# Lake Sharpe Survey Summary

Lake Sharpe is a large (approximately 61,000 acres) Missouri River Reservoir extending from Fort Thompson to Pierre, South Dakota. Lake Sharpe is a destination for many anglers. Many species of fish are found within Lake Sharpe. A few species of Aquatic Invasive Species (AIS) inhabit Lake Sharpe and include: Eurasian Watermilfoil, Curly-Leafed Pondweed, European Rudd, and Purple Loosestrife. Please remember to clean, drain, and dry all equipment used on Lake Sharpe before future use. Walleye regulations are in place for Lake Sharpe. All Walleye less than 15 inches must be released all year except during July and August when there is no minimum size regulation. Also, only one walleye 20 inches or greater may be kept per person. Please see South Dakota Fishing Handbook for more details. Fishing access is plentiful throughout Lake Sharpe. Numerous boat ramps, miles of shore fishing access, and three State Recreation Areas all provide easy access for anglers to fish Lake Sharpe.

Lake Sharpe was sampled by three different methods. Shoreline seining - to index prey near shore, AFS standard gill nets - to index adult fish, and small mesh gill nets - to index small fish off shore. The most abundant species collected by shoreline seining was Gizzard Shad and abundance was more than double the average at 1,312 fish per pull for 2018. Gizzard Shad are the primary forage for Lake Sharpe. Other species collected by seining was similar to the past and included Yellow Perch, Emerald Shiner, Smallmouth Bass, Spottail Shiner, Freshwater Drum and Walleye. Many of these species provide the forage base for Lake Sharpe. Small mesh gill nets collected young Walleye, Yellow Perch, Spottail Shiner, Gizzard Shad, and Channel Catfish. Abundance of these young fish was similar to the past and provides an indication of the future of the fishery.

The adult fish population looks healthy on Lake Sharpe indicated by the gill net abundance index. Channel Catfish (4.2 fish/net), Walleye (3.4 fish/net), Yellow Perch (1.1 fish/net), Smallmouth Bass (1.0 fish/net), Common Carp (0.6 fish/net), and Freshwater Drum (0.4 fish/net) were the most abundant in net catches. Walleye size ranged from 7.5 to 22 inches and the average size was 14 inches. Approximately 40% of the Walleye population was larger than 15 inches of the ones greater than 10 inches. The fatness or condition of Walleye in Lake Sharpe averaged a condition factor 82 which is normal. The Walleye population in Lake Sharpe is maintained solely by natural reproduction and provides a great fishery. Walleye typically reach 15 inches during their fourth or fifth growing season and continues to be at that range. Walleye will continue to thrive within Lake Sharpe and will provide great recreation into the future.

A Walleye tagging project for 2017-2021 is currently underway. Many Walleye each year will be collected and tagged in the outer jaw with a numbered band. If you are lucky to catch one of these tagged walleye please report information at tags.sd.gov to help biologists improve the Walleye fishery on Lake Sharpe. Please report fish that were kept and released.

Channel Catfish are abundant in Lake Sharpe and are often overlooked. The average size Channel Catfish collected in 2018 was 19 inches and 2.5 pounds. Catfish can be found throughout the lake and are great fun to catch. Smallmouth Bass numbers are stable and provide additional sport for anglers. The average Smallmouth Bass collected in 2018 was 14 inches 1.5 pounds. Smallmouth Bass in Lake Sharpe can be greater than 20 inches.

For more information, please contact South Dakota Game, Fish and Parks Ft. Pierre office – (605) 223-7700.

Prepared 01-23-2019 by KDP

# SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
## Sharpe, Hughes County
### FTR-Lake-6327-001
### 2018

## Lake Information

**Name:** Sharpe

**County:** Hughes

**Surface Area:** 58,660 Acres

## Surveys and Investigations

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

| Gear | Date | Effort |
|---|---|---|
| AFS gill net (1/2 inch) | Aug 07, 2018 | 20 net-nights |
| AFS gill net (1/2 inch) | Aug 08, 2018 | 20 net-nights |
| AFS gill net (1/2 inch) | Aug 09, 2018 | 20 net-nights |
| AFS gill net (1/2 inch) | Aug 10, 2018 | 12 net-nights |
| AFS std gill net | Aug 07, 2018 | 20 net-nights |
| AFS std gill net | Aug 08, 2018 | 20 net-nights |
| AFS std gill net | Aug 09, 2018 | 20 net-nights |
| AFS std gill net | Aug 10, 2018 | 12 net-nights |
| large seine | Jul 23, 2018 | 8 hauls |
| large seine | Jul 24, 2018 | 8 hauls |

## Common Fish Species Present

Channel Catfish

Walleye

Yellow Perch

Smallmouth Bass

Common Carp

Freshwater Drum

Gizzard Shad

Spottail Shiner

Shorthead Redhorse

Flathead Catfish

## 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 | 6 | 15 | 9 | 23 | 12 | 30 | 15 | 38 | 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 | CPUE | CI-80 | PSD | CI-80 | PSD-P | CI-80 | Wr | CI-80 |
| AFS gill net (1/2 inch)* | Black Crappie | 0.0 | 0.0 | 0 | | 0 | | | |
| | Gizzard Shad | 0.1 | 0.1 | 0 | | | | | |
| | Spottail Shiner | 0.3 | 0.2 | | | | | | |
| | Walleye | 0.4 | 0.2 | 29 | | 0 | | 97 | 4 |
| | White Bass | 0.0 | 0.0 | 0 | | 0 | | | |
| | Yellow Perch | 0.3 | 0.2 | 17 | | 0 | | 80 | 3 |
| AFS std gill net | Bigmouth Buffalo | 0.0 | 0.0 | 100 | | 100 | | 81 | |
| | Channel Catfish | 4.2 | 0.5 | 68 | 4 | 21 | 3 | 90 | 2 |
| | Common Carp | 0.6 | 0.1 | 100 | | 34 | 11 | 85 | 2 |
| | Flathead Catfish | 0.1 | 0.0 | 75 | | 0 | | 86 | 8 |
| | Freshwater Drum | 0.4 | 0.1 | 100 | | 100 | | 86 | 2 |
| | Gizzard Shad | 0.3 | 0.2 | 96 | | | | 99 | 2 |
| | Goldeye | 0.0 | 0.0 | | | | | | |
| | Lake Herring | 0.0 | 0.0 | 100 | | 0 | | 69 | |
| | River Carpsucker | 0.0 | 0.0 | 100 | | 100 | | 92 | 4 |
| | Sauger | 0.1 | 0.1 | 100 | | 38 | | 70 | 4 |
| | Shorthead Redhorse | 0.2 | 0.1 | 94 | | 81 | | 98 | 3 |
| | Shortnose Gar | 0.0 | 0.0 | | | | | | |
| | Shovelnose Sturgeon | 0.0 | 0.0 | | | | | | |
| | Smallmouth Bass | 1.0 | 0.5 | 90 | 6 | 49 | 9 | 100 | 2 |
| | Smallmouth Buffalo | 0.0 | 0.0 | 100 | | 100 | | 75 | 8 |
| | Walleye | 3.4 | 0.5 | 40 | 4 | 1 | | 80 | 1 |
| | White Bass | 0.1 | 0.1 | 100 | | 100 | | 100 | 3 |
| | Yellow Perch | 1.1 | 0.3 | 55 | 8 | 17 | 6 | 86 | 1 |
| large seine* | Walleye | 2.7 | 1.2 | | | | | | |

## 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 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Avg |
| AFS gill net (1/2 inch) | Black Crappie | | | | | | | | | | 0.0 | 0.0 |
| | Channel Catfish | | | | | | | | | 0.1 | | 0.1 |
| | Common Carp | | | | | | | | | 0.0 | | 0.0 |
| | Freshwater Drum | | | | | | | | | 0.0 | | 0.0 |
| | Gizzard Shad | | | | | | | | | 0.0 | 0.1 | 0.1 |
| | Rainbow Smelt | | | | | | | | | 0.0 | | 0.0 |
| | Smallmouth Bass | | | | | | | | | 0.0 | | 0.0 |
| | Spottail Shiner | | | | | | | | | 0.2 | 0.3 | 0.3 |
| | Walleye | | | | | | | | | 0.3 | 0.4 | 0.4 |
| | White Bass | | | | | | | | | | 0.0 | 0.0 |
| | Yellow Perch | | | | | | | | | 0.2 | 0.3 | 0.3 |
| AFS std gill net | Bigmouth Buffalo | | | | | | | | | 0.0 | 0.0 | 0.0 |
| | Black Crappie | | | | | | 0.0 | | | | | 0.0 |
| | Channel Catfish | | | | | | 2.3 | | | 4.9 | 4.2 | 3.8 |
| | Common Carp | | | | | | 0.4 | | | 0.9 | 0.6 | 0.6 |
| | Flathead Catfish | | | | | | 0.0 | | | 0.0 | 0.1 | 0.0 |
| | Freshwater Drum | | | | | | 0.4 | | | 0.6 | 0.4 | 0.5 |
| | Gizzard Shad | | | | | | 0.2 | | | 0.3 | 0.3 | 0.3 |
| | Goldeye | | | | | | 0.0 | | | 0.0 | 0.0 | 0.0 |
| | Lake Herring | | | | | | | | | 0.0 | 0.0 | 0.0 |
| | Northern Pike | | | | | | | | | 0.0 | | 0.0 |
| | Rainbow Trout | | | | | | 0.0 | | | | | 0.0 |
| | River Carpsucker | | | | | | 0.8 | | | 0.2 | 0.0 | 0.3 |
| | Sauger | | | | | | 1.0 | | | 0.4 | 0.1 | 0.5 |
| | Shorthead Redhorse | | | | | | 0.6 | | | 0.1 | 0.2 | 0.3 |
| | Shortnose Gar | | | | | | 0.0 | | | | 0.0 | 0.0 |
| | Shovelnose Sturgeon | | | | | | 0.0 | | | 0.0 | 0.0 | 0.0 |
| | Smallmouth Bass | | | | | | 1.9 | | | 0.8 | 1.0 | 1.2 |
| | Smallmouth Buffalo | | | | | | 0.3 | | | 0.1 | 0.0 | 0.1 |
| | Spottail Shiner | | | | | | | | | 0.0 | | 0.0 |
| | Walleye | | | | | | 12.9 | | | 5.0 | 3.4 | 7.1 |
| | White Bass | | | | | | 0.6 | | | 0.8 | 0.1 | 0.5 |
| | White Sucker | | | | | | 0.0 | | | 0.0 | | 0.0 |
| | Yellow Perch | | | | | | 1.3 | | | 0.6 | 1.1 | 1.0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| std exp gill net | Bigmouth Buffalo | | | | | | | | 0.2 | 0.2 |
| | Black Bullhead | | | 0.1 | 0.1 | | | | 0.0 | 0.1 |
| | Black Crappie | | 0.1 | 0.1 | 0.0 | 0.0 | | 0.1 | 0.1 | 0.1 |
| | Burbot | | | | | | 0.0 | | | 0.0 |
| | Channel Catfish | 5.3 | 5.0 | 2.8 | 6.6 | 4.4 | 3.0 | 4.0 | 4.8 | 4.5 |
| | Chinook Salmon | | | | | | | | 0.0 | 0.0 |
| | Common Carp | 1.9 | 1.7 | 1.9 | 1.8 | 2.5 | 1.1 | 2.0 | 1.5 | 1.8 |
| | Freshwater Drum | 0.1 | 0.2 | 0.2 | 0.3 | 0.1 | 0.1 | 0.4 | 0.5 | 0.2 |
| | Gizzard Shad | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 3.6 | 0.6 |
| | Goldeye | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Lake Herring | | | | | | | 0.6 | | 0.6 |
| | Largemouth Bass | | | | | | 0.0 | | | 0.0 |
| | Northern Pike | | 0.0 | 0.1 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| | Rainbow Smelt | 0.0 | | | | | | | | 0.0 |
| | Rainbow Trout | | | | 0.0 | | 0.0 | | | 0.0 |
| | River Carpsucker | 0.5 | 1.1 | 0.6 | 0.3 | 0.5 | 2.0 | 2.7 | 0.3 | 1.0 |
| | Sauger | 2.5 | 1.1 | 1.8 | 0.9 | 1.4 | 1.6 | 1.9 | 1.4 | 1.6 |
| | Shorthead Redhorse | 0.1 | 0.0 | 0.7 | 0.8 | 1.3 | 0.7 | 1.5 | 0.3 | 0.7 |
| | Shortnose Gar | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Shovelnose Sturgeon | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Smallmouth Bass | 0.4 | 1.3 | 0.3 | 0.2 | 1.1 | 0.6 | 0.7 | 1.6 | 0.8 |
| | Smallmouth Buffalo | 0.0 | 0.0 | | | 0.0 | 0.1 | 0.0 | | 0.0 |
| | Spottail Shiner | | 0.0 | 0.0 | | | | 0.0 | | 0.0 |
| | Walleye | 17.2 | 19.9 | 18.4 | 21.9 | 12.5 | 8.0 | 12.9 | 21.3 | 16.5 |
| | White Bass | 0.5 | 0.5 | 0.4 | 0.0 | 0.8 | 0.2 | 0.0 | 0.2 | 0.3 |
| | White Crappie | | 0.1 | 0.1 | 0.0 | | | | 0.8 | 0.3 |
| | White Sucker | 0.0 | 0.0 | 0.3 | | 0.1 | | 0.0 | | 0.1 |
| | Yellow Perch | 1.6 | 1.9 | 2.6 | 1.8 | 1.4 | 0.9 | 3.0 | 2.7 | 2.0 |

## 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 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| AFS gill net (1/2 inch) | Black Crappie | PSD | | | | | | | | | | 0 |
| | | PSD-P | | | | | | | | | | 0 |
| | Channel Catfish | PSD | | | | | | | | | 20 | |
| | | PSD-P | | | | | | | | | 0 | |
| | | Wr | | | | | | | | | 93 | |
| | Common Carp | PSD | | | | | | | | | 100 | |
| | | PSD-P | | | | | | | | | 0 | |
| | | Wr | | | | | | | | | 93 | |
| | Gizzard Shad | PSD | | | | | | | | | 0 | 0 |
| | | Wr | | | | | | | | | 150 | |
| | Smallmouth Bass | PSD | | | | | | | | | 0 | |
| | | PSD-P | | | | | | | | | 0 | |
| | | Wr | | | | | | | | | 89 | |
| | Walleye | PSD | | | | | | | | | 0 | 29 |
| | | PSD-P | | | | | | | | | 0 | 0 |
| | | Wr | | | | | | | | | 91 | 97 |
| | White Bass | PSD | | | | | | | | | | 0 |
| | | PSD-P | | | | | | | | | | 0 |
| | Yellow Perch | PSD | | | | | | | | | 17 | 17 |
| | | PSD-P | | | | | | | | | 0 | 0 |
| | | Wr | | | | | | | | | 85 | 80 |
| AFS std gill net | Bigmouth Buffalo | PSD | | | | | | | | | 100 | 100 |
| | | PSD-P | | | | | | | | | 100 | 100 |
| | | Wr | | | | | | | | | 88 | 81 |
| | Black Crappie | PSD | | | | | | 0 | | | | |
| | | PSD-P | | | | | | 0 | | | | |
| | Channel Catfish | PSD | | | | | | 86 | | | 68 | 68 |
| | | PSD-P | | | | | | 39 | | | 18 | 21 |
| | | Wr | | | | | | | | | 85 | 90 |
| | Common Carp | PSD | | | | | | 100 | | | 97 | 100 |
| | | PSD-P | | | | | | 60 | | | 24 | 34 |
| | | Wr | | | | | | | | | 80 | 85 |

| | | | | |
|---|---|---|---|---|
| Flathead Catfish | PSD | 100 | 100 | 75 |
| | PSD-P | 0 | 0 | 0 |
| | Wr | | 70 | 86 |
| Gizzard Shad | PSD | 100 | 100 | 96 |
| | Wr | | 97 | 99 |
| Lake Herring | PSD | | 100 | 100 |
| | PSD-P | | 100 | 0 |
| | Wr | | 104 | 69 |
| Northern Pike | PSD | | 50 | |
| | PSD-P | | 0 | |
| | Wr | | 162 | |
| Rainbow Trout | PSD | 0 | | |
| | PSD-P | 0 | | |
| River Carpsucker | PSD | 96 | 94 | 100 |
| | PSD-P | 96 | 50 | 100 |
| | Wr | | 98 | 92 |
| Sauger | PSD | 97 | 93 | 100 |
| | PSD-P | 49 | 26 | 38 |
| | Wr | | 72 | 70 |
| Shorthead Redhorse | PSD | 100 | 100 | 94 |
| | PSD-P | 81 | 100 | 81 |
| | Wr | | 102 | 98 |
| Smallmouth Bass | PSD | 68 | 70 | 90 |
| | PSD-P | 26 | 32 | 49 |
| | Wr | | 99 | 100 |
| Smallmouth Buffalo | PSD | 100 | 100 | 100 |
| | PSD-P | 82 | 100 | 100 |
| | Wr | | 77 | 75 |
| Walleye | PSD | 26 | 35 | 40 |
| | PSD-P | 2 | 1 | 1 |
| | Wr | | 77 | 80 |
| White Bass | PSD | 96 | 100 | 100 |
| | PSD-P | 74 | 100 | 100 |
| | Wr | | 93 | 100 |
| White Sucker | PSD | 100 | 100 | |
| | PSD-P | 0 | 100 | |
| | Wr | | 88 | |
| Yellow Perch | PSD | 56 | 57 | 55 |
| | PSD-P | 22 | 19 | 17 |
| | Wr | | 87 | 86 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| std exp gill net | Bigmouth Buffalo | PSD | | | | | | | | 100 |
| | | PSD-P | | | | | | | | 75 |
| | | Wr | | | | | | | | 79 |
| | Black Bullhead | PSD | | | 100 | 100 | | | | 100 |
| | | PSD-P | | | 0 | 0 | | | | 0 |
| | | Wr | | | 99 | 93 | | | | 78 |
| | Black Crappie | PSD | | 0 | 100 | 100 | 100 | | 0 | 0 |
| | | PSD-P | | 0 | 50 | 100 | 100 | | 0 | 0 |
| | | Wr | | 95 | 100 | 104 | 84 | | 104 | 102 |
| | Channel Catfish | PSD | 79 | 74 | 82 | 53 | 53 | 77 | 68 | 44 |
| | | PSD-P | 1 | 1 | 2 | 5 | 4 | 15 | 13 | 9 |
| | | Wr | 93 | 88 | 89 | 90 | 86 | 86 | 89 | 85 |
| | Common Carp | PSD | 98 | 97 | 100 | 95 | 97 | 100 | 100 | 89 |
| | | PSD-P | 2 | 10 | 13 | 27 | 20 | 22 | 31 | 26 |
| | | Wr | 82 | 81 | 81 | 84 | 86 | 84 | 82 | 87 |
| | Gizzard Shad | PSD | 100 | 100 | 0 | 100 | 0 | 100 | 14 | 36 |
| | | Wr | 92 | 107 | | 91 | | 102 | 95 | 94 |
| | Lake Herring | PSD | | | | | | | 100 | |
| | | PSD-P | | | | | | | 14 | |
| | | Wr | | | | | | | 86 | |
| | Largemouth Bass | PSD | | | | | | 100 | | |
| | | PSD-P | | | | | | 100 | | |
| | | Wr | | | | | | 91 | | |
| | Northern Pike | PSD | | 100 | 100 | 0 | 100 | | 100 | 100 |
| | | PSD-P | | 0 | 0 | 0 | 0 | | 0 | 0 |
| | | Wr | | 88 | 107 | 78 | 88 | | 86 | 86 |
| | Rainbow Trout | PSD | | | | 0 | | 0 | | |
| | | PSD-P | | | | 0 | | 0 | | |
| | | Wr | | | | 104 | | 91 | | |
| | River Carpsucker | PSD | 82 | 88 | 100 | 100 | 100 | 98 | 100 | 100 |
| | | PSD-P | 73 | 84 | 56 | 100 | 100 | 92 | 89 | 100 |
| | | Wr | 98 | 92 | 92 | 107 | 96 | 100 | 93 | 98 |
| | Sauger | PSD | 100 | 65 | 86 | 95 | 94 | 92 | 98 | 97 |
| | | PSD-P | 48 | 58 | 43 | 48 | 30 | 66 | 60 | 55 |
| | | Wr | 70 | 81 | 77 | 79 | 76 | 72 | 76 | 74 |
| | Shorthead Redhorse | PSD | 100 | 100 | 91 | 100 | 97 | 100 | 100 | 100 |
| | | PSD-P | 100 | 100 | 27 | 58 | 91 | 94 | 100 | 63 |
| | | Wr | 88 | 116 | 91 | 99 | 97 | 98 | 100 | 185 |
| | Smallmouth Bass | PSD | 78 | 59 | 80 | 40 | 52 | 79 | 71 | 71 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PSD-P | 67 | 24 | 40 | 20 | 19 | 57 | 35 | 47 |
| | Wr | 94 | 103 | 87 | 101 | 107 | 101 | 100 | 101 |
| Smallmouth Buffalo | PSD | 100 | 100 | | | 100 | 67 | 100 | |
| | PSD-P | 100 | 100 | | | 100 | 33 | 0 | |
| | Wr | 64 | 58 | | | 75 | 118 | 77 | |
| Walleye | PSD | 40 | 47 | 39 | 41 | 60 | 52 | 41 | 41 |
| | PSD-P | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| | Wr | 82 | 87 | 83 | 83 | 84 | 85 | 79 | 82 |
| White Bass | PSD | 100 | 100 | 71 | 100 | 89 | 100 | 100 | 100 |
| | PSD-P | 92 | 100 | 71 | 100 | 5 | 100 | 100 | 60 |
| | Wr | 96 | 109 | 86 | 102 | 108 | 104 | 93 | 94 |
| White Crappie | PSD | | 0 | 0 | 100 | | | | 0 |
| | PSD-P | | 0 | 0 | 100 | | | | 0 |
| | Wr | | 108 | 94 | 118 | | | | 97 |
| White Sucker | PSD | 100 | 100 | 100 | | 100 | | 0 | |
| | PSD-P | 100 | 100 | 0 | | 100 | | 0 | |
| | Wr | 91 | 91 | 82 | | 101 | | 86 | |
| Yellow Perch | PSD | 56 | 36 | 61 | 58 | 74 | 36 | 56 | 62 |
| | PSD-P | 0 | 6 | 20 | 9 | 50 | 32 | 15 | 17 |
| | Wr | 89 | 86 | 83 | 91 | 97 | 92 | 96 | 84 |

## Length at Capture

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

Species: Sauger

| | | Mean Length (expanded sample number) at capture by age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10+ |
| 2018 | 7 | | | 356 (4) | 359 (2) | 384 (1) | | | | | |
| 2017 | 27 | | 321 (8) | 361 (15) | 432 (2) | | | 468 (2) | | | |
| 2016 | 32 | | 330 (12) | 382 (5) | 396 (5) | 404 (1) | 404 (1) | 474 (7) | | | |
| 2015 | 44 | | 317 (9) | 391 (19) | 408 (2) | 417 (7) | 459 (3) | | 413 (1) | 445 (2) | 451 (1) |
| 2014 | 67 | 289 (6) | 349 (21) | 387 (15) | 409 (17) | 419 (8) | | 564 (1) | | 526 (2) | |
| 2013 | 33 | 253 (2) | 348 (7) | 370 (13) | 381 (8) | 424 (1) | | | 463 (2) | | |
| 2012 | 26 | | 305 (9) | 380 (11) | | | 429 (3) | 442 (3) | | | |
| 2011 | 28 | 204 (4) | 341 (12) | 414 (4) | 504 (1) | 456 (5) | 463 (2) | | | | |
| 2010 | 26 | 253 (9) | 324 (1) | | 419 (7) | 404 (9) | | | | | |
| 2009 | 61 | | | 373 (26) | 388 (30) | 428 (2) | 389 (2) | | | 393 (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 | 264 | 236 (24) | 318 (62) | 360 (49) | 379 (55) | 400 (55) | 437 (12) | | 393 (1) | 553 (2) | 485 (3) |
| 2017 | 377 | 239 (28) | 313 (65) | 357 (144) | 390 (86) | 418 (30) | 407 (3) | 442 (4) | 464 (6) | 456 (3) | 518 (8) |
| 2016 | 531 | 232 (22) | 322 (184) | 374 (206) | 409 (67) | | 455 (10) | 447 (19) | 455 (7) | 455 (4) | 494 (9) |
| 2015 | 341 | 214 (34) | 327 (121) | 382 (130) | 450 (5) | 426 (15) | 423 (18) | 416 (11) | 432 (6) | 465 (1) | |
| 2014 | 681 | 245 (150) | 337 (292) | 389 (25) | 397 (63) | 427 (80) | 423 (38) | 426 (17) | 456 (6) | 461 (10) | |
| 2013 | 315 | 249 (35) | 349 (23) | 380 (102) | 397 (95) | 395 (28) | 426 (16) | 465 (7) | 444 (4) | 424 (1) | 454 (6) |
| 2012 | 945 | 248 (13) | 307 (417) | 358 (307) | 357 (107) | 415 (39) | 437 (28) | 453 (19) | | 470 (9) | 437 (5) |
| 2011 | 320 | 231 (35) | 340 (162) | 387 (45) | 436 (29) | 436 (25) | 463 (12) | 404 (1) | 503 (3) | | 490 (8) |
| 2010 | 522 | 261 (172) | 348 (99) | 394 (106) | 411 (63) | 416 (60) | 414 (3) | 447 (8) | 434 (1) | 459 (2) | 498 (7) |
| 2009 | 427 | 240 (19) | 334 (99) | 368 (134) | 394 (129) | 400 (5) | 451 (10) | 424 (2) | 451 (9) | 453 (9) | 494 (8) |

## 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).

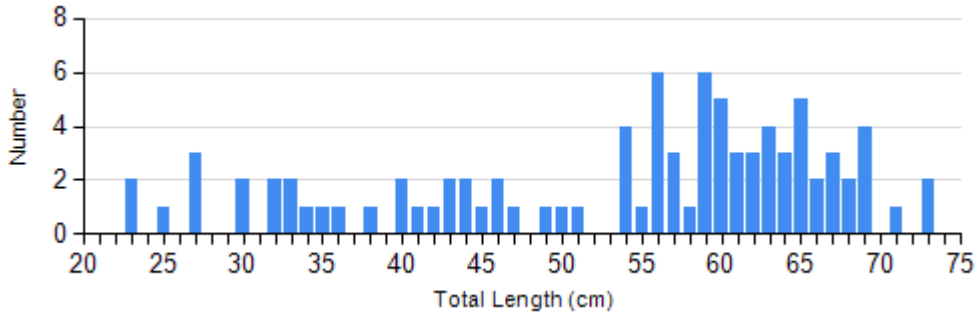
| | | Length Groups | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | S-Q | | Q-P | | P-M | | M | |
| Species | Year | N | Wr (SE) | N | Wr (SE) | N | Wr (SE) | N | Wr (SE) |
| Black Bullhead Gill Net | 2016 | 0 | | 1 | 78 | 0 | | 0 | |
| Channel Catfish Gill Net | 2014 | 17 | 89 (1.9) | 45 | 85 (1.1) | 11 | 85 (2.4) | 0 | |
| | 2015 | 31 | 89 (2.7) | 53 | 89 (1.2) | 12 | 85 (2.0) | 0 | |
| | 2016 | 65 | 88 (1.5) | 41 | 82 (1.6) | 9 | 81 (2.6) | 1 | 75 |
| | 2017 | 114 | 89 (1.2) | 177 | 84 (0.9) | 60 | 81 (1.5) | 3 | 93 (5.3) |
| | 2018 | 97 | 96 (3.9) | 143 | 87 (0.8) | 61 | 85 (1.7) | 1 | 105 |
| Common Carp Gill Net | 2014 | 0 | | 21 | 86 (4.0) | 6 | 76 (6.8) | 0 | |
| | 2015 | 0 | | 34 | 84 (1.7) | 14 | 83 (2.7) | 1 | 18 |
| | 2016 | 4 | 129 (42.5) | 22 | 81 (3.3) | 9 | 82 (2.3) | 0 | |
| | 2017 | 2 | 99 (1.7) | 45 | 81 (1.1) | 15 | 77 (3.3) | 0 | |
| | 2018 | 0 | | 29 | 85 (2.2) | 15 | 86 (2.0) | 0 | |
| Northern Pike Gill Net | 2015 | 0 | | 1 | 86 | 0 | | 0 | |
| | 2016 | 0 | | 1 | 86 | 0 | | 0 | |
| | 2017 | 1 | 89 | 1 | 235 | 0 | | 0 | |
| Rainbow Trout Gill Net | 2014 | 1 | 91 | 0 | | 0 | | 0 | |
| Sauger Gill Net | 2014 | 3 | 87 (3.3) | 10 | 79 (2.2) | 23 | 70 (2.0) | 2 | 37 (2.3) |
| | 2015 | 1 | 79 | 17 | 81 (2.0) | 26 | 73 (1.2) | 1 | 64 |
| | 2016 | 1 | 68 | 14 | 77 (1.0) | 18 | 71 (1.0) | 0 | |
| | 2017 | 2 | 110 (47.6) | 18 | 71 (1.5) | 7 | 65 (4.4) | 0 | |
| | 2018 | 0 | | 5 | 68 (4.3) | 3 | 72 (1.1) | 0 | |
| Walleye Gill Net | 2014 | 92 | 89 (0.8) | 97 | 81 (0.8) | 2 | 85 (15.5) | 0 | |
| | 2015 | 182 | 80 (1.2) | 126 | 79 (0.7) | 1 | 84 | 0 | |
| | 2016 | 303 | 84 | 203 | 81 | 5 | 73 | 0 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | (0.5) | | (0.5) | | (1.1) | | |
| | 2017 | 232 | 80 (0.8) | 121 | 72 (0.7) | 2 | 69 (0.6) | 2 | 73 (3.4) |
| | 2018 | 146 | 82 (0.6) | 96 | 77 (0.5) | 3 | 74 (3.1) | 0 | |
| White Bass Gill Net | 2018 | 0 | | 0 | | 6 | 103 (1.8) | 4 | 94 (3.4) |
| White Bass Gill Net | 2014 | 0 | | 0 | | 2 | 102 (7.8) | 2 | 107 (0.8) |
| | 2015 | 0 | | 0 | | 1 | 93 | 0 | |
| | 2016 | 0 | | 2 | 83 (22.4) | 2 | 103 (6.0) | 1 | 99 |
| | 2017 | 0 | | 0 | | 26 | 99 (1.1) | 30 | 87 (2.3) |
| White Sucker Gill Net | 2015 | 1 | 86 | 0 | | 0 | | 0 | |
| | 2017 | 0 | | 0 | | 1 | 90 | 1 | 86 |
| Yellow Perch Gill Net | 2014 | 14 | 96 (2.3) | 1 | 89 | 6 | 93 (1.4) | 1 | 35 |
| | 2015 | 31 | 97 (3.1) | 29 | 96 (1.7) | 10 | 95 (2.4) | 1 | 86 |
| | 2016 | 25 | 87 (1.5) | 29 | 84 (1.5) | 9 | 80 (4.9) | 2 | 69 (20.2) |
| | 2017 | 18 | 88 (1.9) | 16 | 90 (2.9) | 8 | 79 (2.1) | 0 | |
| | 2018 | 34 | 86 (1.3) | 29 | 86 (1.7) | 13 | 85 (2.4) | 0 | |

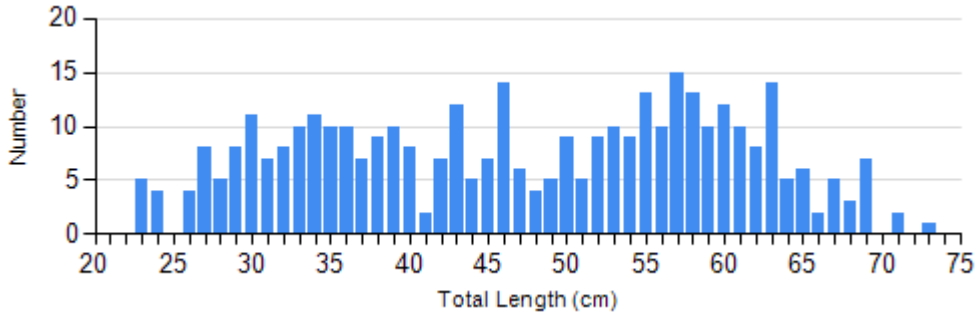
## Length Frequency Distribution

Length frequency histogram of species sampled by year.

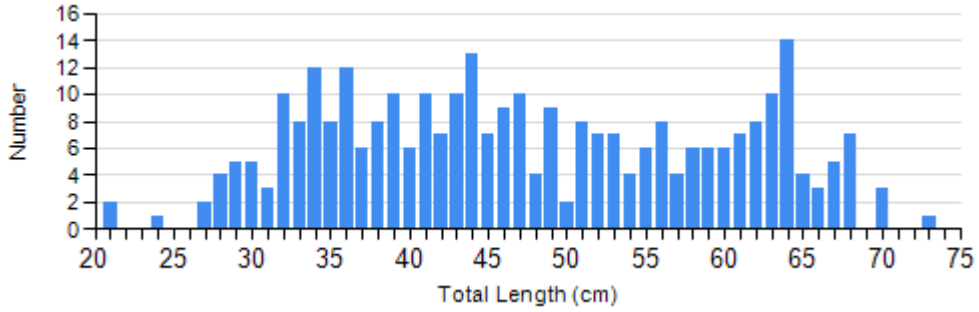
Species: Channel Catfish
Gear: AFS std gill net




2014

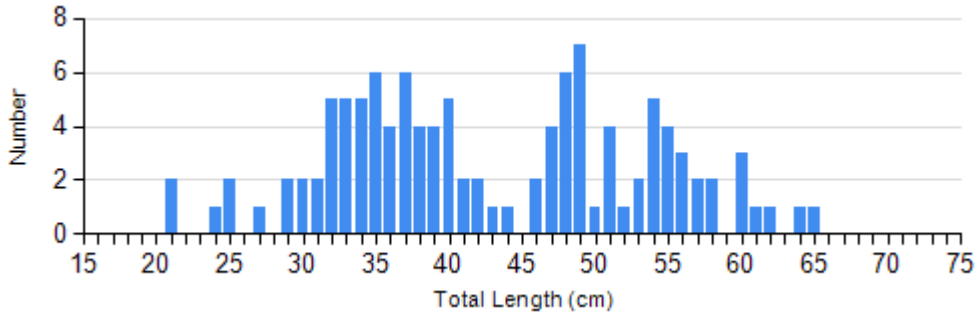



2017

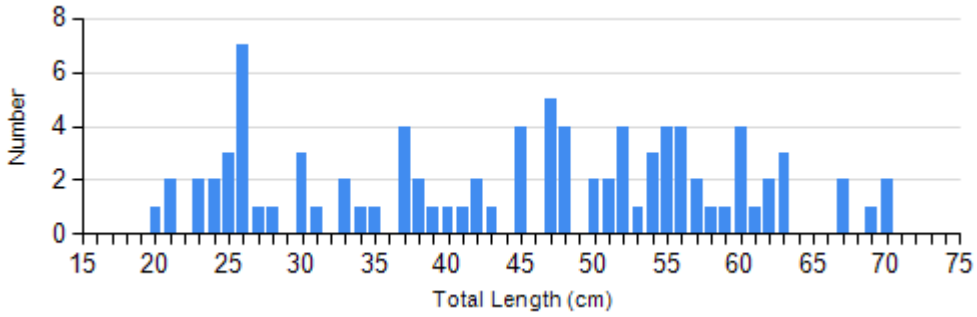



2018

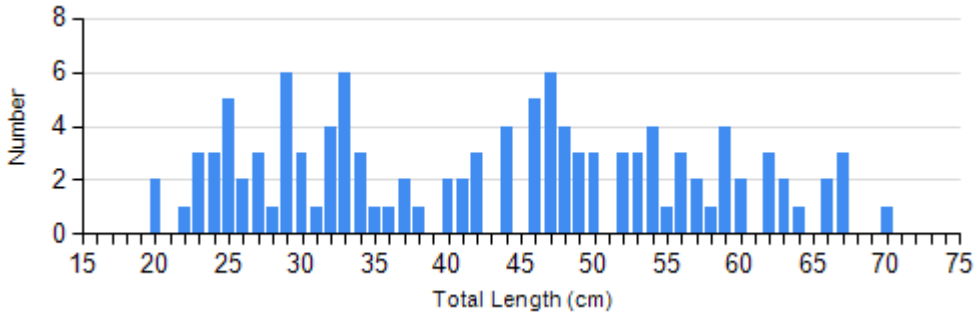
Species: Channel Catfish
Gear: std exp gill net



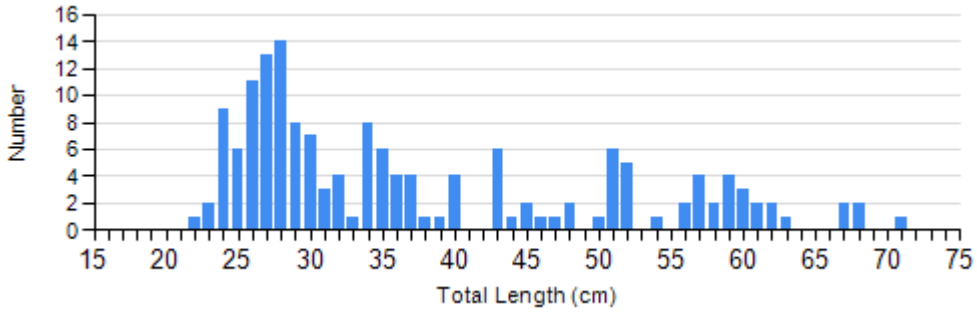

2013




2014

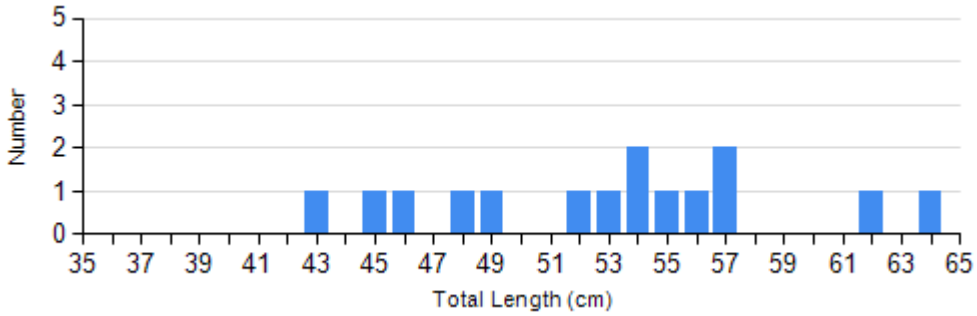



2015

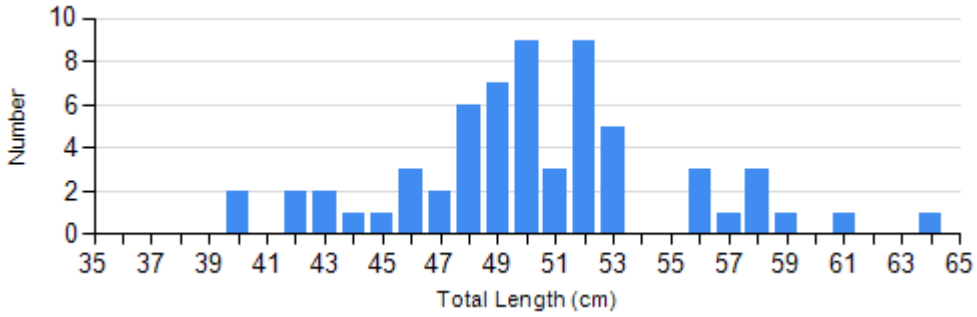



2016

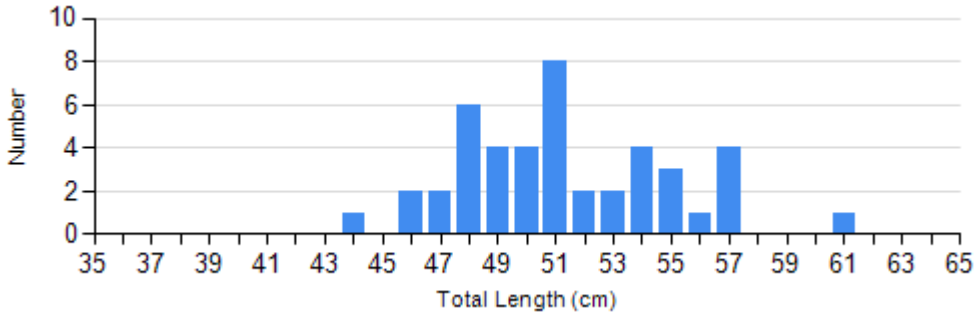
Species: Common Carp
Gear: AFS std gill net




2014

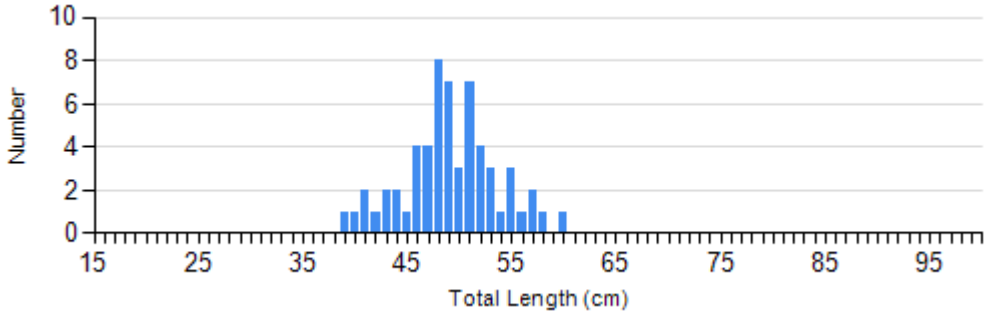



2017

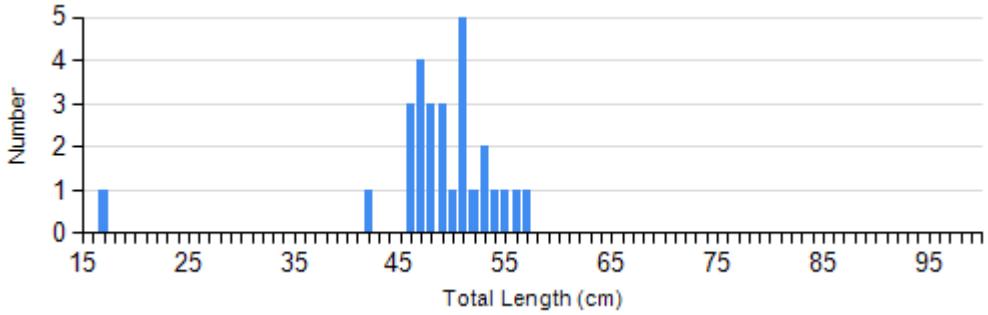



2018

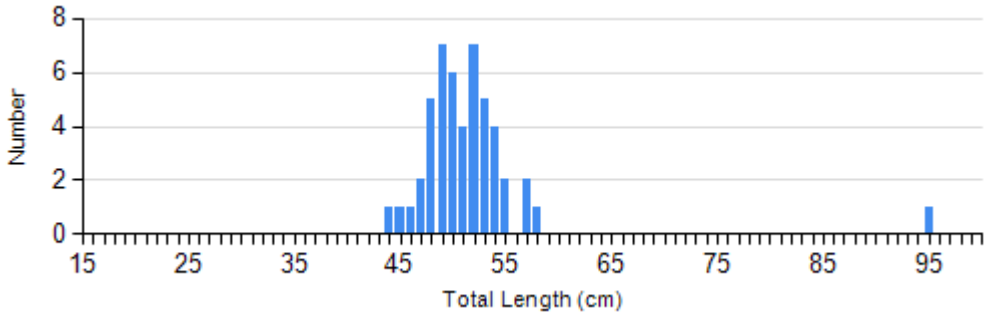
Species: Common Carp
Gear: std exp gill net



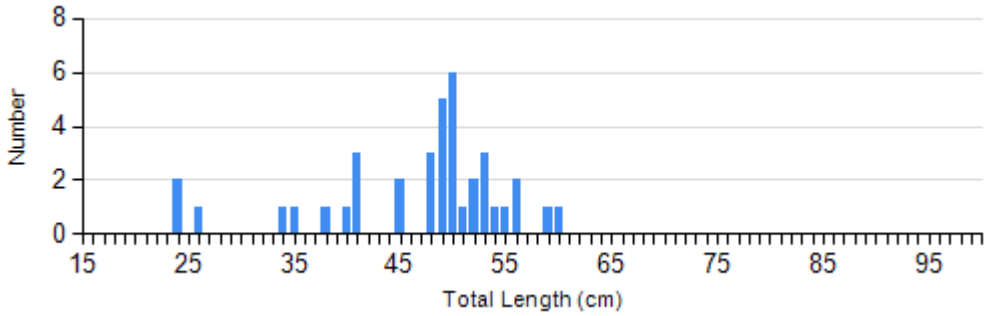

2013




2014

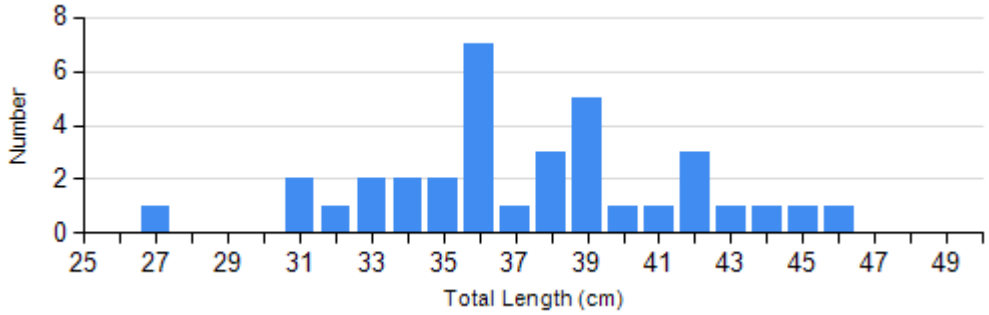



2015

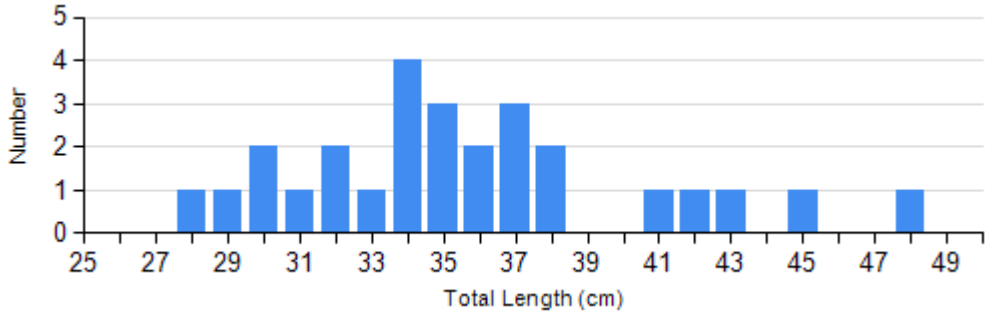



2016

Species: Sauger
Gear: AFS std gill net

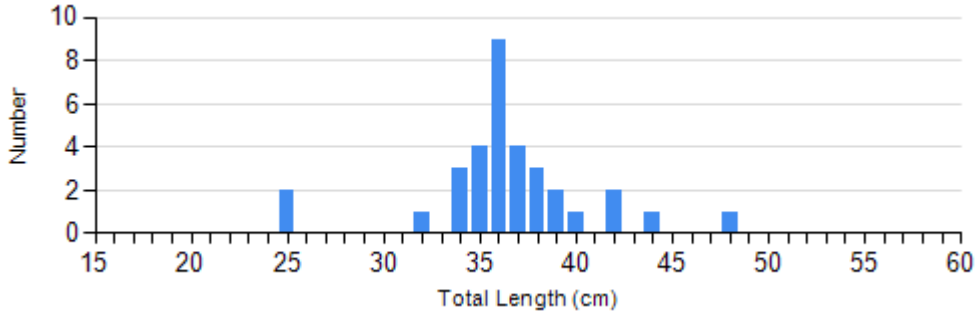



2014

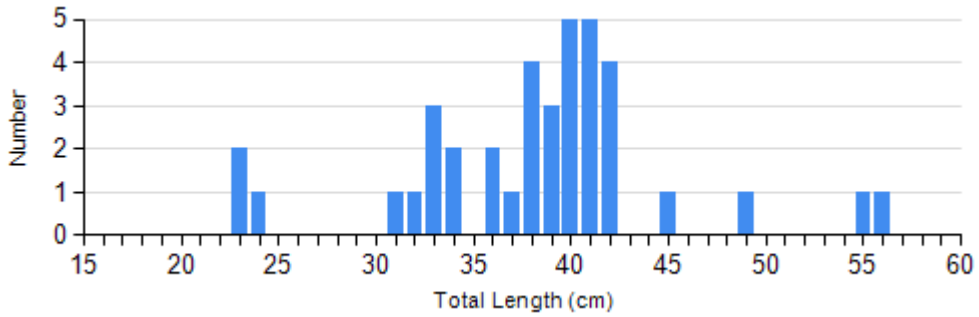



2017

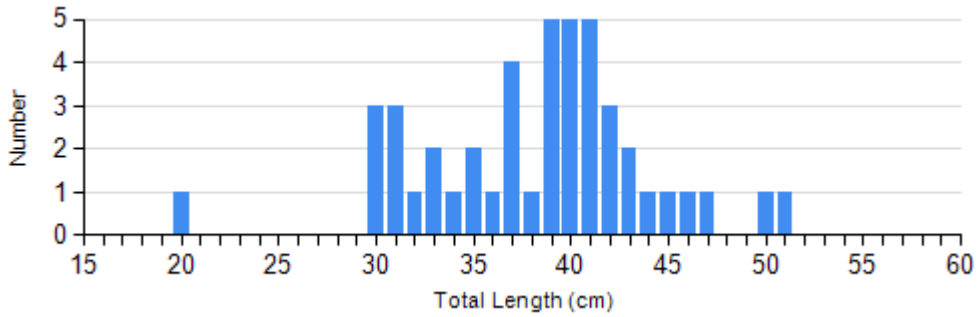
Species: Sauger
Gear: std exp gill net



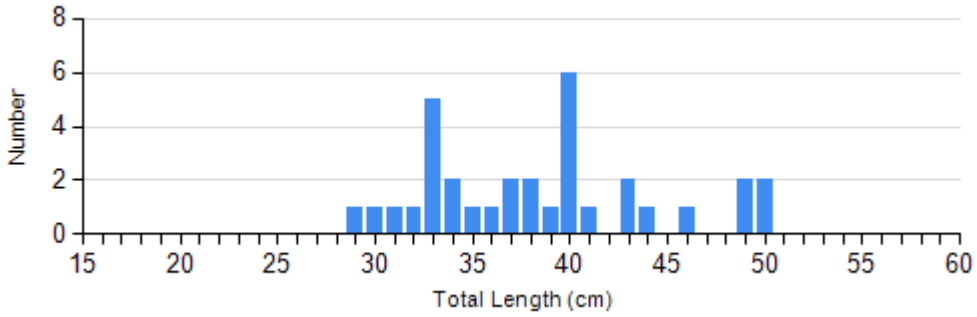

2013




2014

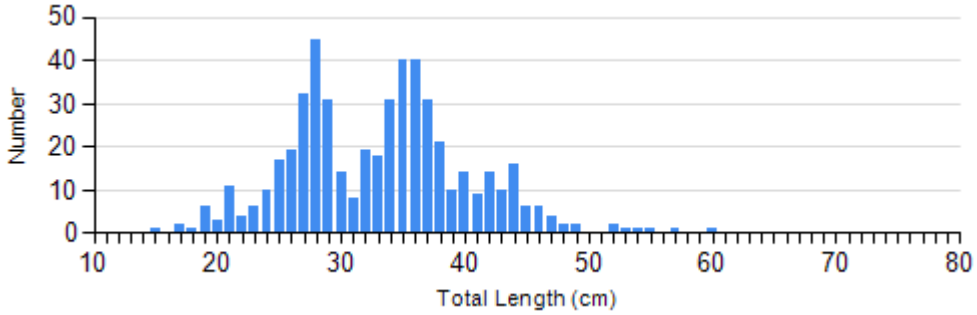



2015

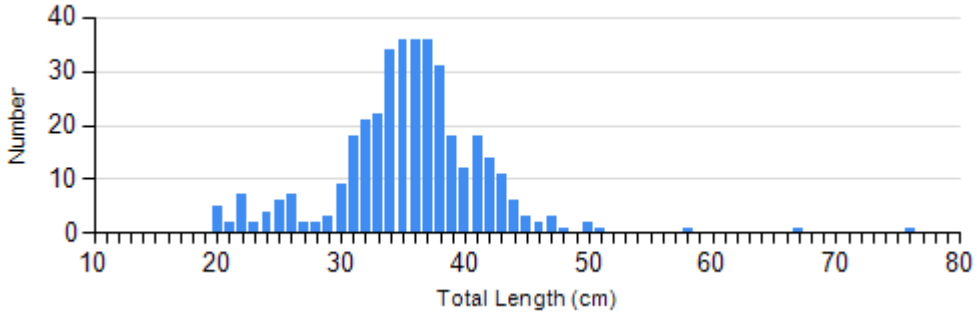



2016

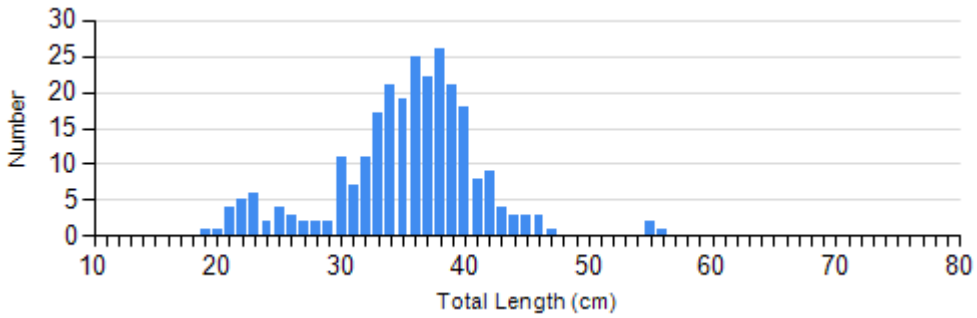
Species: Walleye
Gear: AFS std gill net




2014

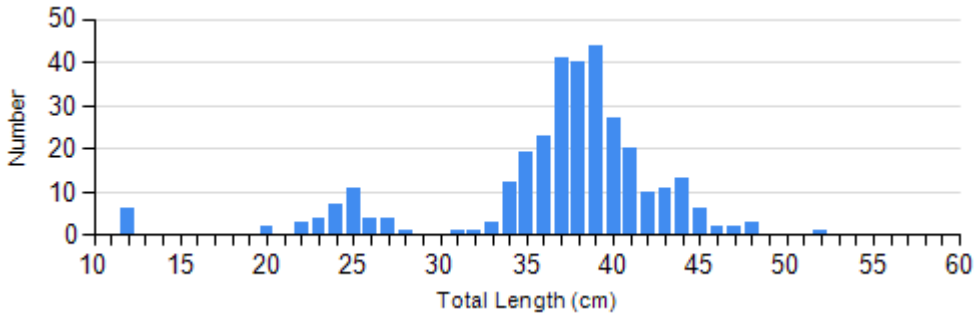



2017

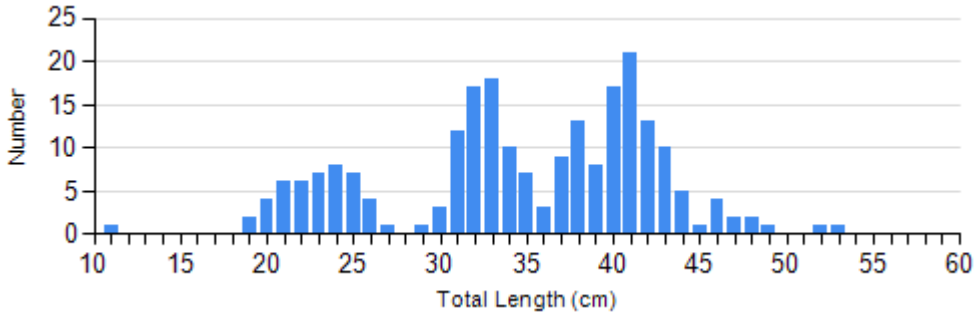



2018

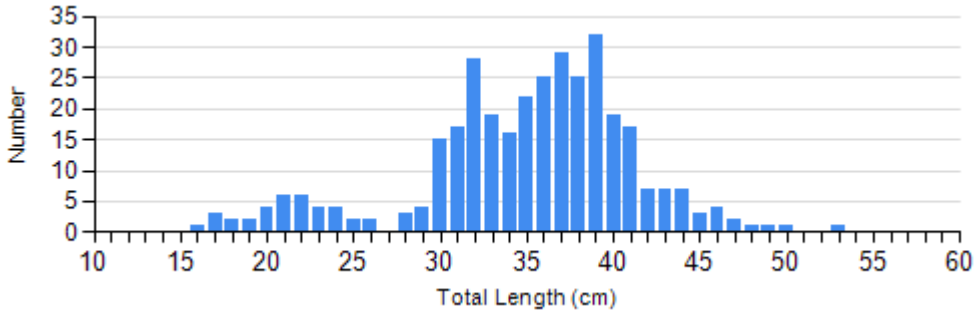
Species: Walleye
Gear: std exp gill net



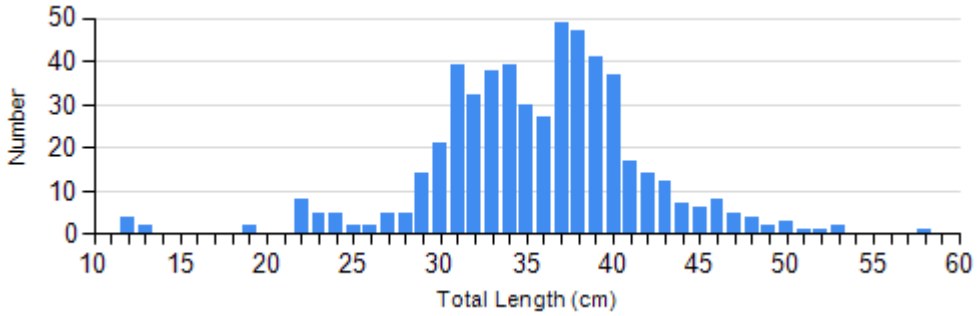

2013




2014

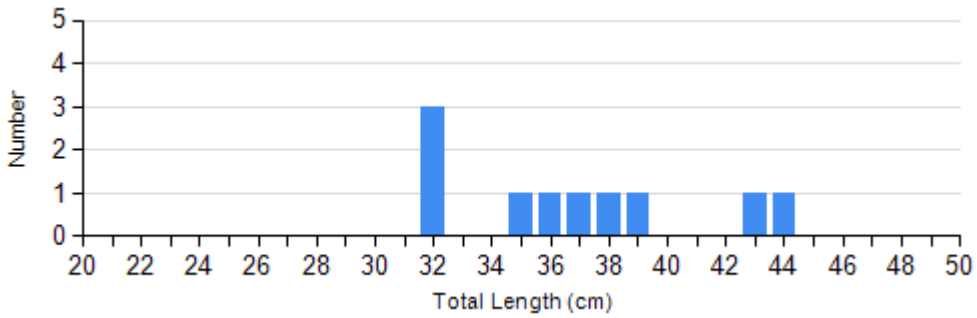



2015



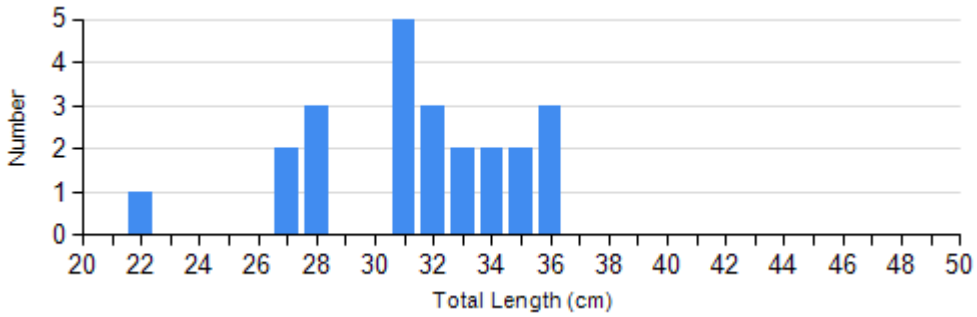

2016

Species: White Bass
Gear: AFS std gill net

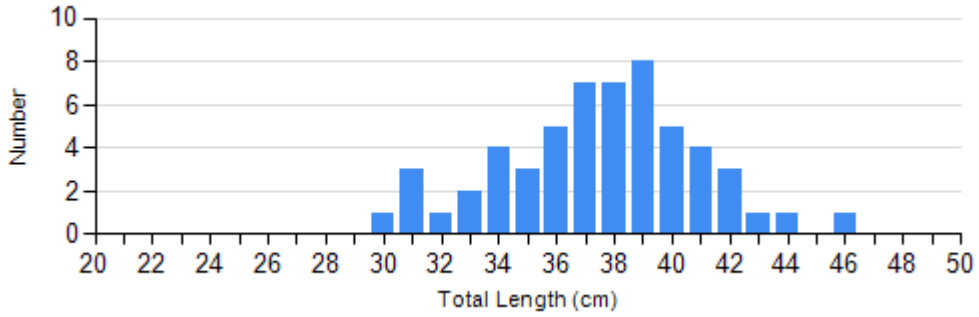



2018

Species: White Bass
Gear: AFS std gill net

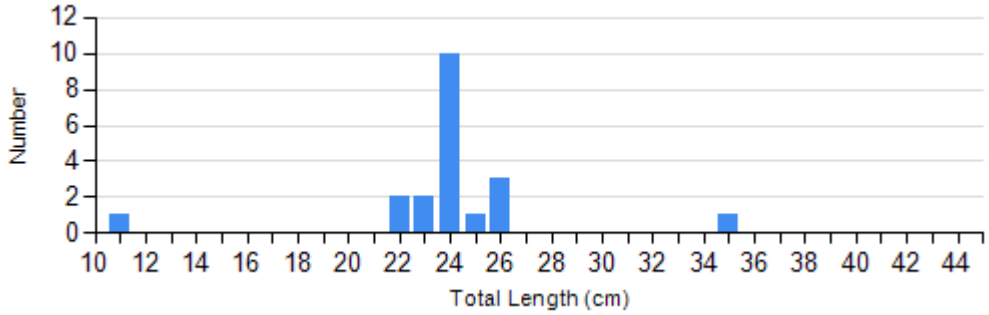



2014



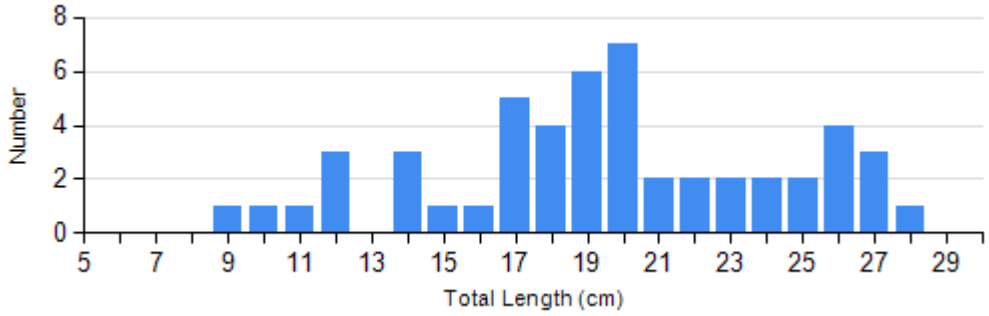

2017

Species: White Bass
Gear: std exp gill net

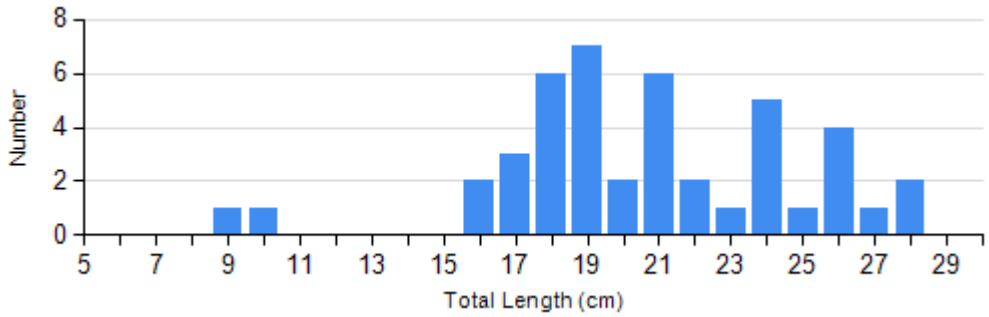



2013

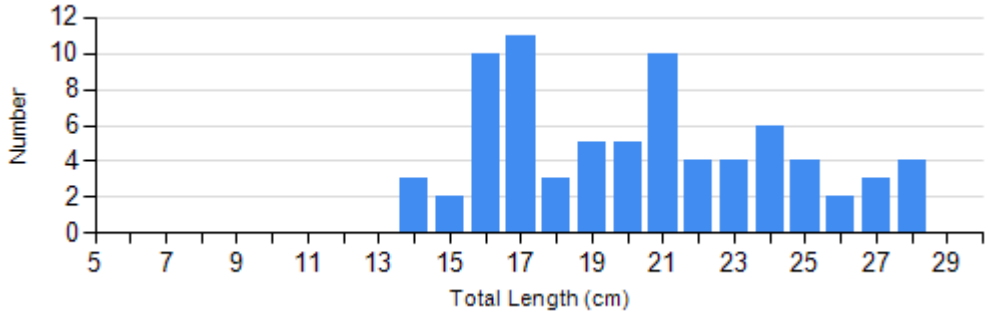
Species: Yellow Perch
Gear: AFS std gill net




2014

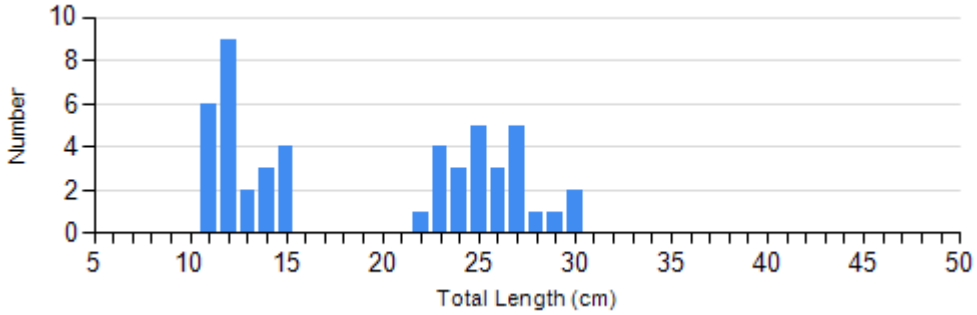



2017

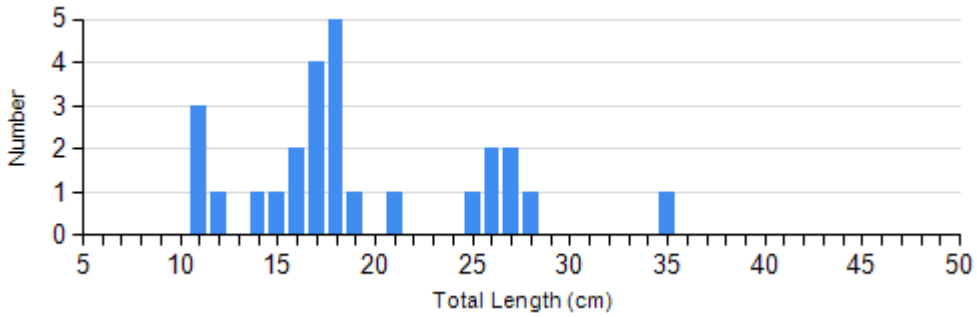



2018

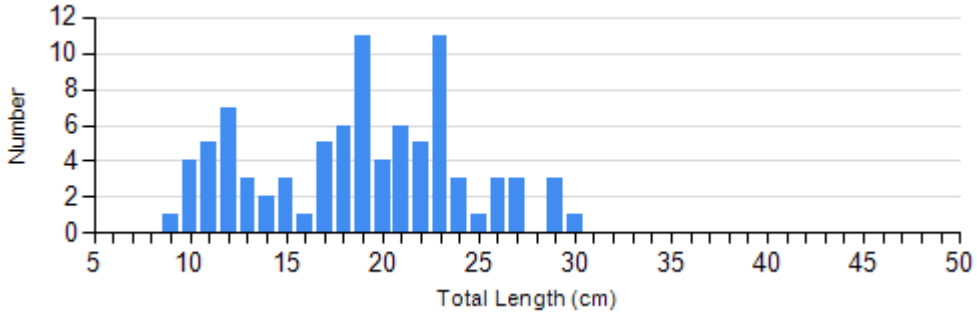
Species: Yellow Perch
Gear: std exp gill net



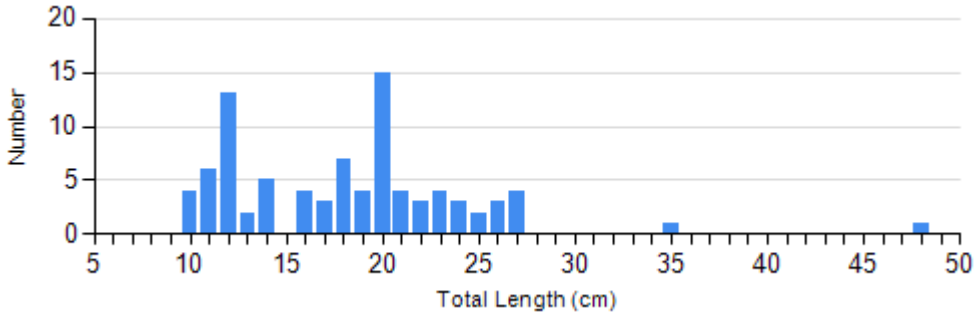

2013




2014




2015

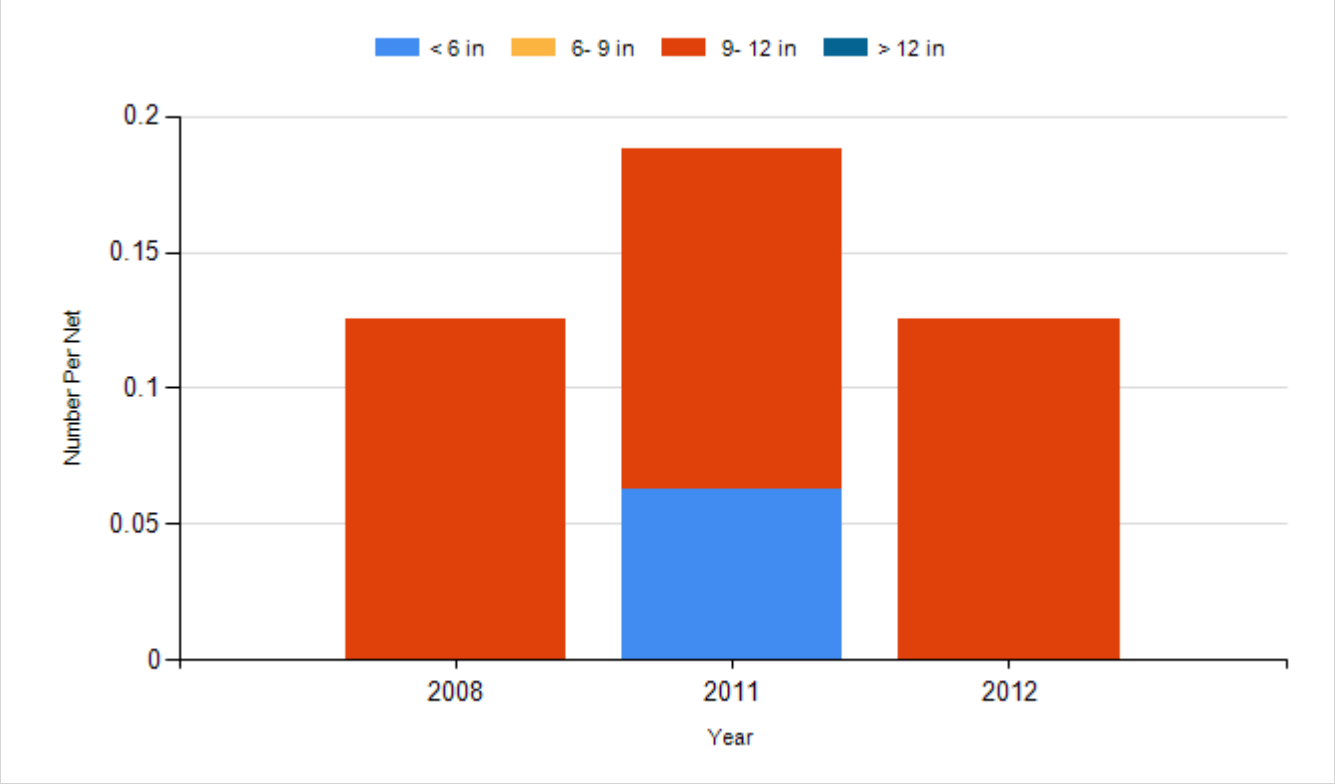



2016

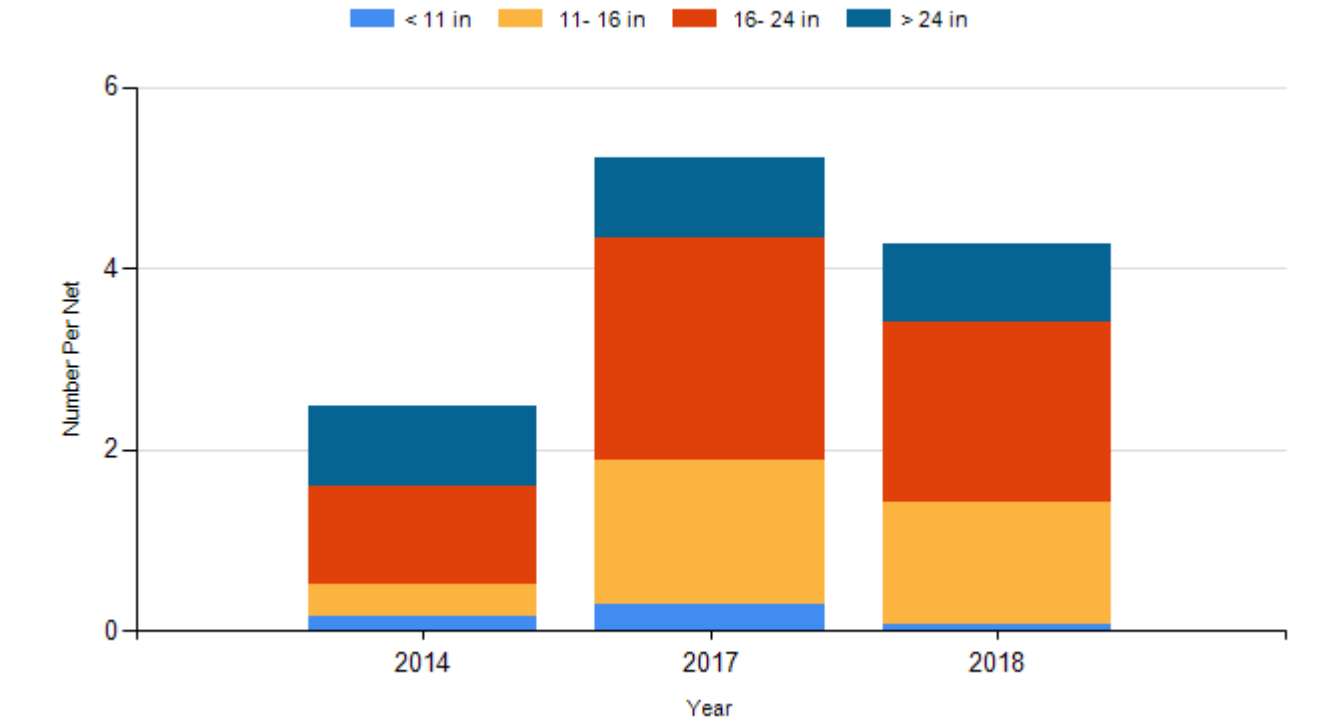
## Historic Fish Sizes and Relative Abundance

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

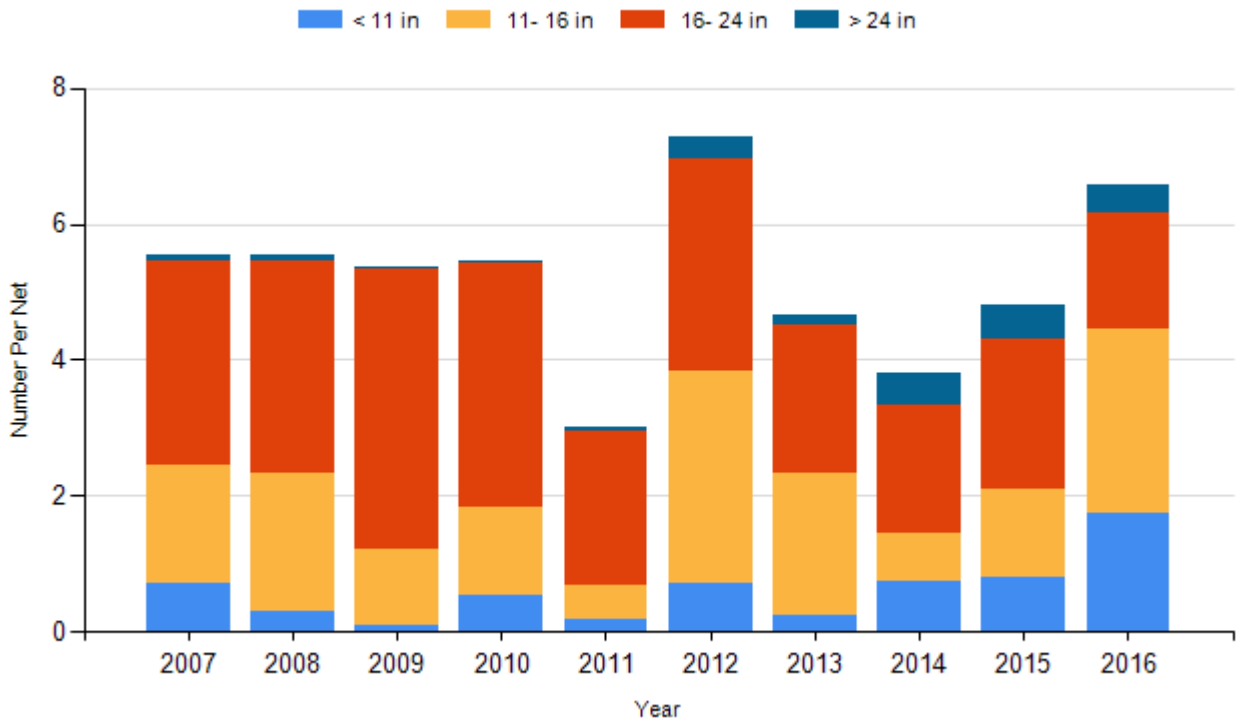
Species: Black Bullhead
Gear: std exp gill net



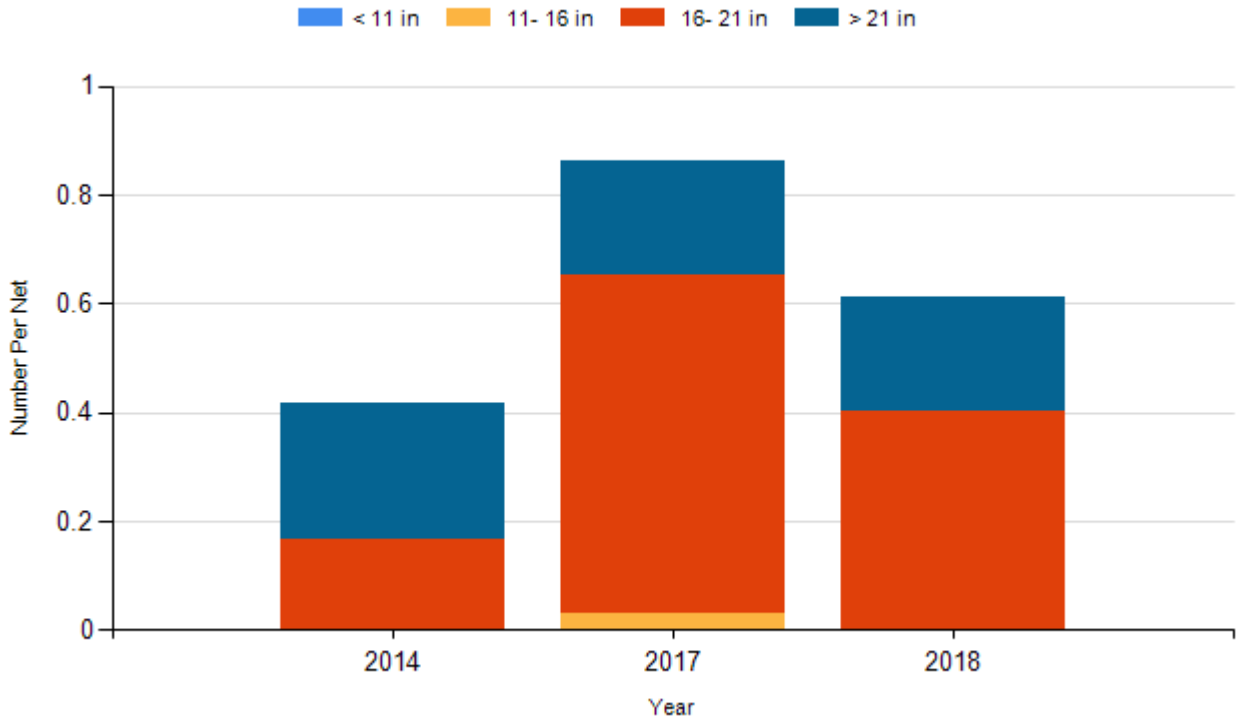

Species: Channel Catfish
Gear: AFS std gill net



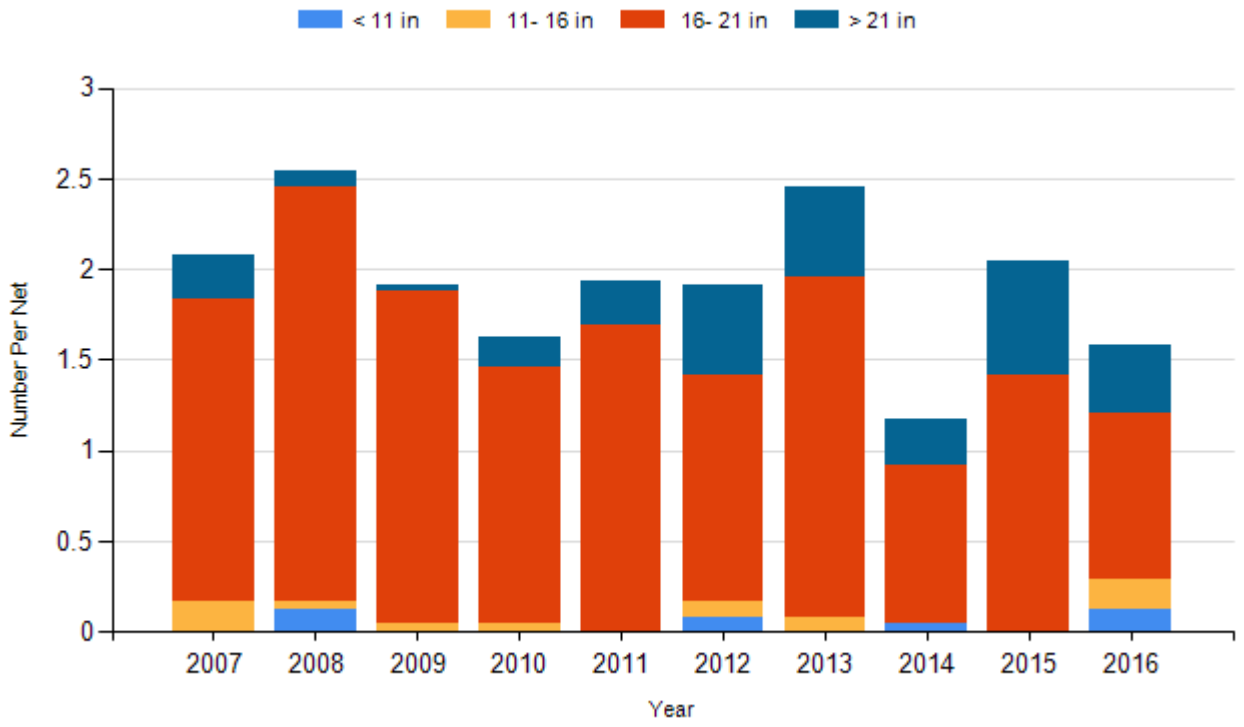
Species: Channel Catfish
Gear: std exp gill net



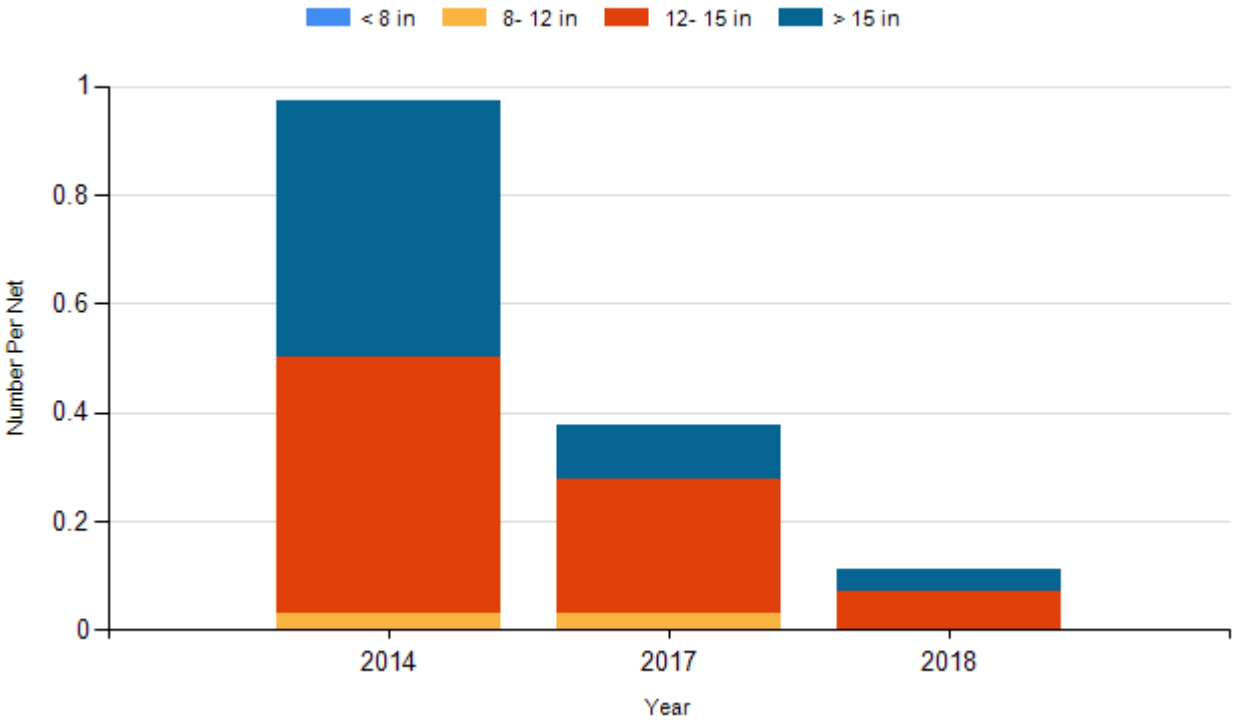

Species: Common Carp
Gear: AFS std gill net



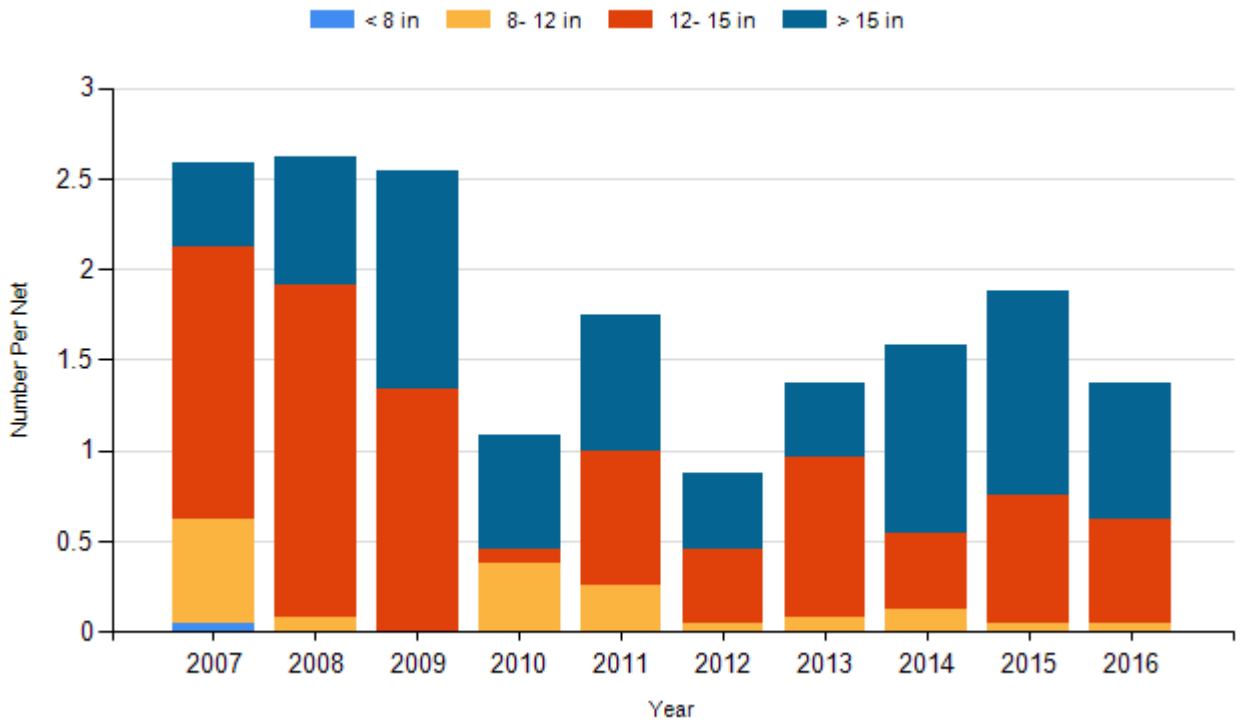
Species: Common Carp
Gear: std exp gill net



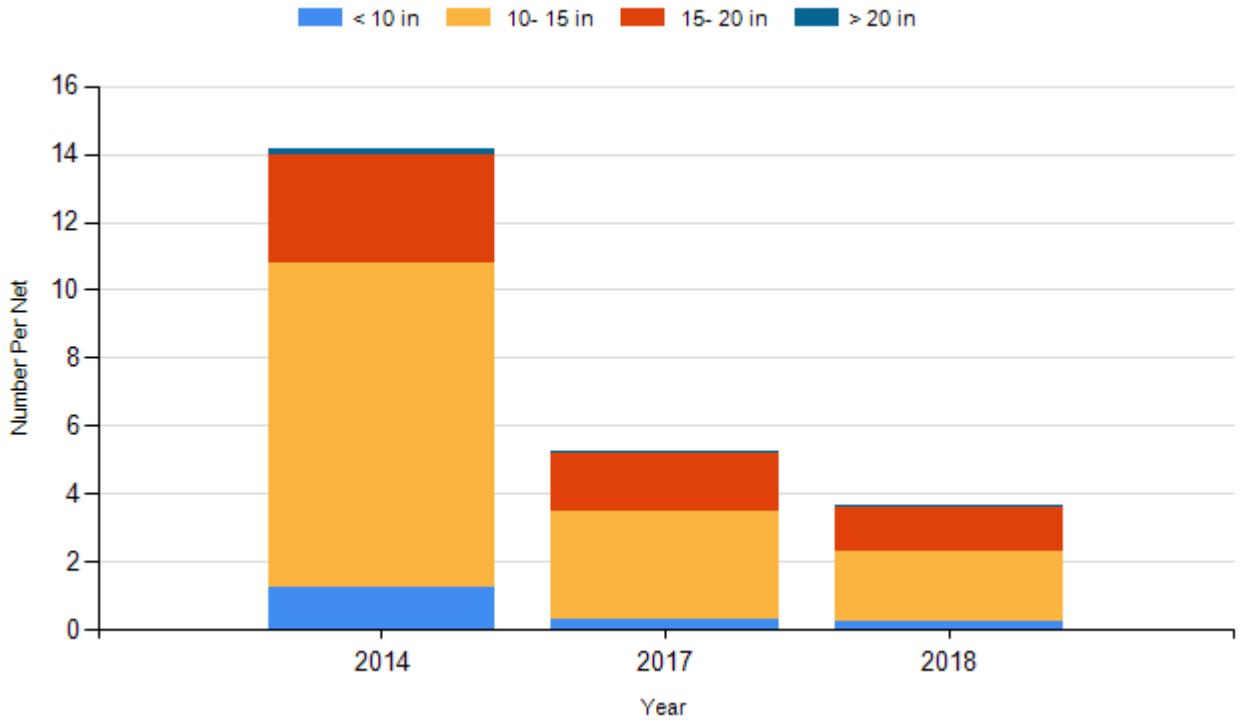

Species: Sauger
Gear: AFS std gill net



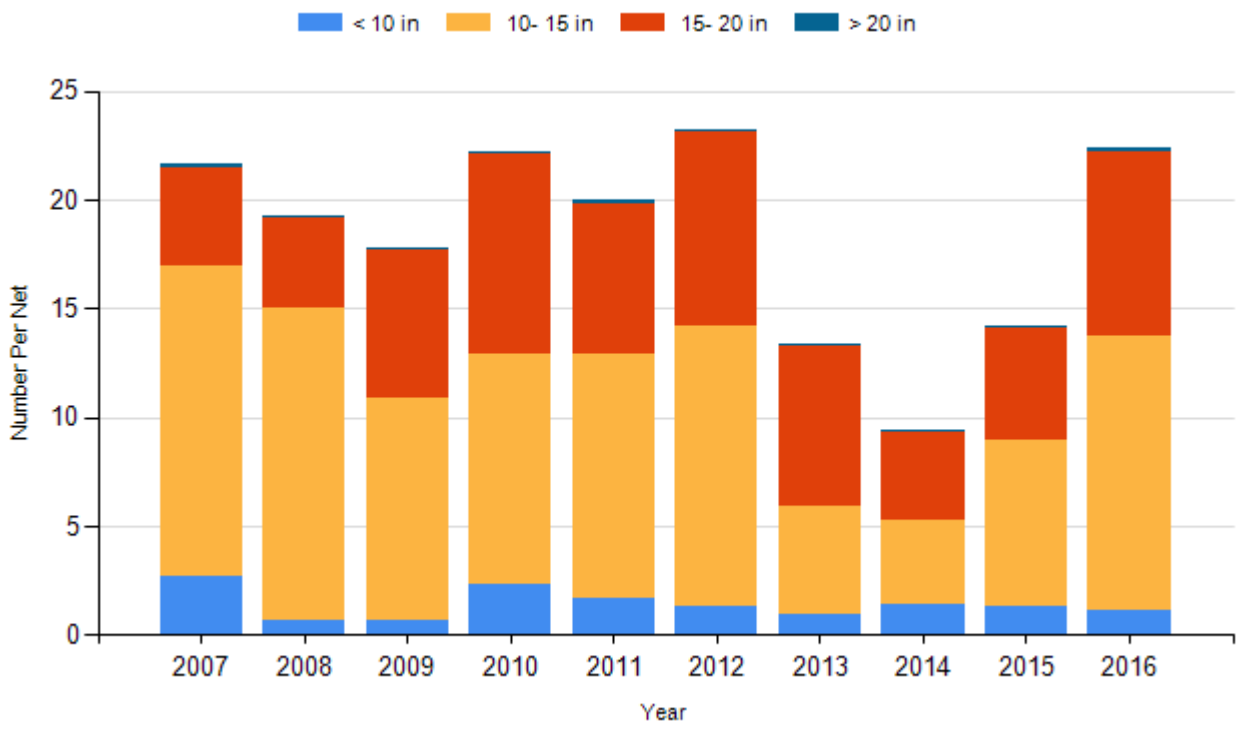
Species: Sauger
Gear: std exp gill net



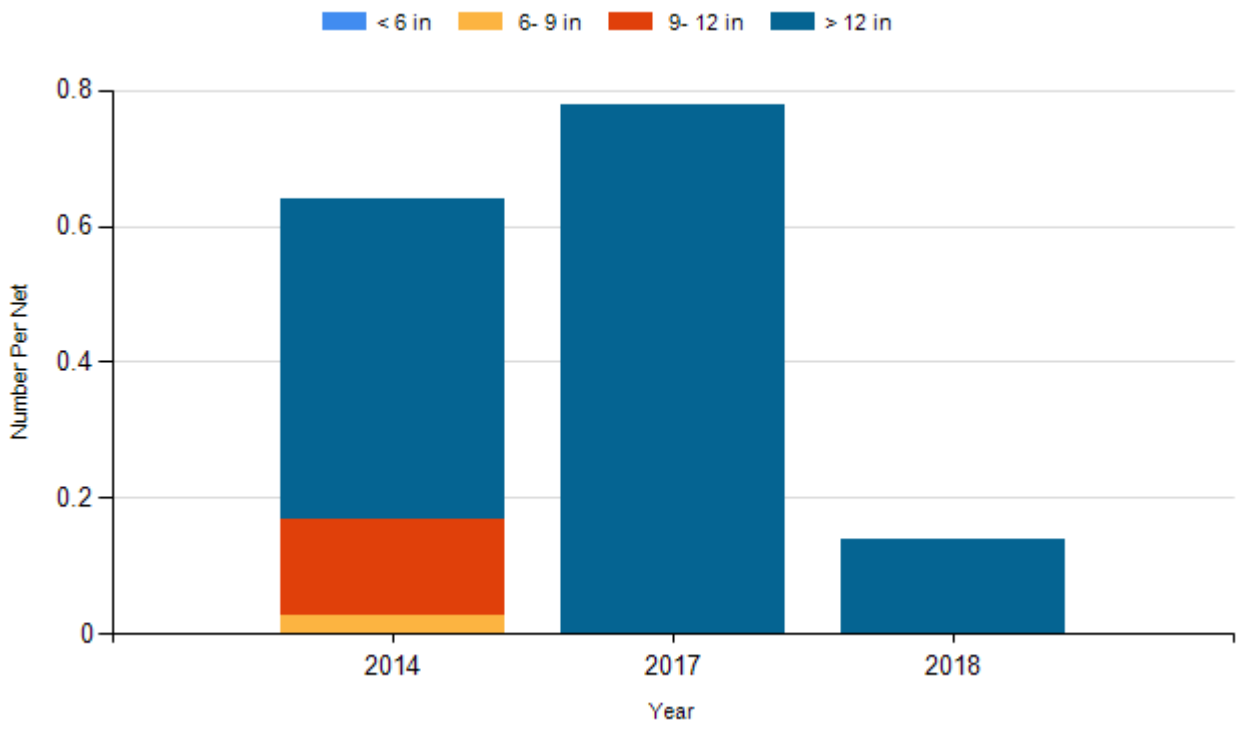

Species: Walleye
Gear: AFS std gill net



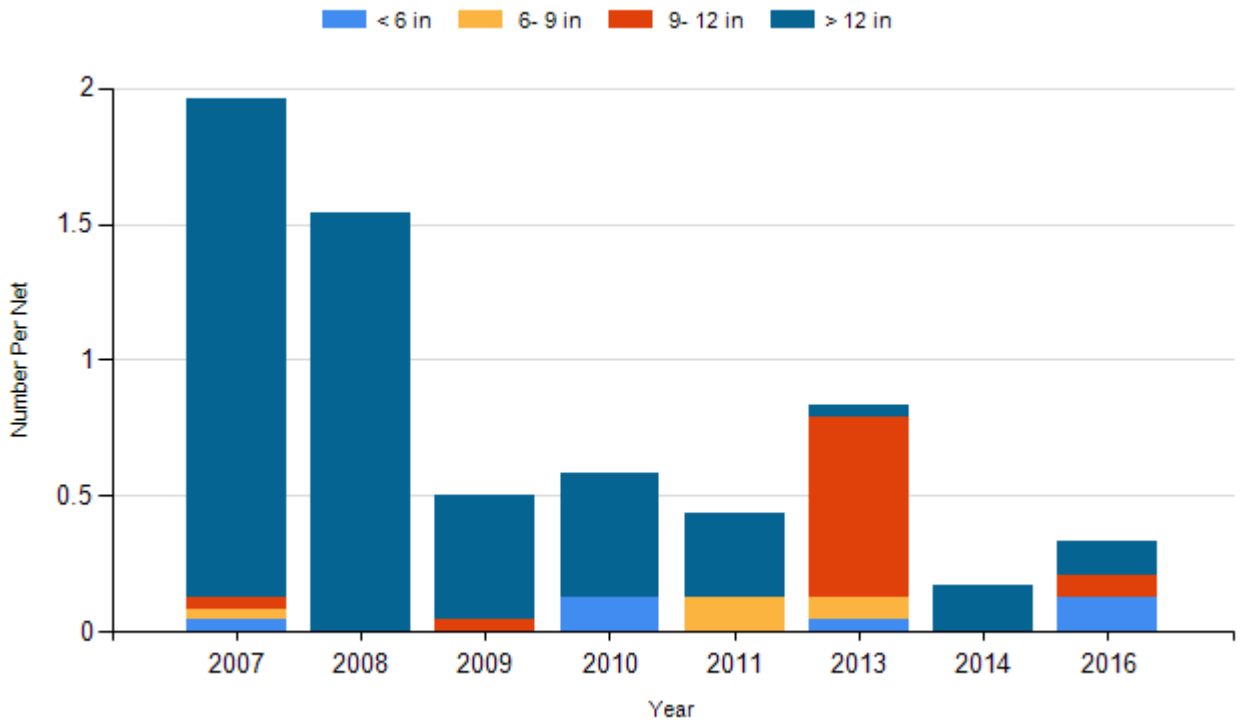
Species: Walleye
Gear: std exp gill net



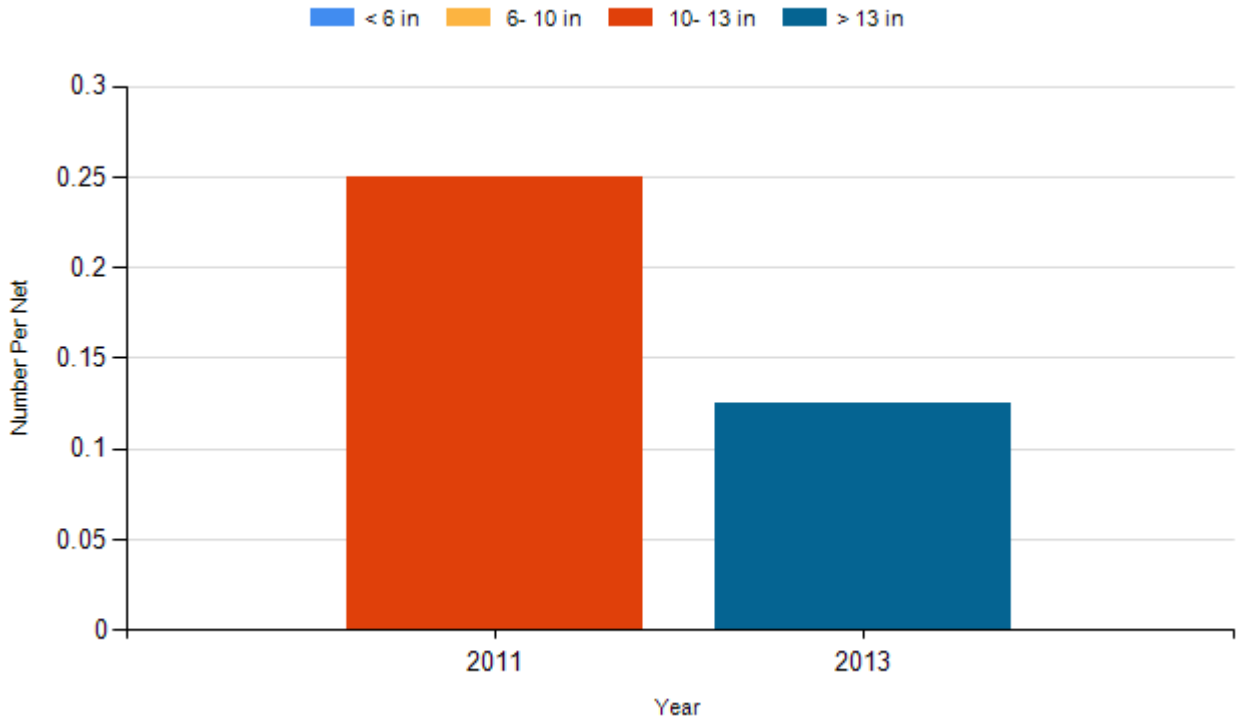

Species: White Bass
Gear: AFS std gill net



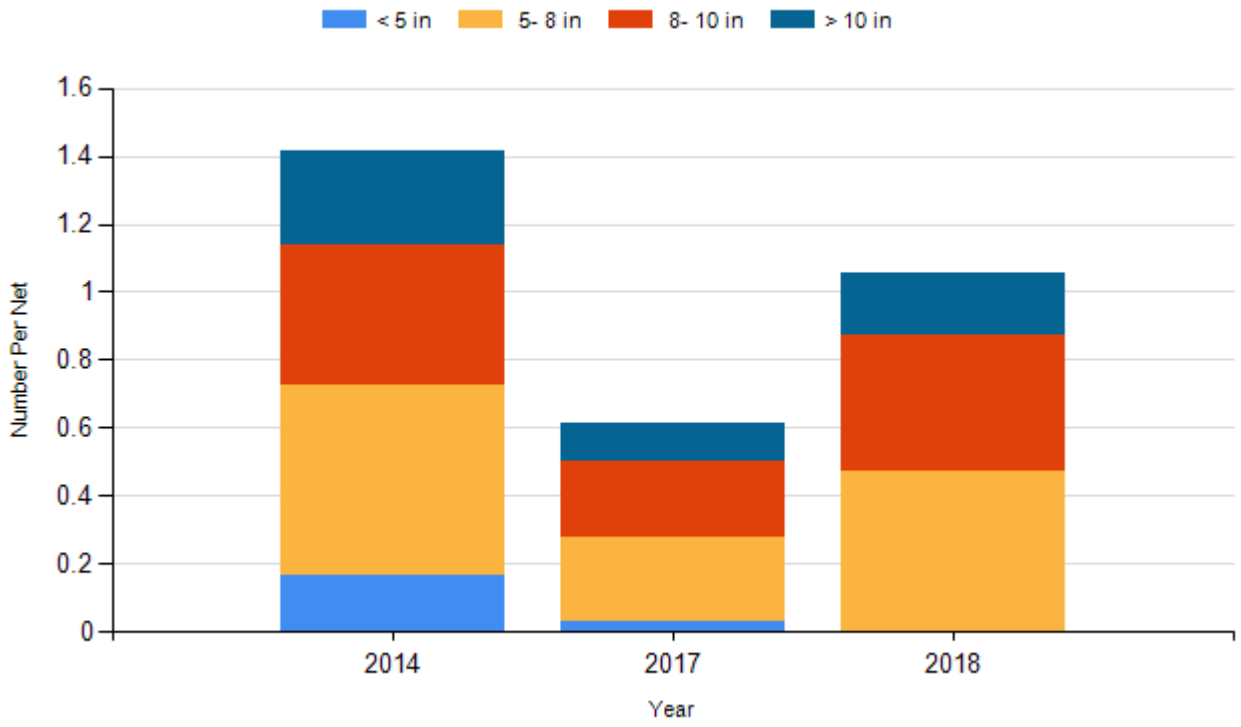
Species: White Bass
Gear: std exp gill net



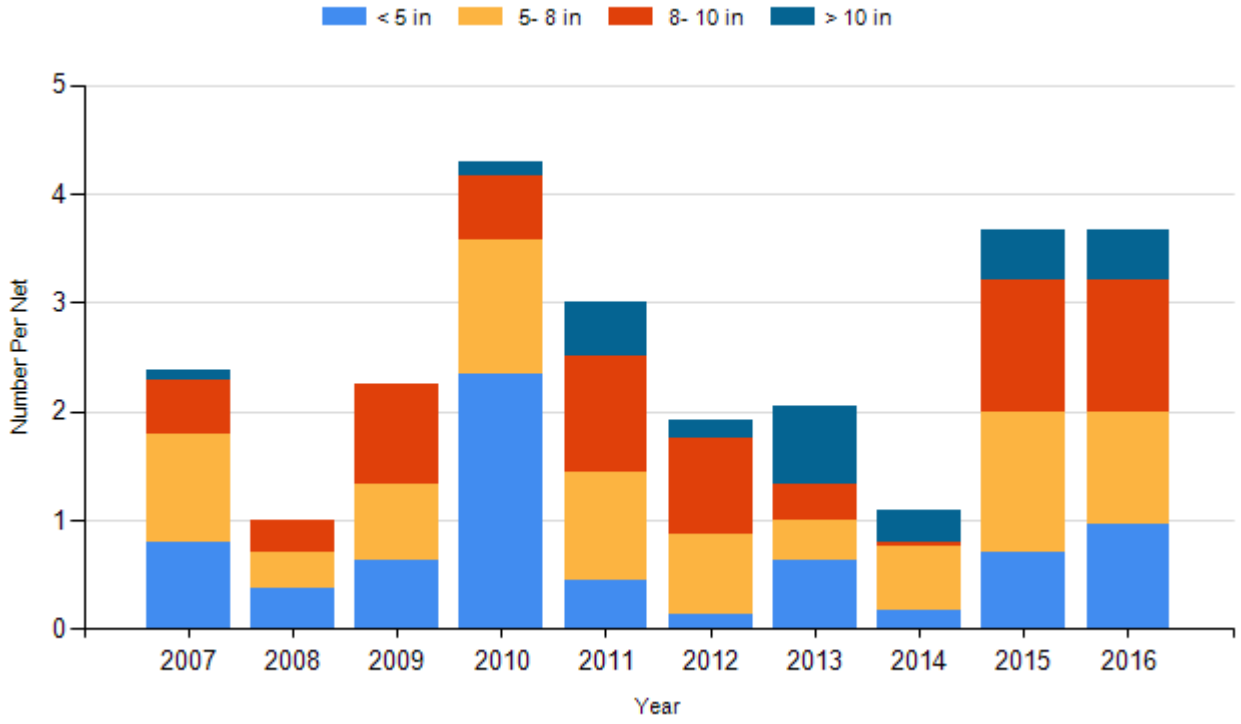

Species: White Sucker
Gear: std exp gill net



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 |
|---|---|---|---|
| 2018 | Paddlefish | | 5,178 |