

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-47

Name: Little Moreau #3
Legal Description: T16N-R25W-Sec. 18
Location from nearest town: 7 miles south and ½ mile west of Timber Lake

County(ies): Dewey
GPS: 45°20'17.88"N 101°06'33.69"W

Date of present survey: June 17-19, 2013 (netting); September 16, 2014 (electrofishing)
Date of last survey: July 12-14, 2010 (netting); September 29, 2010 (electrofishing)
Most recent lake management plan: NA
Management classification: Warm Water Permanent

Primary Game Species	Secondary and Other Species
Largemouth Bass	Black Bullhead
	Green Sunfish

PHYSICAL DATA

Surface Area: 9 acres
Maximum Depth: 12 feet
Lake elevation at time of survey (field observations): Full
Contour map: No

Watershed: 33,300 acres
Mean Depth: 8 feet
Date: NA

Ownership of lake and adjacent lakeshore properties:

Little Moreau #3 is a 9-acre impoundment a little south and west of the town of Timber Lake in north central Dewey County. Not sure of the history on the construction of the dam prior to the breaching, but the dam was virtually dry for a number of years. In 2009, the dam grade and spillway were repaired by the State of South Dakota Game, Fish and Parks Department. The dam grade and entire lake lies within 3,040 acres of land owned by the South Dakota Department of Game, Fish and Parks and managed as a Game Production Area and State Recreation Area. The Division of Parks and Recreation maintains the park and camping area and the Wildlife Division of the Game, Fish and Parks completes fisheries management activities.

Watershed condition with percentages of land use types:

The watershed for Little Moreau #3 is relatively large draining all or portions of 19 sections or approximately 12,000 acres. The area of the watershed is mainly located west and north of the lake and is comprised of privately owned agricultural land and native grassland. Land use in the watershed is estimated at 78% cultivated agricultural land, 10% native grassland used as pasture and for hay crops, 10% native grass and wooded land within the Game Production area, and the remaining 2% residences, roads and a golf course.

Fishing access:

There is no boat ramp or access to the shoreline for accessing a boat other than maybe a small duck type boat. Ample opportunity exists for shorefishing as well as ice fishing.

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

No structures exist at Little Moreau #3. The dam grade and spillway were just rebuilt in 2009.

Field observations of aquatic vegetation condition:

Submergent vegetation surrounds the entire shoreline to a depth of around 6 feet and consists of a variety of pondweed species. Emergent vegetation is found in spotty clumps in different locations around the lake and consists mainly of cattails. A few sedges and rushes are starting to grow in areas around the shoreline as well.

CHEMICAL DATA**Field observations of water quality and pollution problems:**

No pollution problems were evident at the time of the survey. Water clarity was good with a secchi disc reading of 3 feet. Other water quality characteristics were measured in the field on June 17, 2013, using a HACH water quality kit and a Hanna multiparameter 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 Little Moreau #3, Dewey County, June 17, 2013.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (µS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	72.3	4.33	77.8	389	--	8.50	695	348	0.34	-252.0	3
A	13.6	65.8	1.24	88.6	360	--	7.91	--	369	0.36	-326.7	

BIOLOGICAL DATA**Methods:**

Little Moreau #3 was sampled on June 17-19, 2013, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and 3/4in. knotted mesh. No experimental gill netting or electrofishing was done this survey period. On the evening of September 16, 2014, Little Moreau #3 was electrofished for 20 minutes (2-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 10-11 amps to electrofish that lake that had a conductivity of 820 µS/cm with a water temperature of 60.5°F. 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 Little Moreau #3, Dewey County, June 17-19, 2013.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Green Sunfish	217	58.6	21.7	± 13.6	16.0	35	0	113
Black Bullhead	150	40.5	15.0	± 7.3	91.5	69	0	96
Largemouth Bass	2	0.6	0.2	± 0.2	38.4	--	--	108
Golden Shiner	1	0.3	0.1	± 0.1	0.0	--	--	97

* One year (2010)

Electrofishing Catch

Table 3. Total catch from two, ten-minute runs of fall nighttime electrofishing at Little Moreau #3, Dewey County, September 16, 2014.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Largemouth Bass	75	100	225.0	± 138.5	765.0	21	11	106

* One year (2010)

Largemouth Bass

The largemouth bass population was not able to be sampled during the regular lake survey in 2013 due to an early fall blizzard that cooled water temperatures too low to be effective at sampling with electrofishing. So Little Moreau #3 was placed back on the schedule for only an electrofishing survey of the bass population.

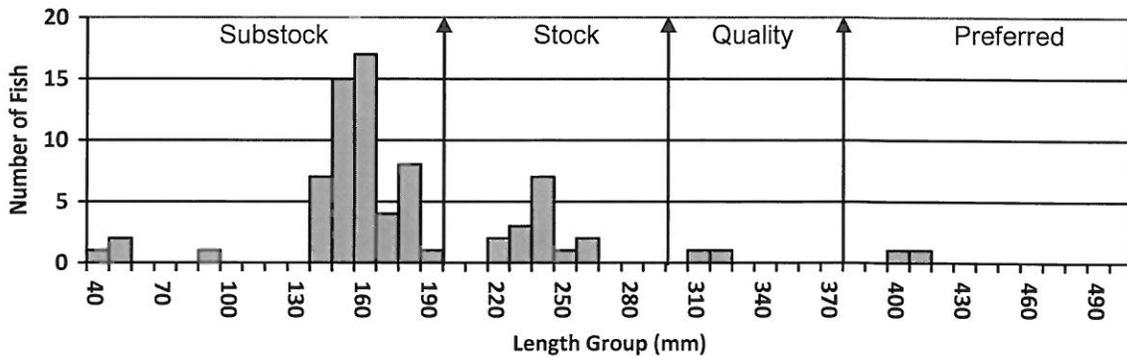
The CPUE of 225 fish per hour is lower than the huge number of 765 per hour from the 2010 survey, which was expected to happen. The population in 2010 was dominated by one year class of fish that was stocked in 2009. This survey has a population with a few year classes (Table 4). Growth is good with means right on with statewide, regional and SLI means (Table 4). Figure 1 illustrates the length frequency histogram for the fish sampled this survey and it can be seen that the population is made up of a few year classes now and is starting to look like an established population. Condition is good with a mean Wr of 106. Things are looking up for this population and the hope is that no winterkills occur and the potential of the dam is seen.

Table 4: Average back-calculated lengths (mm) for each age class of largemouth bass sampled from Little Moreau #3, Dewey County, 2014.

Year Class	Age	N	1	2	3	4	5	6
2013	1	52	93					
2012	2	15	89	161				
2011	3	2	79	158	256			
2008	6	1	78	151	222	317	377	400
All Classes		70	85	156	239	317	377	400
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 Little Moreau #3, Dewey County, 2014.



Other species

Green sunfish were the dominant species sampled this survey in Little Moreau #3. The CPUE of 21.7 is above the 16.0 from the 2010 survey (Table 2). Figures 4 and 5 illustrate the length frequency histograms for the last two surveys. As can be seen there really has been no change in the size structure other than the density. The PSD of 35 with a RSD-P of 0 is right on with the 33 and 0, respectively, from the 2010 survey. Condition is also good with a mean W_r of 113.

Black bullheads were the second most abundant species sampled this survey in Little Moreau #3. The CPUE of 15.0 is well below the 91.5 from the 2010 survey (Table 2). Figures 2 and 3 illustrate the length frequency histograms for the last two surveys. The density has decreased but the size structure has increased. The PSD of 69 with an RSD-P of 0 are above the 0 and 0, respectively, from the 2010 survey. Condition is good with a mean W_r of 96.

Largemouth bass and golden shiner were the only other species sampled this survey. Only 1 golden shiner was sampled, so not much can be said about the population. And only 2 largemouth bass were sampled during the netting portion and no inferences can be made with this low number of fish. It is assumed that the bass numbers are pretty good as the bullhead numbers decreased significantly and the green sunfish numbers did not get out of control. The plan was to electrofish in the fall to get a better idea of the numbers, but an early fall blizzard cooled water temperatures too fast and pushed fish off shore.

Figure 2. Length frequency histogram for black bullhead sampled from Little Moreau #3, Dewey County, 2013.

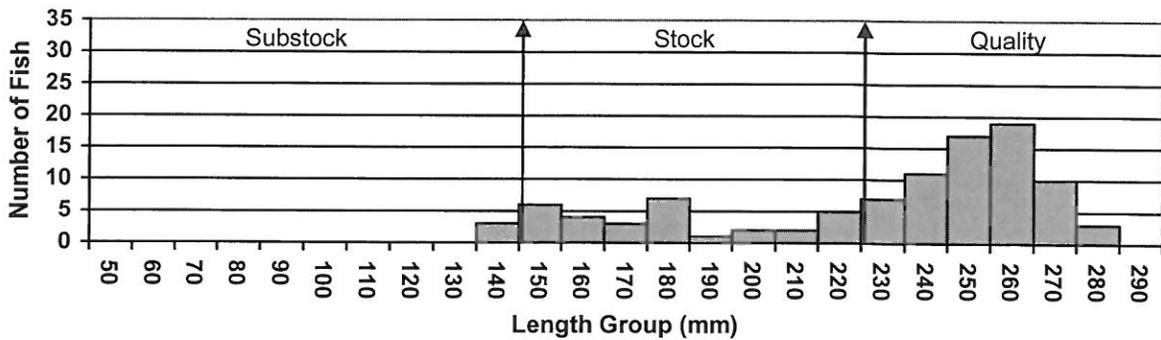


Figure 3. Length frequency histogram for black bullhead sampled from Little Moreau #3, Dewey County, 2010.

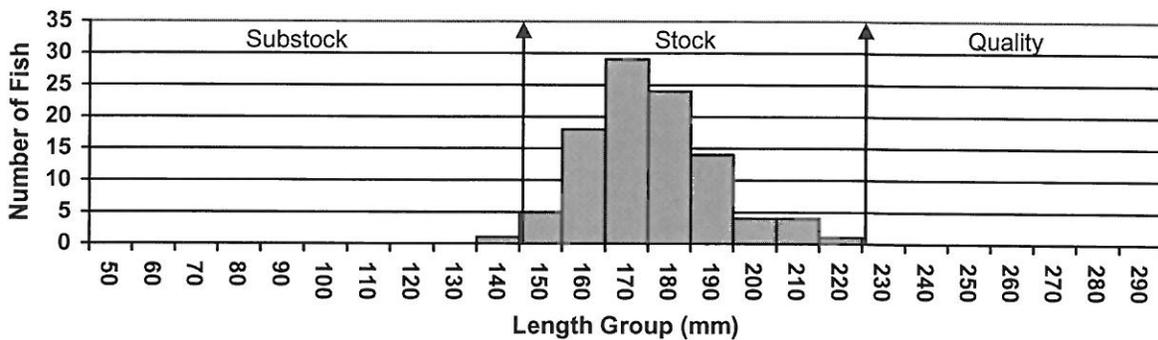


Figure 4. Length frequency histogram for green sunfish sampled from Little Moreau #3, Dewey County, 2013.

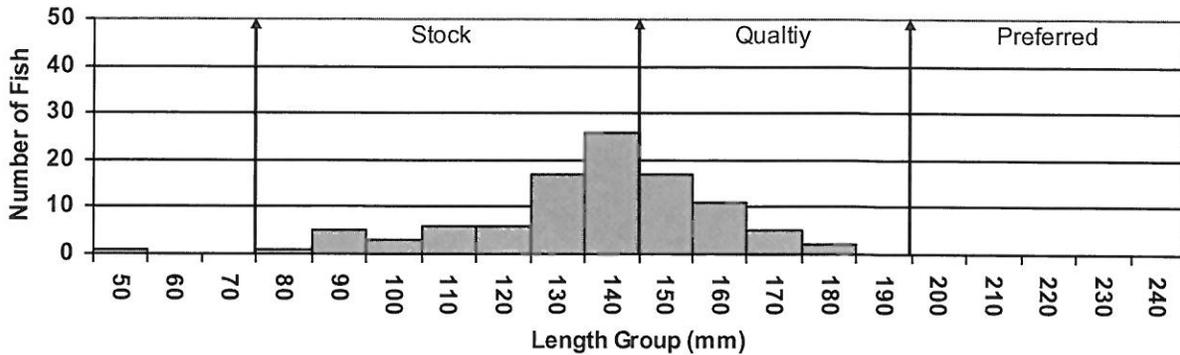
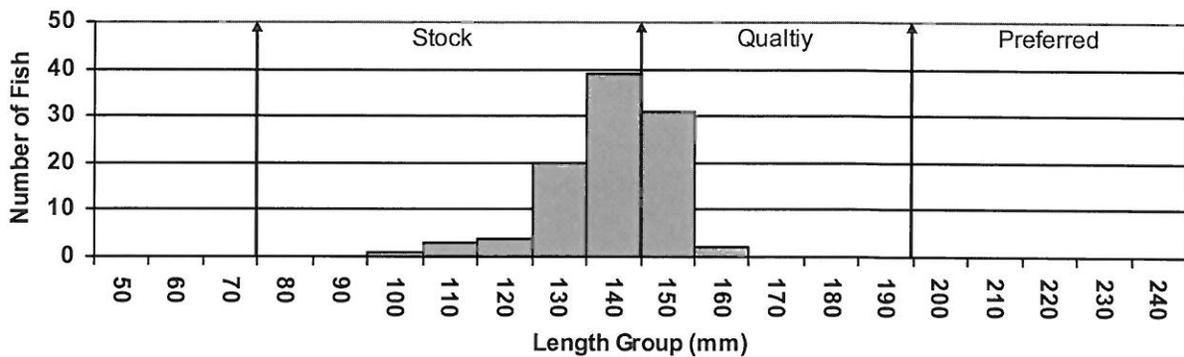


Figure 5. Length frequency histogram for green sunfish sampled from Little Moreau #3, Dewey County, 2010.



Stockings: The only stocking that has taken place recently is the 23,400 first crop small fingerling largemouth bass in 2009 just after the lake refilled from being repaired.

RECOMMENDATIONS

1. Resurvey in 2016 to monitor the fish population.
2. Stock additional fish species after next survey if needed to provide a variety of species.