

Watershed condition with percentages of land use types:

The watershed of Eagle Butte is approximately 6,400 acres or 10 square miles which is mainly located to the south and east of the lake and comprised of privately owned agricultural land, grassland and lands held in trust by the Bureau of Indian Affairs and Cheyenne River Sioux Tribe. Land utilization is approximately 40% cropland, 58% pasture, hay land, or land enrolled in the Conservation Reserve Program, and 2% roads, farms and the City of Eagle Butte.

Fishing access:

Eagle Butte has a new boat ramp, boat dock, toilet and parking area for water fishing. There are also some opportunities for shore fishing around the lake. Shore fishing may become tough due to high amounts of vegetation during the open water periods. Also there is ample ice fishing opportunities.

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

The dam grade and spillway are in good condition. A new boat ramp, dock, parking area, access trail and toilet are all new.

Field observations of aquatic vegetation condition:

Submergent vegetation is found around most of the shoreline and consists of a variety of pondweed species. There was also a large amount of stringy filamentous algae found around most of the lake at the time of the survey. Emergent vegetation consists of a mixture of cattails, rushes and sedges and is found around most of the shoreline.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No pollution problems were evident at the time of the survey. Water clarity was excellent with a secchi disc reading of 10.5 feet. Other water quality characteristics were measured in the field on July 13, 2009, using a HACH water quality test 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 Eagle Butte Lake, 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	73.6	8.13	19.4	110	216	7.45	10.5
A	19	66.9	4.03	138.8	210	399	7.02	

BIOLOGICAL DATA

Methods:

Eagle Butte Lake was sampled on July 13-15, 2009, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾in knotted mesh. No experimental gill nets or electrofishing was done during this year's 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 Eagle Butte Lake, Dewey County, July 13-15, 2009.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	65	54.6	6.5	± 3.0	0.3	3	0	121
Yellow Perch	36	30.3	3.6	± 2.0	1.0	11	0	114
Largemouth Bass	13	10.9	1.3	± 0.8	0.2	--	--	108
Black Bullhead	2	1.7	0.2	± 0.2	217.9	--	--	135
Black Crappie	2	1.7	0.2	± 0.2	3.4	--	--	107
Channel Catfish	1	0.8	0.1	± 0.1	0.0	--	--	149

* Six years (1978, 1988, 1992, 1996, 1999, 2002)

Bluegill

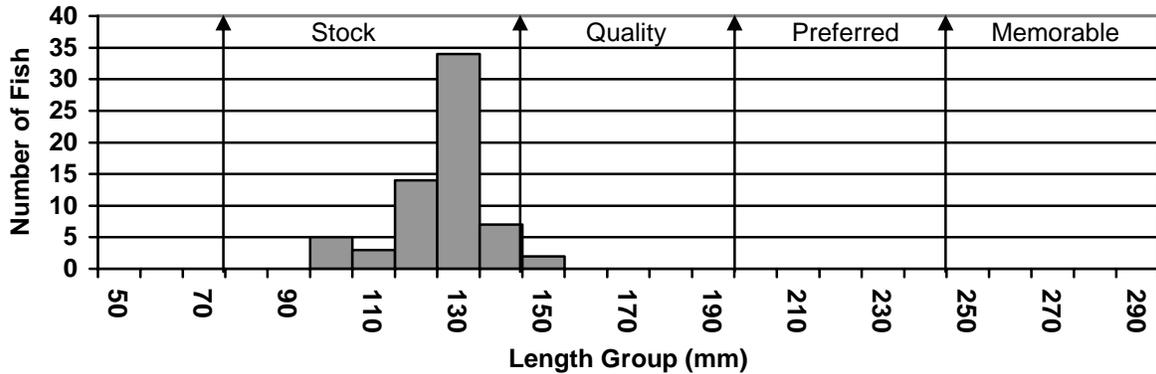
Bluegills are the dominant panfish species sampled in Eagle Butte this survey period. The CPUE was 6.5 compared to the 0.3 six year mean (Table 2). This is not really a true comparison as the lake was just restocked in 2008 after being almost completely dry and void of all fish species. Figure 1 illustrates what the size distribution is so far. Growth is fine with means right on with statewide, regional and SLI means (Table 3). Condition is also good with a mean Wr of 121. This is a young, new up and coming population that will be monitored the next couple years till it get fully established.

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

Year Class	Age	N	Back-calculated Age	
			1	2
2007	2	65	47	90
All Classes		65	47	90
Statewide Mean			55	103
Region II Mean			52	97
SLI* Mean			53	101

*Small Lakes and Impoundments

Figure 1. Length frequency histogram for largemouth bass sampled from Eagle Butte Lake, Dewey County, 2009.



Yellow Perch

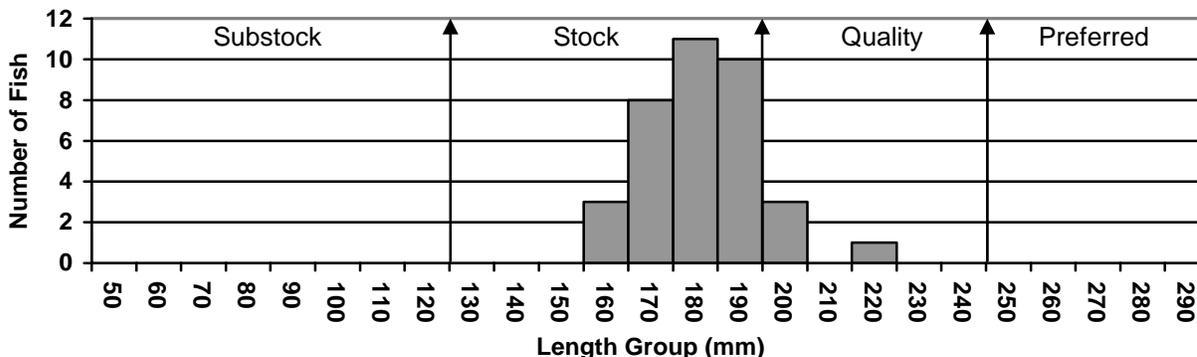
A yellow perch population seems to be getting established in Eagle Butte as well. The CPUE was 3.6 fish per net night (Table 2). Growth is good with the first year well above the statewide, regional and SLI means (Table 4). Condition is also good with a mean Wr of 114. This is another young population that appears to be establishing. The size structure can be seen by Figure 2. The population will need to be further monitored in the next few years to ensure that they do get fully established.

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

Year Class	Age	N	Back-calculated Age
2008	1	36	153
All Classes		36	153
Statewide Mean			86
Region II Mean			70
SLI* Mean			87

*Small Lakes and Impoundments

Figure 2. Length frequency histogram for yellow perch sampled from Eagle Butte Lake, Dewey County, 2009.



Largemouth Bass

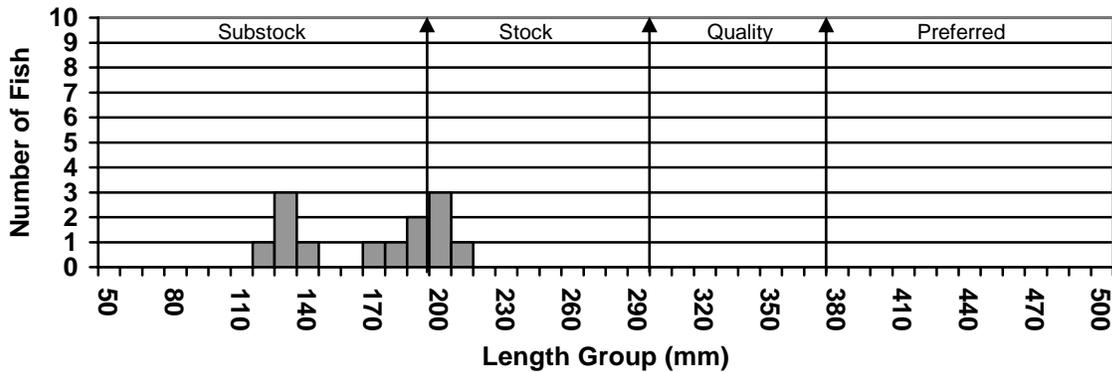
The only predator fish found in Eagle Butte this survey was largemouth bass. A couple stockings have been made and two age classes were found this survey. No electrofishing was done to get a true estimate, but 1.3 fish per net night is a pretty good catch rate. Growth is slow and is a little puzzling and will be monitored the next survey. Condition is good with a mean Wr of 108. Figure 3 illustrated this size distribution of this population. A better look at this population needs to be made at the time of the next survey.

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

Year Class	Age	N	Back-calculated Age	
			1	2
2008	1	5	71	
2007	2	8	57	135
All Classes		13	64	135
Statewide Mean			96	182
Region II Mean			105	183
SLI* Mean			99	183

*Small Lakes and Impoundments

Figure 3. Length frequency histogram for largemouth bass sampled from Eagle Butte Lake, Dewey County, 2009.



Other Species

Black crappie, black bullhead and channel catfish were the only other species sampled this survey. All three were sampled in small amount so no inferences about the populations can be made at this time. Green sunfish and walleye were the only species not sampled this survey that had been in past surveys (Table 7). This was expected as neither species was stocked after the severe drought conditions.

Table 6. Stocking records from the possible winterkill in 1992/93 to present for Eagle Butte Lake, Dewey County.

Year	Number	Species	Size
1997	8,500	Largemouth Bass	Fingerling
1997	1,672	Walleye	Fingerling
1998	200	Black Crappie	Adult
2001	2,315	Walleye	Fingerling
2008	8,640	Largemouth Bass	Fingerling

A few other stockings were made in 2008 after Eagle Butte refilled by the Cheyenne River Sioux Tribe Game and Fish Department to help get the fish populations in Eagle Butte going again.

RECOMMENDATIONS

1. Stock adult black crappies to supplement the population that is starting to take off.
2. Stock more walleye fingerlings to build up the predator population to control the black bullhead population.
3. Stock prespawn adult largemouth bass to build up the predator population to control the black bullhead population.
4. Resurvey in 2011 to monitor the fish populations.

Table 7. Trap net (TN) and electrofishing (EF) CPUE for all fish species sampled in Eagle Butte Lake since survey records started.

Species	1978	1988	1992	1996	1999	2002	2006	2009
BLB (TN)	--	225.3	512.5	101.0	300.3	168.3	--	
BLC (TN)	6.8	3.5	4.3	--	0.6	5.3	--	
YEP (TN)	3.6	2.3	--	--	--	--	--	
LMB (EF)	--	0.0	--	--	37.9	--	--	
LMB (TN)	--	--	--	--	1.4	--	--	
NOP (TN)	0.5	0.8	0.8	--	--	0.3	--	
WAE (EF)	--	--	0.8	--	33.7	--	--	
WAE (TN)	--	0.1	--	--	3.6	3.1	--	
BLG (TN)	--	2.0	--	--	--	--	--	
GSF (TN)	--	--	--	--	--	0.1	--	

BLB – Black bullhead, BLC – Black crappie, YEP – Yellow perch, LMB – Largemouth bass, NOP – Northern pike, WAE – Walleye, BLG – Bluegill, GSF – Green sunfish