

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-45

Name: Red Lake **County(ies):** Brule
Legal Description: T130N-R70W-Sec. 3, 4, 8-11, 14-21
GPS: 43°44'39.05"N 99°11'59.30"W
Location from nearest town: 2 miles south and ½ mile west of Pukwana

Date of present survey: July 9-10, 2012 (netting)
Date of last survey: July 12-14, 1999 (netting)
Most recent lake management plan: None available
Management classification: Warmwater Marginal

Primary Game Species	Secondary and Other Species
Black Crappie	Black Bullhead
Bluegill	Common Carp
Channel Catfish	Green Sunfish
Yellow Perch	Largemouth Bass
Northern Pike	Smallmouth Bass

PHYSICAL DATA

Surface Area: 3,600 acres **Watershed:** 92,160 acres
Maximum Depth: 10 feet **Mean Depth:** 5.5 feet
Lake elevation at time of survey (field observations): 1 foot low
Contour map: NA **Date:** NA

Ownership of lake and adjacent lakeshore properties:

Red Lake is registered on the South Dakota list of meandered lakes. The State Legislature of 1957 vested in the Department of Game, Fish and Parks the authority to administer these meandered lakes. The surrounding land is privately owned with the exception of a 65 acre Game Production Area on the northeast shore of the lake.

Watershed condition with percentages of land use types:

The watershed use is approximately 70% cropland and 30% pasture or grassland.

Fishing access:

Fishing can take place on Red Lake via shore, ice or boat. There are several locations for any option.

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

No water control structures exist on Red Lake. A crude gravel boat ramp is located on the Game Production Area.

Field observations of aquatic vegetation condition:

No submergent vegetation was found in the lake during this survey. Emergent vegetation consisted of cattails and was found primarily on the southwest end of the lake.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No pollution problems were evident at the time of the survey. Water clarity was poor with a secchi disc reading of 13 inches. Other water quality characteristics were measured in the field on July 9, 2012, using a HACH water quality kit and a Hanna multiparameter meter. The results are found in Table 1.

Presence of a thermocline and depth from surface: NA

Station for water chemistry located on attached map: NA

Table 1. Water chemistry results from Red Lake, Brule County, July 9, 2012.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/l)	Hardness (mg/l)	pH	Secchi disc
A	Surface	78.58	4.59	96.8	408	1038	8.90	13 in
A	8.0	78.03	3.29	123.8	343	933	8.72	

BIOLOGICAL DATA

Methods:

Red Lake was sampled on July 9-10, 2012, with five overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and 3/4 inch knotted mesh. One overnight experimental gill net was also set. The gill net is 150ft x 6ft with 25ft panels of 1/2, 3/4, 1, 1-1/4, 1-1/2, and 2 inch monofilament mesh. No nighttime electrofishing was done during this survey. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Gill net catch

Table 2. Total catch of one, 150 ft. experimental gill nets at Red Lake, Brule County, July 9-10, 2012.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Common Carp	77	76.2	77.0	± 0.0	0.0	0	0	95
Black Bullhead	24	23.8	24.0	± 0.0	0.0	62	0	93

*First sample since 1999

Trap Net Catch

Table 3. Total catch of five, overnight ¾-inch frame nets at Red Lake, Brule County, July 9-10, 2012.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Black Bullhead	2,336	95.3	467.2	± 179.1	0.0	62	0	98
Green Sunfish	60	2.5	12.0	± 18.4	0.0	23	0	115
Common Carp	55	2.2	11.0	± 6.5	0.0	48	7	97

*First sample since 1999

Fish Population

Red Lake had not been surveyed for some time as the lake suffered from a major drought and little to no fish were present. The lake has since filled and a survey was conducted to determine what fish were left and how many of each species. The only species sampled this survey were black bullhead, green sunfish and common carp (Table 3).

Black bullheads were the dominant species sampled with a CPUE of 467.2 fish per net night. The gill net CPUE was 24. They had a fairly decent size structure with a PSD of 62 and an RSD-P of 0. The size structure can also be seen in Figure 1. The only downfall is the very high density and the lack of preferred and larger fish. Condition is good with a mean Wr of 98.

Green sunfish CPUE for trap nets was 12. Green sunfish condition was also good with a mean Wr of 115. Green sunfish length frequency histogram can be seen in Figure 3.

Common carp CPUE for trap nets was 11 and the gill net CPUE was 77. Common carp condition was good with a mean Wr of 96. Figure 2 illustrates the length frequency histogram for the carp sampled this survey and a number of the fish sampled were in the trophy category.

Conditions in Red Lake do not appear to be desirable for fish stockings at this time. So no stockings are planned at this time.

Figure 1. Length frequency histogram for black bullhead sampled from Red Lake, Brule County, 2012.

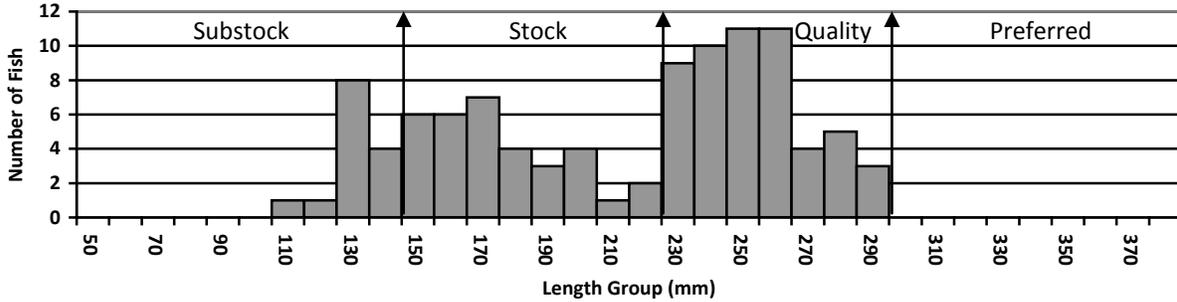


Figure 2. Length frequency histogram for common carp sampled from Red Lake, Brule County, 2012.

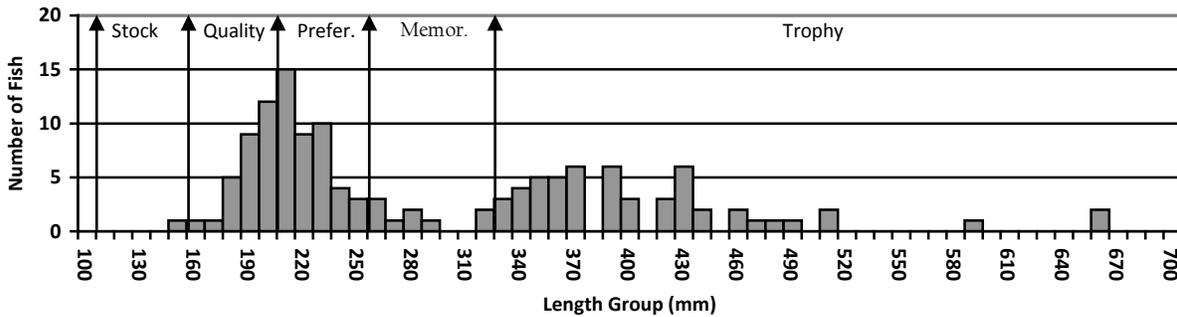
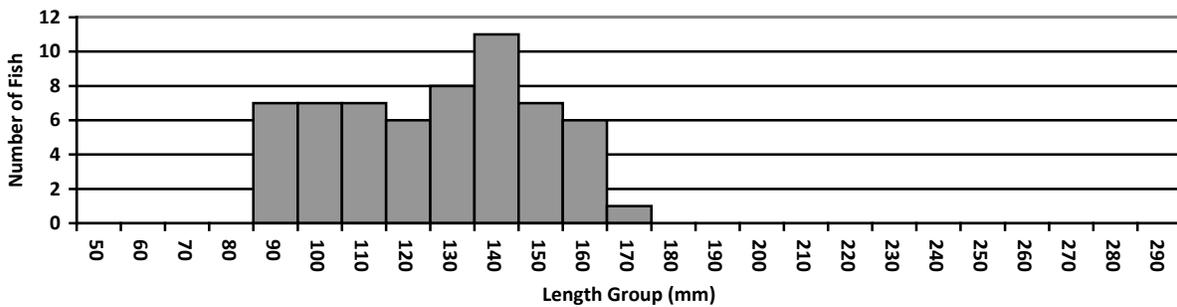


Figure 3. Length frequency histogram for green sunfish sampled from Red Lake, Brule County, 2012.



Stockings: No stockings have taken place in the last ten years for Red Lake, Brule County.

RECOMMENDATIONS

1. Do nothing at this time, including no stockings are any further surveys.