

Pickerel Lake Site Description

Location

Water designation number (WDN)	22-0002-00
Legal description	T124N-R53W-Sec.15,22,23,26,27,34,35
County (ies)	Day
Location from nearest town	6 miles northeast of Grenville

Survey Dates and Sampling Information

Survey dates	June 22-24, 2010 (FN, GN)
Gill net sets (n)	6
Frame net sets (n)	18

Morphometry

Watershed area (acres)	17,165
Surface area (acres)	981
Maximum depth (ft)	41
Mean depth (ft)	16

Ownership and Public Access

Pickerel Lake is a meandered lake managed by the SDGFP. Four public access sites exist on Pickerel Lake; two are located within State Parks on the east and west shores; one at the "Old Pickerel Lake Hatchery Site" located south of the State Park East Unit; and a section line access point, which does not include a boat ramp, in the northwest corner of the lake (Figure 1-2). Ownership of the Pickerel Lake shoreline includes the State of South Dakota, the Bureau of Indian Affairs, and private ownership. The shoreline of Pickerel Lake is highly developed.

Watershed and Land Use

Land use within the Pickerel Lake watershed is primarily agricultural with a mix of pasture or grassland, cropland, and woodland.

Water Level Observations

The South Dakota Water Management Board established Ordinary High Water Mark (OHWM) is 1845.6 fmsl, and the outlet elevation of Pickerel Lake is 1844.9 fmsl. On May 5, 2010, Pickerel Lake was above the outlet elevation and OHWM with an elevation of 1845.7 fmsl. By October 6, 2010 the elevation of Pickerel Lake had declined to 1845.1 fmsl which was below OHWM but still exceeded the outlet elevation.

Aquatic Nuisance Species Monitoring

Plant Survey

Emergent vegetation is limited to north bay of Pickerel Lake; while submersed vegetation exists in several shallow-protected areas of the lake. Aquatic plant species identified during the 2010 survey include cattail, common duckweed, coontail, elodea, northern milfoil, sago pondweed, and water crowfoot. Chara (a macro algae) was also sampled. No aquatic nuisance plant species were encountered.

Macro-Invertebrate/Mussel Survey

No aquatic nuisance macro-invertebrate or mussel species were sampled in 2010.

Fish Community Survey

No aquatic nuisance fish species captured during the 2010 survey; however, common carp are present in the lake (Table 2).

Fish Management Information

Primary species	black crappie, bluegill, smallmouth bass, walleye, yellow perch
Other species	black bullhead, common carp, emerald shiner, largemouth bass, northern pike, rock bass, spottail shiner, white bass, white sucker
Lake-specific regulations	NE Panfish Management Area: 10 daily; 50 possession. Smallmouth/Largemouth Bass: Only those <14", or 18" and longer may be taken. Of those no more than one may be 18" or longer. Walleye: minimum length 15".
Management classification	warm-water permanent
Fish Consumption Advisories	none

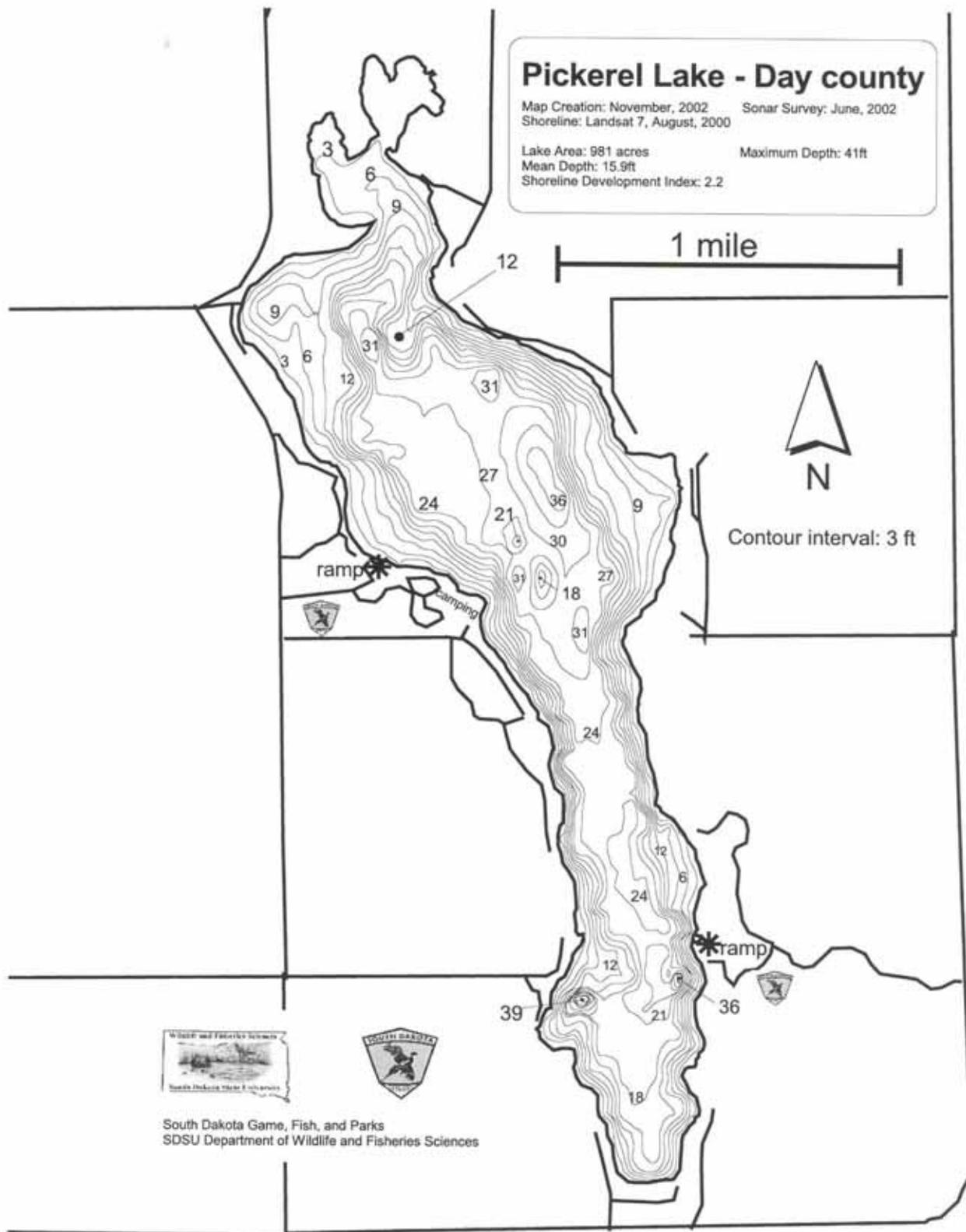


Figure 1. Contour map of Pickerel Lake, Day County, South Dakota.



Figure 2. Map depicting geographic location of several Day County, South Dakota Lakes including Pickeral Lake (top). Also noted are public access sites and standardized net locations for Pickeral Lake. PLFN= frame nets; PLGN=gill nets

Management Objectives

- 1) Maintain a mean frame net CPUE of stock-length black crappie ≥ 10 , a PSD of 30-60, and a PSD-P of 5-10.
- 2) Maintain a mean frame net CPUE of stock-length bluegill ≥ 25 , a PSD of 30-60, and a PSD-P of 5-10.
- 3) Maintain a moderate density smallmouth bass population with a PSD of 40-70, and a PSD-P of 10-40.
- 4) Maintain a mean gill net CPUE of stock-length walleye ≥ 10 , a PSD of 30-60, and a PSD-P of 5-10.
- 5) Maintain a mean gill net CPUE of stock-length yellow perch ≥ 30 , a PSD of 30-60, and a PSD-P of 5-10.
- 6) Maintain a mean frame net CPUE of stock-length bullhead ≤ 100 .

Results and Discussion

Pickerel Lake is the uppermost lake in a chain of lakes known as the Waubay Lakes Basin. Pickerel Lake is a very popular recreational destination, especially during the summer months. Pickerel Lake is highly developed with nearly the entire lake shoreline supporting residential housing and cabins. In addition, Pickerel Lake has two State Parks located on the east and west shores. Currently, Pickerel Lake is primarily managed as a panfish (i.e., black crappie, bluegill, and yellow perch), smallmouth bass and walleye fishery. However, other species such as northern pike, rock bass, and white bass also contribute to the Pickerel Lake fishery.

Primary Species

Black crappie: The mean frame net CPUE of stock-length black crappie during 2010 was 4.0 (Table 1) and below the minimum objective (≥ 10 stock-length black crappie/net night; Table 3). Since 2003, the mean frame net CPUE of black crappie has ranged from a low of 1.4 (2005) to a high of 15.6 (2008), with the 2003-2010 average being 7.9 (Table 2). Based on the 2010 frame net catch, relative abundance is moderate.

Otoliths have been collected from a sub-sample of frame net captured black crappie since 2006. Age structure information indicates that black crappie from the 2005 year-class have dominated the population in surveys conducted from 2007-2010 and represent 94% of the black crappies sampled in the frame nets in 2010 (Tables 4-5; Figure 3). In 2010, black crappie captured in the frame nets ranged in total length from 21 to 31 cm (8.3 to 12.2 in), had a PSD of 100 and a PSD-P of 58. The 2010 PSD and PSD-P were above the management objectives (30-60 and 5-10, respectively; Table 3).

The substantial increase in PSD-P observed from 2009 to 2010 is a result of the strong 2005 year-class reaching preferred-length and poor recruitment of new year-classes.

Black crappie from the 2005 year-class had a weighted mean length at capture of 201 mm (7.9 in) at age-3, 231 mm (9.1 in) at age-4, and 251 mm (9.9 in) at age-5 (Table 5). Condition of black crappie in 2010 was good with mean Wr ranging from 83 to 102 for all length categories sampled. The 2010 mean Wr of frame net captured black crappies was 103 (Tables 1, 3). A decreasing trend in Wr was observed as total length increased.

Bluegill: The mean frame net CPUE of stock-length bluegill during 2010 was 3.5 (Table 1) and below the minimum objective (≥ 25 stock-length bluegill/net night; Table 3). Since 2003, the mean frame net CPUE of bluegill has ranged from a low of 3.5 (2010) to a high of 29.2 (2008), with the 2003-2010 average being 11.2 (Table 2). Based on the 2010 frame net CPUE, relative abundance is low.

Bluegill captured in frame nets during 2010 ranged in total length from 9 to 24 cm (3.5 to 9.4 in), had a PSD of 87, and a PSD-P of 56 (Figure 4). Both the PSD and PSD-P were above the management objectives of 30-60 and 5-10 (Table 3).

Age and growth data were collected from a sub-sample of frame net captured bluegill in 2010. Five year-classes were present in the frame net sample (Tables 6-7). The mean total length-at-capture for bluegills sampled in frame nets was 169 mm (6.7 in.) for age-3, 203 mm (8.0 in.) for age-4 and 217 mm (8.5 in.) for age-5 (Table 7). Bluegill condition was high, with mean Wr values exceeding 108 for all length categories sampled. The mean Wr for stock-length bluegill in the 2010 frame net catch was 112 (Table 1). Relative weight (Wr) values may have been influenced by seasonal sampling bias (i.e., spawning behavior) during 2010.

Smallmouth bass: Prior to 2009, fall night electrofishing was used to assess smallmouth bass populations in NE South Dakota. However, recent research in NE South Dakota found that spring night electrofishing over suitable habitat (i.e., rocky substrate) provides a better index to smallmouth bass populations in NE South Dakota glacial lakes (Bacula 2009). Spring night electrofishing surveys for smallmouth bass on Pickerel Lake will be conducted biennially beginning in 2009. No population data is available for smallmouth bass in 2010.

Walleye: The mean gill net CPUE of stock-length walleye during 2010 was 9.2 (Table 1) and slightly below the minimum objective (≥ 10 stock length walleye/net night; Table 3). Since 2003, walleye abundance in Pickerel Lake based on gill net CPUE has ranged from 4.8 (2009) to 21.5 (2004) stock-length walleye/net night with the 2003-2010 average being 12.2 (Table 2). Based on the 2010 gill net CPUE relative abundance of walleye appears to be moderate (4-11 stock-length walleye/net).

Walleye captured in the 2010 gill net catch ranged in total length from 23 to 43 cm (9.1 to 16.9 in), had a PSD of 4 and a PSD-P of 0 (Figure 6). The 2010 PSD and PSD-P were below the objective ranges of 30-60 and 5-10 (Table 3). In 2010, approximately 3% of stock-length walleye captured in the gill net catch were above the 381-mm (15-inch) minimum length restriction.

Natural reproduction in Pickerel Lake has been consistently poor with fall night electrofishing catch rates of age-0 walleye commonly below 12/hr (Table 2). Therefore, walleye relative abundance has relied heavily on large fingerling stockings to establish year classes capable of sustaining the walleye fishery. Lucchesi (1997) reported that large fall fingerling walleye stockings contributed 79%, 38%, and 66% to the walleye population in 1992, 1993, and 1994, respectively. In 2010, otoliths were collected from a sub-sample of gill net captured walleye and indicated the presence of five year-classes (2003-2004, 2006-2008) with the 2006 year class being the most represented (Table 8). All year-classes sampled corresponded with large fingerling stockings (Table 8).

Walleye in Pickerel Lake exhibit growth rates that are similar to other permanent lakes in the region (e.g., Enemy Swim and Clear). Since 2005, the weighted mean total length at capture of age-3 walleye has ranged from 310 to 358 mm (12.2 to 14.1 in); while age-4 walleye had weighted mean total length at capture values that ranged from 322 to 388 mm (12.7 to 15.3 in; Table 10). Length-at-capture values are likely strongly influenced by size of large fingerlings stocked which can vary substantially. Walleye were in fair condition with mean W_r values that ranged from 78 to 82 for all length categories sampled. The mean W_r of stock-length walleye captured in gill nets from Pickerel Lake during 2010 was 81 (Table 1).

Yellow Perch: The mean gill net CPUE of stock-length yellow perch in 2010 was 21.0 (Table 1), and below the minimum objective (≥ 30 stock-length yellow perch/net night). Since 2003, the gill net CPUE of stock-length yellow perch has ranged from 7.5 (2009) to 55.8 (2006) with the 2002-2009 average being 35.5 (Table 2). Based on the 2010 gill net catch the relative abundance of stock-length yellow perch appears to be moderate.

Yellow perch captured in the 2010 gill net catch ranged in total length from 8 to 24 cm (3.1 to 9.4 in) and had a PSD of 40 (Figure 7). The 2010 PSD was within the objective range of 30-60 (Table 3). No preferred-length yellow perch were captured resulting in a PSD-P of 0, which is well below the objective range of 5-10 (Table 3).

Otoliths were collected from a sub-sample of gill net captured yellow perch in 2010. Age structure information indicates that yellow perch in Pickerel Lake have exhibited relatively-consistent recruitment of varying magnitude in recent years. Six consecutive year classes (2004-2009) were present in the 2010 gill net catch (Table 11).

Yellow perch in Pickerel Lake tend to grow slower and be longer-lived than many populations in northeast South Dakota. In 2010, the weighted mean total length at capture for age-5 male yellow perch was 200 mm (7.9 in) and the weighted mean total length at capture for age-5 female yellow perch was 226 mm (8.9 in; Table 12). Yellow perch in the 2010 gill net catch were in good condition with the mean W_r values that exceeded 100 for all length categories sampled. The mean W_r for stock-length yellow perch was 103 and no length-related trends were apparent.

Other Species

Black bullhead: Relative abundance of black bullhead in Pickerel Lake remained low from 2003-2007 with mean frame net CPUE values of <5 stock-length black bullheads/net night. The mean frame net CPUE of stock-length black bullhead in 2008 and 2009 increased to 19.4 and 14.9, respectively (Table 2). The mean frame net CPUE of stock-length black bullhead in 2010 decreased to 4.6 (Table 1), and was within the management objective (≤ 100 stock-length black bullhead/net; Table 3).

Length-frequency analysis of black bullheads in the 2010 frame net catch indicates a single year class ranging in total length from 29 to 33 cm (11.4 to 13.0 in) dominates the population (Figure 7). This year class has resulted in the increased frame net CPUE in recent years (Table 2; Figure 8). Black bullheads captured in the 2010 frame net catch ranged in total length from 16 to 35 cm (6.3 to 13.8 in), had a PSD of 91 and a PSD-P of 71.

No age and growth information was collected in 2010. In 2010, frame net captured black bullheads were in good condition with mean W_r values that ranged from 87 to 104 for all length categories sampled. The mean W_r for stock-length black bullheads was 90 (Table 1) and a decreasing trend in W_r was observed as total length increased.

Northern Pike: Northern pike typically are not sampled effectively using standard lake survey methods; therefore reported values may not accurately represent the at-large population. Neumann and Willis (1995) reported the most reliable time to sample northern pike with gill nets was late spring following the spawn.

The mean gill net CPUE of stock-length northern pike was 2.7 (Table 1) and slightly below the minimum objective (≥ 3 stock-length northern pike/net night; Table 3). Since 2003, the mean gill net CPUE of stock-length northern pike has fluctuated from a low of 0.5 (2005) to a high of 6.0 (2007) with the 2003-2010 average being 3.3 (Table 2). Based on the 2010 gill net catch, northern pike relative abundance appears to be moderate.

No age or growth information was collected in 2010. Northern pike sampled in gill nets during 2010 ranged in total length from 39 to 89 cm (15.4 to 35.0 in), had a PSD of 69, and a PSD-P of 13 (Table 1). Northern pike condition was similar to past years with mean W_r values that ranged from 79 to 98 for all length categories sampled. The mean W_r for stock-length northern pike was 84 (Table 1). Mean W_r values were likely at a seasonal low as Neumann and Willis (1995) reported that W_r values were lowest during spring following the spawn and throughout the summer in Lake Thompson, South Dakota.

Rock Bass: The 2010 mean frame net CPUE of stock-length fish was 4.3 (Table 1). Since 2003, the mean frame net CPUE of stock-length rock bass has ranged from a low of 3.7 (2009) to a high of 8.4 (2008) with the 2003-2010 average being 5.2 (Table 2). Rock bass captured in the 2010 frame net catch from Pickerel Lake ranged in total length from 12 to 25 cm (4.7 to 9.8 in), had a PSD of 90 and a PSD-P of 5.

No age growth data was collected for rock bass in 2010; however, condition of rock bass in the 2010 frame net catch was good with mean W_r values that ranged from 110 to 111 for all length categories sampled. The mean W_r of stock-length rock bass captured in the 2010 gill net catch was 110 (Table 1).

Other: Spottail shiner, white bass and white sucker were captured in low numbers during the 2010 survey (Table 1).

Management Recommendations

- 1) Conduct fish population assessment surveys on an annual basis (next survey scheduled in summer 2011) to monitor fish relative abundance, fish population size structures, fish growth, and stocking success.
- 2) Conduct spring night electrofishing on a biennial basis (odd years) to monitor smallmouth bass population parameters.
- 3) Collect otoliths from black crappie, walleye, and yellow perch; scales from smallmouth bass to assess growth rates and age structure of each population.
- 4) If lack of black crappie natural recruitment continues, consider the possibility of supplemental stockings of fingerlings to establish additional year classes.
- 5) Stock walleye at (≈ 25 large fingerlings/acre) to establish additional year classes if gill netting results warrant (i.e., low gill net CPUE of < 250 mm (10 inch) walleye).
- 6) Maintain length limit on largemouth and smallmouth bass to benefit population and comply with toolbox options (Blackwell and Lucchesi 2009). Largemouth and smallmouth bass must be less than 14" or longer than 18", but only one 18" or longer can be kept in the daily creel.
- 7) Maintain the 381-mm (15 in) minimum length limit on walleye to benefit the population and comply with tool box options (Lucchesi and Blackwell 2009).
- 8) 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; frame/gill nets = catch/net night) 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 frame nets and experimental gill nets from Pickerel Lake, 2010. Confidence intervals include 80 percent (\pm CI-80) or 90 percent (\pm CI-90). BLB= black bullhead; BLC= black crappie; BLG= bluegill; NOP= northern pike; ROB= rock bass; SMB= smallmouth bass; SPS= spottail shiner; WAE= walleye; WHB= white bass; 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	4.6	1.6	91	6	71	8	90	<1
BLC	4.0	1.4	100	0	58	10	99	1
BLG	3.5	1.5	87	7	56	10	112	2
NOP	0.3	0.2	20	43	0	---	77	5
ROB	4.3	1.3	90	5	5	4	110	1
SMB	1.9	0.6	65	14	21	11	90	2
WAE	0.8	0.3	7	13	0	---	80	2
WHS	0.3	0.1	100	0	100	0	94	8
YEP	0.2	0.1	33	67	0	---	97	11
<i>Gill nets</i>								
BLB	0.2	0.2	0	---	0	---	87	---
BLC	8.3	5.2	100	0	60	12	101	1
BLG	0.2	0.2	100	---	100	---	94	---
NOP	2.7	1.6	69	21	13	14	84	3
SMB	0.3	0.5	50	50	0	---	101	17
SPS ¹	0.7	0.5	---	---	---	---	---	---
WAE	9.2	2.4	4	4	0	---	81	1
WHB	0.5	0.3	100	0	100	0	83	<1
WHS	1.7	0.9	100	0	90	10	107	3
YEP	21.0	5.7	40	7	0	---	103	1

¹ All fish sizes.

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 gill nets, frame nets, and electrofishing in Pickerel Lake, 2003-2010. BLB= black bullhead; BLC= black crappie; BLG= bluegill; COC= common carp; EMS= emerald shiner; LMB= largemouth bass; NOP= northern pike; ROB= rock bass; SMB= smallmouth bass; SPS= spottail shiner; WAE= walleye; WHB= white bass; WHS= white sucker; YEP= yellow perch

Species	CPUE								
	2003	2004	2005	2006 ⁵	2007 ⁵	2008	2009	2010	Mean
<i>Frame nets</i>									
BLB	4.3	0.8	2.0	1.8	2.6	19.4	14.9	4.6	6.3
BLC	6.3	3.8	1.4	8.1	12.6	15.6	11.6	4.0	7.9
BLG	5.6	6.3	4.2	14.2	17.0	29.2	9.7	3.5	11.2
COC	0.2	0.1	0.0	0.2	0.1	0.0	0.0	0.0	0.1
LMB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOP	0.4	0.1	0.5	0.3	0.7	0.7	0.4	0.3	0.4
ROB	4.7	3.8	7.6	4.7	4.4	8.4	3.7	4.3	5.2
SMB	3.2	1.6	1.9	5.6	5.6	5.4	1.9	1.9	3.4
SPS ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WAE	0.5	0.2	0.2	0.7	0.6	0.3	0.6	0.8	0.5
WHB	0.1	1.1	0.0	0.2	1.8	0.2	0.1	0.0	0.4
WHS	1.2	0.9	0.3	0.2	0.9	0.3	0.0	0.3	0.5
YEP	0.3	1.6	0.8	1.2	2.3	0.2	0.1	0.2	0.8
<i>Gill nets</i>									
BLB	0.0	0.0	0.0	0.2	4.5	5.5	0.5	0.2	1.4
BLC	12.3	13.2	3.2	1.8	16.7	26.8	3.8	8.3	10.8
BLG	0.2	0.0	0.2	0.5	1.5	0.7	0.0	0.2	0.4
COC	0.0	0.2	0.0	2.5	1.7	0.7	0.3	0.0	0.7
EMS ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOP	4.8	1.5	0.5	1.8	6.0	5.7	3.3	2.7	3.3
ROB	0.3	2.2	0.5	1.0	1.8	0.2	0.2	0.0	0.8
SMB	3.2	0.5	3.3	2.0	1.2	0.3	1.3	0.3	1.5
SPS ¹	0.3	2.2	0.0	0.0	0.0	1.5	0.5	0.7	0.7
WAE	10.3	21.5	11.7	21.3	12.7	6.0	4.8	9.2	12.2
WHB	2.0	1.8	0.8	0.7	1.8	0.8	1.2	0.5	1.2
WHS	4.3	1.5	3.2	2.3	3.5	3.7	1.2	1.7	2.7
YEP	50.3	28.5	33.5	55.8	43.7	30.0	7.5	21.0	33.8
<i>Electrofishing</i>									
SMB	126.2 ²	205.6 ²	91.2 ²	240.0 ²	123.5 ²	96.3 ²	77.4 ³	---	137.2
WAE ⁴ (age-0)	6.0	0.0	7.6	9.9	12.0	1.0	1.2	---	5.4

¹ All fish sizes.

² Fall night electrofishing-SMB.

³ Spring night electrofishing-SMB.

⁴ Fall night electrofishing-WAE; catch rate (CPUE) represents age-0 walleye/hour

⁵ Monofilament gill net mesh size change (0.75", 1.00", 1.25", 1.50", 2.00" and 2.50")

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 mean relative weight (Wr) for selected species captured in gill nets, frame nets, and electrofishing in Pickerel Lake, 2003-2010. BLC= black crappie; BLG= bluegill; SMB= smallmouth bass; WAE= walleye; YEP= yellow perch

Species	2003	2004	2005	2006 ²	2007 ²	2008	2009	2010	Average	Objective
<i>Frame nets</i>										
BLC										
CPUE	6	4	1	8	13	16	12	4	8	≥ 10
PSD	97	96	100	99	20	61	97	100	84	30-60
PSD-P	78	62	60	99	18	7	4	58	48	5-10
Wr	103	101	104	94	117	109	103	99	104	---
BLG										
CPUE	6	6	4	14	17	29	10	4	11	≥ 25
PSD	48	98	74	38	58	90	98	87	74	30-60
PSD-P	18	10	57	15	3	6	44	56	26	5-10
Wr	125	129	126	115	116	121	115	112	120	---
<i>Gill nets</i>										
WAE										
CPUE	10	22	12	21	13	6	5	9	12	≥ 10
PSD	32	5	3	40	53	31	17	4	23	30-60
PSD-P	8	2	0	0	1	3	7	0	3	5-10
Wr	86	86	86	89	84	82	86	81	85	---
YEP										
CPUE	50	29	34	56	44	30	8	21	34	≥ 30
PSD	50	68	93	21	17	29	56	40	47	30-60
PSD-P	15	15	51	10	5	2	0	0	12	5-10
Wr	107	101	114	101	102	104	106	103	105	---
<i>Electrofishing</i>										
SMB ¹										
CPUE	---	---	---	---	---	---	77	---	77	---
PSD	---	---	---	---	---	---	44	---	44	40-70
PSD-P	---	---	---	---	---	---	25	---	25	10-20
Wr	---	---	---	---	---	---	89	---	89	---

¹ Spring night electrofishing-SMB.

² Monofilament gill net mesh size change (0.75", 1.00", 1.25", 1.50", 2.00" and 2.50")

Table 4. Year class distribution based on the expanded age/length summary for black crappie sampled in frame nets from Pickerel Lake, 2006-2010.

Survey Year	Year Class												
	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
2010					2	68				2			
2009 ¹	---				6	197				1			
2008	---	---				259	1			7	2		8
2007	---	---	---			286	3		1	9			33
2006	---	---	---	---		1	3			3			13

¹ Older black crappie were sampled, but are not reported in this table.

Table 5. Weighted mean total length (mm) at capture for black crappie age-1 through age-10 sampled in frame nets (expanded sample size) from Pickerel Lake, 2006-2010.

Year	Age									
	1	2	3	4	5	6	7	8	9	10
2010	---	---	---	225(2)	251(68)	---	---	---	315(2)	---
2009 ¹	---	---	187(6)	231(197)	---	---	---	298(1)	---	---
2008	---	---	201(259)	236(1)	---	---	285(7)	291(2)	---	---
2007	---	153(286)	213(3)	---	273(1)	286(9)	---	---	299(33)	---
2006	100(1)	139(3)	---	---	270(3)	---	---	291(13)	---	---

¹ Older black crappie were sampled, but are not reported in this table

Table 6. Year class distribution based on the expanded age/length summary for bluegill sampled in frame nets from Pickerel Lake, 2010.

Survey Year	Year Class						
	2010	2009	2008	2007	2006	2005	2004
2010			5	18	12	23	5

Table 7. Weighted mean total length (mm) at capture for bluegill age-1 through age-6 sampled in frame nets (expanded sample size) from Pickerel Lake, 2010.

Year	Age					
	1	2	3	4	5	6
2010	---	115 (5)	169 (18)	203 (12)	217 (23)	234 (5)

Table 8. Year class distribution based on the expanded age/length summary for walleye sampled in gill nets and associated stocking history (Number stocked x 1,000) from Pickerel Lake, 2006-2010.

Survey Year	Year Class										
	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
2010			17	14	26		1	1			
2009	---			3	18	2	3	1	2		1
2008 ¹	---	---		3	19	3	10	3	3	2	
2007 ²	---	---	---		6	2	31	15	8	16	3
2006 ²	---	---	---	---			26	34	15	49	3
# stocked											
fry											
sm. fingerling											
lg. fingerling	17		15	1	25		27	19	13		

¹ One age-14 walleye was sampled, but not reported in this table.

² Monofilament gill net mesh size change (0.75", 1.00", 1.25", 1.50", 2.00" and 2.50")

Table 9. Stocking history including size and number for fishes stocked into Pickerel Lake, 2000-2010. LMB= largemouth bass; SMB= smallmouth bass; WAE= walleye

Year	Species	Size	Number
2001	WAE	large fingerling	56,250
2002	WAE	large fingerling	13,420
2003	WAE	large fingerling	18,582
2004	SMB	fingerling	700
	WAE	large fingerling	26,940
2006	LMB	fingerling	101,500
	WAE	large fingerling	25,146
2007	WAE	large fingerling	765
2008	WAE	large fingerling	15,135
2010	WAE	large fingerling	17,442

Table 10. Weighted mean total length at capture (mm) for walleye age-1 through age-10 sampled in experimental gill nets (expanded sample size) from Pickerel Lake, 2005-2010. Note: sampling was conducted at approximately the same time during each year allowing comparisons among years to monitor growth trends.

Year	Age									
	1	2	3	4	5	6	7	8	9	10
2010	---	258(17)	311(14)	322(26)	---	433(1)	398(1)	---	---	---
2009		258(3)	316(18)	358(2)	385(3)	563(1)	486(2)		486(1)	
2008 ¹	190(3)	262(19)	331(3)	375(10)	447(3)	393(3)	461(2)	---	---	---
2007	211(6)	295(2)	358(31)	388(15)	445(8)	433(16)	489(3)	---	---	---
2006	---	300(26)	333(34)	387(15)	398(49)	469(3)	---	---	495(1)	---
2005	---	255(12)	310(15)	349(47)	---	---	408(1)	---	---	---

¹ One age-14 walleye was sampled, but not reported in this table.

Table 11. Year class distribution based on the age/length summary for yellow perch sampled in gill nets from Pickerel Lake, 2009-2010.

Year Class

Survey Year	2010	2009	2008	2007	2006	2005	2004	2003
2010		22	68	11	24	20	4	
2009	---			2	9	15	18	1

Table 12. Weighted mean total length (mm) at capture by gender for yellow perch captured in experimental gill nets (expanded sample size) from Pickerel Lake, 2009-2010.

Year	Age					
	1	2	3	4	5	6
2010						
Male	98 (8)	144 (7)	185 (2)	---	200 (3)	---
Female	95 (12)	147 (61)	195 (9)	222 (24)	226 (17)	233 (4)
Combined	96 (22)	147 (68)	193 (11)	222 (24)	222 (20)	233 (4)
2009						
Male	---	---	162(2)	189(5)	247(1)	---
Female	---	150(2)	174(7)	200(10)	220(17)	
Combined	---	150(2)	171(9)	196(15)	221(18)	220(1)

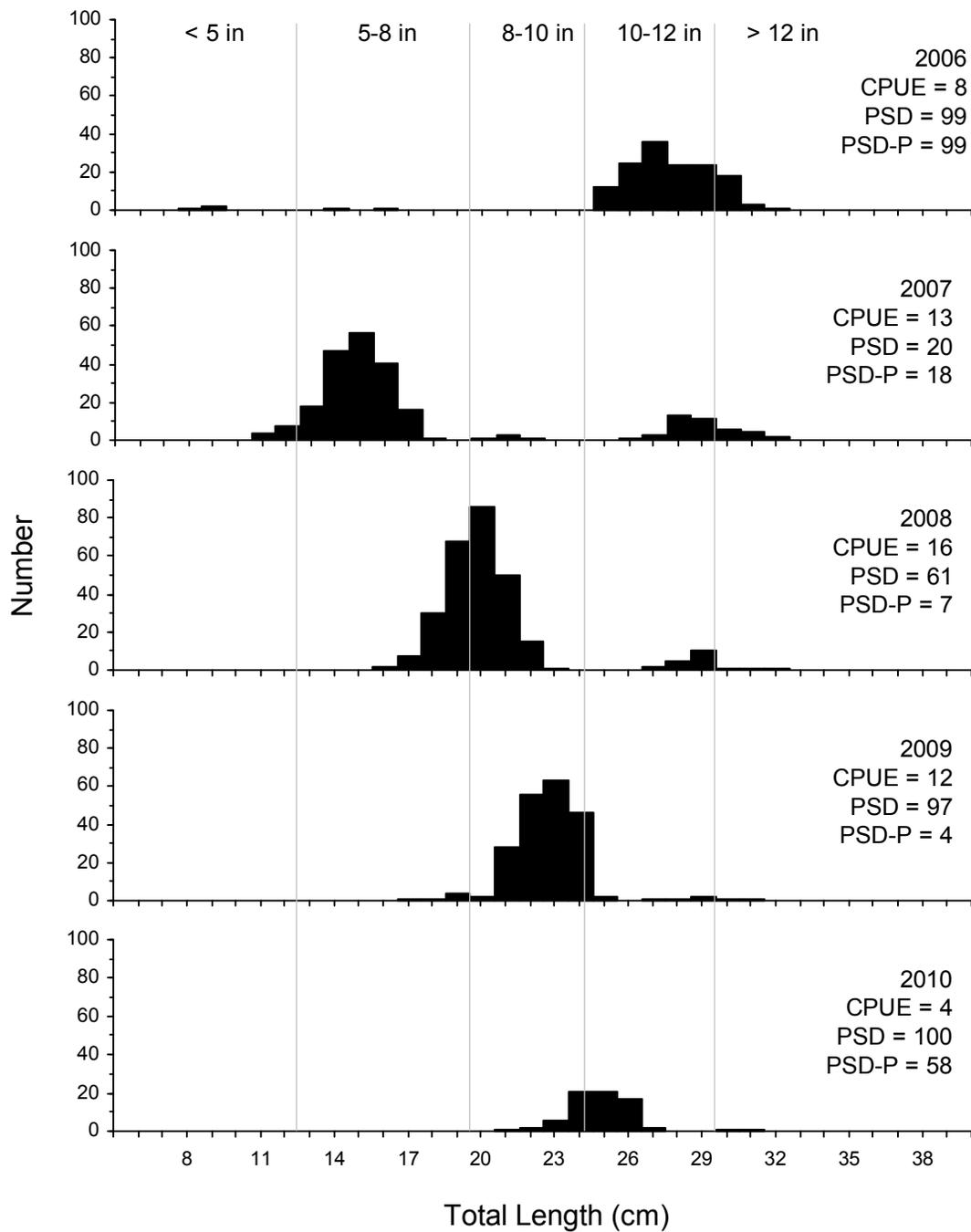


Figure 3. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for black crappie captured using frame nets in Pickerel Lake, 2006-2010.

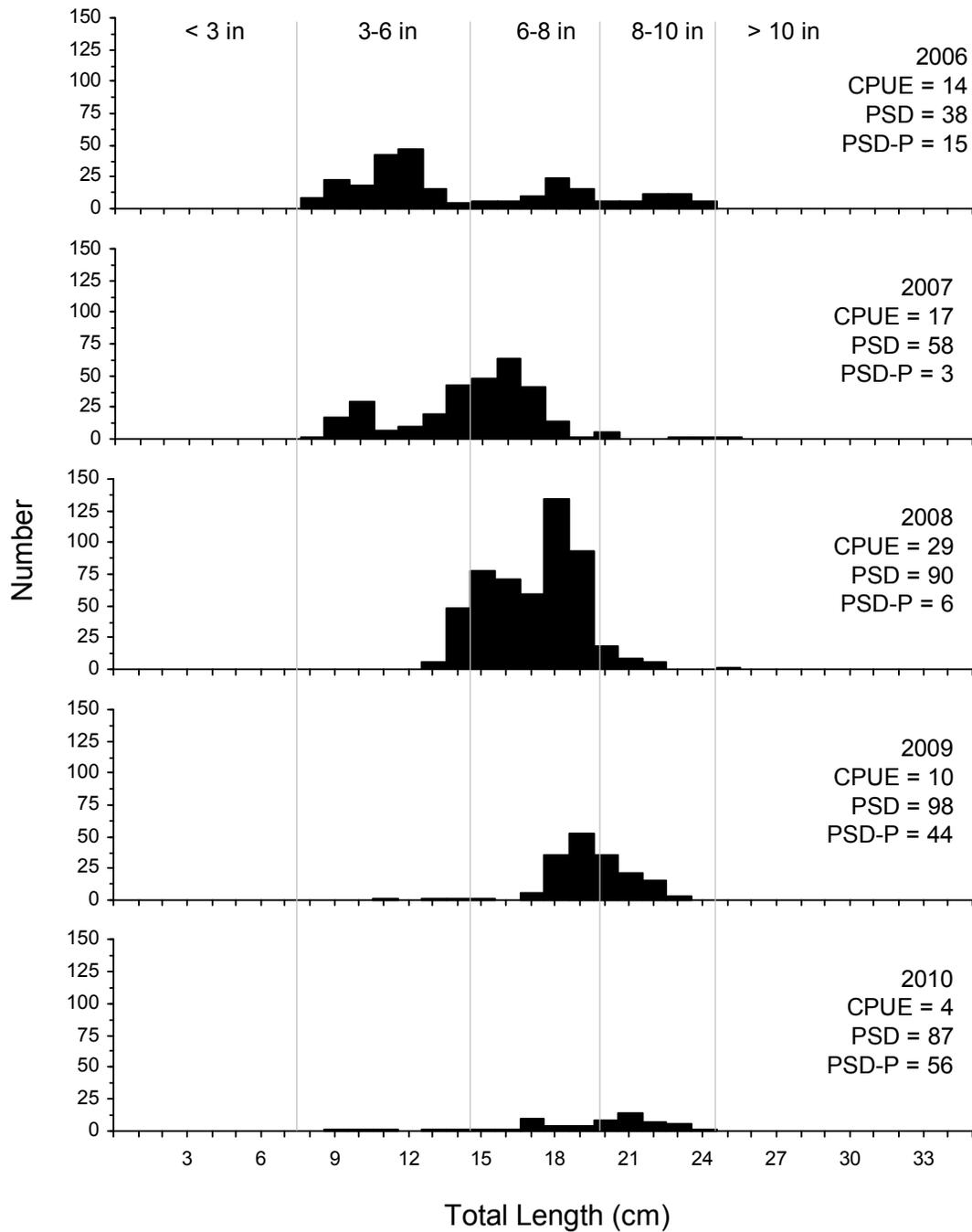


Figure 4. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for bluegill captured using frame nets in Pickerel Lake, 2006-2010.

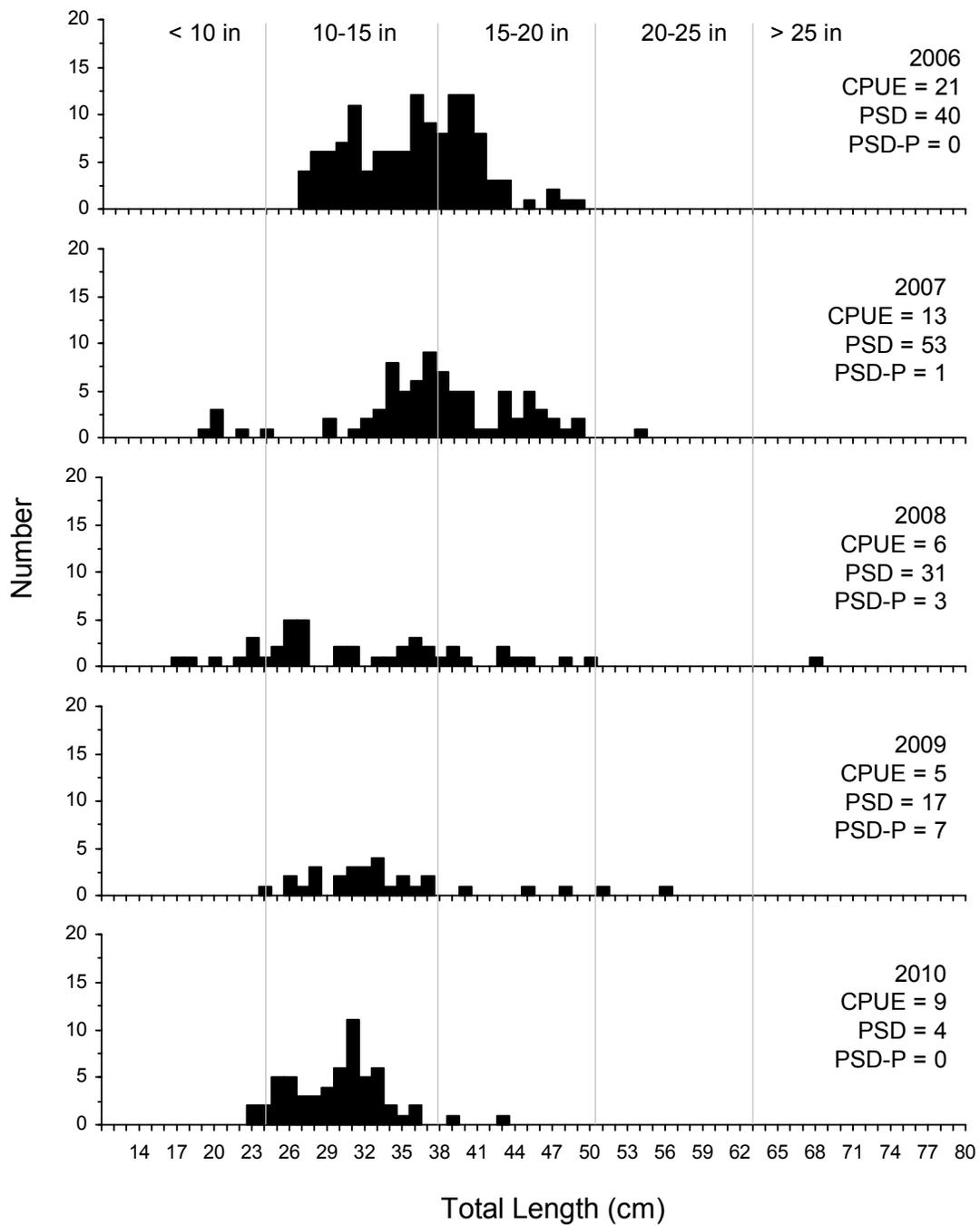


Figure 5. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for walleye captured using gill nets in Pickerel Lake, 2006-2010.

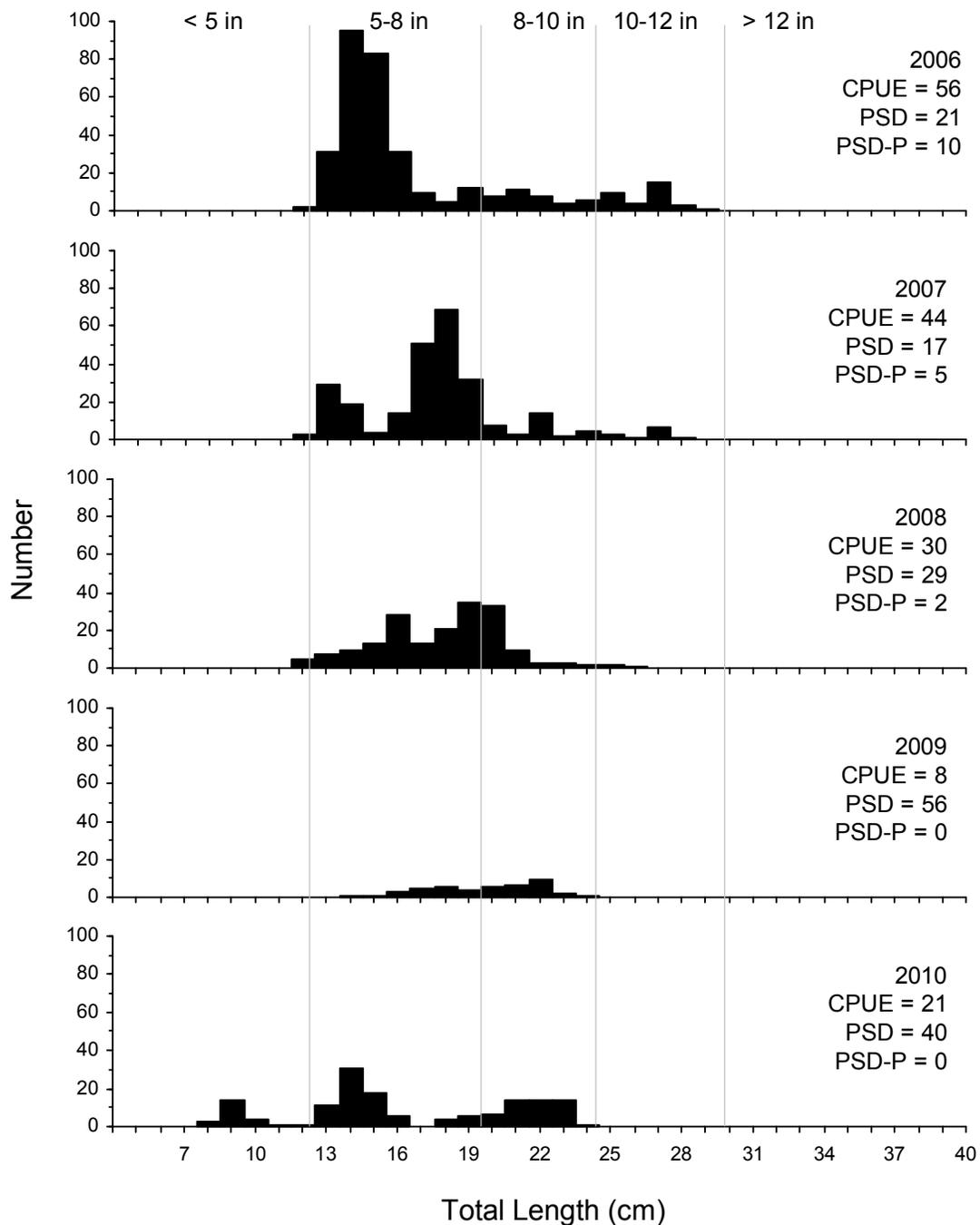


Figure 6. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for yellow perch captured using gill nets in Pickerel Lake, 2006-2010.

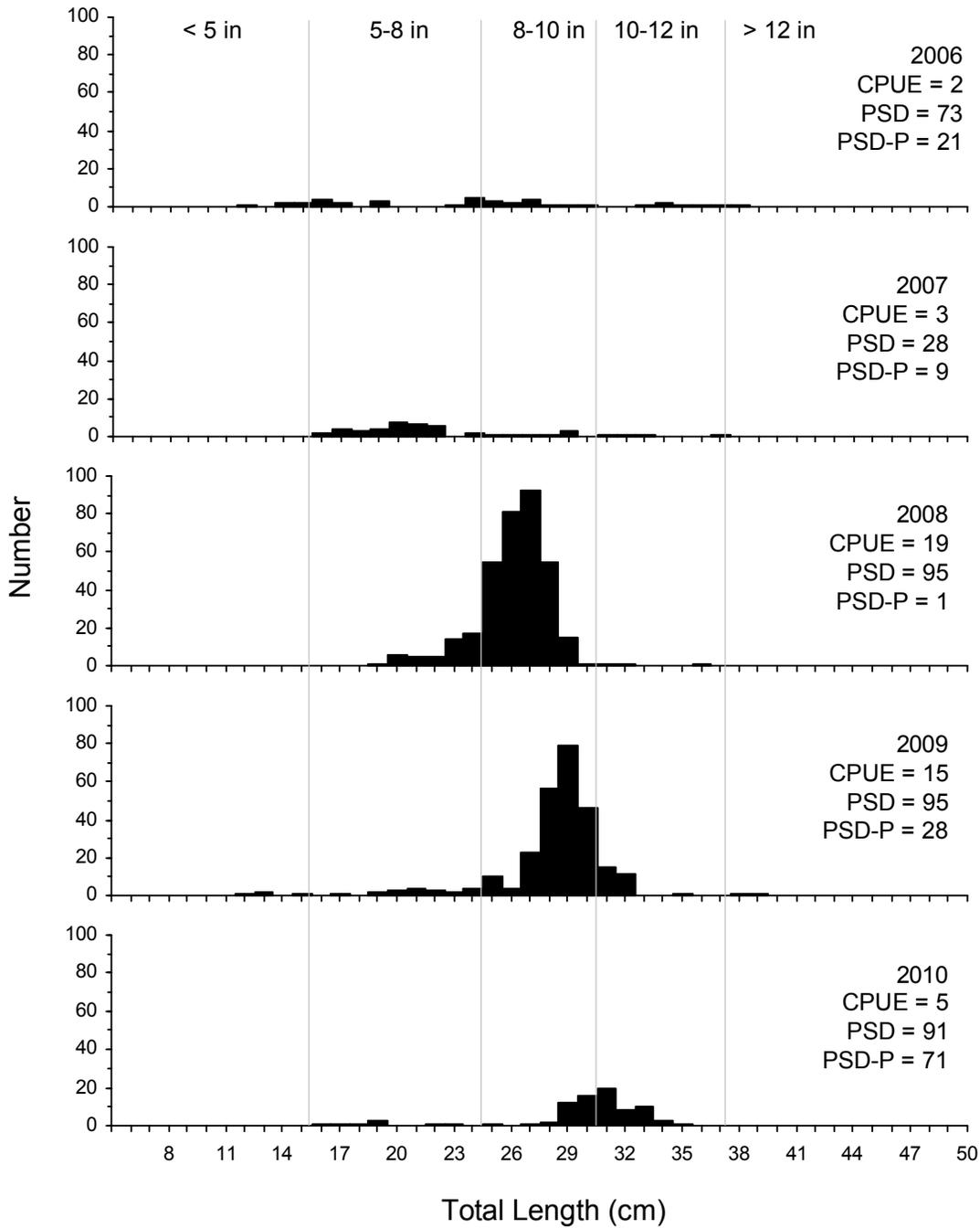


Figure 7. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for black bullhead captured using frame nets in Pickerel Lake, 2006-2010.

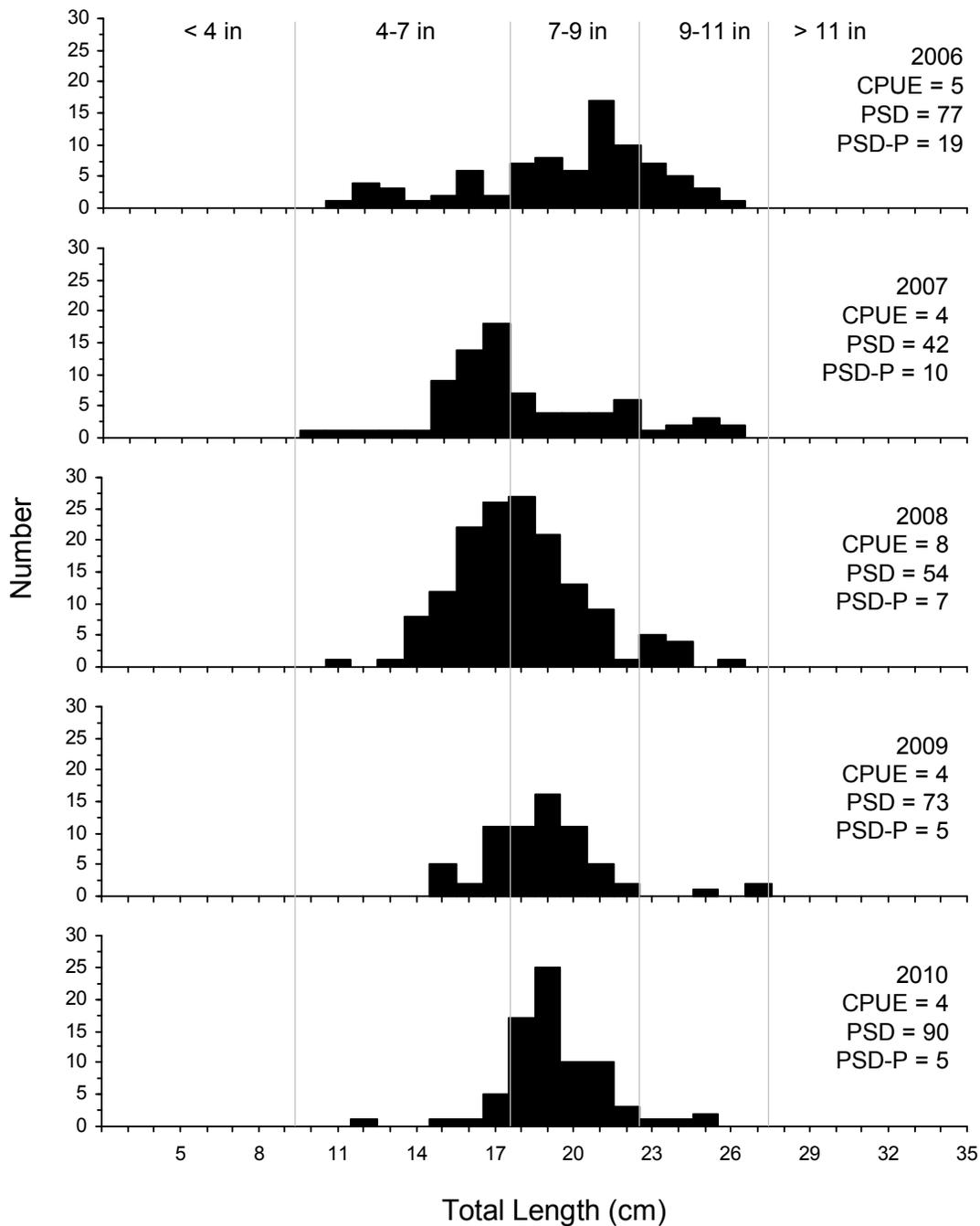


Figure 8. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for rock bass captured using frame nets in Pickerel Lake, 2006-2010.