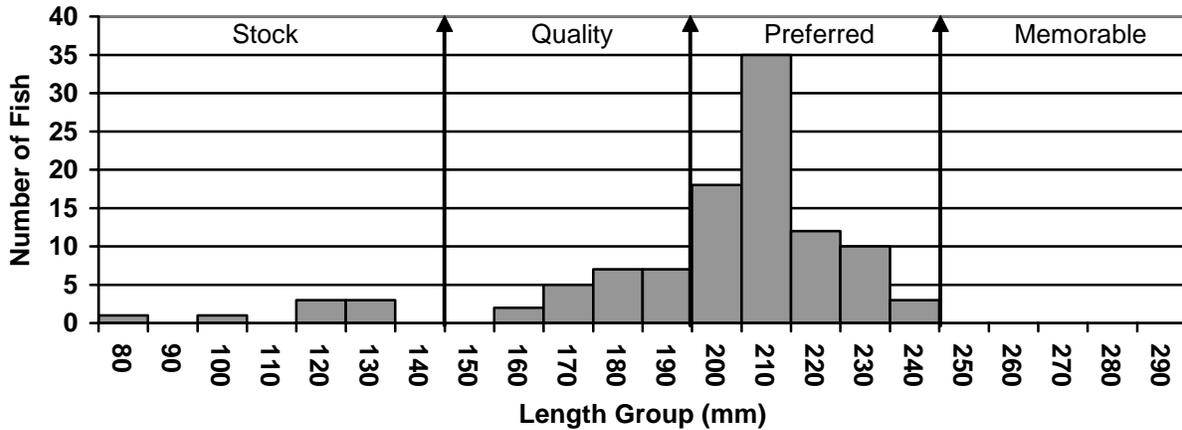
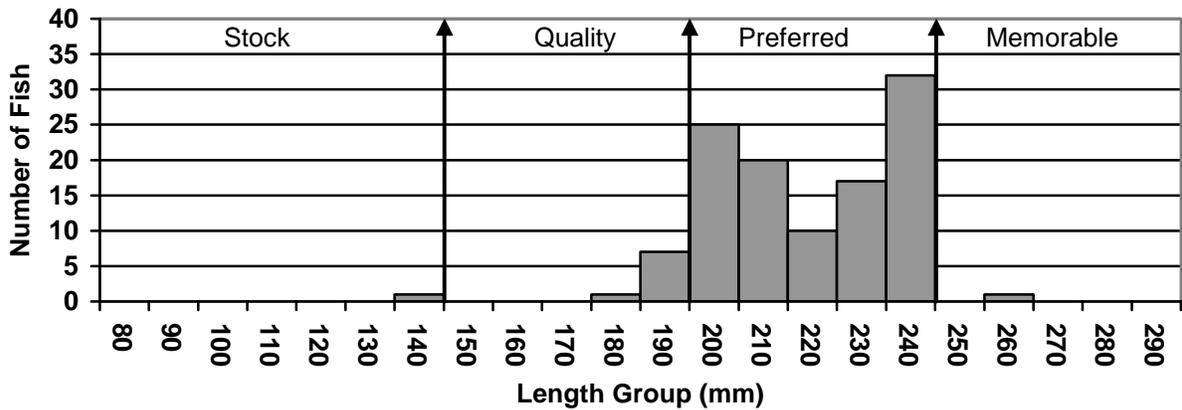


Figure 4. Length frequency histogram for bluegill sampled from Lantry Dam, Dewey County, 1999.



Black Bullhead

The black bullhead population in Lantry has taken off since the lake refilled. This was the only fish population that survived the extreme low water during the drought conditions. And like any other bullhead population, they took off right away. The CPUE of 433.0 is at an all time high for any survey (Table 6). The seven year mean was only 3.6, which is a manageable number for a lake. This population is dominated by young fish, which is expected and can be seen in Figure 5. Figures 6 and 7 illustrate what the size structure has been like in the past. Condition is fine with a mean W_r of 88. Hopefully by getting the other fish populations going again, especially the largemouth bass, this population will get to a manageable level again.

Figure 5. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2009.

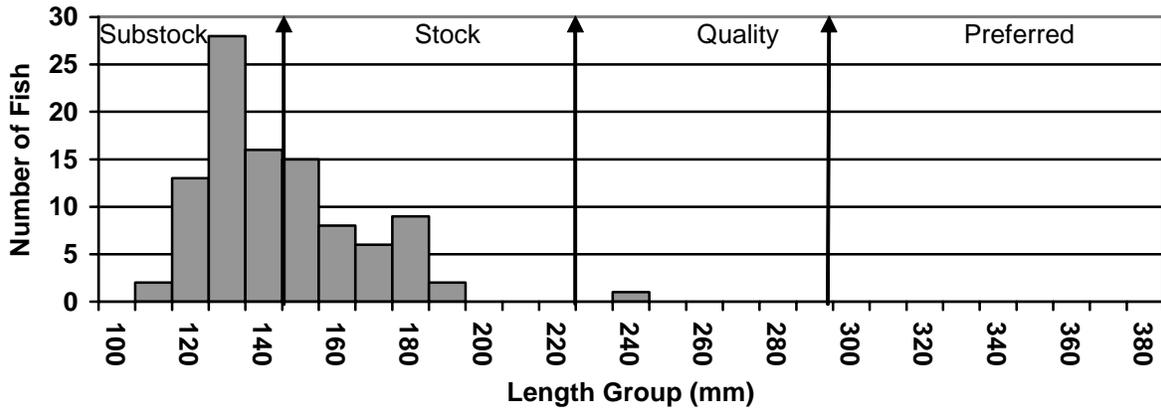


Figure 6. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2005.

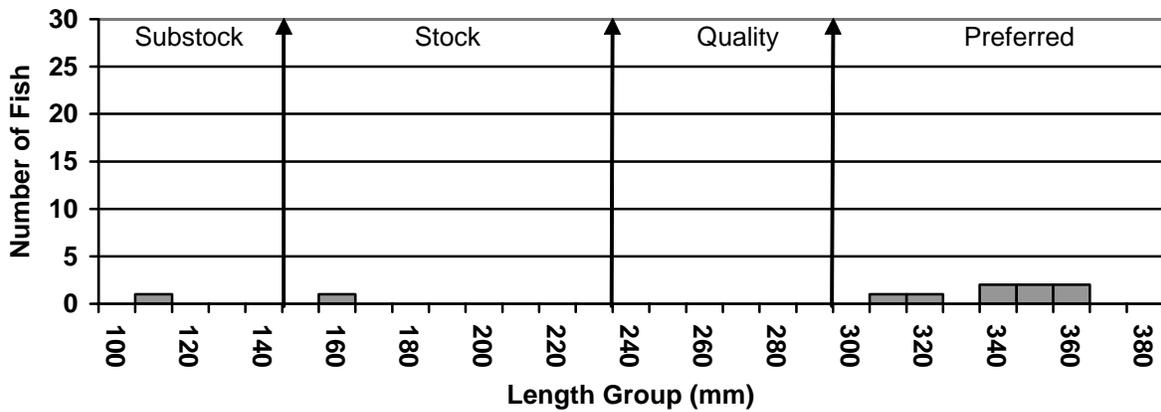
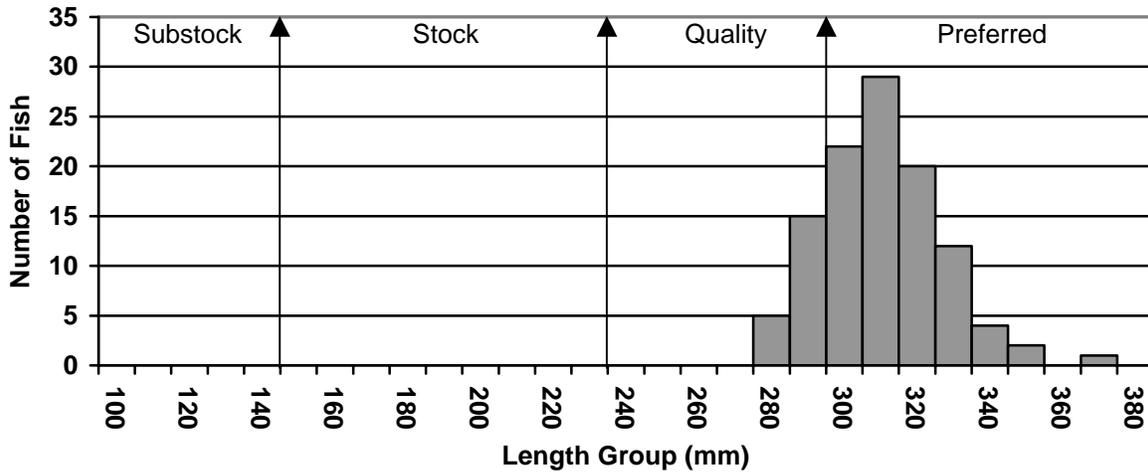


Figure 7. Length frequency histogram for black bullhead sampled from Lantry Dam, Dewey County, 2002.



Yellow Perch

The yellow perch population in Lantry Dam is just like all the other populations, dominated by young fish from mainly one year class. The CPUE of 12.6 was the second highest number sampled this survey period only behind the black bullheads. The number was also well above the seven year mean of 1.7. Growth is very good with means well above statewide, regional and SLI means (Table 4). Figure 8 illustrates the current size structure while Figure 9 illustrates what the size structure has been like in the past. Condition is good with a mean Wr of 108.

Table 4. Average back-calculated lengths (mm) for each age class of yellow perch sampled from Lantry Dam, Dewey County, 2009.

Year Class	Age	N	Back-calculated Age
2008	1	100	154
All Classes		100	154
Statewide Mean			86
Region II Mean			91
SLI* Mean			87

* Small Lakes and Impoundments

Figure 8. Length frequency histogram for yellow perch sampled from Lantry Dam, Dewey County, 2009.

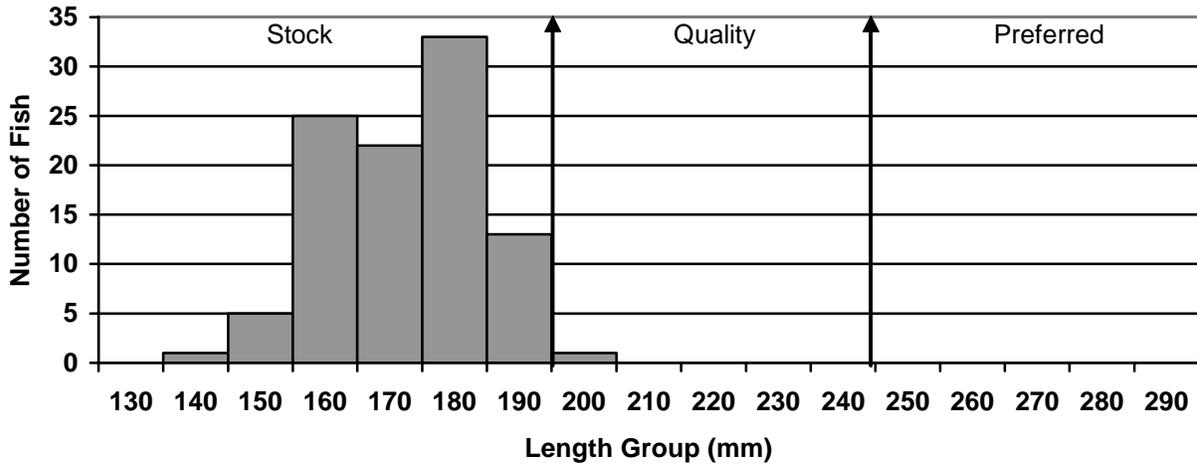
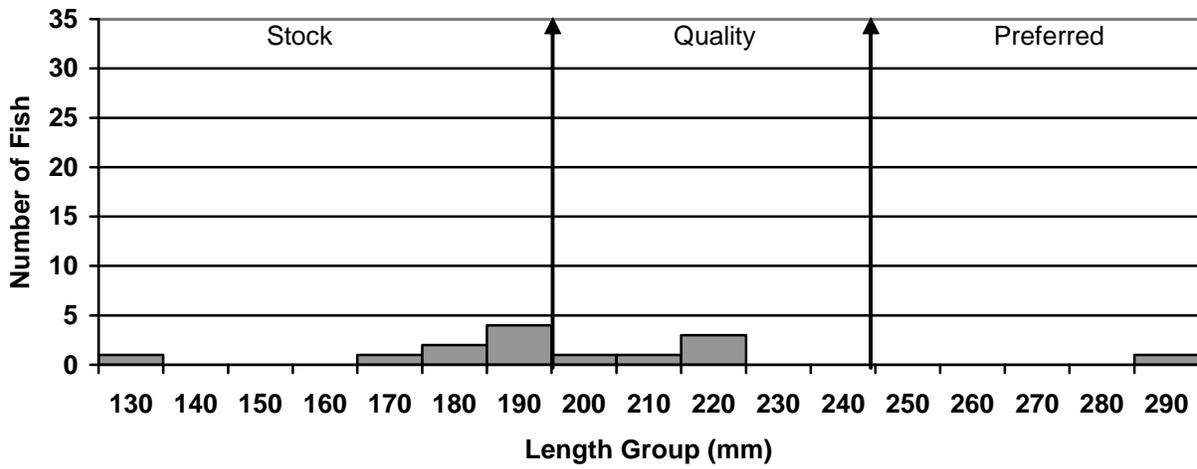


Figure 9. Length frequency histogram for yellow perch sampled from Lantry Dam, Dewey County, 2005.



Largemouth Bass

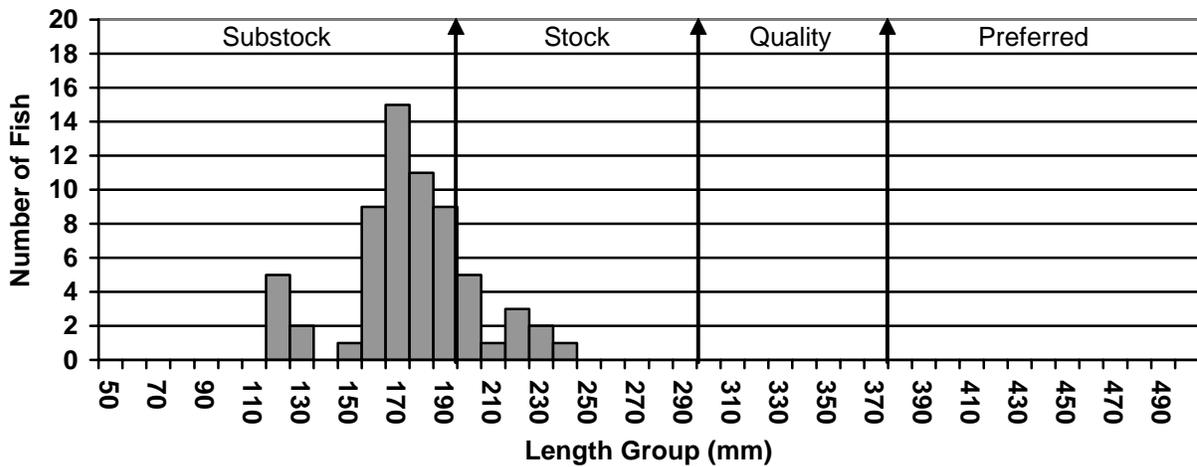
Lantry Dam contains a good and growing largemouth bass population. The CPUE of 6.4 is a very good trap net CPUE. No electrofishing was done this survey to get a better count do to a lack of time and being a new population that could wait another year to get a better idea of recruitment from the recent stockings. The population is dominated by fish that are 2 years old (Table 5). Growth is very slow at this time but may be just from a lot of competition due to many other species being stocked at the same time (Table 5). Condition is good with a mean Wr of 107. Figure 10 illustrates the size structure of the fish sampled this survey period.

Table 5. Average back-calculated lengths (mm) for each age class of largemouth bass sampled from Lantry Dam, Dewey County, 2009.

Year Class	Age	N	Back-calculated Age	
			1	2
2008	1	8	77	
2007	2	56	56	142
All Classes		64	67	142
Statewide Mean			96	182
Region II Mean			105	183
SLI* Mean			99	183

* Small Lakes and Impoundments

Figure 10. Length frequency histogram for largemouth bass sampled from Lantry Dam, Dewey County, 2009.



Other Species

Black crappies were the only other species sampled this survey. The CPUE was the lowest this period at 1.1 fish per net night. This is well below the 9.5 seven year mean from past surveys. They are more than likely just lagging behind in getting reestablished and will continue to be monitored.

All species were sampled that have been in the historical records (Table 6).

Table 6. 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
BLB (TN)	--	0.1	0.8	2.5	1.3	18.8	1.7	433.0
BLC (TN)	10.6	31.4	6.8	7.4	0.3	9.7	0.5	1.1
YEP (TN)	0.8	1.1	3.0	3.1	0.3	1.5	2.3	12.6
LMB (EF)	--	--	--	--	13.8	0.0	4.0	--
LMB (TN)	--	--	--	--	--	--	--	6.4
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

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

Table 7. 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 Tribe Game and Fish Department to help get this lake going again.

RECOMMENDATIONS

1. Stock largemouth bass to supplement the existing population. This should be done only if it is determined that the population is not high enough after a round of electrofishing.
2. Resurvey again in 2011 to check the status of the fish populations in Lantry Dam.