Lake Oahe – Lower Fish Population Survey Summary from 2018 Results

Lake Oahe is a very large Missouri River reservoir extending from Pierre, South Dakota to Bismarck, North Dakota. For summary and analysis purposes, Lake Oahe is divided into lower and upper regions with the dividing line being the US Highway 212 Bridge. This report is for lower Lake Oahe which is from Oahe Dam upstream to the US Highway 212. For a summary and analysis upstream of US Highway 212 to the North Dakota state line, please see Lake Oahe Upper report.

Many species of fish are found within Lake Oahe. A few species of aquatic invasive species (AIS) inhabit Lake Oahe and include: European Rudd, Eurasian Watermilfoil, and Curly-Leafed Pondweed. Please remember to clean, drain, and dry all equipment used on Lake Oahe before future use. Lake Oahe follows state-wide fishing regulations, no special regulations exists. Fishing access is plentiful on Lower Lake Oahe with miles of shore fishing access, fifteen boat ramps, and two State Recreation Areas all provide access for anglers to fish Lake Oahe.

Lake Oahe was sampled with five different methods. Shoreline seining to index prey near shore, AFS standard gill nets to index adult fish, small mesh gill nets in August to index small fish off shore, small mesh gill nets in October to index young Walleye, and suspended gill nets to index coolwater prey such as Lake Herring.

Shoreline seine results provided 14 different fish species with young White Bass being the most plentiful for Lower Oahe. Followed by Smallmouth Bass, Black Crappie, and Emerald Shiner for other abundant species collected. All species collected in 2018 fell within the ranges seen during the past five years. These small fish provide a prey source in shallow water near shore.

Standard gill net sampling techniques were switched to a statewide standard beginning in 2017. Due to the changed techniques, a comparison of 2017 and 2018 data to prior data is not available. Net catches for all species from 2017 to 2018 remained similar with the exception of Channel Catfish which increased from 4.8 to 7.2 fish per net. Walleye gill net catches remained similar at 1.7 Walleye per net. Walleye collected ranged from 8.1 to 28.2 inches with the average at 15.0 inches. Approximately 15% of Walleye greater than 10 inches collected were also larger than 20 inches. This PSD-P value was near the 10 year average of 14 and greater than the years of 2012 to 2015 which was less than 10% of the population. Walleye up to the age of 18 were collected with the largest year-class of Walleye was produced in 2014 (Age-4). The age-4 Walleye averaged 15 inches. Growth of Walleye has improved from the lower prey base years of 2014 when an age-4 walleye averaged 12 inches. The fatness or condition (Wr) of Walleye has improved for Lower Oahe. Larger Walleye (P-M) condition has remained good with values close to 90 during the last four years. Smaller Walleye (S-Q) condition has increased to 84 for 2018, which indicates good prey abundance and growth for the future.

Approximately 2.1 million Walleye fingerlings were stocked at eleven locations in Lower Lake Oahe during June, 2018. These stocked Walleye were marked with Oxytetracyline (OTC) which will help biologists to determine the future success of the stocking. The mark cannot be to be seen by an angler and will not affect the behavior of the Walleye. Current plans are to stock Walleye fingerlings in 2019 and to continue to evaluate the stocking success.

Small mesh gill nets in October were set to determine the success of Walleye stocking. Fifteen nets were set at eight locations within Lower Lake Oahe in water 30 feet or less. Walleye catches averaged 0.35 Walleye per net at stocked locations and 0.03 at non-stocked locations. Currently it is unknown how many of these stocked walleye will survive past their first fall and contribute to the fishery.

Small mesh gill nets in August provide a slightly different view as these nets were set in a large variety of depths and locations throughout Lake Oahe. Walleye catch rates (CPUE) was 0.28 fish per net with Yellow Perch (0.21), Spottail Shiner (0.18), and White Crappie (0.13/fish/net-night) being the most abundant in these nets. These young fish provide prey for sportfish and provide an indication how production was for other species of fish.

Suspended gill net sampling was completed during late July. Suspended gill net survey is a paired survey with the hydroacoustics survey to help index our coldwater prey abundance. Netting was completed at Sutton's, Bloody Run, and Bakers regions. Lake Herring was the most abundant species collected in 2018 with an average of 235 fish/net-night. Rainbow Smelt catch rate of 15 fish/net-night was found in 2018. Lake Herring and Rainbow Smelt provide the majority of the prey species in the coldwater region within Lake Oahe.

The survey results from 2018 indicate prey species abundance has increased (Lake Herring, White Bass, Spottail Shiner, etc.) and growth rates for Walleye have increased with their higher abundance. Walleye abundance for Lower Oahe has remained stable with a possible increase due to high Walleye stocking that has occurred in 2017 and 2018. The likelihood of these Walleye surviving to be caught by anglers is currently unknown.

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

Prepared 03-11-2019 by KDP.

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Oahe Lower, Stanley County
LLO-Lake-2952-000
2018

Lake Information

Name: Oahe Lower

County: Stanley

Surface Area: 96,580 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS gill net (1/2 inch)	Aug 14, 2018	20 net-nights
AFS gill net (1/2 inch)	Aug 16, 2018	18 net-nights
AFS gill net (1/2 inch)	Aug 17, 2018	16 net-nights
AFS gill net (1/2 inch)	Aug 21, 2018	18 net-nights
AFS gill net (1/2 inch)	Oct 01, 2018	30 net-nights
AFS gill net (1/2 inch)	Oct 02, 2018	30 net-nights
AFS gill net (1/2 inch)	Oct 04, 2018	30 net-nights
AFS gill net (1/2 inch)	Oct 08, 2018	30 net-nights
AFS std gill net	Aug 14, 2018	20 net-nights
AFS std gill net	Aug 16, 2018	18 net-nights
AFS std gill net	Aug 17, 2018	16 net-nights
AFS std gill net	Aug 21, 2018	18 net-nights
large seine	Jul 26, 2018	8 hauls
large seine	Jul 27, 2018	4 hauls
suspended gill net	Jul 17, 2018	2 net-nights
suspended gill net	Jul 19, 2018	1 net-nights

Common Fish Species Present

Lake Herring

White Bass

Smallmouth Bass

Black Crappie

Emerald Shiner

Yellow Perch

Channel Catfish

White Crappie

Spottail Shiner

Walleye

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)*	Common Carp	0.0	0.0	100		100		86	
	Freshwater Drum	0.0	0.0	0		0			
	Gizzard Shad	0.0	0.0	0					
	Sauger	0.0	0.0	0		0		103	
	Shortnose Gar	0.0	0.0						
	Smallmouth Bass	0.0	0.0	0		0		102	
	Spotfin Shiner	0.0	0.0						
	Spottail Shiner	0.0	0.0						
	Walleye	0.3	0.1	100		0		96	1
	White Bass	0.0	0.0	0		0			
	White Crappie	0.0	0.0	0		0			
	Yellow Perch	0.0	0.0	0		0		98	4
AFS std gill net	Bigmouth Buffalo	0.0	0.0	100		100		128	
	Channel Catfish	7.2	2.0	66	3	3	1	82	1
	Common Carp	0.5	0.1	100		49	13	79	2
	Freshwater Drum	0.4	0.1	81	11	35	13	85	2
	Gizzard Shad	0.0	0.0	0					
	Goldeye	0.0	0.0						
	Lake Herring	0.2	0.1	100		0		76	1
	Northern Pike	0.2	0.1	100		62		94	3
	River Carpsucker	0.1	0.1	100		100		93	5
	Shorthead Redhorse	0.1	0.1	100		60		94	6
	Smallmouth Bass	1.7	0.5	82	5	39	6	96	1
	Smallmouth Buffalo	0.1	0.1	50	28	10		85	4
	Walleye	1.7	0.3	38	6	15	5	86	1
	White Bass	0.3	0.3	100		100		100	2
	White Sucker	0.1	0.0	100		100		93	6
	Yellow Perch	0.4	0.1	54	15	4		96	10
large seine*	Black Crappie	26.6	8.8						
	Common Carp	0.8	0.1						
	Emerald Shiner	17.2	2.0						
	Freshwater Drum	0.1	0.0						
	Gizzard Shad	0.8	0.4						

	Johnny Darter	0.3	0.1			
	Largemouth Bass	1.0	0.1			
	River Carpsucker	1.4	0.4			
	Smallmouth Bass	30.8	1.0			
	Spottail Shiner	2.0	0.1			
	Walleye	0.4	0.3			
	White Bass	39.3	3.2			
	White Crappie	7.0	0.3			
	Yellow Perch	12.3	0.8			
suspended gill net	Lake Herring	301.0	178.0	100	10	1
	Rainbow Smelt	41.3	23.5			

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)	Channel Catfish									0.0		0.0
	Common Carp									0.0	0.0	0.0
	Freshwater Drum									0.0	0.0	0.0
	Gizzard Shad									0.4	0.0	0.2
	Goldeye									0.0		0.0
	Sauger										0.0	0.0
	Shortnose Gar										0.0	0.0
	Smallmouth Bass									0.0	0.0	0.0
	Spotfin Shiner										0.0	0.0
	Spottail Shiner									0.0	0.0	0.0
	Walleye									0.2	0.3	0.3
	White Bass									0.1	0.0	0.1
	White Crappie									0.0	0.0	0.0
	Yellow Perch									0.3	0.0	0.2
AFS std gill net	Bigmouth Buffalo									0.0	0.0	0.0
	Channel Catfish									4.8	7.2	6.0
	Common Carp									0.4	0.5	0.5
	Freshwater Drum									0.4	0.4	0.4
	Gizzard Shad									0.0	0.0	0.0
	Goldeye									0.0	0.0	0.0
	Lake Herring										0.2	0.2
	Northern Pike									0.3	0.2	0.3
	River Carpsucker									0.2	0.1	0.2
	Sauger									0.0		0.0
	Shorthead Redhorse									0.1	0.1	0.1
	Shortnose Gar									0.0		0.0
	Smallmouth Bass									1.6	1.7	1.7
	Smallmouth Buffalo									0.4	0.1	0.3
	Walleye									1.4	1.7	1.6
	White Bass									0.9	0.3	0.6
	White Crappie									0.0		0.0
	White Sucker									0.0	0.1	0.1
	Yellow Perch									0.1	0.4	0.3
large seine*	Black Crappie										26.6	26.6

	Common Carp										0.8	0.8
	Emerald Shiner										17.2	17.2
	Freshwater Drum										0.1	0.1
	Gizzard Shad										0.8	0.8
	Johnny Darter										0.3	0.3
	Largemouth Bass										1.0	1.0
	River Carpsucker										1.4	1.4
	Smallmouth Bass										30.8	30.8
	Spottail Shiner										2.0	2.0
	Walleye										0.4	0.4
	White Bass										39.3	39.3
	White Crappie										7.0	7.0
	Yellow Perch										12.3	12.3
	Bigmouth Buffalo						0.2					0.2
std exp gill net	Black Crappie		0.3	0.1	0.2			0.0				0.2
	Bluegill	1.6	0.5	0.1	0.1							0.6
	Channel Catfish	14.7	9.3	8.4	11.7	13.4	18.1	8.3	17.3			12.7
	Chinook Salmon	0.0						0.0				0.0
	Common Carp	4.0	2.5	2.3	1.3	2.7	2.6	1.4	2.2			2.4
	Freshwater Drum	0.6	1.3	0.8	0.6	0.5	0.8	0.3	0.7			0.7
	Gizzard Shad	0.0	0.0		0.1	0.0						0.0
	Goldeye		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
	Lake Herring	0.1						103.4				51.8
	Northern Pike	0.4	2.7	1.7	1.9	0.3	0.6	0.5	0.8			1.1
	Rainbow Smelt	0.0						0.0				0.0
	River Carpsucker	0.4	0.7	0.5	0.8	0.6	1.6	0.1	0.1			0.6
	Sauger	0.3	0.3	0.1	0.1	0.1						0.2
	Shorthead Redhorse	0.1	1.1	1.3	0.2	1.3	0.6	0.5				0.7
	Shortnose Gar	0.0					0.0		0.0			0.0
	Smallmouth Bass	2.7	8.4	3.2	2.3	1.5	1.5	2.1	2.9			3.1
	Smallmouth Buffalo	0.2	0.2	0.3		0.4	0.4	0.5	0.4			0.3
	Spottail Shiner	0.0	0.0	0.0								0.0
	Walleye	16.2	17.3	20.1	18.2	10.7	10.7	3.0	3.9			12.5
	White Bass	0.8	0.6	0.5	0.9	0.6	0.8	0.3	0.2			0.6
	White Crappie	0.4	0.2	0.1	0.0	0.3	0.1	0.2				0.2
	White Sucker	0.7	1.1	0.9	0.4	0.2	0.9	0.2	0.1			0.6
	Yellow Perch	9.9	18.1	2.9	0.4	0.5	0.8	1.8	0.8			4.4
	Lake Herring								174.2	237.4	301.0	237.6
suspended gill net	Rainbow Smelt								2.2	14.5	41.3	19.3

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)	Channel Catfish	PSD									100	
		PSD-P									0	
		Wr									78	
	Common Carp	PSD									100	100
		PSD-P									50	100
		Wr									79	86
	Gizzard Shad	PSD									0	0
	Sauger	PSD										0
		PSD-P										0
		Wr										103
	Smallmouth Bass	PSD									0	0
		PSD-P									0	0
		Wr									93	102
	Walleye	PSD									0	100
		PSD-P									0	0
		Wr									78	96
	White Bass	PSD									0	0
		PSD-P									0	0
	White Crappie	PSD									0	0
		PSD-P									0	0
		Wr									135	
	Yellow Perch	PSD									0	0
		PSD-P									0	0
		Wr									125	98
AFS std gill net	Bigmouth Buffalo	PSD									100	100
		PSD-P									100	100
		Wr									98	128
	Channel Catfish	PSD									60	66
		PSD-P									1	3
		Wr									79	82
	Common Carp	PSD									65	100
		PSD-P									15	49

	Wr	81	79
Gizzard Shad	PSD	0	0
Lake Herring	PSD		100
	PSD-P		0
	Wr		76
Northern Pike	PSD	100	100
	PSD-P	29	62
	Wr	91	94
River Carpsucker	PSD	100	100
	PSD-P	100	100
	Wr	101	93
Sauger	PSD	100	
	PSD-P	0	
	Wr	75	
Shorthead Redhorse	PSD	60	100
	PSD-P	60	60
	Wr	92	94
Smallmouth Bass	PSD	57	82
	PSD-P	13	39
	Wr	94	96
Smallmouth Buffalo	PSD	0	50
	PSD-P	0	10
	Wr	81	85
Walleye	PSD	36	38
	PSD-P	19	15
	Wr	81	86
White Bass	PSD	100	100
	PSD-P	90	100
	Wr	90	100
White Crappie	PSD	50	
	PSD-P	50	
	Wr	99	
White Sucker	PSD	100	100
	PSD-P	100	100
	Wr	98	93
Yellow Perch	PSD	25	54
	PSD-P	0	4
	Wr	84	96

std exp gill net	Bigmouth Buffalo	PSD						100		
		PSD-P						100		
		Wr						85		
	Black Crappie	PSD		60	0	100			0	
		PSD-P		0	0	100			0	
		Wr		114	113	77			108	
	Bluegill	PSD	62	33	100	0				
		PSD-P	0	0	0	0				
		Wr	121	107	117					
	Channel Catfish	PSD	49	68	36	51	38	31	36	49
		PSD-P	4	7	4	7	3	3	3	2
		Wr	91	83	82	80	79	85	78	77
	Common Carp	PSD	99	89	86	100	100	100	97	65
		PSD-P	51	51	36	58	47	63	70	40
		Wr	81	83	84	92	83	91	82	82
	Gizzard Shad	PSD	0	0		100	0			
		Wr				104				
	Lake Herring	PSD	100						99	
		PSD-P	100						3	
		Wr	101							
	Northern Pike	PSD	50	41	63	88	100	100	73	100
		PSD-P	0	6	7	24	50	90	27	40
		Wr	88	85	85	77	78	83	88	88
	River Carpsucker	PSD	100	85	100	100	100	100	0	100
		PSD-P	63	85	44	93	100	100	0	100
		Wr	97	103	93	95	104	100	837	103
	Sauger	PSD	100	80	100	100	0			
		PSD-P	100	80	100	100	0			
		Wr	89	83	86	70	186			
	Shorthead Redhorse	PSD	100	100	83	100	88	100	100	
		PSD-P	50	15	43	25	50	80	77	
		Wr	108	94	90	81	83	98	101	
	Smallmouth Bass	PSD	63	73	62	61	52	78	65	65
		PSD-P	45	48	33	24	30	44	49	44
		Wr	102	96	91	85	98	108	94	94
	Smallmouth Buffalo	PSD	100	100	100		50	86	100	86
		PSD-P	100	75	100		38	71	62	71
		Wr	82	81	80		82	215	81	76

	Walleye	PSD	90	43	51	32	21	19	59	59		
		PSD-P	24	18	15	7	2	1	3	36		
		Wr	91	90	88	76	75	87	81	83		
	White Bass	PSD	100	91	100	100	100	100	83	100		
		PSD-P	100	91	100	94	100	100	83	0		
		Wr	97	97	92	87	90	100	88	148		
	White Crappie	PSD	0	67	0	0	100	100	100			
		PSD-P	0	33	0	0	100	100	100			
		Wr	85	83	140		88	95	86			
	White Sucker	PSD	50	89	100	100	100	94	100	50		
		PSD-P	25	5	53	100	100	94	40	0		
		Wr	92	90	89	85	91	87	89	91		
	Yellow Perch	PSD	33	21	12	13	44	27	25	27		
		PSD-P	1	4	2	13	0	7	0	0		
		Wr	97	85	83	68	88	100	85	82		
suspended gill net	Lake Herring	PSD								100	100	100
		PSD-P								2	1	10

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+
2017	1			341 (1)							
2013	1				282 (1)						
2011	1					501 (1)					
2010	5	298 (1)				511 (4)					
2009	6			418 (1)	445 (4)	396 (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	122	253 (6)	310 (22)	367 (12)	379 (48)	454 (15)	345 (1)	532 (4)	421 (1)	527 (10)	678 (3)
2017	86	219 (9)	286 (7)	327 (39)	354 (13)	555 (1)	506 (7)	593 (2)	535 (7)		645 (1)
2016	84	218 (2)	264 (23)	310 (16)	390 (5)	480 (10)	530 (4)	539 (24)	514 (1)		
2015	92	211 (21)	278 (16)	343 (10)	391 (13)	458 (5)	454 (28)				
2014	211	196 (13)	273 (19)	316 (37)	317 (15)	360 (123)		463 (1)	471 (1)		750 (1)
2013	211	211 (11)	274 (45)	298 (13)	353 (137)	538 (1)	496 (3)	560 (1)	521 (1)		
2012	343	233 (18)	257 (8)	351 (285)	468 (8)	490 (4)	517 (13)	565 (3)		548 (3)	658 (3)
2011	375	153 (11)	351 (246)	435 (29)	499 (22)	508 (36)	543 (18)	533 (1)	559 (2)	568 (3)	603 (5)
2010	313	295 (174)	391 (21)	451 (20)	495 (51)	526 (30)	530 (2)	586 (1)	636 (2)	548 (3)	574 (9)
2009	290	291 (18)	384 (20)	435 (128)	490 (65)		536 (4)	553 (9)	541 (23)	590 (2)	589 (20)

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).

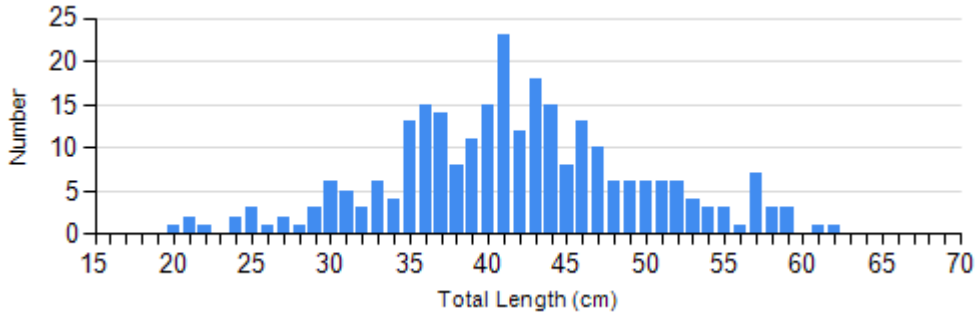
		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Channel Catfish Gill Net	2014	224	86 (0.9)	91	85 (1.4)	10	80 (3.8)	0	
	2015	128	77 (0.6)	67	78 (0.8)	5	82 (3.6)	0	
	2016	159	76 (0.6)	146	77 (1.2)	7	82 (3.8)	0	
	2017	104	79 (1.0)	153	78 (0.8)	2	86 (13.5)	0	
	2018	174	83 (1.2)	328	80 (0.6)	17	94 (4.4)	0	
Common Carp Gill Net	2014	0		17	95 (4.2)	29	89 (1.0)	0	
	2015	1	88	9	83 (2.8)	23	81 (1.3)	0	
	2016	14	82 (1.5)	10	82 (2.4)	16	82 (1.8)	0	
	2017	7	86 (1.8)	10	82 (2.3)	3	69 (15.4)	0	
	2018	0		18	82 (1.5)	17	76 (2.0)	0	
Northern Pike Gill Net	2014	0		1	77	6	85 (2.1)	3	81 (7.8)
	2015	3	91 (8.3)	5	87 (2.6)	2	84 (1.0)	1	91
	2016	0		9	94 (2.8)	2	71	4	79 (16.6)
	2017	0		12	89 (7.4)	4	98 (1.4)	1	95
	2018	0		5	96 (3.6)	6	94 (2.4)	2	85 (4.8)
Sauger Gill Net	2017	0		1	75	0		0	
Walleye Gill Net	2014	157	88 (0.8)	34	87 (1.2)	1	82	1	68
	2015	29	76 (1.0)	40	84 (1.1)	2	91 (3.6)	0	
	2016	29	77 (1.0)	16	81 (2.1)	25	91 (1.6)	0	
	2017	47	78 (0.9)	13	81 (1.7)	13	91 (1.7)	1	98
	2018	75	84 (0.7)	28	87 (1.1)	10	86 (5.5)	8	95 (2.7)
White Bass	2018	0		0		14	106	11	93

Gill Net							(1.0)		(2.9)
White Bass Gill Net	2014	0		0		6	103 (2.5)	8	98 (3.2)
	2015	1	103	0		1	82	4	86 (5.9)
	2016	0		3	148 (58.6)	0		0	
	2017	0		5	99 (2.0)	24	94 (1.2)	21	84 (2.0)
White Sucker Gill Net	2014	1	82	0		0		16	88 (2.4)
	2015	0		3	90 (3.6)	0		2	89 (2.0)
	2016	1	89	1	93	0		0	
	2017	0		0		0		2	98 (4.0)
	2018	0		0		3	89 (4.0)	1	103
Yellow Perch Gill Net	2014	11	106 (3.9)	3	97 (2.5)	1	47	0	
	2015	33	85 (2.0)	11	83 (2.3)	0		0	
	2016	11	81 (2.1)	4	84 (5.5)	0		0	
	2017	6	86 (3.6)	2	78 (3.3)	0		0	
	2018	13	105 (16.1)	14	90 (1.1)	1	65	0	

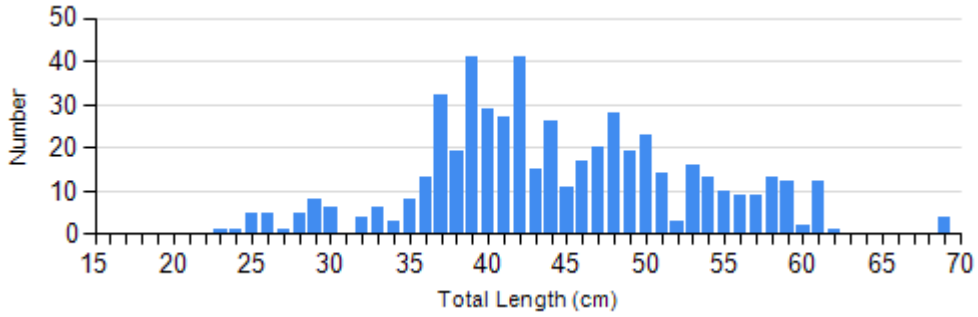
Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Channel Catfish
Gear: AFS std gill net

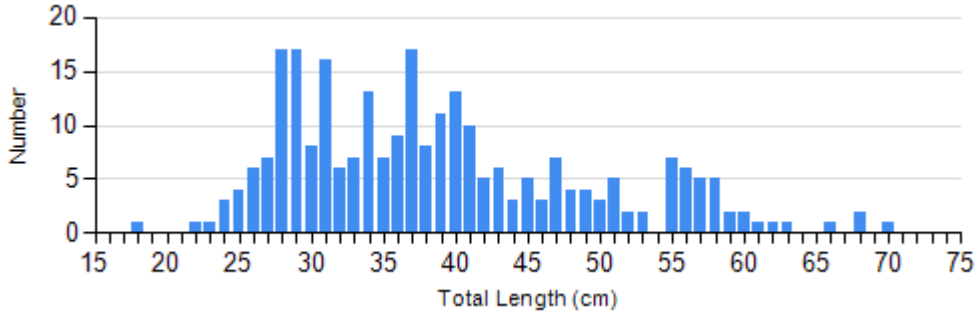


2017

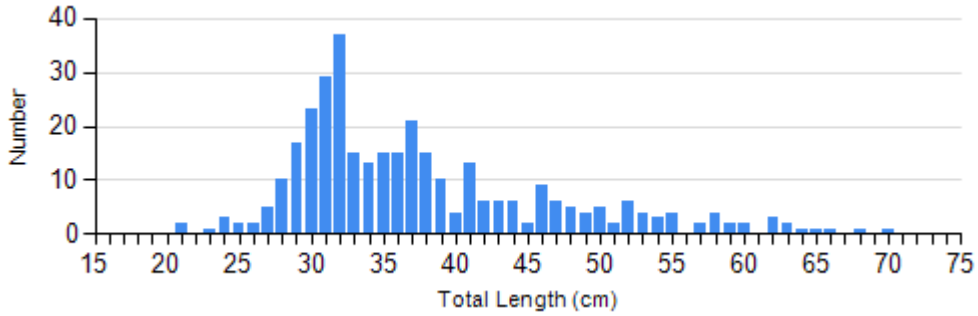


2018

Species: Channel Catfish
Gear: std exp gill net



2013



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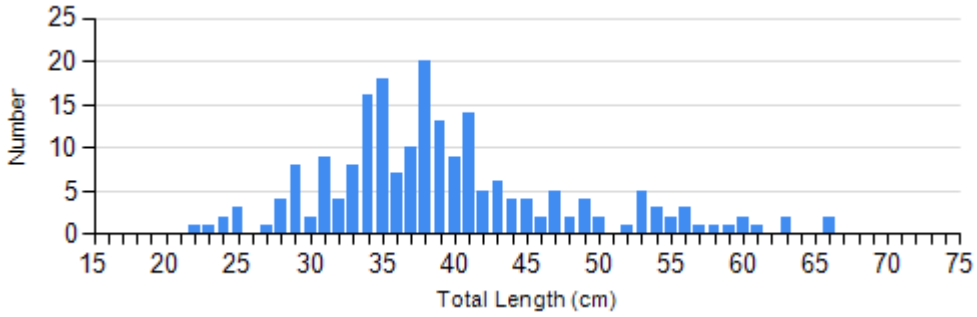

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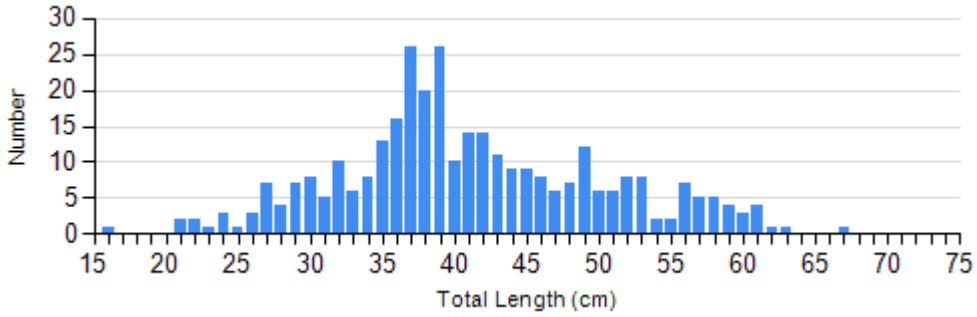
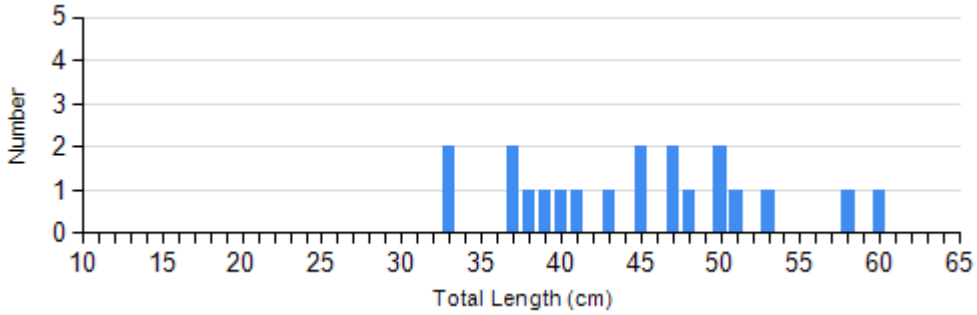
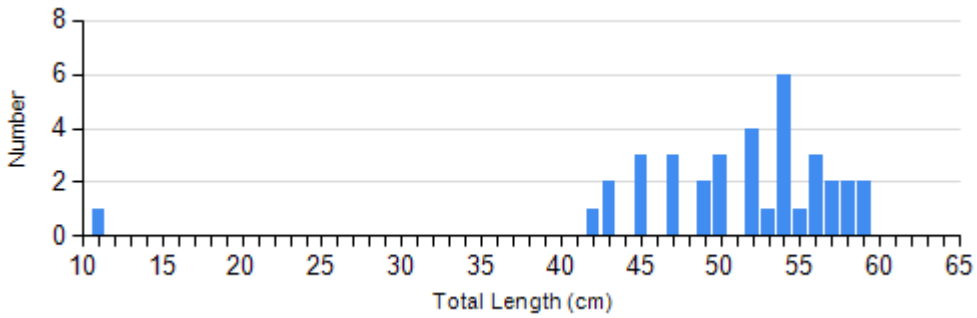


2016

Species: Common Carp
Gear: AFS std gill net

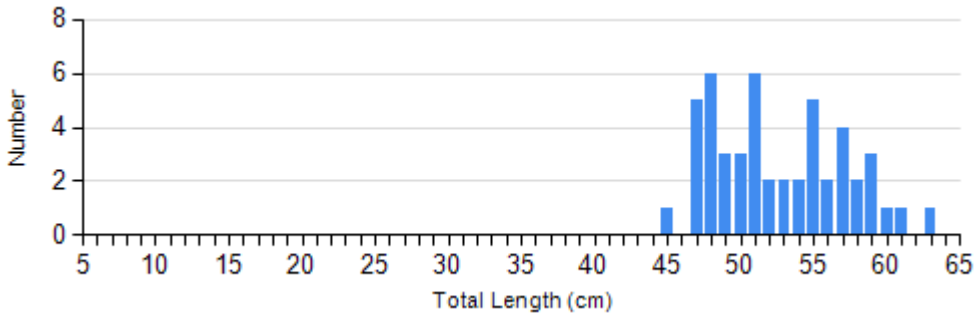


2017



2018

Species: Common Carp
Gear: std exp gill net



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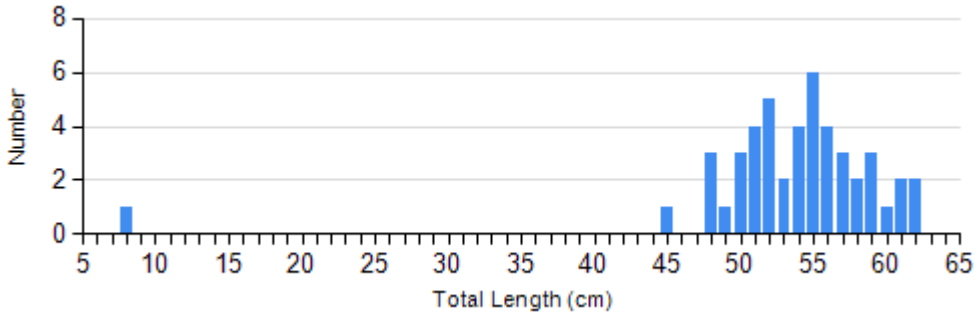

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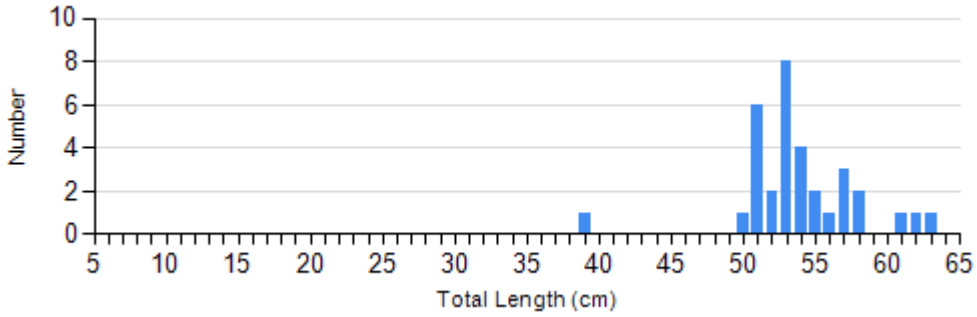

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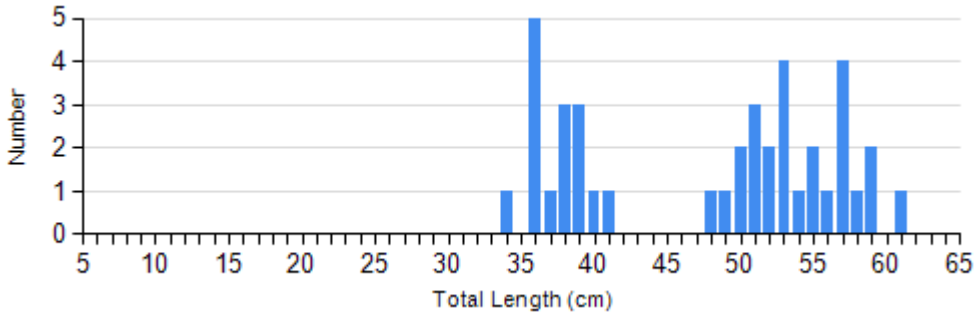
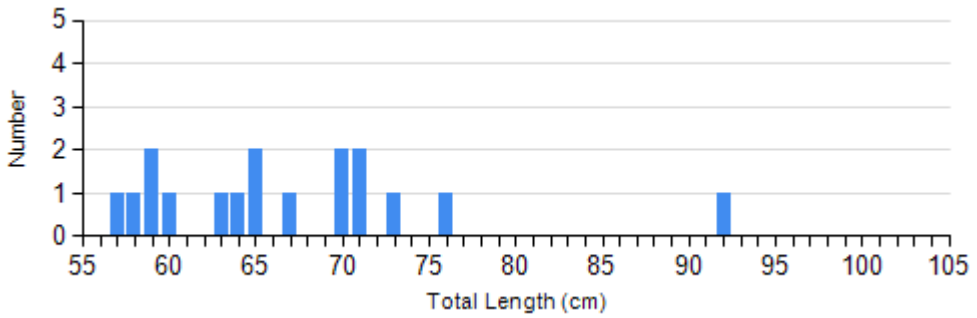
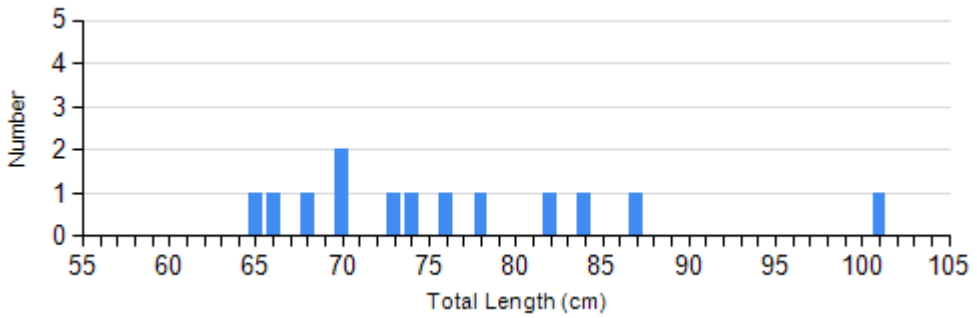


2016

Species: Northern Pike
Gear: AFS std gill net



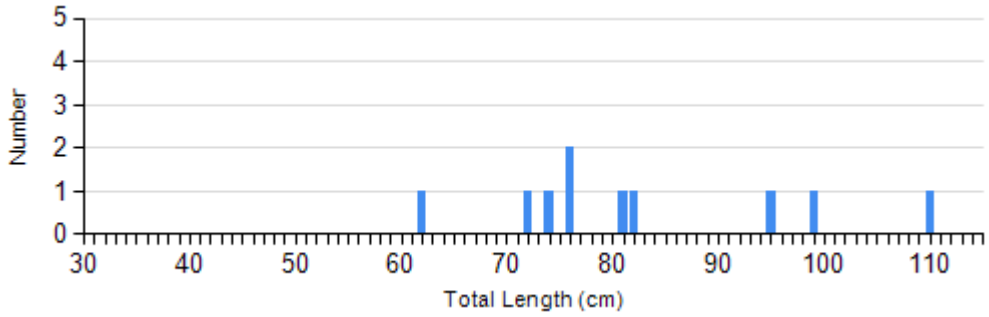
2017



2018

Species: Northern Pike
Gear: std exp gill net

2014



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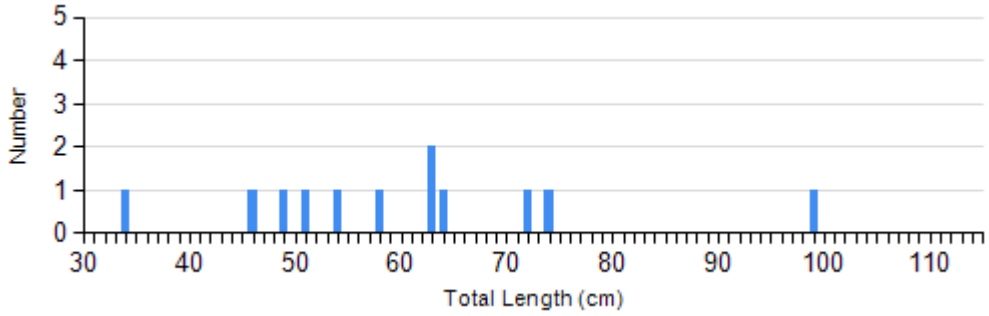
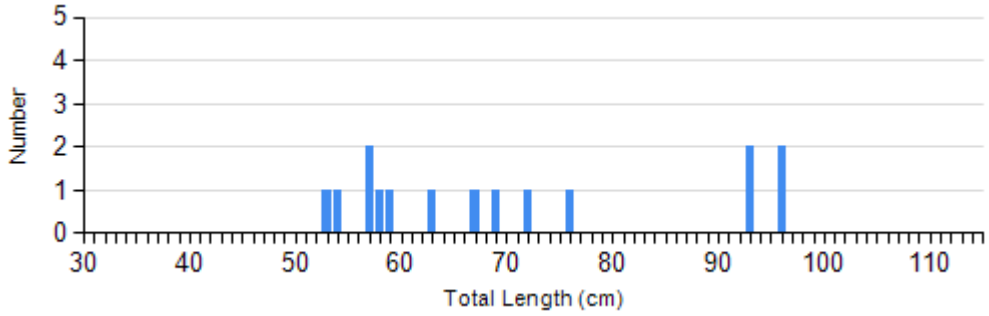
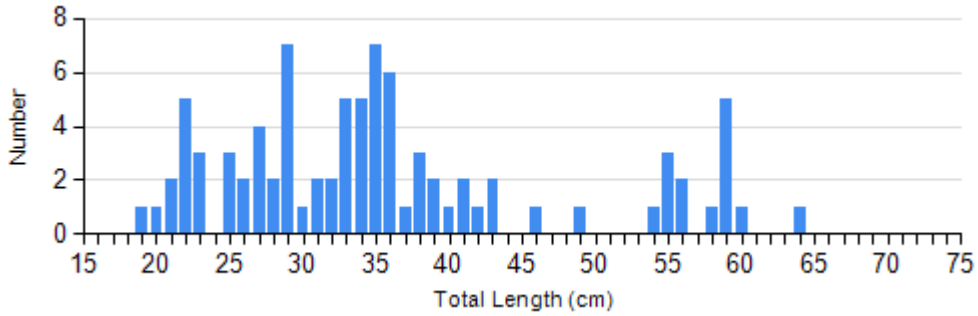


2016

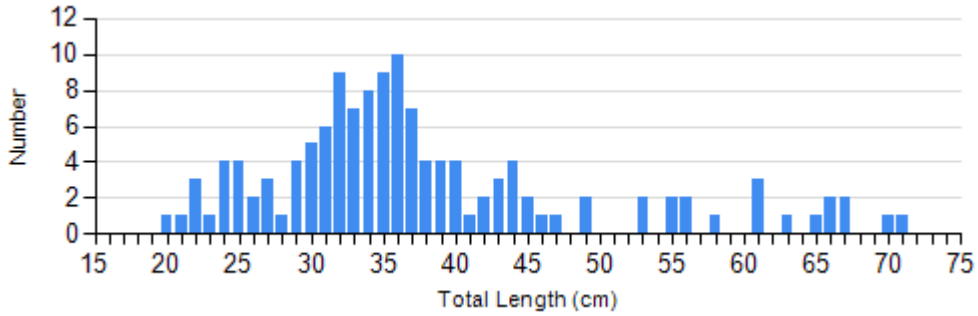


Species: Walleye
Gear: AFS std gill net

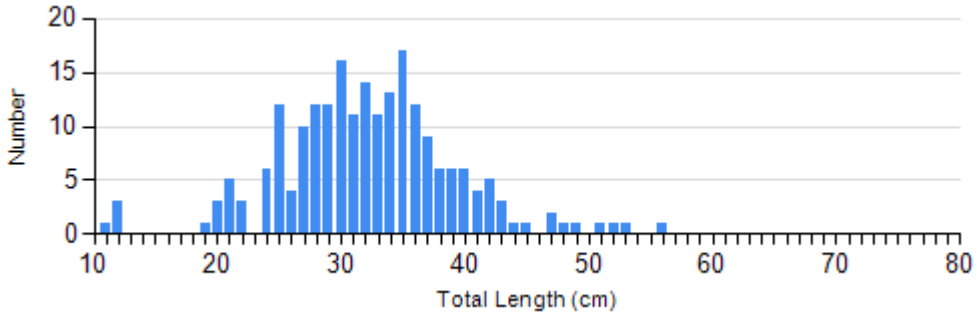
2017



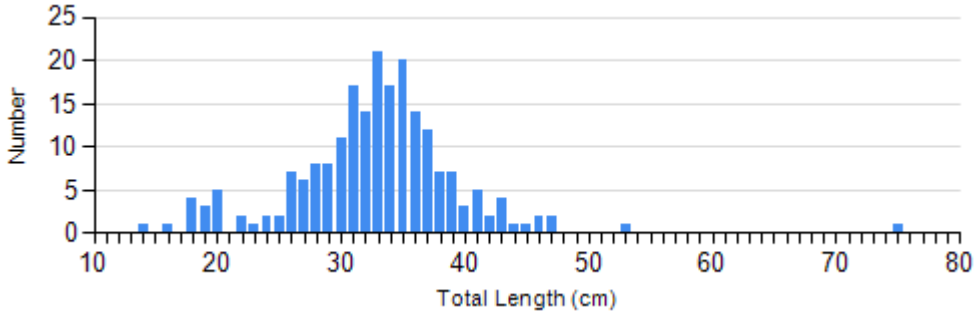
2018



Species: Walleye
Gear: std exp gill net



2013



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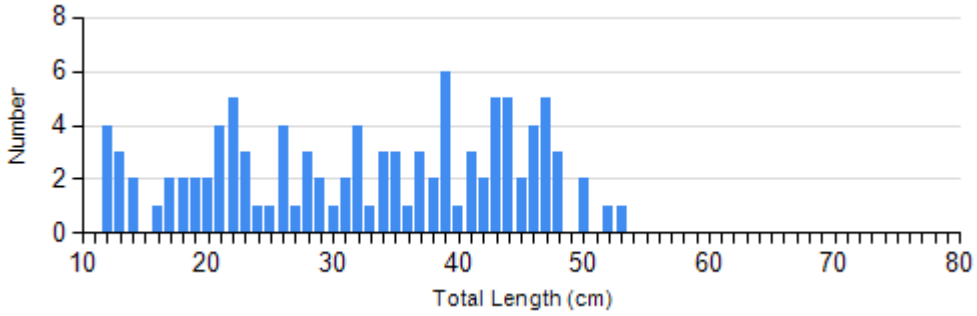

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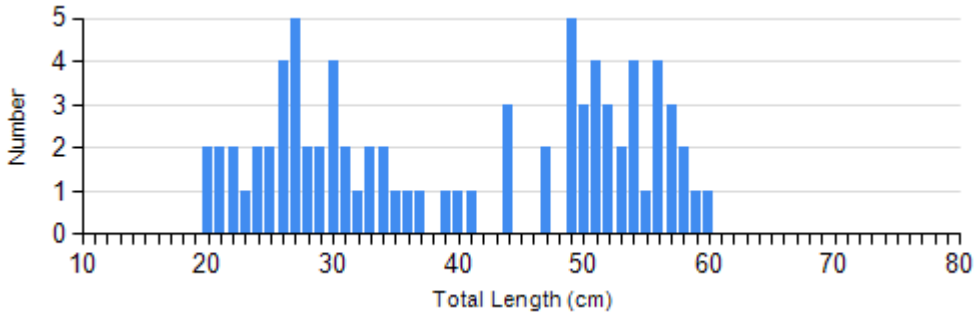
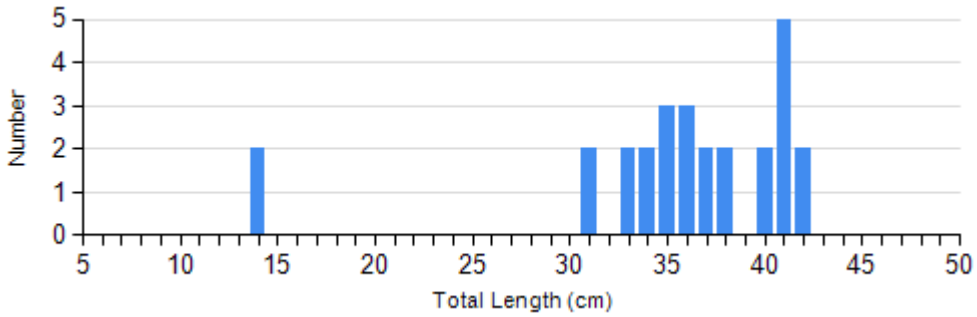
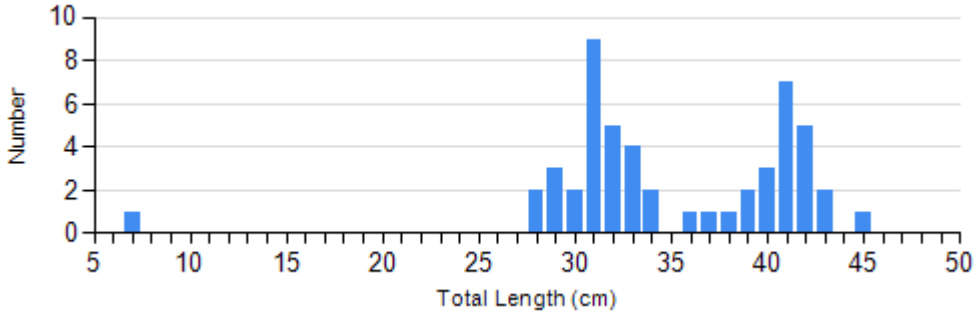


2016

Species: White Bass
Gear: AFS std gill net

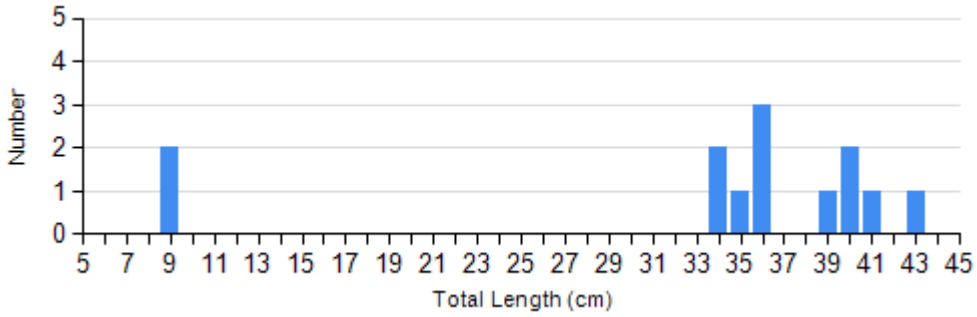


2018

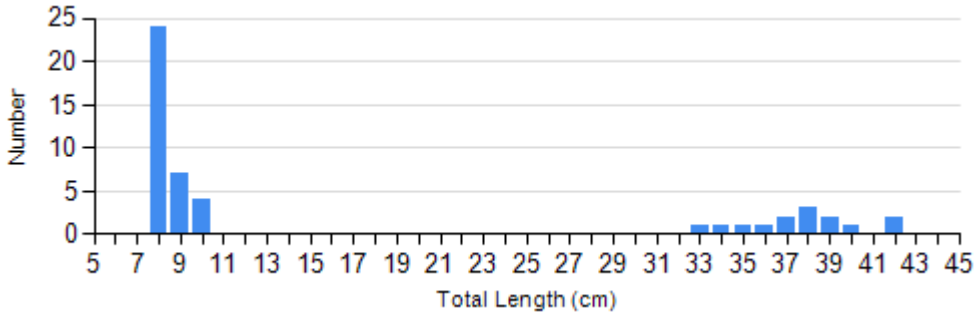


2017

Species: White Bass
Gear: std exp gill net



2013



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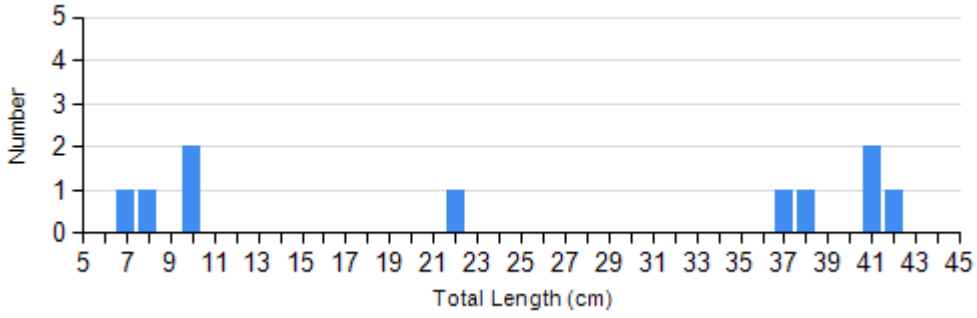
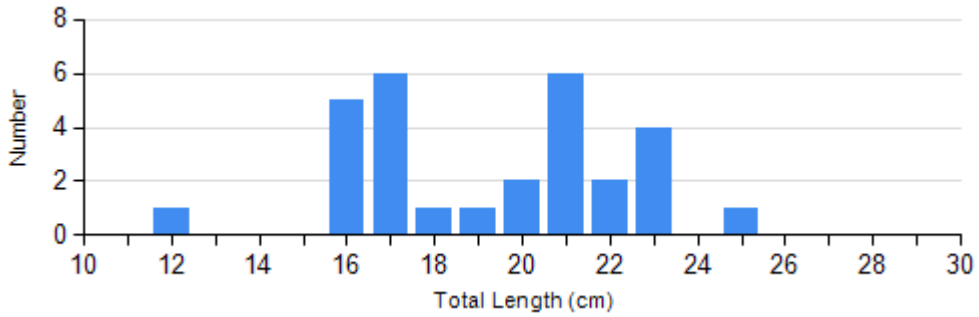


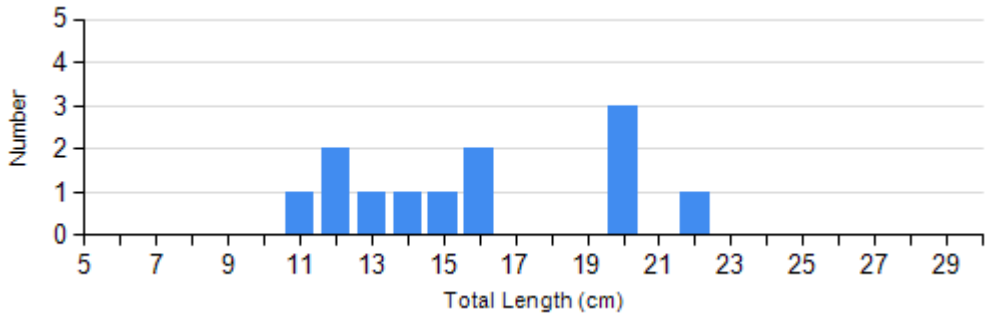
2015

Species: Yellow Perch
Gear: AFS std gill net

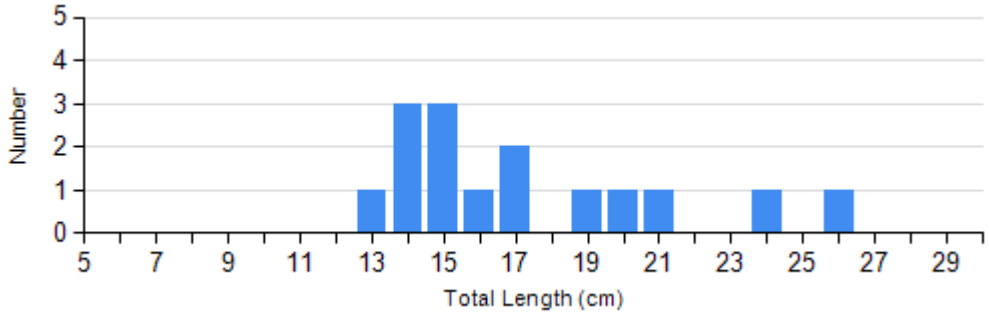


2018

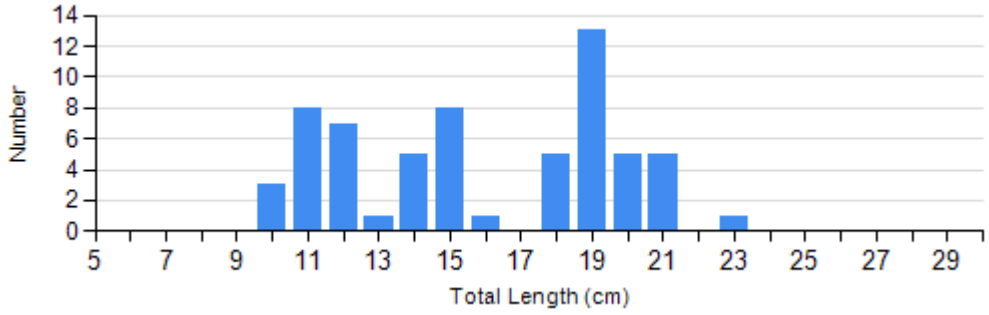
Species: Yellow Perch
Gear: std exp gill net



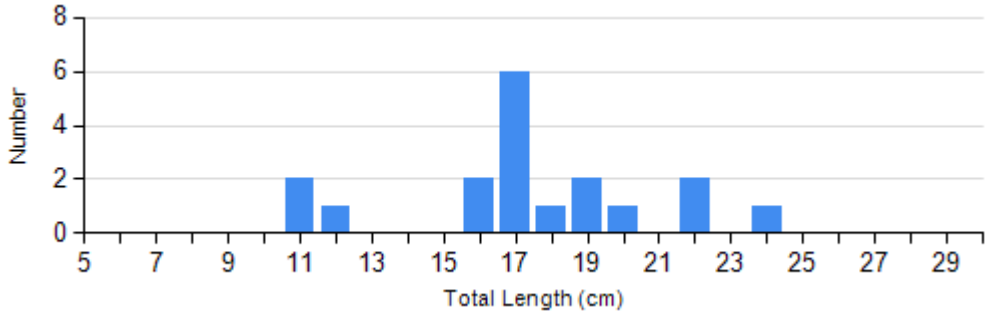
2013



2014



2015

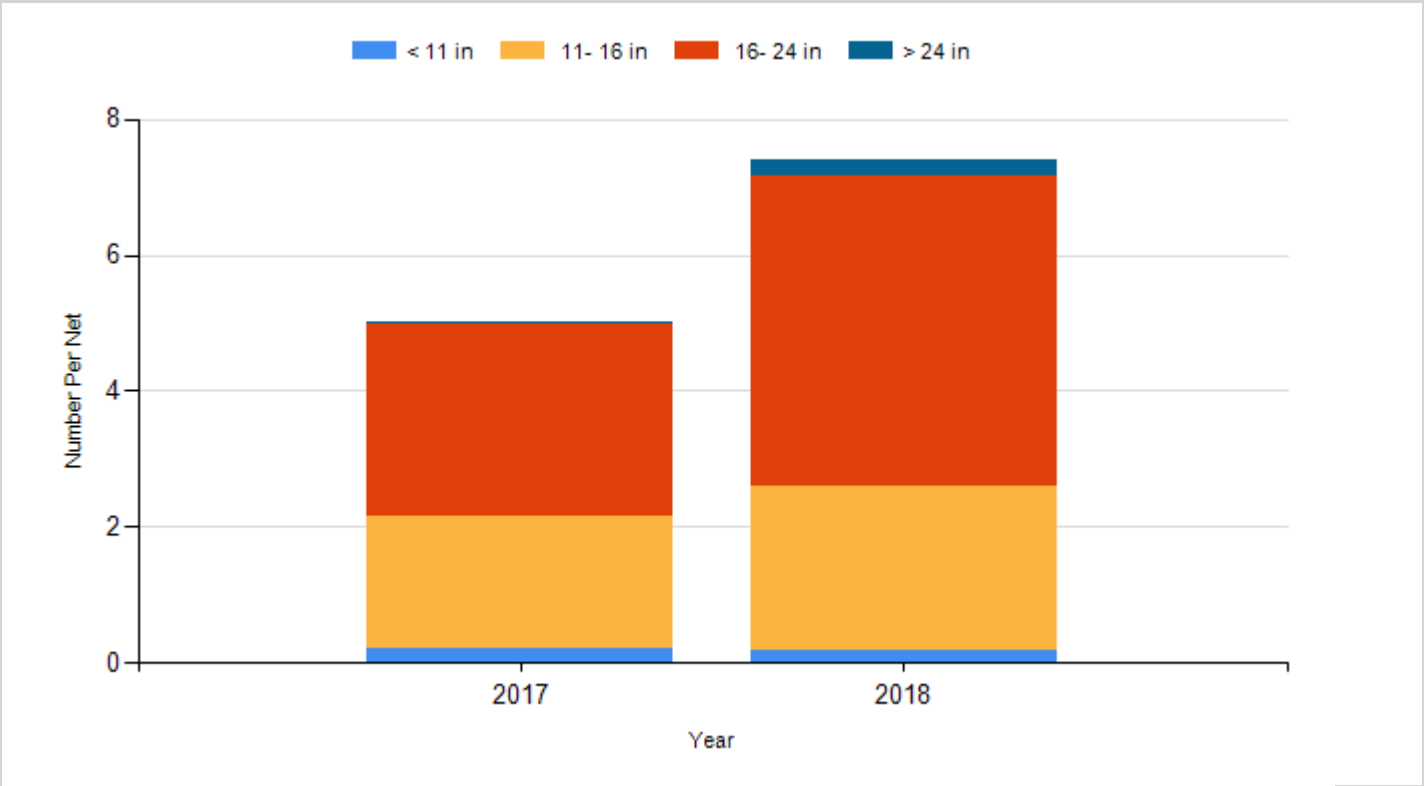


2016

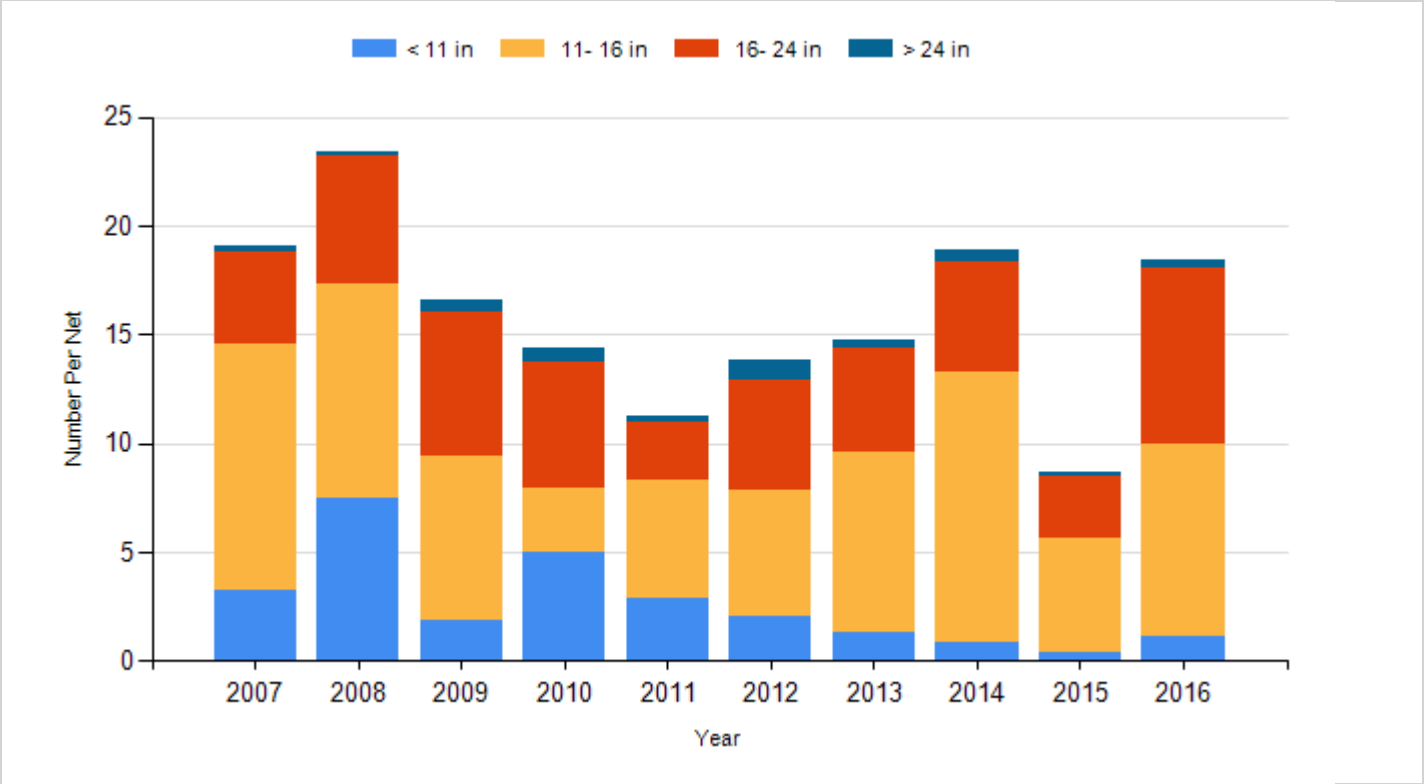
Historic Fish Sizes and Relative Abundance

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

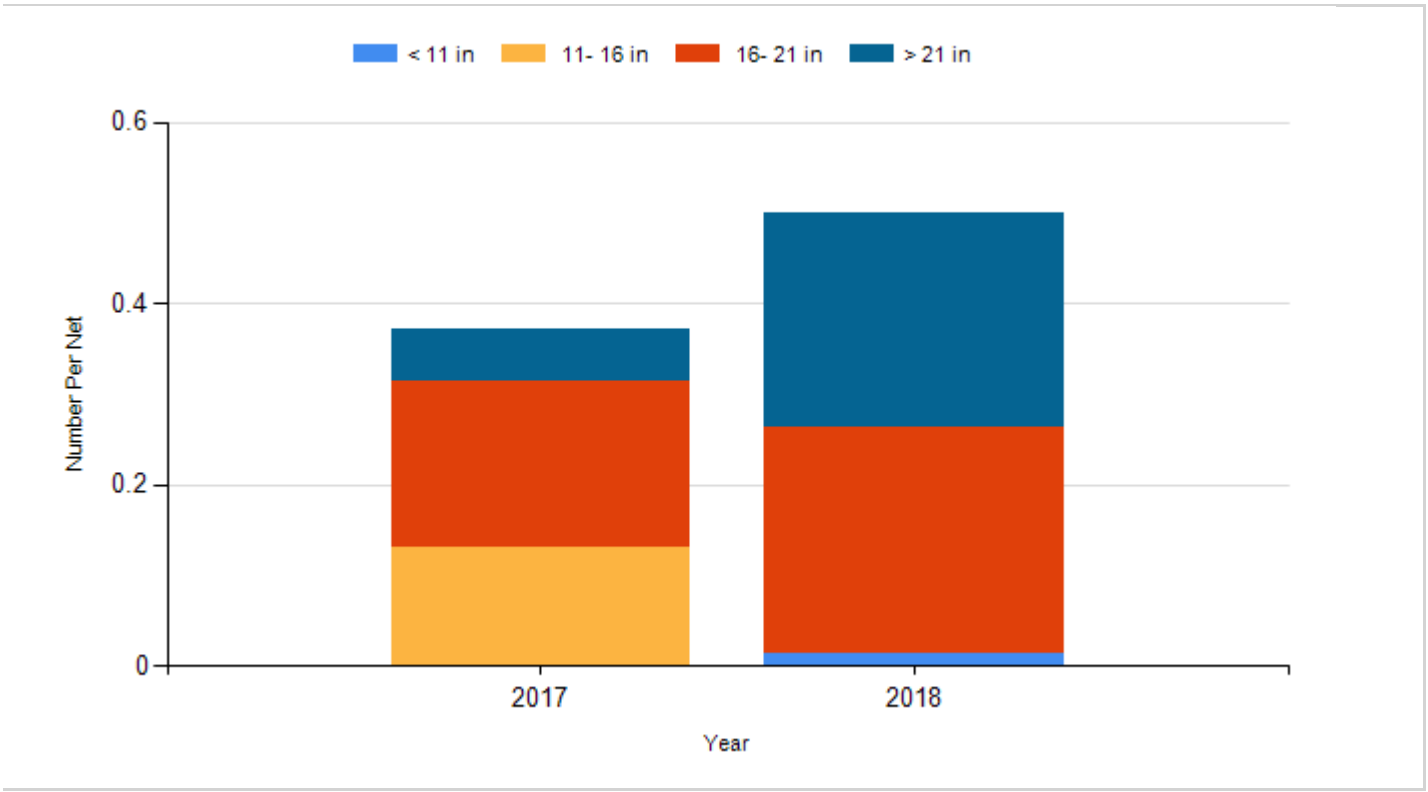
Species: Channel Catfish
Gear: AFS std gill net



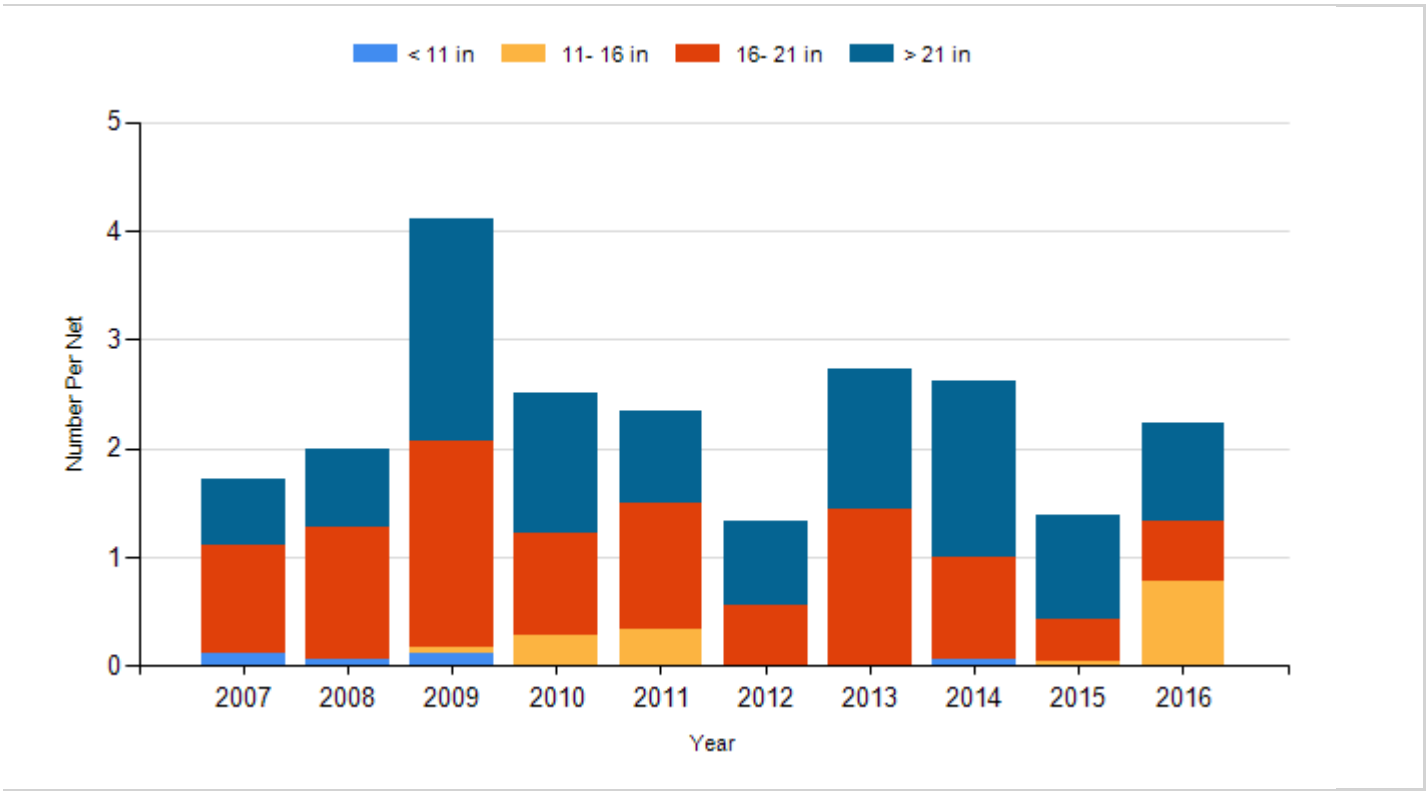
Species: Channel Catfish
Gear: std exp gill net



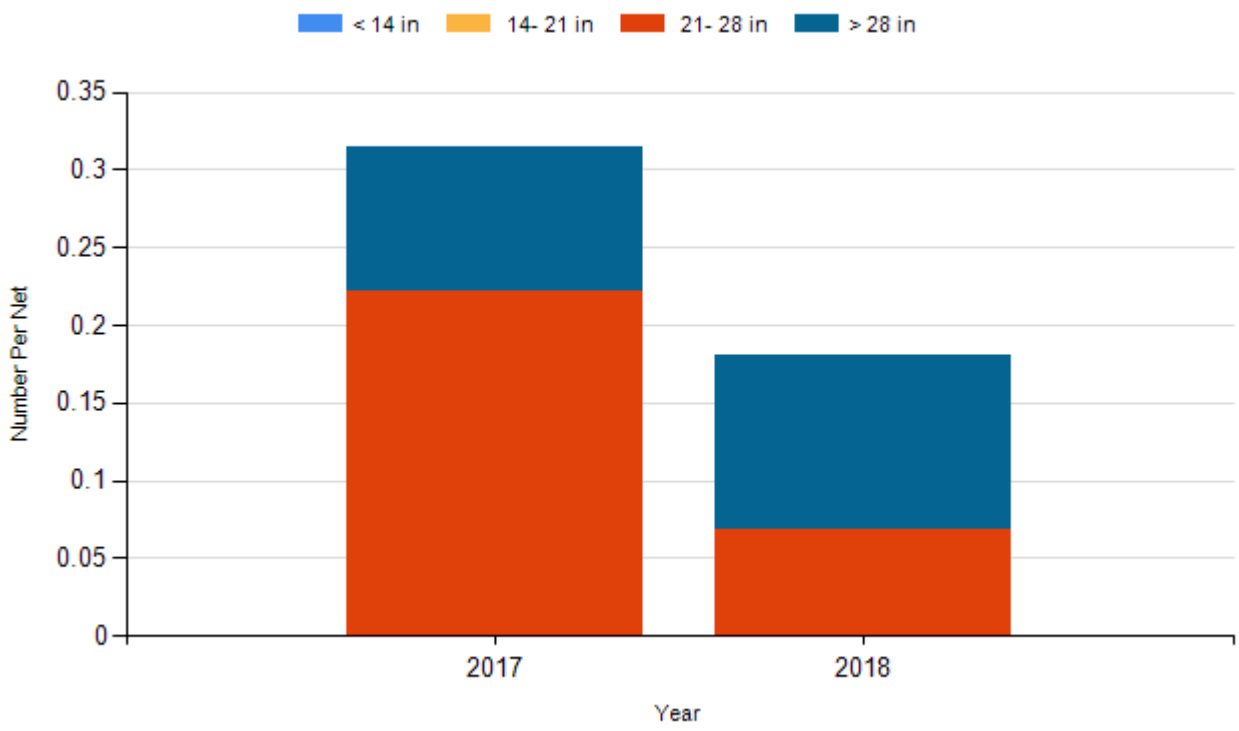
Species: Common Carp
Gear: AFS std gill net



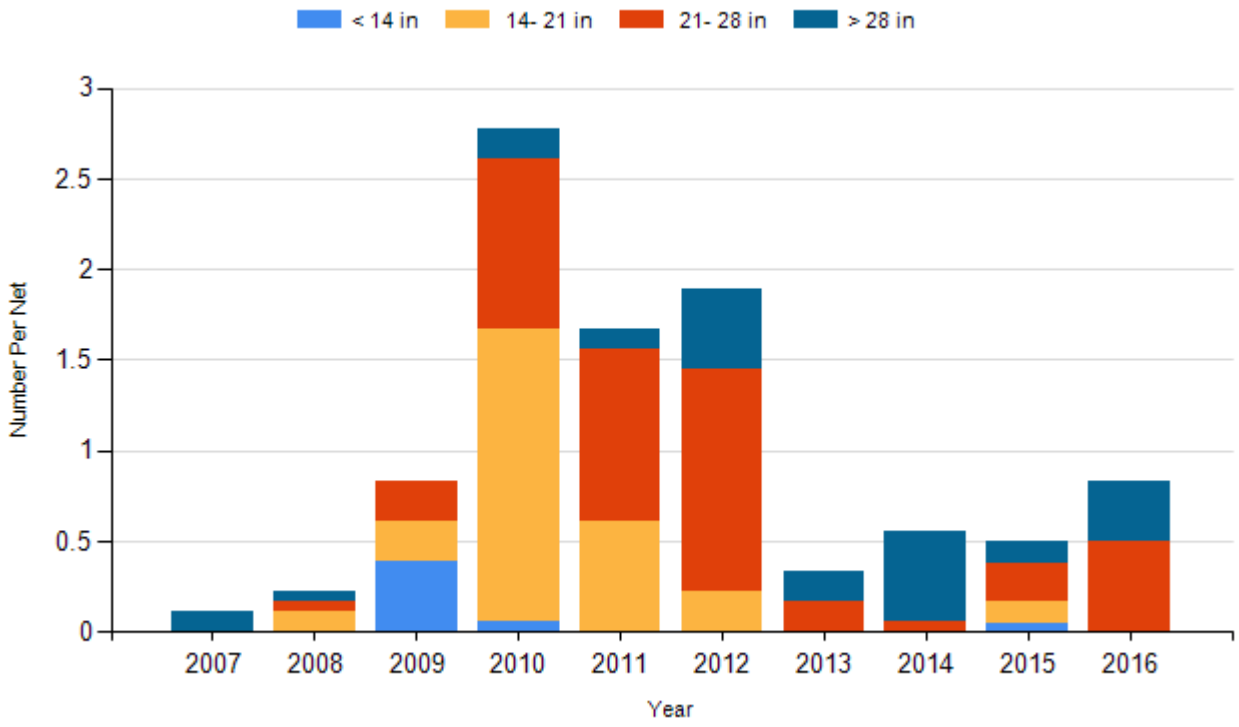
Species: Common Carp
Gear: std exp gill net



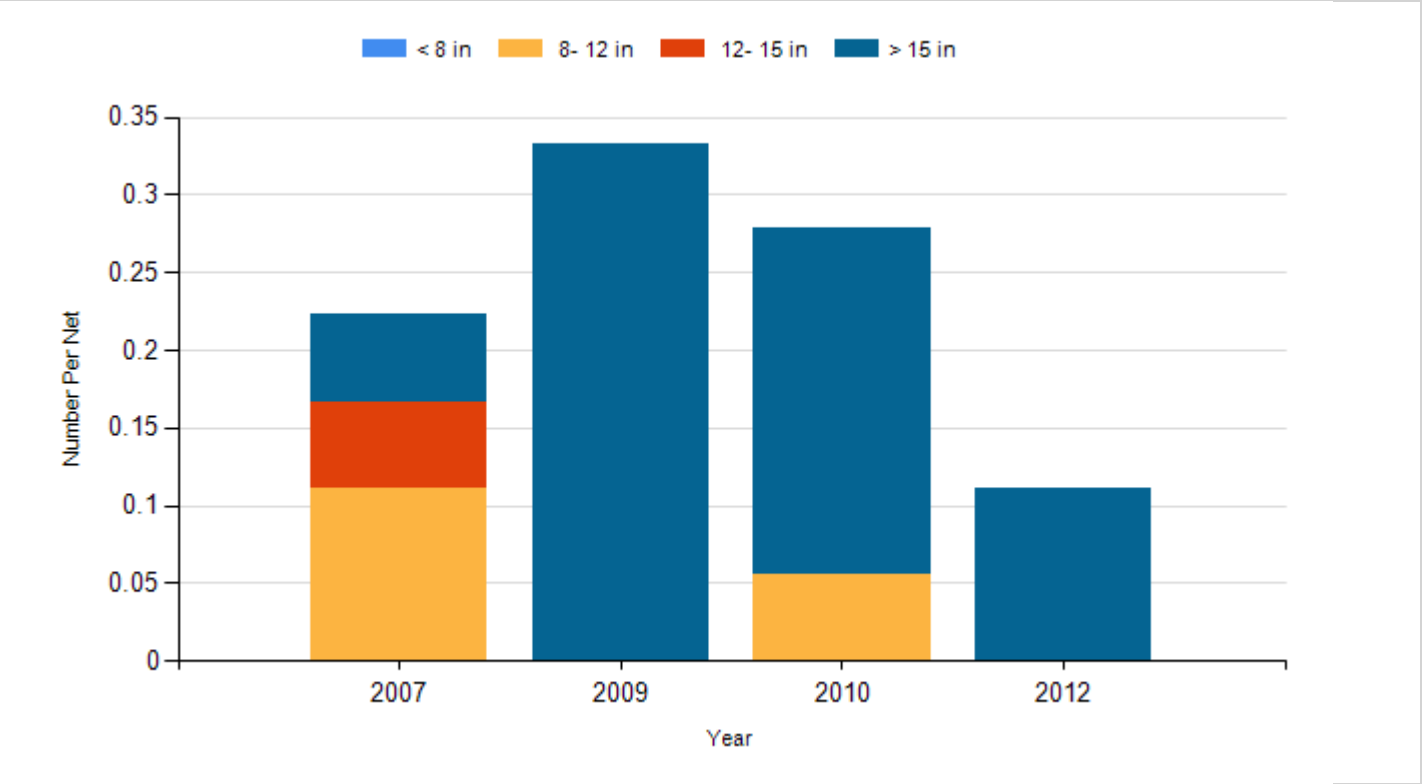
Species: Northern Pike
Gear: AFS std gill net



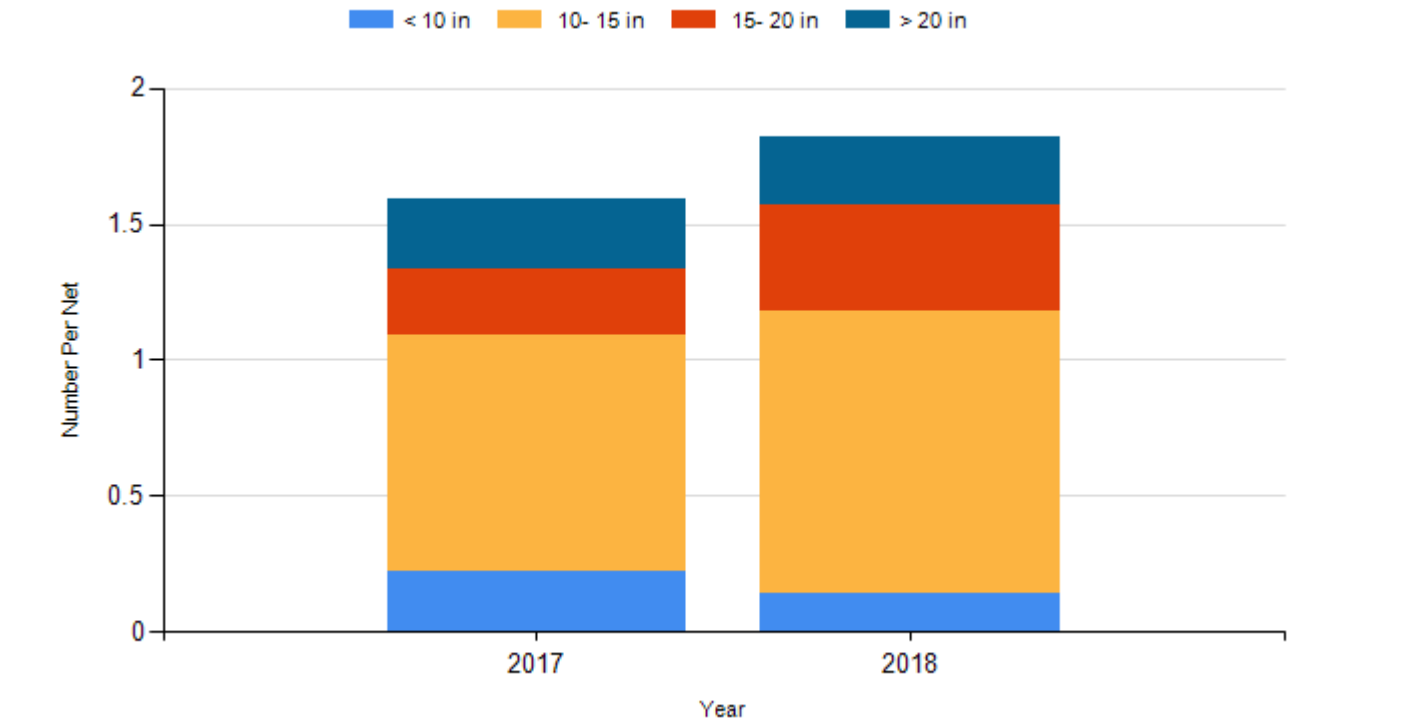
Species: Northern Pike
Gear: std exp gill net



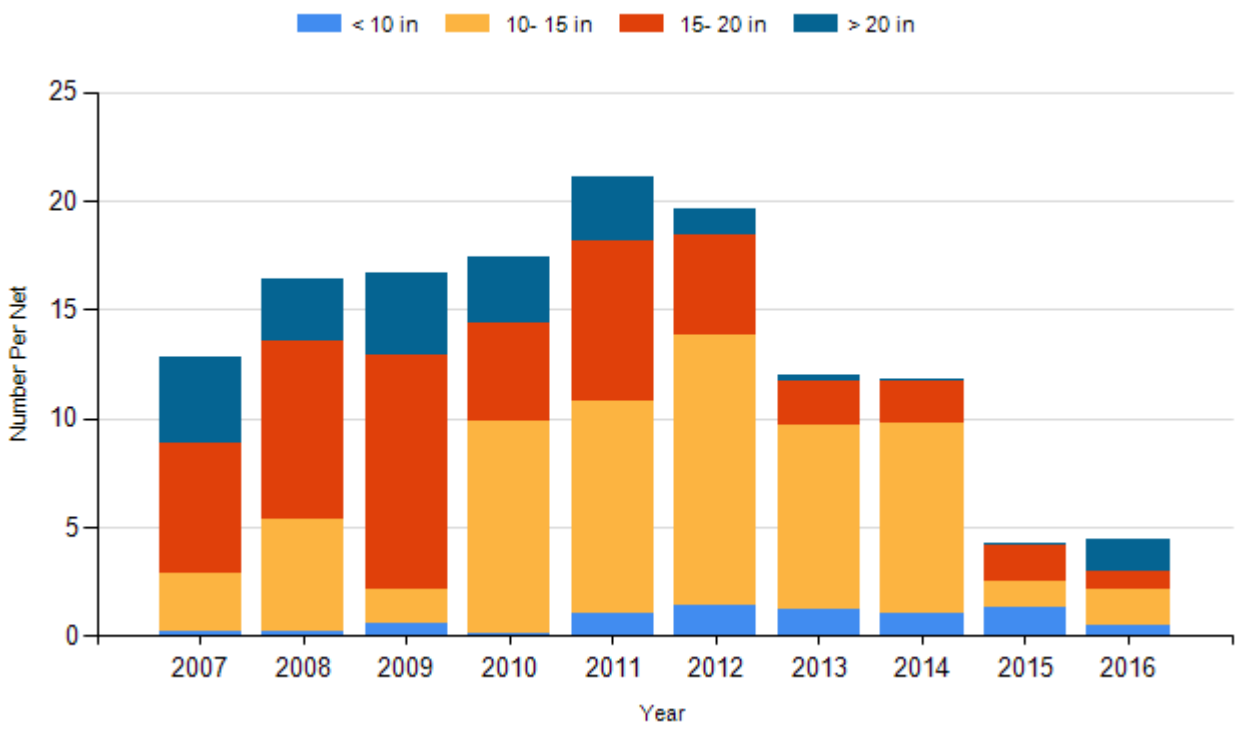
Species: Sauger
Gear: std exp gill net



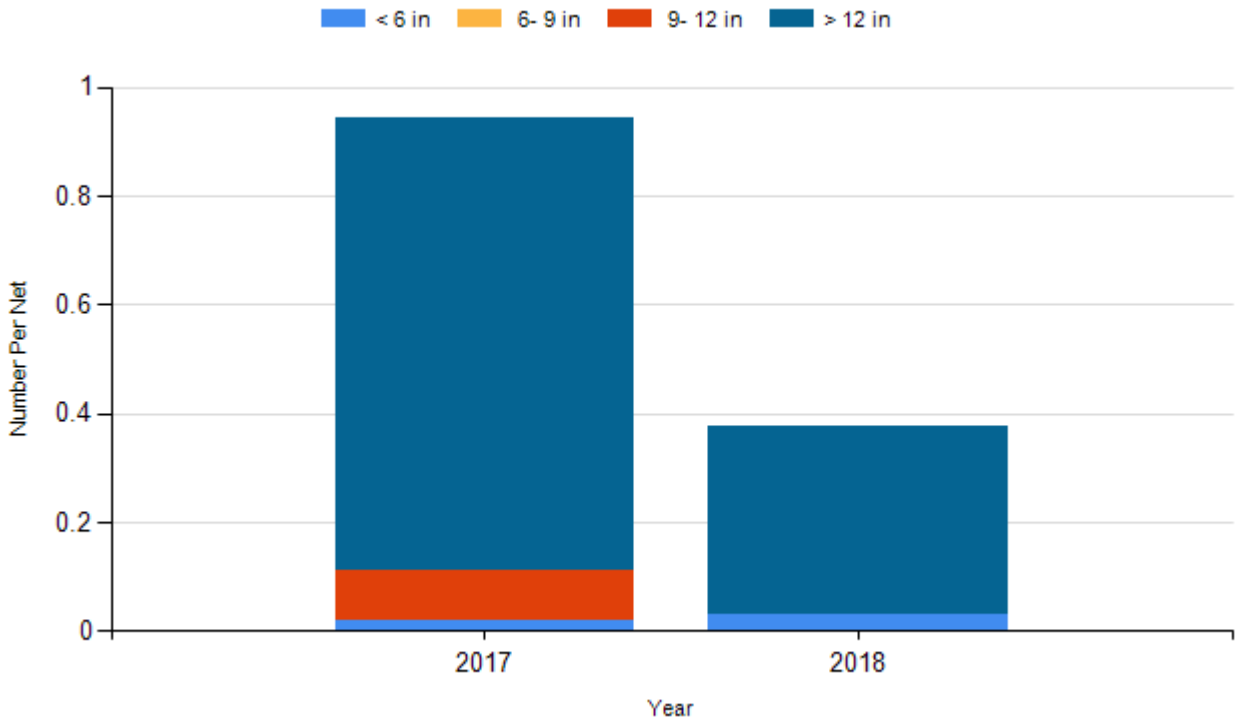
Species: Walleye
Gear: AFS std gill net



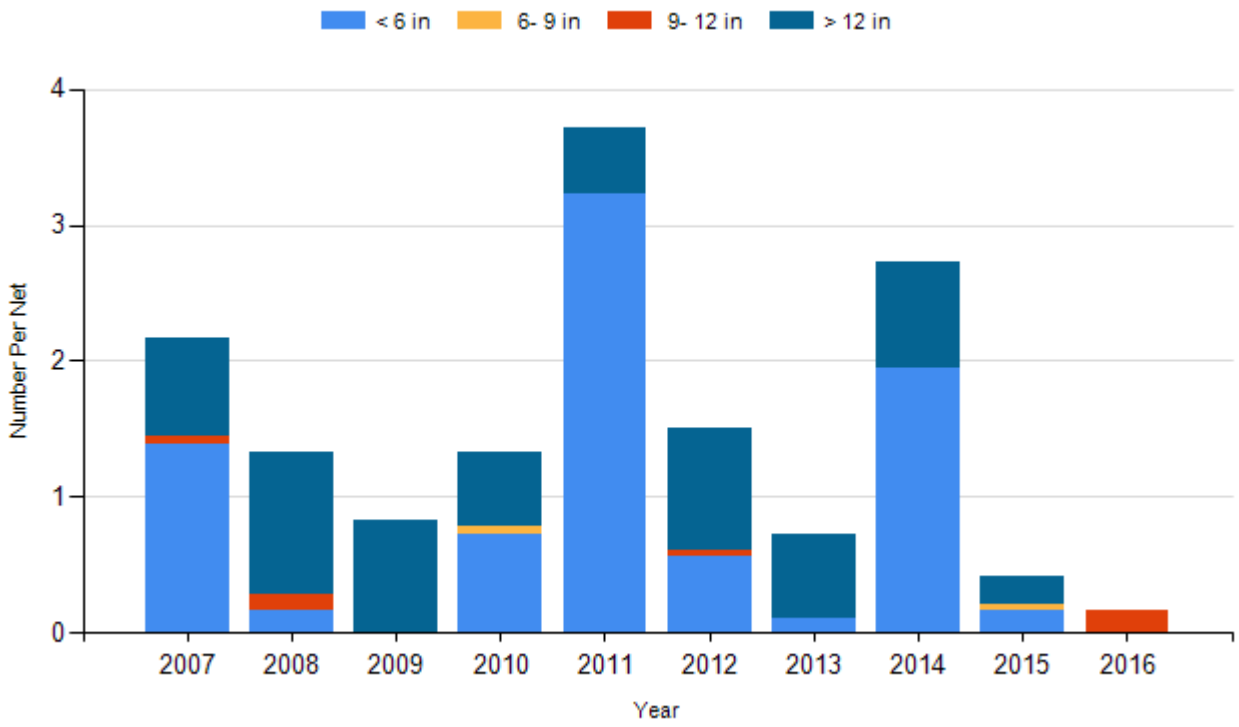
Species: Walleye
Gear: std exp gill net



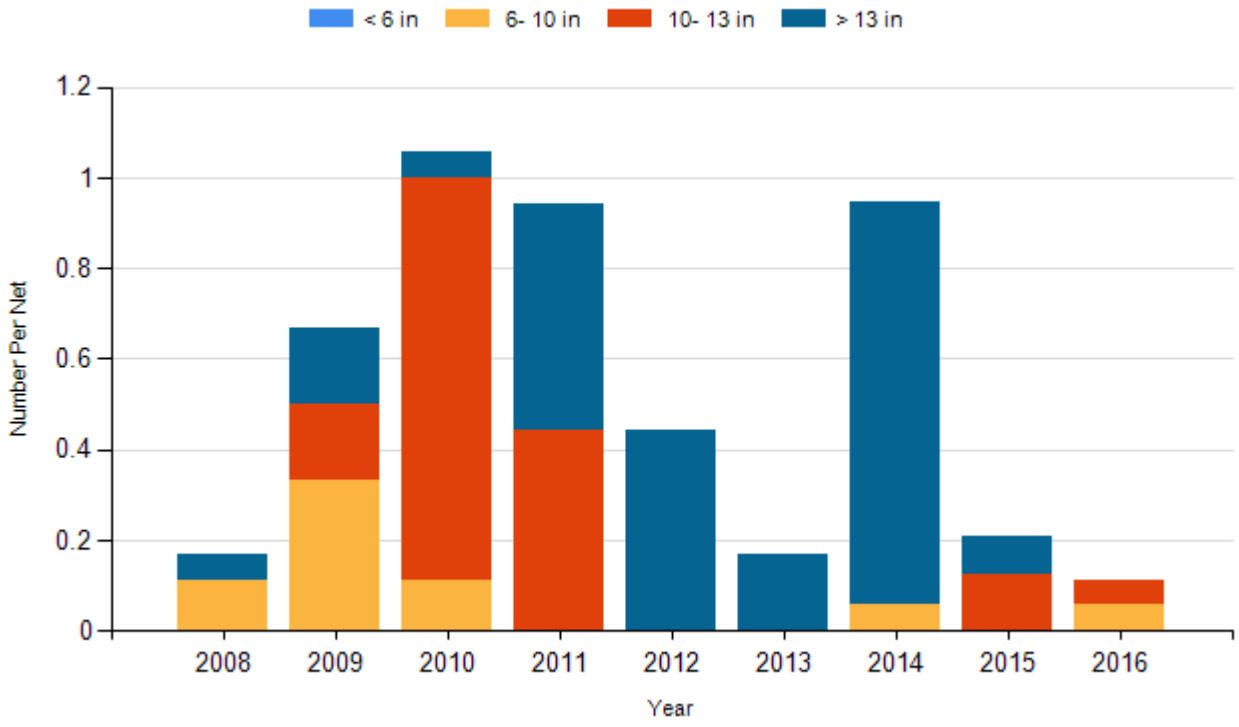
Species: White Bass
Gear: AFS std gill net



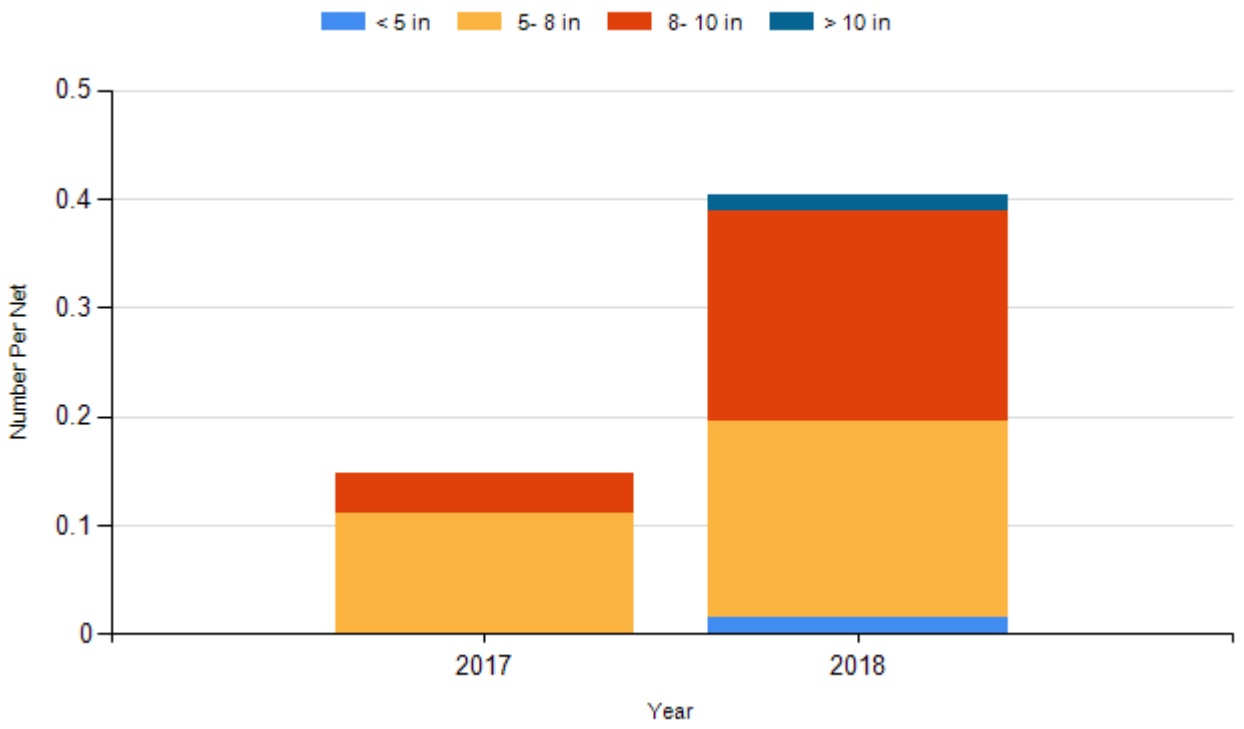
Species: White Bass
Gear: std exp gill net



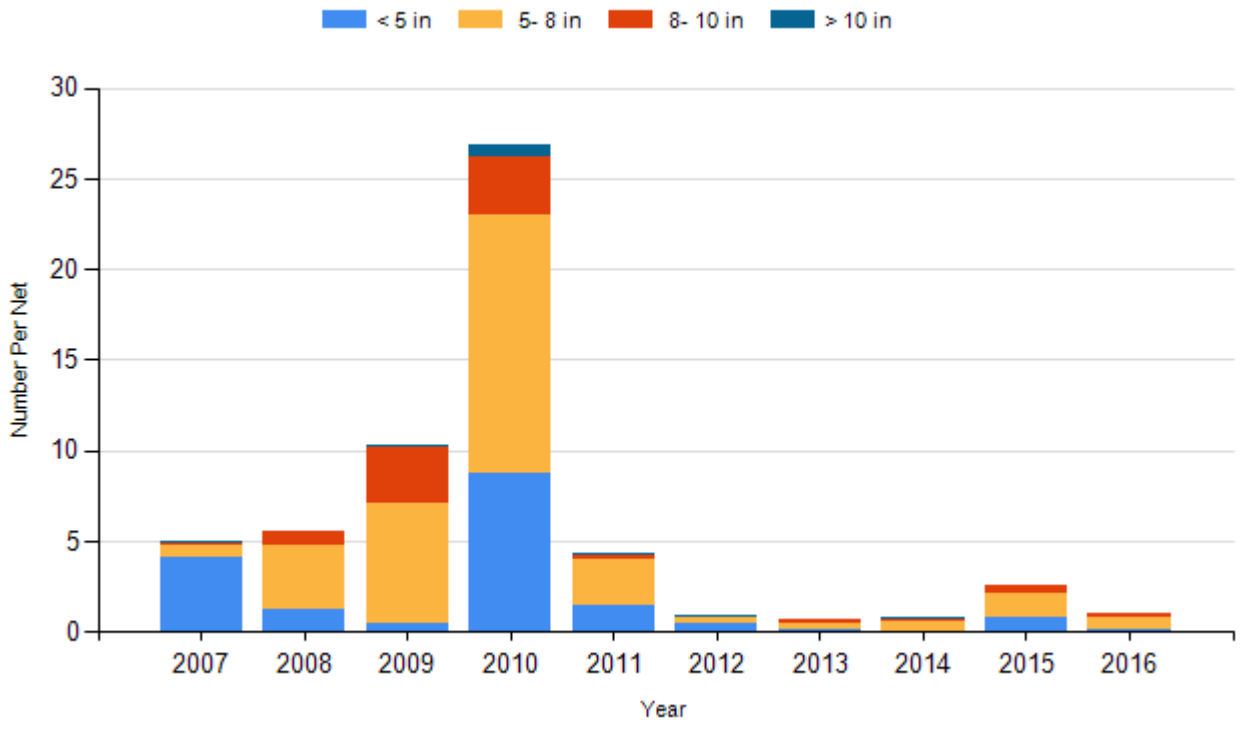
Species: White Sucker
Gear: std exp gill net



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	Chinook Salmon (Oahe)	Fingerling	99,426
2018	Walleye	Small	144,460
2018	Walleye	Small Fingerling	1,830,546