Clubhouse Slough

Site Description

Location

Water designation number (WDN)	48-0051-00
Legal description	T126N-R56W-Sec 23-26
County (ies)	Marshall
Location from nearest town	6.0 miles northwest and 3.0 miles south of Lake City

Survey Dates and Sampling Information

Survey dates	September 15, 2015 (GN)
Gill net sets (n)	3

Morphometry (Figure 1)

Watershed area (acres)	34,744
Surface area (acres)	660
Maximum depth (ft)	≈20
Mean depth (ft)	----

Ownership and Public Access

Clubhouse Slough covers both public and private property; the fishery is managed by SDGFP. No formal boat ramp exists; public access has been limited to the road right-of-way along 434th Ave (Ft. Sisseton Road; Figure 1) and foot traffic across state owned lands. Lands adjacent to the Clubhouse Slough are owned the state of South Dakota and private individuals.

Watershed and Land Use

The 34,744 acre Roy Lake (HUC-12) sub-watershed encompasses Clubhouse Slough and is located within the larger Northern Coteau Lakes-Upper James River (HUC-10) watershed. Land use within the watershed is primarily agricultural with a mix of pasture or grassland, cropland, and scattered shelterbelts.

Water Level Observations

Water levels on Clubhouse Slough are not monitored by SDDENR.

Fish Management Information

Primary species	walleye, yellow perch
Other species	black bullhead
Lake-specific regulations	none
Management classification	none
Fish consumption advisories	none

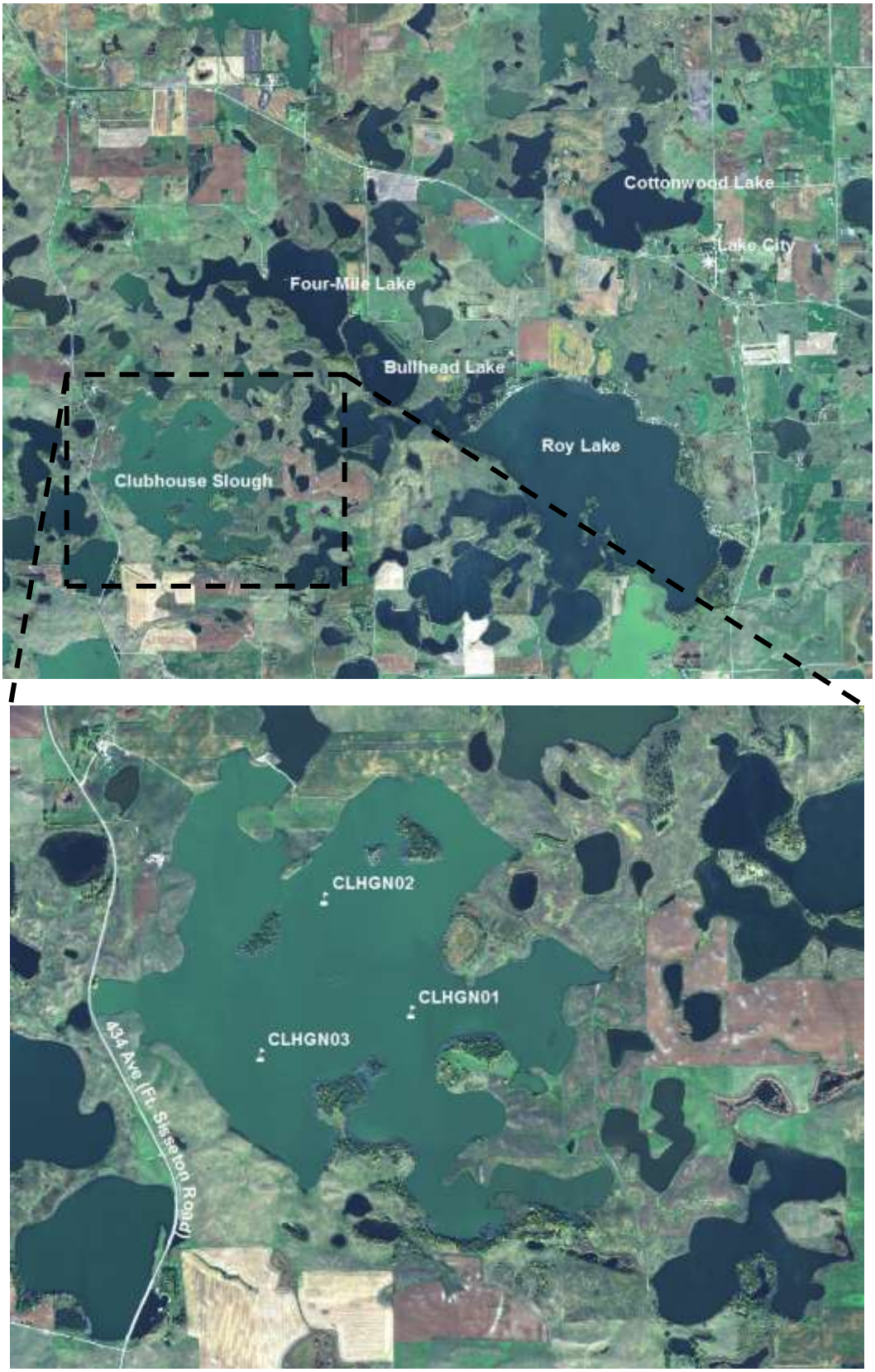

Figure 1. Map depicting geographic location of several lakes in the Lake City, South Dakota area including Clubhouse Slough (top). Also noted are standardized net locations for Clubhouse Slough (bottom). CLHGN= gill nets

Management Objectives

1) Maintain a mean gill net CPUE of stock-length walleye ≥ 10, a PSD of 30-60, and a PSD-P of 5-10.

2) Maintain a mean gill net CPUE of stock-length yellow perch ≥ 30, a PSD of 30-60, and a PSD-P of 5-10.

Results and Discussion

Above normal precipitation and the resulting run-off during the mid to late 1990s and again from 2010-2012 increased the surface area and depth of Clubhouse Slough. Increased water levels diminished the threat of winterkill and created habitat capable of supporting sport fish populations. While not stocked by SDGFP until recently, both yellow perch and walleye are present in the lake (Table 1; Table 2). In fact, a popular yellow perch fishery developed during the 2014-15 winter and angler use was high.

Primary Species

Walleye: The majority of walleye in the 2015 gill net catch were age-0 and < stock-length (i.e. 25 cm; 10 in) resulting in a mean gill net CPUE for all sizes of walleye of 25.0. Only nine stock-length walleye ranging in TL from 49 to 61 cm (16.1 to 24.0 in) were sampled; all were from the 2011 (age-4) year class. The mean gill net CPUE of stock-length walleye was 3.0 (Table 2) and well below the minimum objective (≥ 10 stock-length walleye/net night). Given the low sample size, few inferences can be made concerning other population parameters (e.g., size structure, growth, or condition).

Yellow Perch: The mean gill net CPUE of stock-length yellow perch was 49.3 (Table 2) and above the minimum objective (≥ 30 stock-length yellow perch/net night). Based on the 2015 gill net catch, relative abundance appears to be high. However, most individuals were < quality-length (i.e., 20 cm; 8 in; Figure 2).

Otoliths collected from a sub-sample of gill net captured yellow perch indicated that four consecutive year classes (2012-2015) were present. The 2014 and 2015 cohorts were the most represented and collectively comprised 94% of yellow perch in the gill net catch (Table 3).

The weighted mean TL at capture for age-1 and age-2 yellow perch was 154 and 173 mm (6.1 and 6.8 in), respectively (Table 4). Gill net captured yellow perch had high condition, with mean Wr values that exceeded 90 for all length categories (e.g., stock to quality) sampled. The mean Wr of stock-length individuals was 104 (Table 2) and length-related trends in condition were not apparent.

Management Recommendations

1) Establish a public boat ramp and parking on Clubhouse Slough.

2) If adequate public access can be established:

- complete introductory walleye stockings (≈500 fry/acre) for three consecutive years (2015-2017) to establish the population, then stock on a biennial basis to establish additional year classes provided water levels remain sufficient;

- conduct fish community assessment surveys on an every third year basis (next surveyed scheduled for summer 2018) to monitor fish relative abundance, fish population size structures, fish growth, and stocking success;

- collect otoliths from walleye and yellow perch to assess age structure and growth rates of each population; and

- consider implementation of the 71-cm (28-in) minimum length limit and daily limit of one walleye regulation on Clubhouse Slough. This regulation is designed to provide a unique fishery with high catch rates for large fish (Lucchesi and Blackwell 2009).

Table 1. Stocking history including size and number for fishes stocked into Clubhouse Slough, 2015. WAE= Walleye

Year	Species	Size	Number
2015	WAE	fry	300,000

Table 2. 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 experimental gill nets from Clubhouse Slough, 2015. Confidence intervals include 80 percent (± CI-80) or 90 percent (± CI-90). BLB= black bullhead; WAE= walleye; YEP= yellow perch

	Abundance		Stock Density Indices				Condition	
Species	CPUE	CI-80	PSD	CI-90	PSD-P	CI-90	Wr	CI-90
Gill Nets								
BLB	0.7	0.6	100	0	0	---	86	21
WAE	3.0	2.2	100	0	78	27	101	4
YEP	49.3	12.0	3	2	0	---	104	1

Table 3. Year class distribution based on the expanded age/length summary for yellow perch sampled in gill nets from Clubhouse Slough, 2015.

	Year Class			
Survey Year	2015	2014	2013	2012
2015	342	137	25	5

Table 4. Weighted mean TL (mm) at capture for yellow perch captured in experimental gill nets (expanded sample size) from Clubhouse Slough, 2015.

	Age				
Survey Year	0	1	2	3	4
2015	111(342)	154(137)	173(25)	208(5)	---

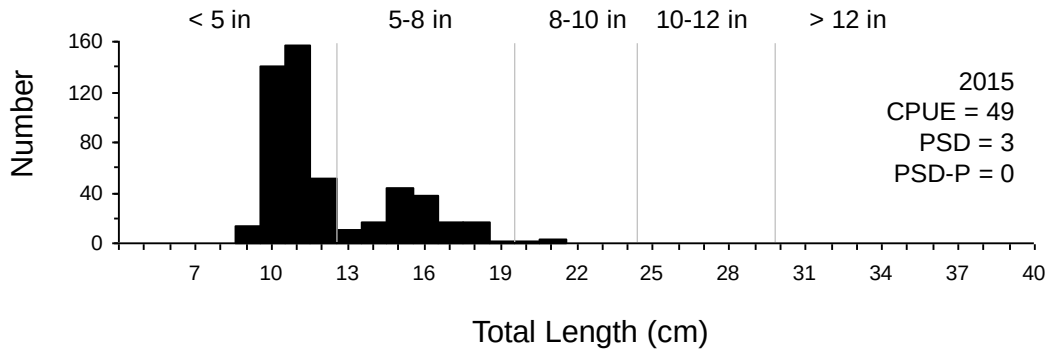

Figure 2. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for yellow perch captured using experimental gill nets in Clubhouse Slough, 2015.