

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-46

Name: Pasture 6 (Bottleneck) Pond

County: Perkins

Legal description: Sec 25, T 19N, R 14E

Location from nearest town: 4 miles north and ¼ mile west of Bison, SD.

Dates of present survey: August 20, 2013

Date last surveyed: June 21, 2012

Management classification: Warmwater semi-permanent

Primary Species: (game and forage)

1. Yellow Perch
2. Black Crappie
3. _____

Secondary and other species:

1. Green Sunfish
2. _____
3. _____

PHYSICAL CHARACTERISTICS

Surface Area: 22 acres

Maximum depth: NA

Lake elevation at survey (from known benchmark): -3

Watershed: NA

Mean depth: NA

Ownership of lake and adjacent lakeshore property:

Pasture 6 (Bottleneck) Pond is located on the Grand River National Grasslands and is owned by the United States Forest Service (USFS).

Fishing Access:

There is a "two track" road from White Butte Road northwest to the pond. The "two track" path crosses a creek bottom that is part of the watershed the pond is in. After substantial precipitation events this pond is very difficult to get to by vehicle. Most of the shoreline is void of emergent vegetation (eg. Cattails), and thus, shoreline fishing access is good. However, during the later summer months much of the shallow water near the shoreline contains dense submergent aquatic vegetation. During this time waders or a very small boat may be needed to fish. There is no boat ramp at the Pasture 6 (Bottleneck) Pond.

Observations of Water Quality and Aquatic Vegetation:

During summer there can be dense submergent aquatic vegetation near the shorelines of the pond. There is not a lot of emergent shoreline vegetation. The only possible water quality issues identified by South Dakota Game, Fish and Parks staff (SDGF&P) at the time of the survey are shoreline erosion and manure from livestock at the pond. However, no water quality measurements were taken.

Observations on conditions of structures (i.e. spillway, boat ramps and docks, roads, etc):

There were no obvious issues identified by SDGF&P at the time of the survey; however the dam was not closely examined. The “two track” road to the pond receives little maintenance. There are no docks, ramps, or piers at this pond.

MANAGEMENT OBJECTIVES

- Objective 1.** Provide a panfish and Largemouth Bass fishery.
- Objective 2.** Decrease the density of panfish fish species (eg. Green Sunfish) through Largemouth Bass stockings.

BIOLOGICAL DATA

Sampling Effort and Catch

On August 20, 2013 a fish population netting survey was completed on the Pasture 6 (Bottleneck) Pond. The survey was completed using four trap nets set over night (Figure 1). Trap nets were modified fyke nets consisting of a 1.3 m X 1.5 m (4.2 ft X 4.9 ft) frame, 19.1 mm (0.75 in) mesh and a 1.2 X 23 m (3.9 X 75.5 ft) lead.

A total of three fish species were collected from the trap nets. These include Green Sunfish, Black Crappie, and Yellow Perch (Table 1). The only fish species that have been stocked by SDGF&P are Smallmouth Bass, Largemouth Bass, and Yellow Perch. Pasture 6 (Bottleneck) Pond was also surveyed in 2012 and only Green Sunfish were found in the trap nets at that time.

A seine haul survey was conducted using three quarter arc seine hauls (Figure 1). A bag seine that is 16 m with 6 mm bar mesh was used to complete the seine hauls. During the three quarter arc seine hauls a total of three fish species were collected. These include Green Sunfish and Black Crappie that appeared to be age-0, and Fathead Minnow. It was difficult to complete seine hauls due to the dense submergent vegetation near the shoreline.

Table 1. Catch data from all species collected in three trap nets in Pasture 6 (Bottleneck) Pond, August 20, 2013. CPUE's with 80% confidence intervals in parentheses. PSD, PSD-P and $Wr \geq S$ with 95% confidence intervals in parentheses.

Species	Year	N	CPUE (80%)	CPUE-S (95%)	PSD (95%)	PSD-P (95%)	$Wr \geq S$ (95%)
Green Sunfish	2013	418	139.3 (83.8)	139.3 (83.8)	59 (5)	0	114.4 (1.6)
Black Crappie	2013	103	34.3 (31.8)	1 (1.1)	67 (33)	33 (67)	107 (15.4)
Yellow Perch	2013	11	3.7 (1.6)	3.7 (1.6)	100	73 (27)	91.7 (4.8)

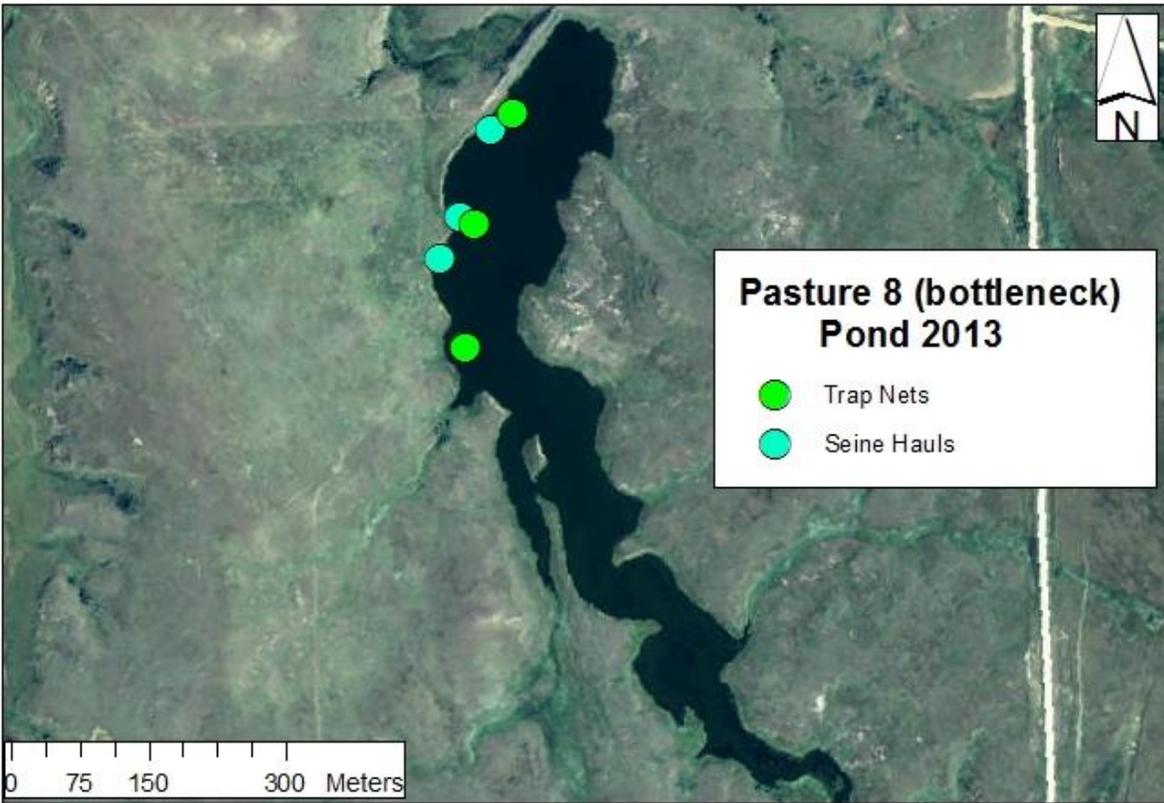


Figure 1. Map of net locations on Pasture 6 (Bottleneck) Pond in 2013.

Black Crappie

Black Crappie were found in all the trap nets with a mean catch-per-unit-effort (CPUE) of 34.3, and most of the Black Crappie were under stock length with a mean CPUE of stock length or greater fish (CPUE-S) of 1 (Table 1). There appears to be a large year class between 100 mm (4 in) and 130 mm (5 in) with a few larger fish near preferred length (250 mm; 10 in) (Figure 2). Condition was good for the few fish collected over stock length with a mean relative weight ($Wr_{\geq S}$) of 107 (Table 1). During the seine hauls a total of one age-0 Black Crappie was collected.

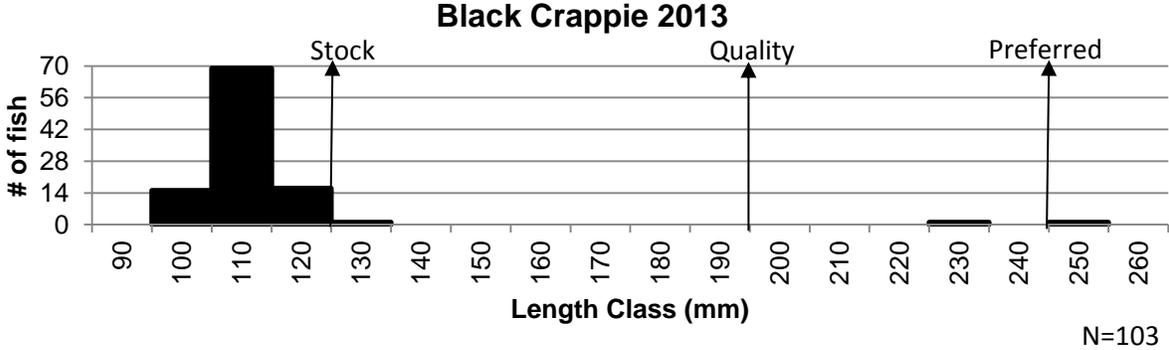


Figure 2. Length frequencies of Black Crappie surveyed by trap net in Pasture 6 (Bottleneck) Pond 2013.

Green Sunfish

There were more Green Sunfish collected in the 2013 than the 2012 sample with mean CPUE's of 139.3 and 35.3, respectively (Table 1). It also appears there has been growth in Green Sunfish as many of the fish in 2013 were in the quality to preferred length range this year (Figures 3 and 4). The PSD also increased from 17 in 2012 to 59 in 2013 (Table 1). Condition was good in both 2012 and 2013 with a mean $W_{r \geq S}$ of 130.4 and 114.4, respectively (Table 1). During the seine hauls a total of 115 Green Sunfish were collected with a mean CPUE of 38.3. A large portion of the Green Sunfish collected by seine hauls appeared to be age-0.

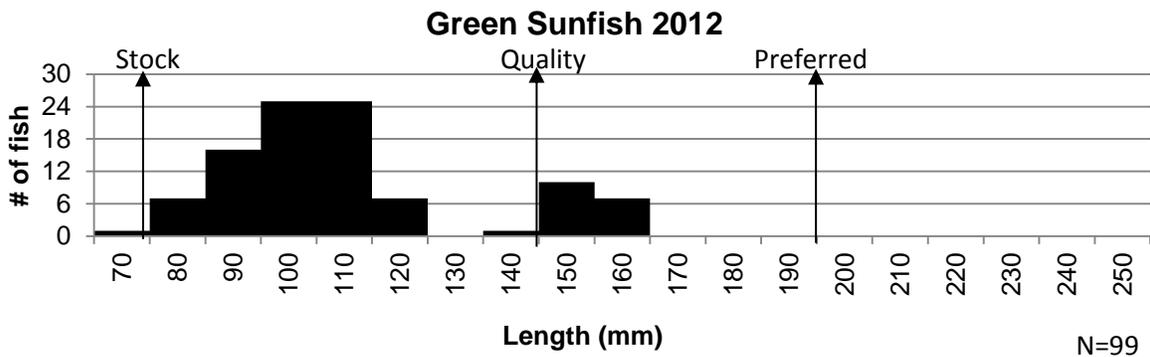


Figure 3. Length frequency histogram for Green Sunfish surveyed by trap net in Pasture 6 (Bottleneck) Pond 2012.

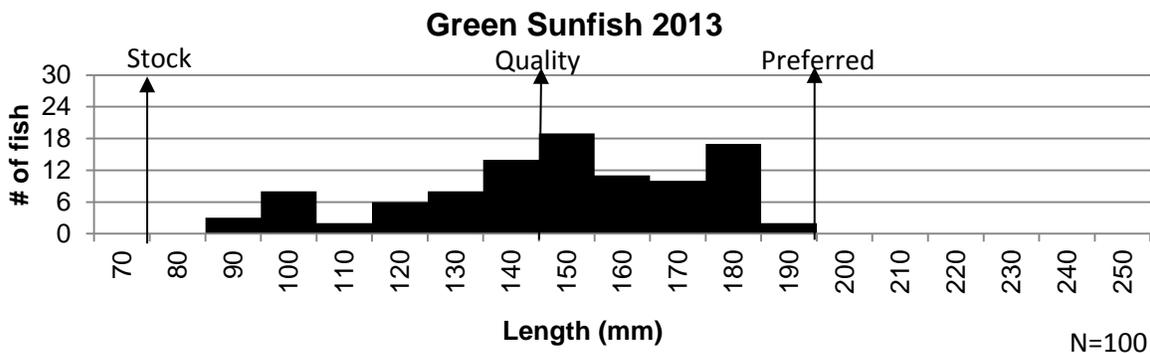


Figure 4. Length frequency histogram for Green Sunfish surveyed by trap net in Pasture 6 (Bottleneck) Pond 2013.

Fathead Minnow

A total of 213 Fathead Minnows were collected during three seine hauls. The mean CPUE for Fathead Minnows surveyed during the seine hauls was 71.

Largemouth and Smallmouth Bass

An angling survey was completed in 2012 and 2013 to evaluate the success of the Largemouth and Smallmouth Bass stockings in 2009 and 2012. During four total angler hours between the two surveys no Largemouth Bass or Smallmouth Bass were collected. There were no visual signs (e.g. fish surfacing and young fish in the shallow water) of Largemouth or Smallmouth Bass as well.

MANAGEMENT RECOMMENDATIONS

1. Stock adult Largemouth Bass, when available, as the fingerling fish may be getting consumed by other fishes before they can recruit to the population.
2. Continue to survey the pond after fish stockings and drought or heavy precipitation periods.

APPENDIX

Appendix A. Stocking record for the Pasture 6 (Bottleneck) Pond from 2009-Present.

<u>Year</u>	<u>Species</u>	<u>Size</u>	<u># Stocked</u>
2009	Largemouth Bass	Fingerling	1,000
2012	Yellow Perch	Adult	220
2012	Smallmouth Bass	Fingerling	2,160