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, Purple Loosestrife, and Zebra Mussels (discovered in 2019 in Lake Sharpe). 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 year round except during July and August where there is no minimum size regulation. Also, only one Walleye 20 inches or greater may be kept per person. Please see the 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.

Below are a few of the common angler targeted species of fish summaries for Lake Sharpe fisheries survey completed in 2019.

- **Channel Catfish:** Channel Catfish can be found throughout the lake and are great fun to catch. Channel Catfish are abundant in Lake Sharpe and are often overlooked. During the 2019 survey, the average size was 19 inches and 2.5 pounds. Catch rates in 2019 were 2.7 fish/net which is near the average 3.5. Approximately 16 percent of fish collected also were larger than 24 inches. The plumpness or fatness of Channel Catfish was good (91 Wr).
- **Smallmouth Bass:** Smallmouth Bass population abundance is stable and provides additional sport for anglers. Net catch rates in 2019 was 0.9 fish/net which is near the average of 1.1 fish/net. The average Smallmouth Bass collected in 2019 was 14.5 inches and 2 pounds. Approximately 61 percent of the fish collected were larger than 14 inches. Smallmouth in Lake Sharpe can reach lengths greater than 20 inches. The plumpness of Smallmouth Bass was good (93 Wr).
- **Sauger:** Lake Sharpe Sauger remains a secondary species. Sauger are more commonly found in the upper, more river-like, reaches of Lake Sharpe. Abundance seen in 2019 was 0.2 fish/net slightly lower than the average of 0.4 fish/net. Ages were determined from the fish collected and they ranged from 2 to 7 years old. Sauger typically reach 15 inches during the fourth and fifth growing season.
- **Walleye:** Walleye are the primary targeted species by anglers fishing Lake Sharpe. Walleye abundance decreased to 2.6 fish/net in 2019 from the average of 6.0 fish/net. This was possibly due to higher than average water flows through Lake Sharpe during the time of survey causing issues with net catchablity. Walleye collected ranged from 7 to 22 inches and averaged 14 inches. Approximately 47 percent of the population exceeded 15 inches at the time of survey. Walleye production was good throughout the lake as young walleye were collected by seining and averaged 1 fish/net-pull in 2019. Walleye typically surpass 15 inches during their fourth or fifth growing season. Walleye aged 0 to 12 years old were also collected in 2019. Lake Sharpe continues to be a productive fishery for Walleye into the future.
- **Yellow Perch:** Yellow Perch are found in Lake Sharpe and can be targeted by anglers. They also provide a prey for larger fish within the lake. Abundance was down slightly (0.5 fish/net) from the average of 0.9 fish/net. Yellow Perch collected ranged from 5 to 11 inches and averaged 8 inches in length. Approximately 14 percent collected were larger than 10 inches. Most Yellow Perch caught by anglers are accidently caught while targeting Walleye.

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 tag.sd.gov to help biologists improve the Walleye fishery on Lake Sharpe. Please report fish that were kept and released.

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

Prepared 02-25-2020 by KDP

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Sharpe, Hughes County
FTR-Lake-6327-001
2019

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 13, 2019	18 net-nights
AFS gill net (1/2 inch)	Aug 14, 2019	19 net-nights
AFS gill net (1/2 inch)	Aug 15, 2019	19 net-nights
AFS gill net (1/2 inch)	Aug 16, 2019	16 net-nights
AFS std gill net	Aug 13, 2019	18 net-nights
AFS std gill net	Aug 14, 2019	19 net-nights
AFS std gill net	Aug 15, 2019	19 net-nights
AFS std gill net	Aug 16, 2019	16 net-nights
large seine	Aug 01, 2019	8 hauls
large seine	Jul 31, 2019	8 hauls

Common Fish Species Present

Channel Catfish

Walleye

Smallmouth Bass

Common Carp

Gizzard Shad

Freshwater Drum

Yellow Perch

Shorthead Redhorse

Sauger

River Carpsucker

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
AFS gill net (1/2 inch)*	Channel Catfish	2	0.0	0.0	0		0		87	2
	Common Carp	4	0.1	0.0	100		25		85	2
	Gizzard Shad	2	0.0	0.0	0					
	Northern Pike	1	0.0	0.0	0		0		96	
	Sauger	6	0.1	0.0	50		50		74	7
	Spottail Shiner	6	0.1	0.1						
	Walleye	17	0.2	0.1	0		0		84	4
	Yellow Perch	23	0.3	0.1	14		0		96	4
AFS std gill net	Bigmouth Buffalo	2	0.0	0.0	100		100		77	11
	Black Bullhead	1	0.0	0.0	100		0		70	
	Channel Catfish	197	2.7	0.4	67	5	16	4	91	1
	Common Carp	55	0.8	0.2	100		27	9	83	2
	Flathead Catfish	2	0.0	0.0	50		0		87	1
	Freshwater Drum	33	0.5	0.2	100		100		85	3
	Gizzard Shad	34	0.5	0.1	100				108	2
	Goldeye	13	0.0	0.0						
	Lake Herring	3	0.0	0.0	100		67		69	1
	Northern Pike	1	0.0	0.0	0		0		86	
	River Carpsucker	9	0.1	0.1	100		100		100	4
	Sauger	12	0.2	0.1	92		33		65	4
	Shorthead Redhorse	20	0.3	0.1	85		70	17	108	10
	Shovelnose Sturgeon	5	0.0	0.0						
	Smallmouth Bass	67	0.9	0.5	87	6	61	9	93	1
	Smallmouth Buffalo	4	0.1	0.0	100		75		80	1
	Walleye	200	2.6	0.4	47	5	1		78	1
	White Bass	8	0.1	0.1	100		100		92	5
	White Sucker	1	0.0	0.0	100		100		92	
	Yellow Perch	37	0.5	0.2	68	12	14	9	98	3
large seine*	Walleye	16	1.0	0.7						

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.

Gear	Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Avg
AFS gill net (1/2 inch)*	Black Crappie								0.0	0.0	0.0	0.00
	Channel Catfish								0.1	0.0	0.0	0.03
	Common Carp								0.0	0.0	0.1	0.03
	Freshwater Drum								0.0	0.0	0.0	0.00
	Gizzard Shad								0.0	0.1	0.0	0.03
	Northern Pike								0.0	0.0	0.0	0.00
	Rainbow Smelt								0.0	0.0	0.0	0.00
	Sauger								0.0	0.0	0.1	0.03
	Smallmouth Bass								0.0	0.0	0.0	0.00
	Spottail Shiner								0.2	0.3	0.1	0.20
	Walleye								0.3	0.4	0.2	0.30
	White Bass								0.0	0.0	0.0	0.00
	Yellow Perch								0.2	0.3	0.3	0.27
AFS std gill net	Bigmouth Buffalo					0.0			0.0	0.0	0.0	0.00
	Black Bullhead					0.0			0.0	0.0	0.0	0.00
	Black Crappie					0.0			0.0	0.0	0.0	0.00
	Channel Catfish					2.3			4.9	4.2	2.7	3.53
	Common Carp					0.4			0.9	0.6	0.8	0.68
	Flathead Catfish					0.0			0.0	0.1	0.0	0.03
	Freshwater Drum					0.4			0.6	0.4	0.5	0.48
	Gizzard Shad					0.2			0.3	0.3	0.5	0.33
	Goldeye					0.0			0.0	0.0	0.0	0.00
	Lake Herring					0.0			0.0	0.0	0.0	0.00
	Northern Pike					0.0			0.0	0.0	0.0	0.00
	Rainbow Trout					0.0			0.0	0.0	0.0	0.00
	River Carpsucker					0.8			0.2	0.0	0.1	0.28
	Sauger					1.0			0.4	0.1	0.2	0.43
	Shorthead Redhorse					0.6			0.1	0.2	0.3	0.30
	Shortnose Gar					0.0			0.0	0.0	0.0	0.00
	Shovelnose Sturgeon					0.0			0.0	0.0	0.0	0.00
	Smallmouth Bass					1.9			0.8	1.0	0.9	1.15
	Smallmouth Buffalo					0.3			0.1	0.0	0.1	0.13
	Spottail Shiner					0.0			0.0	0.0	0.0	0.00
	Walleye					12.9			5.0	3.4	2.6	5.98
	White Bass					0.6			0.8	0.1	0.1	0.40
	White Sucker					0.0			0.0	0.0	0.0	0.00
	Yellow Perch					1.3			0.6	1.1	0.5	0.88
Large seine*	Black Crappie									0.1	0.0	0.03
	Bluntnose Minnow									0.8	0.0	0.41
	Channel Catfish									0.1	0.0	0.06
	Common Carp									0.1	0.0	0.06
	Emerald Shiner									13.1	0.0	6.56

	Freshwater Drum									2.9	0.0	1.44
	Gizzard Shad									1,312.3	0.0	656.13
	Johnny Darter									0.9	0.0	0.44
	Lake Herring									0.2	0.0	0.09
	Largemouth Bass									0.3	0.0	0.16
	Orangespotted Sunfish									0.1	0.0	0.06
	River Carpsucker									0.4	0.0	0.22
	Shorthead Redhorse									0.1	0.0	0.03
	Smallmouth Bass									4.8	0.0	2.38
	Spottail Shiner									3.3	0.0	1.63
	Walleye									2.7	1.0	1.85
	White Bass									2.4	0.0	1.19
	White Crappie									0.1	0.0	0.03
	White Sucker									0.3	0.0	0.16
	Yellow Perch									27.2	0.0	13.59
Std exp gill net	Bigmouth Buffalo	0.0	0.0	0.0	0.0	0.0	0.0	0.2				0.03
	Black Bullhead	0.0	0.1	0.1	0.0	0.0	0.0	0.0				0.03
	Black Crappie	0.1	0.1	0.0	0.0	0.0	0.1	0.1				0.06
	Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Channel Catfish	5.0	2.8	6.6	4.4	3.0	4.0	4.8				4.37
	Chinook Salmon	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Common Carp	1.7	1.9	1.8	2.5	1.1	2.0	1.5				1.79
	Freshwater Drum	0.2	0.2	0.3	0.1	0.1	0.4	0.5				0.26
	Gizzard Shad	0.2	0.0	0.0	0.0	0.3	0.6	3.6				0.67
	Goldeye	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Lake Herring	0.0	0.0	0.0	0.0	0.0	0.6	0.0				0.09
	Largemouth Bass	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Northern Pike	0.0	0.1	0.0	0.0	0.0	0.0	0.0				0.01
	Rainbow Smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Rainbow Trout	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	River Carpsucker	1.1	0.6	0.3	0.5	2.0	2.7	0.3				1.07
	Sauger	1.1	1.8	0.9	1.4	1.6	1.9	1.4				1.44
	Shorthead Redhorse	0.0	0.7	0.8	1.3	0.7	1.5	0.3				0.76
	Shortnose Gar	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Shovelnose Sturgeon	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Smallmouth Bass	1.3	0.3	0.2	1.1	0.6	0.7	1.6				0.83
	Smallmouth Buffalo	0.0	0.0	0.0	0.0	0.1	0.0	0.0				0.01
	Spottail Shiner	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.00
	Walleye	19.9	18.4	21.9	12.5	8.0	12.9	21.3				16.41
	White Bass	0.5	0.4	0.0	0.8	0.2	0.0	0.2				0.30
	White Crappie	0.1	0.1	0.0	0.0	0.0	0.0	0.8				0.14
	White Sucker	0.0	0.3	0.0	0.1	0.0	0.0	0.0				0.06
	Yellow Perch	1.9	2.6	1.8	1.4	0.9	3.0	2.7				2.04

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.

Gear	Species		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AFS std gill net	Bigmouth Buffalo	PSD								100	100	100
		PSD-P								100	100	100
		Wr								88	81	77
	Black Bullhead	PSD										100
		PSD-P										0
		Wr										70
	Black Crappie	PSD					0					
		PSD-P					0					
	Channel Catfish	PSD					86			68	68	67
		PSD-P					39			18	21	16
		Wr								85	90	91
	Common Carp	PSD					100			97	100	100
		PSD-P					60			24	34	27
		Wr								80	85	83
	Flathead Catfish	PSD					100			100	75	50
		PSD-P					0			0	0	0
		Wr								70	86	87
	Gizzard Shad	PSD					100			100	96	100
		Wr								97	99	108
	Lake Herring	PSD								100	100	100
		PSD-P								100	0	67
		Wr								104	69	69
	Northern Pike	PSD								50		0
		PSD-P								0		0
		Wr								162		86
	Rainbow Trout	PSD					0					
		PSD-P					0					
	River Carpsucker	PSD					96			94	100	100
		PSD-P					96			50	100	100
		Wr								98	92	100
	Sauger	PSD					97			93	100	92
		PSD-P					49			26	38	33
		Wr								72	70	65
	Shorthead Redhorse	PSD					100			100	94	85
		PSD-P					81			100	81	70
		Wr								102	98	108
	Smallmouth Bass	PSD					68			70	90	87

		PSD-P					26			32	49	61
		Wr								99	100	93
	Smallmouth Buffalo	PSD					100			100	100	100
		PSD-P					82			100	100	75
		Wr								77	75	80
	Walleye	PSD					26			35	40	47
		PSD-P					2			1	1	1
		Wr								77	80	78
	White Bass	PSD					96			100	100	100
		PSD-P					74			100	100	100
		Wr								93	100	92
	White Sucker	PSD					100			100		100
		PSD-P					0			100		100
		Wr								88		92
	Yellow Perch	PSD					56			57	55	68
		PSD-P					22			19	17	14
		Wr								87	86	98
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	74	82	53	53	77	68	44			
		PSD-P	1	2	5	4	15	13	9			
		Wr	88	89	90	86	86	89	85			
	Common Carp	PSD	97	100	95	97	100	100	89			
		PSD-P	10	13	27	20	22	31	26			
		Wr	81	81	84	86	84	82	87			
	Gizzard Shad	PSD	100	0	100	0	100	14	36			
		Wr	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			95		84		
River Carpsucker	PSD	88	100	100	100	98	100	100
	PSD-P	84	56	100	100	92	89	100
	Wr	92	92	107	96	100	93	98
Sauger	PSD	65	86	95	94	92	98	97
	PSD-P	58	43	48	30	66	60	55
	Wr	81	77	79	76	72	76	74
Shorthead Redhorse	PSD	100	91	100	97	100	100	100
	PSD-P	100	27	58	91	94	100	63
	Wr	116	91	99	97	98	100	185
Smallmouth Bass	PSD	59	80	40	52	79	71	71
	PSD-P	24	40	20	19	57	35	47
	Wr	103	87	101	107	101	100	101
Smallmouth Buffalo	PSD	100			100	67	100	
	PSD-P	100			100	33	0	
	Wr	58			75	118	77	
Walleye	PSD	47	39	41	60	52	41	41
	PSD-P	1	1	1	0	1	0	1
	Wr	87	83	83	84	85	79	82
White Bass	PSD	100	71	100	89	100	100	100
	PSD-P	100	71	100	5	100	100	60
	Wr	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		0	
	PSD-P	100	0		100		0	
	Wr	91	82		101		86	
Yellow Perch	PSD	36	61	58	74	36	56	62
	PSD-P	6	20	9	50	32	15	17
	Wr	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+
2019	11		284 (1)	341 (3)	346 (1)	377 (5)		415 (1)			
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)					

Species: Walleye

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	199	222 (16)	319 (15)	359 (48)	384 (26)	380 (53)	404 (29)	451 (7)		500 (2)	462 (1)
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)

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).

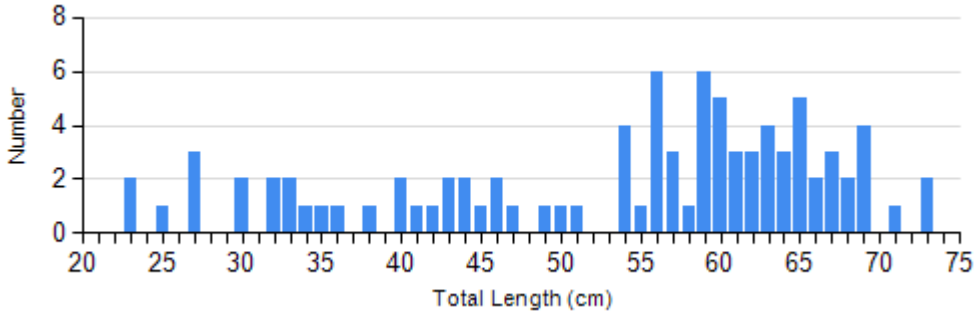
		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Bullhead Gill Net	2016	0		1	78	0		0	
	2019	0		1	70	0		0	
Channel Catfish Gill Net	2015	31	89 (2.7)	53	89 (1.2)	12	85 (2.0)	0	
	2016	65	88 (1.5)	41	82 (1.6)	9	81 (2.6)	1	75
	2017	114	89 (1.2)	177	84 (0.9)	60	81 (1.5)	3	93 (5.3)
	2018	97	96 (3.9)	143	87 (0.8)	61	85 (1.7)	1	105
	2019	65	90 (0.7)	100	92 (1.1)	29	94 (1.9)	2	85 (6.4)
Common Carp Gill Net	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	
	2019	0		40	83 (1.2)	15	84 (3.0)	0	
Northern Pike Gill Net	2015	0		1	86	0		0	
	2016	0		1	86	0		0	
	2017	1	89	1	235	0		0	
	2019	1	86	0		0		0	
Sauger Gill Net	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	
	2019	1	74	7	67 (4.0)	4	59 (2.7)	0	
Walleye Gill Net	2015	182	80 (1.2)	126	79 (0.7)	1	84	0	
	2016	303	84 (0.5)	203	81 (0.5)	5	73 (1.1)	0	
	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	
	2019	97	81 (0.7)	85	76 (0.8)	2	75 (2.3)	0	
White Bass Gill Net	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)
	2018	0		0		6	103 (1.8)	4	94 (3.4)
	2019	0		0		2	102 (2.1)	6	89 (4.2)
White Sucker Gill Net	2015	1	86	0		0		0	
	2017	0		0		1	90	1	86
	2019	0		0		1	92	0	
Yellow Perch Gill Net	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	
	2019	12	110 (4.6)	20	95 (2.2)	5	87 (4.3)	0	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Channel Catfish
Gear: AFS std gill net



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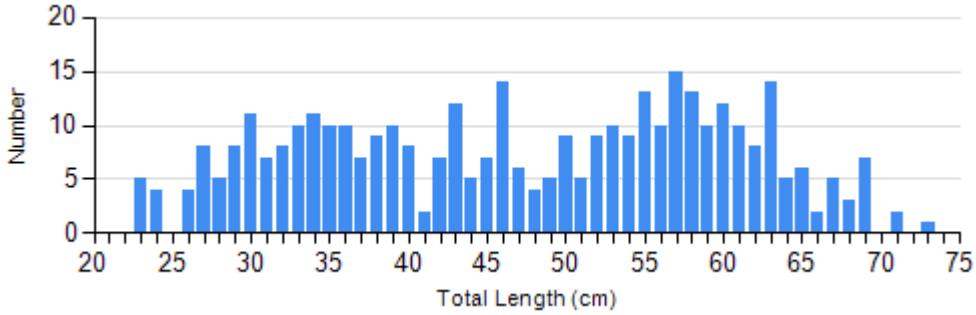
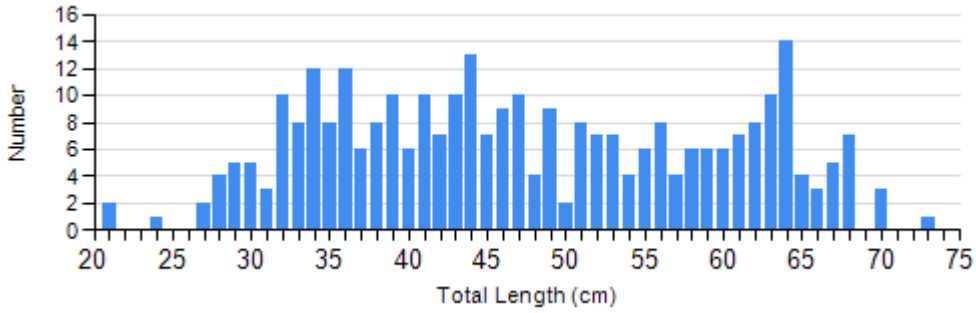


2017



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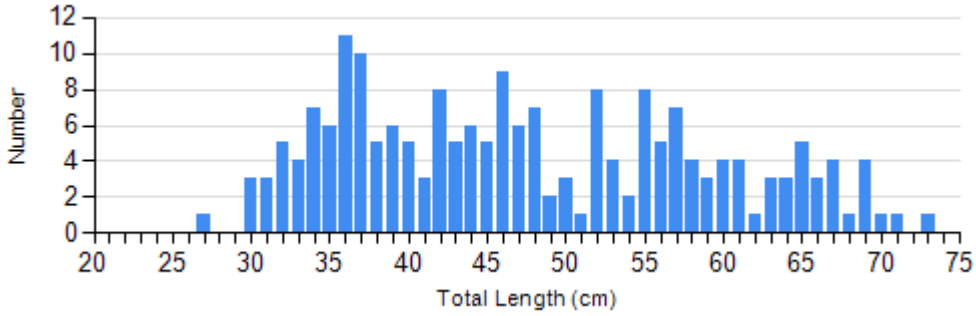
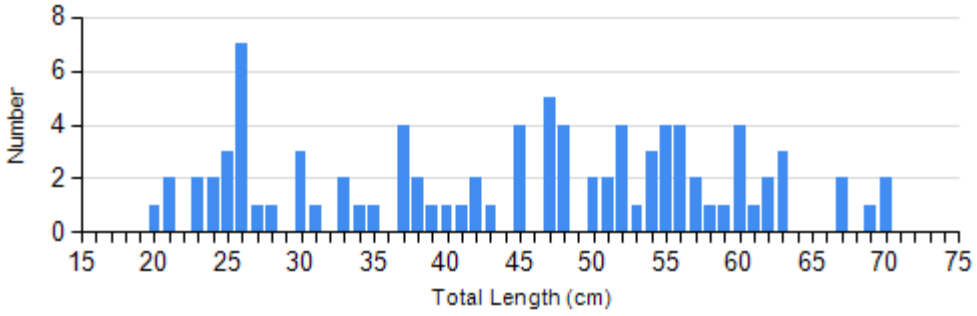


2019

Species: Channel Catfish
Gear: std exp gill net

2014



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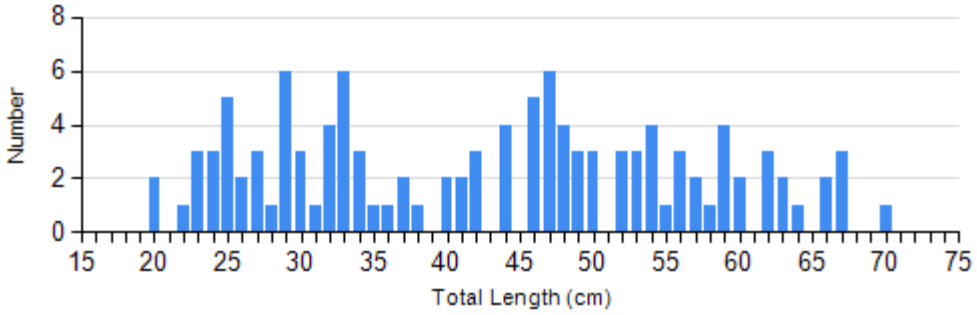
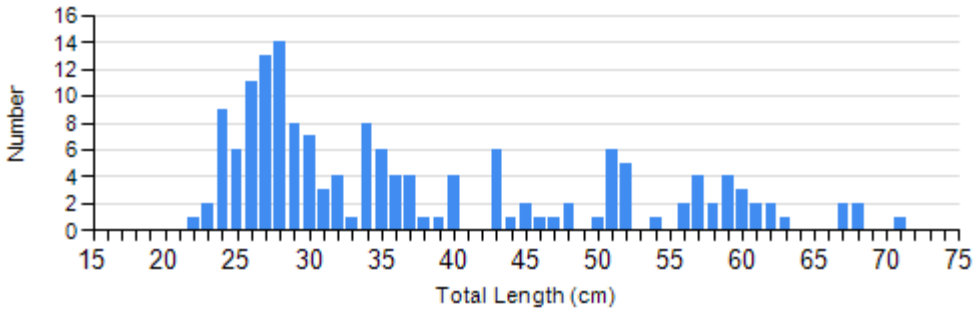
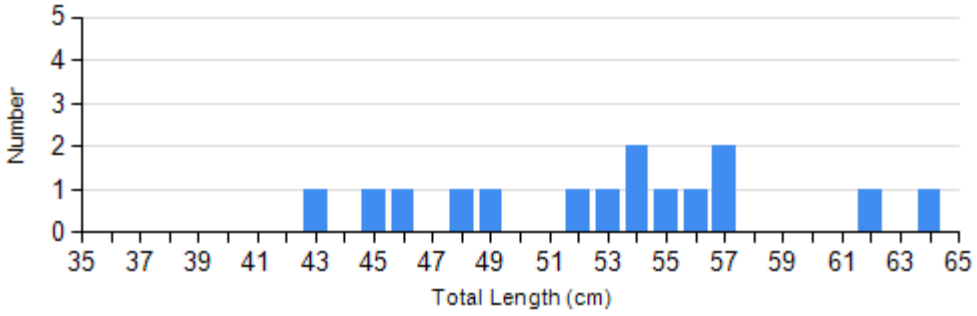


2016



Species: Common Carp
Gear: AFS std gill net

2014



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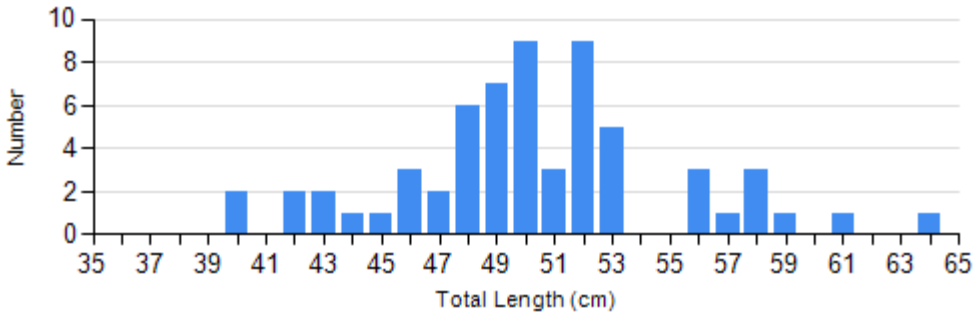

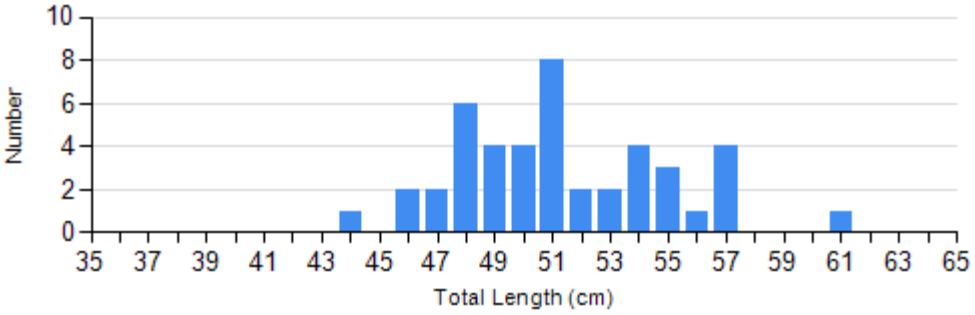

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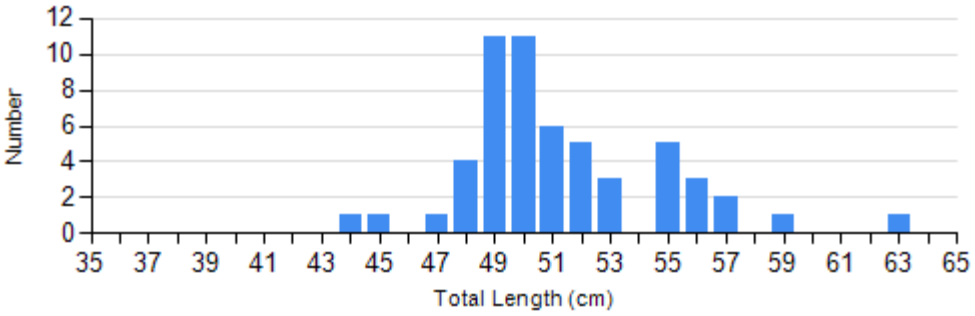
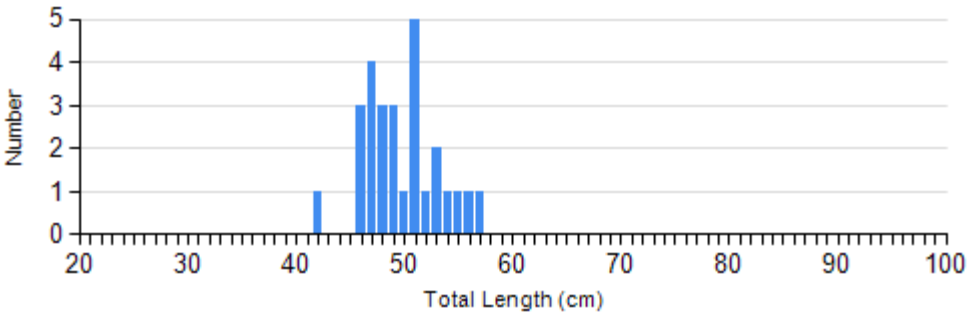


2019

Species: Common Carp
Gear: std exp gill net



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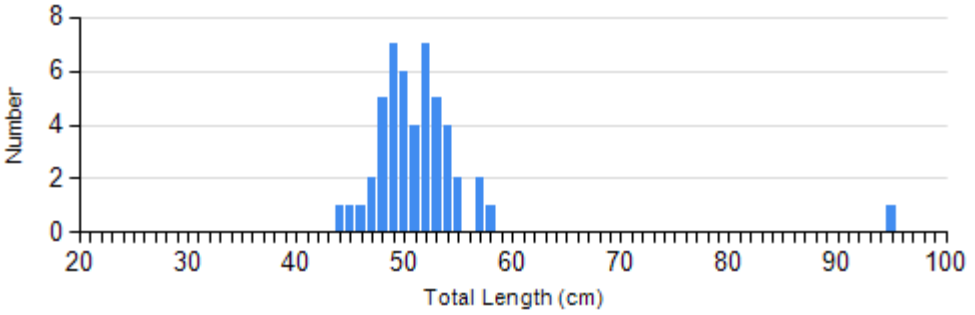

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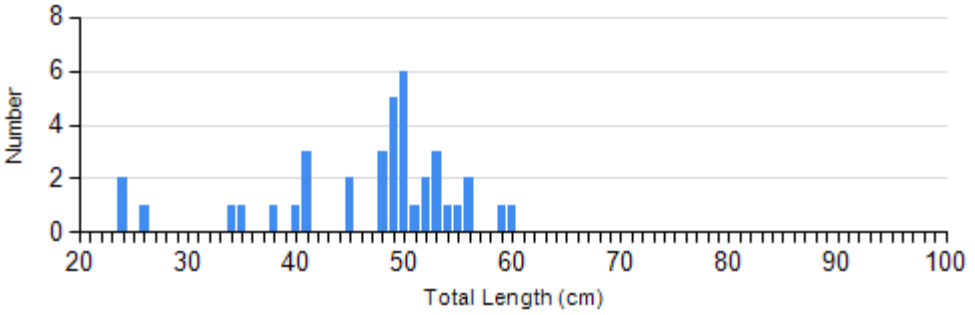
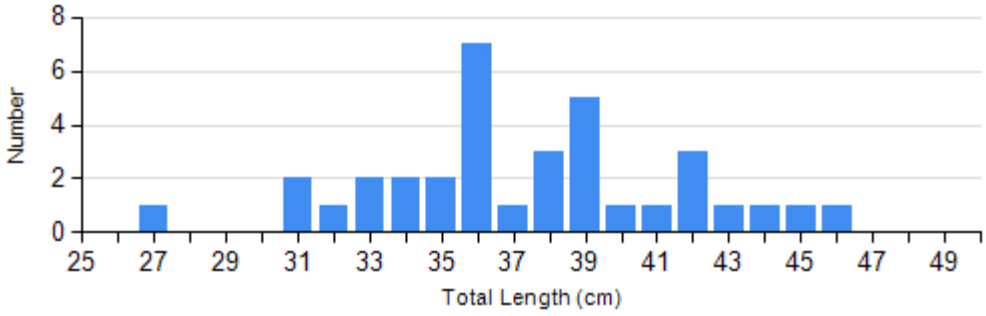


2016

Species: Sauger
Gear: AFS std gill net



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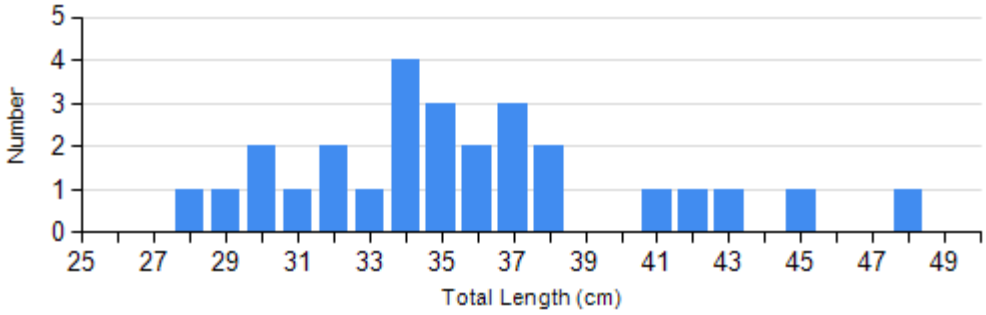
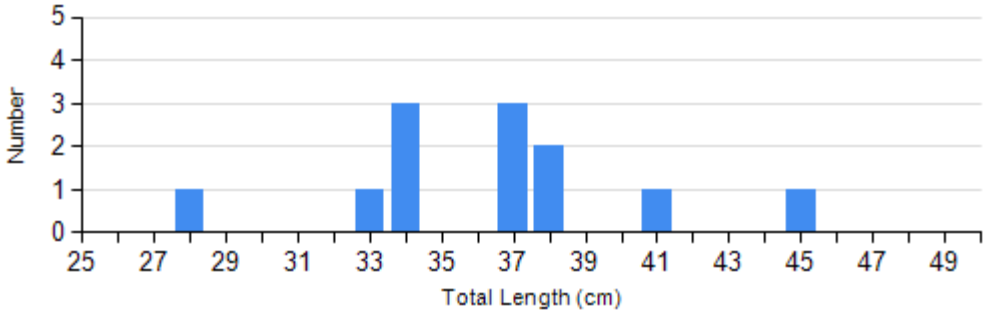
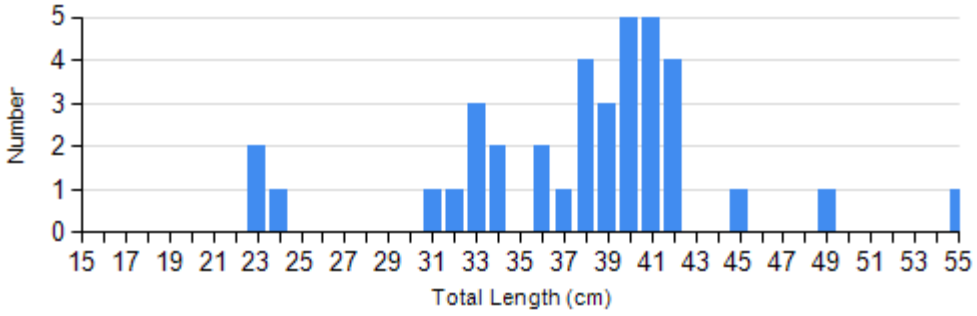


2017

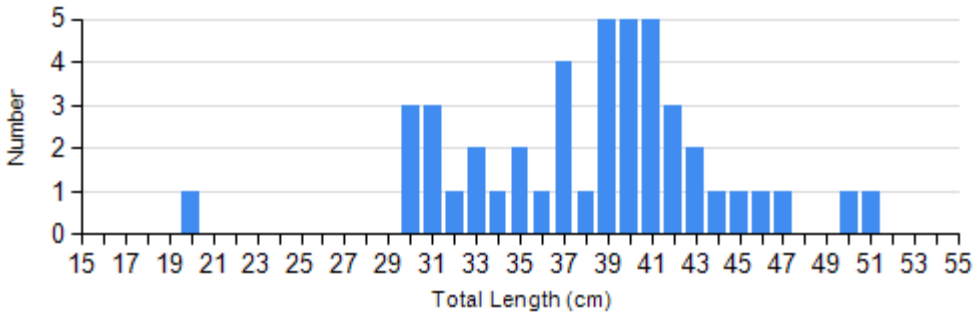


2019

Species: Sauger
Gear: std exp gill net



2014



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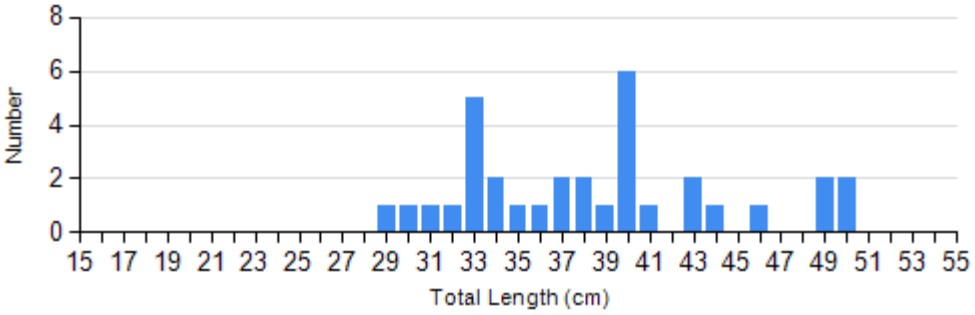
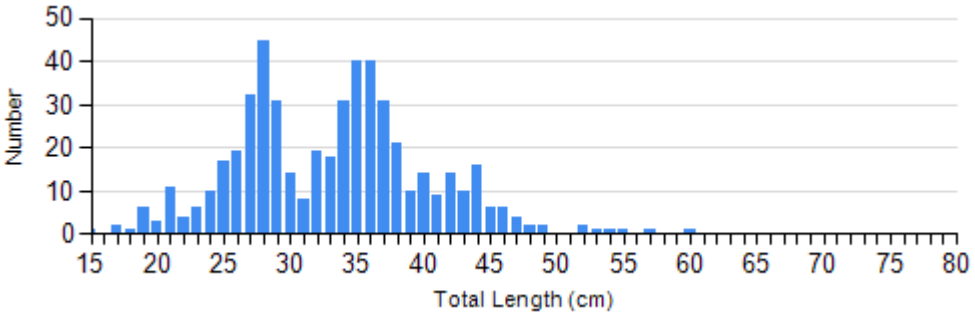


2016

Species: Walleye
Gear: AFS std gill net



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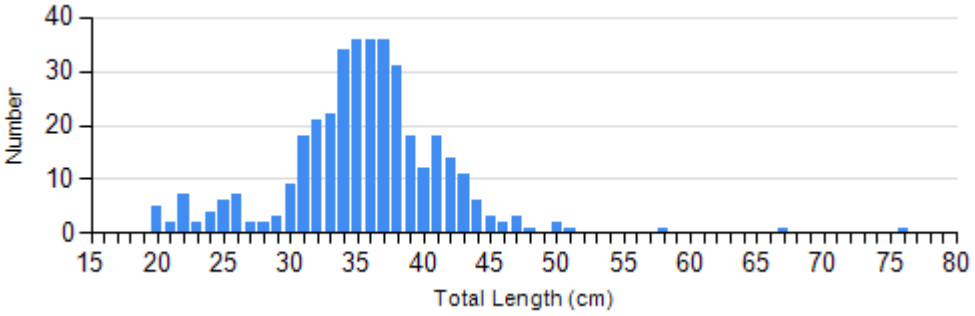

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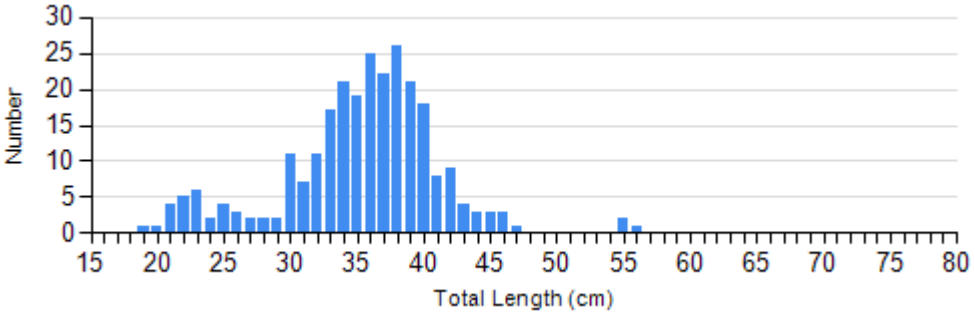

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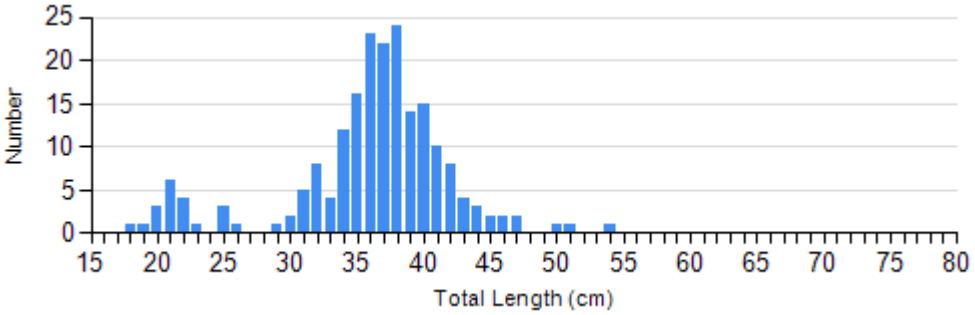
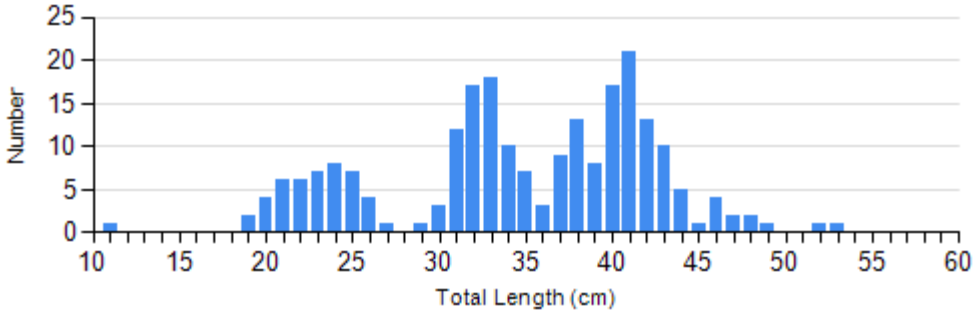


2019

Species: Walleye
Gear: std exp gill net



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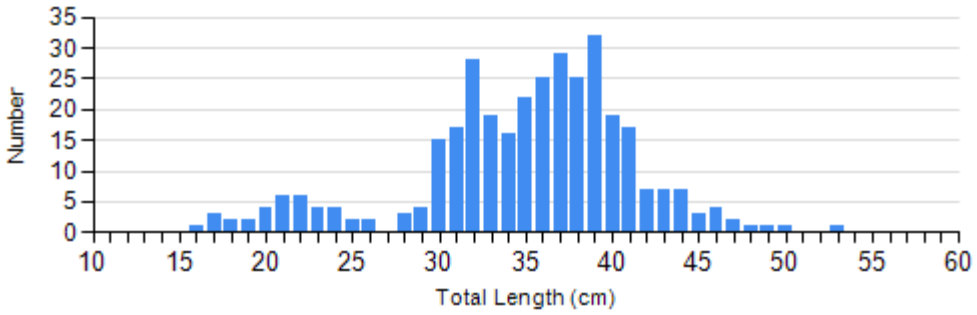

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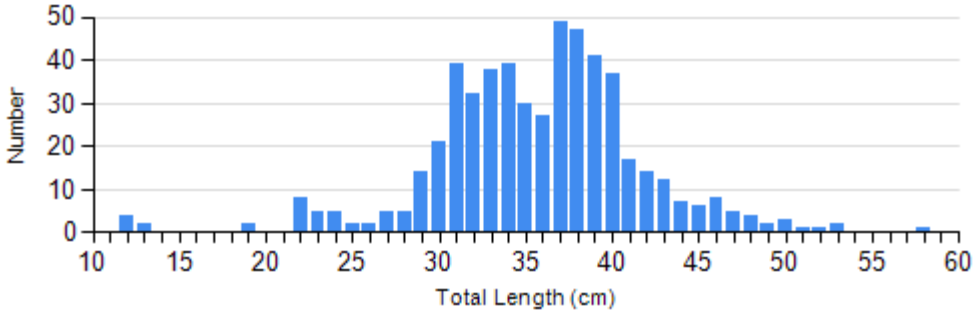
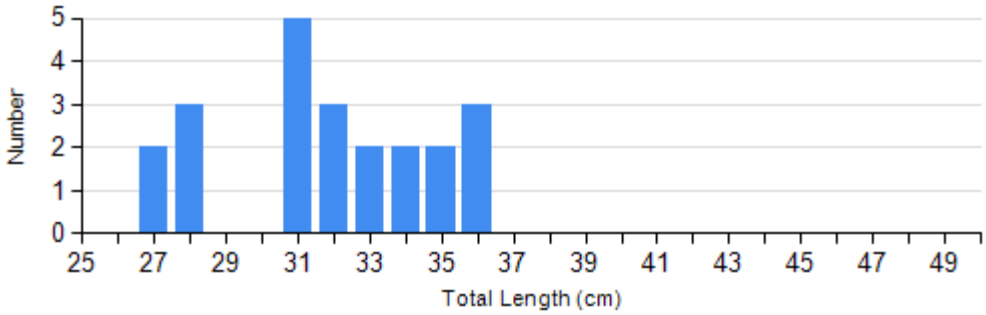
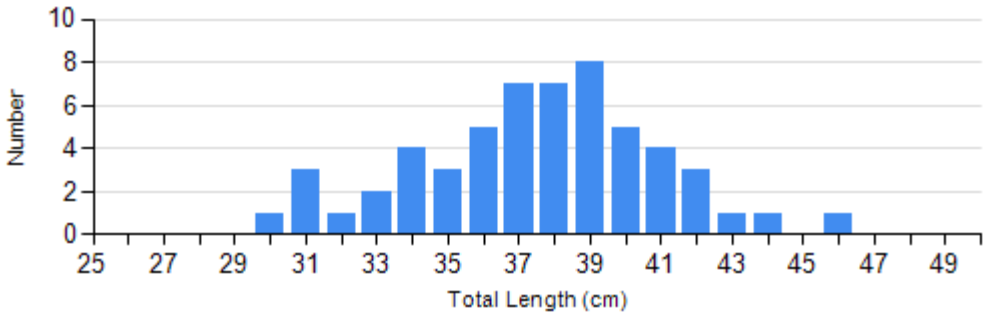


2016

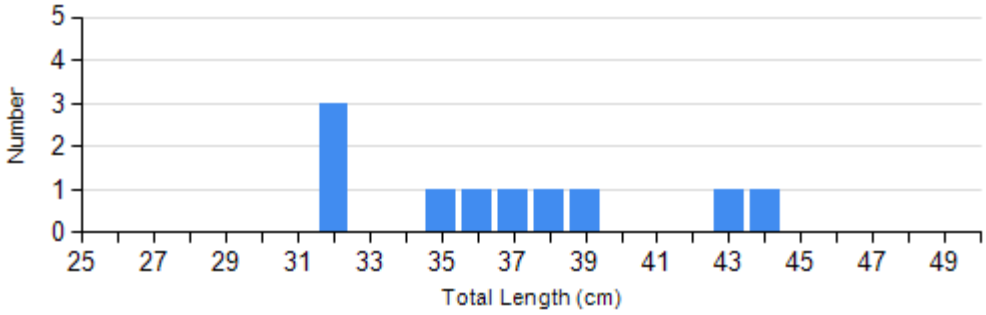
Species: White Bass
Gear: AFS std gill net



2014

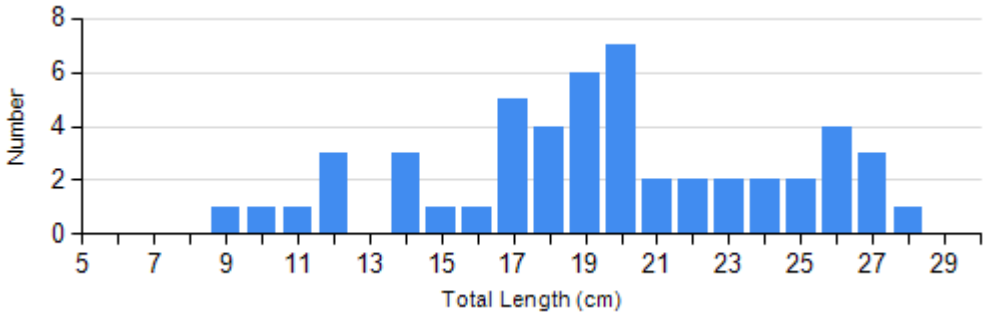


2017



2018

Species: Yellow Perch
Gear: AFS std gill net



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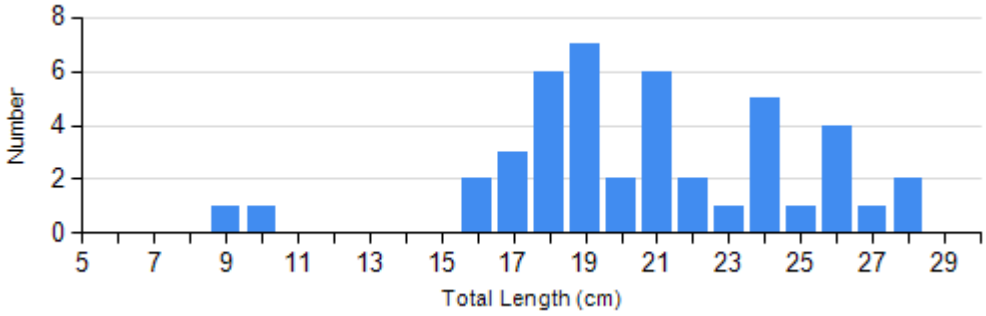

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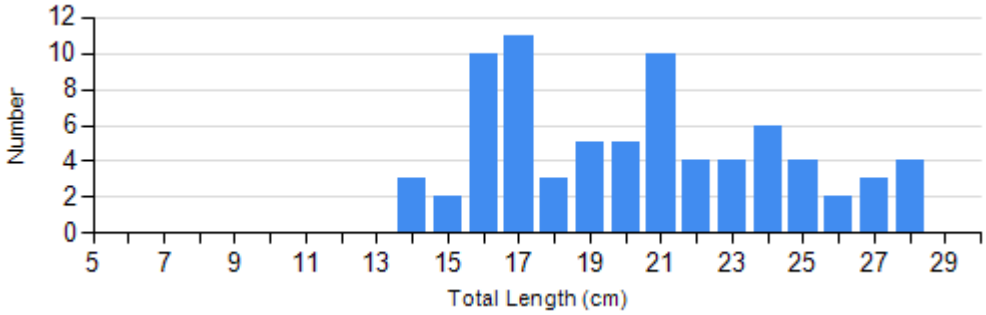
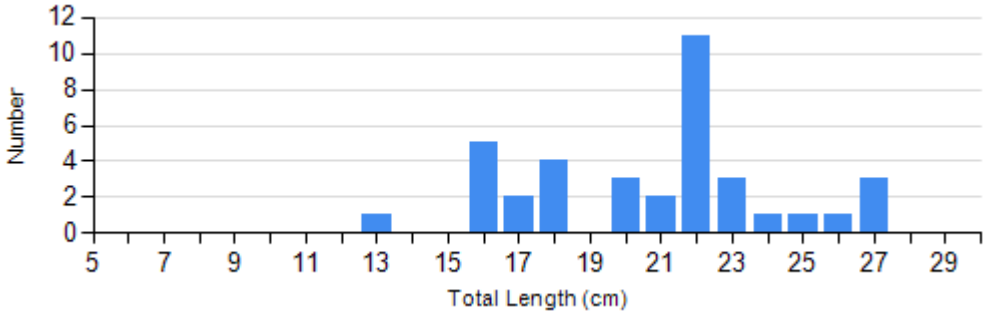
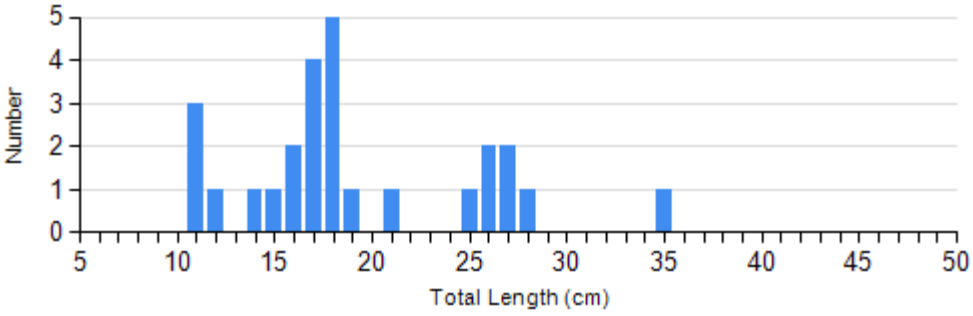


2018



2019

Species: Yellow Perch
Gear: std exp gill net



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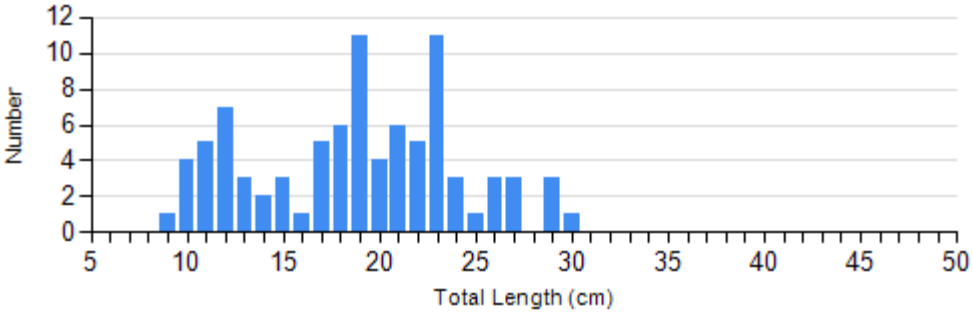
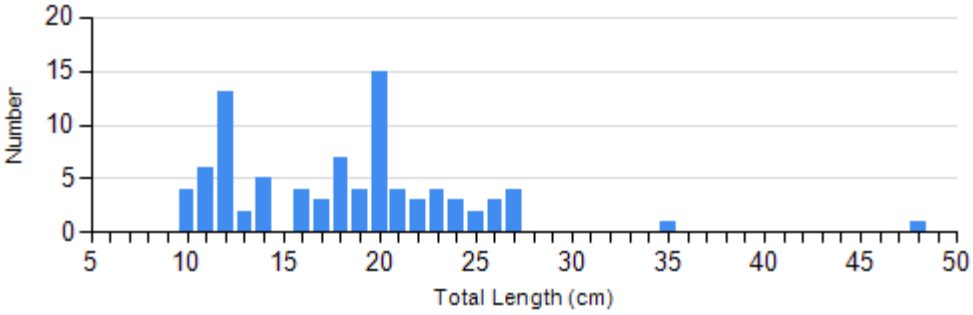


2015

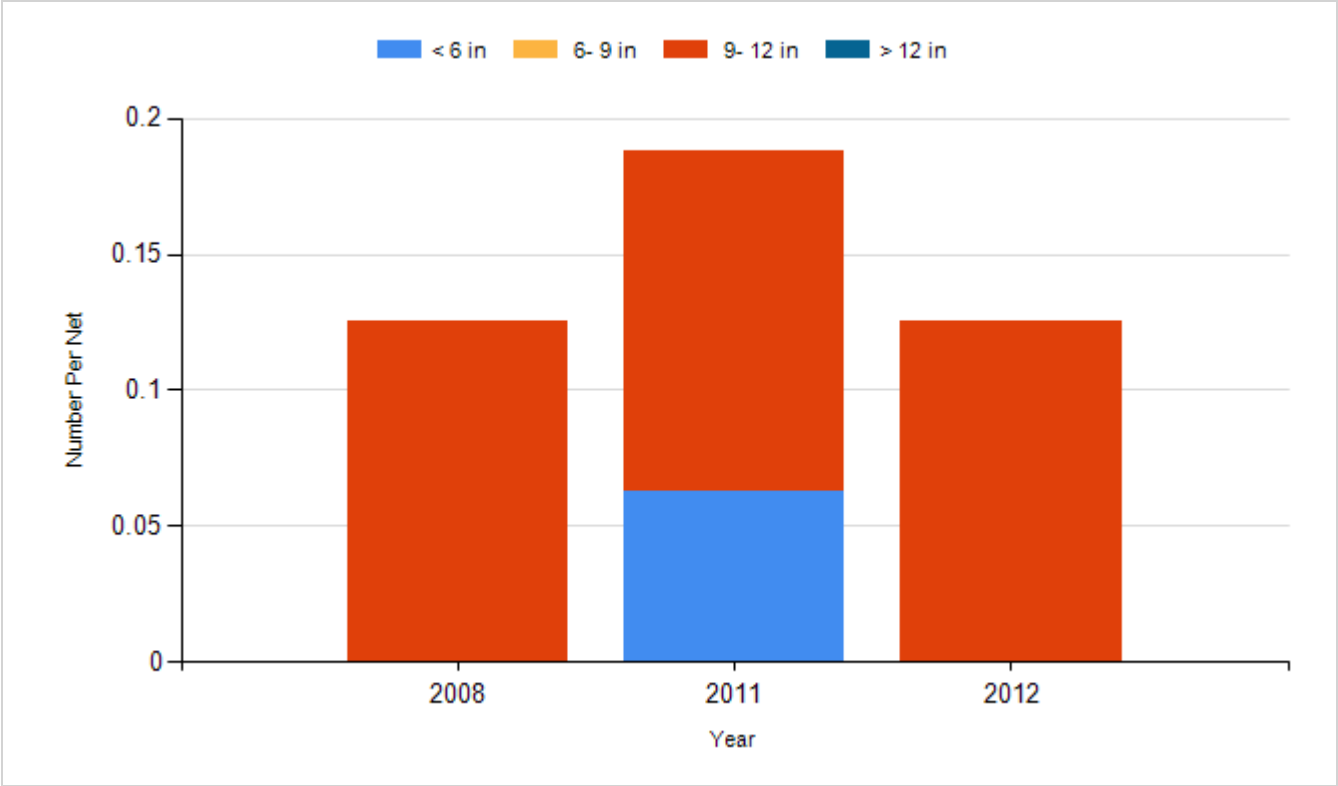


2016

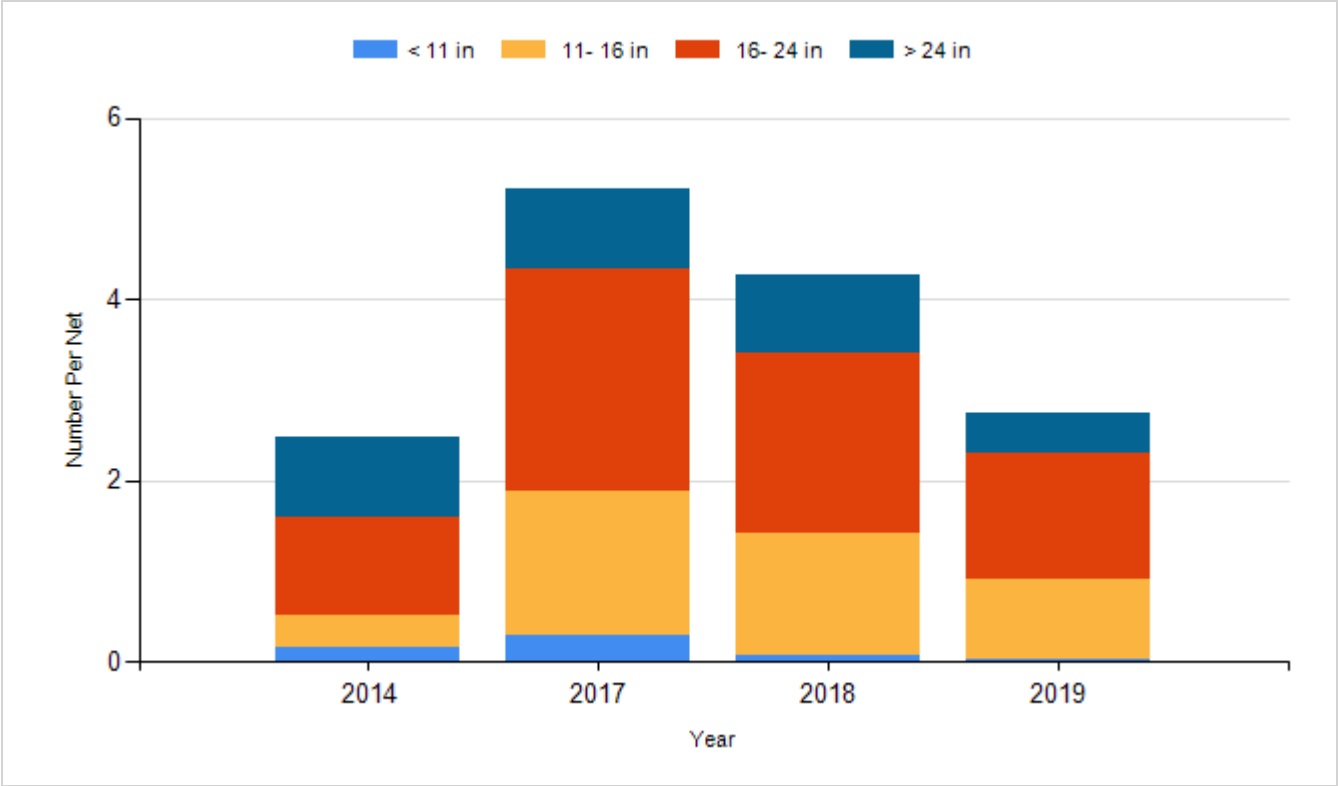
Historic Fish Sizes and Relative Abundance

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

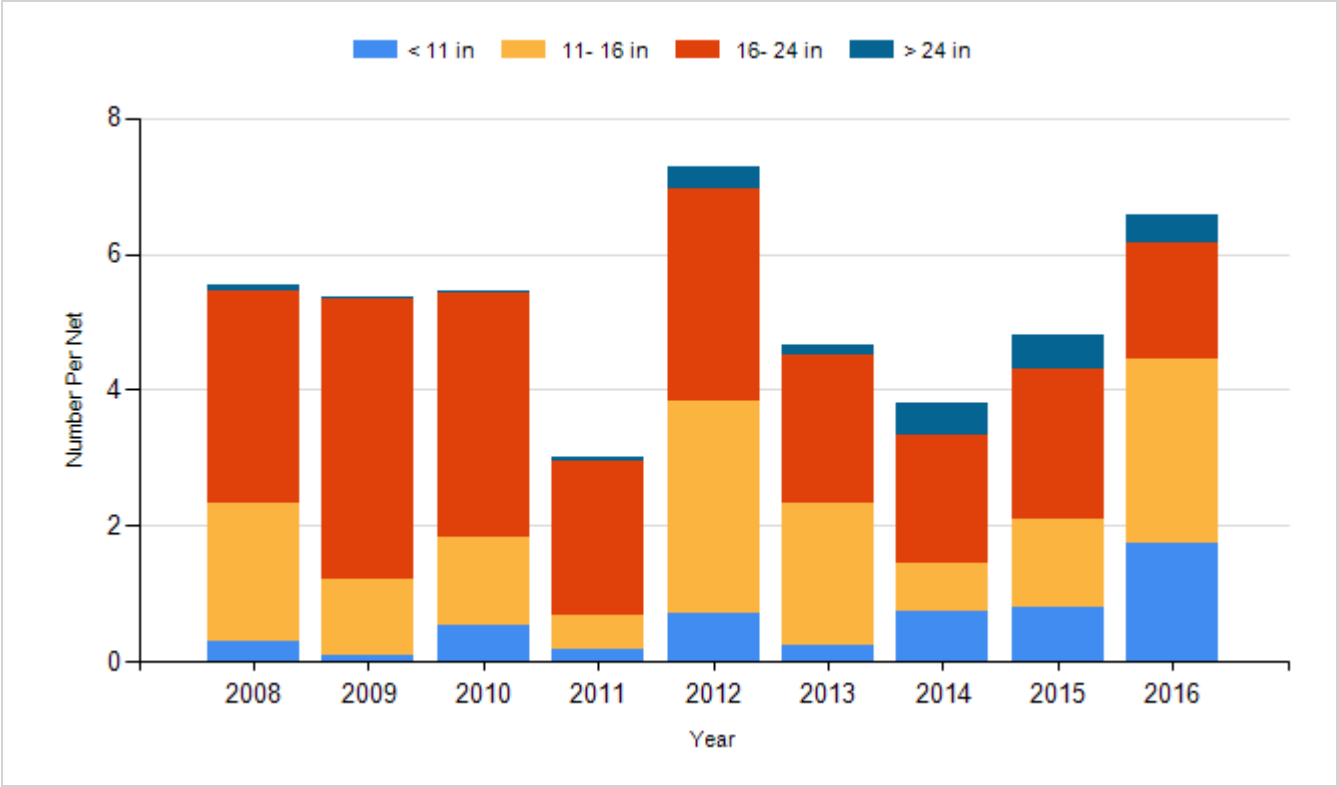
Species: Black Bullhead
Gear: std exp gill net



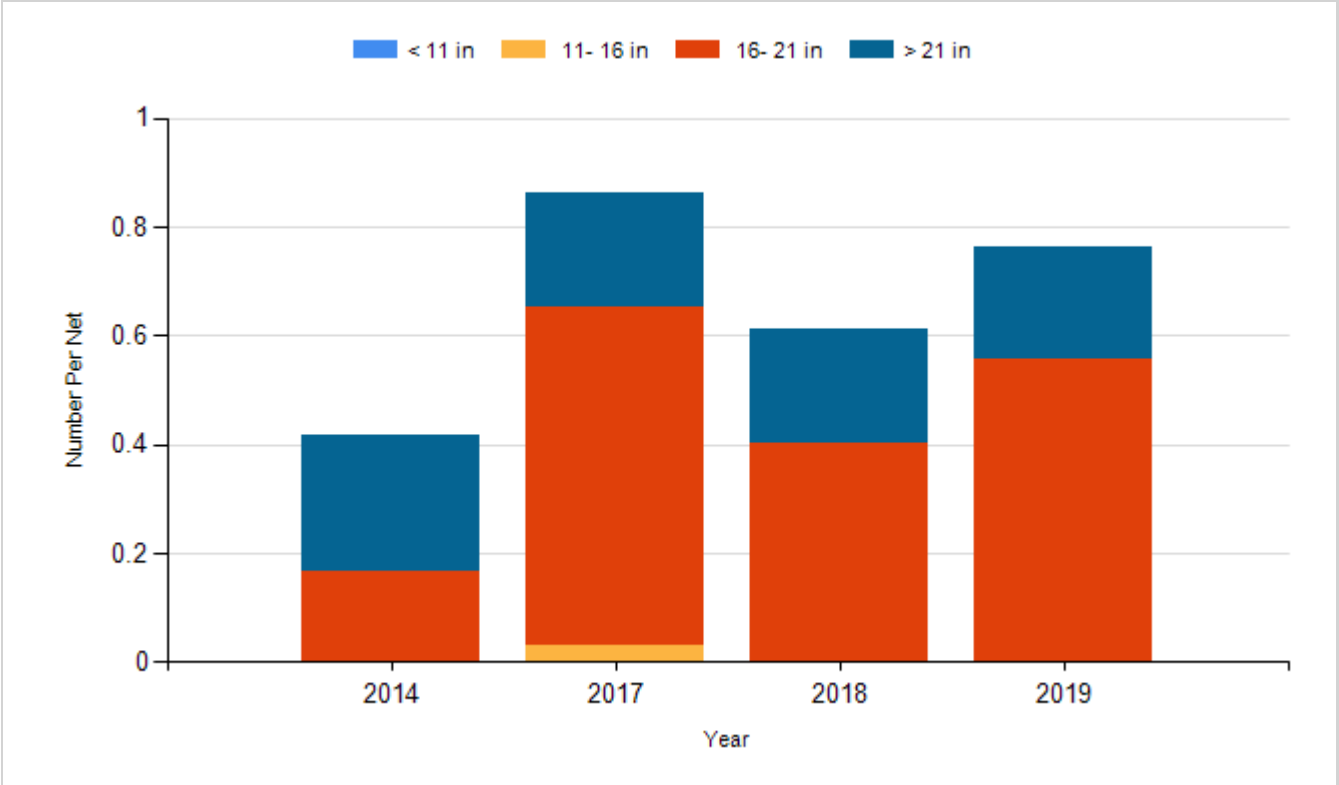
Species: Channel Catfish
Gear: AFS std gill net



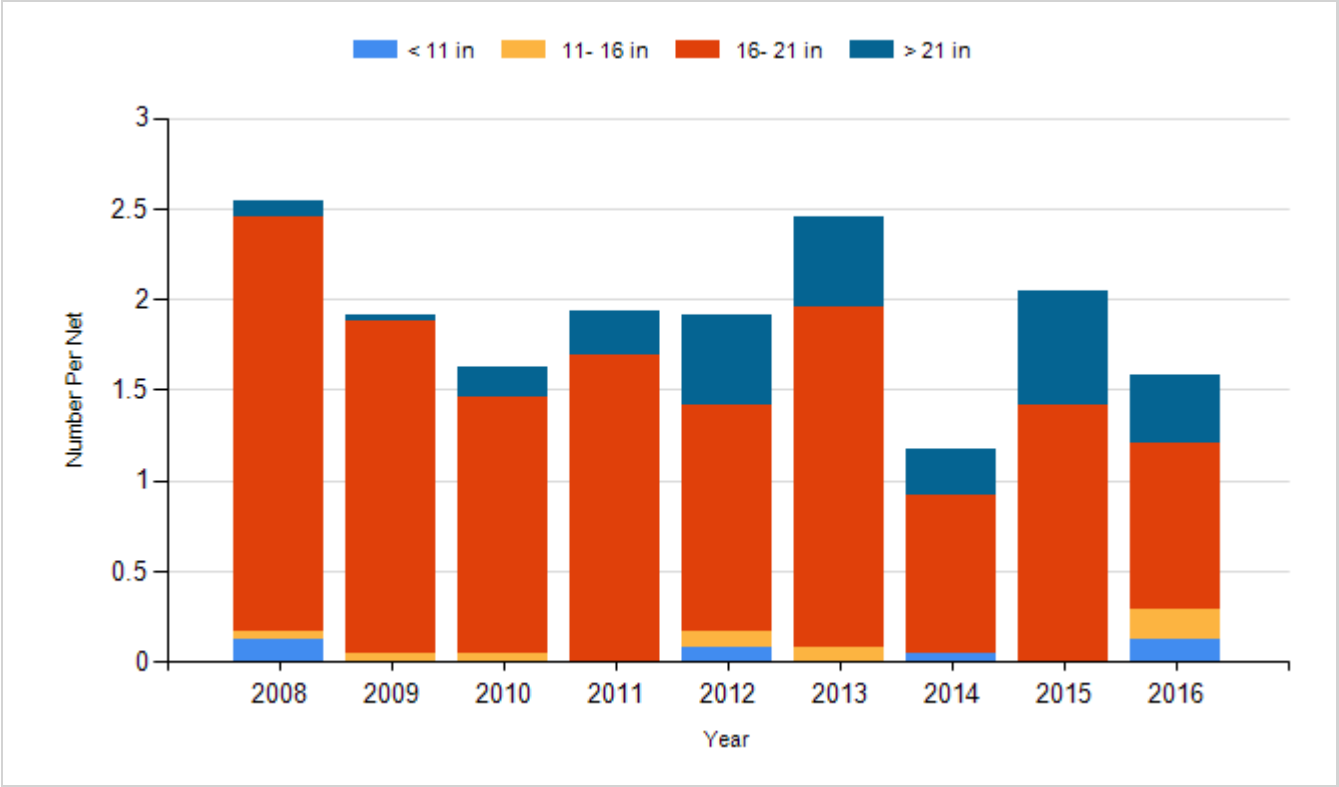
Species: Channel Catfish
Gear: std exp gill net



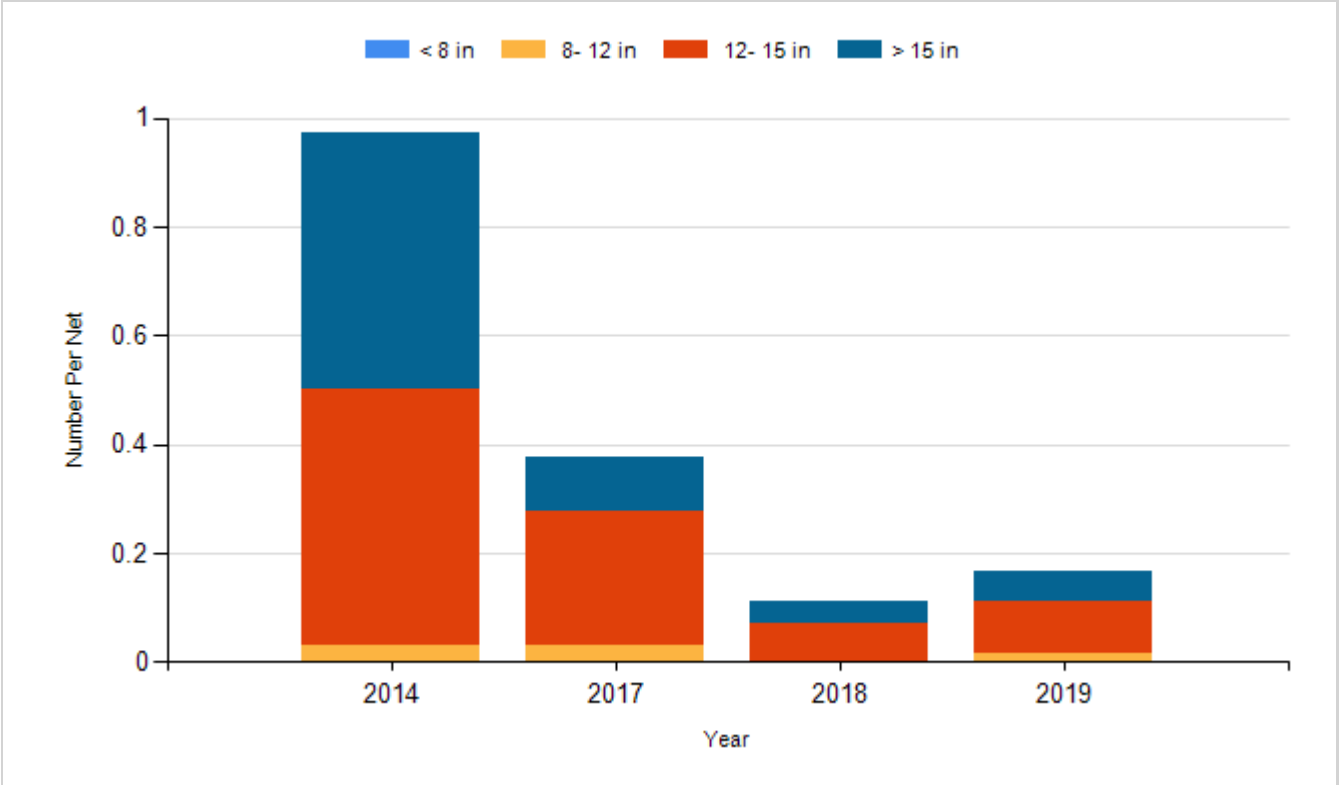
Species: Common Carp
Gear: AFS std gill net



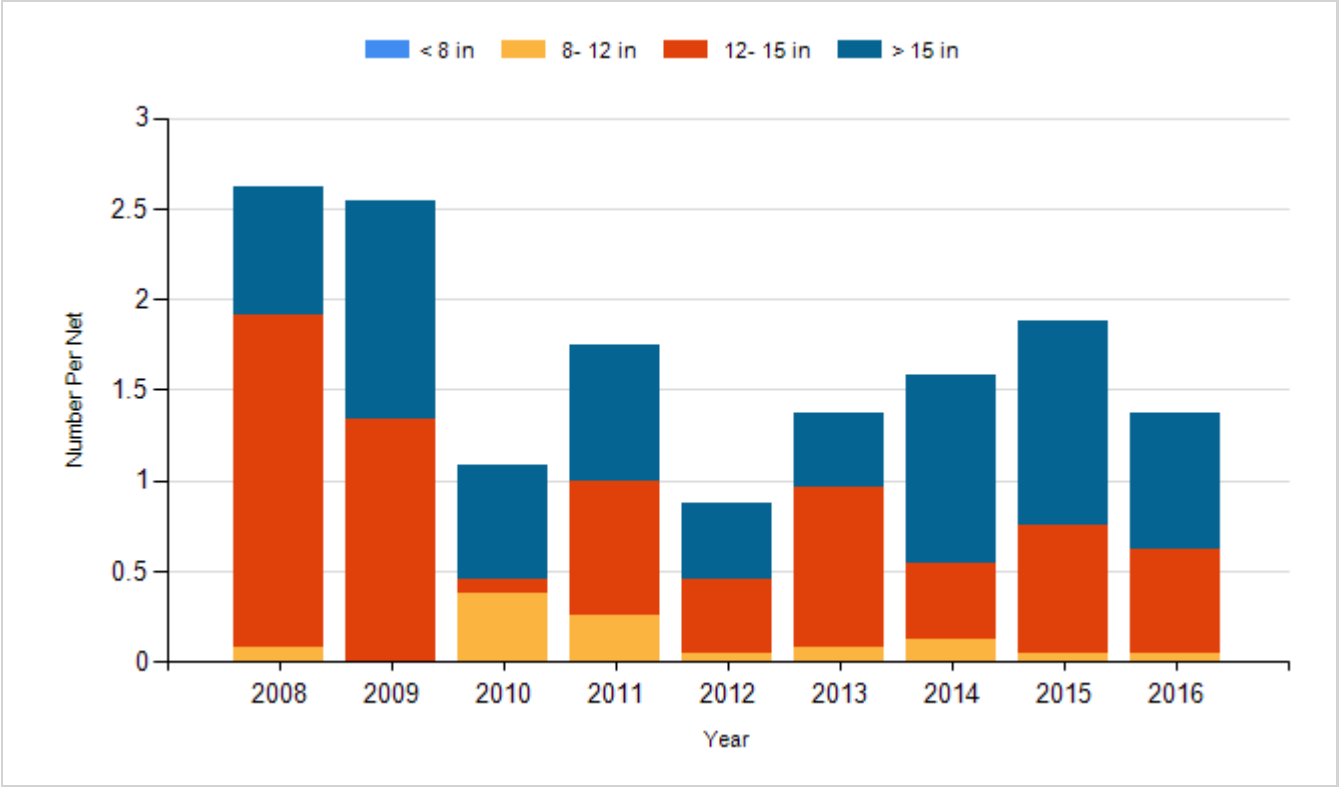
Species: Common Carp
Gear: std exp gill net



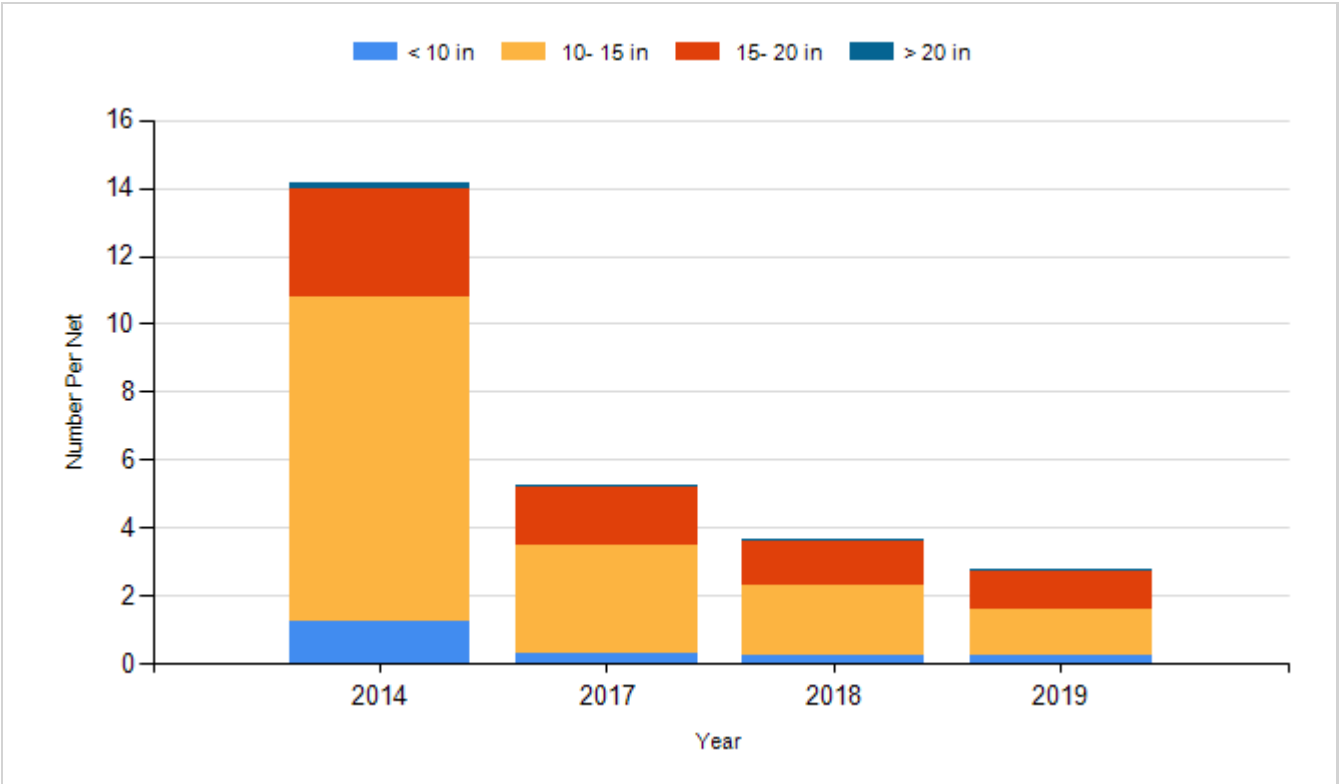
Species: Sauger
Gear: AFS std gill net



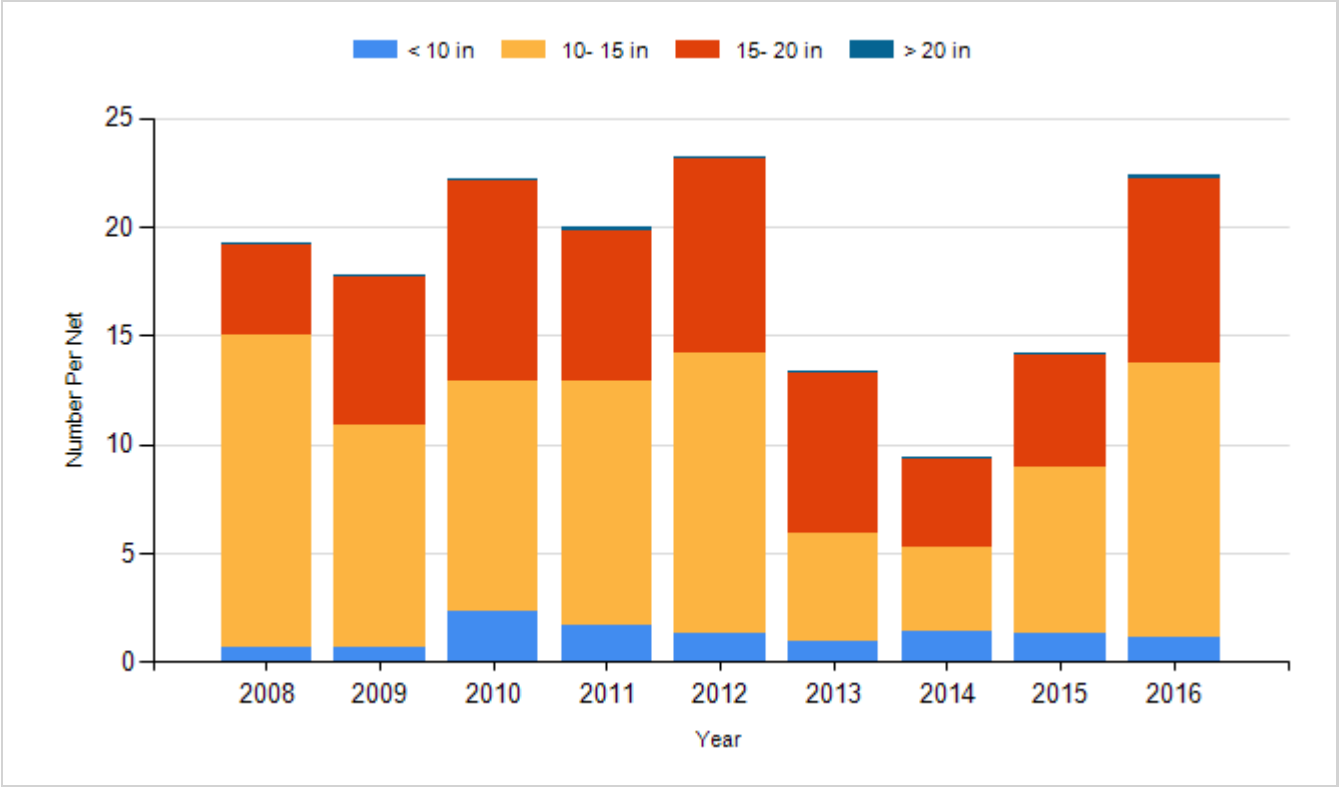
Species: Sauger
Gear: std exp gill net



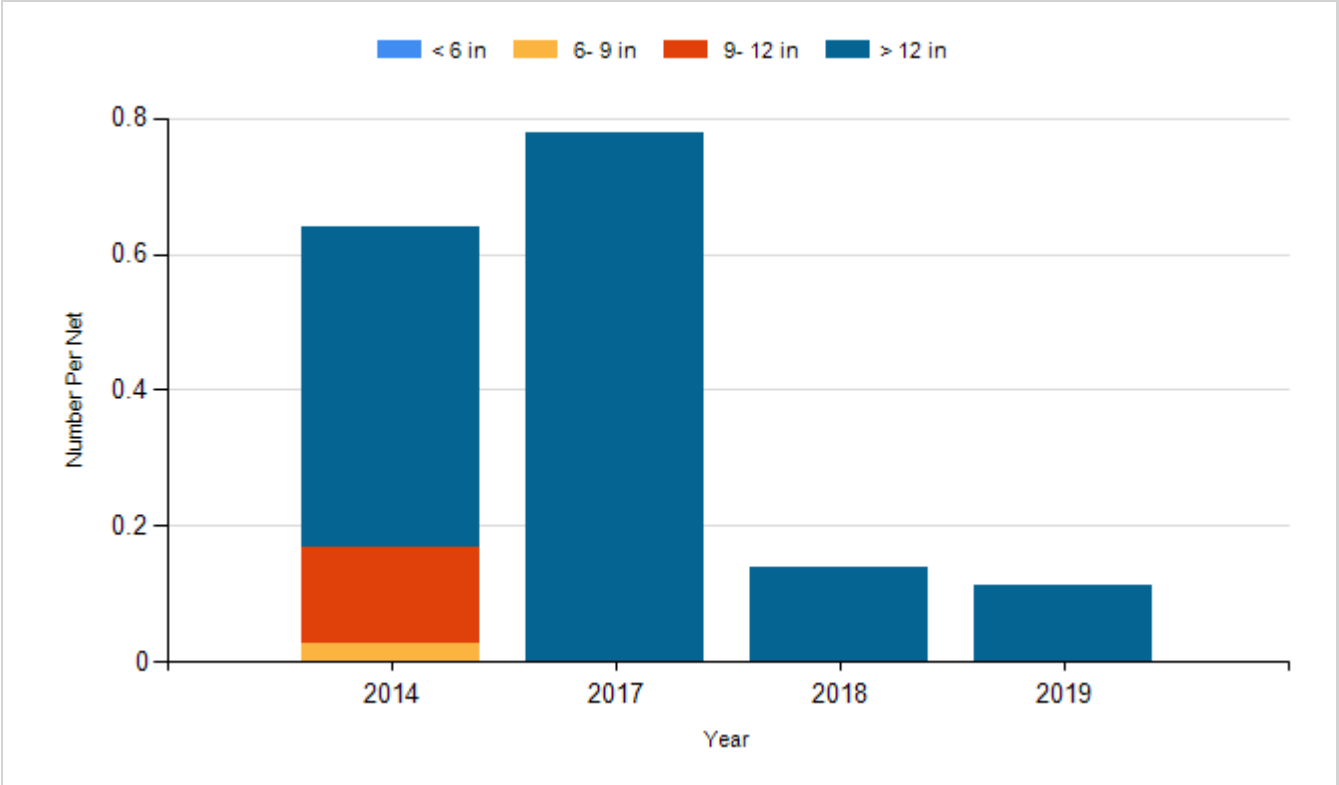
Species: Walleye
Gear: AFS std gill net



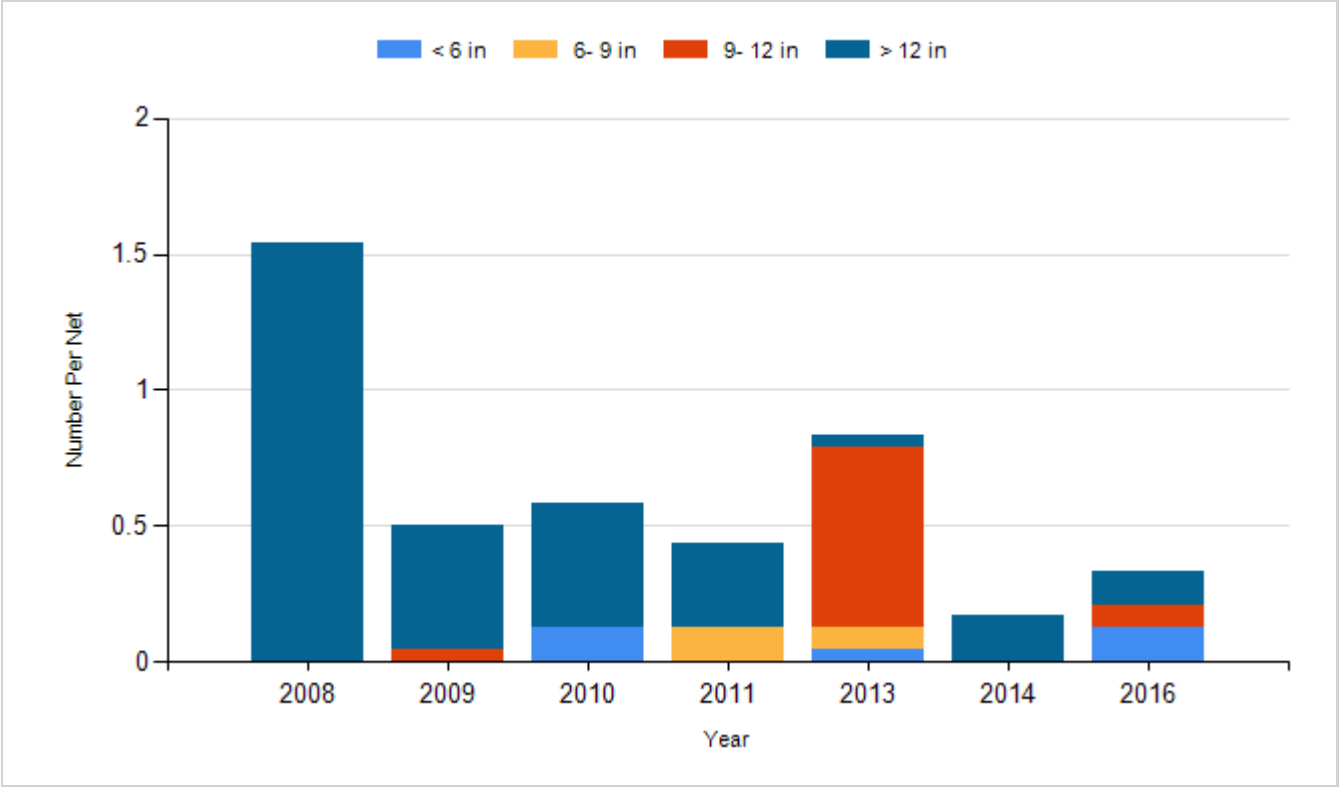
Species: Walleye
Gear: std exp gill net



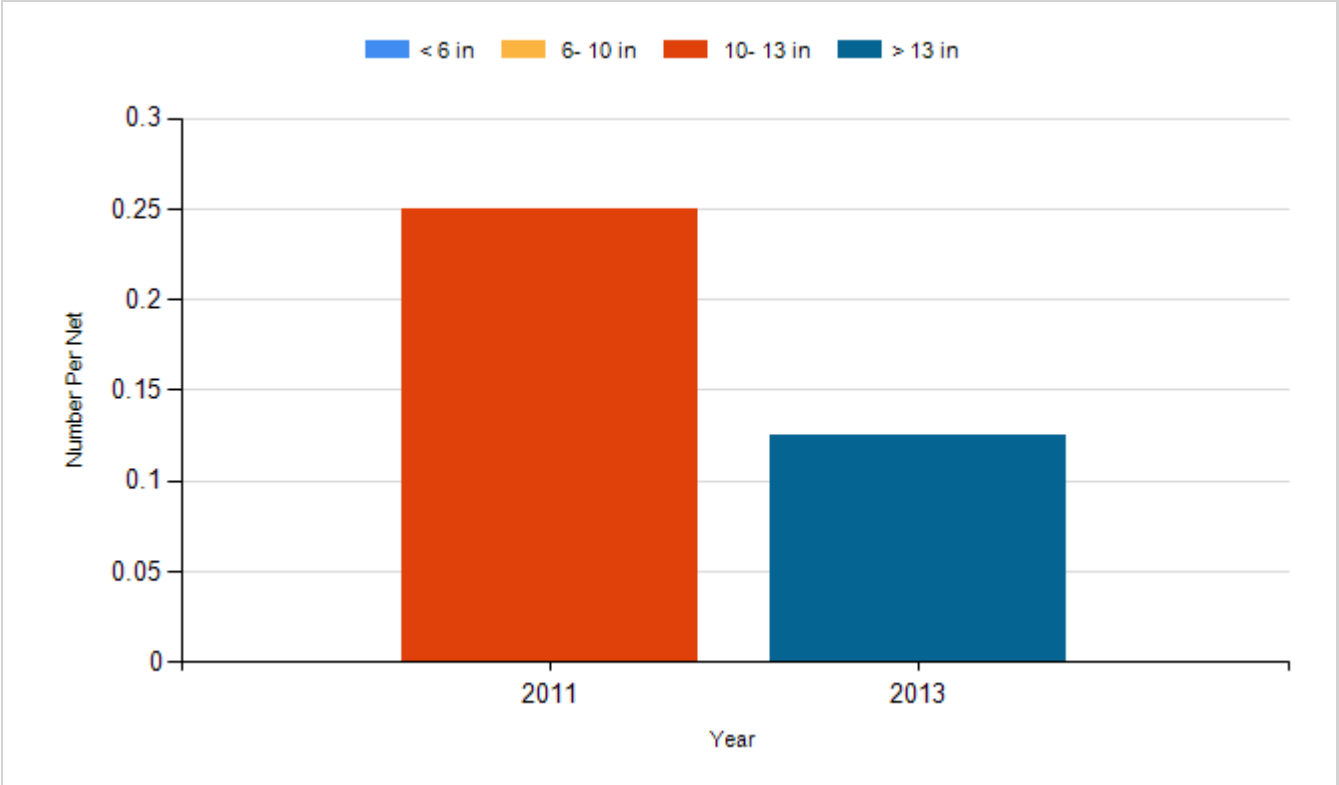
Species: White Bass
Gear: AFS std gill net



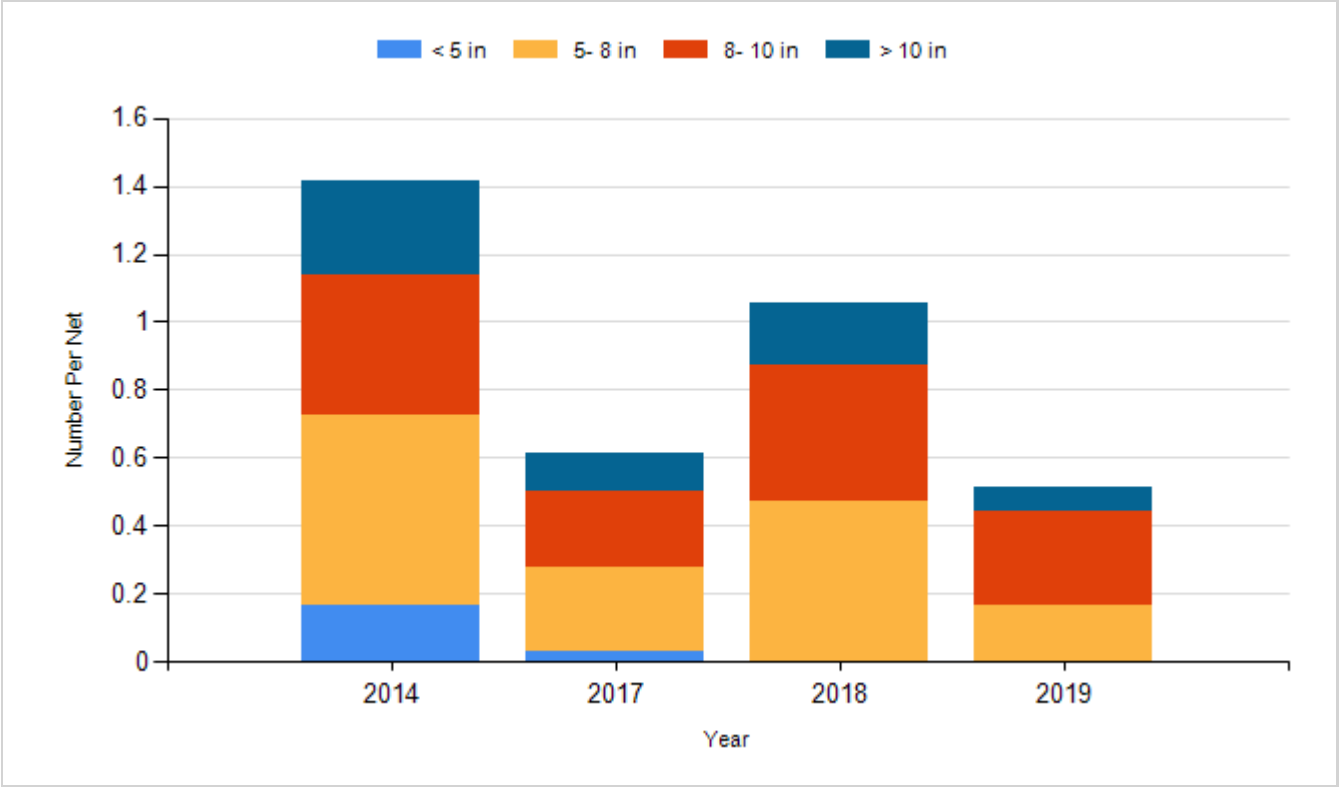
Species: White Bass
Gear: std exp gill net



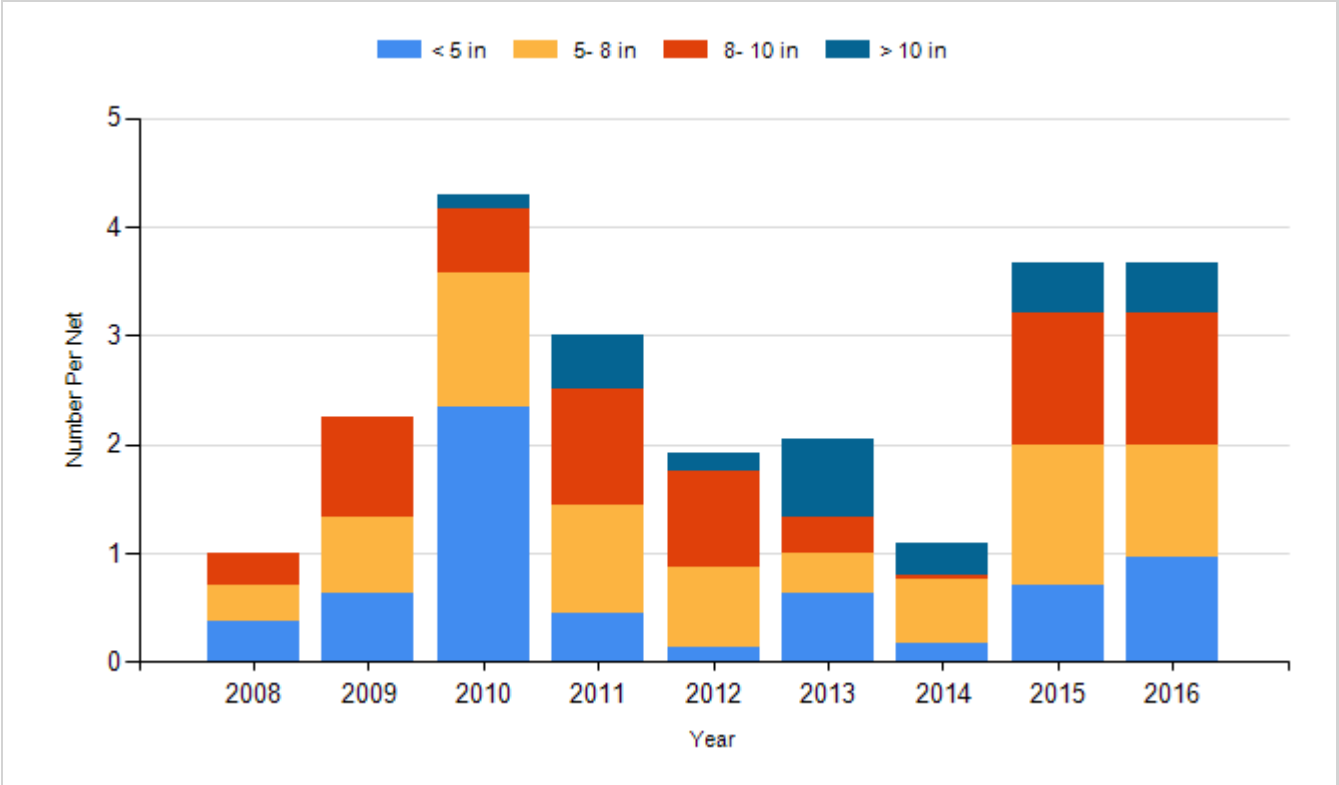
Species: White Sucker
Gear: std exp gill net



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
2008	Rainbow Trout (McConaugRainbow Trout	Catchable	14,400
2009	Rainbow Trout (McConaugRainbow Trout	Catchable	20,000
2010	Rainbow Trout (Erwin)	Catchable 15"	20
2010	Rainbow Trout (McConaugRainbow Trout	Catchable	20,000
2010	Rainbow Trout (Shasta)	Catchable	300
2011	Rainbow Trout (Erwin x Arlee)	Catchable	3,750
2011	Rainbow Trout (McConaugRainbow Trout	Catchable	16,250
2012	Rainbow Trout (McConaugRainbow Trout	Catchable 11"	10,000
2012	Rainbow Trout (Shasta)	Catchable 11"	10,000
2013	Rainbow Trout (Erwin x Arlee)	Catchable 11"	2,980
2013	Rainbow Trout (Shasta)	Catchable 11"	20,000
2014	Rainbow Trout (Shasta)	Catchable 11"	9,600
2015	Paddlefish	Large Fingerling	5,604
2015	Paddlefish	Small Fingerling	7,500
2015	Rainbow Trout (Ennis)	Catchable 11"	451
2015	Rainbow Trout (Shasta)	Catchable 11"	9,855
2016	Paddlefish	Fry	50,372
2016	Rainbow Trout (Shasta)	Catchable 11"	7,496
2017	Paddlefish	Juvenile	10,000
2017	Rainbow Trout (Shasta)	Catchable	5,438
2017	Rainbow Trout (Shasta)	Catchable 15"	2,720
2018	Paddlefish		5,178
2018	Rainbow Trout (Shasta)	Catchable	1,200
2019	Paddlefish	Fingerling	4,066
2019	Paddlefish	Juvenile	6,000