

## SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-47

**Name:** New Underwood Lake

**County:** Pennington

**Legal description:** NM ¼ Sec 30, T 2N, R 11E

**Location from nearest town:** ½ mile N, ½ mile W of New Underwood, SD

**Dates of present survey:** May 22, September 8, 2014

**Date last surveyed:** June 10-11, 2013

**Management classification:** Warmwater semi-permanent

Primary Species:(game and forage)

1. Black crappie
2. Bluegill
3. Largemouth bass

Secondary and other species:

1. Black bullhead
2. Golden shiner
3. Channel catfish

### PHYSICAL CHARACTERISTICS

**Surface Area:** 20 acres

**Watershed:** 1,920 acres

**Lake elevation at survey (from known benchmark):** -0.5 feet

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

The lakeshore is owned by the South Dakota Department of Game, Fish and Parks and managed as a lake access area.

#### **Fishing Access**

Fish access is decent with a two-tract trail around the lake. A gravel boat ramp exists and is useable when the lake is near full. Vegetation limits the amount of shoreline used for fishing as the summer progresses, and by mid-June the dam grade provides the best shore fishing area.

#### **Observations of Water Quality and Aquatic Vegetative:**

Cattails surround much of the lake. Submerged vegetation can be abundant in mid to late summer in water less than six feet.

#### **Observations on condition of structures (i.e. spillway, boat ramps and docks, roads, etc)**

All structures associated with New Underwood dam appeared to be in good condition. No problems were identified by department personnel.

### BIOLOGICAL DATA

#### **Sampling Effort and Catch**

Sampling with night boat electrofishing was conducted at New Underwood Lake on May 22, 2014, with a water temp of 61°F. Four sites were completed during the survey for a total of 21.8

minutes (Table 1). After observing a fish kill, the lake was resampled on September 8, 2014, with a water temp of 68 °F. Three sites were sampled for a total of 16.25 minutes.

### Largemouth bass

Largemouth bass density was high with a CPUE of 263.2 during the spring sampling (Table 1). Size structure was fairly low with a PSD of 23 and a PSD-P of 15. After a summer fish kill, the lake was resurveyed in the fall with a similar CPUE of 239.9. Size structure was lower with a PSD of 6 and a PSD-P of 4. The length frequency also shows that the larger fish declined from the spring sample (Figure 1). Fall fish condition was good with a *Wr* of 103.2. Fish aging was done during the spring sample and showed slow growth (Table 2).

Table 1. Composite listing of data for largemouth bass collected by electrofishing in New Underwood Lake, 2002, 2004, 2006, 2009, 2011, 2014. Total catch (N), pedal time (seconds), CPUE's with 80% and PSD, PSD-P, and *Wr* with 90% confidence intervals in parentheses.

Year	N	Time (sec)	CPUE	CPUE-S	PSD	PSD-P	<i>Wr</i> ±S
2002	14	1,195	42.9 (60.6)	24.4 (21.4)	38 (35)	13 (23)	94.4 (3.8)
2004	56	1,700	117.5 (56.9)	99.0 (27.7)	28 (11)	0	93.0 (1.8)
2006	18	1,067	60.5 (9.1)	60.5 (9.1)	17 (16)	0	104.1 (1.3)
2009	55	1,716	121.4 (118.6)	97.0 (133.2)	14 (9)	0	115.6 (1.0)
2011	43	1,403	97.7 (83.2)	51.7 (49.0)	45 (20)	5 (9)	93.4 (1.8)
2014	99	1,308	263.2 (85.7)	190.9 (52.5)	23 (8)	15 (7)	87.9 (0.4)
2014*	52	975	239.9 (160.6)	224.2 (131.7)	6 (6)	4 (5)	103.2 (0.2)

\*fall sample after observed summer kill

Table 2. New Underwood Lake largemouth bass year class, age in 2014, sample size (N), mean back-calculated total length-at-age, the Region 1 mean length-at-age, and the South Dakota state-wide largemouth bass mean length-at-age. Standard errors are in parentheses.

Year Class	Age	N	1	2	3	4	5	6	7
2012	2	8	95	206					
2011	3	24	78	133	196				
2010	4	61	74	138	189	223			
2009	5	38	76	158	215	246	266		
2008	6	18	71	177	237	271	300	321	
2007	7	2	73	128	224	277	350	409	443
2014 Pop. mean		151	78	157	212	254	305	365	443
(SE)			(4)	(12)	(9)	(12)	(24)	(44)	(0)
Region 1			78	154	214	272	318		
(SE)			(4)	(10)	(11)	(13)	(13)		
South Dakota			96	182	250	305	342		
(SE)			(3)	(6)	(7)	(8)	(8)		

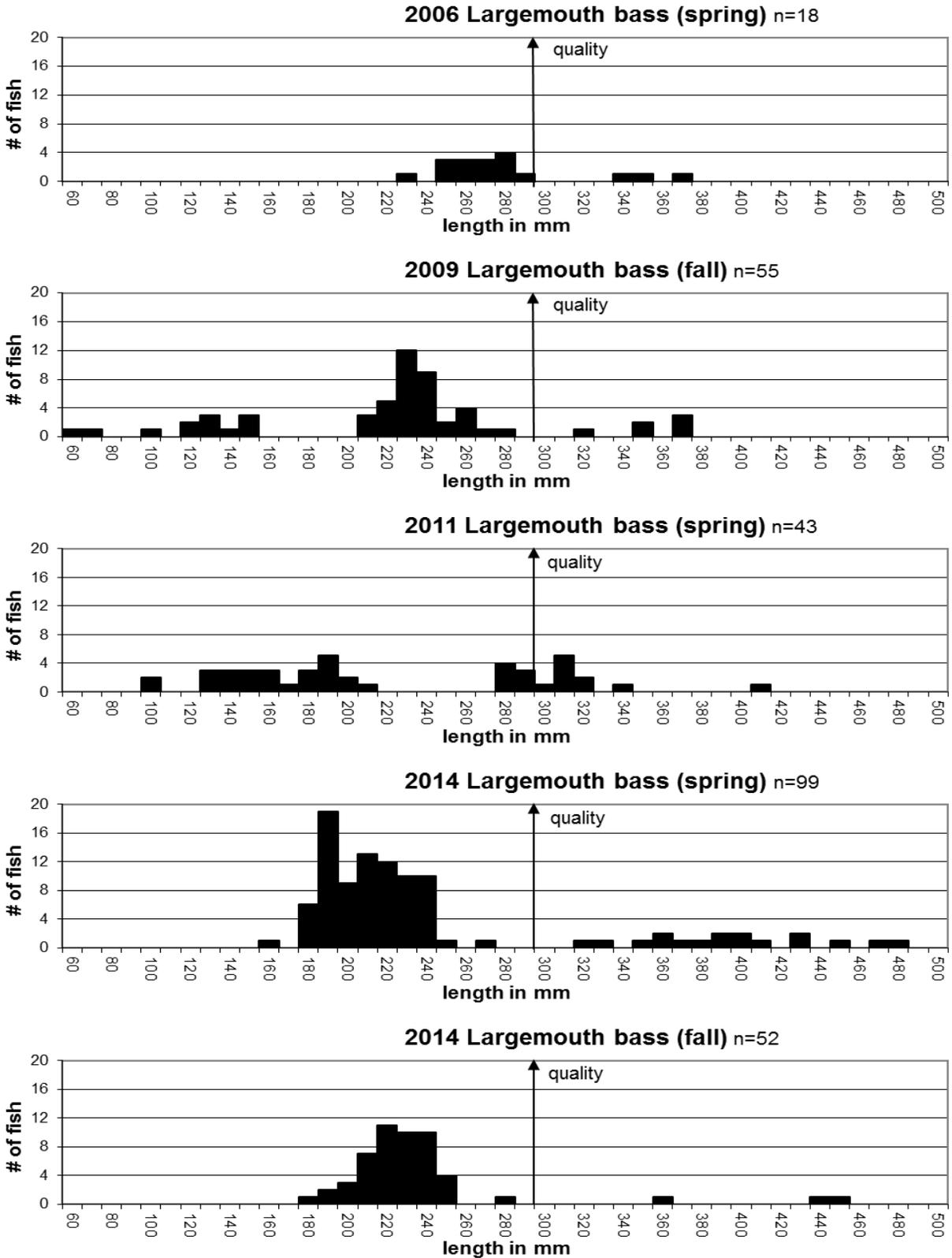


Figure 1. Length histogram of largemouth bass collected during night electrofishing from New Underwood Lake, Pennington County, 2006, 2009, 2011, 2014.

## RECOMMENDATIONS

1. Continue conducting lake surveys biennially to monitor largemouth bass and panfish populations and to evaluate the 15-inch minimum regulation for largemouth bass.
2. Continue to stock channel catfish to provide a unique angling opportunity at this well-utilized fishery.
3. Stock adult yellow perch, channel catfish and black crappie to provide more angling opportunity.

## APPENDIX

Appendix A. Stocking record for New Underwood Lake, Pennington County, 2002-2014.

Year	Number	Species	Size
2002	2,680	Largemouth bass	Fingerling
2003	200	Largemouth bass	Adult
	30	Channel catfish	Adult
2004	336	Channel catfish	Adult
2006	217	Channel catfish	Adult
2008	300	Black crappie	Adult
	90	Largemouth bass	Adult
	1,500	Largemouth bass	Fingerling
	40	Bluegill	Adult
	8,000	Bluegill	Fingerling
2009	200	Channel catfish	Adult
	300	Largemouth bass	Juvenile
2010	23	Channel catfish	Adult
2011	200	Channel catfish	Adult
2012	1,500	Largemouth bass	Fingerling
2014	225	Yellow perch	Adult
	143	Channel catfish	Adult