

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-45

Name: Smith Dam **County(ies):** Stanley
Legal Description: T109N-R79W-Sec. 11 **GPS:** 44°15'48.49"N 101°00'46.92"W
Location from nearest town: 8 miles S, 2.5 miles east of Ft. Pierre

Date of present survey: July 9-11, 2012 (netting)

Date of last survey: June 22-24, 2009 (netting)

Most recent lake management plan: None done

Management classification: Unknown

Primary Game Species	Secondary and Other Species
Bluegill	Golden Shiner
Black Crappie	Yellow Perch
Largemouth Bass	White Crappie

PHYSICAL DATA

Surface Area: 12 acres

Watershed: Unknown

Maximum Depth: 20 feet

Mean Depth: 4-8 feet

Lake elevation at time of survey (field observations): 2-3 feet low

Contour map: NA

Date: NA

Smith Dam is located in Stanley County. The entire lake is located on property owned by the United States Department of Agriculture, Forest Service and is part of the Fort Pierre National Grasslands. The only structure is the dam grade and outlet structure, which were recently repaired.

Sherriff Dam is a 12 surface acre lake that is entirely surrounded by cattails along with many other emergent types of aquatic vegetation. Submergent vegetation also surrounds most of the shoreline to depths of around 4-5 feet and consists of many different species of pondweeds. The combination of submergent and emergent vegetation around the lake limits the amount of shore fishing opportunities. There is also limited boat access that is limited to a canoe or duck type boat that can be easily loaded and unloaded by hand. There is good ice fishing opportunities. No depth contour map has ever been done on Smith Dam.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No pollution problems were evident at the time of the survey. Water clarity is good with a secchi disc reading of 3 feet. Other water quality characteristics were measured in the field on July 9, 2012, using a HACH water quality kit and a Hanna multiparameter meter. Results are found in Table 1.

Table 1. Water chemistry results from Smith Dam, Stanley County, July 9, 2012.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (μ S/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	82.4	6.06	28.8	142	170	7.64	270	135	0.13	121.7	3
A	14	79.9	2.78	35.4	130	174	7.54	269	138	0.13	113.2	

BIOLOGICAL DATA

Methods:

Smith Dam was sampled on July 9-11, 2012, with eight 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 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 eight, overnight 3/4-inch frame nets at Smith Dam, Stanley County, July 9-11, 2012.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	469	77.4	58.6	\pm 24.6	108.3	92	3	94
Black Crappie	132	21.8	16.5	\pm 5.4	17.3	96	2	91
White Crappie	5	0.8	0.6	\pm 0.3	0.8	--	--	78

* Three year mean (1993, 2006, 2009)

Bluegill

Bluegills continue to be the dominant panfish species present in Smith Dam. The CPUE of 58.6 is below the 138.4 from 2009 as well as the 108.3 three year mean (Table 2). Growth is slow with means well below statewide, regional and SLI mean (Table 3). Condition is good with a mean Wr of 94. Figures 1 through 4 illustrate the length frequency histograms for the last four surveys. Not a lot changes except for the density. The current PSD is 92 with a RSD-P of 3 compared to the 33 and 1, respectively, from 2009. The population is showing signs of stunting as the growth rates continue to slow and the size structure is not changing at all. Removal of some will help with increasing the largemouth bass population.

Table 3. Average back-calculated lengths (mm) for each age class of bluegill sampled from Smith Dam, Stanley County, 2012.

Year Class	Age	N	Back-calculated Age											
			1	2	3	4	5	6	7	8	9	10		
2010	2	1	52	80										
2009	3	1	38	72	107									
2007	5	18	38	63	85	111	139							
2006	6	18	41	64	89	111	129	146						
2005	7	19	41	63	92	120	141	155	167					
2004	8	16	40	65	90	122	138	154	165	175				
2003	9	23	39	62	89	116	137	148	157	166	172			
2002	10	5	43	69	94	109	121	135	149	156	161	165		
All Classes		101	42	67	92	115	134	148	160	166	166	165		
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 Smith Dam, Stanley County, 2012.

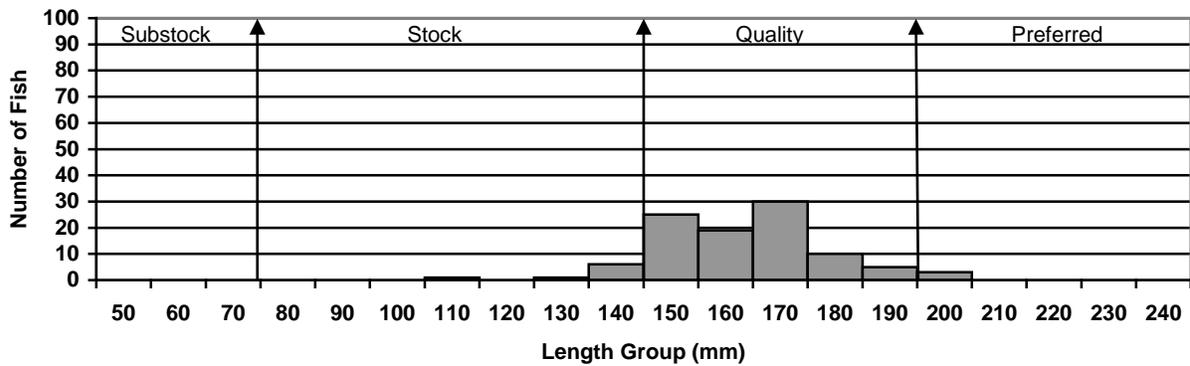


Figure 2. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 2009.

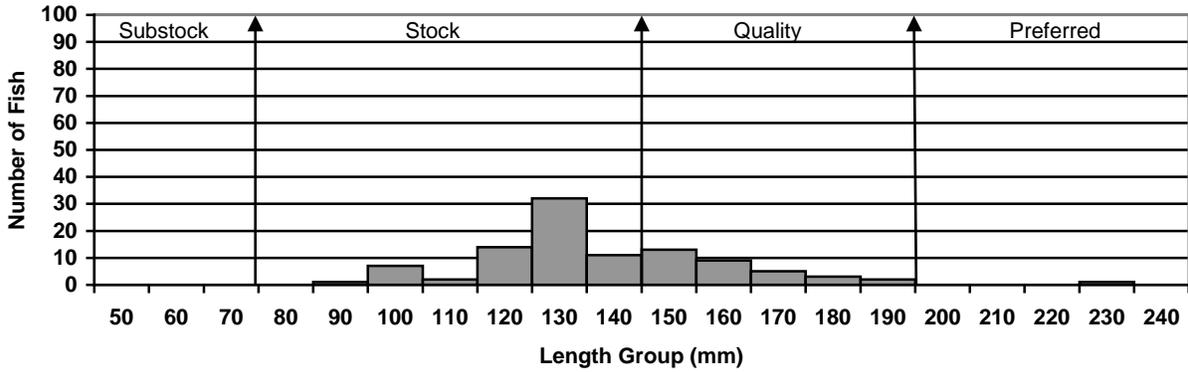


Figure 3. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 2006.

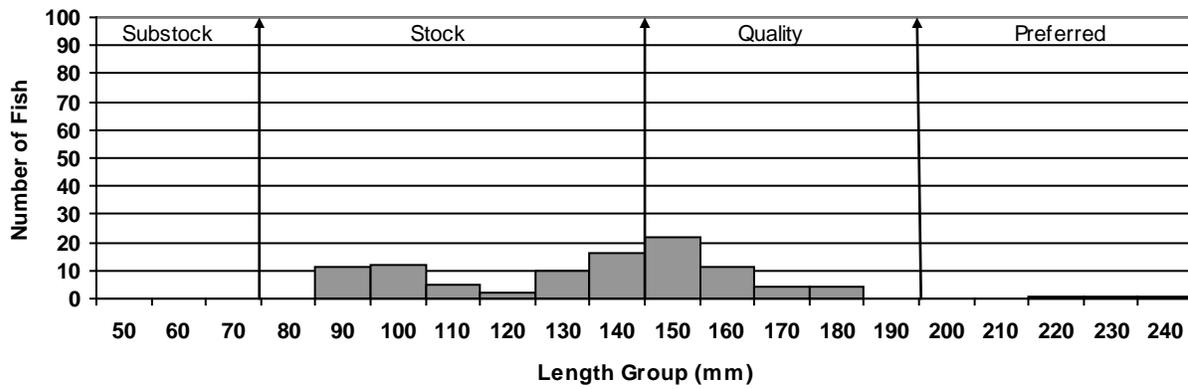
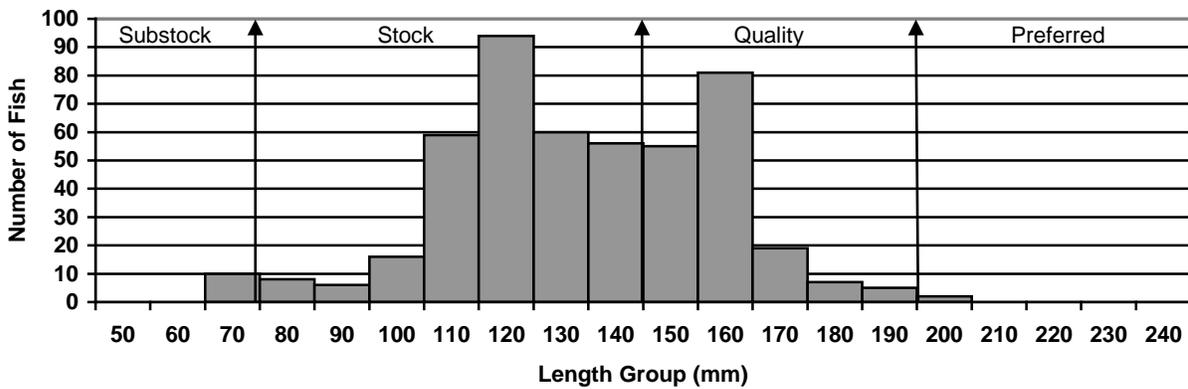


Figure 4. Length frequency histogram for bluegill sampled from Smith Dam, Stanley County, 1993.



Black Crappie

Smith Dam continues to contain a black crappie population. The CPUE of 16.5 is below the 26.0 from 2009 as well as the 17.3 three year mean (Table 2). Growth is slow compared to statewide, regional and SLI means (Table 4). Condition is good with a mean Wr of 91. Figures 5 through 8 illustrate the length frequency histograms for the last four surveys. The population was pretty minimal in 1993, but has grown since then until the slight regression in the current survey. The current PSD of 96 with an RSD-P of 2 is higher than the 33 and 1, respectively, from the 2009 survey. This population would also benefit from an increased density of largemouth bass.

Table 4. Average back-calculated lengths (mm) for each age class for black crappie sampled from Smith Dam, Stanley County, 2012.

Year Class	Age	N	Back-calculated Age									
			1	2	3	4	5	6	7	8	9	
2010	2	9	73	112								
2008	4	1	71	95	129	150						
2007	5	15	70	111	149	174	194					
2006	6	35	66	113	153	178	196	210				
2005	7	18	66	103	144	169	186	203	214			
2004	8	20	68	113	161	186	200	210	217	223		
2003	9	1	85	130	174	186	202	212	216	224	228	
All Classes		99	71	111	152	174	196	209	216	224	228	
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 5. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 2012.

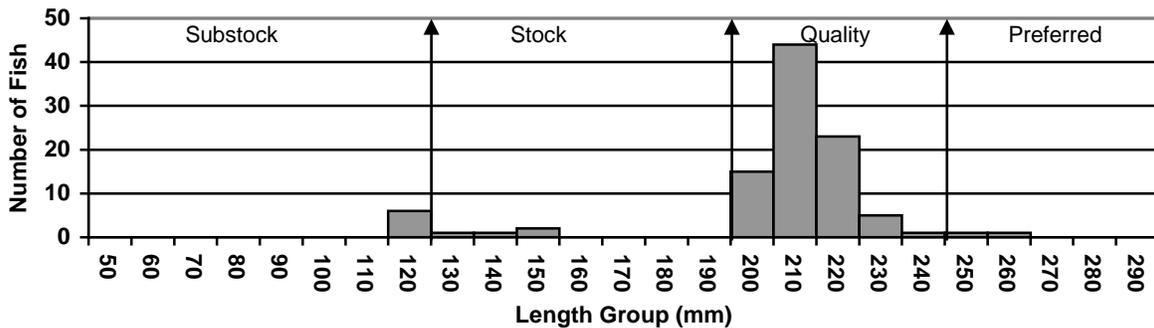


Figure 6. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 2009.

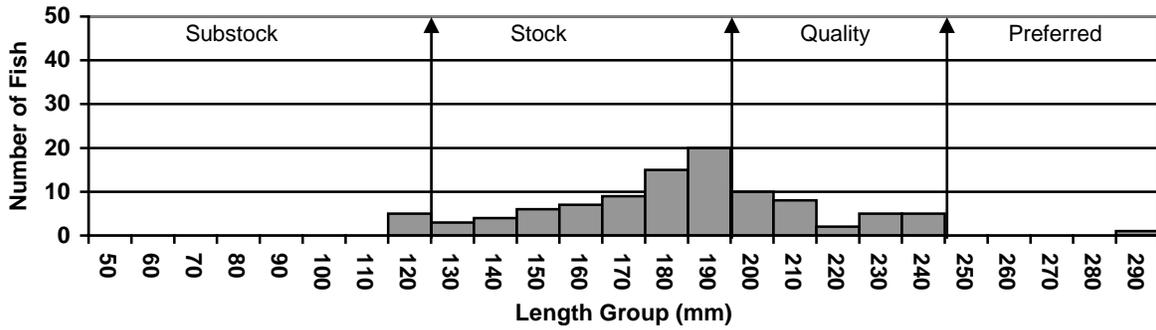


Figure 7. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 2006.

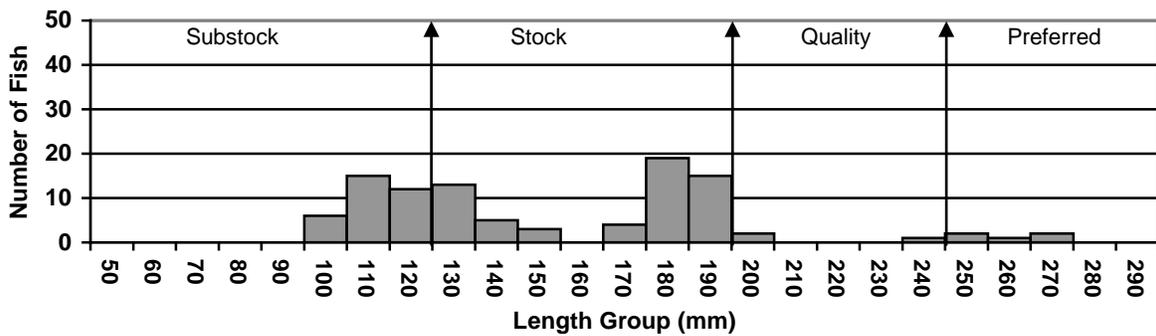
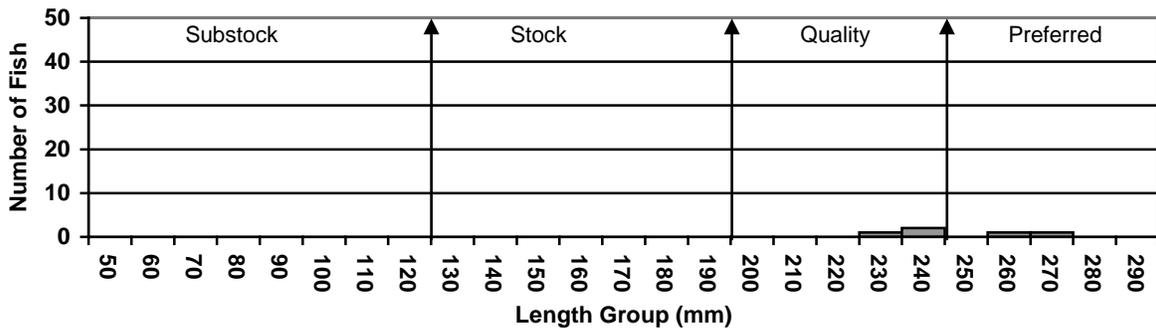


Figure 8. Length frequency histogram for black crappie sampled from Smith Dam, Stanley County, 1993.



Other Species

White crappies were the only other species sampled during this survey. There was only 5 fish sampled, so no inferences can be made about the population. The past has been up and down as well as none were sampled in 2009, but 2006 had a CPUE of 2.4. Largemouth bass and golden shiner were the species not sampled this survey that had been in past surveys.

RECOMMENDATIONS

1. Resurvey in 2015 to further monitor the fish populations and to continually collect trend data on the lake.
2. Manual removal of bluegills to help reduce the stunting that is starting to take place.
3. Stock adult largemouth bass to bolster the population.