Cresbard Lake

Site Description

Location

Water designation number (WDN)	28-0002-00
Legal description	T120N-R68W-Sec.27
County (ies)	Faulk
Location from nearest town	2.0 miles west of Cresbard

Survey Dates and Sampling Information

Survey dates	August 13, 2015 (GN)
Gill net sets (n)	3

Morphometry (Figure1)

Watershed area (acres)	20,172
Surface area (acres)	67
Maximum depth (ft)	15
Mean depth (ft)	7

Ownership and Public Access

Cresbard Lake is an impoundment owned by the State of South Dakota and the fishery is managed by the SDGFP. A public access site is located on the south shore and is maintained by the city of Cresbard. Lands adjacent to the lake are under private and municipal ownership.

Watershed and Land Use

The 20,172 acre Cresbard Lake sub-watershed (HUC-12) is located within the larger Cresbard Lake (HUC-10) watershed. Land use within the watershed is primarily agricultural including a mix of pasture or grassland, cropland, and scattered shelterbelts.

Water Level Observations

Water levels on Cresbard Lake are not monitored by SDDENR.

Fish Management Information

Primary species	northern pike, yellow perch
Other species	black bullhead, bluegill, golden shiner
Lake-specific regulations	none
Management classification	warm-water marginal
Fish consumption advisories	none

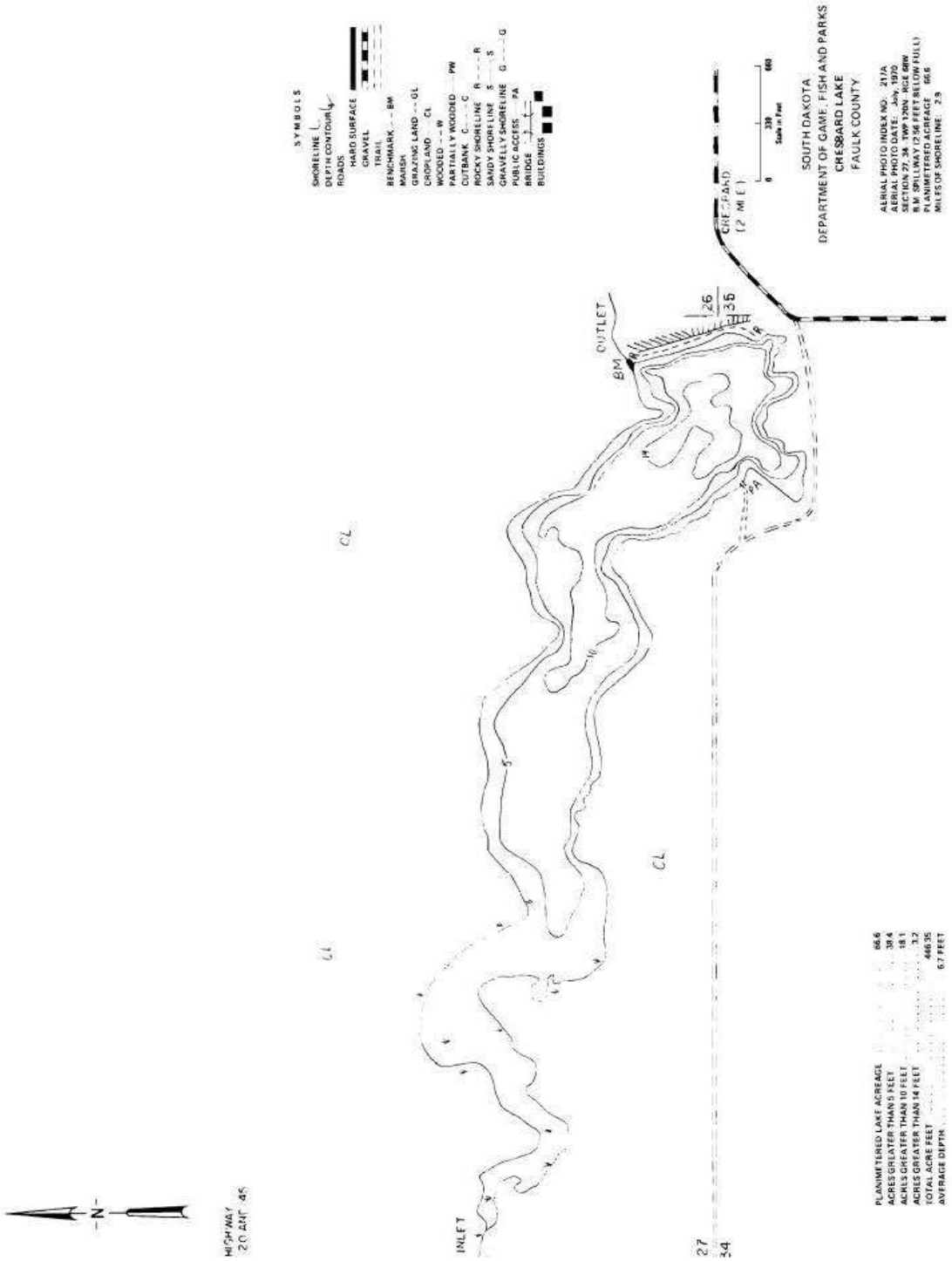

Figure 1. Map depicting surface area and depth contours of Cresbard Lake, Faulk County, South Dakota.

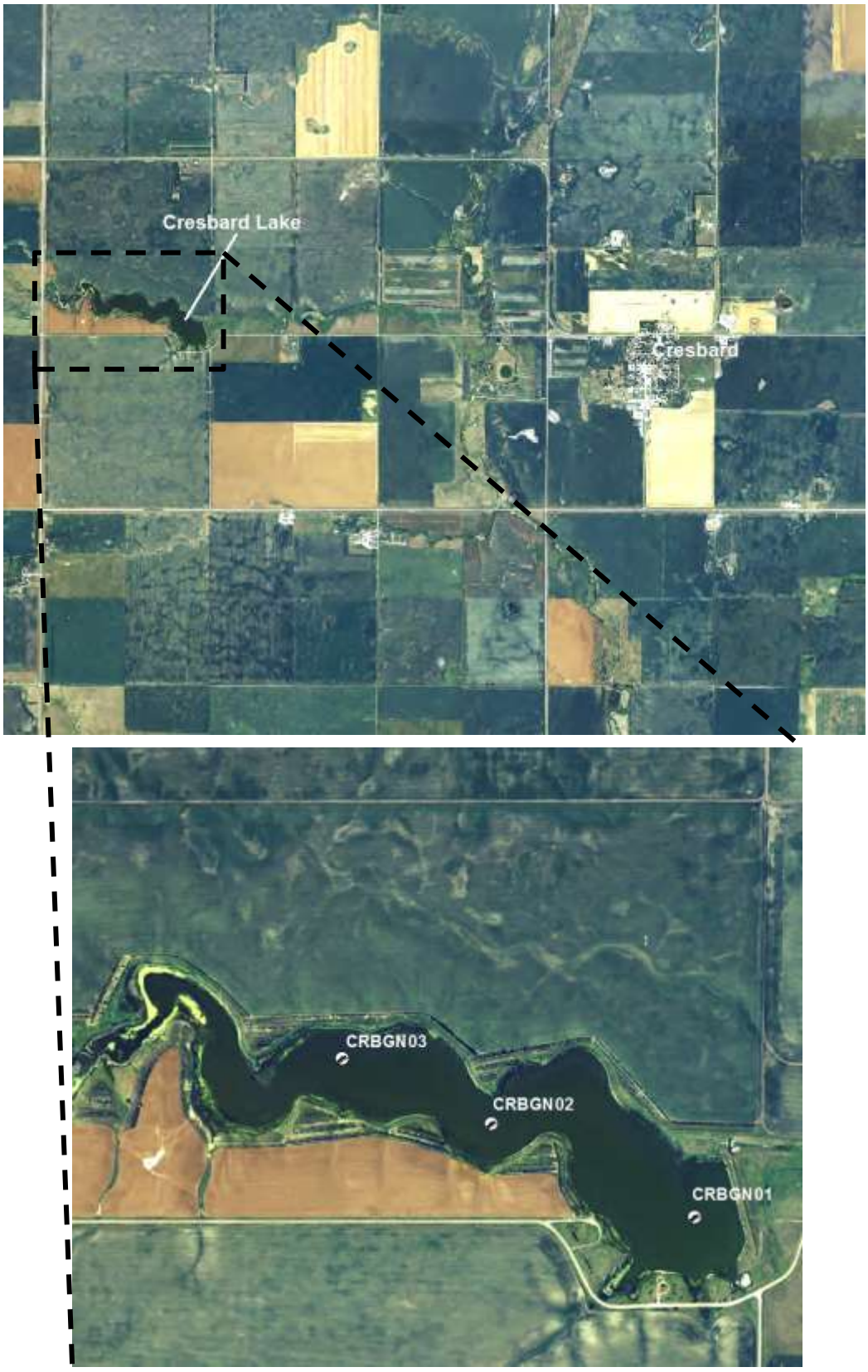

Figure 2. Map depicting geographic location of Cresbard Lake from Cresbard, South Dakota (top); also noted are standardized net locations (bottom). CRBGN= gill nets

Management Objectives

1) Maintain a population of northern pike in Cresbard Lake.

2) Maintain a population of yellow perch in Cresbard Lake.

Results and Discussion

Cresbard Lake is an impoundment located in north central Faulk County, just west of the city of Cresbard. The dam forming Cresbard Lake was constructed on the north fork of Snake Creek in 1936. Snake Creek is also known as the Nixon River, which flows easterly and enters the James River just north of Redfield, SD.

Historically, Cresbard Lake was managed as a bluegill and largemouth bass fishery and has occasionally developed a quality largemouth bass population. Unfortunately, frequent winterkill events limit the fishery and often results in a fish community dominated by black bullheads. In recent years, the strategy has shifted toward a fishery managed for northern pike and yellow perch (species believed to be less vulnerable to winterkill).

Primary Species

Northern Pike: No northern pike were captured in the 2015 gill net survey (Table 1; Figure 3). To meet management objectives stocking of northern pike may be required to reestablish or supplement the population.

Yellow Perch: In the 2015 gill net survey nine yellow perch were captured for a CPUE of 3.0 (Table 1). Relative abundance is considered low.

Yellow perch ranged in total length from 23 to 29 cm (9.1 to 11.4 in; Figure 4) had a PSD of 100 and PSD-P of 78. No growth information was collected during 2015. The mean Wr for stock-length yellow perch was 101 (Table 1).

Other Species

Black Bullhead: The 2015 mean gill net CPUE of stock-length black bullhead was 142.3 (Table 1). Frequent winter-kill events, of moderate to severe magnitude, likely limit predator densities resulting in black bullhead dominating the fish community in Cresbard Lake.

Black bullheads ranged in total length from 13 to 27 cm (5.1 to 10.6 in; Figure 5). The PSD was 10 and PSD-P was 0 (Table 1, Figure 5). No growth information was collected during 2015. The mean Wr for stock-length black bullheads was 92 (Table 1).

Bluegill: Bluegill were capture in low numbers in 2015 with a mean gill net CPUE of 4.7 (Table 1). The presence of bluegill likely indicates the survival and reproduction of adult bluegill stocked in 2011. However, bluegill populations are typically assessed

with frame nets and the 2015 gill net catch may not accurately represent the at-large population. Bluegill ranged in TL from 9 to 10 cm (3.5 to 3.9 in) and likely represented a single year class.

Golden Shiner: Golden shiner were captured in large numbers in the 2015 gill net survey with a mean CPUE of 37.7 (Table 1).

Management Recommendations

1) Conduct fish community surveys utilizing spring night electrofishing on an every fifth year basis (next survey scheduled in summer 2020) to monitor fish relative abundance, fish population size structures, fish growth, and stocking success.

2) Manage as a self-sustaining northern pike and yellow perch fishery.

3) Monitor winter and summer kill events. In cases of substantial winter or summer kill stock with northern pike and yellow perch to re-establish a fish community.

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 experimental gill nets from Cresbard Lake, 2015. Confidence intervals include 80 percent (± CI-80) or 90 percent (± CI-90). BLB= black bullhead; BLG= bluegill; GOS= golden shiner; 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	142.3	76.4	10	2	0	---	92	1
BLG	4.7	5.5	0	---	0	---	130	<1
GOS[1]	37.7	15.8	---	---	---	---	---	---
YEP	3.0	2.9	100	0	78	27	101	3

[1] All fish sizes

Table 2. Historic mean catch rate (CPUE; gill nets= catch/net night, electrofishing= catch/hour) of stock-length fish for various fish species captured by night electrofishing and experimental gill nets from Cresbard Lake, 2010-2015. NOP= northern pike; YEP= yellow perch

	CPUE					
Species	2010	2011	2012	2013	2014	2015
Gill nets						
BLB	---	---	---	---	---	142.3
BLG	---	---	---	---	---	4.7
GOS[1]	---	---	---	---	---	37.7
YEP	---	---	---	---	---	3.0
Electrofishing						
BLB	97.0	---	---	---	---	---
NOP	11.0	---	---	---	---	---
YEP	37.0	---	---	---	---	---

[1] All fish sizes

Table 3. Stocking history including size and number for fishes stocked into Cresbard Lake, 2005-2015. BLG= bluegill; CCF= channel catfish; LMB= largemouth bass; SMB= smallmouth bass; YEP= yellow perch

Year	Species	Size	Number
2005	BLG	fingerling	1,075
	LMB	fingerling	5,400
	SMB	fingerling	2,550
2006	CCF	fingerling	6,930
2011	BLG	adult	1,000
	YEP	adult	1,615

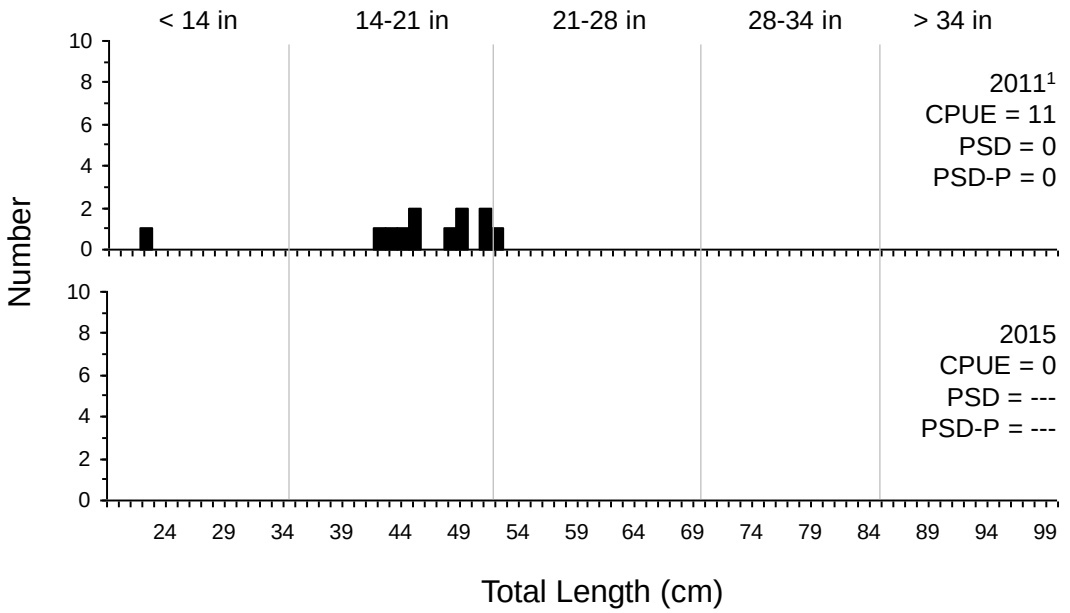

Figure 3. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for northern pike captured from Cresbard Lake, 2010-2015.

[1] Sampling conducted using night electrofishing; experimental gill nets used in other years.

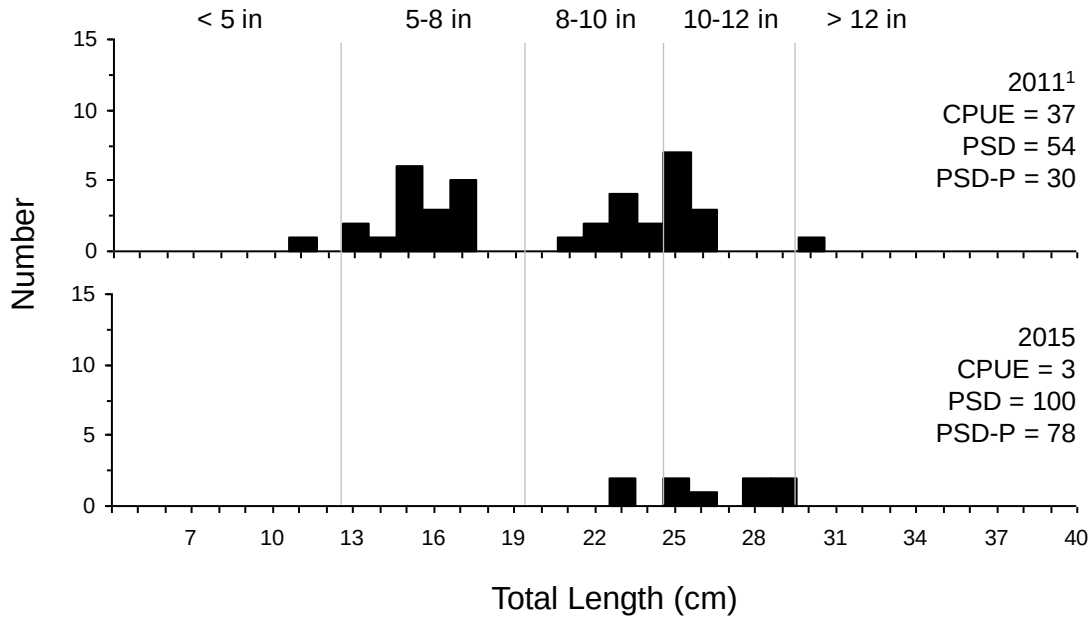

Figure 4. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for yellow perch captured from Cresbard Lake, 2010-2015.

[1] Sampling conducted using night electrofishing; experimental gill nets used in other years.

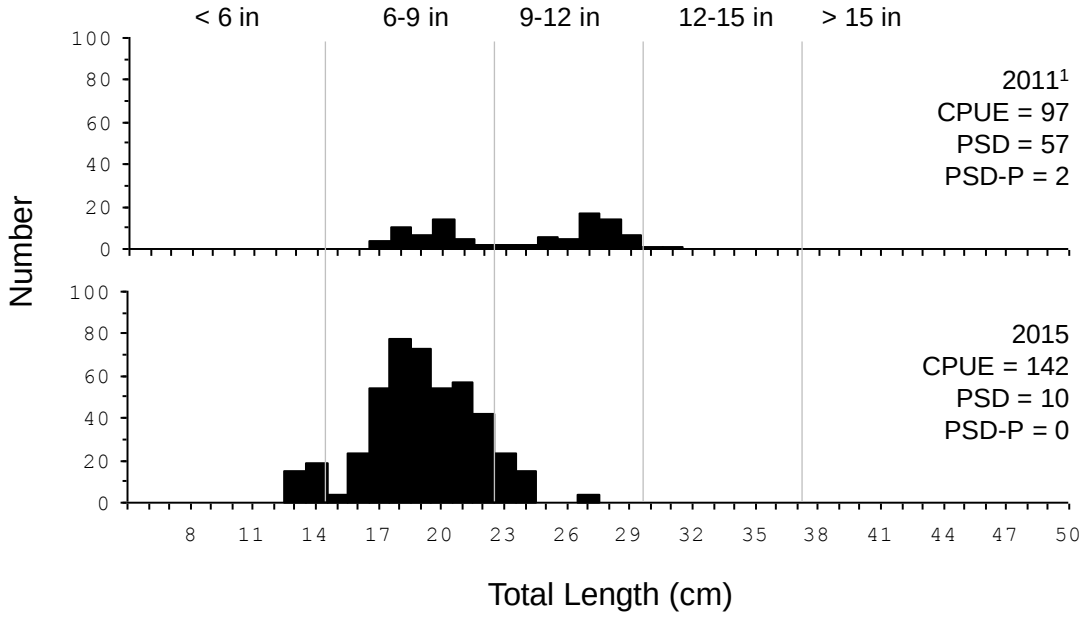

Figure 5. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for black bullhead captured from Cresbard Lake, 2010-2015.

[1] Sampling conducted using night electrofishing; experimental gill nets used in other years.