

## SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-47

**Name:** Owens Lake

**County:** Perkins

**Legal description:** Sec 4, T 17N, R 14E

**Location from nearest town:** 3 miles east, 4 miles south of Bison, SD

**Dates of present survey:** June 23-25, 2014

**Date last surveyed:** June 18-19, 2013

**Management classification:** Warmwater semi-permanent

Primary Species: (game and forage)

1. Black bullhead
2. Northern pike
3. \_\_\_\_\_

Secondary and other species:

1. Largemouth bass
2. Yellow perch
3. Bluegill

### PHYSICAL CHARACTERISTICS

**Surface Area:** 96 acres

**Watershed:** 57,000 acres

**Maximum depth:** 15 feet

**Mean depth:** 6.3 feet

**Lake elevation at survey (from known benchmark):** full pool

#### Ownership of lake and adjacent lakeshore property:

Most of the land around Owens Lake is owned by the Department of Game, Fish and Parks and is managed as a Game Production Area.

#### Fishing Access:

Owens Lake has boat access with a rough, plank boat ramp on the south side. Shore access is limited by heavy vegetation around the shoreline and heavy submergent vegetation around the entire lake.

#### Observations of Water Quality and Aquatic Vegetation:

During the survey, the lake water was very clear and emergent vegetation was prevalent in depths under seven feet deep. Approximately 70 percent of the shoreline is covered by cattails or reeds. No pollution problems were noticed during this survey.

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

The dam spillway appeared in good condition. The boat ramp is a rough concrete plank ramp that is being undercut by wave action in spots and is in need of replacement.

## MANAGEMENT OBJECTIVES

- Objective 1.** Maintain moderate densities of yellow perch and bluegill and PSD's  $\geq 30$ .
- Objective 2.** Maintain a mean trap net CPUE of stock-length black bullhead  $<100$  and PSD  $>30$ .
- Objective 3.** Increase largemouth bass and northern pike numbers to moderate to high densities to keep black bullhead and other panfish densities and size structure within management objective ranges.

## BIOLOGICAL DATA

### Sampling Effort and Catch

Trap nets and experimental gill nets were used on June 23-25, 2014 to sample adult fish populations in the reservoir (Figure 1). The net sampling consisted of eight trap net nights and two gill net night and catch data is displayed in Tables 1 and 2. Discussion on selected fish species follows and completes this report.

Table 1. Catch data from all fish species collected in two experimental gill nets in Owens Lake, South Dakota, June 23-25, 2014. CPUE values with 80% confidence intervals in parentheses. PSD, PSD-P and  $W_{\geq S}$  values with 90% confidence intervals in parentheses

Species	N	CPUE	CPUE-S	PSD	PSD-P	$W_{\geq S}$
Black bullhead	3	1.5 (4.6)	1.5 (4.6)	--	--	130.0 (22.6)
Northern pike	15	7.5 (20.0)	7.5 20.0	33 (23)	0	86.3 (1.8)
Yellow perch	3	1.5 (1.5)	1.5 (1.5)	--	--	81.6 (30.9)

Table 2. Catch data from all species collected in eight trap nets in Owens Lake, South Dakota, June 23-25, 2014. CPUE's with 80% confidence intervals in parentheses. PSD, PSD-P and  $W_{\geq S}$  with 90% confidence intervals in parentheses

Species	N	CPUE	CPUE-S	PSD	PSD-P	$W_{\geq S}$
Black bullhead	62	7.8 (3.1)	7.8 (3.1)	27 (10)	6 (6)	93.1 (1.2)
Black crappie	2	0.3 (0.2)	0.3 (0.2)	--	--	100.1 (67.7)
Bluegill	14	1.8 (1.0)	1.6 (0.9)	46 (26)	8 (13)	136.2 (0.7)
Northern pike	36	4.5 (1.2)	4.5 (1.2)	64 (14)	3 (4)	86.5 (1.3)

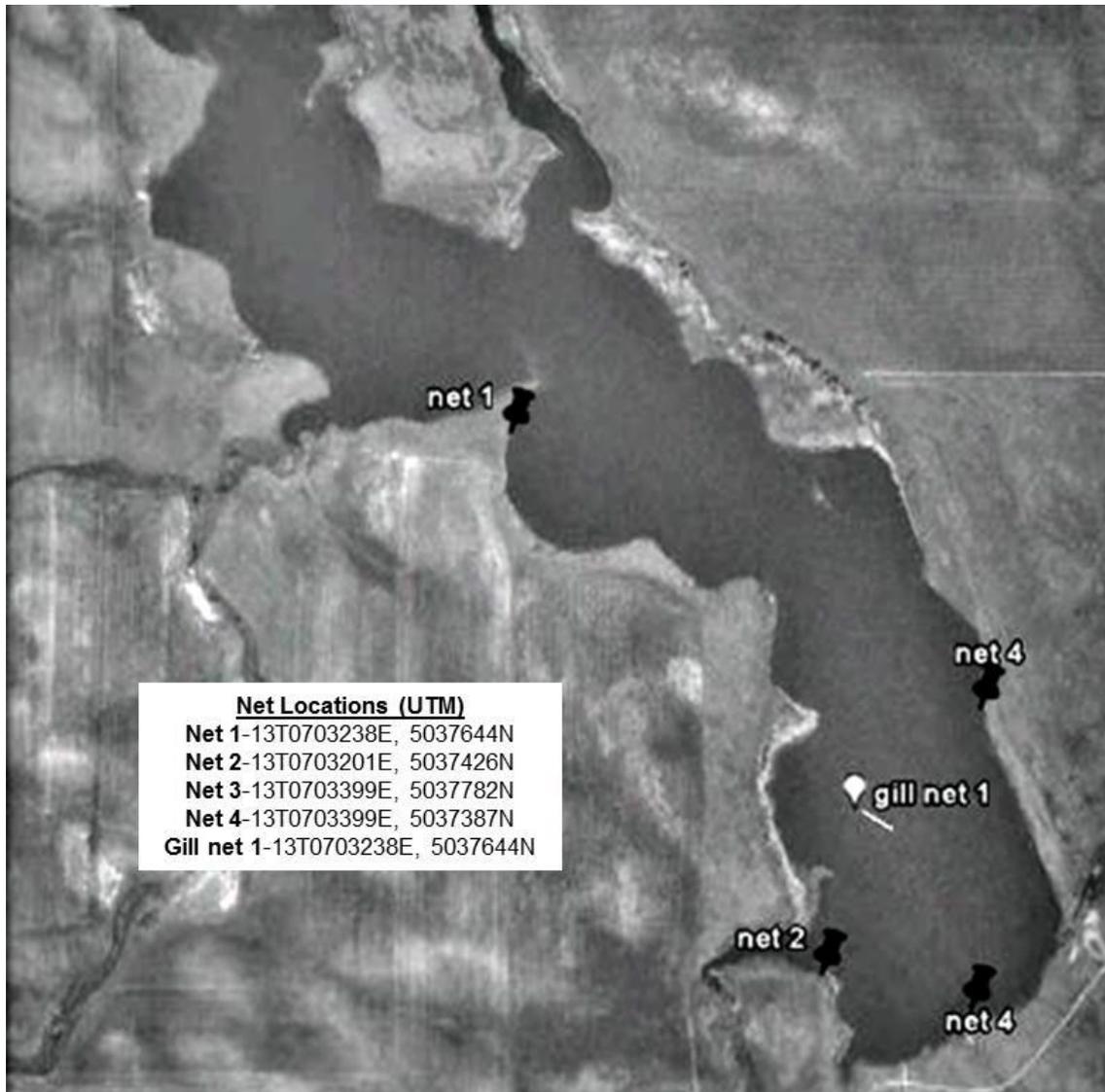


Figure 1. Locations, with GPS coordinates, of the experimental gill net (gill net) and trap nets (net) during the fish survey of Owens Lake, South Dakota, 2014.

### Black bullheads

In 2014, black bullhead was the most abundant species sampled in trap nets and produced a CPUE of 7.8 (Table 2). The two gill nets caught three black bullheads (Table 1). Stock indices are just below the objective value with a PSD of 27 and a PSD-P of 6 from the trap net sample (Table 2). Black bullhead condition was good with average relative weight for stock length and larger fish ( $W_{\geq S}$ ) of 93.1. Length frequency histograms from the past few years indicate good growth is occurring (Figure 2).

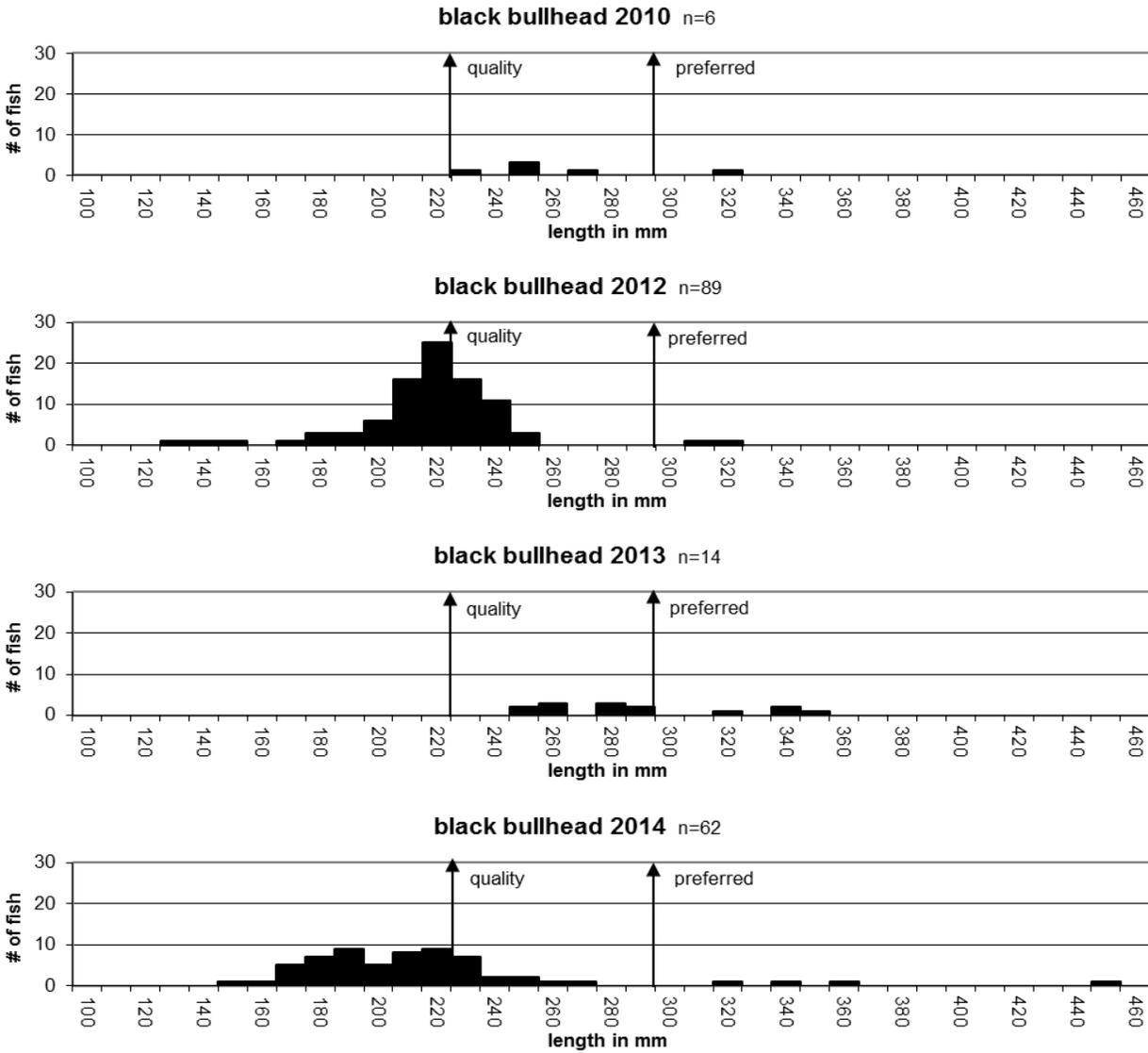


Figure 2. Length frequencies of black bullheads from Owens Lake, Perkins County, South Dakota, 2010, 2012-2014.

### Bluegill

Bluegills were introduced in 2012 when 835 adults were stocked. The trap net sample yielded a CPUE of 1.8 (Table 2). Fish condition was impressive with a  $Wr \geq S$  of 136.2. The length frequency histogram indicates recruitment occurring as well as good growth with what appears to be age-2 fish in the 130-160 mm range (Figure 3)

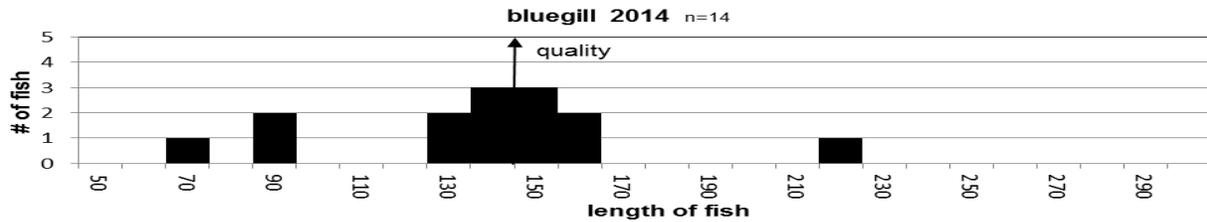


Figure 3. Length frequency of bluegill from trap nets at Owens Lake, Perkins County, South Dakota, 2014.

Northern pike

Northern pike are the dominate predator with a trap net CPUE of 4.5 and a gill net CPUE of 7.5 (Tables 1 and 2). Size structure was high with a PSD of 33 in the gill net and 64 in the trap nets indicating a balanced population. Fish condition was below average with a mean  $W/\geq S$  of 86.3 from the gill net sample. The length frequency histogram shows good recruitment appears to be occurring (Figure 4).

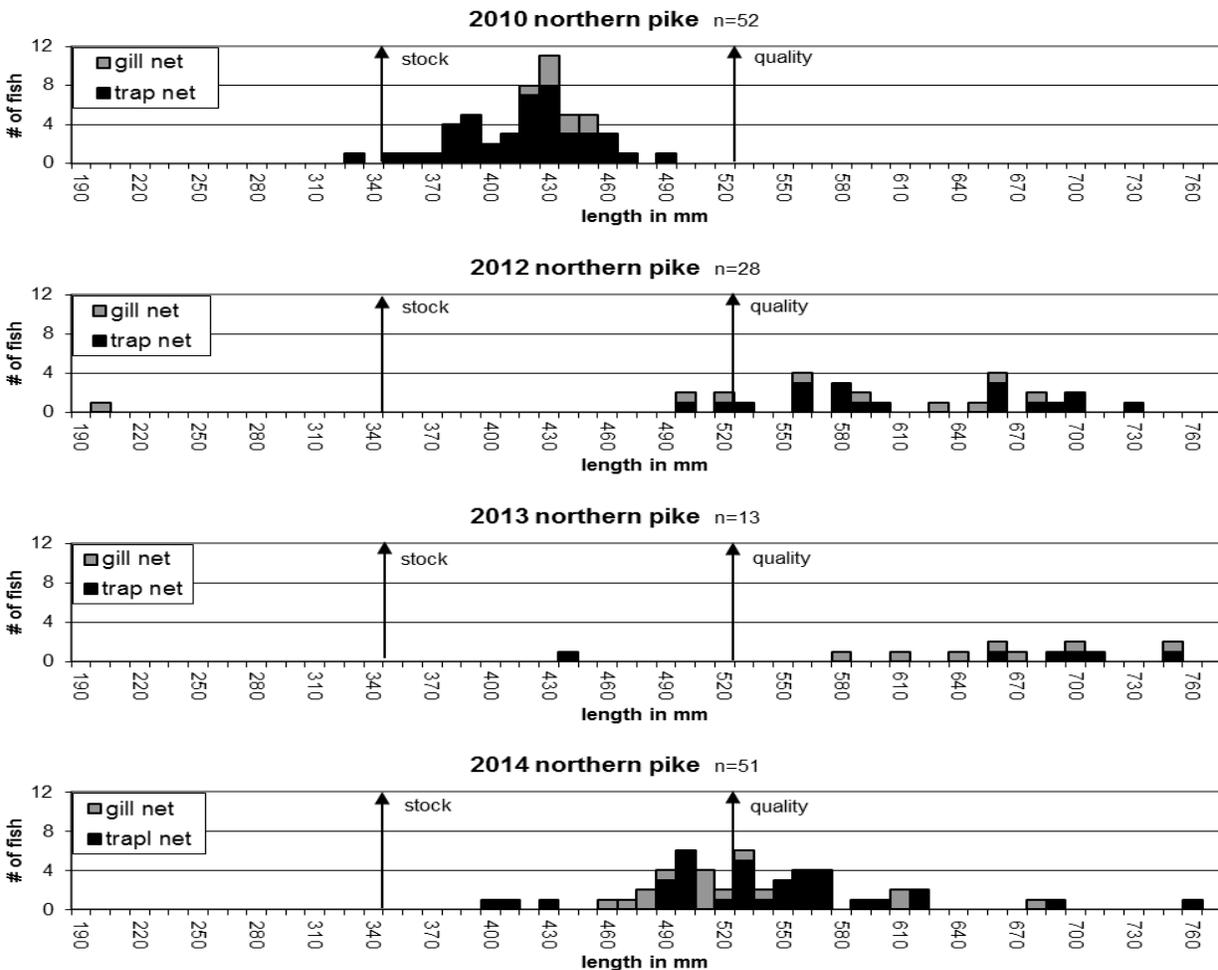


Figure 4. Length frequencies of northern pike sampled in gill nets and trap nets from Owens Lake, Perkins County, South Dakota, 2010, 2012-2014.

## RECOMMENDATIONS

1. Resurvey in 2015 to check fish populations and determine if bluegill and largemouth bass introductions were successful.

## APPENDIX

Appendix A. Stocking history, including year, number stocked, species and size of fish stocked into Owens Lake, Perkins County, South Dakota, 1995-2014.

Year	Number	Species	Size
1995	197	Northern pike	Adult
1996	16,230	Northern pike	Adult
1997	32,000	Northern pike	Fingerling
2005	368	Yellow perch	Adult
2009	250	Yellow perch	Adult
2010	97,600	Northern pike	Fry
	5,560	Largemouth bass	Fingerling
2012	572	Yellow perch	Adult
	835	Bluegill	Adult
	320	Largemouth bass	Adult
2014	250	Largemouth bass	Juvenile
	800	Yellow perch	Adult