# Lake Poinsett

## Site Description

***Location***

| | |
|---|---|
| Water designation number (WDN) | 32-0001-00 |
| Legal description | T112N-R52W-Sec.3-6; T113N-R52W-Sec.14-16,20-23,26-34 |
| County (ies) | Hamlin/Brookings |
| Location from nearest town | 7.0 miles west of Estelline, SD |

***Survey Dates and Sampling Information***

| | |
|---|---|
| Survey dates | July 22-24, 2014 (FN, GN)<br>September 8, 2014 (EF-WAE) |
| Frame net sets (n) | 17 |
| Gill net sets (n) | 6 |
| Fall electrofishing-WAE (min) | 58 |

***Morphometry (Figure 1)***

| | |
|---|---|
| Watershed area (acres) | 292,197 |
| Surface area (acres) | 7,903 |
| Maximum depth (ft) | 22 |
| Mean depth (ft) | 17 |

***Ownership and Public Access***

Lake Poinsett is a meandered lake owned by the State of South Dakota and the fishery is managed by the SDGFP. The SDGFP maintains four public access sites on Lake Poinsett including one in a State Recreation Area (Figure 1; Figure 2). Ownership of the Lake Poinsett shoreline includes the State of South Dakota and private ownership. The shoreline of Lake Poinsett is highly developed and supports many cabins and homes.

***Watershed and Land Use***

The 30,834 acre Lake Poinsett sub-watershed (HUC-12) is located within the larger Lake Poinsett (HUC-10) watershed. Land use within the watershed is primarily agricultural including a mix of cropland, pasture or grassland, and shelterbelts. Additionally, several smaller communities (e.g., Badger, Hayti) are located within the watershed.

***Water Level Observations***

The OHWM elevation for Lake Poinsett is 1651.5 fmsl and the outlet elevation is 1650.5 fmsl. The elevation of Lake Poinsett on May 13, 2014 was 1652.0 fmsl; 1.1 ft higher than the fall 2013 elevation of 1650.9 fmsl. On October 15, 2014 the elevation was 1650.7 fmsl.

***Fish Management Information***

| | |
|---|---|
| Primary species | smallmouth bass, walleye, yellow perch |
| Other species | bigmouth buffalo, black bullhead, black crappie, bluegill, channel catfish, common carp, green sunfish, northern pike, orangespotted sunfish, river carpsucker, shorthead redhorse, spottail shiner, white bass, white crappie, white sucker, yellow bullhead |
| Lake-specific regulations | walleye: minimum length 15” |
| Management classification | warm-water semi-permanent |
| Fish consumption advisories | none |

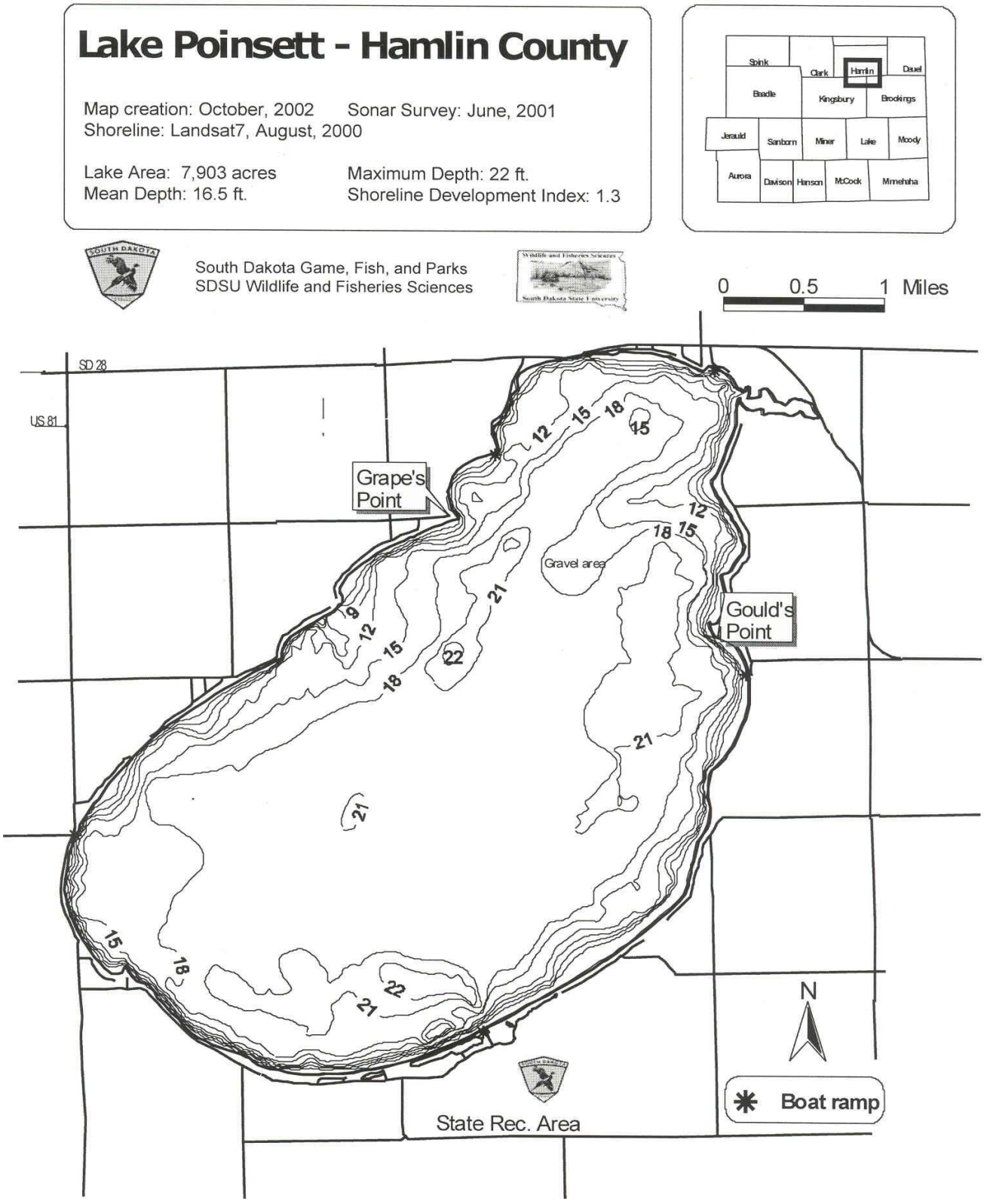


Figure 1. Map depicting access points and depth contours of Lake Poinsett, Hamlin County, South Dakota.

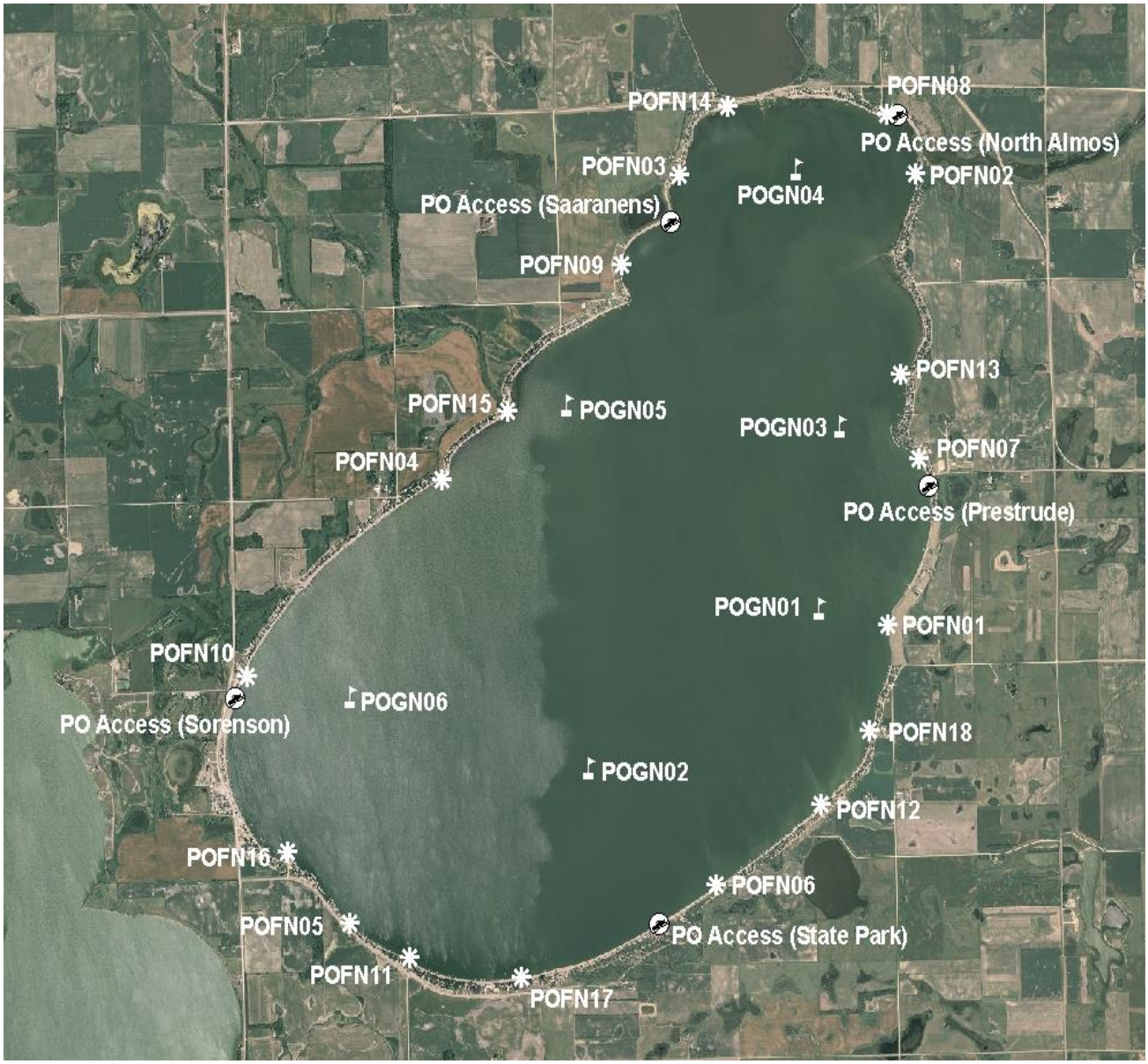


Figure 2. Map depicting access sites and standardized net locations for Lake Poinsett, Hamlin County, South Dakota. POFN= frame nets, POGN= gill nets

## 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.

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

4) Maintain a mean frame net CPUE of stock-length black bullhead ≤ 100.

## Results and Discussion

Lake Poinsett is one of South Dakota's largest natural lakes with a surface area of nearly 8,000 acres. Lake Poinsett receives water from Lake Albert and Dry Lake. Historically, Lake Poinsett has been a popular destination for recreational activities including fishing, boating, swimming, water-skiing, and camping. Public access to Lake Poinsett is exceptional with access locations on the north, east, south (State Recreation Area), and west shores of the lake. Currently, Lake Poinsett is primarily managed as a smallmouth bass, walleye, and yellow perch fishery.

*Primary Species*

Smallmouth bass: 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 northeastern South Dakota glacial lakes (Bacula 2009). Spring night electrofishing to monitor smallmouth bass population parameters in Poinsett Lake was not conducted during 2014, but is scheduled to be conducted biennially during even years (i.e., 2016, 2018, 2020…).

Walleye: The mean gill net CPUE of stock-length walleye was 11.7 (Table 1) and above the minimum objective (≥ 10 stock-length walleye/net night; Table 3). Since 2005, mean gill net CPUE's have ranged from a low of 5.0 (2006) to a high of 27.7 (2011; Table 2). The 2014 mean gill net CPUE represented an increase from the 2013 CPUE of 6.7 (Table 2) and suggested high relative abundance.

Walleye captured in the gill net catch ranged in TL from 39 to 59 cm (15.4 to 23.2 in), had a PSD of 44 and a PSD-P of 4 (Table 1; Figure 3). The PSD was within the objective range 30-60; while, the PSD-P was slightly below the objective range of 5-10 (Table 3). In 2014, approximately 44% of walleye captured in gill nets were above the 38-cm (15-in) minimum-length restriction and available for harvest on Lake Poinsett (Figure 4).

In recent years, strong walleye year classes have been produced in both stocked (e.g., 2009) and non-stocked (e.g., 2007 and 2008) years (Table 4; Table 6; Kaufman et. al 2013). In 2014, otoliths collected from a sub-sample of gill net captured walleye suggested the presence of six year-classes (2008-2013; Table 4). The 2009 and 2011 year classes, which coincided with fry stockings, comprised 31% and 46%, respectively, of walleye in the gill net catch (Table 4).

The 2014 mean fall night electrofishing CPUE of age-0 walleye was 992.2 (Table 1) and indicated production of a large year class, which coincided with a fry stocking (Table 1; Table 6). Stocked fry were marked with Oxytetracycline (OTC) so that the contribution of stocked fish could be evaluated; the estimated stocking contribution was 26% (Table 4). While a combination of fry stocking and natural reproduction contributed to the large 2014 year class, recruitment is unknown and will be assessed in future surveys.

Walleye in Lake Poinsett typically attain quality length and the minimum length limit (38 cm; 15 in) by age 3 (Table 5). Since 2005, the weighted mean TL at capture for age-3 walleye has ranged from 361 to 480 mm (14.2 to 18.9 in; Table 5). Growth of the 2009-2011 year classes has been slower than was observed among year-classes produced from 2004-2008 (Table 5). Age-3 weighted mean TL at capture values have decreased in each of the past three surveys (i.e., 2012-2014; Table 5). The cause of decreased walleye growth is unknown but may be linked to increased relative abundance of individual year classes (Table 4) and/or decreased prey availability (i.e. white bass) since 2008. Gill net captured walleye had mean Wr values that ranged from 88 to 94 for all length categories (e.g., stock to quality) sampled, with the mean Wr of stock-length individuals being 90 (Table 1). No discernible length-related trends in condition were apparent.

Yellow Perch: The mean gill net CPUE of stock-length yellow perch was 40.5 (Table 1) and above the minimum objective (≥ 30 stock-length yellow perch/net night; Table 3). Since 2005, mean gill net CPUE values have ranged from a low of 0.8 (2005) to a high of 137.2 (2010; Table 2). Based on the 2014 gill net CPUE, relative abundance is considered high.

Gill net captured yellow perch ranged in TL from 11 to 32 cm (4.3 to 12.6 in), with the PSD and PSD-P values of 26 and 11 (Table 1; Figure 4). Both the PSD and PSD-P were near management objectives of 30-60 and 5-10 (Table 3).

Otoliths were collected from a sub-sample of gill net captured yellow perch; five consecutive year classes were present (2009-2013; Table 7). The 2013 year class was the most represented and comprised 57% of yellow perch in the gill net catch (Table 7).

Yellow perch in Lake Poinsett typically surpass quality-length (20 cm; 8 in) by age 2 (Table 8). However, growth of the 2012 cohort (age 2 in 2014) has been slower than that of year classes produced from 2007-2011. From 2009-2013, weighted mean TL at capture values for age-2 yellow perch ranged from 214 to 246 mm (8.4 to 9.7 in; Table 8). In 2014, the weighted mean TL at capture at age 2 was 181 mm (7.1 in; Table 8). As with most populations, males tend to be smaller at a given age than females, particularly at older ages (Table 8). Gill net captured yellow perch had high condition with mean Wr values that exceeded 110 for all length categories (e.g., stock to quality)

sampled. The mean Wr of stock-length yellow perch was 114 (Table 1). No length-related trends in condition were apparent.

*Other Species*

Bullheads: The bullhead community in Lake Poinsett is comprised of both black and yellow bullhead. From 2005-2010, few black or yellow bullhead were captured (Table 2). In 2012, an increase in mean frame net CPUE values occurred for both species Table 2; Figure 5). In 2014, the mean frame net CPUE of stock-length individuals was 10.2 and 6.3 for black and yellow bullhead, respectively (Table 1). Currently, relative abundance is moderate.

Frame net captured black bullhead ranged in TL from 12 to 40 cm (4.7 to 15.7 in), had a PSD of 25 and a PSD-P of 22; yellow bullhead ranged in TL from 15 to 35 cm (5.9 to 13.8 in), had a PSD of 99 and a PSD-P of 99 (Table 1; Figure 5).

No age or growth information was collected. No length-related trends in condition were apparent for either species. For black bullhead, mean Wr values ranged from 88 to 92 for all length categories (e.g., stock to quality) sampled, with the mean Wr of stock-length individuals being 90 (Table 1). The majority of yellow bullhead in the frame net catch were in the memorable-trophy length category that had a mean Wr of 106.

Channel Catfish: Channel catfish in Lake Poinsett have generally been considered to be present at a low density with mean gill net CPUE values that have ranged from a low of 0.0 (2010) to a high of 2.5 (2013; Table 2). In 2014, four channel catfish that ranged in TL from 53 to 77 cm (20.9 to 30.3 in) were captured by gill nets, which resulted in a mean gill net CPUE of 0.7 (Table 1). Although abundance is low the potential exists for anglers to catch channel catfish in Lake Poinsett.

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. Northern pike relative abundance has generally been considered low, with mean gill net CPUE values ranging from 0.0 to 1.0 from 2003-2010 (Table 2). The mean gill net CPUE of stock-length northern pike increased substantially in 2011, with a mean gill net CPUE of 7.3 (Table 2). Since 2011, the mean gill net CPUE of stock-length northern pike has declined and in 2014 the mean gill net CPUE was 1.2 (Table 1). Relative abundance is considered moderate.

Gill net captured northern pike ranged in TL from 54 to 76 cm (21.3 to 29.9 in), had a PSD of 100, and a PSD-P of 43 (Table 1). No age and growth information was collected in 2014. Sampled stock-length northern pike had a mean Wr value of 87 (Table 1).

White Bass: White bass were not abundant in either the gill net or frame net catch. Frame nets captured 12 stock-length white bass that ranged in TL from 34 to 42 cm (13.4 to 16.5 in) resulting in a mean frame net CPUE of 0.8 (Table 1). Five white

bass that ranged in TL from 35 to 44 cm (13.8 to 17.3 in) were captured by gill nets, which resulted in a mean gill net CPUE of 0.8 (Table 1).

No age and growth information was available. The mean Wr values for stock-length white bass captured in frame nets and gill nets were 103 and 107, respectively (Table 1). However, condition indices should be interpreted with caution as sample size was low.

Other: Bigmouth buffalo, black crappie, common carp, spottail shiner, and white sucker were other fish species captured in low numbers during the 2014 survey (Table 1).

Bigmouth buffalo, common carp, and white bass are commonly harvested through a permit by commercial fisherman. The approximate commercial harvest during the winter of 2013-2014 was: 7,600 pounds of common carp; 41,000 pounds of bigmouth buffalo; and 3,600 pounds of white bass.

## Management Recommendations

1) Conduct fish community assessment surveys utilizing gill nets and frame nets on an annual basis (next survey scheduled in summer 2015) to monitor fish relative abundance, fish population size structure, 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, when water conditions allow [i.e., water levels are high enough to inundate in shore habitat rock, rip-rap)].

4) 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].

5) Maintain the 381-mm (15 in) minimum length limit on walleye. The regulation is designed to protect smaller fish from harvest and increase average fish size (Lucchesi and Blackwell 2009).

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 frame nets, gill nets and electrofishing in Lake Poinsett, 2014. Confidence intervals include 80 percent (± CI-80) or 90 percent (± CI-90). BIB= bigmouth buffalo; BLB= black bullhead; BLC= black crappie; CCF= channel catfish; COC= common carp; NOP= northern pike; SMB= smallmouth bass; SPS= spottail shiner; WAE= walleye; WHB= white bass; WHS= white sucker; YEB= yellow bullhead; YEP= yellow perch

| | Abundance | | Stock Density Indices | | | | Condition | |
|---|---|---|---|---|---|---|---|---|
| Species | CPUE | CI-80 | PSD | CI-90 | PSD-P | CI-90 | Wr | CI-90 |
| *Frame nets* | | | | | | | | |
| BIB | 0.5 | 0.4 | 100 | 0 | 44 | 33 | 83 | --- |
| BLB | 10.2 | 3.0 | 25 | 6 | 22 | 5 | 90 | <1 |
| BLC | 1.5 | 0.3 | 84 | 13 | 84 | 13 | 107 | 1 |
| COC | 0.2 | 0.2 | 100 | 0 | 100 | 0 | 87 | 9 |
| NOP | 1.0 | 0.3 | 100 | 0 | 88 | 14 | 78 | 8 |
| SMB | 1.4 | 0.4 | 83 | 14 | 39 | 18 | 107 | 2 |
| WAE | 2.4 | 0.6 | 32 | 13 | 5 | 6 | 88 | 1 |
| WHB | 0.8 | 0.4 | 100 | 0 | 100 | 0 | 103 | <1 |
| WHS | 0.4 | 0.2 | 100 | 0 | 100 | 0 | 97 | 3 |
| YEB | 6.3 | 2.1 | 99 | 1 | 99 | 1 | 106 | <1 |
| YEP | 0.1 | 0.1 | 0 | --- | 0 | --- | 111 | --- |
| *Gill nets* | | | | | | | | |
| BIB | 0.5 | 0.3 | 67 | 67 | 67 | 67 | 101 | 11 |
| BLB | 0.5 | 0.7 | 0 | --- | 0 | --- | 101 | 18 |
| BLC | 0.3 | 0.5 | 0 | --- | 0 | --- | 124 | <1 |
| CCF | 0.7 | 0.5 | 100 | 0 | 75 | 59 | 117 | --- |
| COC | 0.8 | 0.8 | 100 | 0 | 100 | 0 | 103 | 10 |
| NOP | 1.2 | 0.8 | 100 | 0 | 43 | 39 | 87 | 2 |
| SMB | 0.7 | 0.6 | 100 | 0 | 75 | 59 | 100 | 8 |
| SPS[1] | 8.8 | 5.7 | --- | --- | --- | --- | --- | --- |
| WAE | 11.7 | 2.7 | 44 | 10 | 4 | 4 | 90 | <1 |
| WHB | 0.8 | 0.7 | 100 | 0 | 100 | 0 | 107 | 3 |
| WHS | 3.5 | 1.0 | 95 | 8 | 71 | 18 | 104 | 3 |
| YEP | 40.5 | 9.0 | 26 | 5 | 11 | 3 | 114 | <1 |
| *Electrofishing* | | | | | | | | |
| WAE[2] | 992.2 | --- | --- | --- | --- | --- | --- | --- |

[1] All fish sizes

[2] Fall electrofishing-WAE; catch rate (CPUE) represents age-0 walleye/hour

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 using gill nets, frame nets, and electrofishing in Lake Poinsett, 2005-2014. BIB= bigmouth buffalo; BLB= black bullhead; BLC= black crappie; BLG= bluegill; CCF= channel catfish; COC= common carp; NOP= northern pike; OSF= orangespotted sunfish; SHR= shorthead redhorse; SMB= smallmouth bass; SPS= spottail shiner; WAE= walleye; WHB= white bass; WHS= white sucker; YEB= yellow bullhead; YEP= yellow perch

| | CPUE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Species | 2005 | 2006[4] | 2007[4] | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| *Frame nets* | | | | | | | | | | |
| BIB | 0.1 | --- | --- | 0.0 | 1.8 | 0.4 | --- | 0.0 | 4.2 | 0.5 |
| BLB | 0.2 | --- | --- | 0.6 | 0.3 | 0.2 | --- | 79.7 | 4.4 | 10.2 |
| BLC | 0.0 | --- | --- | 0.0 | 0.0 | 0.1 | --- | 4.5 | 0.4 | 1.5 |
| BLG | 0.0 | --- | --- | 0.0 | 0.0 | 0.0 | --- | 0.1 | 0.0 | 0.0 |
| CCF | 1.6 | --- | --- | 0.7 | 0.1 | 0.4 | --- | 0.8 | 0.2 | 0.0 |
| COC | 0.0 | --- | --- | 0.2 | 1.1 | 0.6 | --- | 0.3 | 2.7 | 0.2 |
| NOP | 1.0 | --- | --- | 1.3 | 0.6 | 0.5 | --- | 5.9 | 3.6 | 1.0 |
| OSF [1] | 0.1 | --- | --- | 0.0 | 0.0 | 0.0 | --- | 0.0 | 0.0 | 0.0 |
| SHR | 0.0 | --- | --- | 0.1 | 0.1 | 0.0 | --- | 0.2 | 0.1 | 0.0 |
| SMB | 0.0 | --- | --- | 4.3 | 0.3 | 1.7 | --- | 2.2 | 1.2 | 1.4 |
| WAE | 0.1 | --- | --- | 1.4 | 4.1 | 0.3 | --- | 4.0 | 1.4 | 2.4 |
| WHB | 0.0 | --- | --- | 0.7 | 0.6 | 0.1 | --- | 3.1 | 0.4 | 0.8 |
| WHS | 0.5 | --- | --- | 1.4 | 2.4 | 0.7 | --- | 1.1 | 0.2 | 0.4 |
| YEB | 0.0 | --- | --- | 0.0 | 0.0 | 0.0 | --- | 19.3 | 2.7 | 6.3 |
| YEP | 4.3 | --- | --- | 2.3 | 0.4 | 22.4 | --- | 0.6 | 0.1 | 0.1 |
| *Gill nets* | | | | | | | | | | |
| BIB | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.5 |
| BLB | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 2.5 | 0.2 | 0.5 |
| BLC | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| CCF | 1.2 | 2.7 | 1.0 | 0.3 | 0.5 | 0.0 | 0.8 | 2.2 | 2.5 | 0.7 |
| COC | 0.2 | 0.8 | 1.0 | 0.0 | 0.0 | 0.3 | 0.3 | 2.8 | 1.3 | 0.8 |
| NOP | 0.0 | 0.7 | 0.8 | 0.5 | 0.0 | 1.0 | 7.3 | 2.0 | 1.3 | 1.2 |
| OSF[1] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| SHR | 0.2 | 0.3 | 0.3 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| SMB | 0.8 | 0.7 | 1.8 | 0.2 | 0.2 | 0.2 | 0.3 | 1.3 | 1.3 | 0.7 |
| SPS[1] | 0.0 | 0.0 | 0.0 | 0.2 | 2.0 | 4.7 | 0.0 | 0.0 | 0.5 | 8.8 |
| WAE | 8.3 | 5.0 | 6.3 | 5.7 | 16.0 | 10.0 | 27.7 | 12.5 | 6.7 | 11.7 |
| WHB | 15.0 | 11.7 | 10.0 | 3.2 | 3.5 | 3.5 | 1.3 | 2.2 | 0.8 | 0.8 |
| WHS | 2.0 | 1.5 | 1.2 | 0.5 | 0.2 | 2.7 | 2.7 | 2.3 | 4.3 | 3.5 |
| YEB | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 0.3 | 0.0 |
| YEP | 0.8 | 5.7 | 6.2 | 16.0 | 13.2 | 137.2 | 22.0 | 22.0 | 15.0 | 40.5 |
| *Electrofishing* | | | | | | | | | | |
| SMB[2] | --- | --- | --- | --- | --- | 19.6 | --- | 30.6 | --- | --- |
| WAE[3] | 97.5 | 117.0 | 79.8 | 19.5 | 257.2 | 0.0 | 4.0 | 305.0 | 2.0 | 992.2 |

[1] All fish sizes
[2] Spring electrofishing-SMB
[3] Fall electrofishing-WAE; catch rate (CPUE) represents age-0 Walleye/hour
[4] Monofilament gill net mesh size (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 relative weight (Wr) for selected species captured using gill nets, frame nets, and electrofishing in Lake Poinsett, 2005-2014. BLB= black bullhead; SMB= smallmouth bass; WAE= walleye; YEP= yellow perch

| Species | 2005 | 2006[1] | 2007[1] | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Objective |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Frame nets* | | | | | | | | | | | |
| BLB | | | | | | | | | | | |
| CPUE | < 1 | --- | --- | 1 | <1 | <1 | --- | 80 | 4 | 10 | ≤ 100 |
| PSD | 100 | --- | --- | 100 | 33 | 67 | --- | 36 | 100 | 25 | --- |
| PSD-P | 100 | --- | --- | 100 | 33 | 67 | --- | 14 | 43 | 22 | --- |
| Wr | 101 | --- | --- | 90 | 102 | 88 | --- | 95 | 87 | 90 | --- |
| *Gill nets* | | | | | | | | | | | |
| WAE | | | | | | | | | | | |
| CPUE | 8 | 5 | 6 | 6 | 16 | 10 | 28 | 13 | 7 | 12 | ≥ 10 |
| PSD | 72 | 63 | 42 | 59 | 17 | 32 | 16 | 57 | 48 | 44 | 30-60 |
| PSD-P | 10 | 23 | 18 | 12 | 2 | 2 | 5 | 4 | 8 | 4 | 5-10 |
| Wr | 97 | 85 | 89 | 88 | 90 | 94 | 85 | 82 | 85 | 90 | --- |
| YEP | | | | | | | | | | | |
| CPUE | 1 | 6 | 6 | 16 | 13 | 137 | 22 | 22 | 15 | 41 | ≥ 30 |
| PSD | 60 | 100 | 32 | 17 | 27 | 9 | 93 | 83 | 81 | 26 | 30-60 |
| PSD-P | 60 | 38 | 22 | 16 | 15 | 3 | 5 | 55 | 23 | 11 | 5-10 |
| Wr | 105 | 105 | 107 | 105 | 106 | 106 | 107 | 107 | 110 | 114 | --- |
| *Electrofishing* | | | | | | | | | | | |
| SMB[2] | | | | | | | | | | | |
| CPUE | --- | --- | --- | --- | --- | 20 | --- | 31 | --- | --- | --- |
| PSD | --- | --- | --- | --- | --- | 45 | --- | 13 | --- | --- | 40-70 |
| PSD-P | --- | --- | --- | --- | --- | 30 | --- | 6 | --- | --- | 10-40 |
| Wr | --- | --- | --- | --- | --- | 116 | --- | 99 | --- | --- | --- |

[1] Monofilament gill net mesh size (0.75", 1.00", 1.25", 1.50", 2.00" and 2.50")
[2] Spring 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 10,000) from Lake Poinsett, 2010-2014.

| | Year Class | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Survey Year | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 |
| 2014 | | 1 | 12 | 32 | 2 | 22 | 1 | | | | | |
| 2013 | --- | | | 8 | 12 | 18 | 1 | 1 | 1 | | | |
| 2012 | --- | --- | | 12 | 1 | 68 | 2 | 2 | 1 | | | 1 |
| 2011 | --- | --- | --- | | | 145 | 7 | 8 | 3 | 2 | | 1 |
| 2010 | --- | --- | --- | --- | | 51 | 21 | 8 | 3 | | 2 | |
| # stocked | | | | | | | | | | | | |
| fry | 400[1] | | 400 | 300[2] | | 400[3] | | | 805 | 1170 | | 1052 |
| sm. fingerling | | | | | | | | | | | | |
| lg. fingerling | | | | | | | | | | | | |

[1] 50% of stocked walleye were OTC marked; 7 of 52 otoliths collected from fall electrofished age-0 walleye exhibited marks for an estimated stocking contribution of 26%.
[2] 50% of stocked walleye were OTC marked; only three age-0 walleye were collected during fall electrofishing. All exhibited marks.
[3] Stocked walleye were OTC marked; 8 of 50 otoliths collected from fall electrofished age-0 walleye exhibited marks for an estimated stocking contribution of 16%. However, it was noted that extensive cracking through the focus of examined otoliths likely influenced mark visibility; therefore, the stocking contribution may have been higher.

Table 5. Weighted mean TL at capture (mm) for walleye age-1 through age-10 sampled in experimental gill nets (expanded sample size) from Lake Poinsett, 2005-2014. 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 |
| 2014 | 264(1) | 317(12) | 361(32) | 421(2) | 458(22) | 581(1) | --- | --- | --- | --- |
| 2013 | --- | 280(8) | 370(12) | 409(18) | 528(1) | 556(1) | 623(1) | --- | --- | --- |
| 2012 | 205(12) | 307(1) | 394(68) | 477(2) | 508(2) | 577(1) | --- | --- | 706(1) | --- |
| 2011 | | 346(145) | 440(7) | 499(8) | 547(3) | 444(2) | --- | 534(1) | --- | --- |
| 2010 | 250(51) | 369(21) | 436(8) | 480(3) | --- | 517(2) | --- | --- | --- | --- |
| 2009 | 265 (47) | 358 (44) | 468 (2) | 478 (3) | 496 (1) | 514 (1) | 580(1) | --- | --- | --- |
| 2008 | 233 (21) | 372 (14) | 450 (4) | 506 (3) | 520 (4) | --- | --- | 568 (1) | --- | --- |
| 2007[1] | 265 (9) | 362 (19) | 433 (1) | 506 (6) | --- | 554 (1) | --- | --- | --- | --- |
| 2006[1] | 223 (39) | 378 (1) | 461 (12) | --- | 563 (2) | --- | 532 (1) | --- | 559 (1) | --- |
| 2005[1] | 269 (3) | 385 (37) | 480 (1) | --- | 511 (2) | 519 (3) | 491 (1) | --- | --- | --- |

[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 Poinsett, 2003-2014. WAE= walleye

| Year | Species | Size | Number |
|---|---|---|---|
| 2003 | WAE | fry | 10,520,000 |
| 2005 | WAE | fry | 11,700,000 |
| 2006 | WAE | fry | 8,050,000 |
| 2009 | WAE | fry | 4,000,000 |
| 2011 | WAE | fry | 3,000,000 |
| 2012 | WAE | fry | 4,000,000 |
| 2014 | WAE | fry | 4,000,000 |

Table 7. Year class distribution based on the age/length summary for yellow perch sampled in gill nets from Lake Poinsett, 2009-2014.

| | Year Class | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Survey Year | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 |
| 2014 | | 140 | 55 | 41 | 2 | 8 | | | | |
| 2013 | --- | | 8 | 56 | 7 | 19 | | | | |
| 2012 | --- | --- | | 23 | 11 | 98 | | | | |
| 2011 | --- | --- | --- | | 6 | 126 | | | | |
| 2010 | --- | --- | --- | --- | | 761 | 47 | 14 | 2 | |
| 2009 | --- | --- | --- | --- | --- | | 59 | 19 | 1 | 1 |

Table 8. Weighted mean TL (mm) at capture by gender for yellow perch captured in experimental gill nets (expanded sample size) from Lake Poinsett, 2009-2014.

| | Age | | | | |
|---|---|---|---|---|---|
| Year | 1 | 2 | 3 | 4 | 5 |
| 2014 | | | | | |
| Male | 150(39) | 179(6) | 228(1) | 237(1) | --- |
| Female | 156(90) | 181(45) | 245(42) | --- | 306(8) |
| Combined | 154(140) | 181(55) | 245(41) | 237(2) | 306(8) |
| 2013 | | | | | |
| Male | 146(2) | 196(5) | 247(3) | 264(3) | --- |
| Female | 147(6) | 215(51) | 244(4) | 279(16) | --- |
| Combined | 147(8) | 214(56) | 246(7) | 277(19) | --- |
| 2012 | | | | | |
| Male | 156(3) | 217(1) | 234(19) | --- | --- |
| Female | 156(18) | 228(10) | 265(78) | --- | --- |
| Combined | 156(23) | 226(11) | 259(98) | --- | --- |
| 2011 | | | | | --- |
| Male | 156(4) | 212(16) | --- | --- | --- |
| Female | 155(1) | 232(99) | --- | --- | --- |
| Combined | 156(6) | 228(126) | --- | --- | --- |
| 2010 | | | | | --- |
| Male | 161(126) | 227(9) | 258(4) | --- | --- |
| Female | 169(484) | 242(40) | 299(8) | 328(2) | --- |
| Combined | 167(761) | 239(47) | 281(14) | 328(2) | --- |
| 2009 | | | | | --- |
| Male | 144(14) | 220(1) | --- | --- | --- |
| Female | 147(44) | 247(18) | 313(1) | 325(1) | --- |
| Combined | 147(59) | 246(19) | 313(1) | 325(1) | --- |

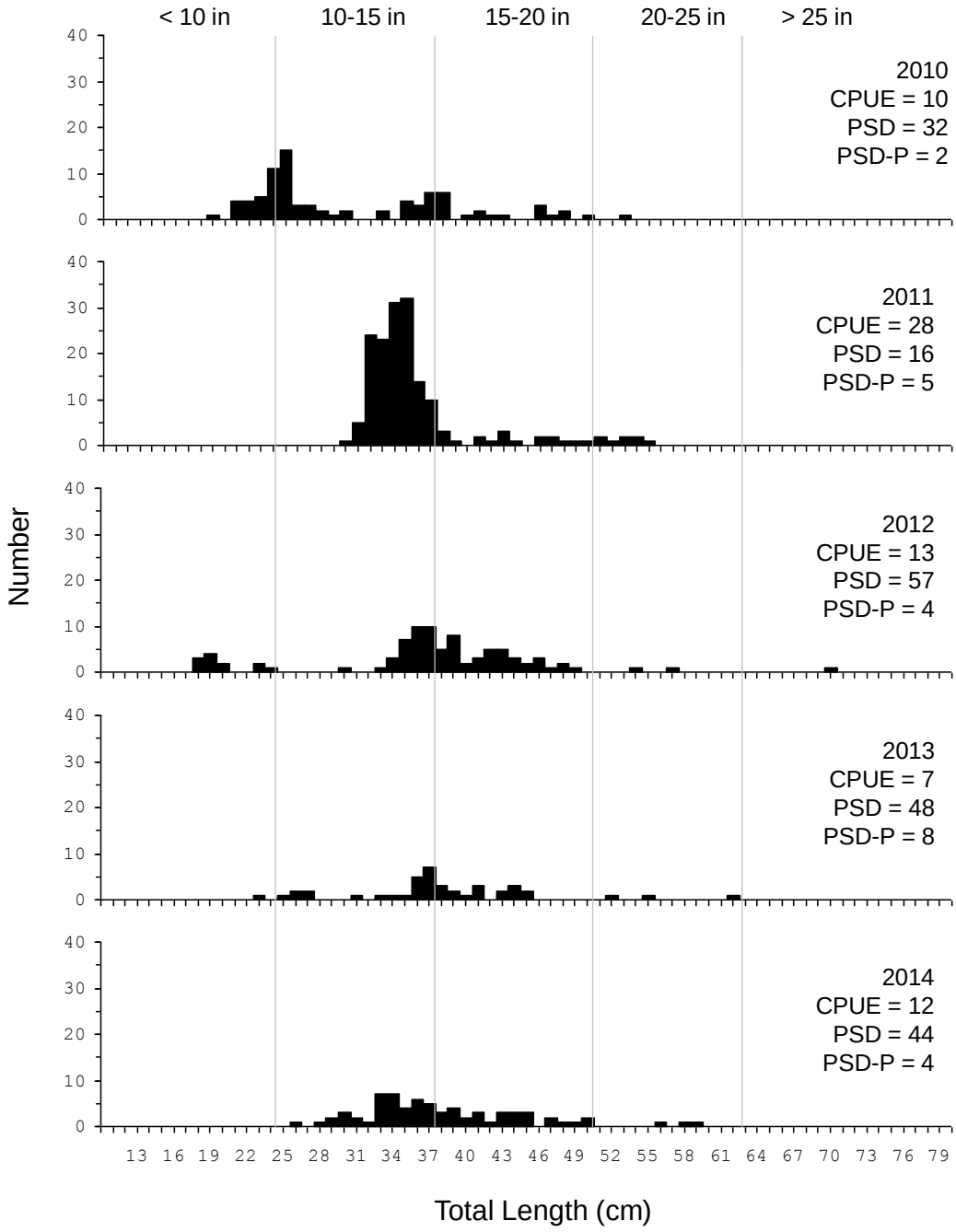


Figure 3. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for walleye captured using experimental gill nets in Lake Poinsett, 2010-2014.

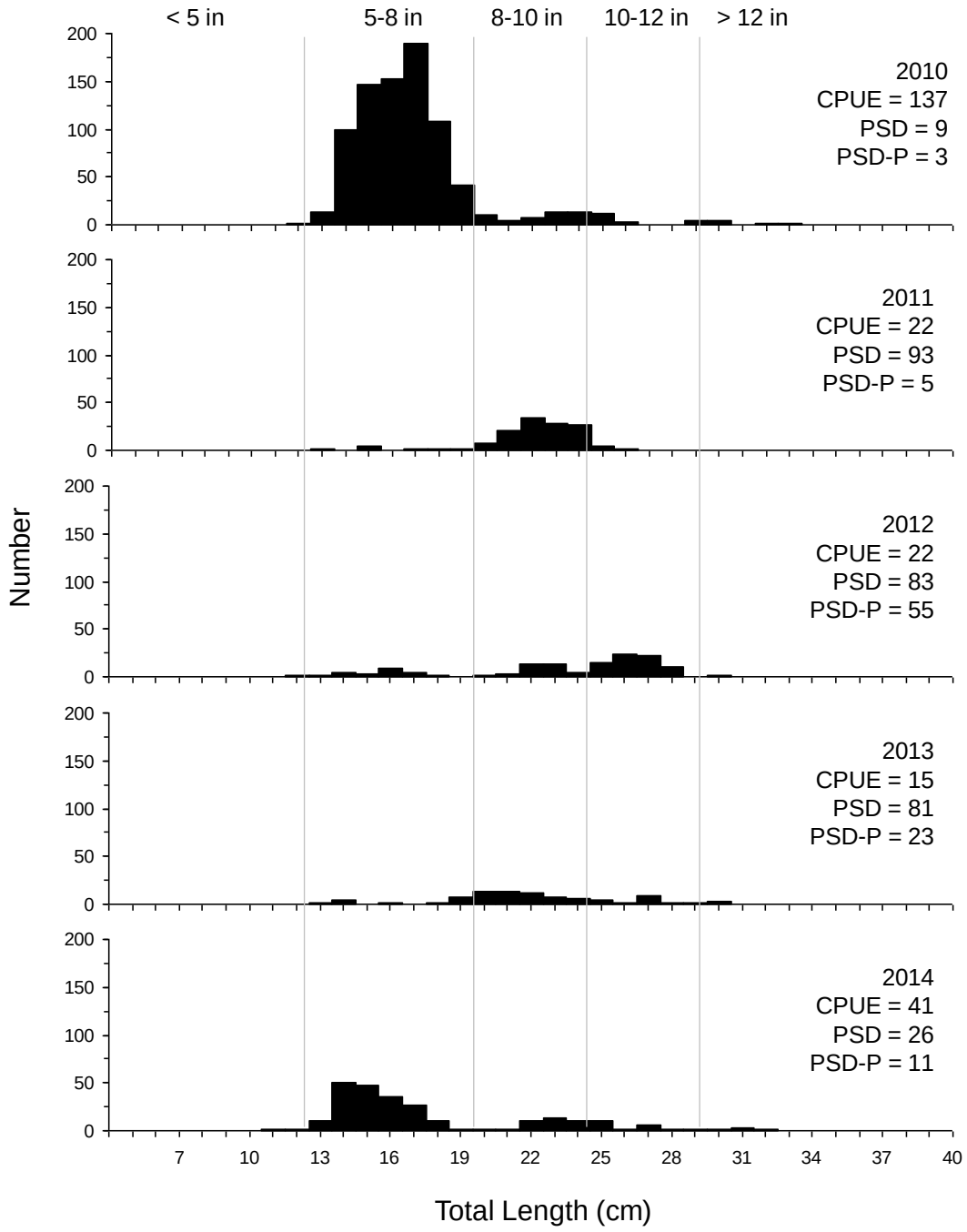


Figure 4. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for yellow perch captured using experimental gill nets in Lake Poinsett, 2010-2014.

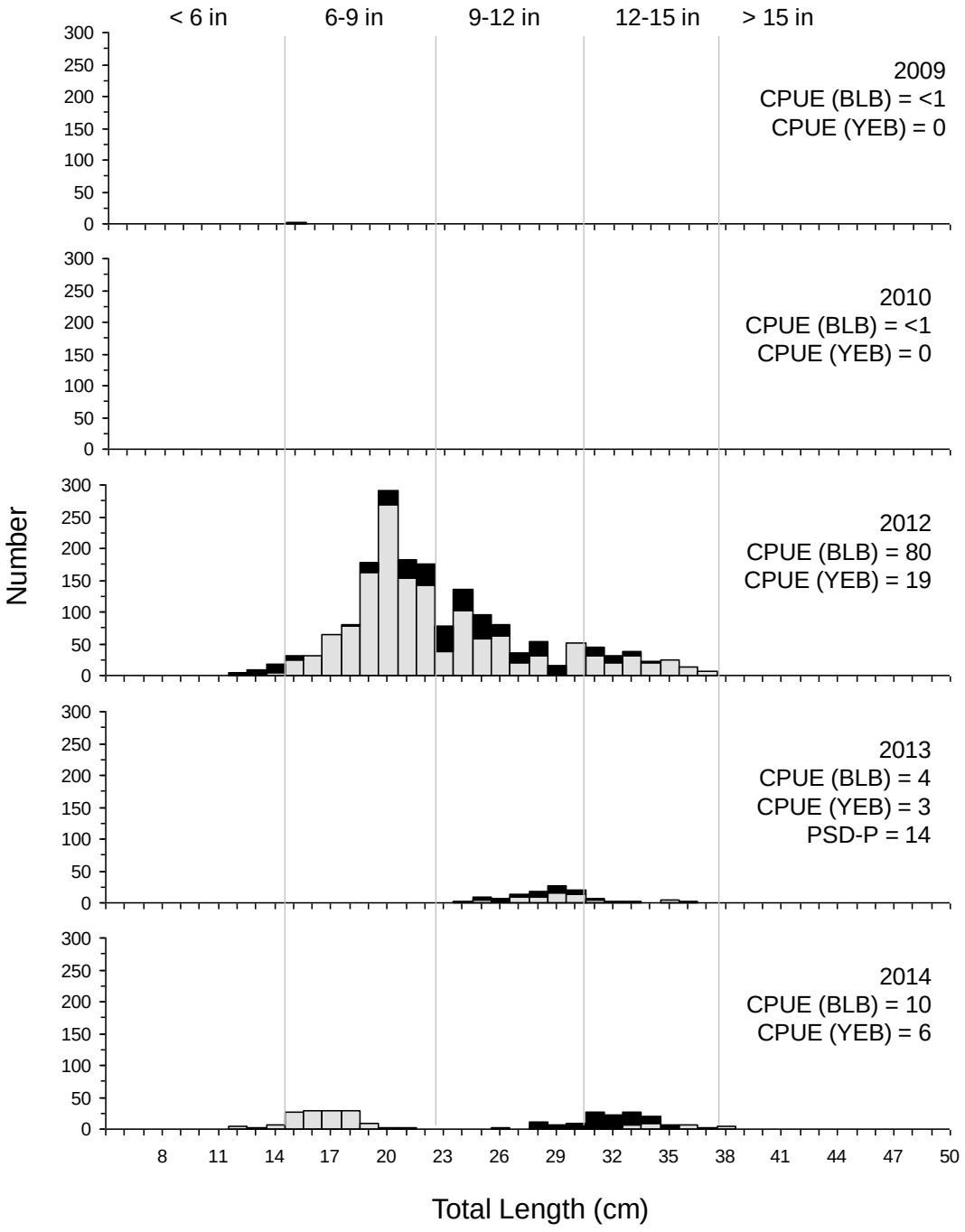


Figure 5. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for black (gray bars) and yellow bullhead (black bars) captured using frame nets in Lake Poinsett, 2009-2014.