Lake Kampeska

Site Description

Location

Water designation number (WDN)	05-0002-00
Legal description	T117N-R53W-Sec.15-22, 27-30, 32
County (ies)	Codington
Location from nearest town	entirely within Watertown city limits

Survey Dates and Sampling Information

Survey dates	July 16-18, 2013 (FN,GN) September 9, 2013 (EF-WAE)
Frame net sets (n)	21
Gill net sets (n)	6
Electrofishing-WAE (min)	60

Morphometry (Figure 1)

Watershed area (acres)	20,433
Surface area (acres)	5,250
Maximum depth (ft)	16
Mean depth (ft)	7

Ownership and Public Access

Lake Kampeska is a meandered lake and the fishery is managed by the SDGFP. Many public access sites are present on Lake Kampeska (Figure 1) with four being maintained by the SDGFP. Lands adjacent to the lake have mixed ownership including the State of South Dakota, Codington County, the city of Watertown, and private individuals.

Watershed and Land Use

The 20,433 acre Lake Kampeska sub-watershed (HUC-12) is located within the larger Lake Kampeska (HUC-10) watershed. Land use within the watershed is comprised of a mix of cropland, pasture or grassland, scattered shelterbelts, housing, and municipal.

Water Level Observations

The South Dakota Water Management Board established OHWM on Lake Kampeska is 1718.3 fmsl and the board set outlet elevation is 1717.8 fmsl. On May 21, 2013 the elevation was 1716.7 fmsl. The water level had declined to an elevation to 1716.3 fmls on October 8, 2013.

Fish Management Information

Primary species	Smallmouth Bass, Walleye
Other species	Bigmouth Buffalo, Black Bullhead, Black Crappie, Bluegill, Channel Catfish, Common Carp, Green Sunfish, Largemouth Bass, Northern Pike, Orangespotted Sunfish, Pumpkinseed, Rock Bass, Shorthead Redhorse, Spottail Shiner, Stonecat, White Bass, White Crappie, White Sucker, Yellow Bullhead, Yellow Perch
Lake-specific regulations	none
Management classification	domestic water supply; warm-water permanent
Fish consumption advisories	none

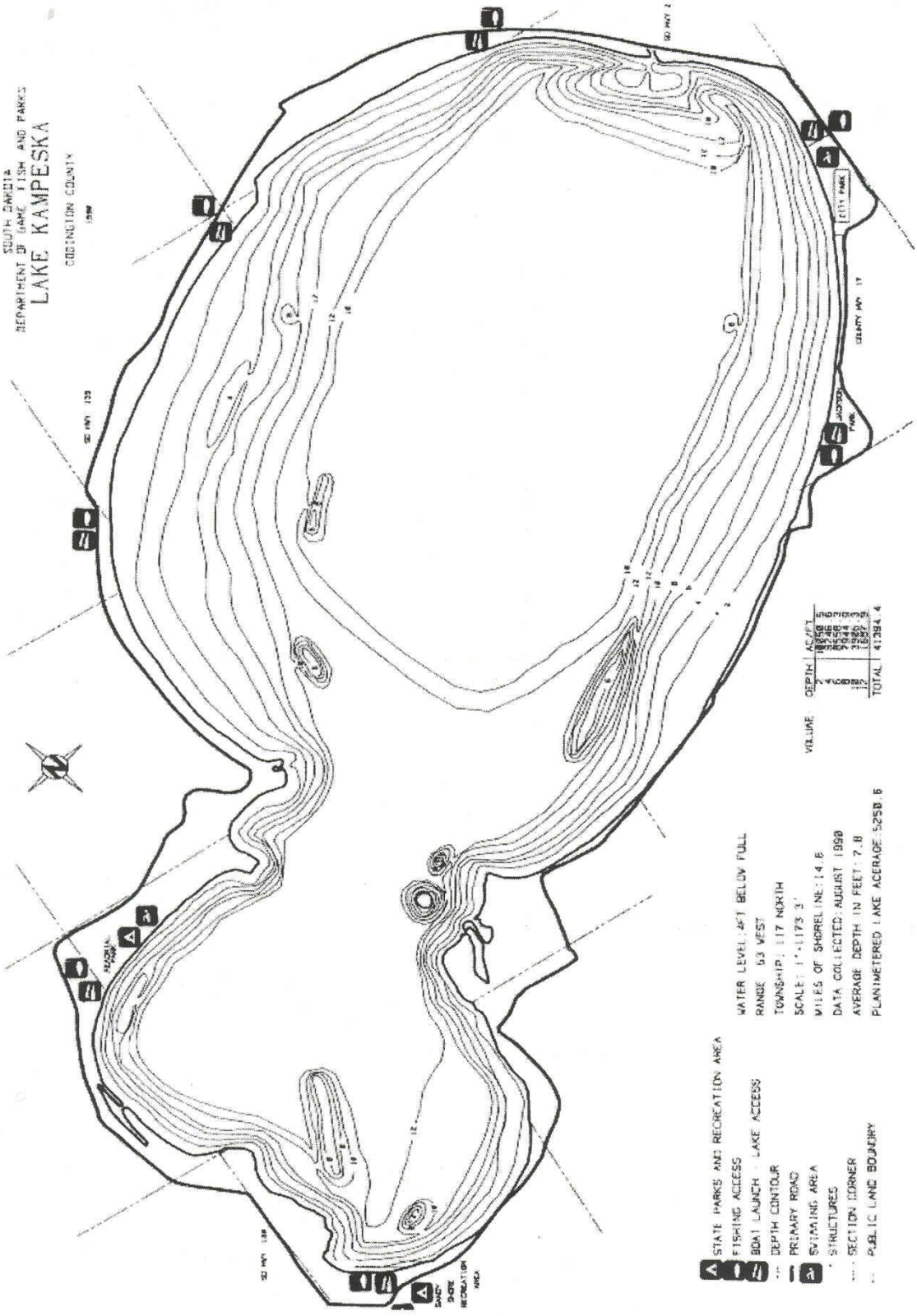

Figure 1. Map depicting access locations and depth contours for Lake Kampeska, Codington County, South Dakota.

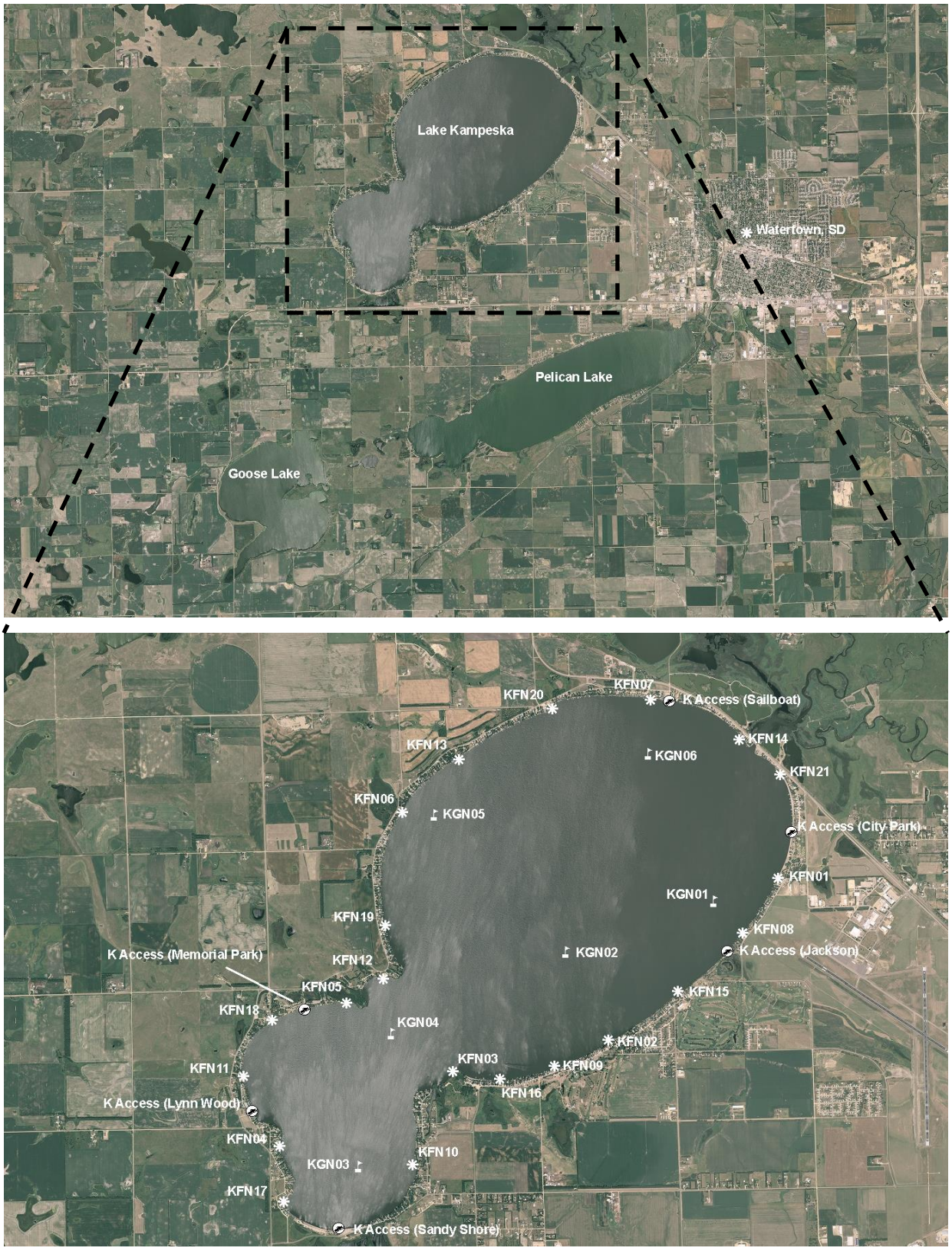

Figure 2. Map depicting geographic location of Lake Kampeska, Goose, and Pelican Lakes from Watertown, South Dakota (top). Also noted are public access points and standardized net locations for Lake Kampeska. KFN= frame nets, KGN= gill nets

Management Objectives

1) Maintain a moderate density Smallmouth Bass population with a PSD of 40-70, and a PSD-P of 10-40.

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

Results and Discussion

Lake Kampeska is a natural lake covering approximately 5,250 surface acres, within the city limits of Watertown, South Dakota. Lake Kampeska is connected to the Big Sioux River through a single inlet-outlet channel located on the northeast side. A weir structure installed on the inlet-outlet channel of Lake Kampeska is intended to slow the input of sediments to the lake basin. When the Big Sioux River is high, water enters Lake Kampeska. Conversely, when the water level in Lake Kampeska is higher than the Big Sioux River and above the weir structure water exits Lake Kampeska through the v-notch.

The lake is a popular site for recreational activities including fishing, boating, swimming, waterskiing, camping, and picnicking. Public access is exceptional with access locations on the north, east, south (State Recreation Area), and west shores of the lake. Lake Kampeska is primarily managed as a Smallmouth Bass and Walleye fishery; however, crappie (Black and White), Bluegill, Channel Catfish, Northern Pike, and White Bass are important components of the fishery.

Primary Species

Smallmouth bass: Prior to 2009, fall night electrofishing was used to assess Smallmouth Bass populations in northeast South Dakota. However, recent research has recommended that smallmouth bass population dynamics be monitored utilizing standardized spring (May and June) night electrofishing over suitable habitat (i.e., rocky substrate) in northeast South Dakota glacial lakes (Bacula 2009). Spring night electrofishing to monitor the Smallmouth Bass population will be conducted biennially during even numbered years (e.g., 2014, 2016, 2018…).

Walleye: The mean gill net CPUE of stock-length Walleye was 7.5 (Table 1) and below the minimum objective (≥ 10 stock-length Walleye/net night; Table 3). Since 2004, the mean gill net CPUE has ranged from a low of 6.5 (2007) to a high of 24.5 (2004; Table 2). The 2013 gill net CPUE was lower than the 2012 CPUE of 12.2 (Table 2) and indicated moderate relative abundance.

Gill net captured Walleye ranged in TL from 19 to 50 cm (7.5 to 19.7 in), had a PSD of 51 and a PSD-P of 0 (Table 1; Figure 3). The PSD was within the objective range of 30-60; while the PSD-P was below the objective range of 5-10 (Table 3).

Both natural reproduction and stocking contribute to the Walleye population in Lake Kampeska. Based on age estimates made using otoliths, eight year classes (2001, 2003, 2005, and 2007-2011) were present in the 2013 gill net catch (Table 4). The 2011 year class was the most abundant and comprised 41% of Walleye in the gill net catch; cohorts produced in 2009 and 2010 accounted for an additional 19% and 22% (Table 4). The 2009 year class coincided with a fry stocking; while the 2010 and 2011 cohorts were naturally produced (Table 4; Table 6). In 2013, the mean fall night electrofishing CPUE of 110.0 (Table 1) suggested that a strong year class, which coincides with a fry stocking (Table 6), was produced. However, recruitment is currently unknown and will be assessed in future surveys.

Fry stocked in 2009 were marked with Oxytetracycline (OTC) so that the contribution of stocked fish could be evaluated. Unfortunately, no age-0 Walleye were captured during fall electrofishing in 2009 (Table 2). Fifteen age-1 (2009 year class) Walleye were captured during spring electrofishing targeting Smallmouth Bass during 2010. Of those, 7 of the 15 exhibited OTC marks for an estimated stocking contribution of 47% for the 2009 cohort (Table 5); however, sample size was low and results should be interpreted with caution. The contribution of naturally-produced Walleye to year classes produced during other stocked years is unknown, as stocked fry were unmarked.

Walleye growth tends to be highly variable (Table 5). Since 2005, the weighted mean TL at capture for age-3 Walleye has ranged from 286 to 384 mm (11.3 to 15.1 in); while weighted mean TL values for age-4 fish have ranged from 319 to 415 mm (12.6 to 16.3 in; Table 5). Mean Wr values ranged from 81 to 88 for all length categories (e.g., stock to quality) represented in the gill net catch. The mean Wr of stock-length Walleye was 88 (Table 1) and no length-related trends in condition were apparent.

Other Species

Bullheads: The bullhead community in Lake Kampeska is comprised of both Black and Yellow bullhead. From 2004-2011, mean frame net CPUE values did not exceed 7.0 for either species (Table 2). A substantial increase in mean frame net CPUE values occurred in 2012 for both species. In 2013, the mean frame net CPUE of stock-length individuals was 22.7 and 15.4 for Black and Yellow bullhead, respectively (Table 1). Currently, relative abundance is moderate.

Frame net captured Black Bullhead ranged in TL from 16 to 32 cm (6.3 to 12.6 in), had a PSD of 100 and a PSD-P of 3; Yellow Bullhead ranged in TL from 19 to 35 cm (7.5 to 13.8 in), had a PSD of 100 and a PSD-P of 81 Table 1; Figure 4).

No age or growth information was collected. A decreasing trend in condition was noted for both species. For Black Bullhead, mean Wr values ranged from 77 to 92 for all length categories (e.g., stock to quality) sampled; while mean Wr values for Yellow Bullheads ranged from 86 to 102 for individual length categories.

Bluegill: The mean frame net CPUE of stock-length Bluegill was 1.6 (Table 1). Since 2004, Bluegill relative abundance has remained low with mean frame net CPUE values ranging from 1.2 (2012) to 6.5 (2004; Table 2). Lack of suitable habitat (i.e.,

aquatic vegetation) and high predator densities likely limit Bluegill abundance in Lake Kampeska.

No age or growth information was collected. Few inferences can be made concerning size structure or condition due to the low sample size.

Crappie: The crappie community in Lake Kampeska is comprised of both Black and White crappie and both species contribute to the fishery. The 2013 mean frame net CPUE for Black Crappie was 0.6 (Table 1). Since 2004, Black Crappie mean frame net CPUE values have fluctuated from a low of 0.4 (2009) to a high of 5.2 (2007; Table 2).

White Crappies were captured in both the frame net and gill net catch (Table 1). Mean CPUE values of stock-length White Crappie were 0.2 and 2.5 for frame nets and gill nets (Table 1). White Crappies appear to be sampled more effectively in gill nets rather than frame nets during our annual fish community surveys on Lake Kampeska. Since 2004, White Crappie mean frame net CPUE values have remained low (i.e., < 2.0); while mean gill net CPUE values have fluctuated from a low of 0.2 (2009) to high of 8.2 (2006; Table 2). Based on the 2013 survey, relative abundance of both species appears to be low.

No age or growth information was collected. Few inferences can be made concerning size structure or condition for either species, due to low sample size.

Channel Catfish: Channel Catfish are occasionally sampled in Lake Kampeska. However, relative abundance appears to be low as mean gill net and frame net CPUE values have been < 1.0 from 2004-2013 (Table 2). In 2013, six Channel Catfish that ranged in TL from 27 to 39 cm (10.6 to 15.4 in) were captured in the frame nets. Gill nets captured a single 71 cm (28.0 in) individual. Although abundance is low, the opportunity exists for anglers to catch an occasional Channel Catfish in Lake Kampeska.

Northern Pike: Northern Pike typically are not sampled effectively during standardized mid-summer fish community surveys. As a result, mean gill net CPUE values are often low. In 2013, gill nets captured 15 Northern Pike that ranged in TL from 48 to 81 cm (18.9 to 31.9 in). The mean gill net CPUE of stock-length Northern Pike was 2.5 (Table 1). Since 2004, mean gill net CPUE values have ranged from a low of 0.2 (2005, 2007, 2010) to a high of 2.5 (2012, 2013; Table 2). Currently, relative abundance is considered moderate.

No age or growth information was collected. Few inferences can be made concerning size structure or condition due to the low sample size.

White Bass: The mean CPUE of stock-length White Bass was 7.2 for frame nets and 4.3 for gill nets (Table 1). Since 2004, mean frame net CPUE values have ranged from 1.3 (2005, 2007) to 10.2 (2009); while mean gill net CPUE values ranged from a low of 3.3 (2005) to a high of 79.5 (2006). Gill net CPUE values increased substantially from 2006-2008, as the strong 2005 year class recruited to the population (Table 2).

Length-frequency analysis of White Bass in the 2013 frame net catch suggested limited recruitment in recent years, as few individuals < preferred-length (30 cm; 12 in) were sampled (Figure 5). The PSD was 100 and the PSD-P was 97 (Table 1; Figure 5).

Nearly all (144 of 148) White Bass in the sample were in the preferred-memorable length category, which had a mean Wr of 79.

White Bass commercial harvest is allowed at Lake Kampeska by permitted commercial fisherman. The annual White Bass quota is 20,000 lb; however, it is met infrequently. During the winter of 2012-2013, the commercial harvest of White Bass from Lake Kampeska was 7,400 lb.

Yellow Perch: The mean gill net CPUE of stock-length Yellow Perch was 5.7 (Table 1). Since 2004, the mean gill net CPUE values have fluctuated from a low of 0.3 (2008) to a high of 6.0 (2010; Table 2). Lake Kampeska has historically supported a low-density population of Yellow Perch. The windswept nature of the lake basin, lack of suitable spawning habitat and escape cover, and predation likely combine to limit Yellow Perch recruitment and abundance.

Other: Lake Kampeska supports a highly diverse fish community, as a result of its connection to the Big Sioux River. Bigmouth Buffalo, Common Carp, Rock Bass, and White Sucker were other fish species captured during the 2013 survey (Table 1).

Bigmouth Buffalo and Common Carp are commonly harvested through a permit by commercial fisherman during the ice-covered season. In the winter of 2012-2013, the commercial harvest of Bigmouth Buffalo and Common Carp from Lake Kampeska was 2,700 and 2,000 lb., respectively.

Management Recommendations

1) Conduct fish population assessment surveys on an annual basis (next survey scheduled in summer 2014) to monitor fish relative abundance, fish population size structures, fish growth, and stocking success.

2) Conduct fall night electrofishing on an annual basis to monitor age-0 Walleye relative abundance.

3) Conduct spring night electrofishing on a biennial basis (even years) to monitor Smallmouth Bass population parameters.

4) Collect otoliths from Walleye and scales from Smallmouth Bass to assess age structure and growth rates of each population.

5) Stock Walleye (≈500 fry/acre) to establish additional year-classes if gill netting and/or fall night electrofishing CPUE of age-0 Walleye results warrant [i.e., low gill net CPUE of sub-stock (< 25 cm;10 in) Walleye and/or fall night electrofishing CPUE of age-0 Walleye < 75 fish/hour).

6) Monitor commercial harvest of Bigmouth Buffalo, Common Carp, and White Bass.

7) Partner with willing landowners on shoreline restoration projects designed to restore native plant fauna along highly-developed shorelines providing improvements to water quality and littoral habitats within the lake.

Table 1. Mean catch rate (CPUE; gill/frame nets= catch/net night, electrofishing= catch/hour) of stock-length fish, proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish, and mean relative weight (Wr) of stock-length fish for various fish species captured in experimental gill nets, frame nets, and electrofishing in Lake Kampeska, 2013. Confidence intervals include 80 percent (± CI-80) or 90 percent (± CI-90). BIB= Bigmouth Buffalo; BLB= Black Bullhead; BLC= Black Crappie; BLG= Bluegill; CCF= Channel Catfish; COC= Common Carp; NOP= Northern Pike; ROB= Rock Bass; SMB= Smallmouth Bass; WAE= Walleye; WHB= White Bass; WHC= White Crappie; WHS= White Sucker; YEB= Yellow Bullhead; YEP= Yellow Perch

	Abundance		Stock Density Indices				Condition	
Gear/Species	CPUE	CI-80	PSD	CI-90	PSD-P	CI-90	Wr	CI-90
Frame nets								
BIB	0.2	0.1	100	0	75	59	92	7
BLB	22.7	8.3	97	1	3	1	90	1
BLC	0.6	0.3	83	20	17	20	105	<1
BLG	1.6	0.7	79	12	41	15	129	2
CCF	0.2	0.2	0	---	0	---	100	2
COC	0.1	0.1	100	---	50	---	106	----
NOP	0.4	0.2	75	31	25	31	73	6
ROB	<0.1	0.1	100	---	0	---	96	---
SMB	1.1	0.4	38	18	8	10	91	2
WAE	1.0	0.4	36	18	0	---	86	3
WHB	7.2	2.5	100	0	97	3	79	<1
WHC	0.2	0.1	75	59	0	---	96	8
WHS	0.5	0.3	100	0	100	0	89	10
YEB	15.4	3.5	100	0	81	4	95	1
Gill nets								
BLB	8.0	3.4	92	7	0	---	91	<1
CCF	0.2	0.2	100	---	100	---	122	---
COC	0.2	0.2	100	---	0	---	97	---
NOP	2.5	1.1	60	23	7	11	79	3
SMB	0.5	0.3	100	0	0	---	84	<1
WAE	7.5	2.5	51	13	0	---	88	2
WHB	4.3	1.3	100	0	85	13	83	2
WHC	2.5	1.1	87	16	13	16	96	2
WHS	1.5	0.3	100	0	89	21	102	3
YEB	2.2	1.9	100	0	69	24	96	5
YEP	5.7	2.9	65	14	18	12	107	1
Electrofishing								
WAE[1]	110.0	39.6	---	---	---	---	---	---

[1] Fall night electrofishing-WAE; catch rate (CPUE) represents age-0 Walleye not stock-length

Table 2. Historic mean catch rate (CPUE; gill/frame nets= catch/net night, electrofishing= catch/hour) of stock-length fish for various fish species captured in experimental gill nets, frame nets, and electrofishing in Lake Kampeska, 2004-2013. BIB= Bigmouth Buffalo; BLB= Black Bullhead; BLC= Black Crappie; BLG= Bluegill; CCF= Channel Catfish; COC= Common Carp; GSF= Green Sunfish; NOP= Northern Pike; OSF= Orangespotted Sunfish; PUS=Pumpkinseed; ROB= Rock Bass; SHR= Shorthead Redhorse; SMB= Smallmouth Bass; STC= Stonecat; WAE= Walleye; WHB= White Bass; WHC= White Crappie; WHS= White Sucker; YEB= Yellow Bullhead; YEP= Yellow Perch

	CPUE									
Gear/Species	2004	2005	2006[1]	2007[1]	2008	2009	2010	2011	2012	2013
Frame nets										
BIB	0.9	0.7	1.7	1.3	1.6	0.2	1.7	0.3	0.2	0.2
BLB	6.7	4.3	2.9	0.4	0.4	2.4	<0.1	0.1	18.2	22.7
BLC	5.1	2.5	2.5	5.2	2.8	0.4	1.2	0.5	1.2	0.6
BLG	6.5	2.4	3.6	4.2	4.0	1.3	3.2	1.5	1.2	1.6
CCF	0.1	0.1	0.0	0.0	<0.1	0.0	0.0	0.2	0.1	0.2
COC	0.1	0.3	0.2	0.4	0.3	0.2	<0.1	0.1	0.0	0.1
GSF	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOP	0.3	0.4	0.2	0.6	0.3	0.5	1.0	0.5	1.3	0.4
OSF[2]	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PUS	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROB	0.5	0.5	0.2	<0.1	<0.1	0.2	0.1	0.2	0.1	<0.1
SHR	0.2	0.0	0.0	0.2	0.0	0.0	<0.1	0.1	0.1	0.0
SMB	3.2	1.8	5.6	7.1	2.7	0.6	2.6	1.6	4.0	1.1
STC[2]	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	0.0	0.0	0.0
WAE	1.6	2.3	0.8	1.6	2.2	1.1	3.4	0.5	0.5	1.0
WHB	6.6	1.3	1.8	1.3	4.3	10.2	7.9	3.0	8.5	7.2
WHC	0.8	0.3	0.9	0.7	0.2	0.1	0.2	1.5	0.3	0.2
WHS	3.2	0.9	0.5	1.3	1.3	1.2	1.6	1.0	0.8	0.5
YEB	2.8	3.4	0.9	1.3	1.4	0.2	5.2	2.7	21.6	15.4
YEP	0.0	0.1	0.1	0.0	0.0	0.0	0.4	0.1	2.9	0.0
Gill nets										
BIB	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0
BLB	2.2	0.3	0.5	0.3	0.2	0.0	0.2	0.0	3.2	8.0
BLG	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CCF	0.0	0.7	0.7	0.8	0.3	0.0	0.2	0.2	0.0	0.2
COC	0.0	0.2	0.3	1.0	0.5	0.5	0.2	0.0	0.2	0.2
NOP	0.8	0.2	0.5	0.2	0.5	1.0	0.2	1.3	2.5	2.5
ROB	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SHR	0.0	0.2	0.0	0.0	0.0	0.3	0.3	0.2	0.2	0.0
SMB	0.3	0.7	0.3	0.8	0.2	0.0	0.0	0.7	0.2	0.5
WAE	24.5	21.8	11.7	6.5	14.3	17.0	20.7	24.3	12.2	7.5
WHB	5.0	3.3	79.5	20.2	15.5	7.2	5.5	4.5	4.8	4.3
WHC	5.5	4.7	8.2	2.5	0.5	0.2	1.0	3.2	3.2	2.5
WHS	0.3	1.0	0.7	1.5	0.3	1.7	1.8	5.5	3.8	1.5
YEB	0.0	0.2	0.8	0.2	0.2	0.0	0.7	0.8	6.7	2.2
YEP	2.7	4.8	4.3	1.3	0.3	2.2	6.0	2.7	3.5	5.7
Electrofishing										
SMB[3]	---	---	---	---	---	---	142.0	---	203.0	---
WAE[4]	4.0	252.1	0.0	10.7	20.6	0.0	0.0	342.0	0.9	110.0

[1] Monofilament gill net mesh size change (0.75", 1.00", 1.25", 1.50", 2.00" and 2.50").
[2] All fish sizes
[3] Spring night electrofishing-SMB
[4] Fall night electrofishing-WAE; catch rate (CPUE) represents age-0 Walleye not stock-length

Table 3. Mean catch rate (CPUE; gill/frame nets= catch/net night, electrofishing= catch/hour) of stock-length fish, proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish, and relative weight (Wr) for selected species captured in experimental gill nets, frame nets, and electrofishing in Lake Kampeska, 2004-2013. SMB= Smallmouth Bass; WAE= Walleye

Species	2004	2005	2006[1]	2007[1]	2008	2009	2010	2011	2012	2013	Objective
Gill nets											
WAE											
CPUE	25	22	12	7	14	17	21	24	12	8	≥ 10
PSD	26	11	73	41	5	4	2	31	53	51	30-60
PSD-P	2	0	1	3	0	1	1	0	0	0	5-10
Wr	83	82	80	85	80	83	86	84	80	88	---
Electrofishing											
SMB[2]											
CPUE	---	---	---	---	---	---	142	---	203	---	---
PSD	---	---	---	---	---	---	51	---	60	---	40-70
PSD-P	---	---	---	---	---	---	4	---	15	---	10-20
Wr	---	---	---	---	---	---	96	---	90	---	---

[1] Monofilament gill net mesh size change (0.75", 1.00", 1.25", 1.50", 2.00" and 2.50").
[2] Spring night electrofishing-SMB

Table 4. Year class distribution based on the expanded age/length summary for Walleye sampled in gill nets and associated stocking history (# stocked x 1,000) from Lake Kampeska, 2009-2013.

	Year Class												
Survey Year	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
2013			24	11	13	4	4		1		1		1
2012[1]	---		2	11	12	25	12	2	8		1		
2011	---	---		11	28	50	13	1	43	1			1
2010[1]	---	---	---		7	55	37	3	28				2
2009	---	---	---	---		35	34	1	64	1	1		2
# stocked													
fry	2400				2500[2]	2500			2300				5100
sm. fingerling													
lg. fingerling													

[1] Older walleye were sampled, but are not reported in this table.
[2] Stocked Walleye were OTC marked; 7 of 15 otoliths collected from spring electrofished age-1 walleye exhibited marks for an estimated stocking contribution of 47%

Table 5. Weighted mean TL (mm) at capture for Walleye age-1 through age-10 sampled in experimental gill nets (expanded sample size) from Lake Kampeska, 2005-2013. Note: sampling was conducted at approximately the same time during each year allowing comparisons among years to monitor growth trends.

	Age									
Year	1	2	3	4	5	6	7	8	9	10
2013[1]	---	248(24)	369(11)	401(13)	410(4)	446(4)	---	420(1)	---	376(1)
2012[1]	205(2)	317(11)	368(12)	393(25)	388(12)	397(2)	406(8)	---	474(1)	---
2011	250(11)	325(28)	359(50)	383(13)	425(1)	392(43)	432(1)	---	---	498(1)
2010[1]	209(7)	281(55)	313(37)	319(3)	354(28)	---	---	---	345(2)	---
2009	195(35)	275(34)	304(1)	328(64)	404(1)	456(1)	---	519(2)	---	---
2008	192(8)	262(11)	286(70)	---	---	---	406(4)	412(1)	---	---
2007[1]	208(1)	248(75)	---	415(6)	---	411(6)	---	473(3)	---	---
2006[1]	203(74)	334(1)	384(19)	375(2)	397(41)	439(1)	453(2)	---	---	---
2005[1]	---	280(22)	---	340(105)	---	421(4)	461(2)	---	---	---

[1] Older Walleye were sampled, but are not reported in this table.

Table 6. Stocking history including size and number for fishes stocked into Lake Kampeska, 2001-2013. WAE=Walleye

Year	Species	Size	Number
2001	WAE	fry	5,100,000
2005	WAE	fry	2,300,000
2008	WAE	fry	2,500,000
2009	WAE	fry	2,500,000
2013	WAE	fry	2,500,000

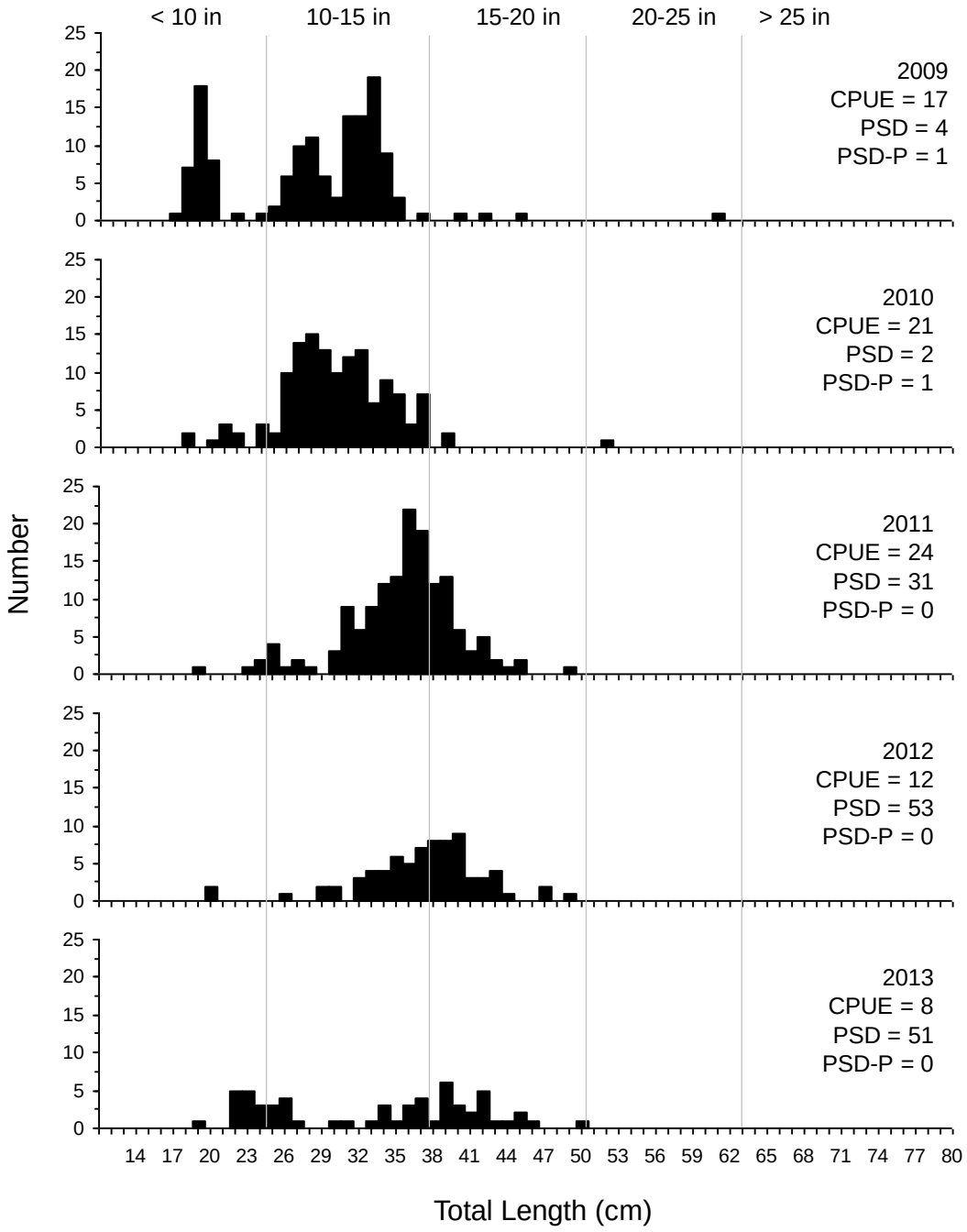

Figure 3. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for Walleye captured using experimental gill nets in Lake Kampeska, 2009-2013.

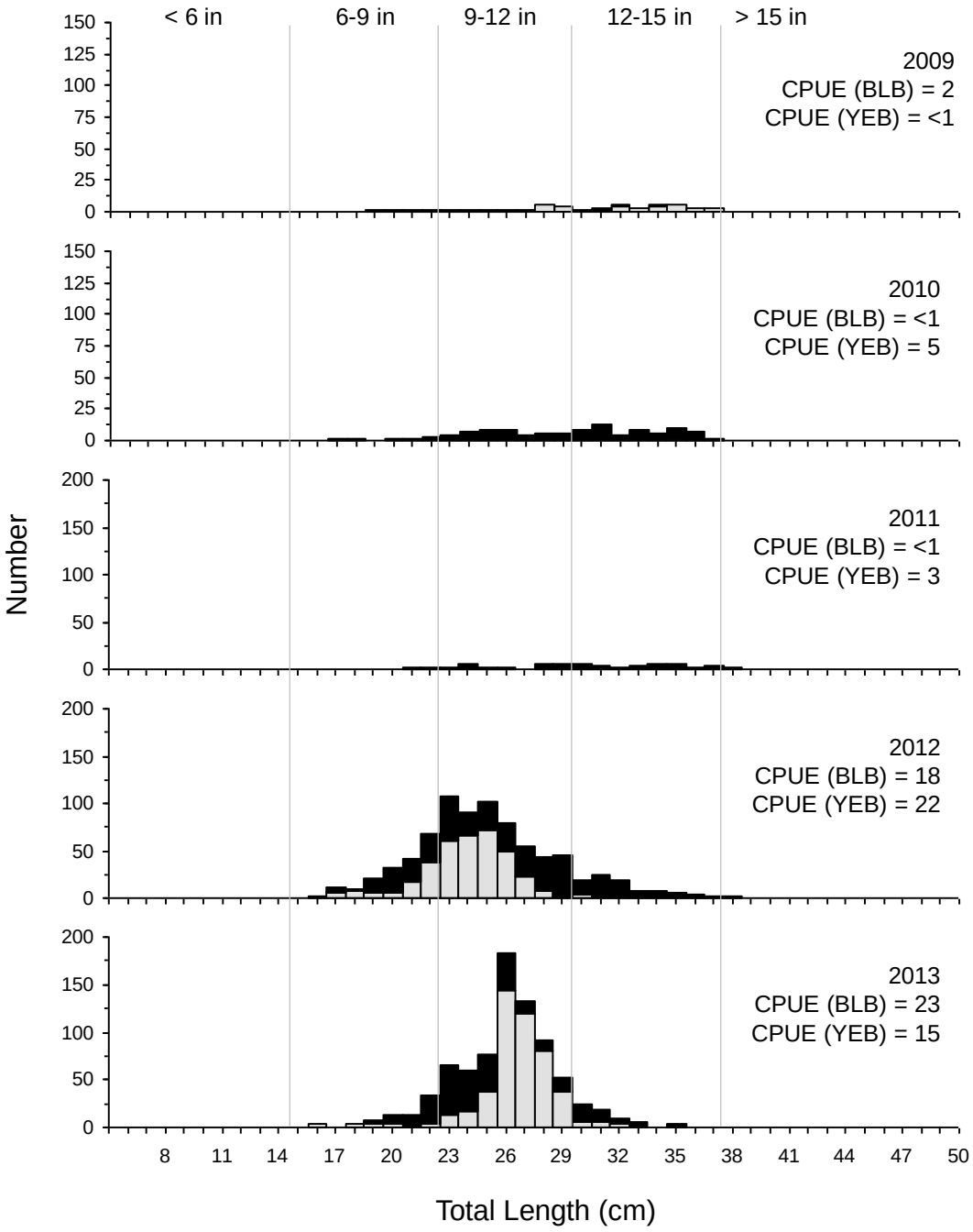

Figure 4. Length-frequency histogram and catch rate for stock-length Black (BLB; gray bars) and Yellow (YEB; black bars) Bullhead captured using frame nets in Lake Kampeska, 2009-2013.

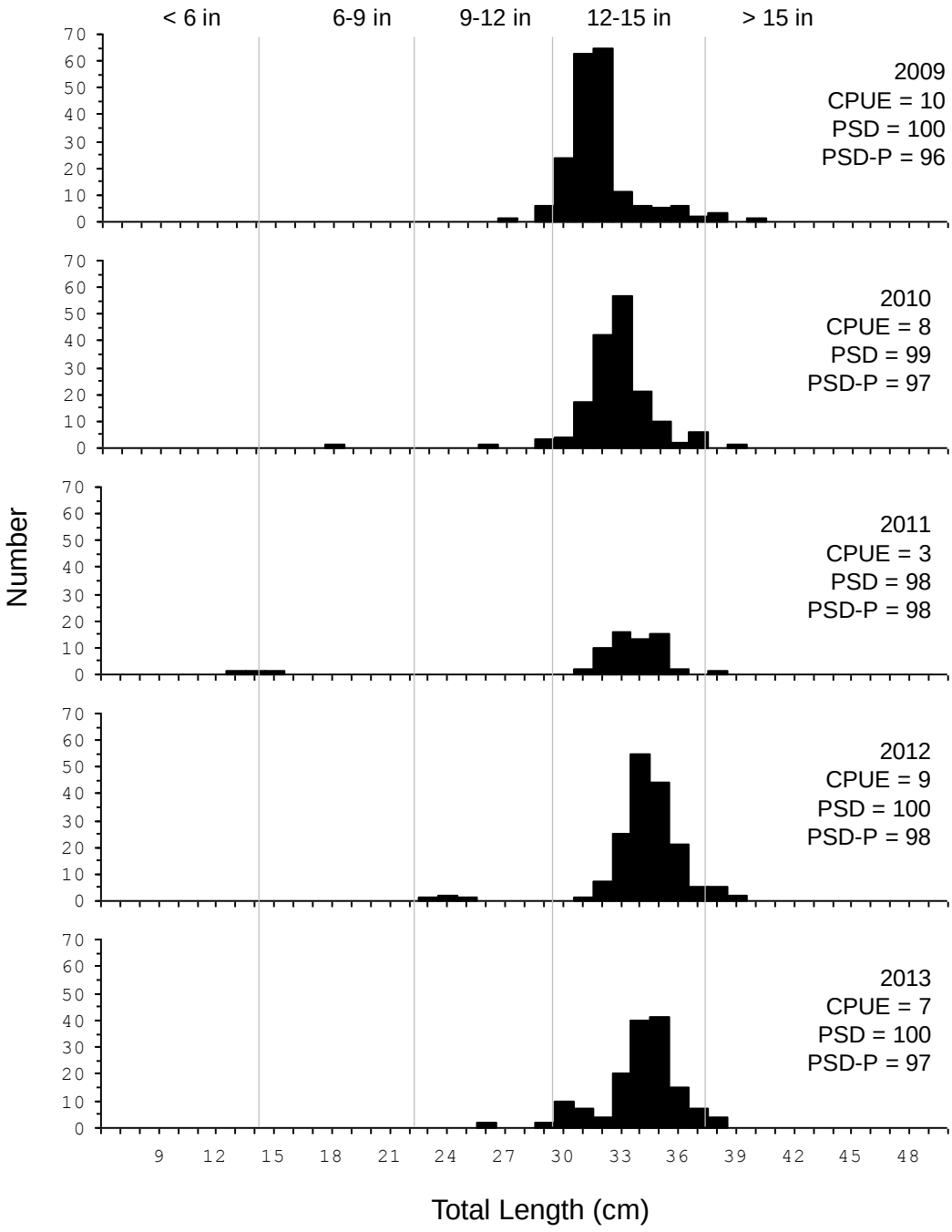

Figure 5. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for White Bass captured using frame nets in Lake Kampeska, 2009-2013.