

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

The dam grade is in good condition as well as the access road. There is a good boat ramp with a hard bottom past the last plank for access even during low water periods. No other structures are present.

Field observations of aquatic vegetation condition:

The submergent vegetation consisted of a few beds of sago pondweed and coontail in spots around the lake to depths of around 3 feet. Emergent vegetation consisted of thick cattails and rushes around the entire shoreline except on the dam grade, which is comprised of rocks.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No obvious pollution problems were evident at the time of the survey. Water clarity was fine with a secchi disc reading of 3 feet. Other water quality characteristics were measured in the field on June 2, 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: Yes, depth unknown

Station for water chemistry located on attached map: Yes

Table 1. Water chemistry results from Dante Lake, Charles Mix County, June 2, 2009.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/l)	Hardness (mg/l)	pH	Secchi disc (ft)
A	Surface	66.2	8.40	52.0	210	951	7.62	3
A	19	56.8	3.40	144.8	292	944	7.38	

BIOLOGICAL DATA

Methods:

Dante Lake was sampled on June 1-3, 2009, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and 3/4 inch knotted mesh. No experimental gill nets were set during this sampling period. No electrofishing was done either as the weather changed for the worse on the evening it was scheduled and no date worked later. 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 Dante Lake, Charles Mix County, June 1-3, 2009.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	937	99.4	93.7	± 13.6	61.3	30	4	106
Yellow Perch	4	0.4	0.4	± 0.2	1.7	--	--	85
Black Bullhead	2	0.2	0.2	± 0.2	1.4	--	--	132

* Seven year mean (1981, 1983, 1987, 1992, 1995, 2000, 2006)

Bluegill

Dante Lake continues to contain a high density bluegill population. The current CPUE is 93.7 compared to the 64.1 from 2006 and the 61.3 seven year mean (Table 2). Even though the high density population, the size structure still seems to be good. The PSD was 30 with an RSD-P of 4, which is improved slightly over the PSD of 17 with an RSD-P of 0 from 2006. The size structure is better illustrated in Figures 1-3 from the past three surveys. Condition is good with a mean Wr of 106 (Table 2). Growth is on the slow side with means slightly below the statewide, regional and SLI means (Table 3). The bluegill population could be thinned down by manual removal and the addition of a top line predator.

Table 3. Average back-calculated lengths (mm) for each age class of bluegill sampled from Dante Lake, Charles Mix County, 2009.

Year Class	Age	N	Back-calculated Age										
			1	2	3	4	5	6	7	8	9	10	
2007	2	1	34	80									
2006	3	12	42	66	84								
2005	4	67	45	74	105	125							
2004	5	15	40	76	104	136	149						
2003	6	1	47	119	141	150	168	175					
2002	7	2	50	92	123	146	165	180	190				
2001	8	1	36	93	117	137	165	186	190	196			
1999	10	1	51	77	125	159	170	197	207	220	229	237	
All Classes		100	43	85	114	142	163	184	196	208	229	237	
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 1. Length frequency histogram for bluegill sampled from Dante Lake, Charles Mix County, 2009.

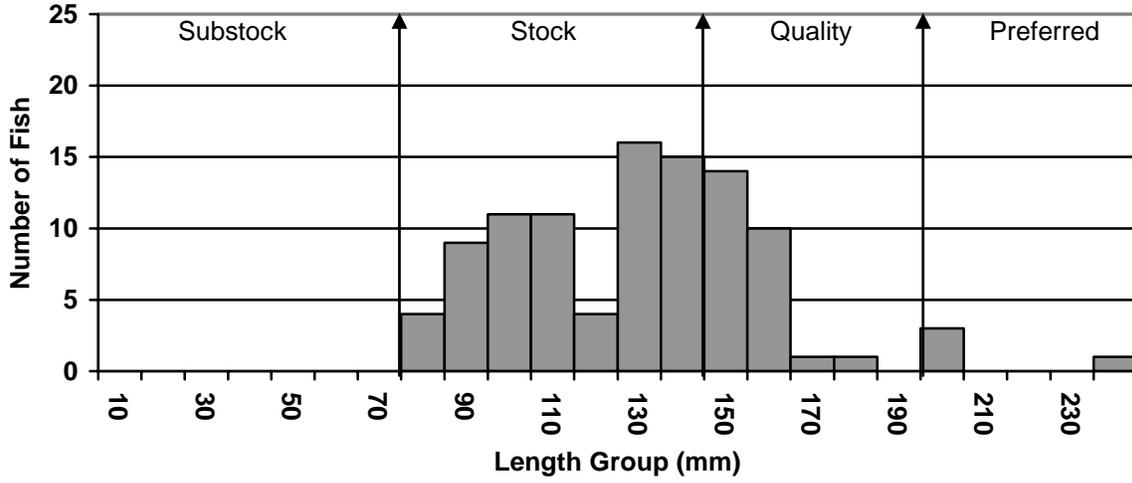


Figure 2. Length frequency histogram for bluegill sampled from Dante Lake, Charles Mix County, 2006.

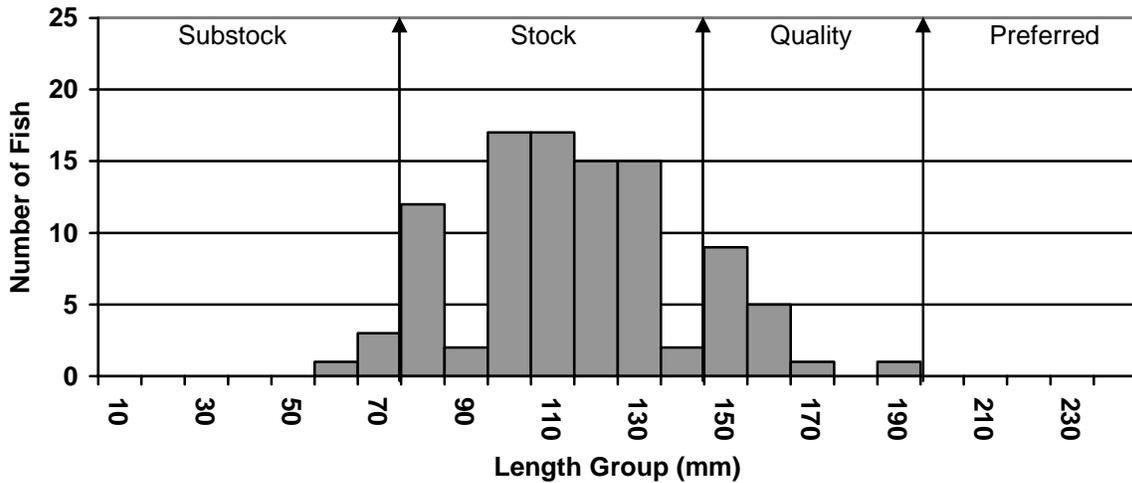
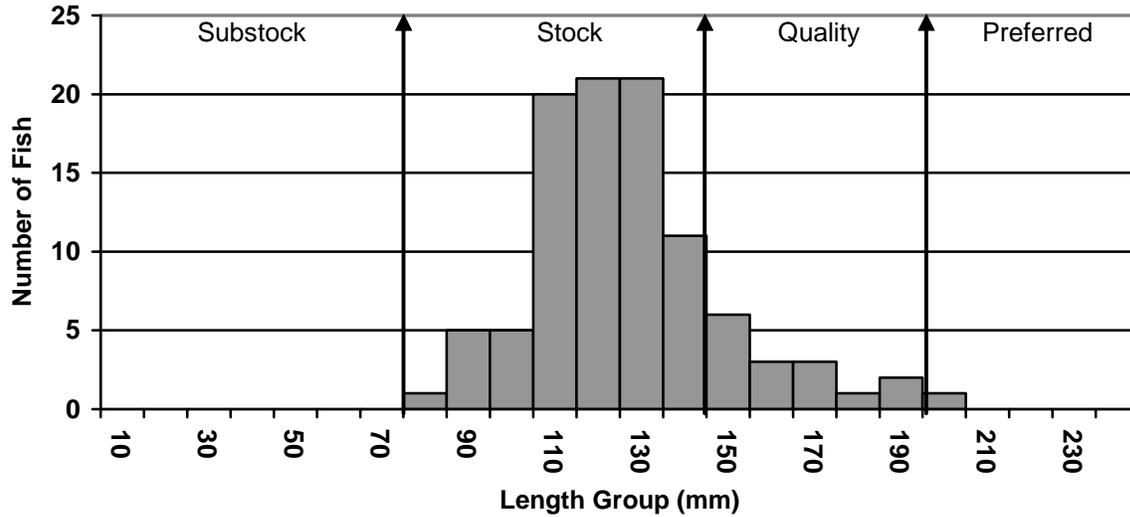


Figure 3. Length frequency histogram for bluegill sampled from Dante Lake, Charles Mix County, 2003.



Other species

The only other species sampled during this survey were yellow perch and black bullheads. Both species had very minimal catch rate (Table 2). Black crappie, largemouth bass, northern pike, channel catfish, walleye, pumpkinseed sunfish and shortnose gar were the species not sampled that have been in past surveys (Table 4).

Table 4. Trap net (TN) and electrofishing (EF) CPUE for all fish species sampled in Dante Lake, Charles Mix County since surveys of record in 1981.

Species	1981	1983	1987	1992	1995	2000	2003	2006	2009
BLB (EF)	--	--	--	--	--	--	--	--	--
BLB (TN)	--	1.6	1.3	0.3	4.1	2.3	--	0.1	0.2
BLC (EF)	--	--	--	--	--	--	--	--	--
BLC (TN)	--	--	1.4	--	0.1	--	--	--	--
YEP (EF)	--	--	--	--	--	--	--	--	--
YEP (TN)	6.25	5.3	--	--	--	--	--	--	0.4
LMB (EF)	--	--	--	--	--	--	0	39.0	--
LMB (TN)	0.4	1.6	--	--	--	--	--	--	--
NOP (EF)	--	--	--	--	--	--	--	--	--
NOP (TN)	0.3	--	--	0.4	0.3	--	--	--	--
CCF (EF)	--	--	--	--	--	--	--	--	--
CCF (TN)	--	0.1	0.1	--	1.3	--	--	--	--
WAE (EF)	--	--	--	--	--	--	--	--	--
WAE (TN)	--	1.0	--	--	--	--	--	--	--
BLG (EF)	--	--	--	--	--	--	2127	--	--
BLG (TN)	13.1	26.8	28.6	24.8	89.8	182.3	--	64.1	93.7
PUS (EF)	--	--	--	--	--	--	--	--	--
PUS (TN)	--	--	--	--	0.1	--	--	--	--
SHG (EF)	--	--	--	--	--	--	--	--	--
SHG (TN)	--	0.1	--	--	--	--	--	--	--

BLB – Black bullhead; BLC – Black crappie; YEP – Yellow perch; LMB – Largemouth bass; NOP – Northern pike; CCF – Channel catfish; WAE – Walleye; BLG – Bluegill; PUS – Pumpkinseed sunfish; SHG – Shortnose gar

Table 5. Stocking records from the last ten years for Dante Lake, Charles Mix County.

Year	Number	Species	Size
1996	1,900	Largemouth Bass	Fingerling
2004	100	Largemouth Bass	Juvenile
2006	2,580	Largemouth Bass	Fingerling

RECOMMENDATIONS

1. Resurvey with trap nets and electrofishing in 2012.
2. Trap and transfer bluegill from Dante to use in other State waters where needed.
3. Stock largemouth bass adults and fingerlings to help reduce and manage the bluegill population.