# Lake Louise Survey Summary

Lake Louise is a 163-acre prairie impoundment located northwest of Miller, South Dakota. Louise is surrounded by land managed by SD Game, Fish and Parks either as a Game Production Area or as a State Recreation Area with full campground facilities. Fishing access is plentiful around the lake. A concrete boat ramp, a handicap accessible dock, two recently added fishing docks (2017), and many other areas along the shoreline exist to provide fishing access. Adjacent to the handicap dock and submerged are several commercially made plastic trees to help attract fish within casting distance of the dock.

Areas of emergent cattail and reed exist throughout the impoundment. Submergent vegetation is adequate throughout and at times very dense in the upper reaches and shallows of the impoundment. Vegetation growth extends out to about 6 to 7 feet of water depth most years. At the time of survey water levels were above full, this is not always the case on Lake Louise. Aquatic invasive flowering rush was found in areas around the lake. Dissolved oxygen, at time of survey, was more than adequate to fully support fish. No thermocline had developed, but typically does later in the summer.

Lake Louise primary fish species include Largemouth Bass, Bluegill, Yellow Perch, Walleye, Northern Pike, and Black Bullhead. Depending on water levels, each species maybe flourishing or not. Reports of a winterkill during the winter of 2018-19 were received. Thus, a shorten electrofishing survey was conducted in 2019 to determine the extent of the fish kill. In which was determined to only a minor winterkill occurred during the winter of 2018-19. A full survey is schedule for the summer of 2020.

- **Largemouth Bass:** Largemouth Bass are increasing in abundance with 163.0 fish/hr electrofishing, the highest abundance in recent for stock length and greater fish (2018 survey). Many of these Largemouth Bass are young (3 years old and less) and is a good sign for the future, with many of these in the eight to twelve-inch class. The plumpness and growth rates for Largemouth Bass are at or above average as well. The 2019 survey illustrated similar results with 138 fish/hr electrofishing with vast majority of them 137 of the 138 collected were age-0 Largemouth Bass. Showing avoidance of larger fish from our gear (day vs night shocking) and a good year-class of young produced for future fishing.

- **Bluegill:** Bluegill abundance has increase in Lake Louise to 20.5 fish/net-night (2018) which is above the average of 5.3 fish/net-night. Condition or plumpness of the Bluegill is very good. The average size increased to 5.5 inches with a size range of 3 to 10 inches. Growth of Bluegill is good and near the state average for growth. The 2019 survey yielded a 58 fish/hr electrofished for Bluegill with a fair size distribution (PSD of 36).

- **Yellow Perch:** Yellow Perch abundance had a slight decrease in abundance, but average size had increased to 7.5 inches (2018). The condition had a slight decrease but is fair for a small impoundment. Growth of Yellow Perch was near the statewide average for Lake Louise. The 2019 boat electrofishing survey collected 20 fish/hr and a number of age-0 fish were seen.

- **Walleye:** Walleye in Lake Louise are a secondary species to provide anglers another species to catch, especially in the spring of the year. Recently walleye abundance has been low, but the average size has been large. Due to a stocking of large fingerlings in the Fall 2017, abundance has increased. Many of these Walleye are now nine inches (2018 survey) and should provide a future fishery. No Walleye were collected during boat electrofishing in the fall, 2019.

- **Black Bullhead:** Black Bullhead abundance in the 2018 survey has decreased and the average size had increased to around 11 inches. This size of Black Bullhead can be a trophy catch for a child. Low abundance continued in 2019 boat electrofishing survey with only 11 collected.

- **Northern Pike:** Northern Pike were first seen in the 2003 survey and continue to provide a fishery since. Abundance is currently low but fish of several sizes exist. Some Northern Pike weighing in the 'teens can be found. A few Northern Pike were collected during the 2019 survey including a few age-0.

- **Other Species:** Common Carp were recently discovered in the lake during the 2015 survey. During the 2019 survey, young common carp were abundant throughout the lake (67 age-0 and 1 adult). Later in the fall of 2019 reports of a fish kill were received and was determined to only include age-0 Common Carp.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Lake Louise below. Please contact South Dakota Game, Fish and Parks Ft. Pierre office – (605) 223-7700 for additional information.

Prepared 02-20-2020 by KDP

# SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
## Louise, Hand County
## TUR-Lake-155-000
## 2019

## Lake Information

**Name:** Louise

**County:** Hand

**Legal Description:** T113-R69-S4

**Surface Area:** 163 Acres

**Maximum Depth:** 20 Feet

**Mean Depth:** 8 Feet

## Surveys and Investigations

Survey methods used by gear type, date, and effort.

| Gear | Date | Effort |
|---|---|---|
| boat shocker (day) | Sep 06, 2019 | 3600 seconds |

## Common Fish Species Present

Largemouth Bass

Bluegill

Yellow Perch

Walleye

Northern Pike

Black Bullhead

Common Carp

## Terminology

Catch per unit effort (**CPUE**) refers to the relative abundance of a species. It is defined as the number of fish captured per unit of effort (i.e., number of fish captured per net-night or number of fish captured per hour electrofishing). In this report CPUE is typically given for only stock-length fish (see length categories table for stock lengths).

A statewide effort to help make netting efforts comparable to all waters sampled across the state, occurred in 2017, with a switch to American Fisheries Society gill nets. Past gill netting efforts were completed with different style/types of nets and are not comparable side by side.

- **AFS std gill net** – 80 ft experimental gill net containing eight panels (10 ft each) of varying monofilament meshes of 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25 and 2.50 inches.
- **std experimental gill net for non-Missouri River waters** - 150 ft experimental gill net containing six panels (25 ft each) of varying monofilament meshes of 0.5, 0.75, 1.00, 1.25, 1.50 and 2.00 inches.
- s**td experimental gill net for Missouri River reservoirs** – 300 ft experimental gill net containing six panels (50 ft each) of varying multifilament meshes of 0.5, 0.75, 1.00, 1.25, 1.50 and 2.00 inches.

$$CPUE = \frac{number\ of\ fish}{effort}$$

Population size structure is quantified using the indices proportional size distribution of quality-length fish (**PSD**) and proportional size distribution of preferred-length fish (**PSD-P**). These indices indicate the proportion of stock-length fish that are equal to or greater than a given length. Minimum lengths for stock, quality and preferred length fish are given in the length categories table.

$$PSD = \left(\frac{number\ of\ fish \geq quality\ length}{number\ of\ fish \geq stock\ length}\right) \text{x } 100$$

$$PSD - P = \left(\frac{number\ of\ fish \geq preferred\ length}{number\ of\ fish \geq stock\ length}\right) \text{x } 100$$

Relative weight (**Wr**) is used to quantify fish plumpness. Relative weight is the ratio of what a fish weighs (W) compared to a length-specific standard weight (Ws) multiplied by 100. Relative weight values of 95-105 are commonly cited as optimum values, but values in the 80s are common during summer sampling in South Dakota.

$$Wr = \left(\frac{W}{Ws}\right) \text{x } 100$$

Confidence intervals (**CI**) are provided for many of the estimates calculated in this report. The confidence interval provides a range in which the true mean is expected to fall. For example, with an 80% CI we are 80% confident that the interval contains the true value.

Length categories include stock (**S**), quality (**Q**), preferred (**P**), memorable (**M**) and trophy (**T**). Length categories for most species have been defined based on a percentage of the world record length for that species. Some species mentioned in this report do not have defined length categories. Length categories for species used in this report are provided in the following table. Measurements are the minimum total length for each category and are reported in inches (in) and centimeters (cm).

| | Stock | | Quality | | Preferred | | Memorable | | Trophy | |
|---|---|---|---|---|---|---|---|---|---|---|
| Species Name | (in) | (cm) | (in) | (cm) | (in) | (cm) | (in) | (cm) | (in) | (cm) |
| Black Bullhead | 6 | 15 | 9 | 23 | 12 | 30 | 15 | 38 | 18 | 46 |
| Black Crappie | 5 | 13 | 8 | 20 | 10 | 25 | 12 | 30 | 15 | 38 |
| Bluegill | 3 | 8 | 6 | 15 | 8 | 20 | 10 | 25 | 12 | 30 |
| Brown Trout | 8 | 20 | 12 | 30 | 16 | 40 | 20 | 50 | 18 | 46 |
| Channel Catfish | 11 | 28 | 16 | 41 | 24 | 61 | 28 | 71 | 36 | 91 |
| Freshwater Drum | 8 | 20 | 12 | 30 | 15 | 38 | 20 | 51 | 25 | 63 |
| Lake Trout | 12 | 30 | 20 | 50 | 26 | 65 | 31 | 80 | 39 | 100 |
| Largemouth Bass | 8 | 20 | 12 | 30 | 15 | 38 | 20 | 51 | 25 | 63 |
| Muskellunge | 20 | 51 | 30 | 76 | 38 | 97 | 42 | 107 | 50 | 127 |
| Northern Pike | 14 | 35 | 21 | 53 | 28 | 71 | 34 | 86 | 44 | 112 |
| Pumpkinseed | 3 | 8 | 6 | 15 | 8 | 20 | 10 | 25 | 12 | 30 |
| Rainbow Trout | 10 | 25 | 16 | 40 | 20 | 50 | 26 | 65 | 31 | 80 |
| Rudd | 6 | 15 | 10 | 25 | 12 | 30 | 15 | 38 | 19 | 48 |
| Sauger | 8 | 20 | 12 | 30 | 15 | 38 | 20 | 51 | 25 | 63 |
| Smallmouth Bass | 7 | 18 | 11 | 28 | 14 | 35 | 17 | 43 | 20 | 51 |
| Walleye | 10 | 25 | 15 | 38 | 20 | 51 | 25 | 63 | 30 | 76 |
| White Bass | 6 | 15 | 9 | 23 | 12 | 30 | 15 | 38 | 18 | 46 |
| White Crappie | 5 | 13 | 8 | 20 | 10 | 25 | 12 | 30 | 15 | 38 |
| Yellow Bullhead | 4 | 10 | 7 | 18 | 9 | 23 | 11 | 28 | 14 | 36 |
| Yellow Perch | 5 | 13 | 8 | 20 | 10 | 25 | 12 | 30 | 15 | 38 |

## Catch Summary of Stock Length Fish

Catch per unit effort (CPUE), proportional size distribution (PSD), proportional size distribution of preferred length fish (PSD-P), and relative weight (Wr) for species sampled in survey with 80% confidence interval (CI-80).

*** Methods/Species that ignore stock length**

| | | | Abundance | | Stock Density Indices | | | | Condition | |
|---|---|---|---|---|---|---|---|---|---|---|
| Gear | Species | Sample Size (n) | CPUE | CI-80 | PSD | CI-80 | PSD-P | CI-80 | Wr | CI-80 |
| boat shocker (day) | Black Bullhead | 11 | 5.0 | 4.8 | 100 | | 40 | | 93 | 5 |
| | Bluegill | 69 | 58.0 | 37.2 | 36 | 9 | 0 | | 108 | 2 |
| | Common Carp | 68 | 1.0 | 1.5 | 100 | | 0 | | 105 | |
| | Largemouth Bass | 138 | 1.0 | 1.5 | 100 | | 0 | | 112 | |
| | Northern Pike | 9 | 7.0 | 4.2 | 0 | | 0 | | 110 | 4 |
| | Yellow Perch | 46 | 20.0 | 11.6 | 15 | | 0 | | 91 | 3 |

## 10-Year Catch Per Unit Effort by Gear and Species

Catch per unit effort (CPUE) and average (Avg) of species across 10 years using different gear types.

| | | CPUE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gear | Species | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Avg |
| AFS std gill net | Black Bullhead | | | | | | | | | 0.0 | | 0.00 |
| | Bluegill | | | | | | | | | 2.8 | | 2.80 |
| | Northern Pike | | | | | | | | | 0.8 | | 0.80 |
| | Walleye | | | | | | | | | 1.0 | | 1.00 |
| | Yellow Perch | | | | | | | | | 11.0 | | 11.00 |
| boat shocker (day) | Black Bullhead | | | | | | | | | | 5.0 | 5.00 |
| | Bluegill | | | | | | | | | | 58.0 | 58.00 |
| | Common Carp | | | | | | | | | | 1.0 | 1.00 |
| | Largemouth Bass | | | | | | | | | | 1.0 | 1.00 |
| | Northern Pike | | | | | | | | | | 7.0 | 7.00 |
| | Yellow Perch | | | | | | | | | | 20.0 | 20.00 |
| boat shocker (night) | Largemouth Bass | 2.0 | 8.0 | 17.0 | 24.0 | | 57.0 | 48.0 | | 164.0 | | 45.71 |
| | Walleye | 29.0 | 0.0 | 5.0 | 0.0 | | 12.0 | 6.0 | | 33.0 | | 12.14 |
| frame net (std 3/4 in) | Black Bullhead | 10.3 | 3.7 | | 9.9 | | 7.0 | 42.2 | | 23.3 | | 16.07 |
| | Bluegill | 4.7 | 1.5 | | 1.5 | | 0.3 | 4.5 | | 20.5 | | 5.50 |
| | Common Carp | 0.0 | 0.0 | | 0.0 | | 0.3 | 0.2 | | 0.0 | | 0.08 |
| | Largemouth Bass | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.1 | | 0.02 |
| | Northern Pike | 0.6 | 0.6 | | 0.8 | | 0.0 | 0.0 | | 0.1 | | 0.35 |
| | Walleye | 0.0 | 0.0 | | 0.1 | | 0.0 | 0.0 | | 0.2 | | 0.05 |
| | Yellow Perch | 3.9 | 1.4 | | 0.1 | | 0.2 | 2.5 | | 2.2 | | 1.72 |
| std exp gill net | Black Bullhead | 32.0 | 0.0 | | 52.5 | | 30.5 | 54.0 | | | | 33.80 |
| | Bluegill | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.5 | | | | 0.10 |
| | Northern Pike | 2.5 | 0.5 | | 1.5 | | 0.5 | 1.5 | | | | 1.30 |
| | Walleye | 0.0 | 0.0 | | 0.0 | | 0.0 | 3.0 | | | | 0.60 |
| | Yellow Perch | 4.5 | 15.0 | | 7.0 | | 14.5 | 97.0 | | | | 27.60 |

## 10-Year Size Structure and Condition Statistics by Gear and Species

Species proportional size distribution (PSD), proportional size distribution of preferred length fish (PSD-P), and relative weight (Wr) collected by different gear types across 10 years.

| | | | Year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gear | Species | Index | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| AFS std gill net | Black Bullhead | PSD | | | | | | | | | 0 | |
| | | PSD-P | | | | | | | | | 0 | |
| | Bluegill | PSD | | | | | | | | | 9 | |
| | | PSD-P | | | | | | | | | 0 | |
| | Northern Pike | PSD | | | | | | | | | 100 | |
| | | PSD-P | | | | | | | | | 67 | |
| | | Wr | | | | | | | | | 92 | |
| | Walleye | PSD | | | | | | | | | 100 | |
| | | PSD-P | | | | | | | | | 50 | |
| | | Wr | | | | | | | | | 90 | |
| | Yellow Perch | PSD | | | | | | | | | 45 | |
| | | PSD-P | | | | | | | | | 0 | |
| | | Wr | | | | | | | | | 76 | |
| boat shocker (day) | Black Bullhead | PSD | | | | | | | | | | 100 |
| | | PSD-P | | | | | | | | | | 40 |
| | | Wr | | | | | | | | | | 93 |
| | Bluegill | PSD | | | | | | | | | | 36 |
| | | PSD-P | | | | | | | | | | 0 |
| | | Wr | | | | | | | | | | 108 |
| | Common Carp | PSD | | | | | | | | | | 100 |
| | | PSD-P | | | | | | | | | | 0 |
| | | Wr | | | | | | | | | | 105 |
| | Largemouth Bass | PSD | | | | | | | | | | 100 |
| | | PSD-P | | | | | | | | | | 0 |
| | | Wr | | | | | | | | | | 112 |
| | Northern Pike | PSD | | | | | | | | | | 0 |
| | | PSD-P | | | | | | | | | | 0 |
| | | Wr | | | | | | | | | | 110 |
| | Yellow Perch | PSD | | | | | | | | | | 15 |
| | | PSD-P | | | | | | | | | | 0 |
| | | Wr | | | | | | | | | | 91 |
| boat shocker (night) | Largemouth Bass | PSD | 100 | 13 | 47 | 100 | | 7 | 31 | | 13 | |
| | | PSD-P | 100 | 0 | 6 | 46 | | 7 | 4 | | 2 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Wr | 125 | 124 | 118 | 114 | 117 | 112 | 110 |
| | Walleye | PSD | 14 | | 80 | | 18 | 67 | 33 |
| | | PSD-P | 0 | | 0 | | 0 | 0 | 33 |
| | | Wr | 92 | | 103 | | 92 | 93 | 90 |
| frame net (std 3/4 in) | Black Bullhead | PSD | 97 | 86 | | 2 | 94 | 99 | 97 |
| | | PSD-P | 1 | 8 | | 1 | 0 | 29 | 73 |
| | | Wr | 88 | 89 | | 91 | 100 | 88 | 87 |
| | Bluegill | PSD | 100 | 73 | | 93 | 100 | 9 | 20 |
| | | PSD-P | 60 | 67 | | 47 | 33 | 9 | 0 |
| | | Wr | 124 | 115 | | 118 | 121 | 141 | 95 |
| | Common Carp | PSD | | | | | 0 | 100 | |
| | | PSD-P | | | | | 0 | 0 | |
| | | Wr | | | | | 122 | 108 | |
| | Largemouth Bass | PSD | | | | | | | 100 |
| | | PSD-P | | | | | | | 0 |
| | | Wr | | | | | | | 51 |
| | Northern Pike | PSD | 0 | 50 | | 38 | | | 100 |
| | | PSD-P | 0 | 0 | | 0 | | | 0 |
| | | Wr | 85 | 91 | | 80 | | | 88 |
| | Walleye | PSD | | | | 100 | | | 100 |
| | | PSD-P | | | | 100 | | | 50 |
| | | Wr | | | | 90 | | | 89 |
| | Yellow Perch | PSD | 90 | 86 | | 0 | 0 | 52 | 36 |
| | | PSD-P | 3 | 14 | | 0 | 0 | 0 | 0 |
| | | Wr | 99 | 96 | | | 130 | 90 | 82 |
| std exp gill net | Black Bullhead | PSD | 92 | 0 | | 1 | 93 | 98 | |
| | | PSD-P | 0 | 0 | | 0 | 0 | 28 | |
| | | Wr | 104 | | | 96 | 110 | | |
| | Bluegill | PSD | | | | | | 0 | |
| | | PSD-P | | | | | | 0 | |
| | | Wr | | | | | | 156 | |
| | Northern Pike | PSD | 0 | 0 | | 100 | 100 | 100 | |
| | | PSD-P | 0 | 0 | | 33 | 100 | 67 | |
| | | Wr | 93 | 104 | | 95 | 92 | 101 | |
| | Walleye | PSD | | | | 0 | | 83 | |
| | | PSD-P | | | | 0 | | 0 | |
| | | Wr | | | | | | 96 | |
| | Yellow Perch | PSD | 67 | 50 | | 0 | 0 | 38 | |
| | | PSD-P | 11 | 0 | | 0 | 0 | 2 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Wr | 100 | 108 | 110 | 110 | 97 |

## Length at Capture

Mean length at capture by age across years sampled, sample size (N).

Species: Bluegill

| | | Mean Length (expanded sample number) at capture by age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ |
| 2018 | 191 | | | 131 (111) | 150 (72) | 169 (6) | 173 (1) | | 240 (1) | | |
| 2016 | 44 | | 114 (20) | 126 (20) | | | 202 (1) | 212 (2) | | 223 (1) | |
| 2015 | 3 | | 172 (2) | 209 (1) | | | | | | | |
| 2013 | 15 | | 115 (1) | 164 (4) | 185 (3) | 227 (1) | 227 (1) | 234 (2) | 243 (1) | 243 (2) | |
| 2011 | 16 | 83 (5) | | 202 (2) | | 220 (4) | 228 (2) | 229 (3) | | | |
| 2010 | 47 | | 186 (9) | | 199 (14) | 206 (22) | | | | 233 (1) | |

Species: Largemouth Bass

| | | Mean Length (expanded sample number) at capture by age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ |
| 2018 | 183 | 180 (20) | 226 (133) | 300 (24) | 345 (4) | | | | 487 (2) | | |
| 2016 | 106 | 184 (66) | 212 (14) | 295 (18) | 322 (6) | 411 (1) | 446 (1) | | | | |
| 2015 | 61 | 232 (57) | | | | 441 (4) | | | | | |
| 2013 | 24 | | 335 (4) | 380 (17) | 393 (3) | | | | | | |
| 2012 | 29 | 191 (17) | 314 (10) | 346 (1) | | 440 (1) | | | | | |
| 2011 | 8 | 277 (8) | | | | | | | | | |
| 2010 | 2 | | 405 (1) | 384 (1) | | | | | | | |

Species: Walleye

| | | Mean Length (expanded sample number) at capture by age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ |
| 2018 | 4 | | | | 424 (1) | 509 (2) | 525 (1) | | | | |
| 2016 | 6 | | 281 (1) | | 421 (5) | | | | | | |
| 2013 | 2 | | 222 (2) | | | | | | | | |

Species: Yellow Perch

| | | Mean Length (expanded sample number) at capture by age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ |
| 2018 | 44 | | 148 (9) | 182 (16) | 209 (11) | 236 (8) | | | | | |
| 2016 | 215 | 114 (21) | 191 (120) | 201 (57) | 225 (10) | 253 (7) | | | | | |
| 2015 | 29 | 160 (25) | 182 (4) | | | | | | | | |
| 2013 | 14 | | 150 (8) | 169 (2) | 180 (3) | | 195 (1) | | | | |
| 2011 | 36 | 98 (4) | 140 (12) | 204 (14) | 225 (4) | 232 (2) | | | | | |
| 2010 | 9 | | 195 (5) | 231 (3) | 260 (1) | | | | | | |

## Fish Condition

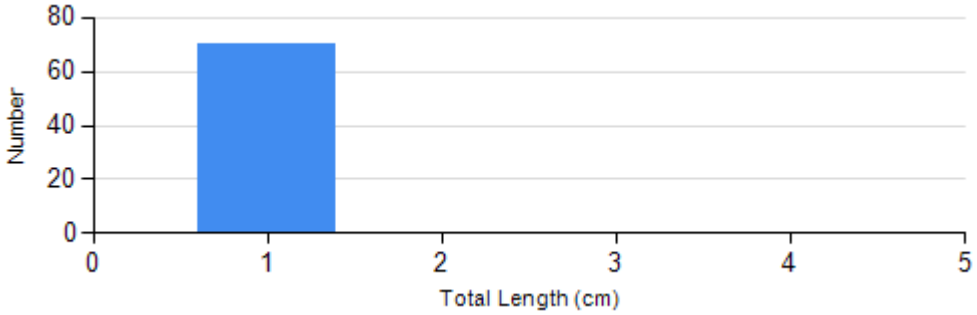
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

| | | Length Groups | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | S-Q | | Q-P | | P-M | | M | |
| Species | Year | N | Wr (SE) | N | Wr (SE) | N | Wr (SE) | N | Wr (SE) |
| Black Bullhead<br>Gill Net | 2015 | 4 | 107<br>(5.7) | 57 | 110<br>(1.4) | 0 | | 0 | |
| Bluegill<br>Frame Net | 2015 | 0 | | 2 | 125<br>(0.0) | 1 | 115 | 0 | |
| | 2016 | 41 | 146<br>(14.8) | 0 | | 4 | 117<br>(3.4) | 0 | |
| | 2018 | 165 | 94<br>(0.9) | 39 | 99<br>(2.0) | 1 | 110 | 0 | |
| Largemouth Bass<br>Electro Fishing | 2015 | 53 | 117<br>(1.3) | 0 | | 4 | 118<br>(3.7) | 0 | |
| | 2016 | 33 | 111<br>(1.4) | 13 | 116<br>(1.9) | 2 | 95<br>(3.2) | 0 | |
| | 2018 | 143 | 109<br>(0.9) | 18 | 114<br>(1.8) | 3 | 126<br>(5.5) | 0 | |
| | 2019 | 0 | | 1 | 112 | 0 | | 0 | |
| Northern Pike<br>Gill Net | 2015 | 0 | | 0 | | 1 | 92 | 0 | |
| | 2016 | 0 | | 1 | | 1 | 103 | 1 | 99 |
| | 2018 | 0 | | 1 | 99 | 2 | 89<br>(3.0) | 0 | |
| Walleye<br>Gill Net | 2016 | 1 | | 5 | 96 | 0 | | 0 | |
| | 2018 | 0 | | 2 | 88<br>(0.3) | 2 | 91<br>(0.9) | 0 | |
| Yellow Perch<br>Gill Net | 2015 | 29 | 110<br>(1.8) | 0 | | 0 | | 0 | |
| | 2016 | 120 | 99<br>(0.8) | 70 | 95<br>(1.2) | 4 | 91 | 0 | |
| | 2018 | 24 | 67<br>(2.3) | 20 | 86<br>(4.4) | 0 | | 0 | |

## Length Frequency Distribution

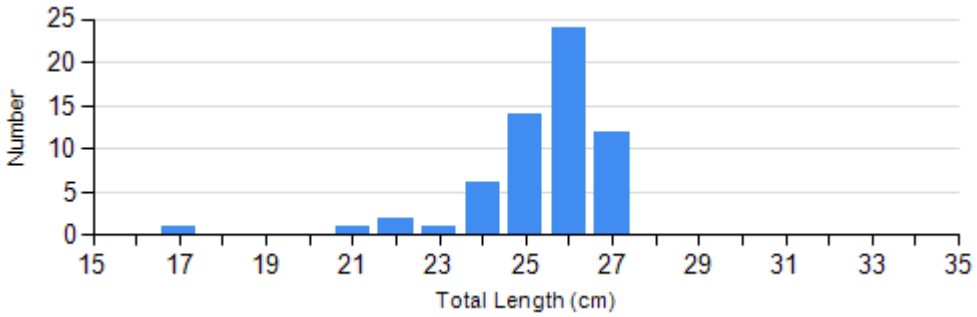
Length frequency histogram of species sampled by year.

Species: Black Bullhead
Gear: AFS std gill net

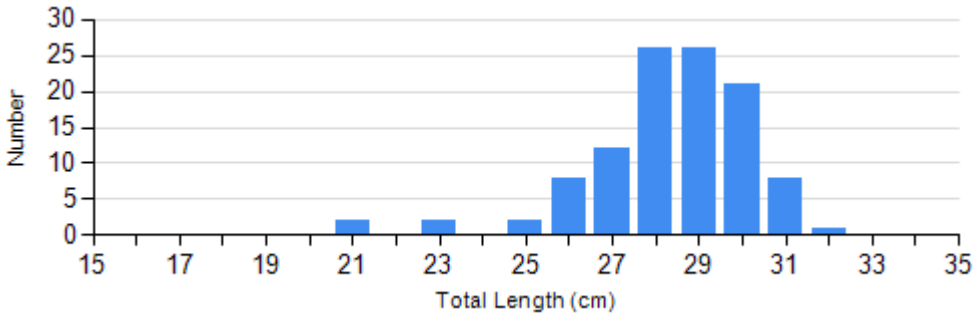



2018

Species: Black Bullhead
Gear: std exp gill net

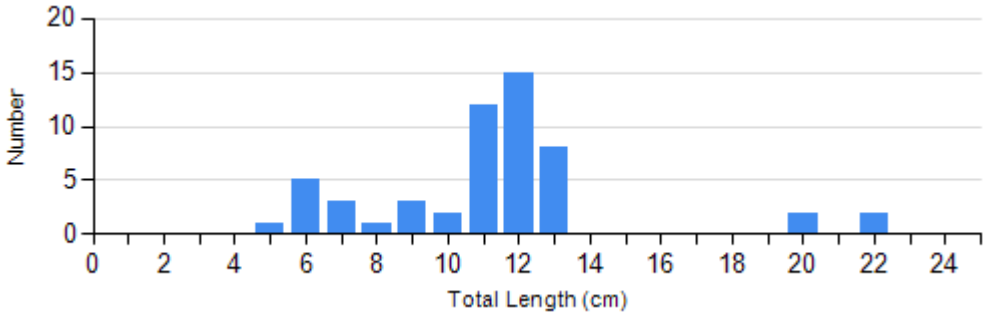



2015

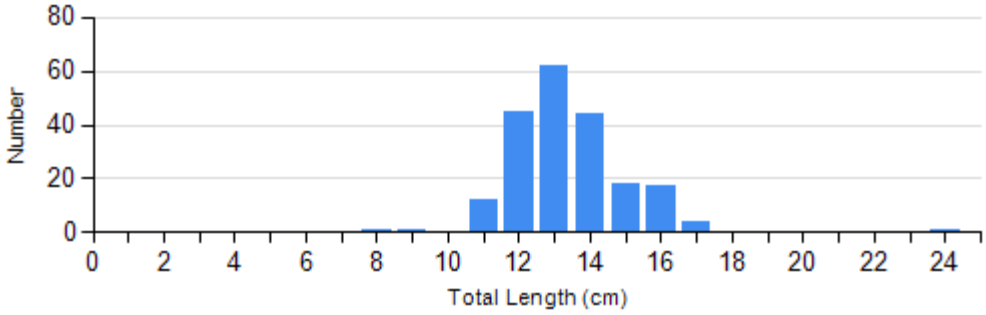



2016

Species: Bluegill
Gear: frame net (std 3/4 in)

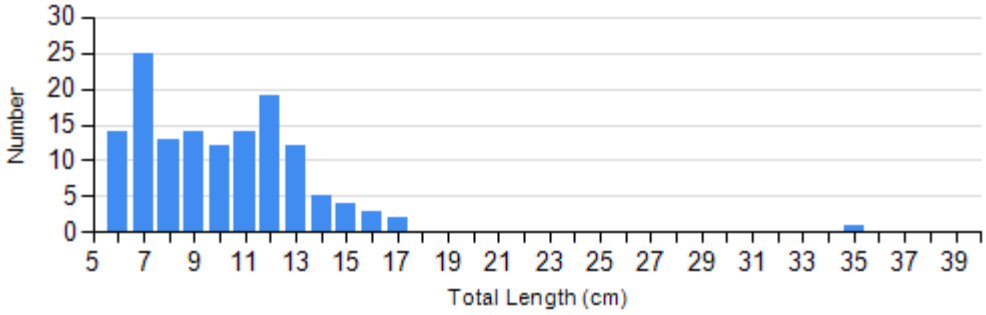



2016



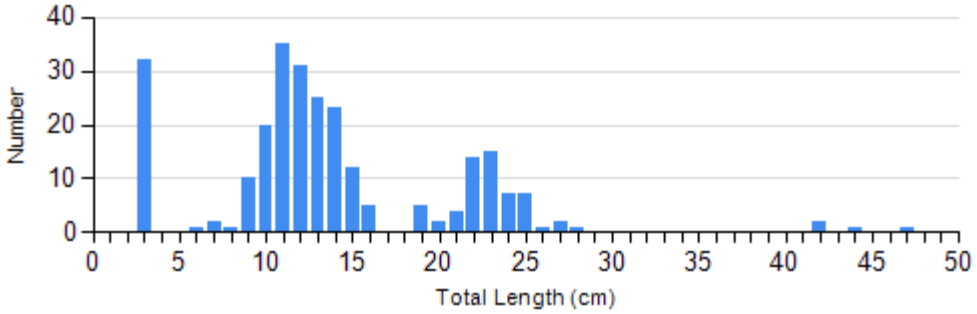

2018

Species: Largemouth Bass
Gear: boat shocker (day)

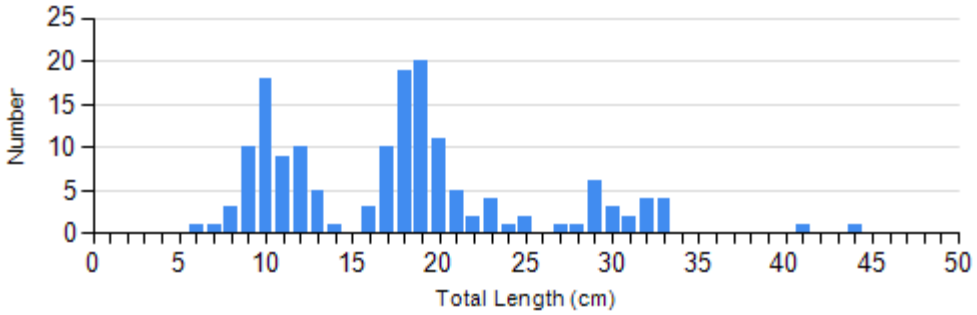



2019

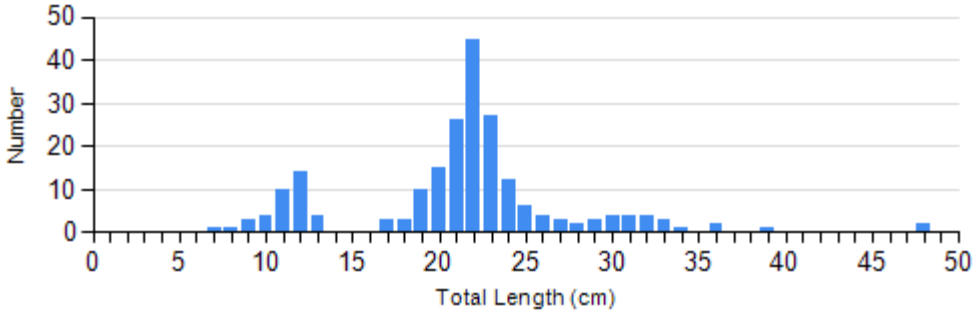
Species: Largemouth Bass
Gear: boat shocker (night)




2015

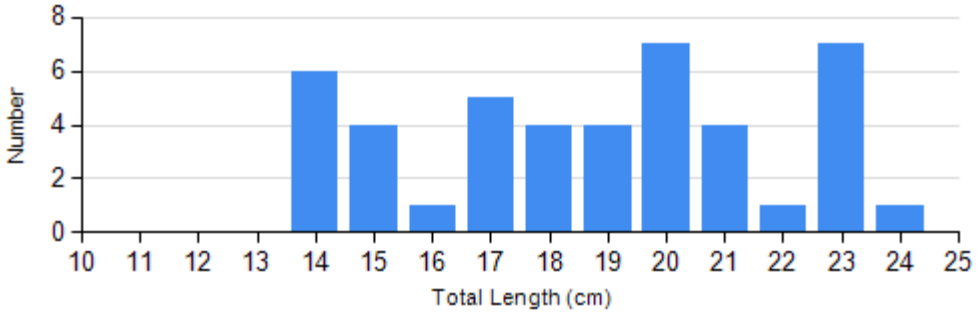



2016



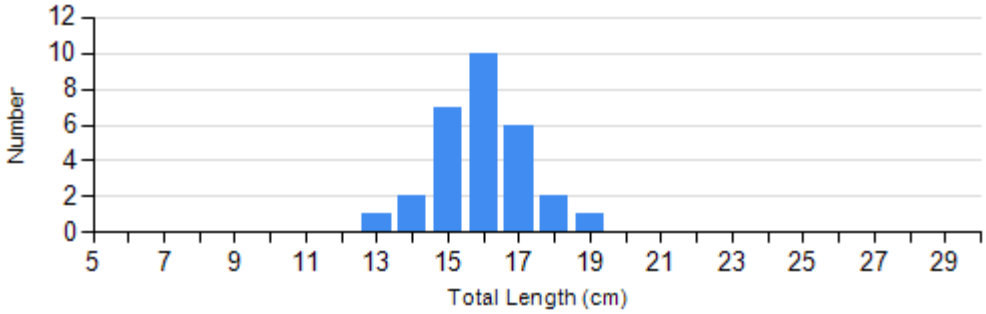

2018

Species: Yellow Perch
Gear: AFS std gill net

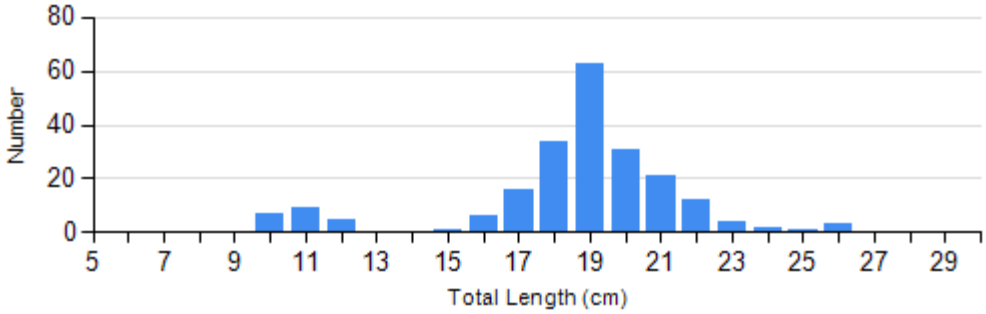



2018

Species: Yellow Perch
Gear: std exp gill net




2015

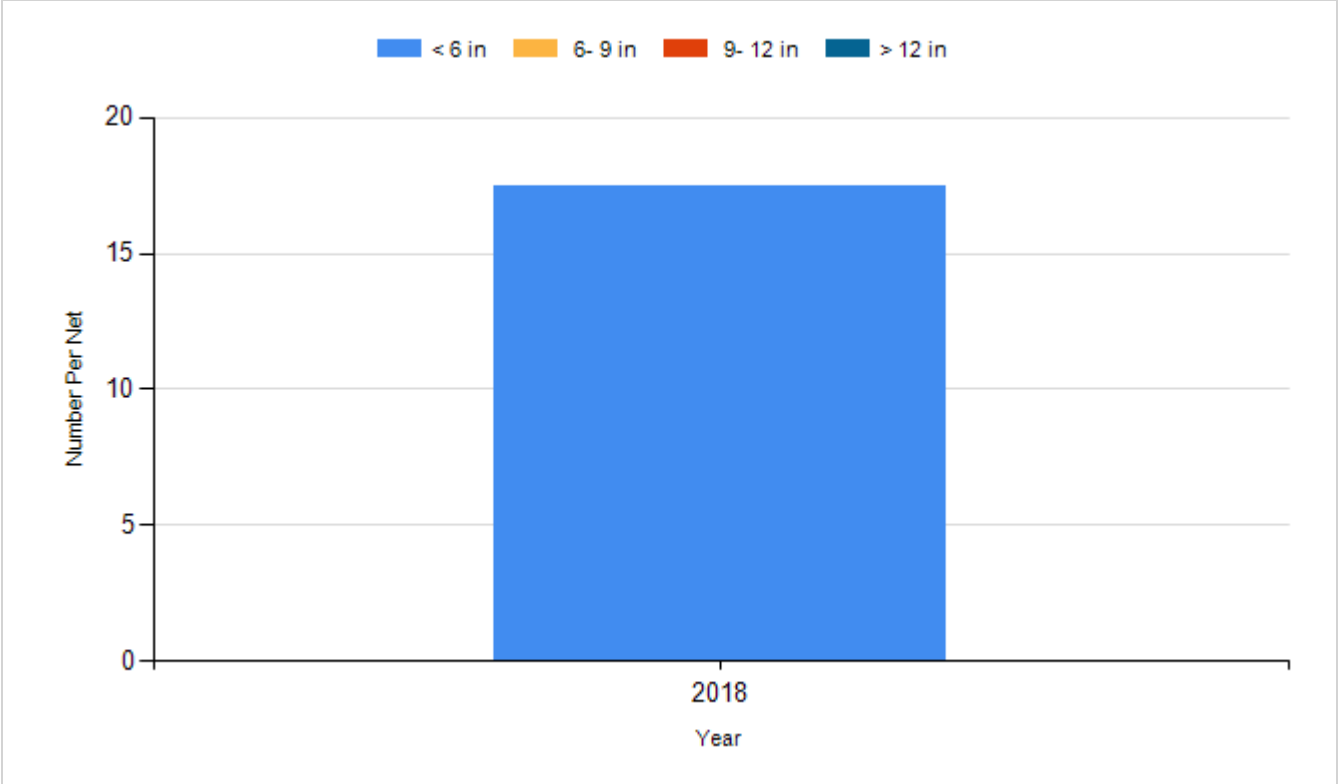



2016

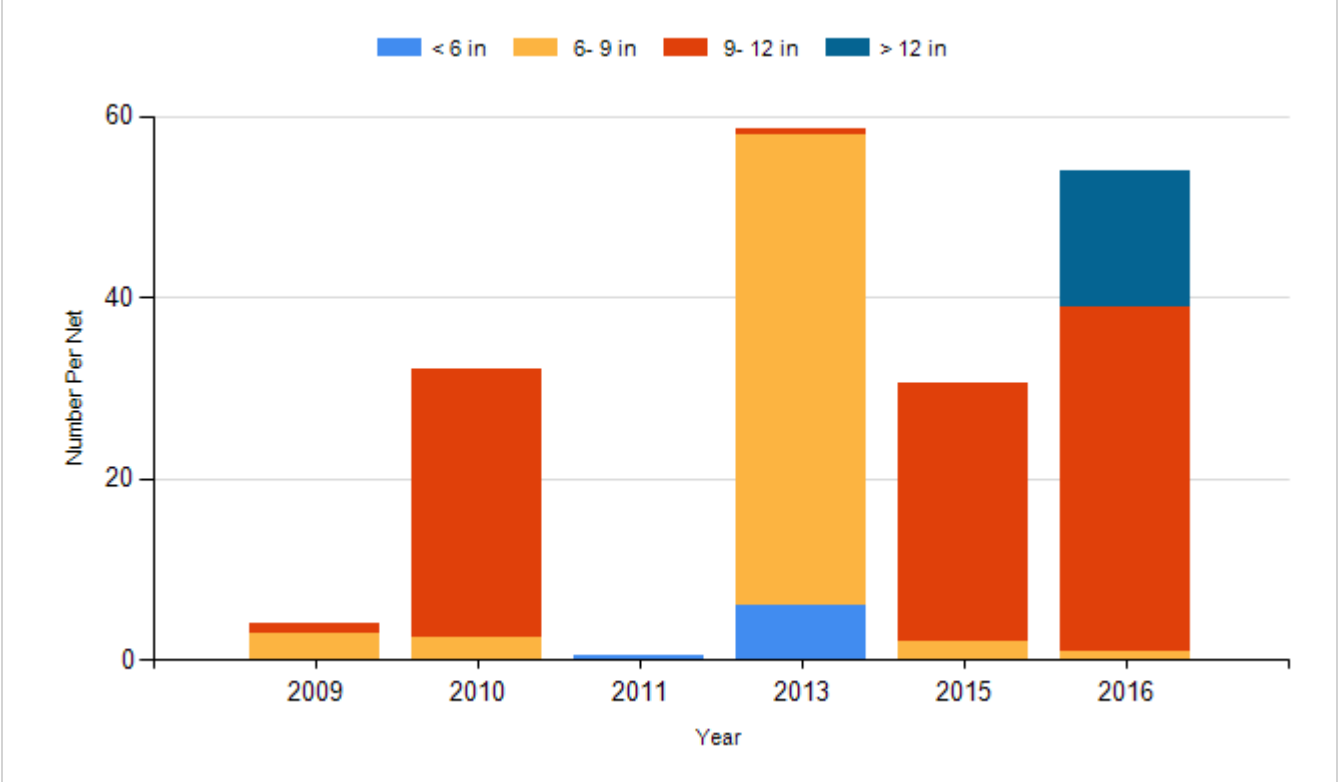
## Historic Fish Sizes and Relative Abundance

Size distribution per net by color for species sampled by year.

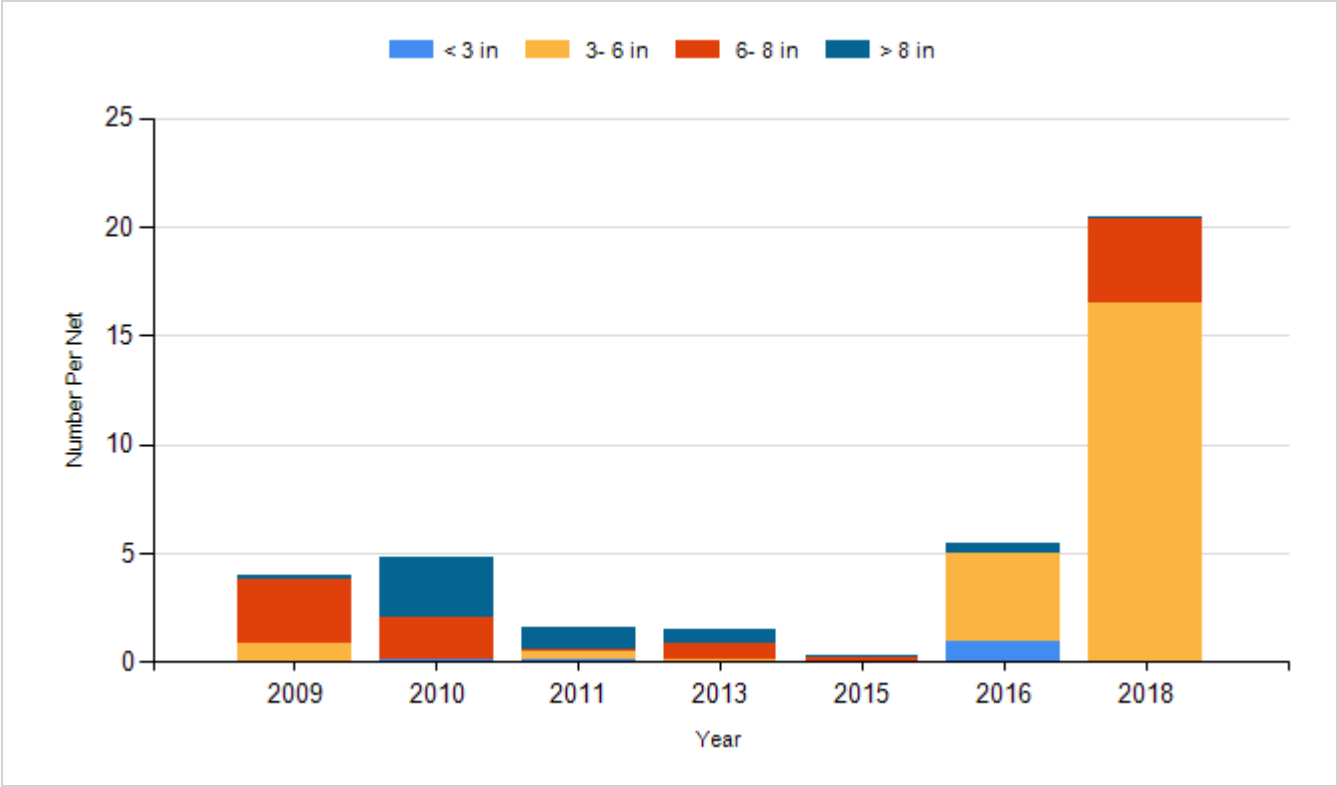
Species: Black Bullhead
Gear: AFS std gill net



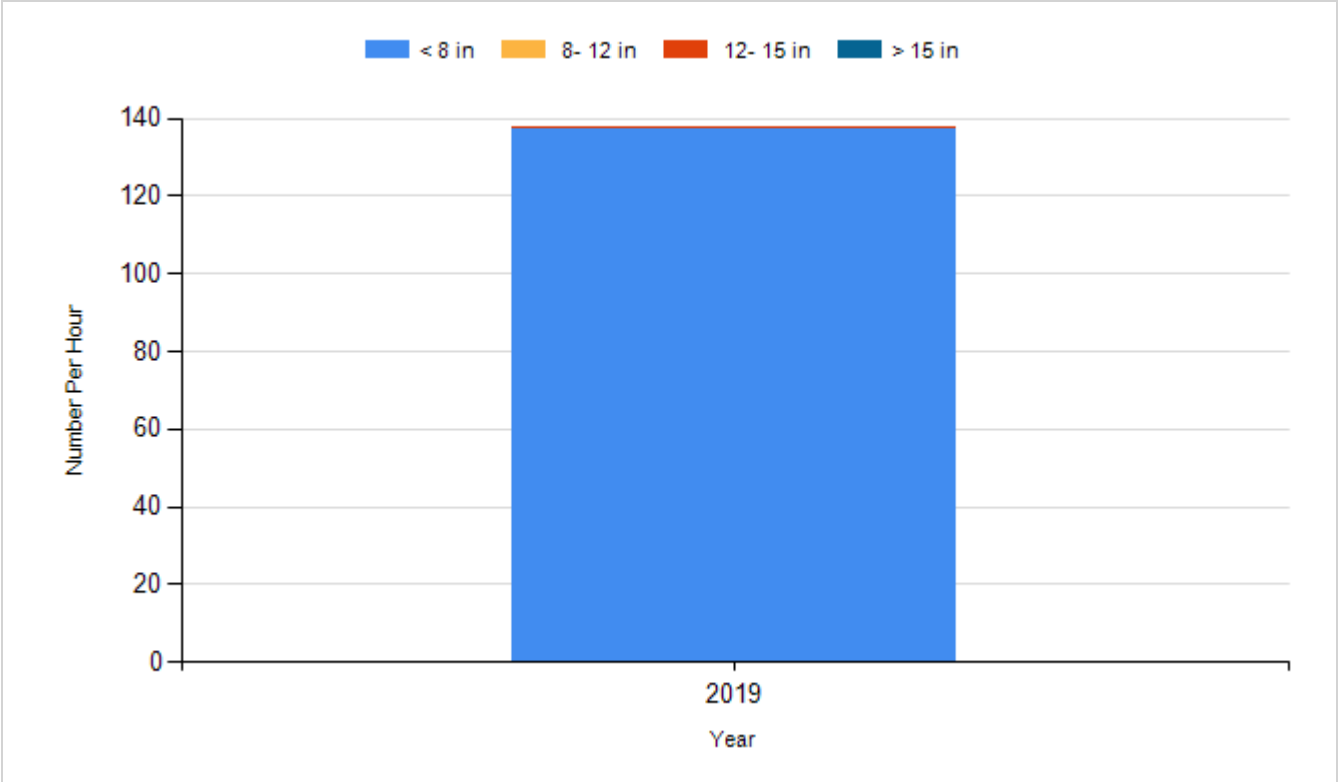

Species: Black Bullhead
Gear: std exp gill net



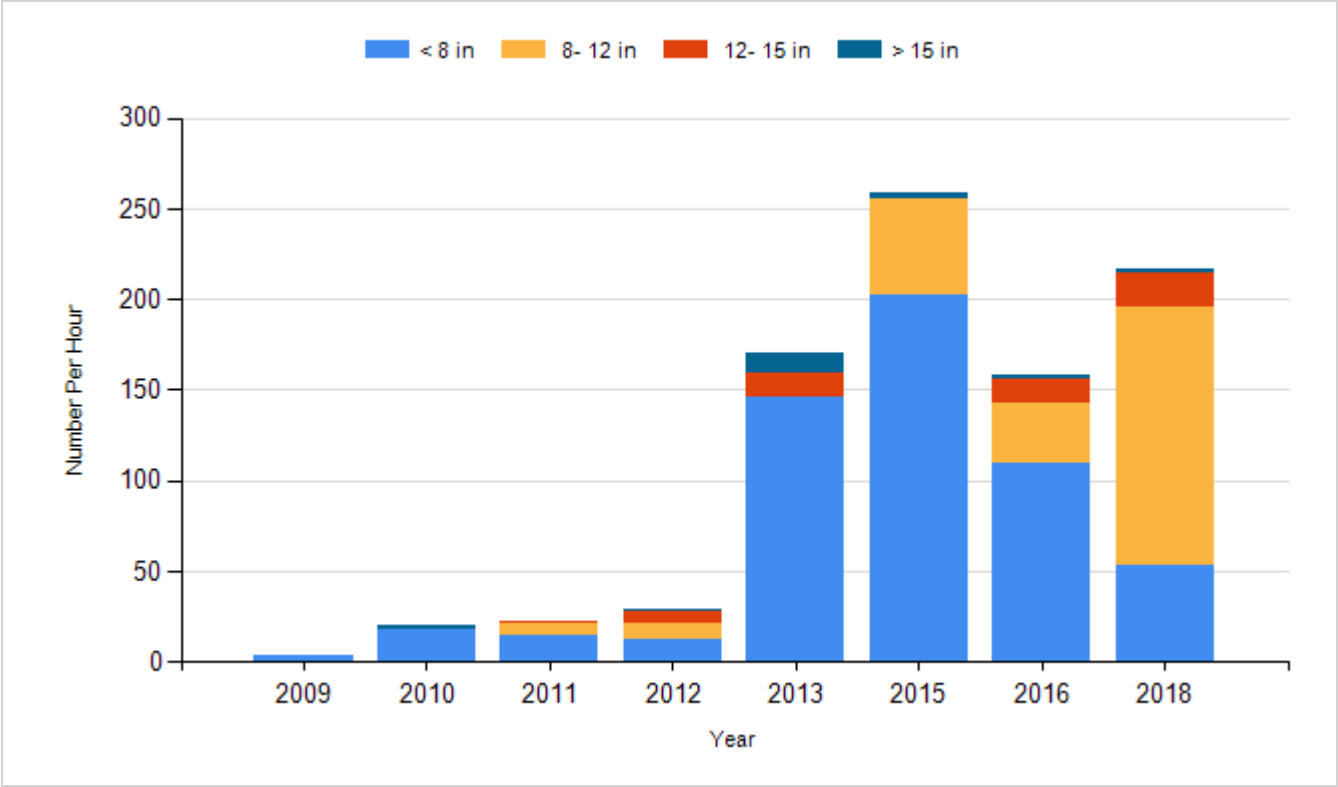
Species: Bluegill
Gear: frame net (std 3/4 in)



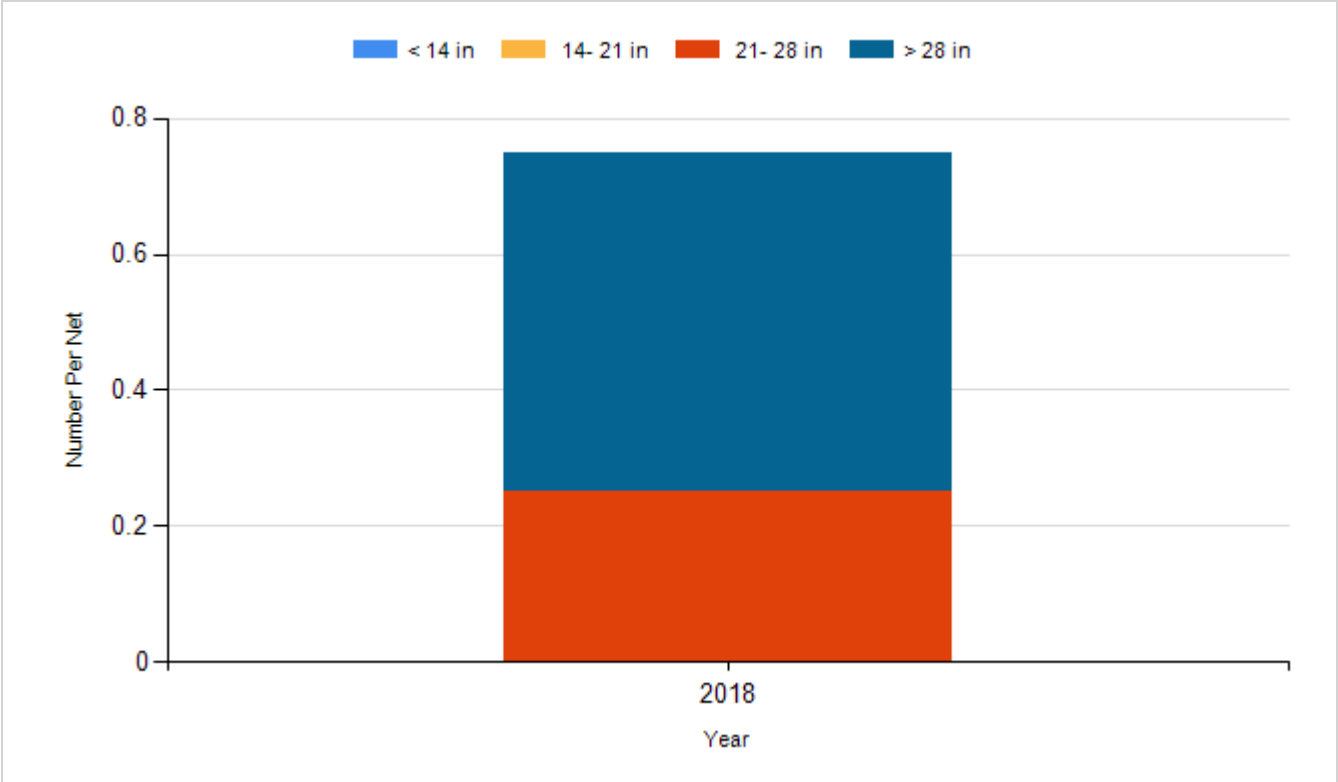

Species: Largemouth Bass
Gear: boat shocker (day)



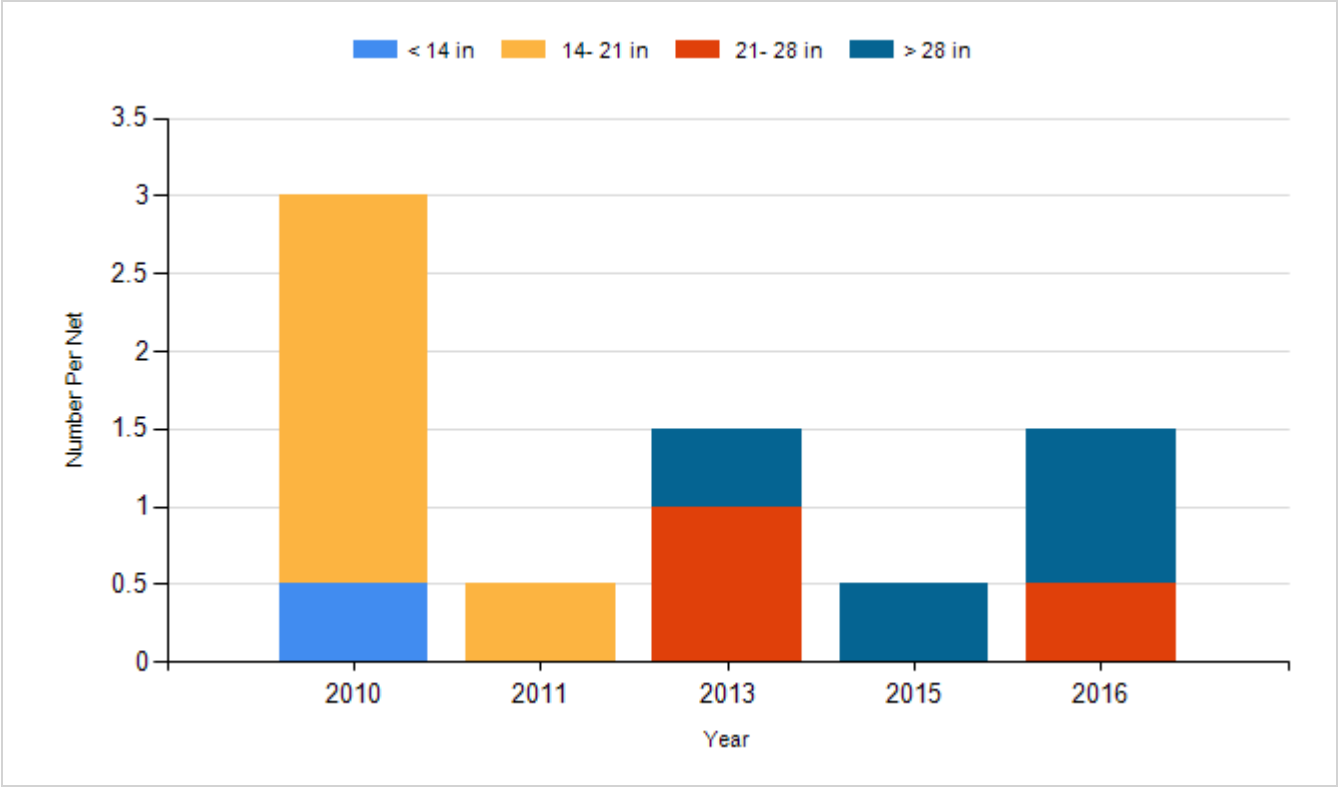
Species: Largemouth Bass
Gear: boat shocker (night)



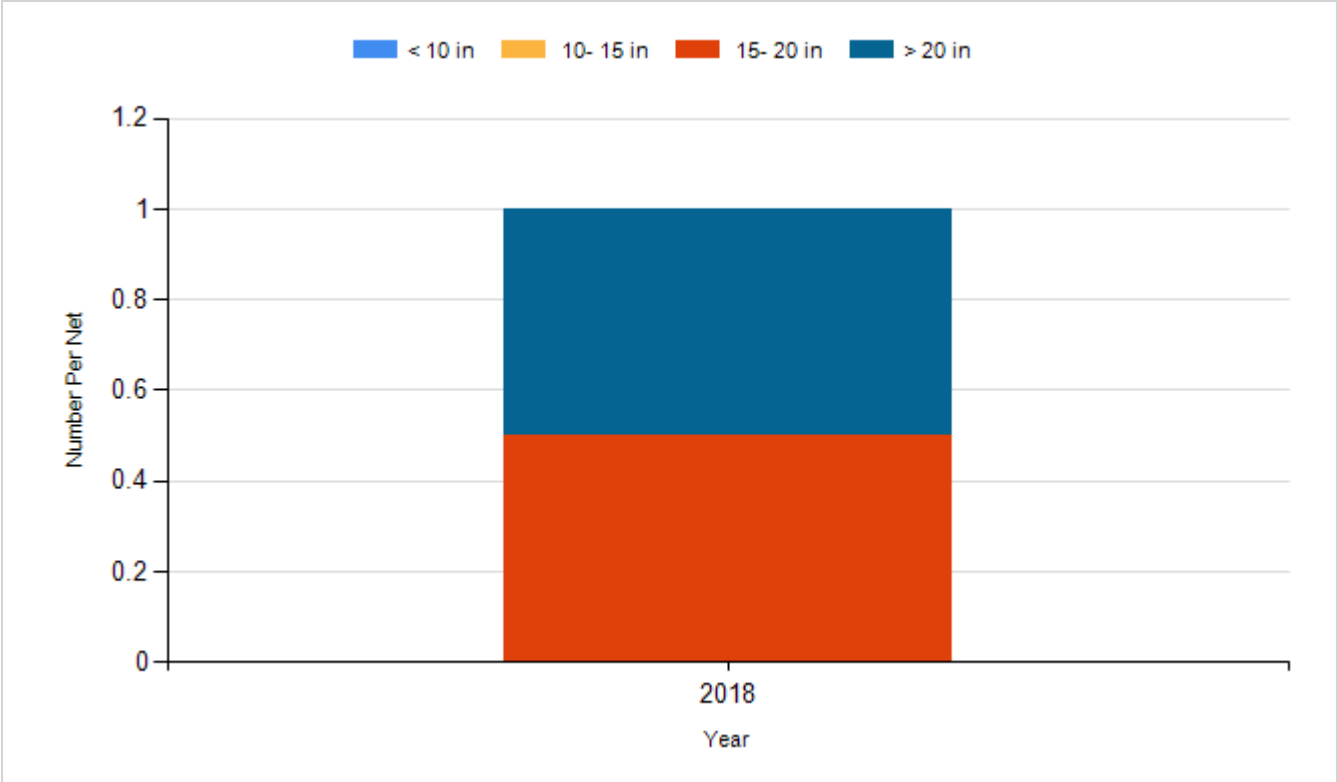

Species: Northern Pike
Gear: AFS std gill net



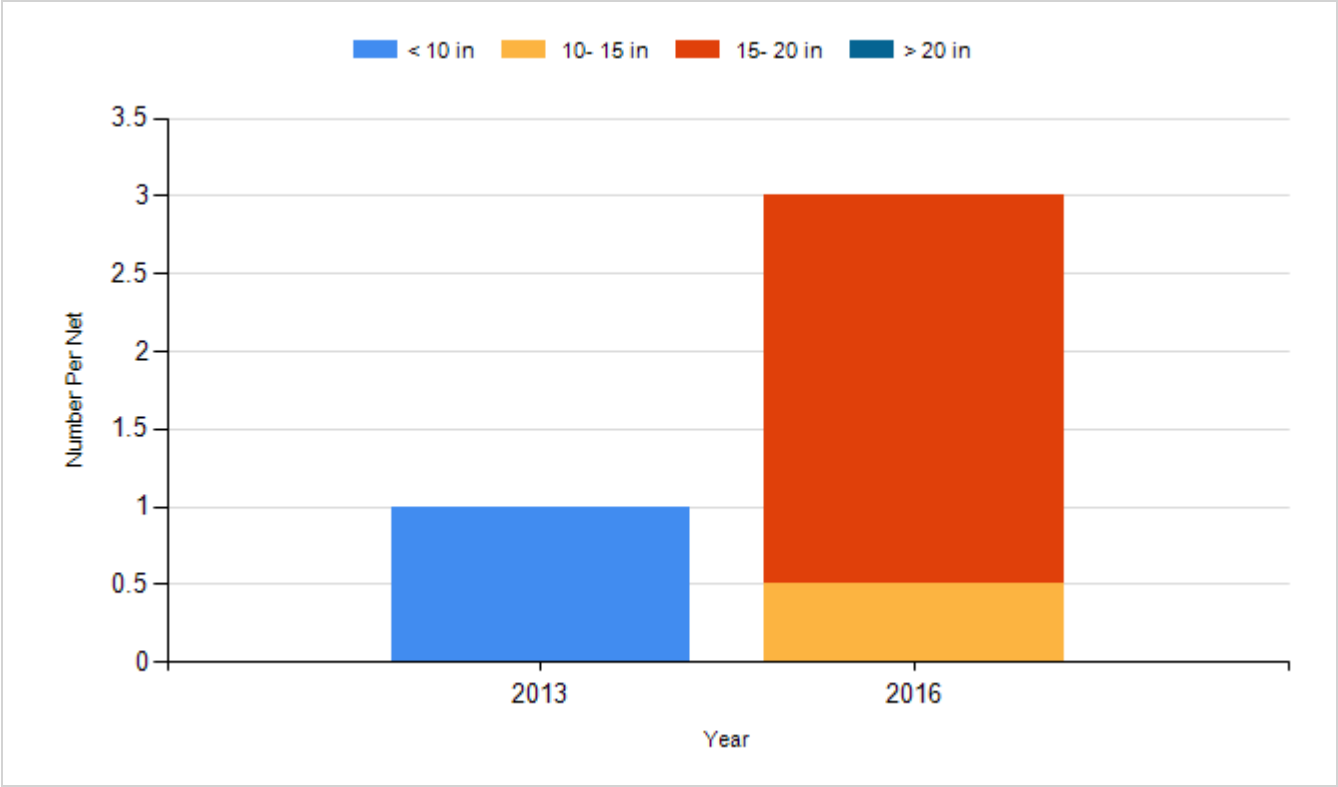
Species: Northern Pike
Gear: std exp gill net



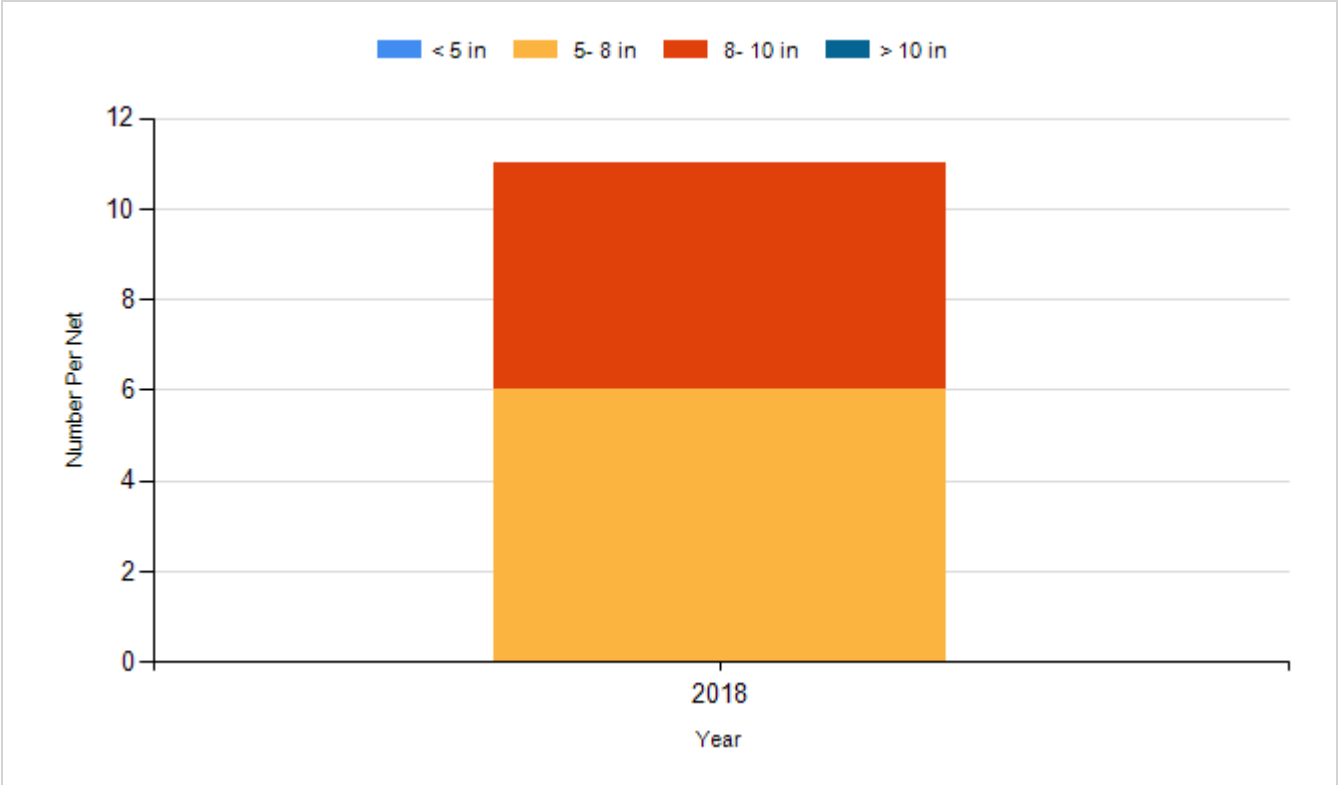

Species: Walleye
Gear: AFS std gill net



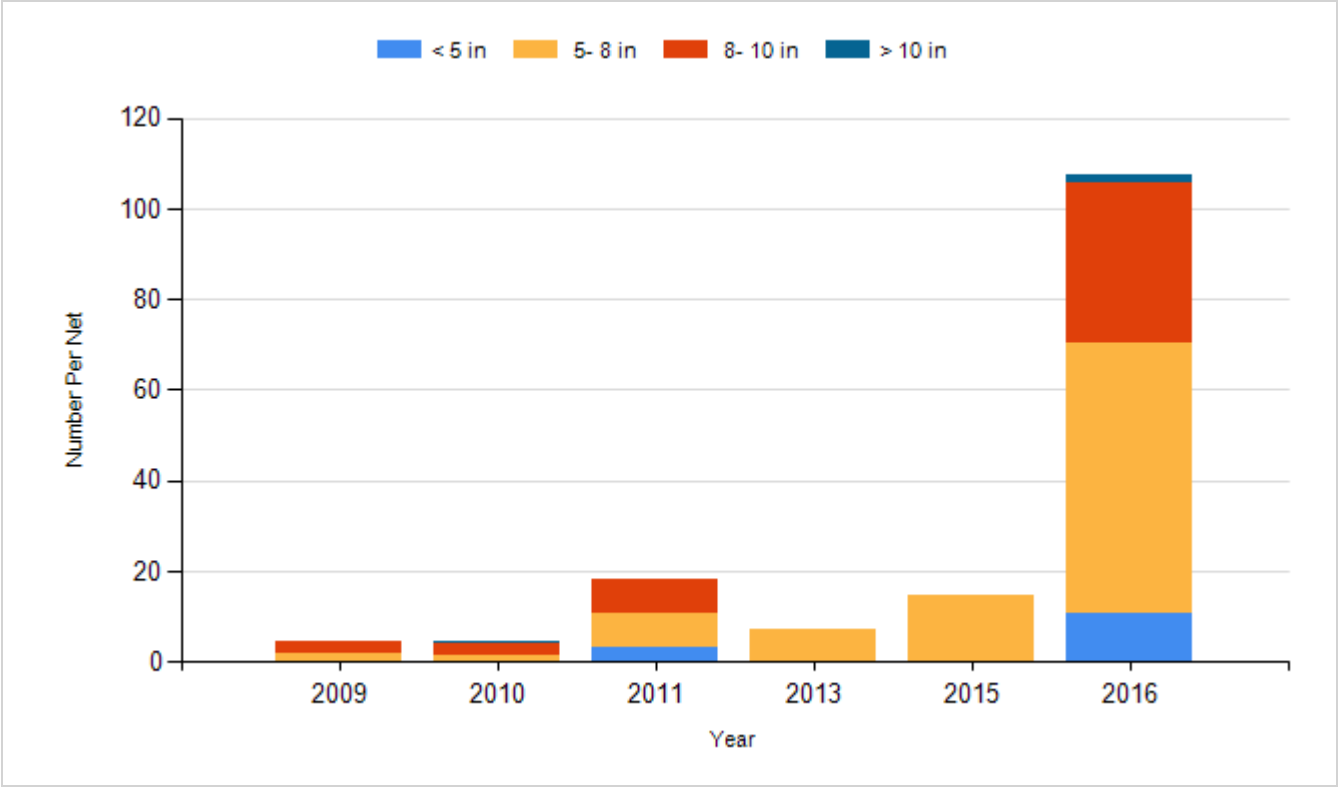
Species: Walleye
Gear: std exp gill net




Species: Yellow Perch
Gear: AFS std gill net



Species: Yellow Perch
Gear: std exp gill net



## Fish Stocking

Number of fish stocked by year, species, and size.

| Year | Species | Size | Number |
|---|---|---|---|
| 2010 | Walleye | Small Fingerling | 23,360 |
| 2012 | Largemouth Bass | Fingerling | 5,640 |
| 2012 | Walleye | Large Fingerling | 1,630 |
| 2014 | Walleye | Large Fingerling | 1,613 |
| 2017 | Walleye | Large Fingerling | 2,200 |