SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-45

Name: Richland Dam **County(ies):** Jones
Legal Description: T02N-R31E-Sec. 8 **GPS:** 44º08'51.085"N 100º24'31.647"W
Location from nearest town: 18 miles S, 3.5 miles W of Ft. Pierre

Date of present survey: June 5-6, 2012 (netting), October 16, 2012 (electrofishing)
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	Yellow Perch
Black Crappie	Black Bullhead
Largemouth Bass	

PHYSICAL DATA

Richland Dam is located in Jones 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 dam and spillway are in good shape. A new concrete boat ramp was just built along with a couple earthen fishing piers.

Richland Dam is a 16 surface acre lake that had a maximum depth at the time of the survey of 15 feet. Richland is entirely surrounded by cattails and many other types of emergent aquatic vegetation. Submergent vegetation also surrounds most of the shoreline to depths of about 6 feet and consists mainly of sago pondweed with a few others mixed in. The combination of submergent and emergent vegetation around the lake limits the amount of shore fishing opportunities. There is good boat access via a new concrete boat ramp. There is also good ice fishing opportunities. No depth contour map has ever been done on Richland Dam.

CHEMICAL DATA

No pollution problems were evident at the time of the survey. Water clarity is excellent with a secchi disc reading of 7.0 feet. A temperature and dissolved oxygen profile was the only other water quality measurements done this survey and the results are found in Table 1.

Table 1. Water chemistry results from Richland Dam, Jones County, June 5, 2012.

Station	Depth (ft)	Temp (F)	DO (ppm)
A	0	72.3	13.9
A	3	70.9	13.2
A	6	69.8	12.7
A	8	69.8	12.9
A	9	66.4	9.2
A	10	63.0	5.1
A	11	62.1	3.8
A	12	61.3	1.2
A	13	61.3	0.2

BIOLOGICAL DATA

Methods:

Richland Dam was sampled on June 5-6, 2012, with eight overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. No experimental gill nets were set during this survey. On the evening of October 16, 2012, Richland Dam was electrofished for 40 minutes (4-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 10-12 amps. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of eight, overnight ¾-inch frame nets at Richland Dam, Jones County, June 5-6, 2012.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	304	71.1	38.0	± 11.1	31.1	70	1	96
Black Crappie	116	27.1	14.5	± 4.9	4.9	23	2	93
Yellow Perch	4	0.9	0.5	± 0.5	0.2	--	--	77
Black Bullhead	4	0.9	0.5	± 0.4	0.2	--	--	117

* Three year mean (1993, 2006, 2009)

Electrofishing Catch

Table 3. Total catch from four, ten-minute runs of fall nighttime electrofishing on Richland Dam, Jones County, October 16, 2012.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Largemouth Bass	135	100	202.5	± 55.7	--	64	35	103

* First year electrofishing

Largemouth Bass

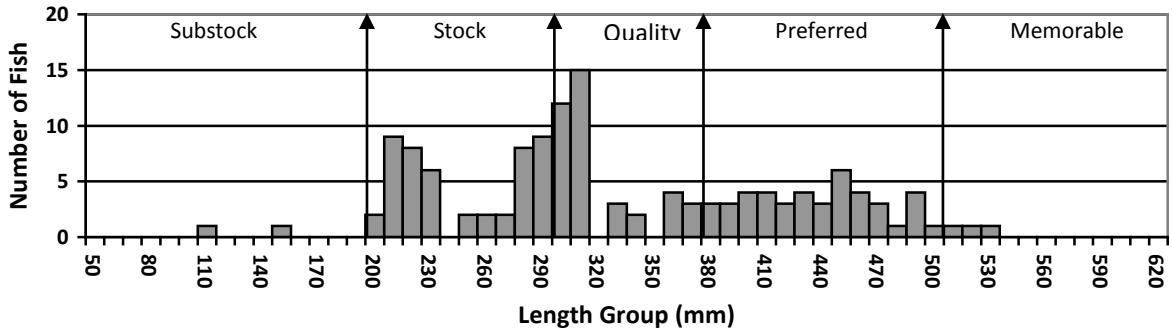
Largemouth bass were sampled for the first time this survey via electrofishing. The CPUE of 202.5 fish per hour was well above the expected rate (Table 3). The size structure was also well above the expected with a PSD of 64 and an RSD-P of 35. Figure 1 illustrates the length frequency histogram for the bass sampled this survey and it can be seen that the population has a very nicely balanced population. Growth is good with means right on with statewide, regional and SLI means (Table 4). Condition is also good with a mean Wr of 103.

Table 4. Average back-calculated lengths (mm) for each age class of largemouth bass sampled from Richland Dam, Jones County, 2012.

			Back-calculated Age									
Year Class	Age	N	1	2	3	4	5	6	7	8	9	10
2011	1	25	110									
2010	2	13	87	192								
2009	3	43	84	157	242							
2008	4	12	91	184	278	344						
2007	5	12	118	212	288	347	389					
2006	6	5	131	212	296	330	386	418				
2005	7	14	113	185	260	312	356	408	438			
2004	8	7	81	166	230	303	355	395	426	466		
2003	9	1	95	150	201	275	337	372	462	491	512	
2002	10	3	85	133	221	257	306	360	396	437	471	497
All Classes		**135**	**99**	**177**	**252**	**310**	**355**	**391**	**430**	**465**	**492**	**497**
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 Richland Dam, Jones County, 2012.



Bluegill

Bluegills continue to remain the dominant panfish species present in Richland Dam. The CPUE of 38.0 is above the 21.5 from the 2009 survey as well as the 31.1 three year mean (Table 2). Figures 2-5 illustrate the length frequency histograms for the last four surveys. Size structure has improved slightly with the PSD of 70 with an RSD-P of 1 compared to the 92 and 1, respectively, from the 2009 survey. Condition is good with a mean Wr of 96. Growth is a little slow with means slightly below the statewide, regional and SLI means (Table 5).

Table 5. Average back-calculated lengths (mm) for each age class of bluegill sampled from Richland Dam, Jones County, 2012.

			Back-calculated Age							
Year Class	Age	N	1	2	3	4	5	6	7	8
2009	3	66	49	75	116					
2008	4	215	46	77	111	153				
2007	5	18	53	86	127	162	184			
2004	8	2	38	66	98	122	148	175	190	204
All Classes		**301**	**47**	**76**	**113**	**146**	**166**	**175**	**190**	**204**
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 Richland Dam, Jones County, 2012.

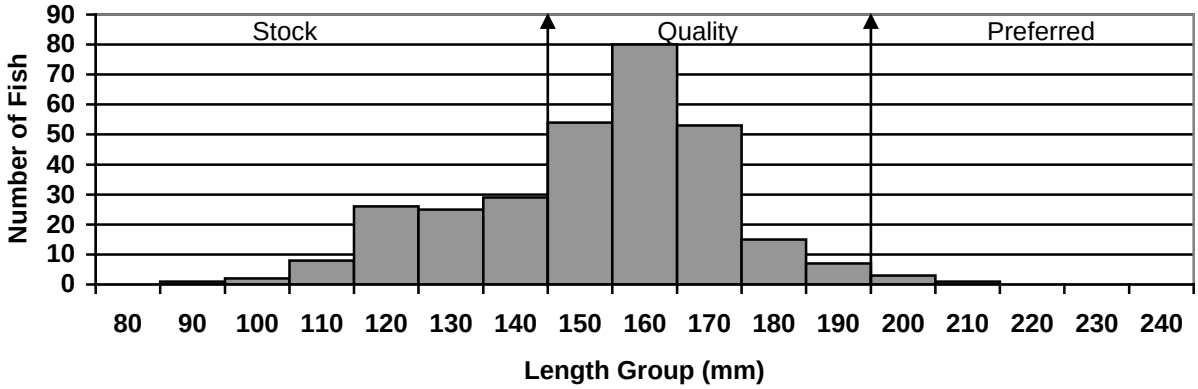


Figure 3. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 2009.

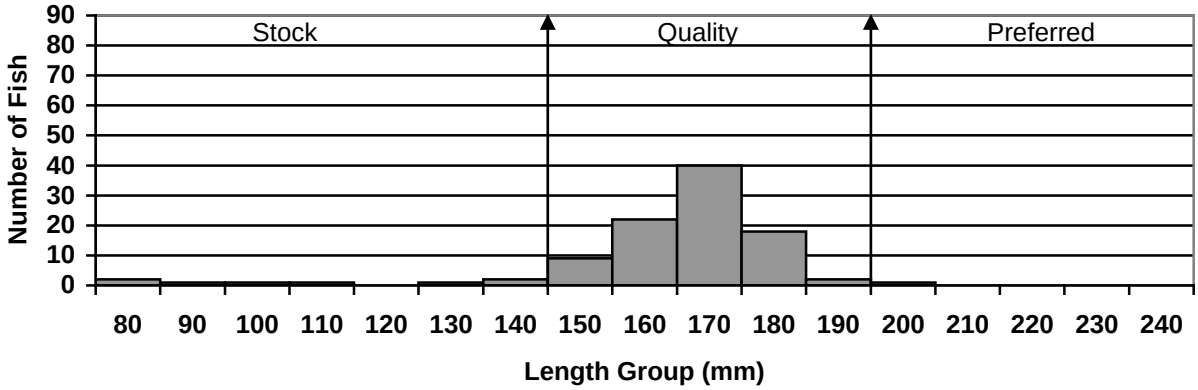


Figure 4. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 2006.

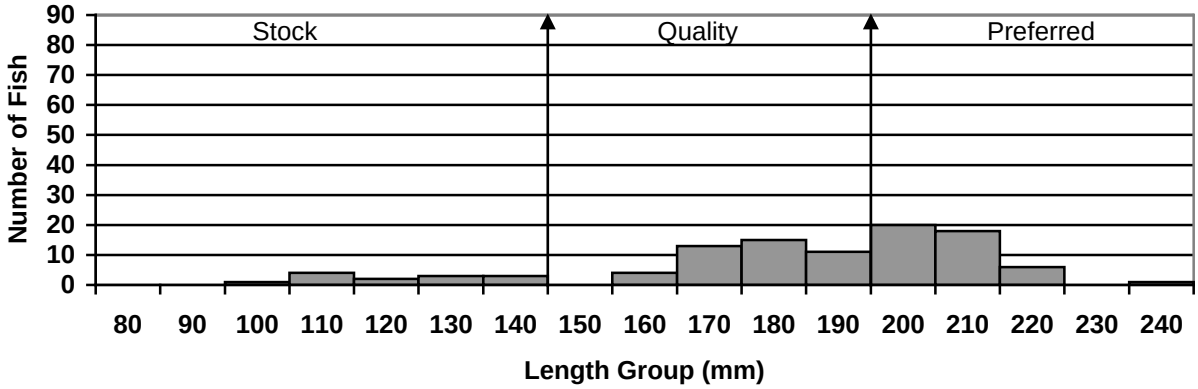
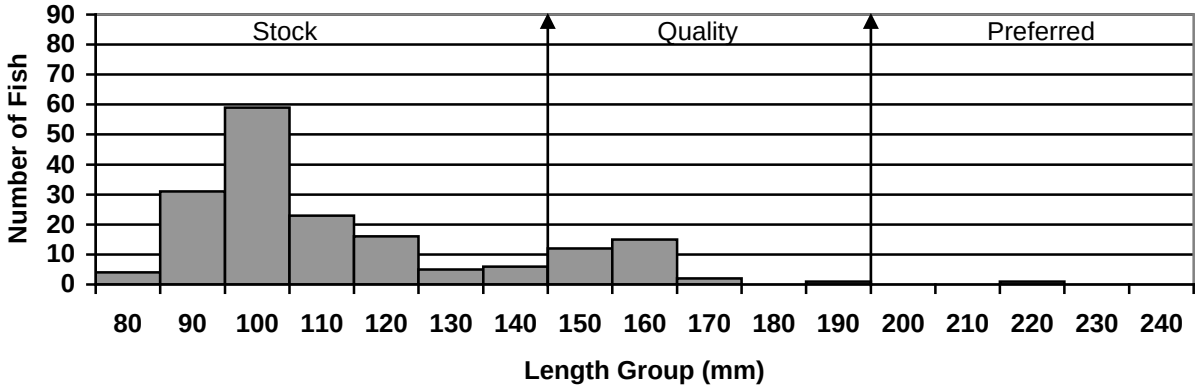


Figure 5. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 1993.



Black Crappie

Richland Dam continues to contain a black crappie population as well. The CPUE of 14.5 was above the 6.8 from 2009 as well as the 4.9 three year mean (Table 2). Condition is good with a mean Wr of 93. Growth is slow with means below statewide, regional and SLI means (Table 6). Figures 6 through 9 illustrate the length frequency histograms for the past four surveys. Size structure has improved over the last survey with a current PSD of 23 and an RSD-P of 2 compared to the 2 and 0, respectively, from the 2009 survey.

Table 6. Average back-calculated lengths (mm) for each age class of black crappie sampled from Richland Dam, Jones County, 2012.

			Back-calculated Age										
Year Class	Age	N	1	2	3	4	5	6	7	8	9	10	11
2010	2	3	76	127									
2009	3	48	74	114	156								
2008	4	34	71	105	138	174							
2006	6	7	74	115	136	160	177	198					
2005	7	10	72	103	126	146	163	178	200				
2004	8	9	74	111	131	145	166	181	194	209			
2003	9	2	73	110	133	153	169	189	202	207	221		
2001	11	1	83	102	141	175	194	216	228	240	249	260	271
All Classes		**114**	**75**	**111**	**137**	**159**	**174**	**192**	**206**	**219**	**235**	**260**	**271**
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 6. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 2012.

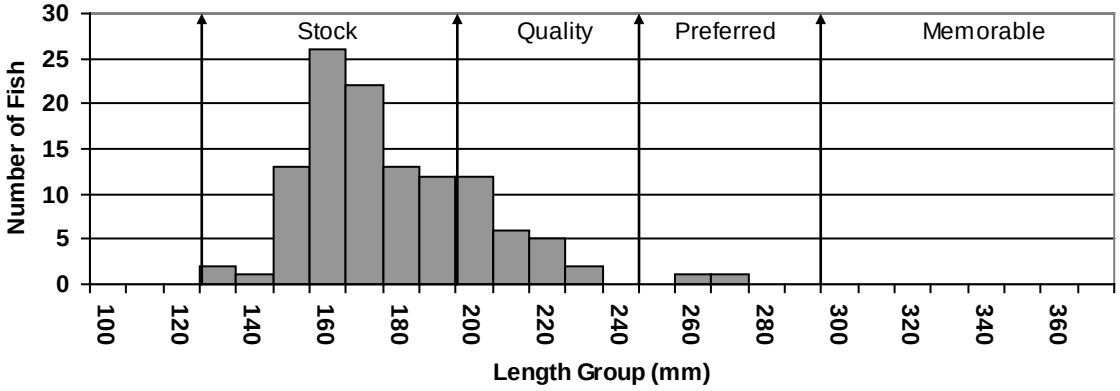


Figure 7. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 2009.

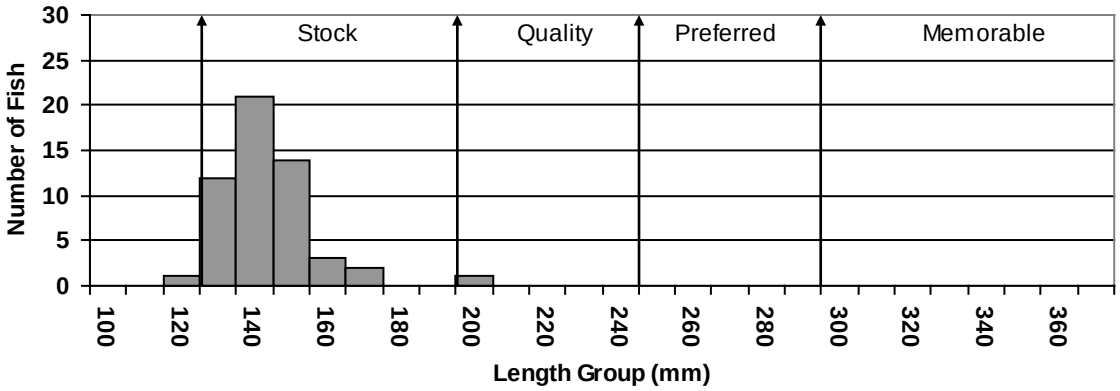


Figure 8. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 2006.

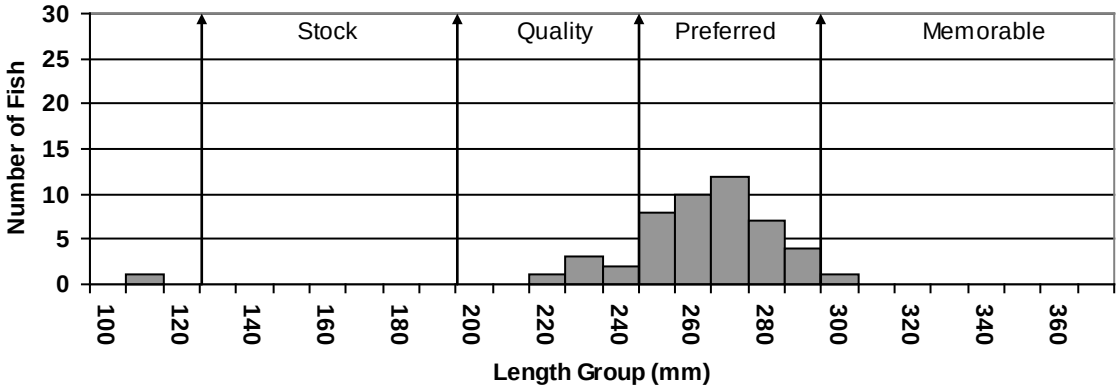
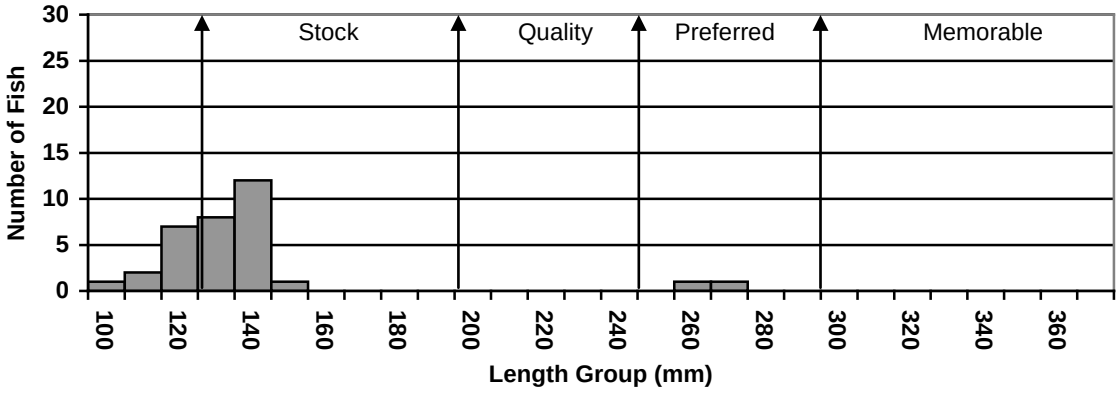


Figure 9. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 1993.



Other Species

Black bullheads were the only other species sampled this survey. The CPUE of 0.5 is right on with the 0.3 from 2009 as well as the 0.2 three year mean (Table 2). Not much else can be said about this population as only 4 fish were sampled.

RECOMMENDATIONS

1. Resurvey in 2015 to further monitor the fish populations and to continually collect trend data on the lake.