

Kampeska Pits

Site Description

Location

Water designation number (WDN)	05-0001-00, 05-0023-00
Legal description	T117N R53W Sec. 10,15 T118N R52 W Sec. 4
County (ies)	Codington
Location from nearest town	3.0 miles northwest of Watertown, SD

Survey Dates and Sampling Information

Survey dates	May 20, 2014 (FN, GN)
Frame net sets (n)	6
Gill net sets (n)	2

Morphometry (Figure 1)

Watershed area (acres)	34,937
Surface area (acres)	≈26
Maximum depth (ft)	≈12
Mean depth (ft)	unknown

Ownership and Public Access

The waterbody referred to as Kampeska Pits is located north of Lake Kampeska on the state-owned Cotton Slough/Ellis 80 Game Production Area (Figure 1). The fishery is managed by the SDGFP. A designated trail runs along the north shore and provides access to several shorefishing areas. Additionally, the south shore is paralleled by a walking/biking trail (Figure 1). Boat access is difficult, as no formal boat ramp exists.

Watershed and Land Use

The 34,937 acre Cottonwood Lake-Big Sioux River sub-watershed (HUC-12), which encompasses the Kampeska Pits, is located within the larger Lakes Inlet-Big Sioux 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 Kampeska Pits are not monitored by SDDENR.

Fish Management Information

Fish species	black bullhead, black crappie, bluegill, common carp, green sunfish; largemouth bass; northern pike, orangespotted sunfish, white sucker, yellow bullhead, yellow perch
Lake-specific regulations	none
Management classification	warm-water permanent
Fish consumption advisories	none

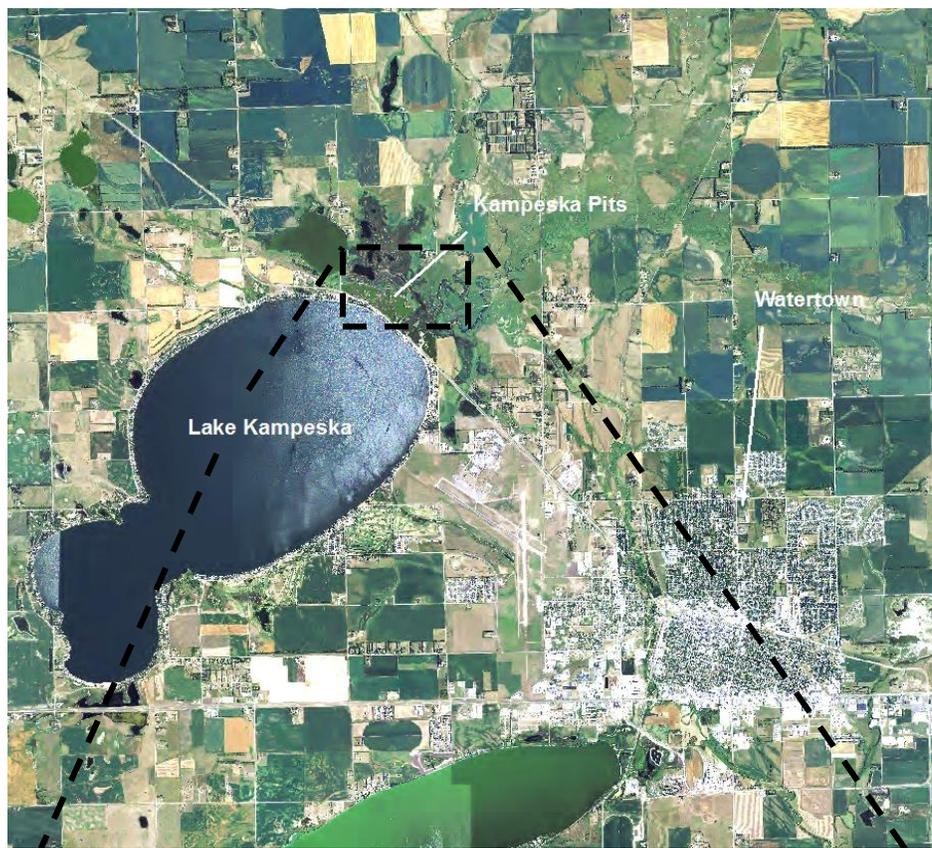


Figure 1. Map depicting geographic location of Lake Kampeska and the Kampeska Pits from Watertown, South Dakota (top). Bottom image provides a close-up of the Kampeska Pit area; note designated trail and walking/biking trail that run along the north and south shorelines, respectively.

Results and Discussion

The Kampeska Pits are a series of gravel pits created by the American Sand and Gravel Company in the 1950's and later acquired by the State of South Dakota. Over the years, the area has been managed primarily as a warm water fishery (i.e., largemouth bass, as suggested by the stocking records); however, several relatively unsuccessful attempts were made to chemically rehabilitate and establish put and take trout fisheries in the early 1970's.

Unfortunately, the pits are shallow and susceptible to winterkill, which limits fisheries management options. Today, the Kampeska Pits are primarily managed as a put and take fishery utilizing stockings of adult bluegill, northern pike, and yellow perch when available (Table 3).

Species

Black Bullhead: Black bullheads were the most abundant fish species captured in the frame net catch. Most were less than stock-length (i.e., 15 cm; 6 in; Figure 2) resulting in a mean frame net CPUE for all sizes of black bullheads of 175.2. The mean frame net CPUE of stock-length black bullheads was 45.3 (Table 1).

Frame net captured black bullheads all were < quality-length (23 cm; 9 in) with TL values that ranged from 9 to 22 cm (3.5 to 8.7 in; Figure 2). As a result, PSD and PSD-P values were 0 (Table 1; Figure 2). No age or growth information was collected. Black bullhead condition was low with mean W_r values that ranged from 77 to 78 for all length categories (e.g., stock to quality) sampled. The mean W_r of stock-length black bullheads was 74 (Table 1).

Northern Pike: Northern pike were the second most abundant fish species captured in the 2014 gill net catch (Table 1). The mean gill net CPUE of stock-length northern pike was 10.0 (Table 1) and suggested high relative abundance. Northern pike in the gill net catch ranged in TL from 45 to 80 cm (17.7 to 31.5 in), had a PSD of 60, and a PSD-P of 10 (Table 1; Figure 3). No age or growth information was collected. Although sample size was low (i.e., 20 stock-length individuals), condition of sampled northern pike appeared to be similar to that of northern pike captured from other northeast South Dakota waters (e.g., Dry Lake) with mean W_r values that ranged from 90 to 101 for all length categories (e.g., stock to quality) represented. Stock-length individuals had a mean W_r of 88 (Table 1) and no length-related trends in condition were apparent.

It is not known if northern pike sampled in the Kampeska Pits during 2014 originated entirely or only partially from the stocking of ≈ 268 adults shortly after ice-out (Table 3). No northern pike were captured during spring electrofishing in 2006 (Table 2). However, high water events that occurred in northeast South Dakota since 2006 (SDDENR 2015) may have allowed northern pike to enter the system and naturally reproduce. Relative abundance of northern pike has increased in many waters across

northeast South Dakota in conjunction with recent high water levels (Kaufman et al. 2014).

Other: Black crappie, common carp, yellow bullhead, and yellow perch were other fish species sampled during the 2014 fish community survey (Table 1).

Management Recommendations

- 1) Conduct fish community assessment surveys utilizing gill nets and frame nets on an every fourth 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 put and take fishery using stockings of adult bluegill, northern pike, and yellow perch, when available.
- 3) Evaluate the possibility of partnering with the city of Watertown to make improvements to the Kampeska Pit area (e.g., excavate lake bottom to increase water depth, install fishing pier, etc.).

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 the Kampeska Pits, 2014. Confidence intervals include 80 percent (\pm CI-80) or 90 percent (\pm CI-90). BLB= black bullhead; BLC= black crappie; COC= common carp; NOP= northern pike; YEB= yellow bullhead; 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	45.3	40.6	0	---	0	---	74	1
BLC	0.8	0.8	60	52	60	52	117	8
COC	0.2	0.2	0	---	0	---	93	---
NOP	0.3	0.5	50	50	0	---	95	37
YEB	0.8	1.2	100	0	80	43	95	4
<i>Gill Nets</i>								
BLB	5.5	10.8	0	---	0	---	77	2
COC	2.0	3.1	0	---	0	---	85	2
NOP	10.0	3.1	60	19	10	12	88	2
YEP	0.5	1.5	0	---	0	---	84	---

Table 2. Historic mean catch rate (CPUE; gill nets = catch/net night, electrofishing = catch/hour) of stock-length fish for various fish species captured in frame nets, experimental gill nets and electrofishing from Kampeska Pits, 2006-2014. BLB= black bullhead; BLC= black crappie; COC= common carp; GSF= green sunfish; LMB= largemouth bass; NOP= northern pike; OSF= orangespotted sunfish; WHS= white sucker; YEB= yellow bullhead; YEP= yellow perch

Species	CPUE							
	2006	2007	2008	2009	2010	2012	2013	2014
<i>Frame nets</i>								
BLB	---	---	---	---	---	---	---	45.3
BLC	---	---	---	---	---	---	---	0.8
COC	---	---	---	---	---	---	---	0.2
NOP	---	---	---	---	---	---	---	0.3
YEB	---	---	---	---	---	---	---	0.8
<i>Gill nets</i>								
BLB	---	---	---	---	---	---	---	5.5
COC	---	---	---	---	---	---	---	2.0
NOP	---	---	---	---	---	---	---	10.0
YEP	---	---	---	---	---	---	---	0.5
<i>Electrofishing²</i>								
BLB	4.9	---	---	---	---	---	---	---
BLC	5.8	---	---	---	---	---	---	---
COC	8.8	---	---	---	---	---	---	---
GSF	1.0	---	---	---	---	---	---	---
LMB	10.7	---	---	---	---	---	---	---
OSF ²	38.8	---	---	---	---	---	---	---
WHS	3.0	---	---	---	---	---	---	---
YEP	2.0	---	---	---	---	---	---	---

¹ Spring night electrofishing

² All fish sizes

Table 3. Stocking history including size and number for fishes stocked into Kampeska Pits, 2006-2014. BLG= bluegill; LMB= largemouth bass; NOP= northern pike; YEP= yellow perch

Year	Species	Size	Number
2008	YEP	adult	875
2009	LMB	juvenile	375
2010	BLG	adult	1,330
2011	BLG	adult	500
	YEP	adult	1,785
2014	NOP	adult	268

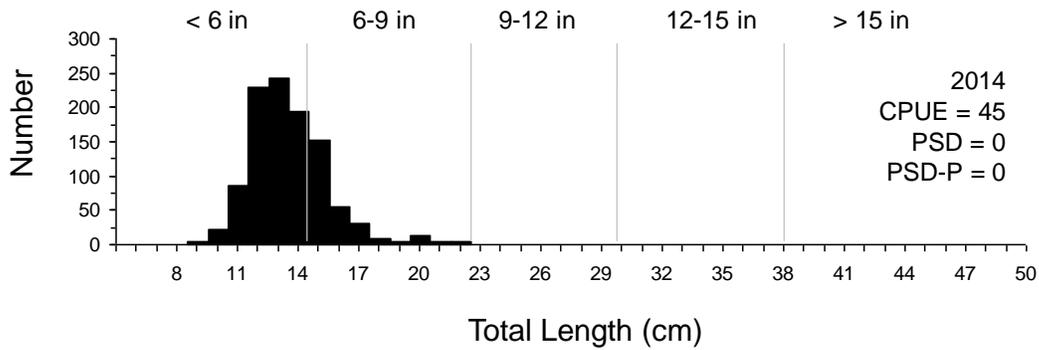


Figure 2. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for black bullhead captured using frame nets in the Kampeksa Pits, 2014.

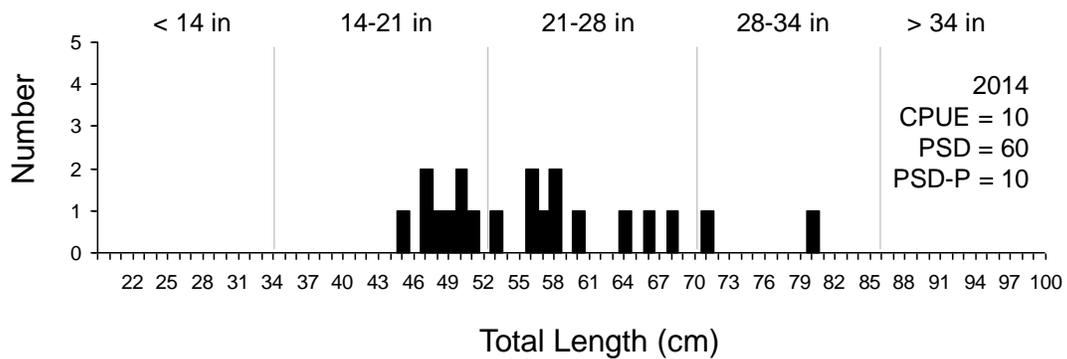


Figure 3. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for northern pike captured using experimental gill nets in the Kampeksa Pits, 2014.