Lake Oahe – Upper Fish Population Survey Summary

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 upper Lake Oahe which is from the US Highway Bridge upstream to the North Dakota State Line. For a summary and analysis downstream of US Highway 212 to Oahe Dam, please see Lake Oahe Lower 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 Upper Lake Oahe with miles of shore fishing access, four State Recreation Areas will all facilities, and eight additional ramps that 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 coldwater prey such as Lake Herring.

Shoreline seine results collected 17 species of fish with Emerald Shiner being the most abundant (156 fish/pull). Other species collected that were most abundant were Black Crappie, Yellow Perch, White Crappie, and Fathead Minnow. All species were within the five year average except Fathead Minnow abundance was high for 2018. These small fish provide a prey source in shallow water near shore and an indication of annual fish production.

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 catch for all species from 2017 to 2018 remained similar. The most abundant fish collected during this survey was Channel Catfish at 10.7 fish/net-night. Channel Catfish lengths ranged from 9 to 29 inches and averaged 17 inches in length. Walleye were the second most abundant species. Walleye catches were 2.2 fish/net-night in 2018. Walleye collected ranged from 7.5 to 28.5 inches and averaged 13.5 inches in length. Approximately 32% of the walleye collected were larger than 15 inches and 8% were larger than 20 inches from the fish collected over 10 inches. The size of walleye in Upper Oahe has increased in recent years. Four year old Walleye averaged 15 inches in 2018 which is faster growth than in the 2013 when they averaged 13 inches at age-4. Growth should continue to improve as prey fish abundance has improved in recent years. Walleye plumpness or condition has remained stable or slightly improved for all sizes of walleye in Upper Oahe.

Small mesh gill nets in August provide an index of prey and young fish found off shore. Yellow Perch were the most abundant (0.6 fish/net-night), followed by Walleye (0.3), Freshwater Drum (0.1), and Spottail Shiner (0.1 fish/net-night). Small fish provide prey for all fish and the net catches are an indication of reproduction of other species in 2018.

Small mesh gill nets in October were set to give an index of young Walleye production for the upper region of Lake Oahe. Walleye catches were low but indicate some production of fish for the future population.

Suspended gill nets sampling was completed during late July. The suspended gill net survey is a paired survey with the hydroacoustics survey to help index our coldwater prey abundance. Primary information collected with this survey is to provide species and size validation. Netting was completed at Dodge Draw and upstream of Whitlock Bay. Lake Herring was the most abundant species collected in 2018 with an average of 175 fish/net-night. Rainbow Smelt catch rate of 11 fish/net-night was also 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, Emerald Shiner, and Crappie species) and growth rates for Walleye has increased with the higher abundance of prey. Walleye abundance has remained stable with an increase of the percentage of larger fish found in the upper regions of Lake Oahe. With additional growth and current size of Walleye, the future is currently looking good for Upper Oahe's Walleye fishing.

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 Upper, Campbell County
ULO-Lake-933-000
2018

Lake Information

Name: Oahe Upper

County: Campbell

Surface Area: 88,405 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS gill net (1/2 inch)	Aug 13, 2018	18 net-nights
AFS gill net (1/2 inch)	Aug 14, 2018	18 net-nights
AFS gill net (1/2 inch)	Aug 15, 2018	36 net-nights
AFS gill net (1/2 inch)	Aug 16, 2018	18 net-nights
AFS gill net (1/2 inch)	Oct 05, 2018	15 net-nights
AFS gill net (1/2 inch)	Oct 12, 2018	15 net-nights
AFS gill net (1/2 inch)	Oct 16, 2018	15 net-nights
AFS gill net (1/2 inch)	Oct 23, 2018	15 net-nights
AFS std gill net	Aug 13, 2018	18 net-nights
AFS std gill net	Aug 14, 2018	18 net-nights
AFS std gill net	Aug 15, 2018	36 net-nights
AFS std gill net	Aug 16, 2018	18 net-nights
large seine	Jul 25, 2018	4 hauls
large seine	Jul 30, 2018	8 hauls
large seine	Jul 31, 2018	12 hauls
suspended gill net	Jul 17, 2018	2 net-nights

Common Fish Species Present

Lake Herring

Emerald Shiner

Black Crappie

Yellow Perch

White Crappie

Fathead Minnow

Spottail Shiner

White Bass

Smallmouth Bass

Channel 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			
	Channel Catfish	0.0	0.0	40		0		75	2
	Common Carp	0.0	0.0	100		0		92	5
	Freshwater Drum	0.1	0.0	0		0		110	9
	Shorthead Redhorse	0.0	0.0	0		0			
	Smallmouth Bass	0.0	0.0	0		0			
	Spottail Shiner	0.0	0.0						
	Walleye	0.2	0.1	0		0		96	3
	White Bass	0.0	0.0	0		0		112	1
	White Crappie	0.0	0.0	0		0		225	68
	Yellow Perch	0.3	0.1	0		0		103	3
AFS std gill net	Black Bullhead	0.0	0.0	0		0		84	
	Black Crappie	0.0	0.0	67		67		104	14
	Channel Catfish	10.7	2.0	61	2	2	1	84	1
	Common Carp	0.3	0.1	100		82	12	81	3
	Freshwater Drum	0.5	0.1	100		50	11	91	2
	Goldeye	0.0	0.0						
	Lake Herring	0.1	0.0						
	Northern Pike	0.1	0.1	100		80		88	6
	River Carpsucker	0.3	0.1	100		100		103	2
	Sauger	0.1	0.1	86		14		79	4
	Shorthead Redhorse	0.4	0.1	94		50	14	93	1
	Shortnose Gar	0.0	0.0						
	Smallmouth Bass	0.7	0.2	94		33	8	97	1
	Smallmouth Buffalo	0.1	0.0	100		38		89	4
	Walleye	2.2	0.3	32	5	8	3	82	1
	White Bass	0.0	0.0	100		100		84	
	White Crappie	0.0	0.0	100		100		74	
	White Sucker	0.0	0.0	100		100		96	8
	Yellow Perch	0.6	0.1	74	9	26	9	92	2
large seine*	Bigmouth Buffalo	1.8	0.1						
	Black Crappie	88.3	3.7						
	Channel Catfish	0.0	0.0						

	Common Carp	0.3	0.1			
	Drum Family	0.1	0.0			
	Emerald Shiner	156.0	4.2			
	Fathead Minnow	29.3	2.9			
	Goldeye	0.8	0.0			
	Iowa Darter	0.1	0.0			
	Largemouth Bass	0.1	0.0			
	Smallmouth Bass	12.0	0.3			
	Smallmouth Buffalo	0.4	0.1			
	Spottail Shiner	13.3	0.5			
	Walleye	0.8	0.1			
	White Bass	12.6	0.6			
	White Crappie	50.6	2.7			
	White Sucker	0.0	0.0			
	Yellow Perch	81.1	3.1			
suspended gill net	Channel Catfish	1.0	0.0	100	50	
	Lake Herring	175.0	446.3	100	72	3
	Rainbow Smelt	9.5	20.0			

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	0.0
	Channel Catfish									0.1	0.0	0.1
	Common Carp									0.0	0.0	0.0
	Freshwater Drum									0.0	0.1	0.1
	Gizzard Shad									1.3		1.3
	Goldeye									0.0		0.0
	Northern Pike									0.0		0.0
	Sauger									0.0		0.0
	Shorthead Redhorse									0.0	0.0	0.0
	Shortnose Gar									0.0		0.0
	Smallmouth Bass										0.0	0.0
	Spottail Shiner									0.1	0.0	0.1
	Walleye									0.5	0.2	0.4
	White Bass									0.3	0.0	0.2
	White Crappie									0.1	0.0	0.1
	Yellow Perch									0.4	0.3	0.4
AFS std gill net	Black Bullhead										0.0	0.0
	Black Crappie										0.0	0.0
	Channel Catfish									9.9	10.7	10.3
	Common Carp									0.2	0.3	0.3
	Flathead Catfish									0.0		0.0
	Freshwater Drum									1.1	0.5	0.8
	Gizzard Shad									0.1		0.1
	Goldeye									0.0	0.0	0.0
	Lake Herring									0.0	0.1	0.0
	Northern Pike									0.2	0.1	0.2
	River Carpsucker									0.3	0.3	0.3
	Sauger									0.1	0.1	0.1
	Shorthead Redhorse									0.2	0.4	0.3
	Shortnose Gar									0.0	0.0	0.0
	Smallmouth Bass									0.2	0.7	0.5
	Smallmouth Buffalo									0.1	0.1	0.1
	Walleye									2.7	2.2	2.5
	White Bass									0.2	0.0	0.1

	White Crappie									0.1	0.0	0.1
	White Sucker									0.0	0.0	0.0
	Yellow Perch									0.7	0.6	0.7
boat shocker (night)	Walleye									81.5		81.5
large seine	Bigmouth Buffalo										1.8	1.8
	Black Crappie										88.3	88.3
	Channel Catfish										0.0	0.0
	Common Carp										0.3	0.3
	Drum Family										0.1	0.1
	Emerald Shiner										156.0	156.0
	Fathead Minnow										29.3	29.3
	Goldeye										0.8	0.8
	Iowa Darter										0.1	0.1
	Largemouth Bass										0.1	0.1
	Smallmouth Bass										12.0	12.0
	Smallmouth Buffalo										0.4	0.4
	Spottail Shiner										13.3	13.3
	Walleye										0.8	0.8
	White Bass										12.6	12.6
	White Crappie										50.6	50.6
	White Sucker										0.0	0.0
	Yellow Perch										81.1	81.1
std exp gill net	Bigmouth Buffalo	0.1	0.6	0.1		0.1	0.2					0.2
	Black Bullhead			0.1								0.1
	Black Crappie		1.1	0.1	0.3	0.1	0.1		0.2			0.3
	Brown Bullhead		0.1									0.1
	Channel Catfish	14.7	10.9	11.7	22.0	15.1	12.7	13.5	20.0			15.1
	Chinook Salmon			0.0								0.0
	Common Carp	2.6	2.0	1.1	1.3	1.2	1.3	0.9	2.0			1.6
	Freshwater Drum	1.0	3.0	0.6	0.9	1.2	1.3	0.8	1.3			1.3
	Gizzard Shad	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			0.1
	Northern Pike	0.1	0.5	2.6	1.6	1.1	0.3	0.5	0.9			1.0
	Rainbow Smelt		0.0									0.0
	River Carpsucker	1.7	1.6	0.6	1.0	0.2	0.4	0.6	0.3			0.8
	Sauger	1.5	1.6	0.7	0.5	0.2	0.6	0.1	0.1			0.7
	Shorthead Redhorse	0.2	0.6	0.2	1.6	1.4	2.2	0.7	0.3			0.9
	Shortnose Gar	0.0		0.0	0.0		0.0	0.0	0.0			0.0

	Smallmouth Bass	0.6	1.9	0.6	0.6	0.4	0.3	0.6	1.1		0.8
	Smallmouth Buffalo	0.3		0.1	0.7		0.1	0.2	0.3		0.3
	Spottail Shiner	0.0									0.0
	Walleye	2.9	8.4	16.5	19.0	13.7	13.6	9.3	7.4		11.4
	White Bass	0.1	0.3	0.5	0.9	1.1	0.3	0.8	0.3		0.5
	White Crappie	2.9	2.1	1.2	0.6	0.9	0.4	0.1	0.2		1.1
	White Sucker	0.1	0.2	0.1			0.1	0.1	0.2		0.1
	Yellow Perch	21.4	22.5	11.3	2.7	1.0	2.9	2.9	1.8		8.3
suspended gill net	Channel Catfish									1.0	1.0
	Lake Herring									175.0	175.0
	Rainbow Smelt									9.5	9.5

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	0
		PSD-P									0	0
	Channel Catfish	PSD									14	40
		PSD-P									0	0
		Wr									79	75
	Common Carp	PSD									100	100
		PSD-P									100	0
		Wr									86	92
	Gizzard Shad	PSD									0	
		Wr									250	
	Northern Pike	PSD									100	
		PSD-P									0	
		Wr									89	
	Sauger	PSD									50	
		PSD-P									0	
		Wr									73	
	Shorthead Redhorse	PSD									100	0
		PSD-P									0	0
		Wr									86	
	Smallmouth Bass	PSD										0
		PSD-P										0
	Walleye	PSD									0	0
		PSD-P									0	0
		Wr									88	96
	White Bass	PSD									0	0
		PSD-P									0	0
		Wr									182	112
	White Crappie	PSD									0	0
		PSD-P									0	0
		Wr									300	225
	Yellow Perch	PSD									18	0
		PSD-P									0	0
		Wr									115	103

AFS std gill net	Black Bullhead	PSD		0
		PSD-P		0
		Wr		84
	Black Crappie	PSD		67
		PSD-P		67
		Wr		104
	Channel Catfish	PSD	53	61
		PSD-P	4	2
		Wr	81	84
	Common Carp	PSD	100	100
		PSD-P	54	82
		Wr	91	81
	Flathead Catfish	PSD	100	
		PSD-P	0	
		Wr	98	
	Gizzard Shad	PSD	100	
		Wr	99	
	Lake Herring	PSD	100	
		PSD-P	0	
		Wr	83	
	Northern Pike	PSD	100	100
		PSD-P	38	80
		Wr	88	88
	River Carpsucker	PSD	100	100
		PSD-P	93	100
		Wr	103	103
	Sauger	PSD	88	86
		PSD-P	25	14
		Wr	75	79
	Shorthead Redhorse	PSD	91	94
		PSD-P	36	50
		Wr	94	93
	Smallmouth Bass	PSD	69	94
		PSD-P	23	33
		Wr	94	97
	Smallmouth Buffalo	PSD	100	100
		PSD-P	100	38
		Wr	72	89
	Walleye	PSD	20	32

		PSD-P								0	8
		Wr								81	82
	White Bass	PSD								77	100
		PSD-P								46	100
		Wr								94	84
	White Crappie	PSD								100	100
		PSD-P								100	100
		Wr								78	74
	White Sucker	PSD								100	100
		PSD-P								100	100
		Wr								90	96
	Yellow Perch	PSD								64	74
		PSD-P								17	26
		Wr								85	92
boat shocker (night)	Walleye	PSD								0	
		PSD-P								0	
std exp gill net	Bigmouth Buffalo	PSD	100	100	100		100	100			
		PSD-P	100	91	100		100	100			
		Wr	80	86	85		91	90			
	Black Bullhead	PSD			0						
		PSD-P			0						
		Wr			85						
	Black Crappie	PSD		13	50	100	100	100		100	
		PSD-P		0	0	67	100	50		75	
		Wr		114	109	102	102	109		78	
	Brown Bullhead	PSD		100							
		PSD-P		0							
		Wr		95							
	Channel Catfish	PSD	53	58	55	53	51	39	60	66	
		PSD-P	1	3	8	8	8	3	10	3	
		Wr	92	86	91	82	83	85	83	81	
	Common Carp	PSD	87	95	100	100	95	100	100	100	
		PSD-P	33	49	68	63	71	67	75	81	
		Wr	82	88	92	95	88	88	87	87	
	Gizzard Shad	PSD	0								
	Lake Herring	PSD								100	
		PSD-P								100	
		Wr								69	

	Northern Pike	PSD	100	60	68	89	90	80	11	76
		PSD-P	50	10	15	25	60	60	0	6
		Wr	97	89	83	71	77	86	80	88
	River Carpsucker	PSD	77	75	100	100	100	100	90	100
		PSD-P	57	50	100	83	100	100	90	100
		Wr	105	100	98	104	108	103	98	98
	Sauger	PSD	96	89	100	100	100	90	100	100
		PSD-P	67	61	69	78	25	10	100	0
		Wr	84	77	73	62	72	79	67	73
	Shorthead Redhorse	PSD	100	100	100	93	100	100	92	83
		PSD-P	67	50	100	57	65	95	83	83
		Wr	95	104	100	96	89	104	94	92
	Smallmouth Bass	PSD	100	76	91	82	88	100	30	70
		PSD-P	73	61	55	27	63	67	30	35
		Wr	118	106	97	93	101	104	100	89
	Smallmouth Buffalo	PSD	100		100	100		100	100	100
		PSD-P	80		0	100		100	67	100
		Wr	81		100	92		91	86	90
	Walleye	PSD	72	40	19	8	5	28	24	16
		PSD-P	9	8	5	3	2	2	0	2
		Wr	93	85	85	82	83	85	83	80
	White Bass	PSD	100	80	78	100	100	100	100	100
		PSD-P	100	80	78	81	100	100	100	80
		Wr	101	100	89	92	89	92	98	92
	White Crappie	PSD	2	65	90	100	100	100	50	100
		PSD-P	2	2	19	100	100	100	50	100
		Wr	103	104	98	93	87	87	97	77
	White Sucker	PSD	100	100	100			100	100	67
		PSD-P	0	100	100			100	100	67
		Wr	86	103	103			91	99	84
	Yellow Perch	PSD	2	19	44	75	72	37	29	61
		PSD-P	0	0	1	2	22	8	2	15
		Wr	112	99	90	86	84	99	93	90
suspended gill net	Lake Herring	PSD								100
		PSD-P								72

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	250 (1)	314 (1)	357 (2)	363 (3)						
2017	7	214 (1)		325 (4)	357 (2)						
2016	1			315 (1)							
2015	1							428 (1)			
2013	4				339 (1)	375 (3)					
2012	6			362 (3)		448 (3)					
2011	13		339 (1)	365 (1)	374 (2)	482 (5)	475 (4)				
2010	28	290 (1)	303 (8)	383 (5)	448 (9)	494 (5)					
2009	28	211 (1)	380 (5)	387 (14)	450 (5)	411 (2)				488 (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	231	207 (24)	279 (61)	337 (42)	381 (76)	422 (7)	512 (3)	552 (5)	643 (1)	569 (8)	566 (3)
2017	186	201 (31)	263 (28)	335 (101)	403 (18)	483 (1)	446 (4)	445 (1)	455 (4)		
2016	171	182 (14)	273 (126)	356 (11)	410 (5)	408 (6)	466 (6)	474 (3)			
2015	271	214 (112)	322 (47)	362 (62)	385 (20)	392 (7)	398 (24)				
2014	290	237 (56)	313 (50)	350 (35)	370 (21)	376 (125)	395 (1)	562 (3)	553 (1)		
2013	269	207 (19)	259 (16)	294 (18)	329 (205)	407 (9)	580 (1)				662 (1)
2012	377	210 (32)	272 (43)	315 (285)	383 (8)	551 (1)	523 (4)	504 (2)	551 (1)		643 (2)
2011	466	199 (32)	270 (363)	379 (47)	449 (8)	519 (6)	521 (4)			534 (1)	630 (5)
2010	374	211 (234)	323 (80)	434 (28)	479 (17)	468 (11)	459 (2)			528 (1)	642 (1)
2009	62	241 (14)	378 (18)	441 (14)	491 (11)	482 (1)		509 (2)	545 (2)		

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).

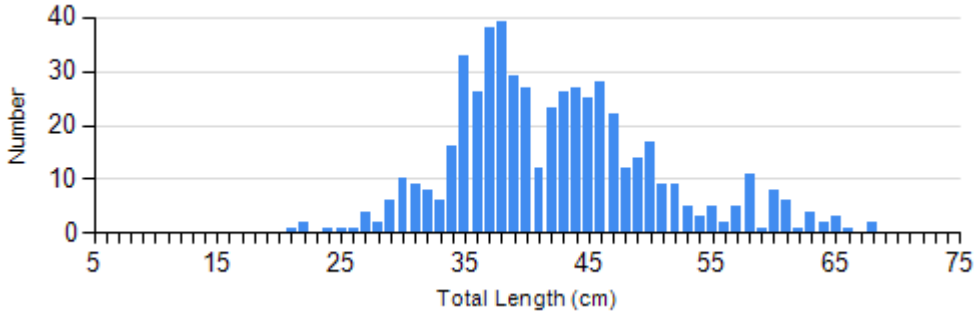
		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Bullhead Gill Net	2018	1	84	0		0		0	
Channel Catfish Gill Net	2014	140	88 (0.6)	81	81 (1.1)	7	77 (2.4)	0	
	2015	96	84 (0.9)	122	83 (0.6)	25	80 (2.4)	0	
	2016	124	83 (1.2)	224	79 (0.5)	12	86 (2.6)	0	
	2017	249	82 (0.8)	264	79 (0.7)	19	85 (2.2)	0	
	2018	373	86 (1.0)	571	84 (0.5)	19	88 (2.2)	1	91
Common Carp Gill Net	2014	0		8	91 (4.6)	13	88 (2.4)	3	75 (16.3)
	2015	0		4	83 (4.0)	10	88 (2.5)	2	91 (1.0)
	2016	0		7	89 (2.9)	27	87 (1.2)	2	89 (1.9)
	2017	0		6	85 (2.6)	6	97 (3.0)	1	87
	2018	0		5	87 (3.6)	23	79 (2.5)	0	
Northern Pike Gill Net	2014	1	56	1	81	0		3	97 (1.7)
	2015	8	81 (1.7)	1	70	0		0	
	2016	4	78 (1.0)	12	92 (1.4)	1	87	0	
	2017	0		8	84 (3.7)	4	97 (5.0)	1	91
	2018	0		2	100 (1.4)	6	81 (7.0)	2	95 (4.5)
Sauger Gill Net	2014	1	76	8	79 (3.6)	1	87	0	
	2015	0		0		1	67	0	
	2016	0		1	73	0		0	
	2017	1	79	5	71 (1.6)	2	84 (10.0)	0	
	2018	1	96	5	76 (2.3)	1	77	0	
Walleye Gill Net	2014	175	85 (0.5)	65	84 (0.9)	4	81 (4.3)	0	

	2015	127	84 (0.5)	41	82 (0.6)	0		0	
	2016	112	80 (0.6)	19	76 (1.3)	2	88 (5.6)	0	
	2017	118	81 (0.5)	30	79 (1.0)	0		0	
	2018	135	82 (1.1)	47	81 (0.7)	10	86 (2.3)	6	87 (1.9)
White Bass Gill Net	2018	0		0		0		1	84
White Bass Gill Net	2014	0		0		2	101 (2.3)	3	87 (14.1)
	2015	0		0		1	94	13	98 (2.9)
	2016	0		1	96	0		4	91 (2.3)
	2017	3	93 (0.7)	4	94 (1.6)	4	97 (4.1)	2	92 (4.6)
White Sucker Gill Net	2014	0		0		2	91 (2.1)	0	
	2015	0		0		1	99	0	
	2016	1	84	0		0		2	84 (1.2)
	2017	0		0		1	90	0	
	2018	0		0		1	90	2	99 (8.8)
Yellow Perch Gill Net	2014	33	101 (1.9)	15	96 (2.0)	4	93 (3.4)	0	
	2015	37	93 (1.3)	14	92 (2.5)	1	84	0	
	2016	13	102 (14.7)	15	84 (1.6)	5	79 (4.9)	0	
	2017	13	90 (2.2)	17	84 (2.4)	6	77 (3.0)	0	
	2018	13	94 (2.1)	24	94 (1.9)	13	86 (2.3)	0	

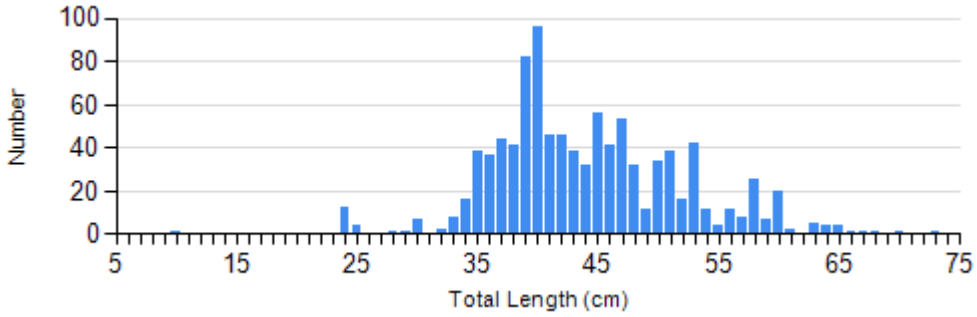
Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Channel Catfish
Gear: AFS std gill net

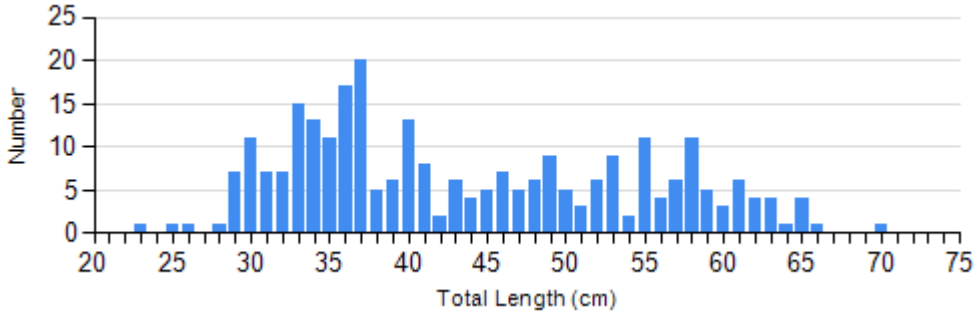


2017

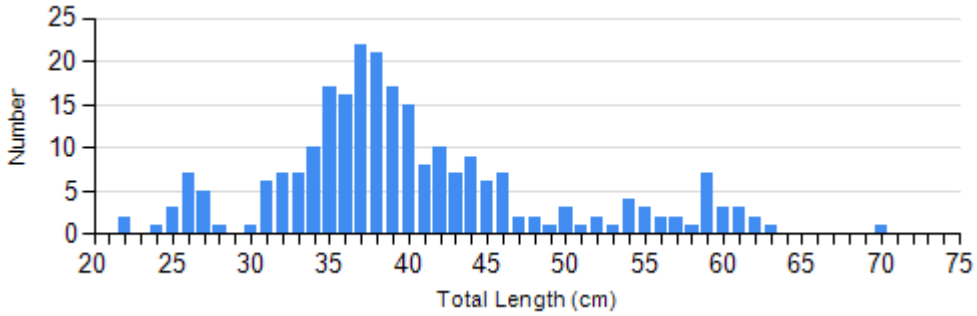


2018

Species: Channel Catfish
Gear: std exp gill net



2013



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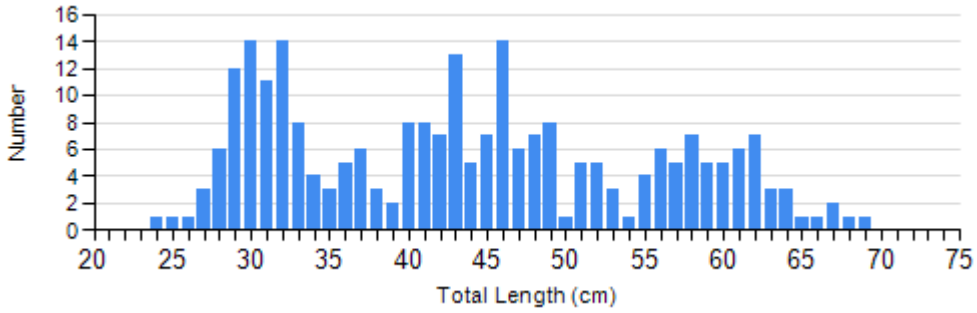

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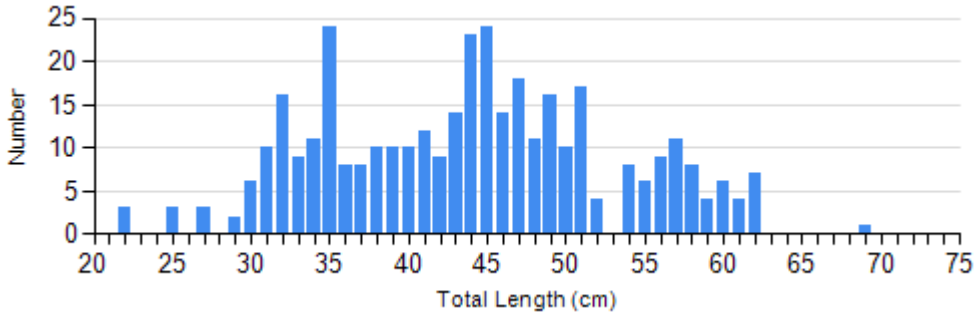
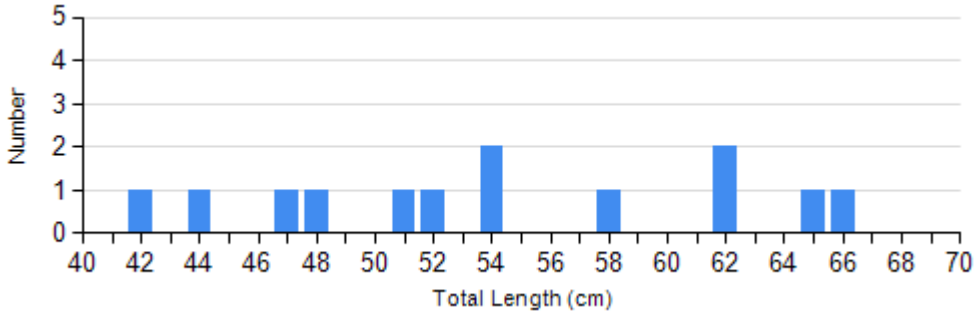
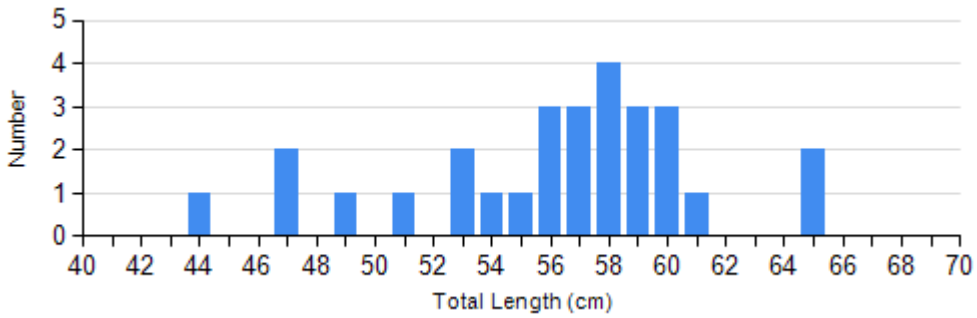


2016

Species: Common Carp
Gear: AFS std gill net

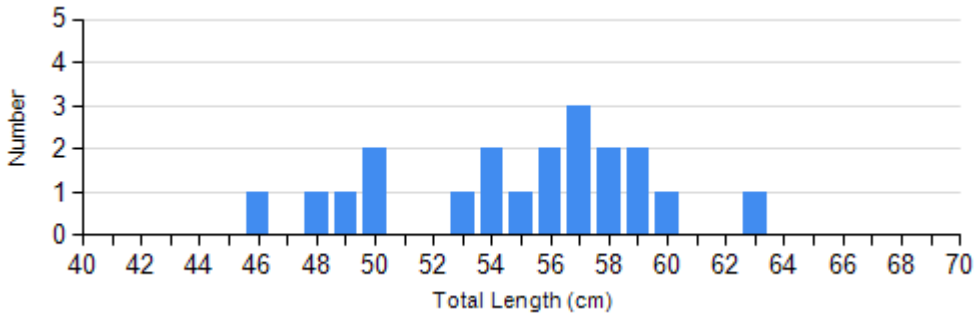


2017

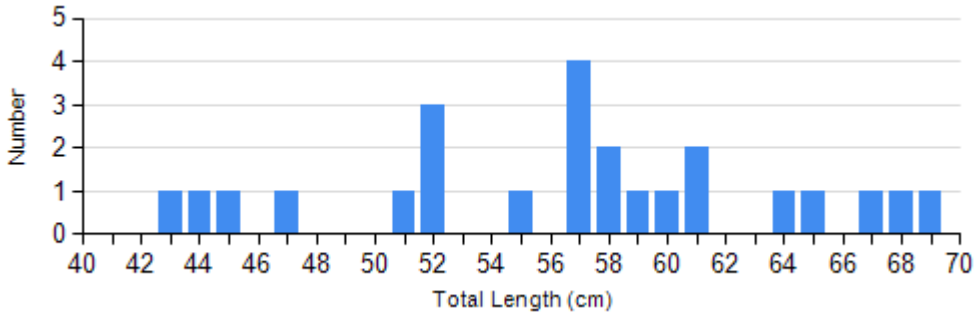


2018

Species: Common Carp
Gear: std exp gill net



2013



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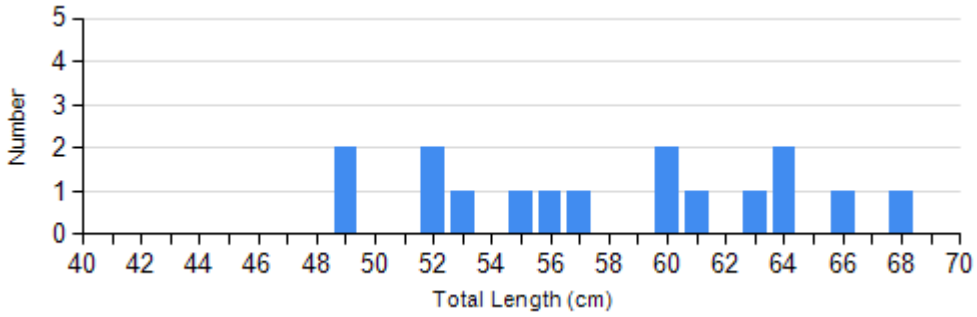

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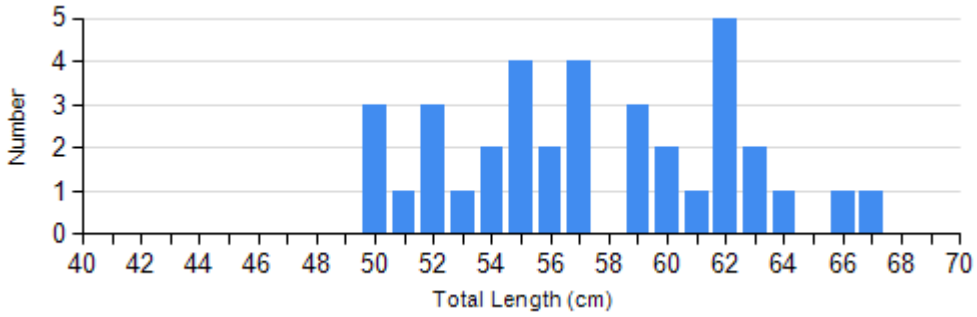
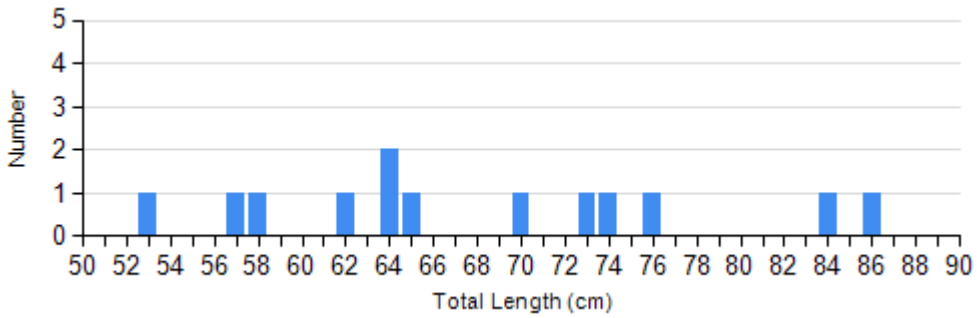


2016

Species: Northern Pike
Gear: AFS std gill net



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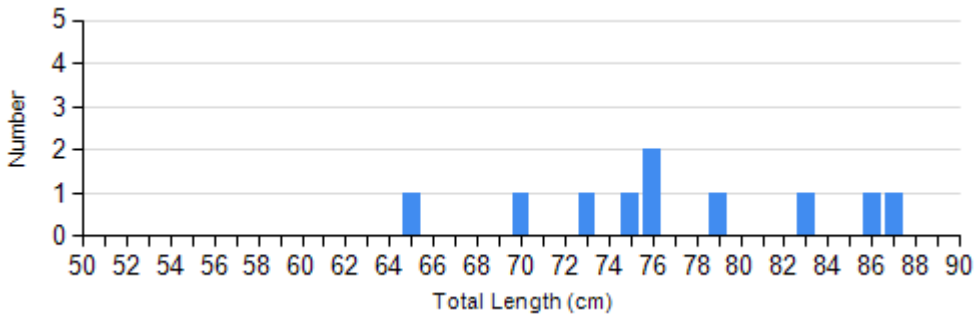
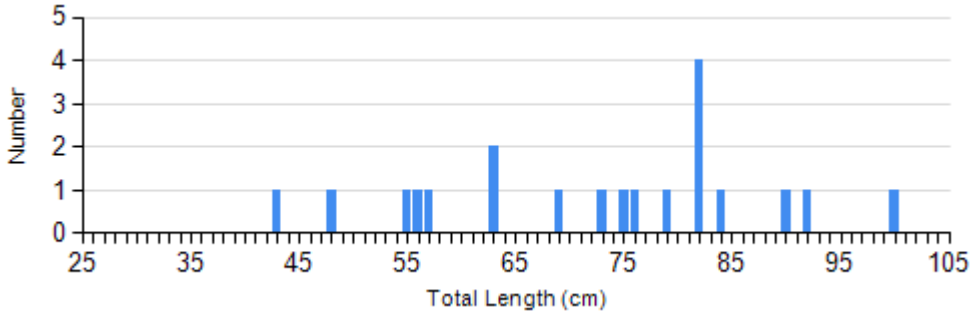
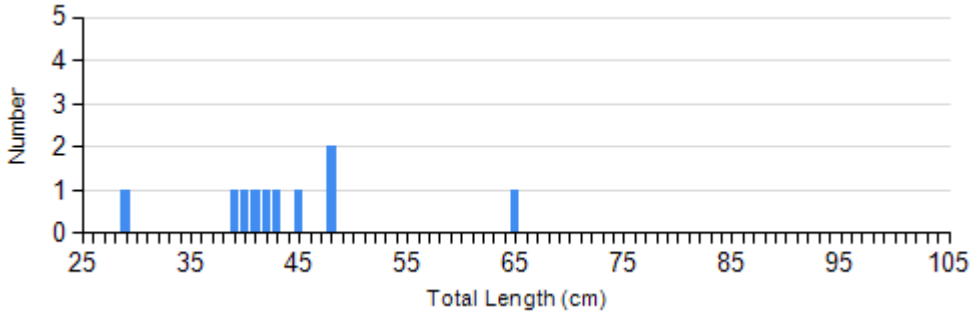


2018

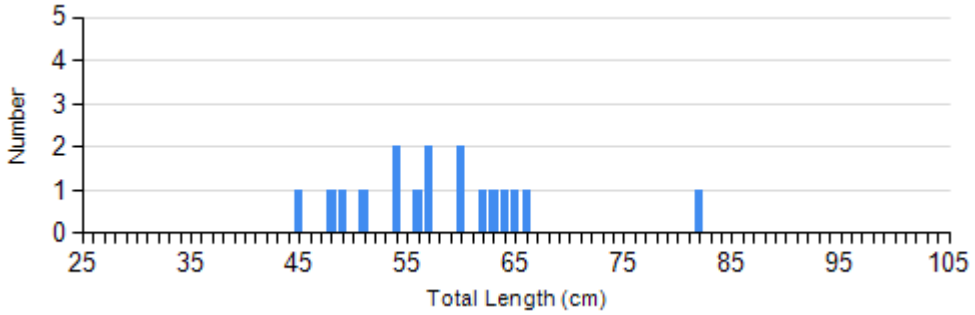
Species: Northern Pike
Gear: std exp gill net



2013

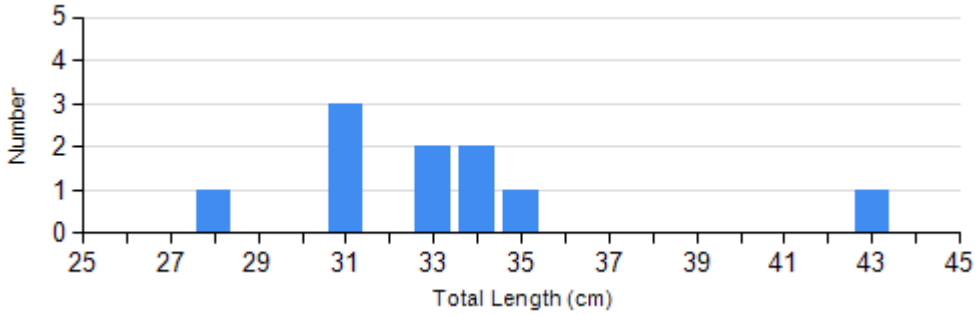


2015



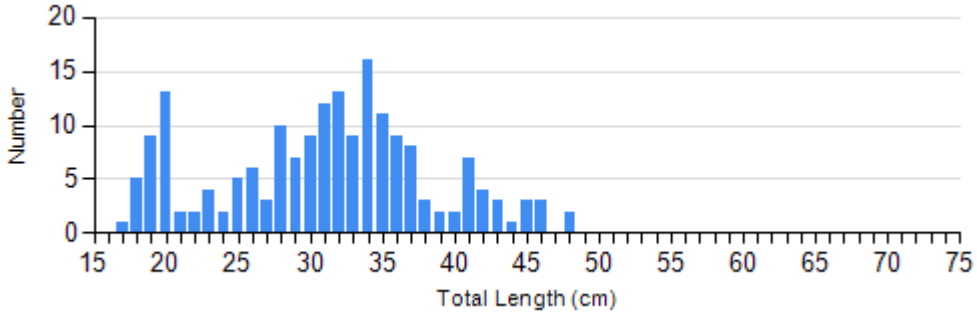
2016

Species: Sauger
Gear: std exp gill net

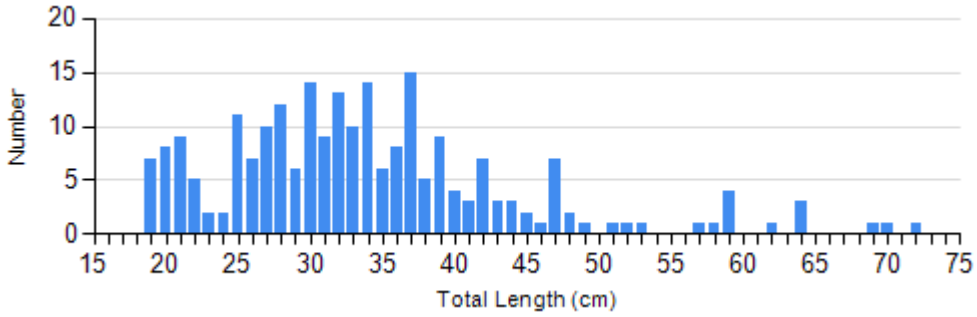


2014

Species: Walleye
Gear: AFS std gill net

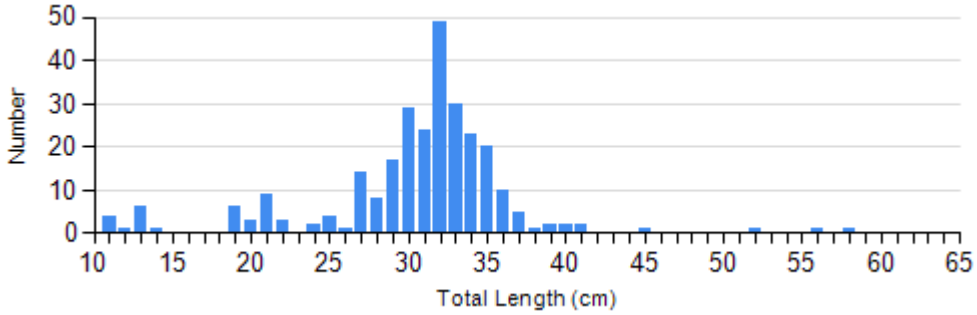


2017



2018

Species: Walleye
Gear: std exp gill net



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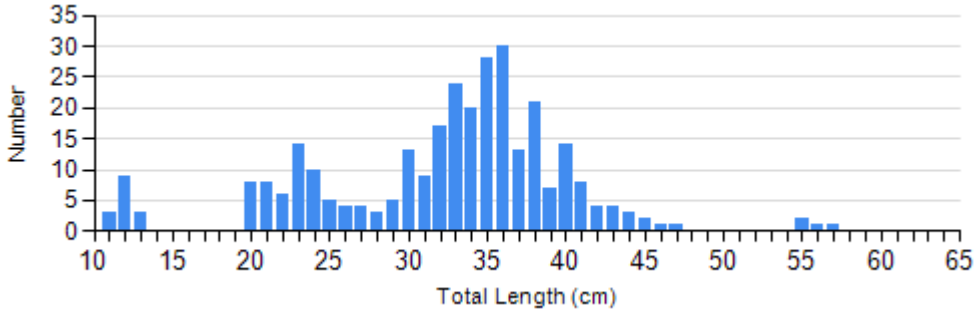

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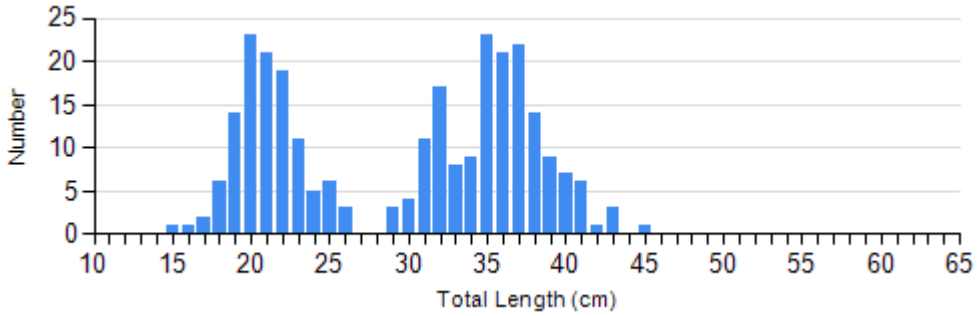
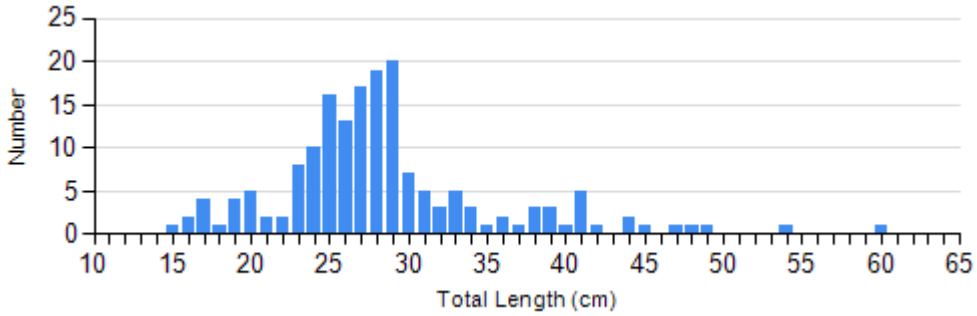
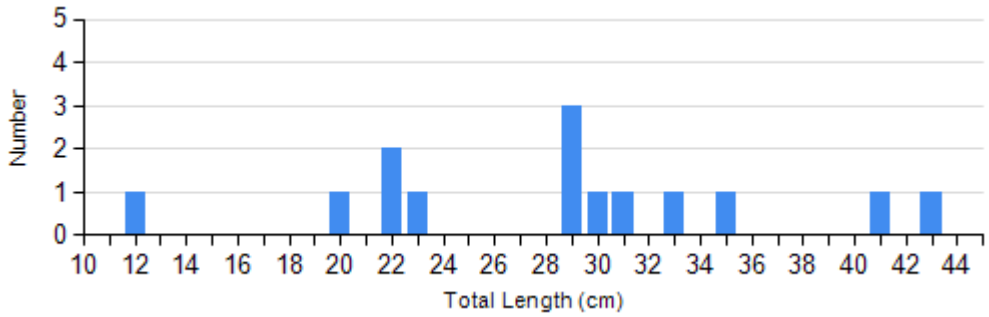


2015



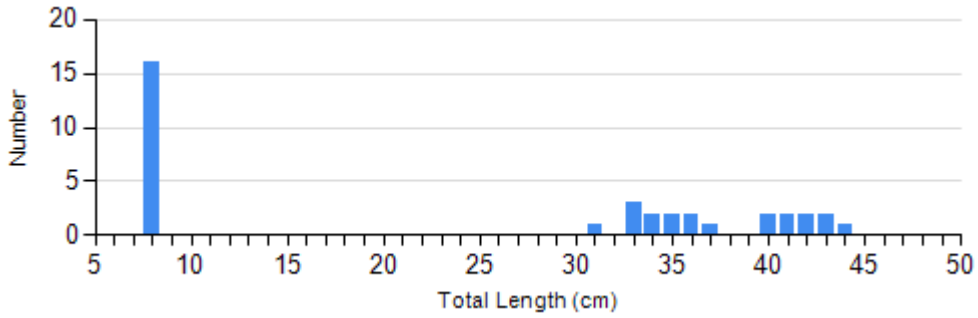
2016

Species: White Bass
Gear: AFS std gill net

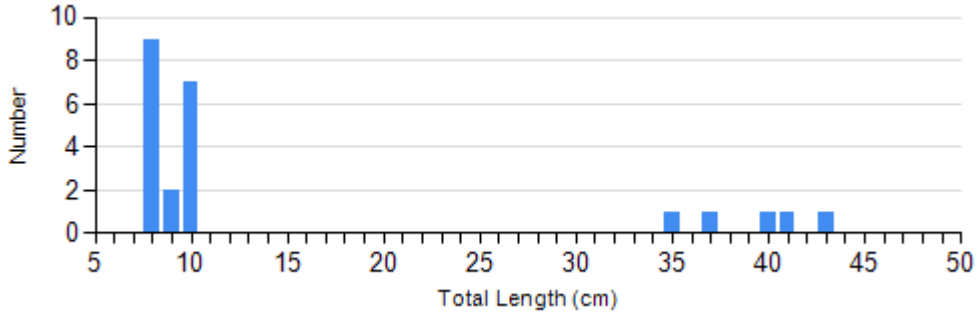


2017

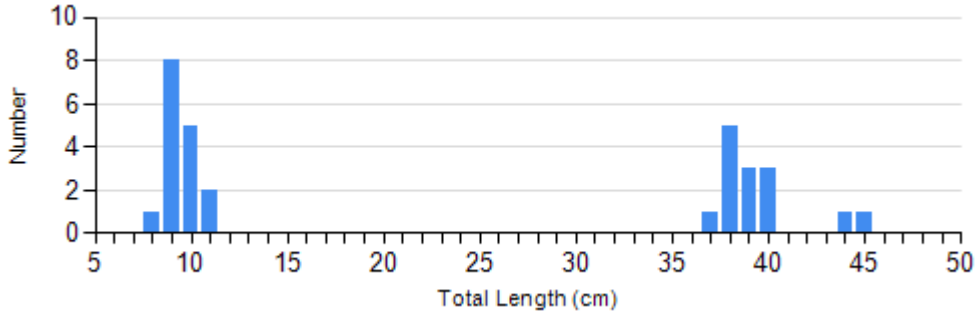
Species: White Bass
Gear: std exp gill net



2013

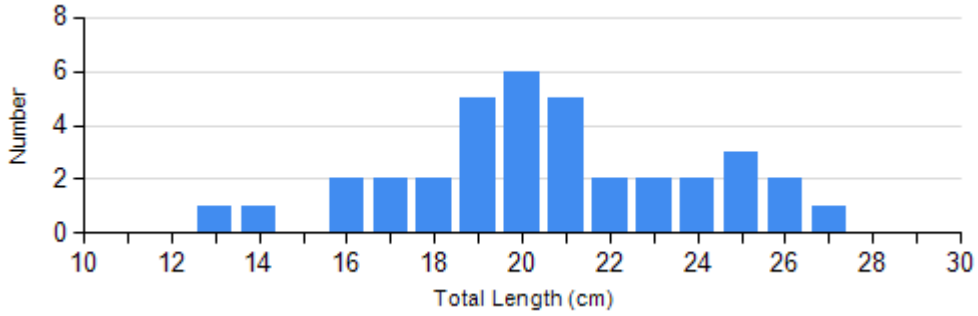


2014

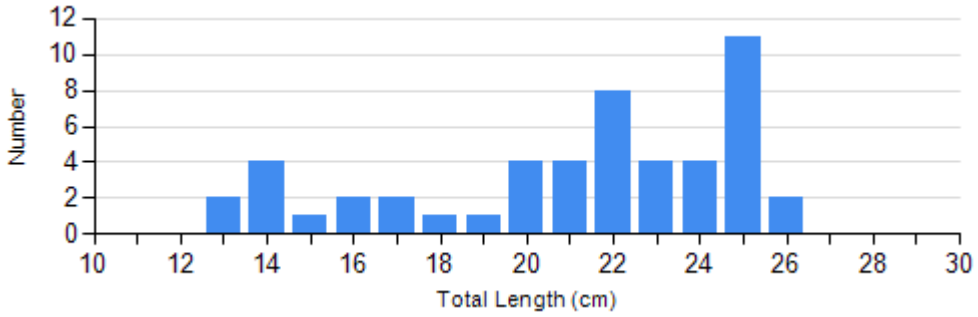


2015

Species: Yellow Perch
Gear: AFS std gill net

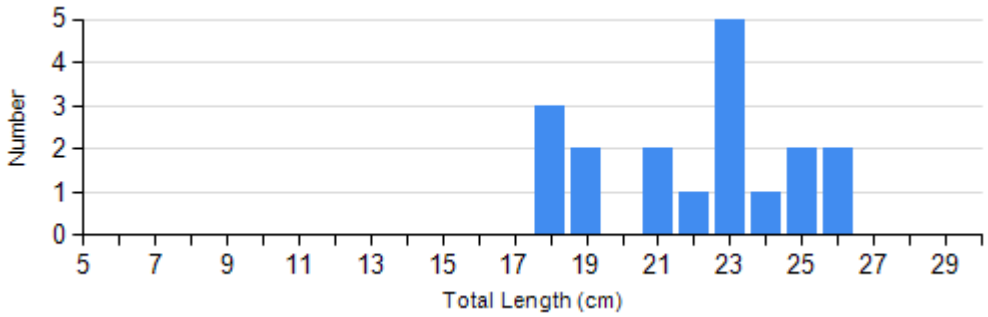


2017

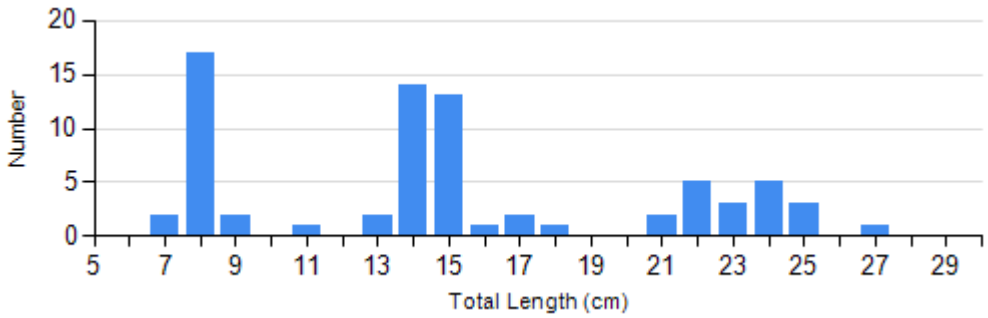


2018

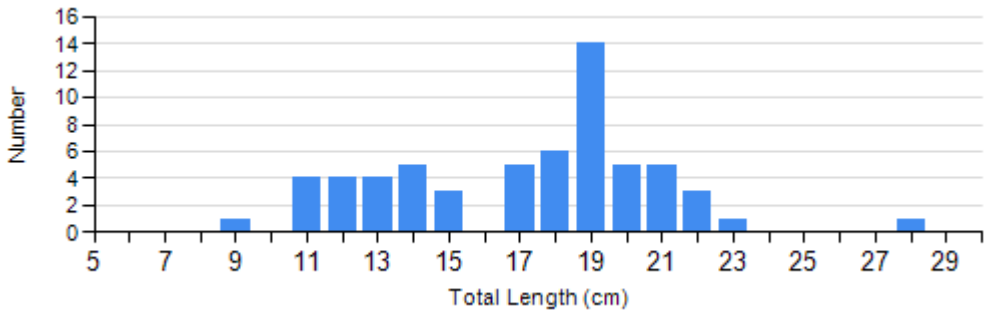
Species: Yellow Perch
Gear: std exp gill net



2013



2014



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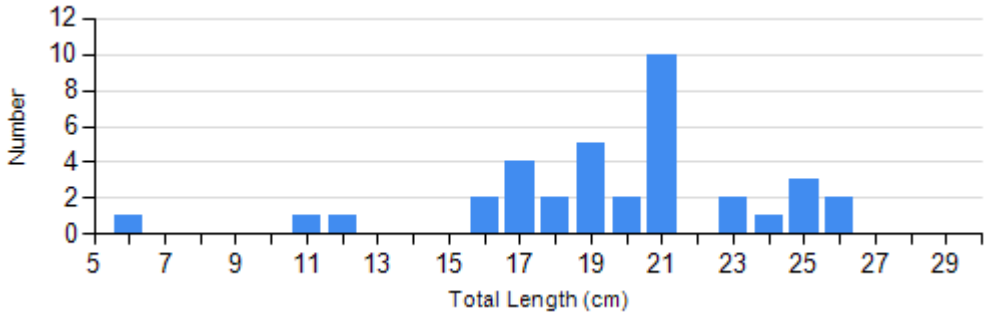
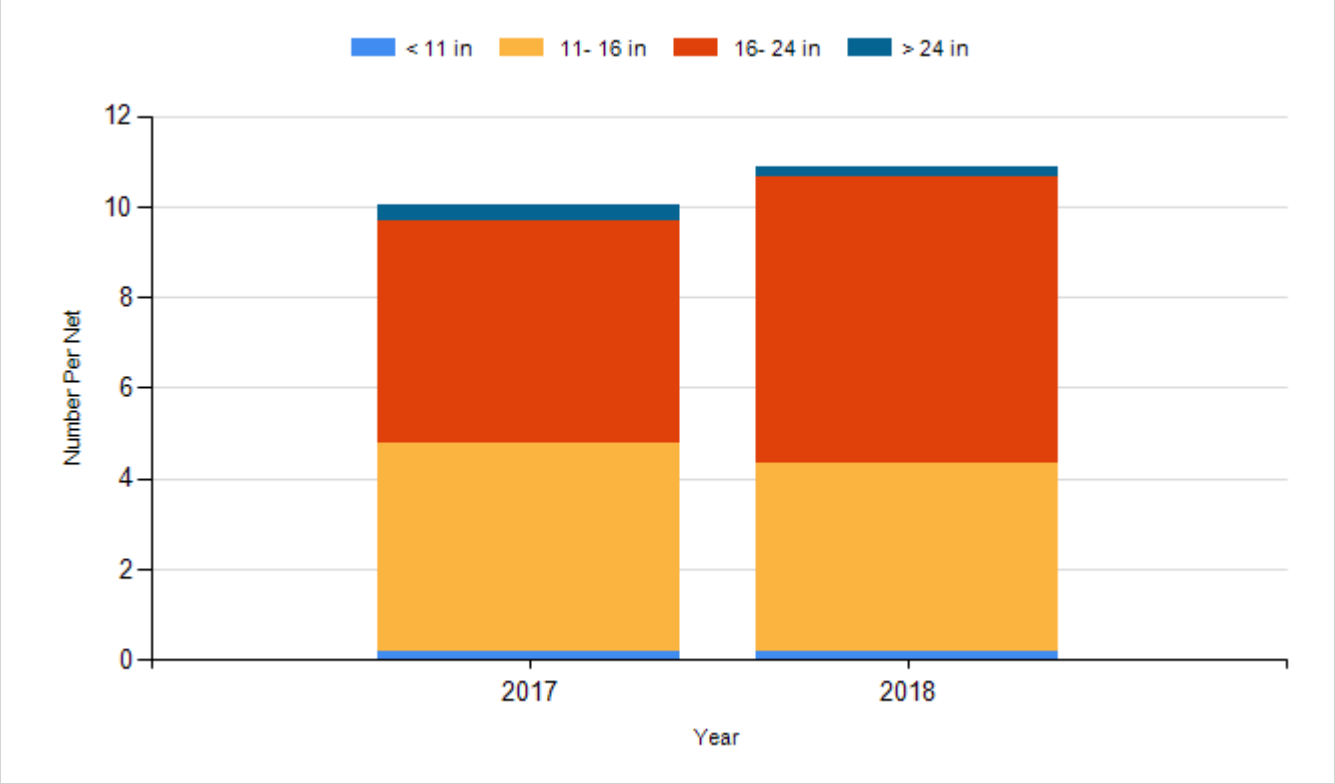


2016

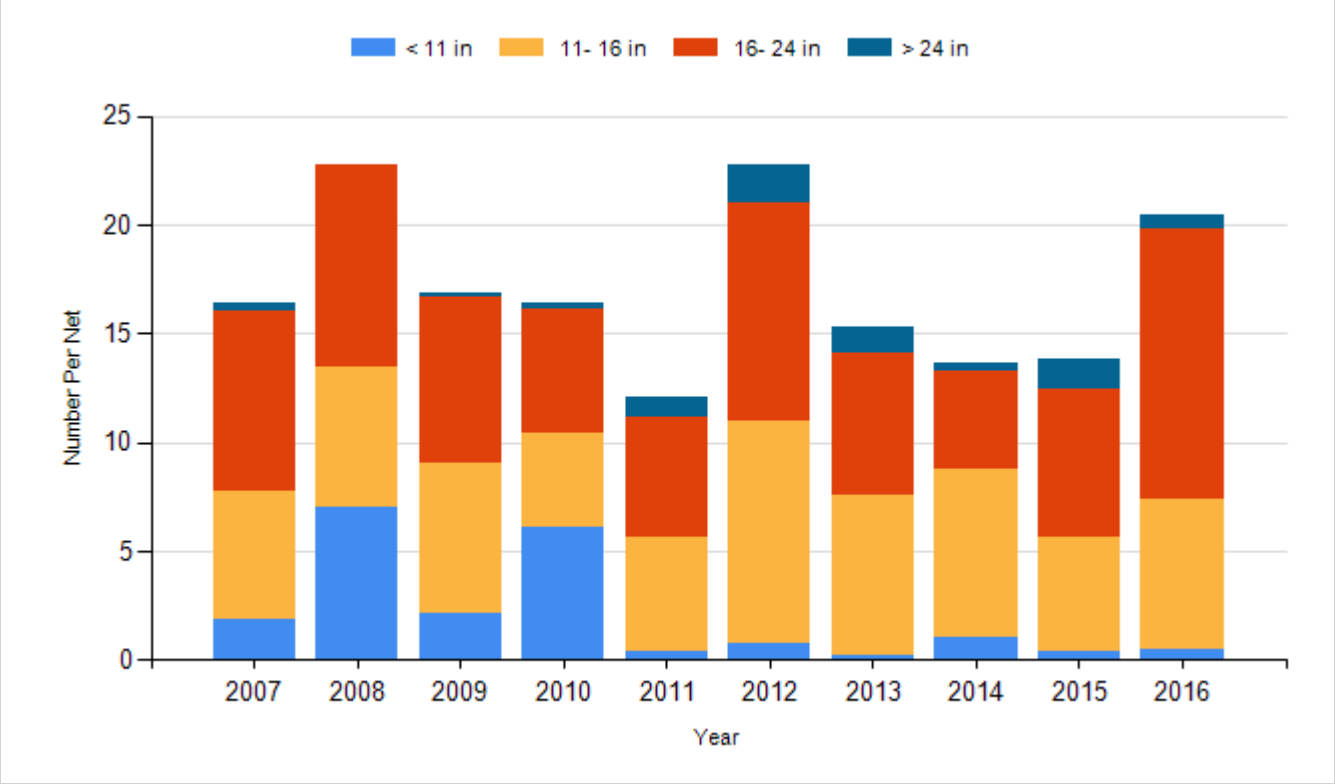
Historic Fish Sizes and Relative Abundance

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

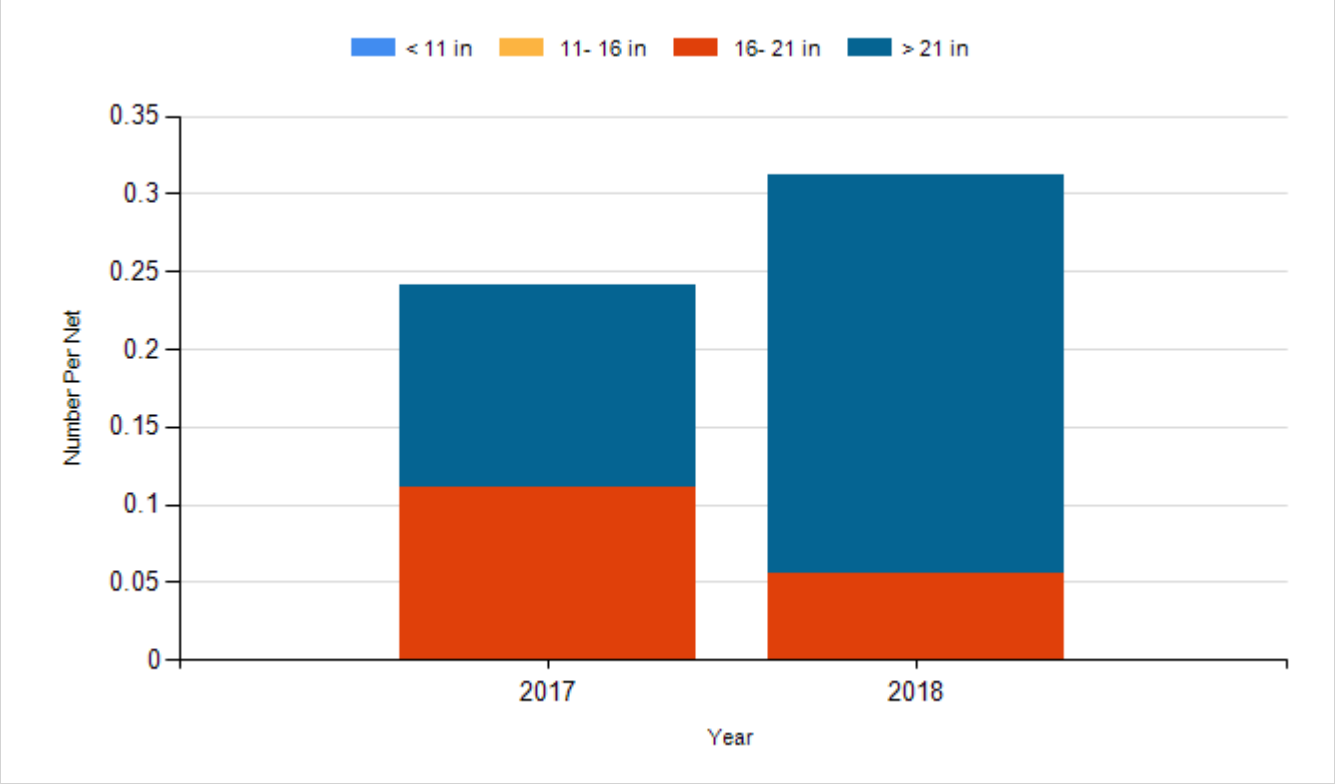
Species: Channel Catfish
Gear: AFS std gill net



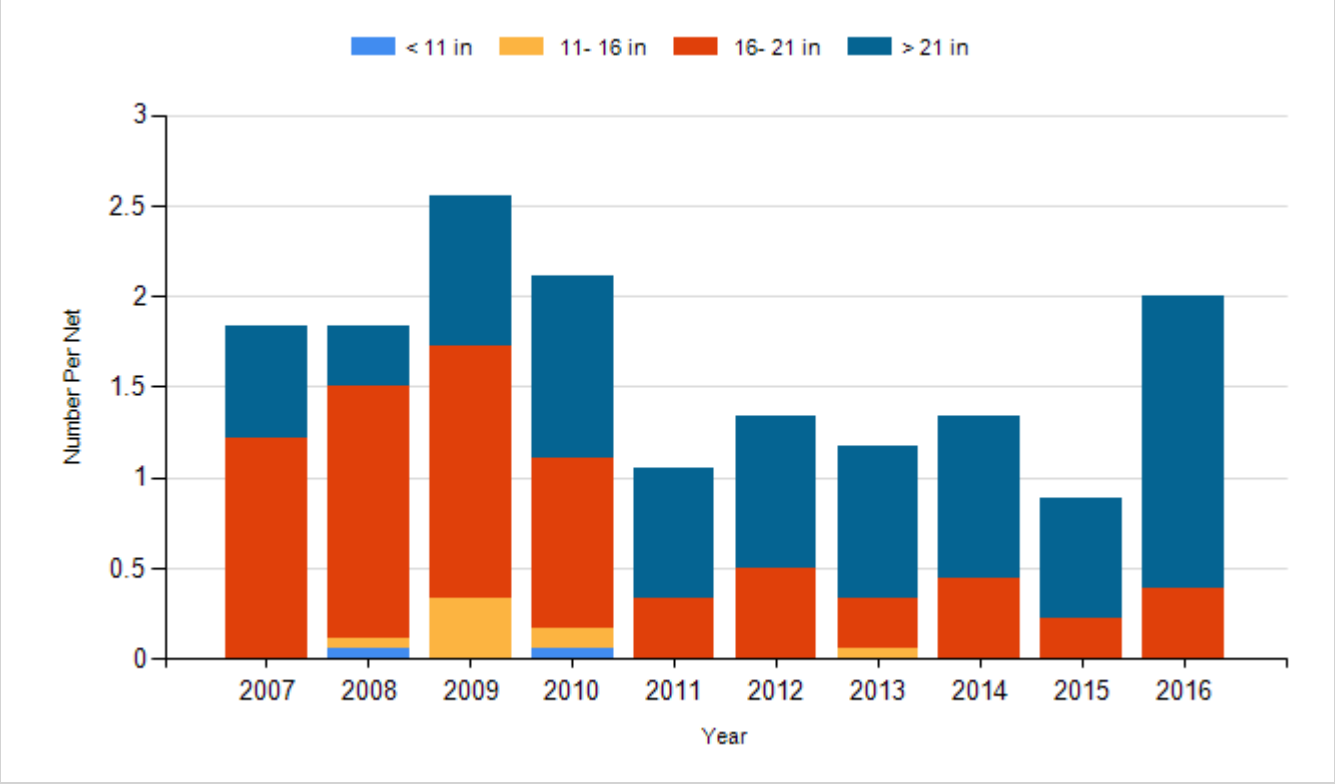
Species: Channel Catfish
Gear: std exp gill net



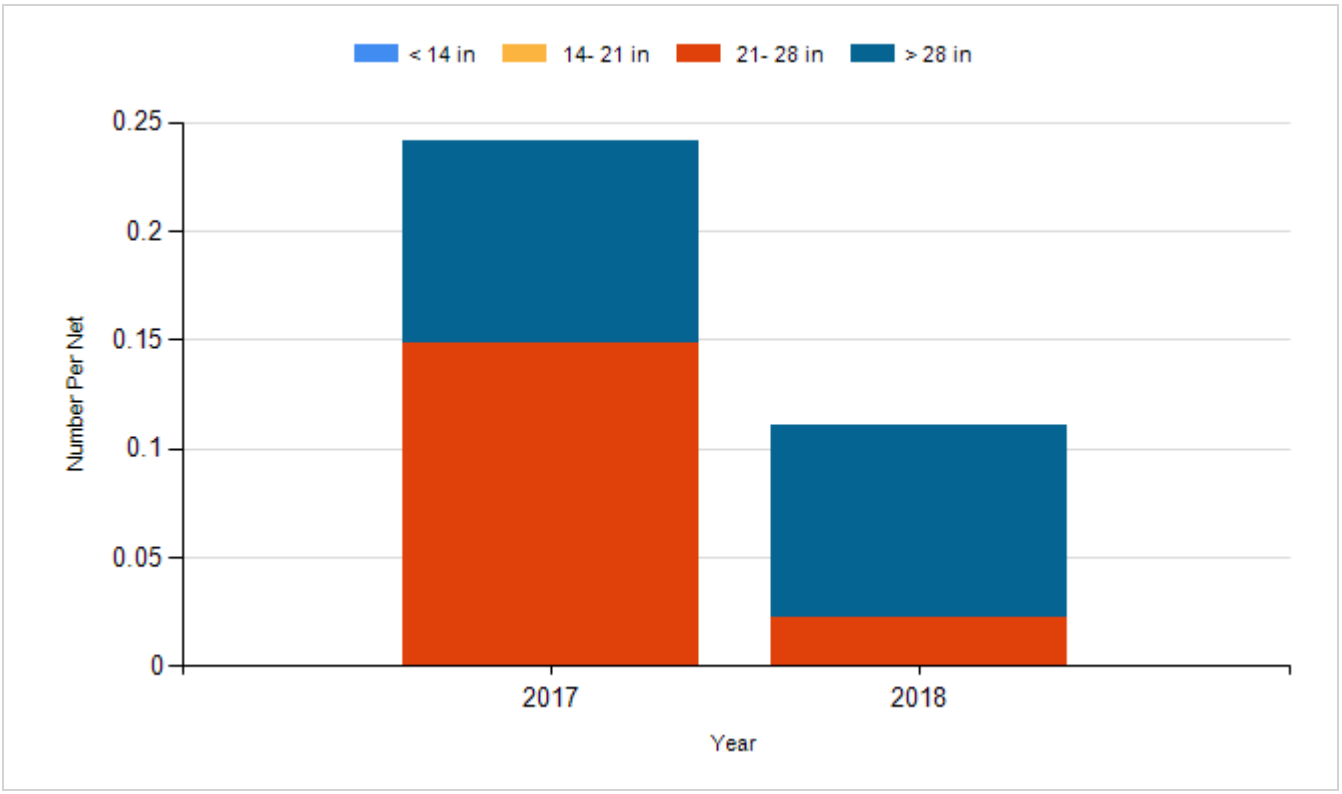
Species: Common Carp
Gear: AFS std gill net



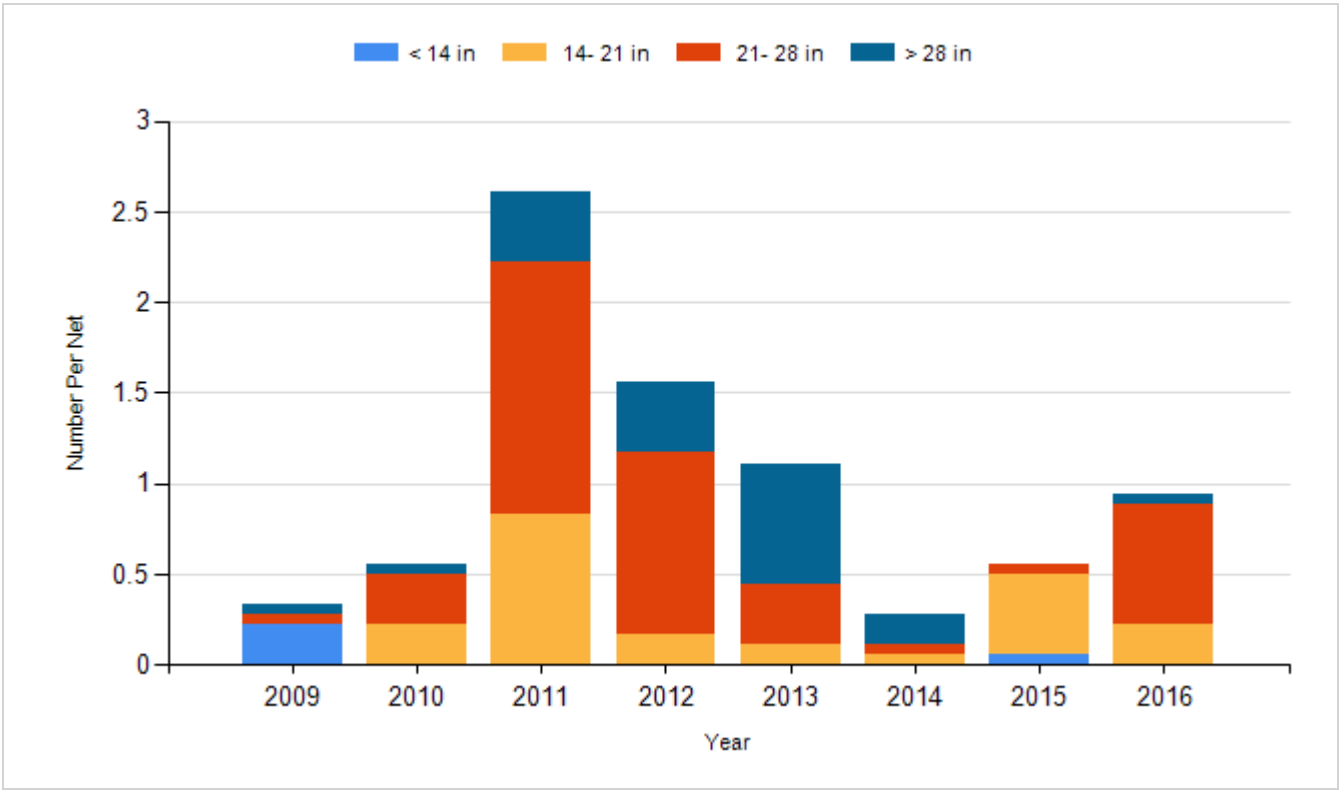
Species: Common Carp
Gear: std exp gill net



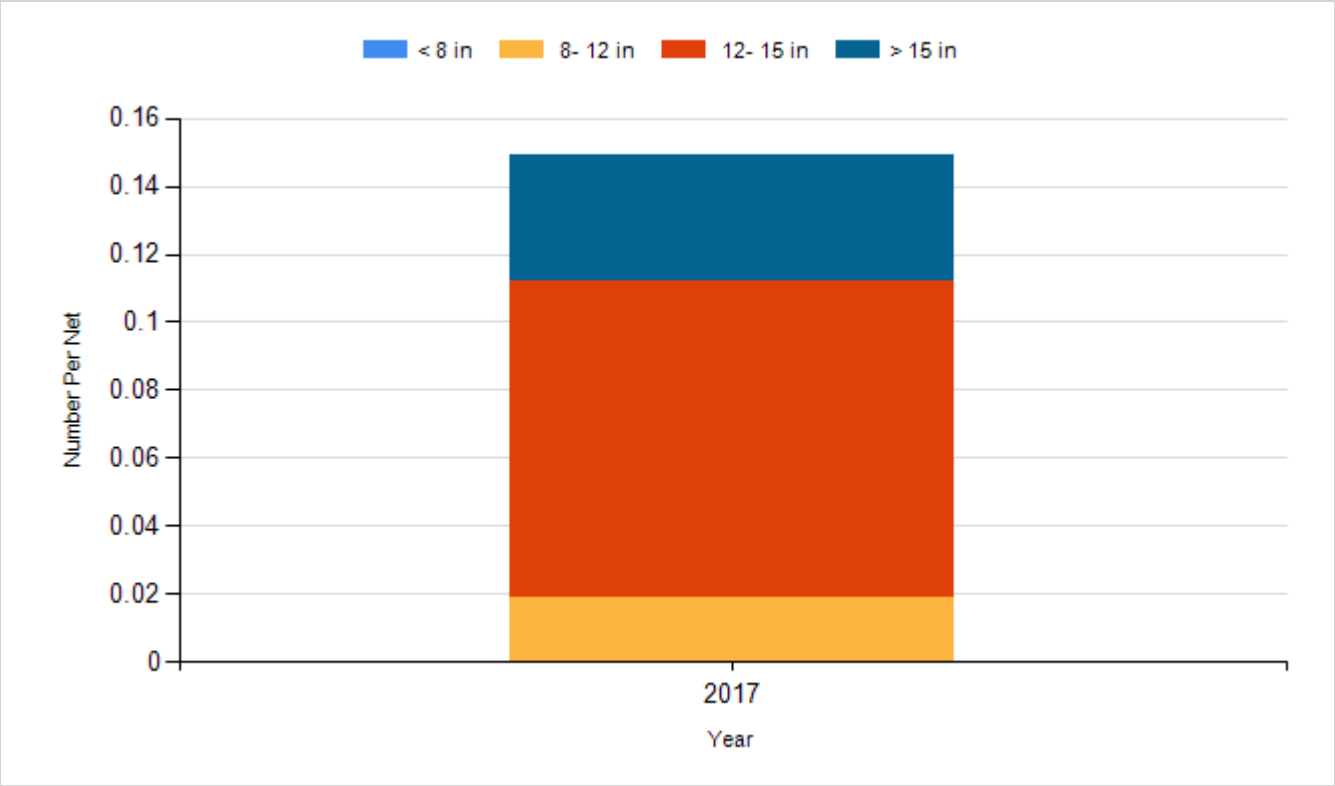
Species: Northern Pike
Gear: AFS std gill net



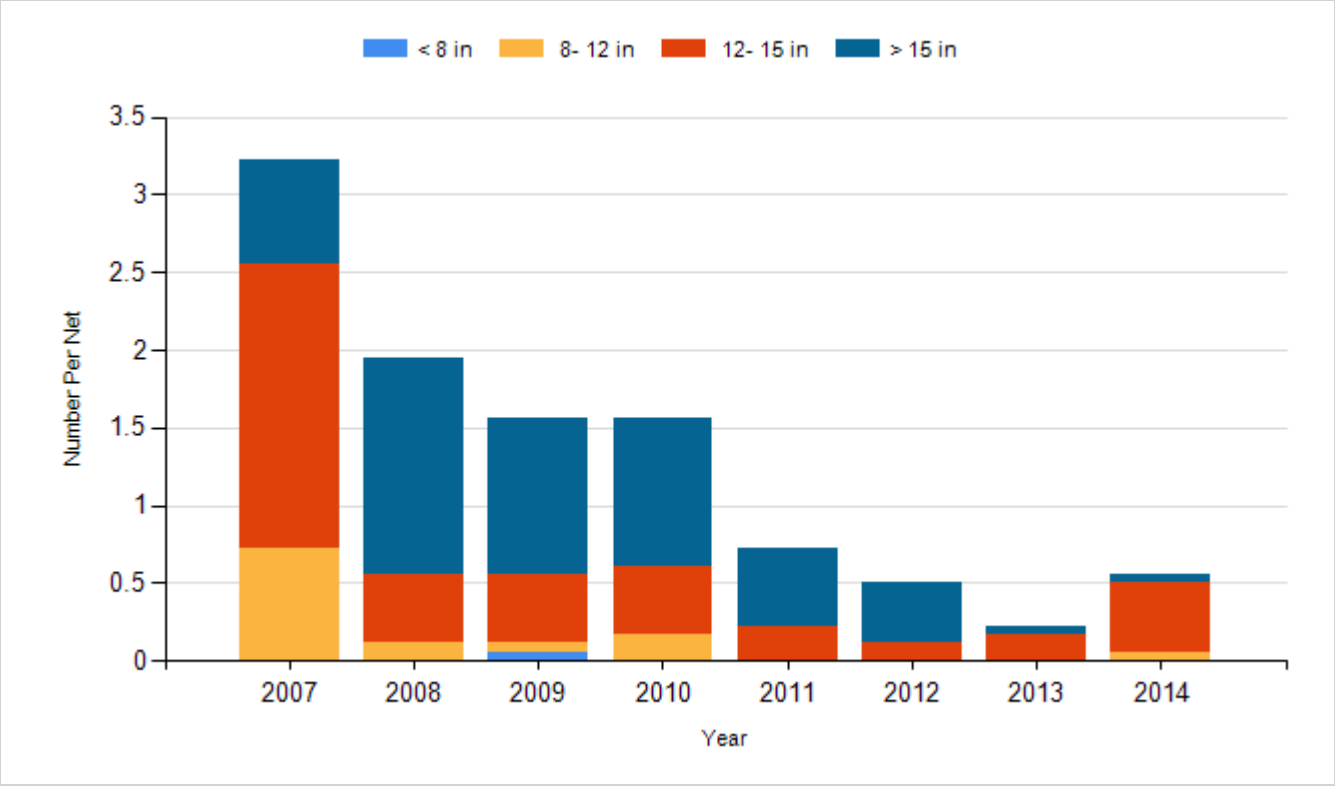
Species: Northern Pike
Gear: std exp gill net



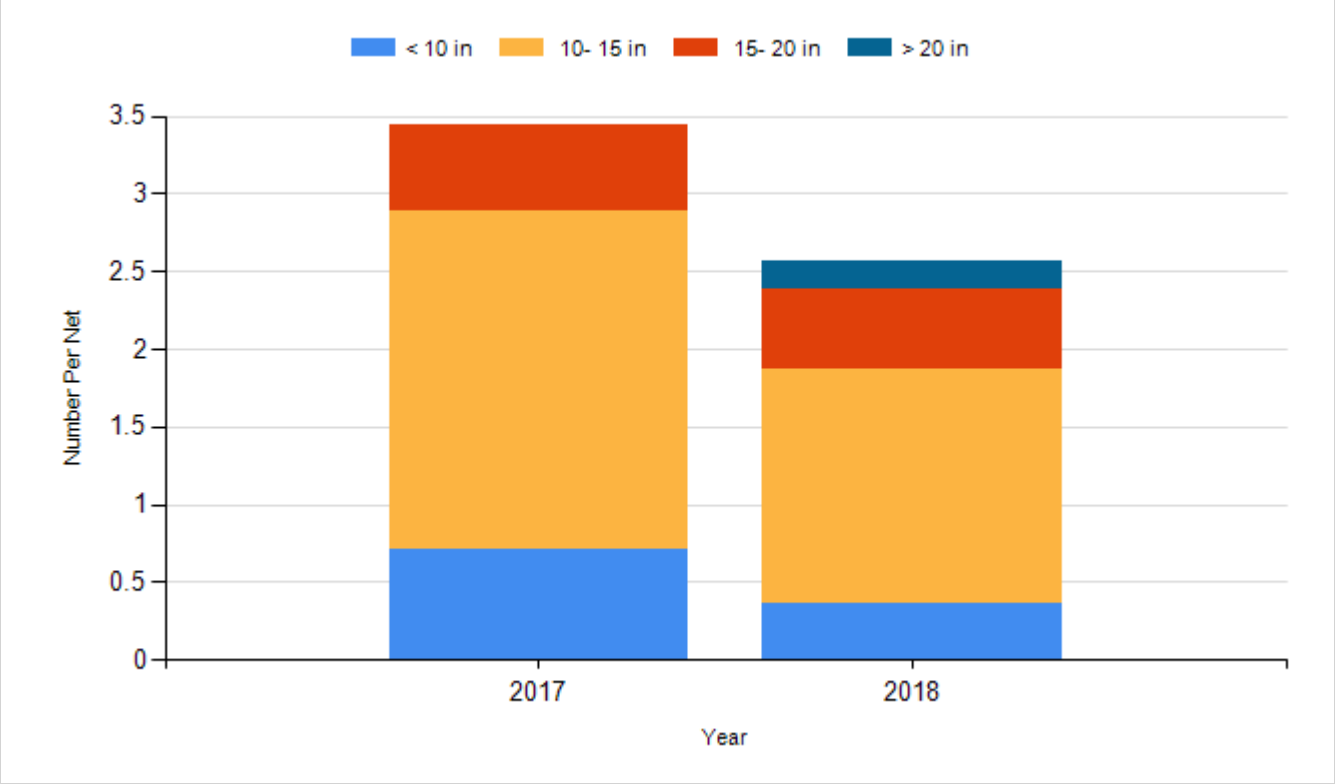
Species: Sauger
Gear: AFS std gill net



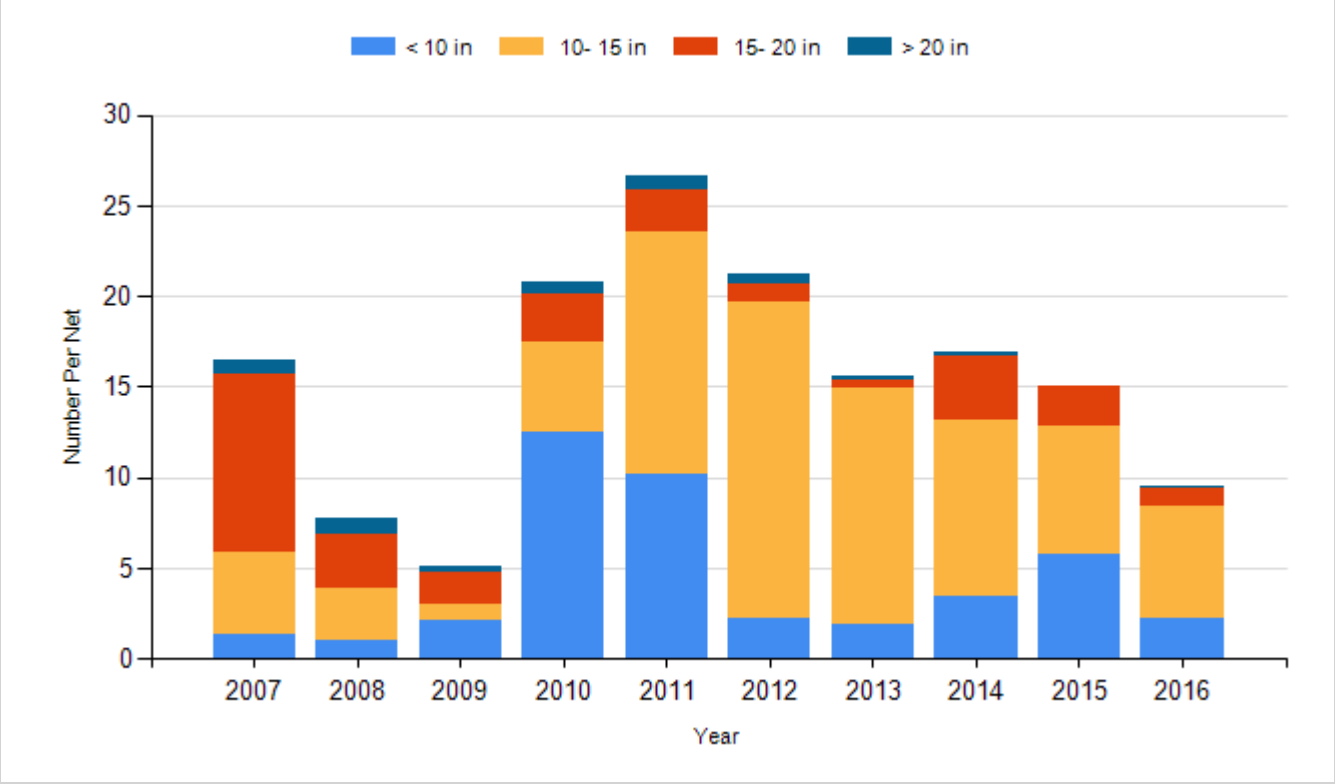
Species: Sauger
Gear: std exp gill net



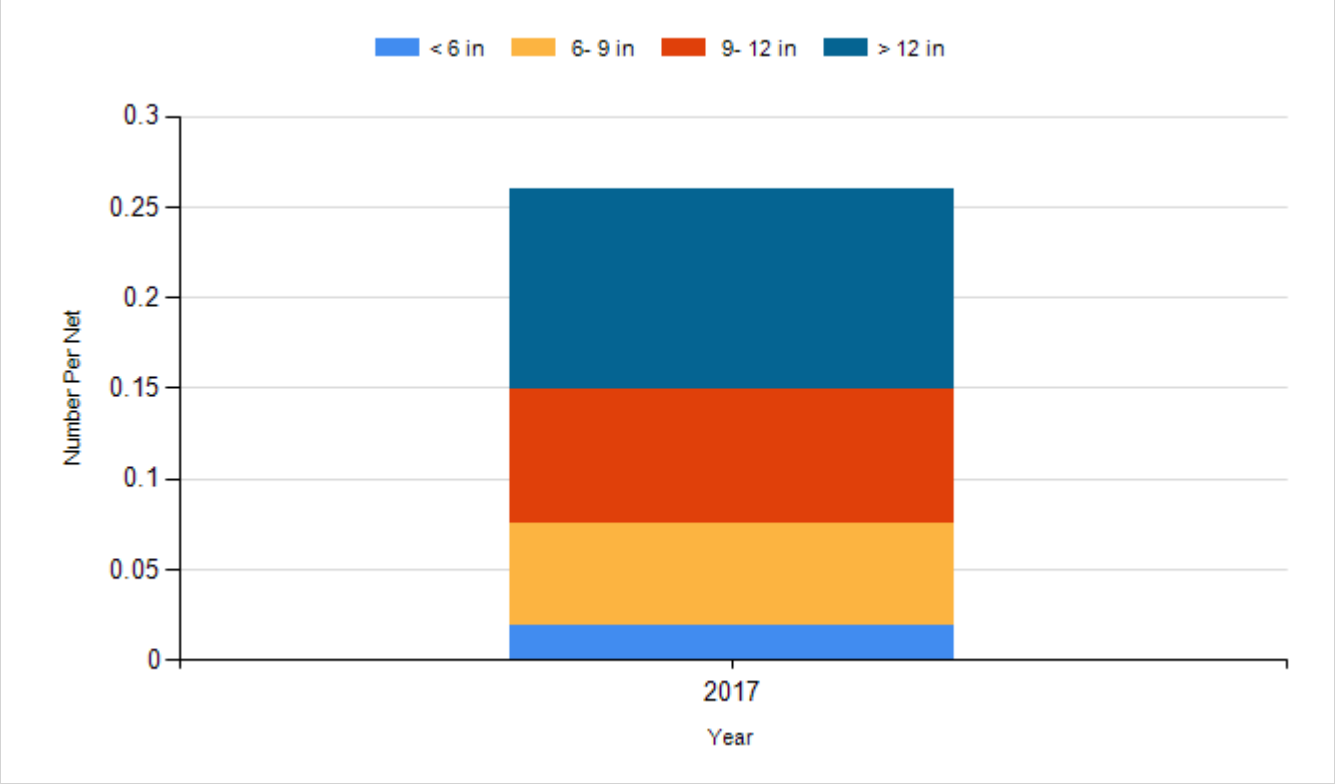
Species: Walleye
Gear: AFS std gill net



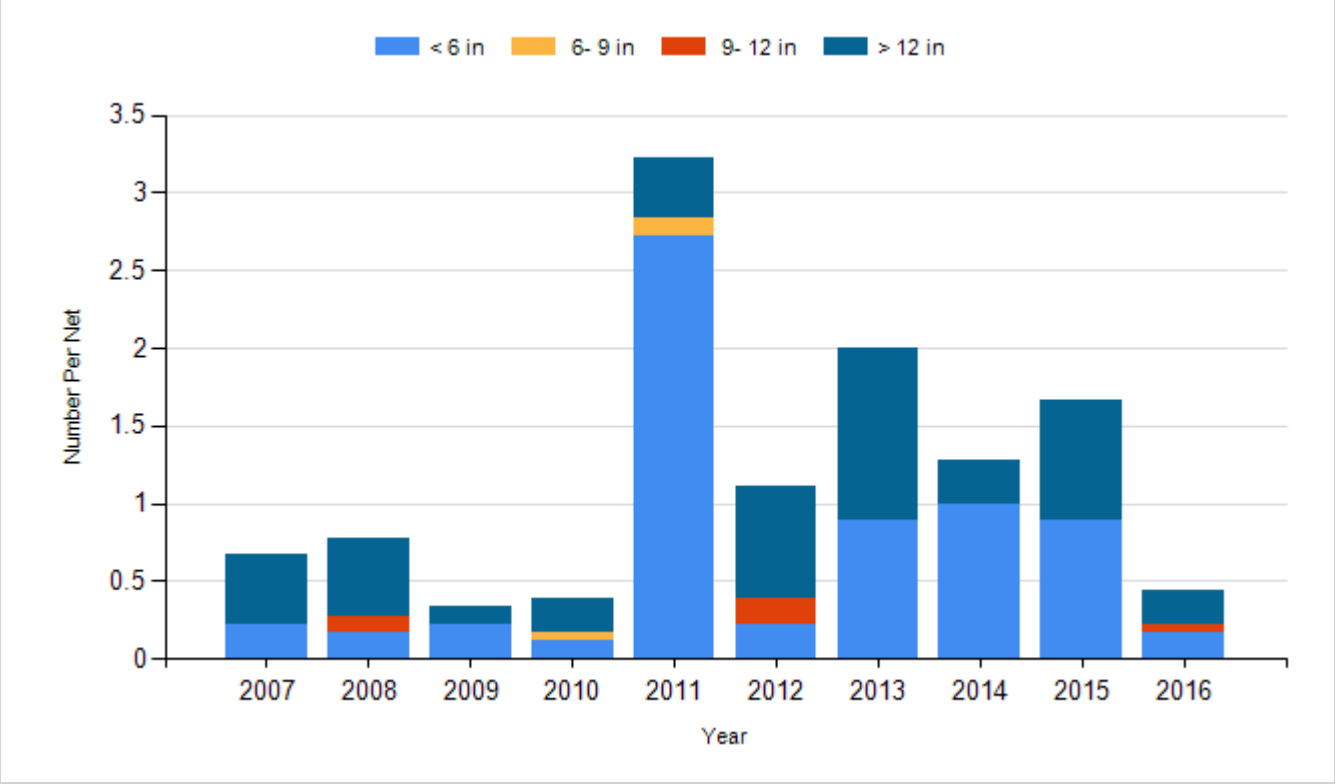
Species: Walleye
Gear: std exp gill net



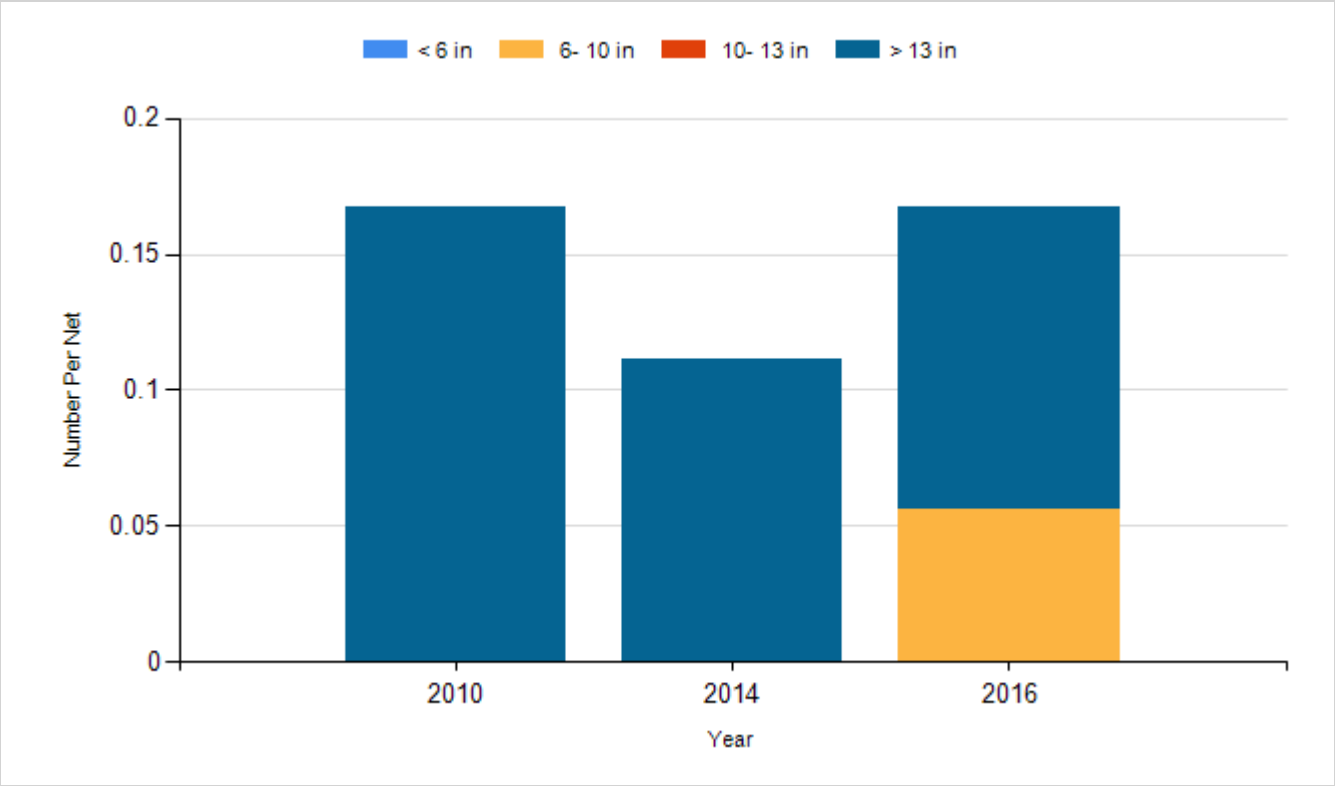
Species: White Bass
Gear: AFS std gill net



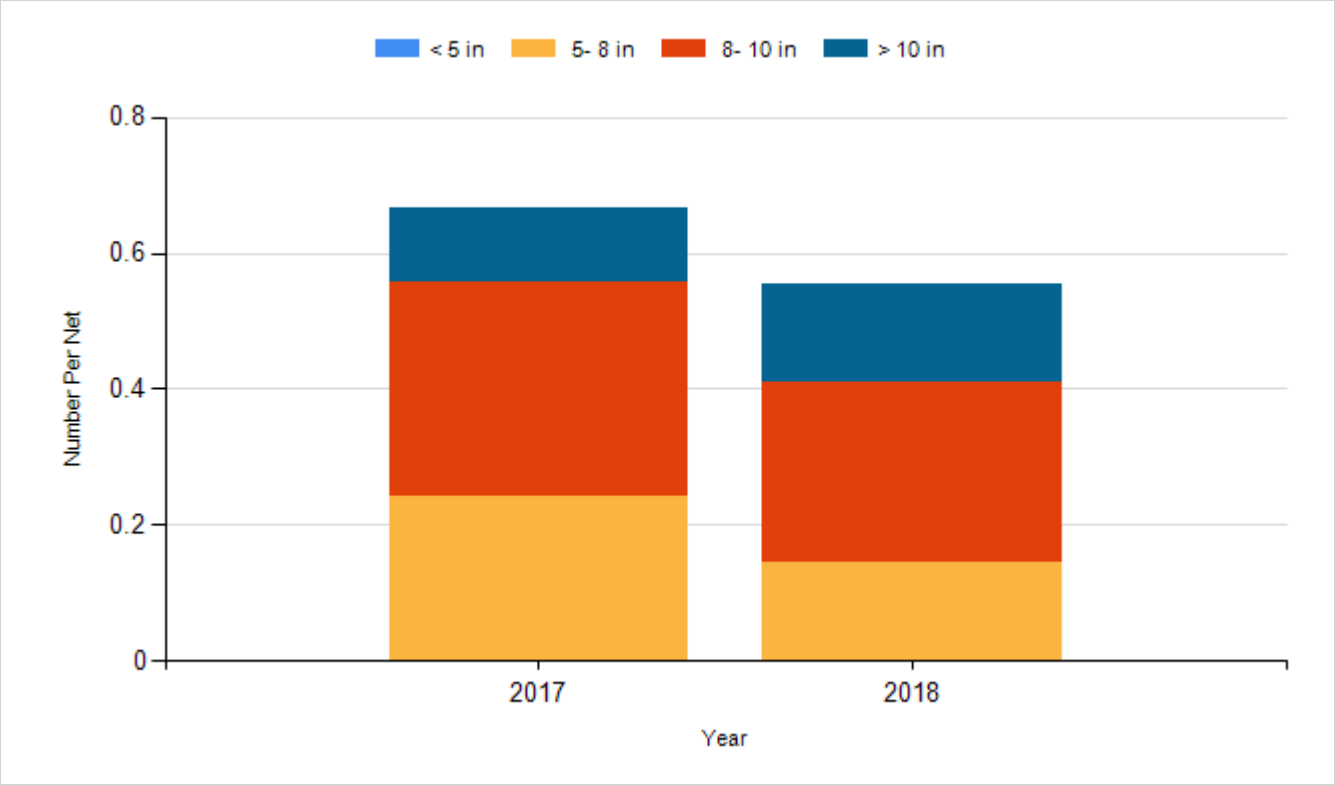
Species: White Bass
Gear: std exp gill net



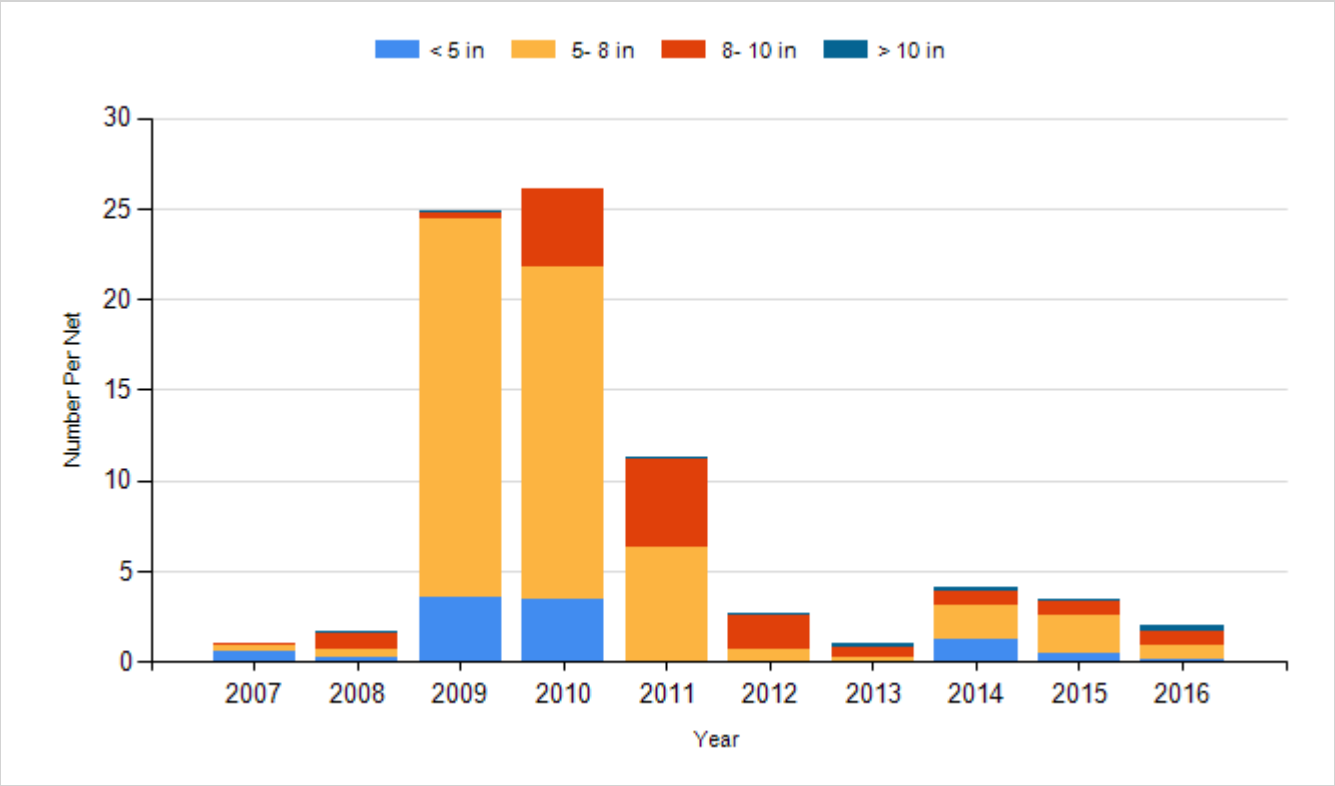
Species: White Sucker
Gear: std exp gill net



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	Atlantic Salmon	Adult	1,863
2018	Atlantic Salmon	Catchable	989
2018	Chinook Salmon (Oahe)	Fingerling	132,736
2018	Walleye	Small Fingerling	104,534