

Lake Farley

Site Description

Location

Water designation number (WDN)	29-0003-00
Legal description	T120N-R49W-Sec. 1
County (ies)	Grant
Location from nearest town	Northwest edge of Milbank, SD

Survey Dates and Sampling Information

Dates of current survey	June 25-26, 2013 (FN,GN)
Frame net sets (n)	10
Gill net sets (n)	2

Morphometry (Figure 1)

Watershed area (acres)	10,376
Surface area (acres)	≈ 90
Maximum depth (ft)	≈ 7
Mean depth (ft)	≈ 4

Ownership and Public Access

Lake Farley is an impoundment primarily owned by the city of Milbank. The fish community is managed by the SDGFP. Lake Farley Park located along the east and south shore provides excellent public access including shore fishing areas, public docks, and a swim beach. Lands adjacent to Lake Farley are owned by the city of Milbank and private individuals. A no-motors restriction is imposed by the city of Milbank.

Watershed and Land Use

Lake Farley, an impoundment on the South Fork of the Whetstone River, is located within the South Fork Yellow Bank River (HUC-10) watershed. Land use within the watershed is primarily agricultural including a mix of pasture or grassland and cropland.

Water Level Observations

Water levels on Lake Farley are not monitored by SDDENR

Fish Management Information

Fish species	Black Bullhead, Black Crappie, Bluegill, Common Carp, Common Shiner, Northern Pike, Orangespotted Sunfish, White Sucker, Yellow Bullhead, Yellow Perch
Lake-specific regulations	none
Management classification	warm-water marginal
Fish consumption advisories	none

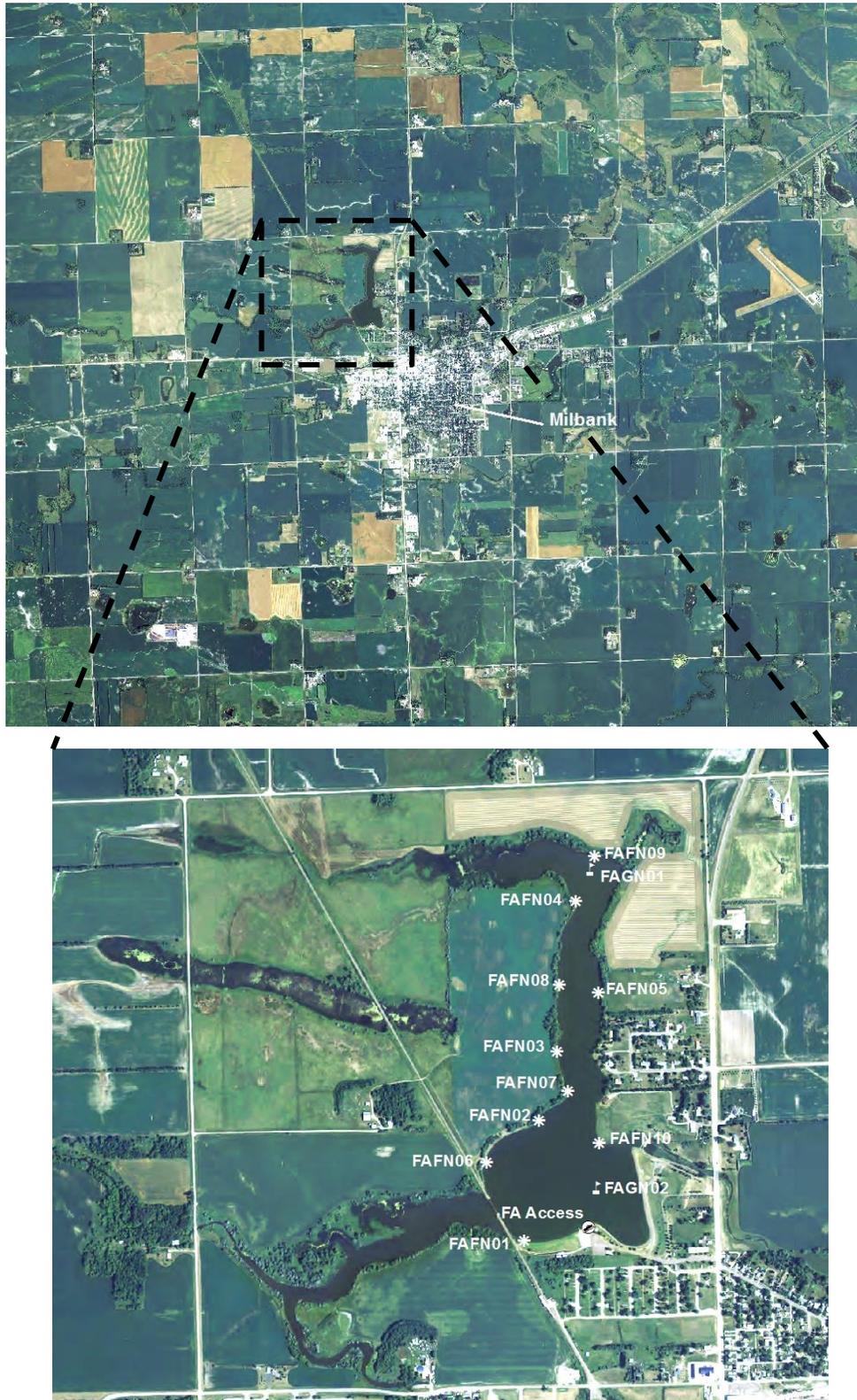


Figure 1. Map depicting geographic location of Lake Farley from Milbank, Grant County, South Dakota (top). Also noted is the public access site and standardized net locations for Lake Farley. FAFN= frame nets; FAGN= gill nets

Results and Discussion

Lake Farley is a shallow impoundment on the South Fork of the Whetstone River and is located within the Milbank city limits. Lake Farley has an extensive history of winterkill often resulting in a fish community dominated by black bullhead. Therefore, Lake Farley is managed primarily as a kids-fishing pond utilizing stockings of adult Bluegill and Northern Pike, when available (Table 3).

Species

Black Bullhead: Reports dating back to 1959 suggest a population often dominated by Black Bullheads likely related to the marginal nature of the lake (i.e., low-water levels leading to complete and partial winterkills). In 2013, Black Bullheads were the most abundant fish species captured in both the frame nets and gill nets (Table 1). The mean frame net CPUE for stock-length Black Bullheads of 331.9 (Table 1) represented an increase from the 2008 CPUE of 195.7 (Table 2) and indicated high relative abundance.

All Black Bullheads in the frame net catch were < quality-length (23 cm; 9 in), resulting in a PSD and PSD-P of 0 (Table 1; Figure 2). No age or growth information was collected. Black Bullhead condition was high with those in the stock-quality length category, which dominated the sample, having a mean W_r of 99.

Black crappie: During the previous fish community survey conducted in 2008, the relative abundance of Black Crappie was considered moderate with the mean frame net CPUE of stock-length fish being 7.0 (Table 2). In addition, a nearly continuous length-frequency from 9 to 20 cm (3.5 to 7.9 in) suggested consistent recruitment in recent years prior to the survey. Unfortunately, no Black Crappies were captured during the 2013 fish community survey (Table 1; Table 2).

Bluegill: Although not abundant, Bluegills were common in the 2008 frame net catch, with what appeared to be a single cohort dominating the sample (Table 2; Figure 3). Similar to Black Crappie, no Bluegills were captured during the 2013 fish community survey (Table 1; Table 2; Figure 3).

Northern Pike: The most recent stocking of adult Northern Pike into Lake Farley was conducted in 2007 (Table 3). In 2008, the relative abundance on Northern Pike appeared to be high with the mean gill net CPUE of stock-length fish being 5.5 (Table 2; Figure 4).

In 2013, gill nets captured no Northern Pike (Table 2; Figure 4). A single individual with a TL of 63 cm (24.8 in) was captured in the frame nets, resulting in mean frame net CPUE of 0.1 (Table 1). Currently, relative abundance is low.

Other: Common Shiner, White Sucker, and Yellow Perch were other fish species sampled during the 2013 fish community survey (Table 1).

It appears that substantial changes in the fish community have taken place since the 2008 survey. These changes can likely be attributed to partial winterkill events between 2008 and 2013, given the shallow nature and extensive history of winter kill in Lake Farley.

Management Recommendations

- 1) Conduct fish community assessment surveys utilizing gill nets and frame nets on an every fifth year basis (next survey scheduled in summer 2018) to monitor fish relative abundance, fish population size structures, fish growth, and stocking success.
- 2) Continue to manage as a kids-fishing pond utilizing stockings of adult Bluegill and Northern Pike, when available.
- 3) Evaluate the possibility of partnering with the city of Milbank to conduct habitat improvements to Lake Farley (i.e., excavate lake bottom to increase water depth, construct jetties to reduce bank erosion and increase fishing access).

Table 1. Mean catch rate (CPUE; catch/net night) of stock-length fish, proportional size distribution of quality- (PSD) and preferred-length fish (PSD-P), and mean relative weight (Wr) of stock-length fish for various fish species captured in frame nets and experimental gill nets from Lake Farley, 2013. Confidence intervals include 80 percent (\pm CI-80) or 90 percent (\pm CI-90). BLB= Black Bullhead; CNS= Common Shiner; NOP= Northern Pike; WHS= White Sucker; YEP= Yellow Perch

Species	Abundance		Stock Density Indices				Condition	
	CPUE	CI-80	PSD	CI-90	PSD-P	CI-90	Wr	CI-90
<i>Frame nets</i>								
BLB	331.9	91.1	0	---	0	---	99	2
NOP	0.1	0.1	100	---	0	---	83	---
WHS	0.3	0.2	67	67	67	67	99	12
YEP	13.3	6.9	2	2	0	---	108	2
<i>Gill nets</i>								
BLB	45.0	6.2	0	---	0	---	97	1
CNS ¹	11.0	21.5	---	---	---	---	---	---
WHS	0.5	1.5	0	---	0	---	97	---
YEP	4.0	9.2	0	---	0	---	110	2

¹all fish sizes

Table 2. Historic mean catch rate (CPUE; catch/net night) of stock-length fish for various fish species captured in frame nets and experimental gill nets from Lake Farley, 2008-2013. BLB= Black Bullhead; BLC= Black Crappie; BLG= Bluegill; CNS= Common Shiner; COC= Common Carp; NOP= Northern Pike; OSF= Orangespotted Sunfish; WHS= White Sucker; YEB= Yellow Bullhead; YEP= Yellow Perch

Species	CPUE					
	2008	2009	2010	2011	2012	2013
<i>Frame nets</i>						
BLB	195.7	---	---	---	---	331.9
BLC	7.0	---	---	---	---	0.0
BLG	4.0	---	---	---	---	0.0
COC	2.1	---	---	---	---	0.0
NOP	1.5	---	---	---	---	0.1
OSF ¹	0.7	---	---	---	---	0.0
WHS	4.7	---	---	---	---	0.3
YEB	2.4	---	---	---	---	0.0
YEP	0.6	---	---	---	---	13.3
<i>Gill nets</i>						
BLB	19.0	---	---	---	---	45.0
BLC	0.5	---	---	---	---	0.0
CNS	0.0	---	---	---	---	11.0
COC	7.5	---	---	---	---	0.0
NOP	5.5	---	---	---	---	0.0
OSF ¹	1.5	---	---	---	---	0.0
WHS	2.0	---	---	---	---	0.5
YEB	1.5	---	---	---	---	0.0
YEP	3.5	---	---	---	---	4.0

¹all fish sizes

Table 3. Stocking history including size and number for fishes stocked into Lake Farley, 2002-2013. BLG= bluegill; NOP= northern pike

Year	Species	Size	Number
2002	BLG	Adult	437
2003	BLG	Adult	500
2007	NOP	Adult	180

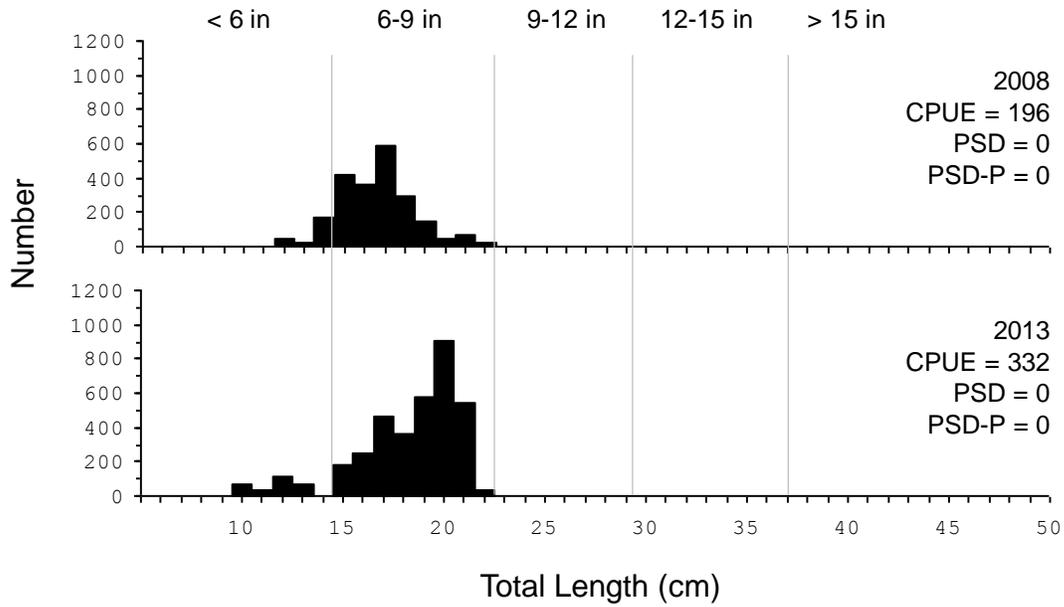


Figure 2. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for Black Bullhead captured using frame nets in Lake Farley, 2008-2013.

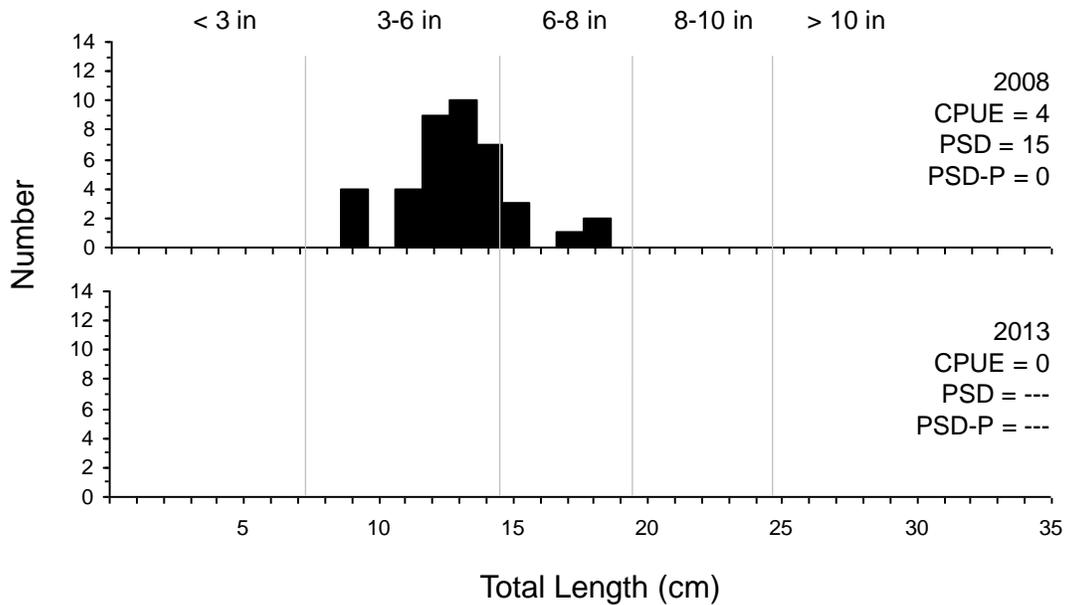


Figure 3. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for Bluegill captured using frame nets in Lake Farley, 2008-2013.

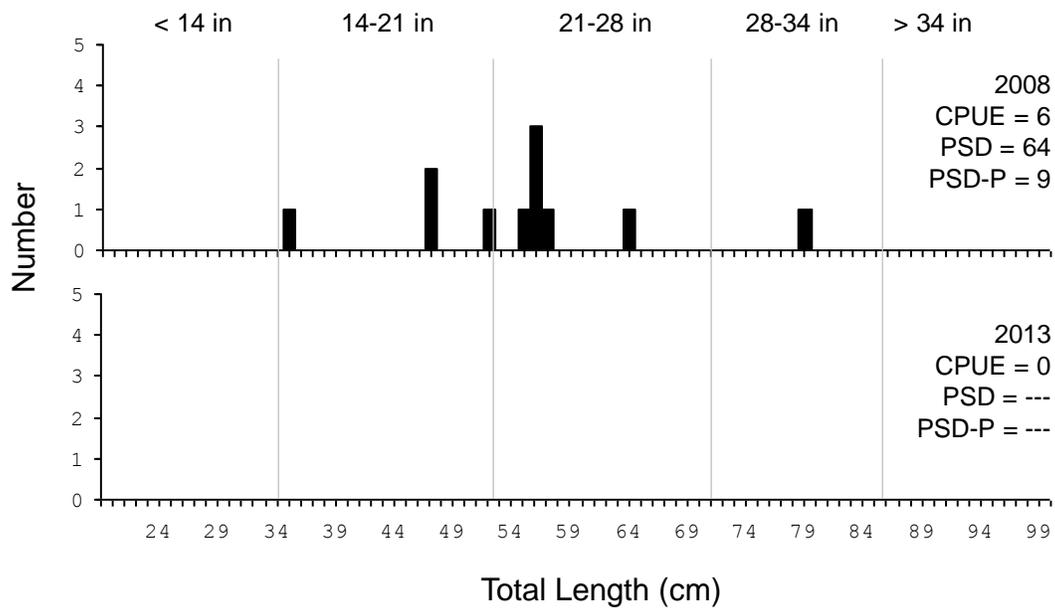


Figure 4. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for Northern Pike captured using experimental gill nets in Lake Farley, 2008-2013.