SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Albert, Kingsbury County
MBS-Lake-176-000
2021

Lake Information

Name:	Albert	**Maximum Depth:**	13 Feet
County:	Kingsbury	**Mean Depth:**	9 Feet
Legal Description:	T112-R53W-Sec. 1-3, 10-12, 14-15, 22	**OHWM Elevation:**	1,653
Surface Area:	3,672 Acres	**Outlet Elevation:**	1,650

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 21, 2021	8 net-nights

Common Fish Species Present

Walleye

Channel Catfish

Bigmouth Buffalo

Common Carp

Northern Pike

Yellow Perch

White Bass

White Sucker

Black Bullhead

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 std gill net	Bigmouth Buffalo	21	2.6	1.5	81		14			
	Black Bullhead	2	0.3	0.4	100		0			
	Channel Catfish	33	4.1	1.4	97		21	11	103	2
	Common Carp	10	1.3	0.7	100		20			
	Northern Pike	7	0.9	0.9	100		29		83	8
	Walleye	27	3.4	0.7	100		22	13	89	2
	White Bass	4	0.5	0.3	100		100		102	5
	White Sucker	3	0.4	0.4	100		100			
	Yellow Perch	6	0.8	0.5	17		17		118	8

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.

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

		CPUE										
Gear	Species	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg
AFS std gill net	Bigmouth Buffalo						4.3	1.3	0.1	0.0	2.6	1.66
	Black Bullhead						1.3	1.1	0.3	0.5	0.3	0.70
	Black Crappie						0.5	0.3	0.0	0.0	0.0	0.16
	Channel Catfish						0.0	0.1	0.0	2.3	4.1	1.30
	Common Carp						0.3	1.0	0.1	0.3	1.3	0.60
	Northern Pike						0.7	0.3	0.5	1.0	0.9	0.68
	Walleye						8.5	17.9	2.1	2.5	3.4	6.88
	White Bass						0.5	0.5	0.6	0.5	0.5	0.52
	White Sucker						1.2	1.0	1.0	1.1	0.4	0.94
	Yellow Perch						14.5	9.3	5.0	1.5	0.8	6.22
frame net (std 3/4 in)	Bigmouth Buffalo	30.6										30.60
	Black Bullhead	57.6										57.60
	Channel Catfish	1.0										1.00
	Common Carp	5.6										5.60
	Northern Pike	4.8										4.80
	Smallmouth Bass	0.2										0.20
	Walleye	4.4										4.40
	White Bass	3.2										3.20
	White Sucker	0.8										0.80
	Yellow Bullhead	3.2										3.20
	Yellow Perch	0.2										0.20
std exp gill net	Bigmouth Buffalo	0.0		0.0	0.0	10.7						2.68
	Black Bullhead	3.3		1.7	15.3	4.3						6.15
	Channel Catfish	0.7		0.0	0.0	0.0						0.18
	Common Carp	1.0		1.0	0.0	0.0						0.50
	Northern Pike	4.3		2.0	1.0	1.0						2.08
	Orangespotted Sunfish	0.0		0.0	0.0	0.0						0.00
	Spottail Shiner	0.0		0.0	0.0	0.0						0.00
	Walleye	11.7		7.3	17.0	9.0						11.25
	White Bass	0.7		0.0	0.0	0.7						0.35
	White Sucker	1.7		1.3	6.3	3.3						3.15
	Yellow Perch	13.7		22.0	17.3	114.0						41.75

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	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
AFS std gill net	Bigmouth Buffalo	PSD						15	20	0		81
		PSD-P						4	0	0		14
	Black Bullhead	PSD						88	100	100	25	100
		PSD-P						88	67	100	0	0
	Channel Catfish	PSD							100		89	97
		PSD-P							100		11	21
		Wr							98		110	103
	Common Carp	PSD						100	100	100	100	100
		PSD-P						100	100	100	50	20
	Northern Pike	PSD						100	100	100	50	100
		PSD-P						75	50	100	38	29
		Wr						87	96	97	90	83
	Walleye	PSD						67	91	76	80	100
		PSD-P						39	14	6	5	22
		Wr						86	90	86	90	89
	White Bass	PSD						67	100	100	25	100
		PSD-P						67	100	100	25	100
		Wr						97	106	94	95	102
	White Sucker	PSD						100	100	100	78	100
		PSD-P						100	100	100	78	100
	Yellow Perch	PSD						71	38	43	75	17
		PSD-P						16	22	5	42	17
		Wr						98	104	110	110	118
frame net (std 3/4 in)	Bigmouth Buffalo	PSD	100									
		PSD-P	17									
		Wr	88									
	Black Bullhead	PSD	73									
		PSD-P	3									
		Wr	100									
	Channel Catfish	PSD	100									
		PSD-P	0									
		Wr	99									
	Common Carp	PSD	100									

			Year									
Gear	Species	Index	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
frame net (std 3/4 in)	Common Carp	PSD-P	75									
		Wr	88									
	Northern Pike	PSD	58									
		PSD-P	25									
		Wr	76									
	Walleye	PSD	18									
		PSD-P	0									
		Wr	77									
	White Bass	PSD	31									
		PSD-P	19									
		Wr	88									
	White Sucker	PSD	100									
		PSD-P	100									
		Wr	87									
	Yellow Perch	PSD	100									
		PSD-P	0									
		Wr	105									
std exp gill net	Bigmouth Buffalo	PSD				0	0					
		PSD-P				0	0					
	Black Bullhead	PSD	80		20	63	100					
		PSD-P	0		20	0	38					
		Wr	98									
	Channel Catfish	PSD	100									
		PSD-P	0									
		Wr	119									
	Common Carp	PSD	100		100							
		PSD-P	33		100							
		Wr	106									
	Northern Pike	PSD	54		83	100	67					
		PSD-P	8		17	33	33					
		Wr	85		91	106	89					
	Walleye	PSD	23		91	94	41					
		PSD-P	0		0	24	11					
		Wr	85		96	102	96					
	White Bass	PSD	100				0					
		PSD-P	100				0					
		Wr	100				100					

			Year									
Gear	Species	Index	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
std exp gill net	White Sucker	PSD	100		25	26	90					
		PSD-P	100		25	16	90					
		Wr	104									
	Yellow Perch	PSD	71		18	96	13					
		PSD-P	34		15	25	11					
		Wr	109		106	121	110					

Length at Capture

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

Species: Walleye

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	18	173 (1)	320 (1)	411 (3)	395 (8)	467 (5)					
2018	141		371 (9)	432 (97)	468 (13)	499 (3)		554 (3)		640 (12)	623 (4)

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2018	76	143 (48)	227 (12)	269 (15)		327 (1)					

Fish Condition

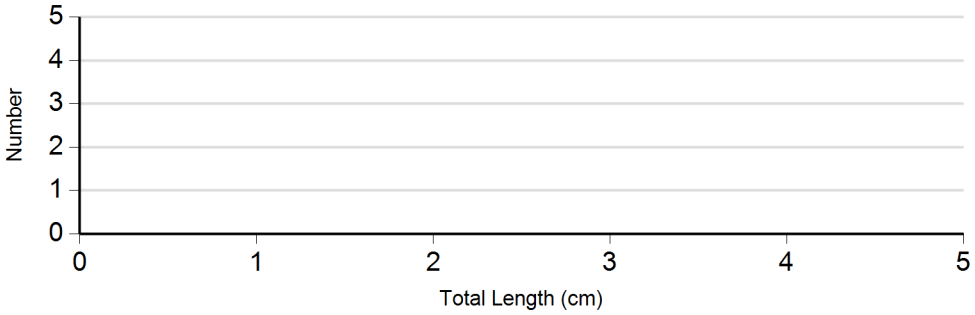
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Channel Catfish Gill Net	2018	0		0		1	98	0	
	2020	2	120 (0.3)	14	107 (1.8)	2	119 (13.2)	0	
	2021	1	106	25	104 (1.7)	6	100 (5.9)	1	83
Northern Pike Gill Net	2017	0		1	82	3	89 (1.4)	0	
	2018	0		1	91	1	101	0	
	2019	0		0		4	97 (9.5)	0	
	2020	4	86 (2.4)	1	99	3	92 (6.3)	0	
	2021	0		5	77 (4.2)	1	84	1	115
Walleye Gill Net	2017	17	86 (1.6)	14	85 (3.8)	19	86 (1.6)	1	85
	2018	13	92 (2.0)	110	91 (0.6)	9	91 (1.7)	11	86 (2.3)
	2019	4	87 (3.4)	12	86 (1.9)	1	79	0	
	2020	4	90 (2.6)	15	89 (1.3)	1	102	0	
	2021	0		21	90 (1.5)	4	85 (0.8)	2	85 (6.4)
White Bass Gill Net	2017	1	96	0		2	98 (4.2)	0	
	2018	0		0		1	106	3	107 (3.0)
	2019	0		0		3	94 (1.0)	2	95 (4.6)
	2020	3	95 (1.5)	0		1	93	0	
	2021	0		0		1	111	3	99 (3.0)
Yellow Perch Gill Net	2017	25	110 (1.4)	48	96 (0.9)	11	96 (2.3)	3	94 (3.2)
	2018	46	107 (1.5)	12	105 (2.9)	13	99 (1.4)	3	99 (5.7)
	2019	23	111 (2.1)	15	110 (1.8)	1	99	1	90
	2020	3	116 (3.0)	4	109 (1.3)	4	111 (3.0)	1	95
	2021	5	121 (7.2)	0		1	107	0	

Length Frequency Distribution

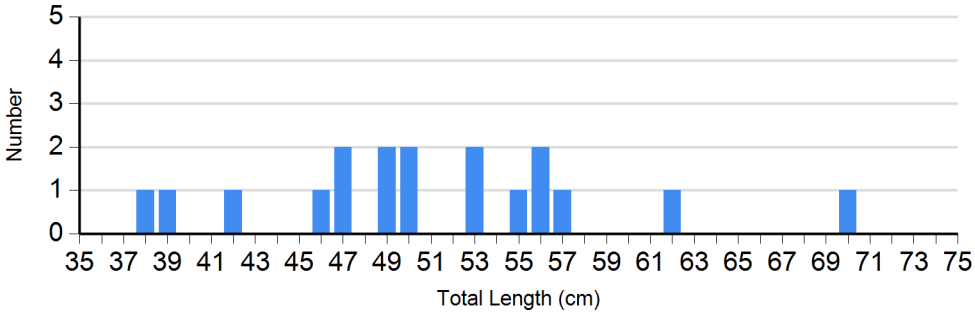
Length frequency histogram of species sampled by year.

Species: Black Bullhead
Gear: std exp gill net

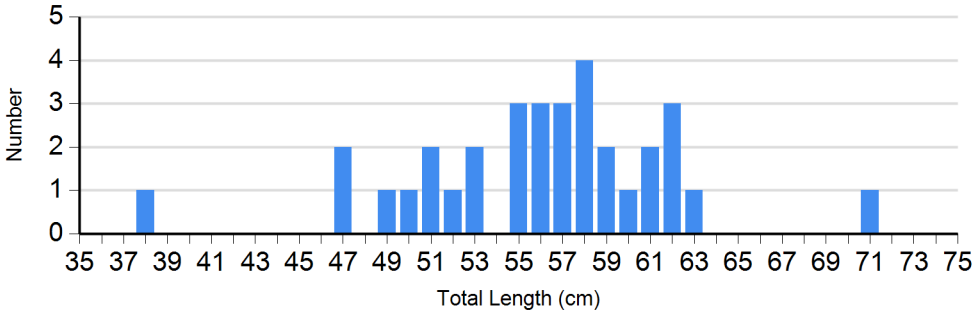


2016

Species: Channel Catfish
Gear: AFS std gill net

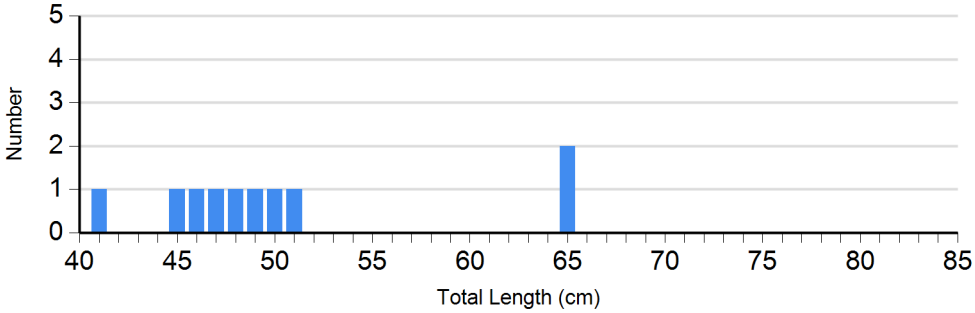


2020



2021

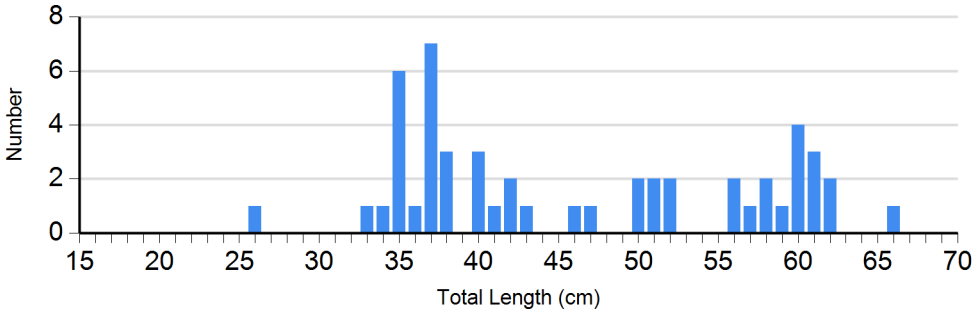
Species: Common Carp
Gear: AFS std gill net



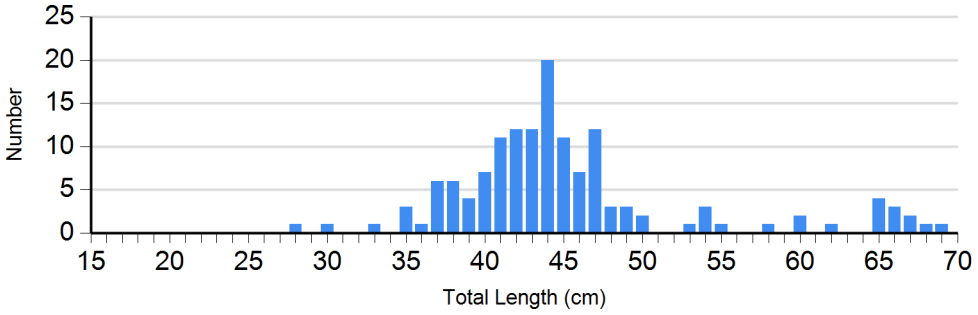
2021

Species: Walleye
Gear: AFS std gill net

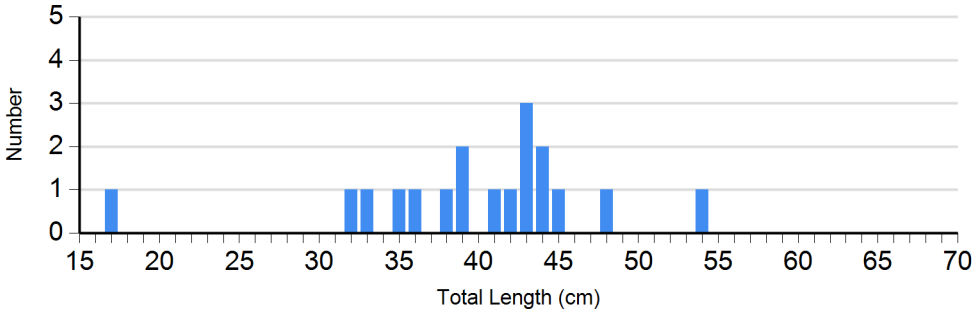
2017



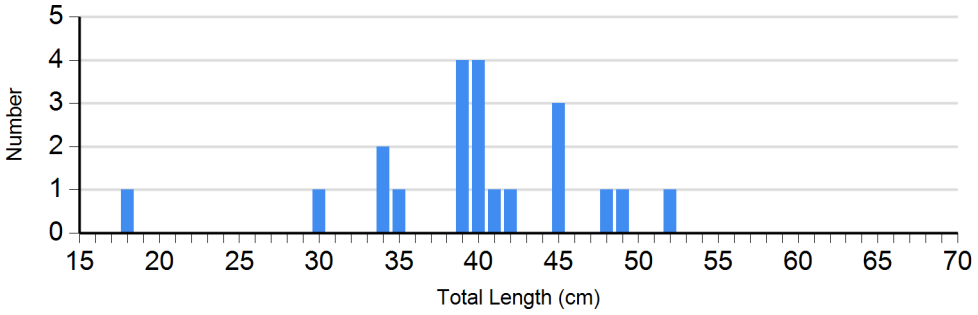
2018



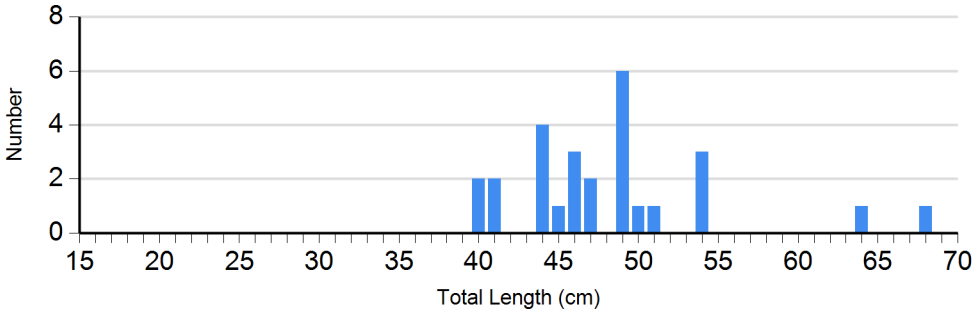
2019



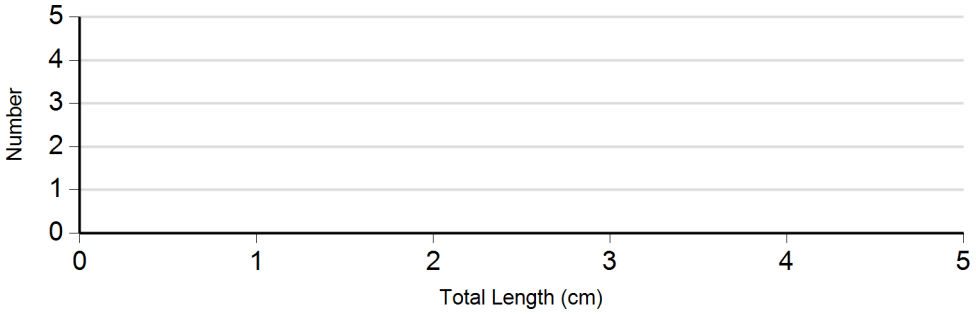
2020



2021

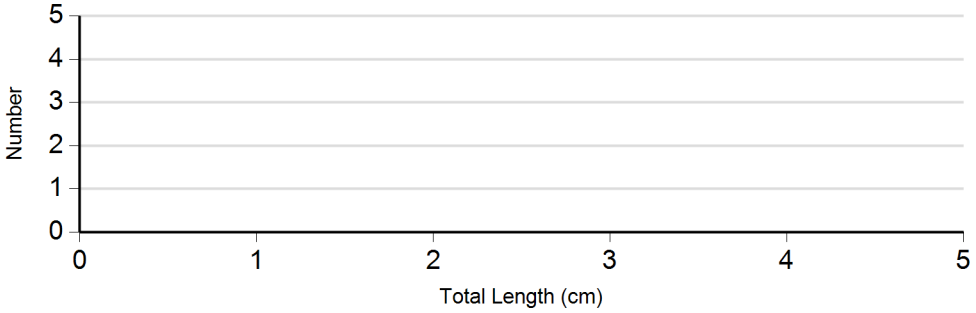


Species: Walleye
Gear: std exp gill net



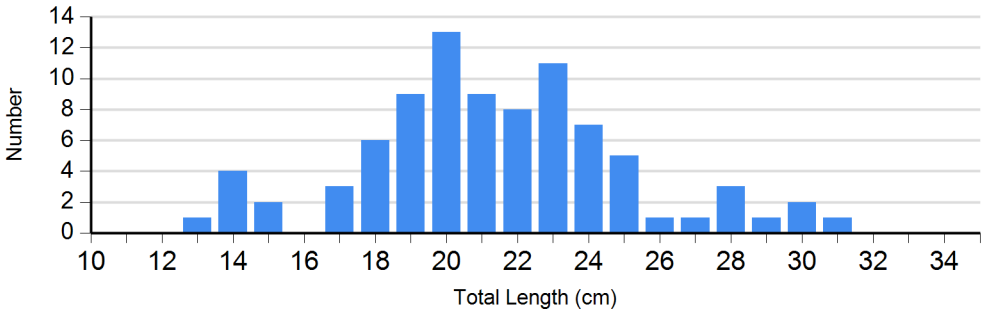
2016

Species: White Sucker
Gear: std exp gill net

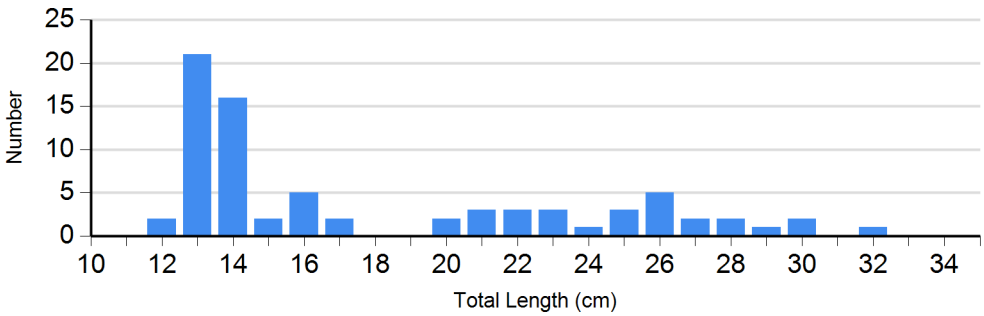


2016

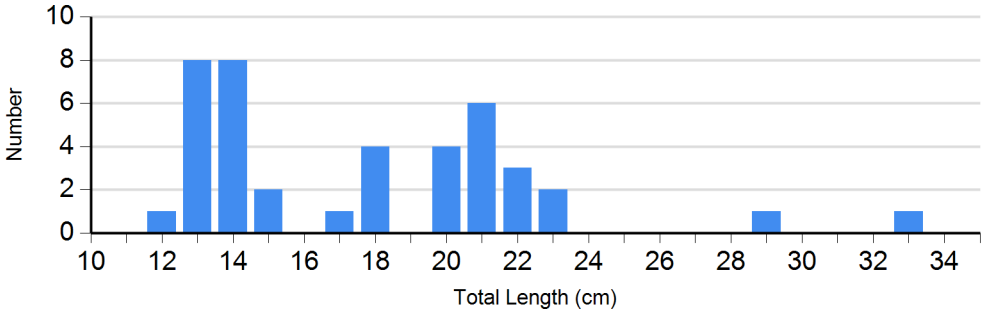
Species: Yellow Perch
Gear: AFS std gill net



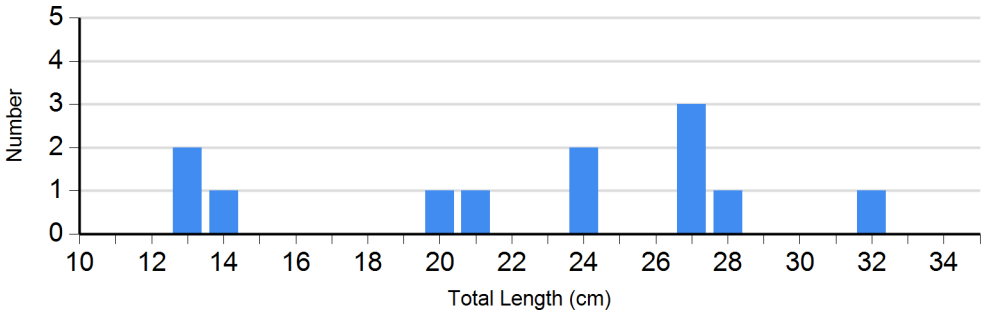
2017



2018

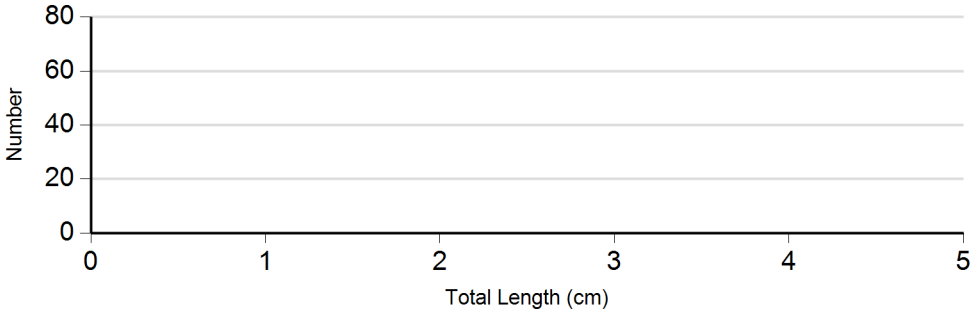


2019



2020

Species: Yellow Perch
Gear: std exp gill net

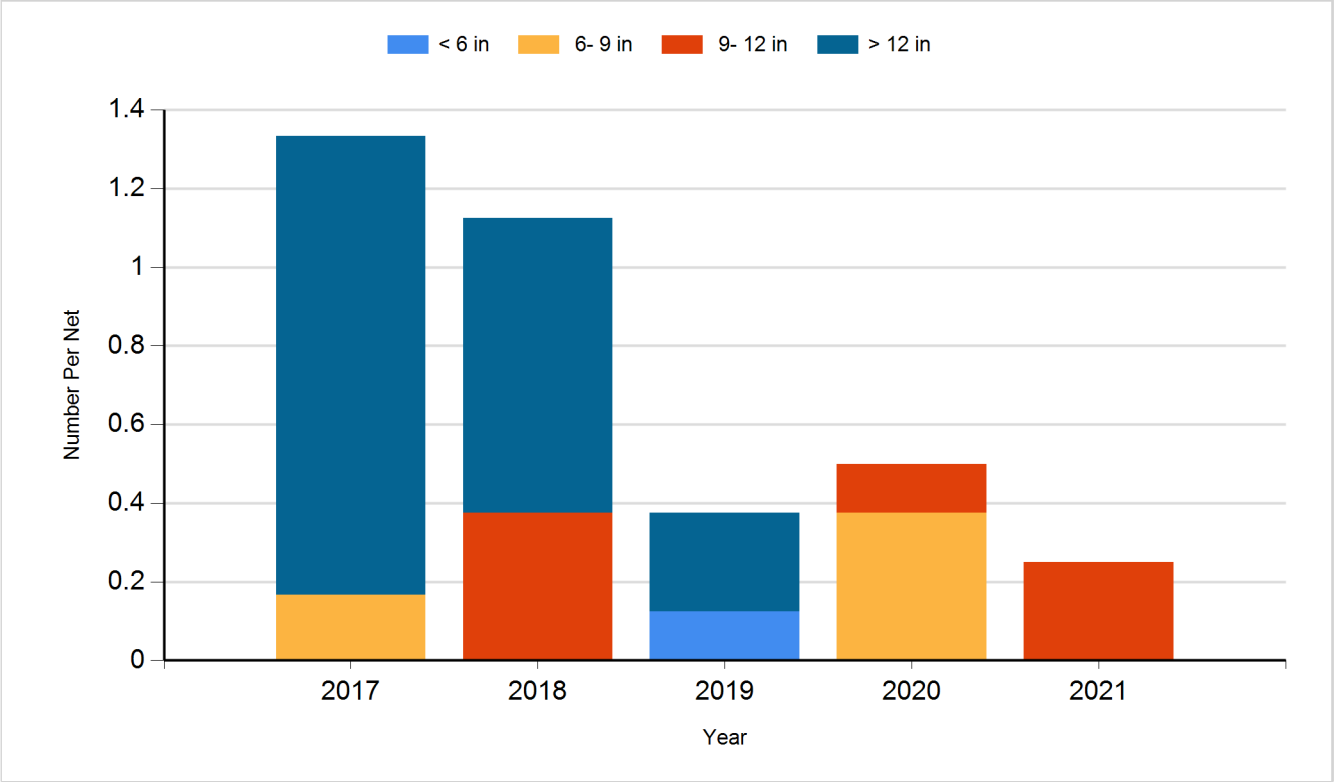


2016

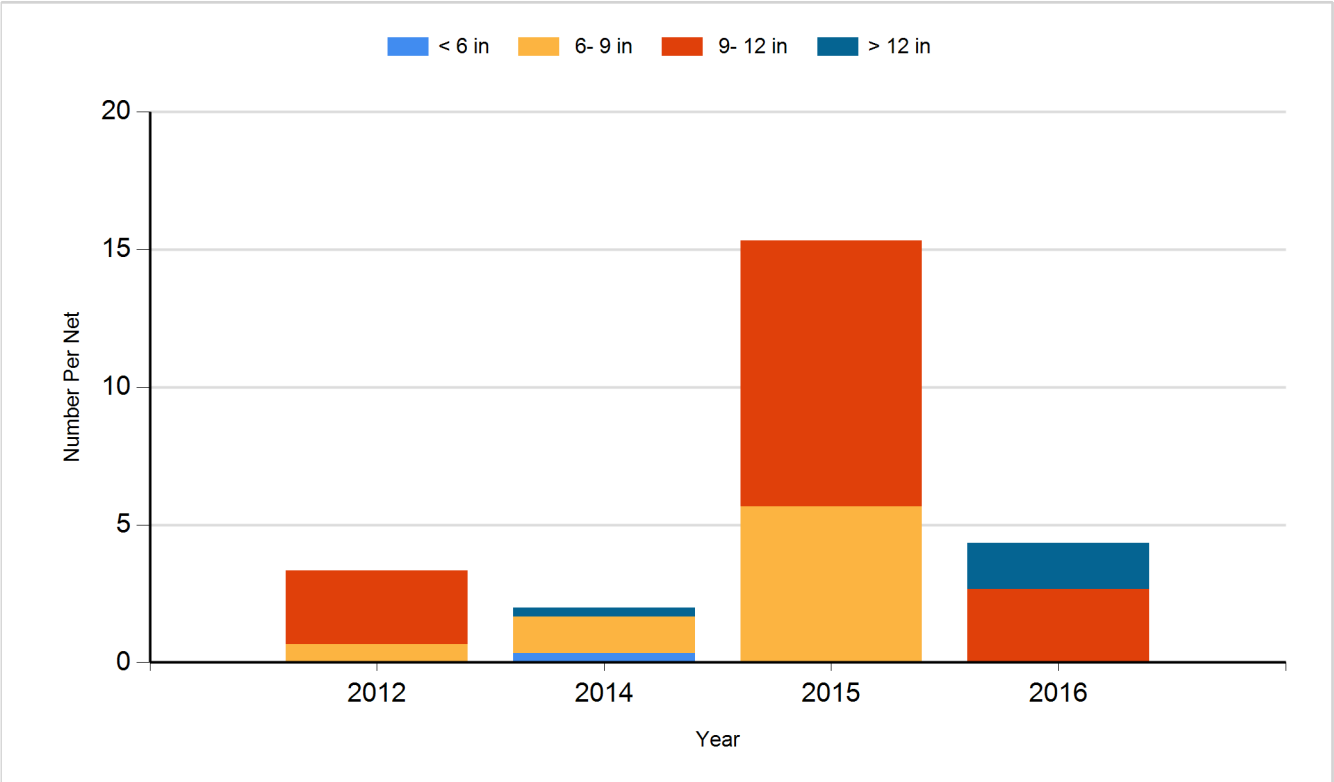
Historic Fish Sizes and Relative Abundance

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

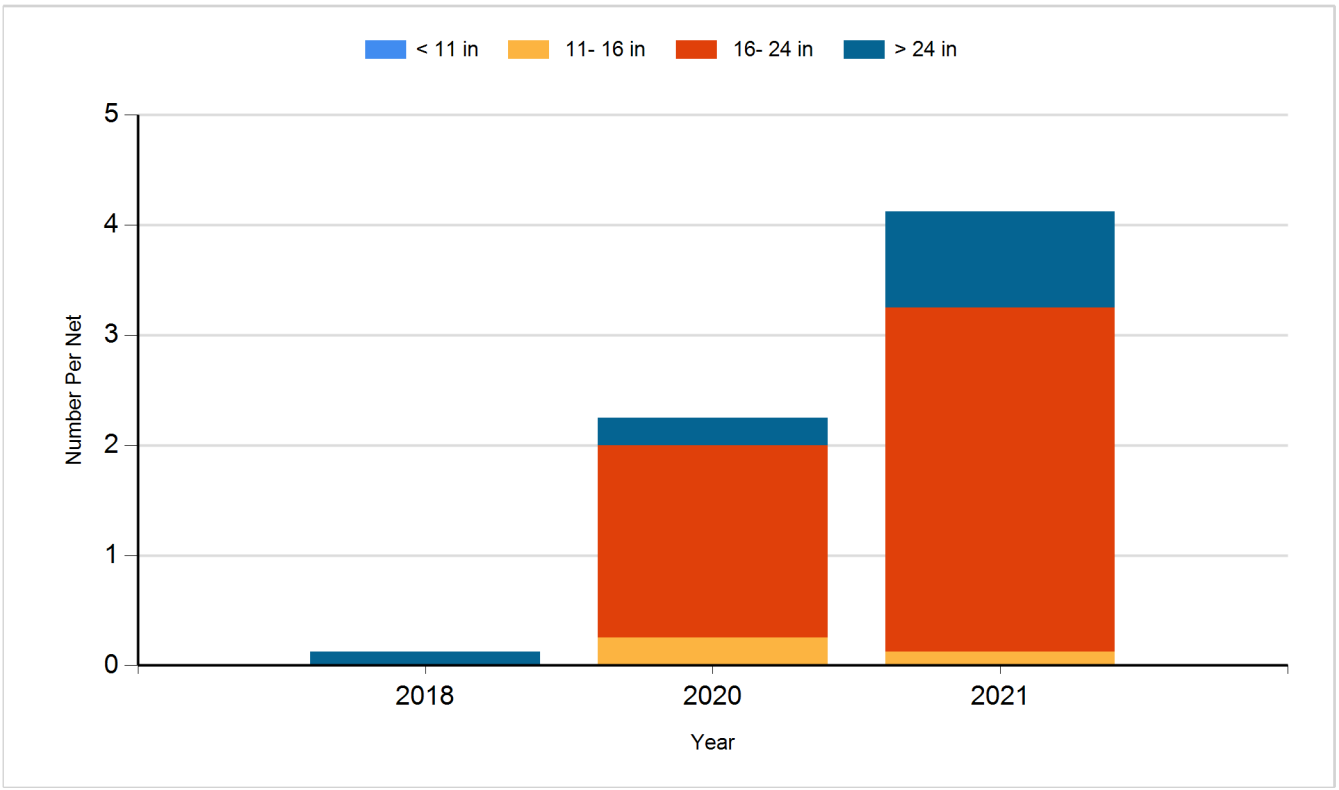
Species: Black Bullhead
Gear: AFS std gill net



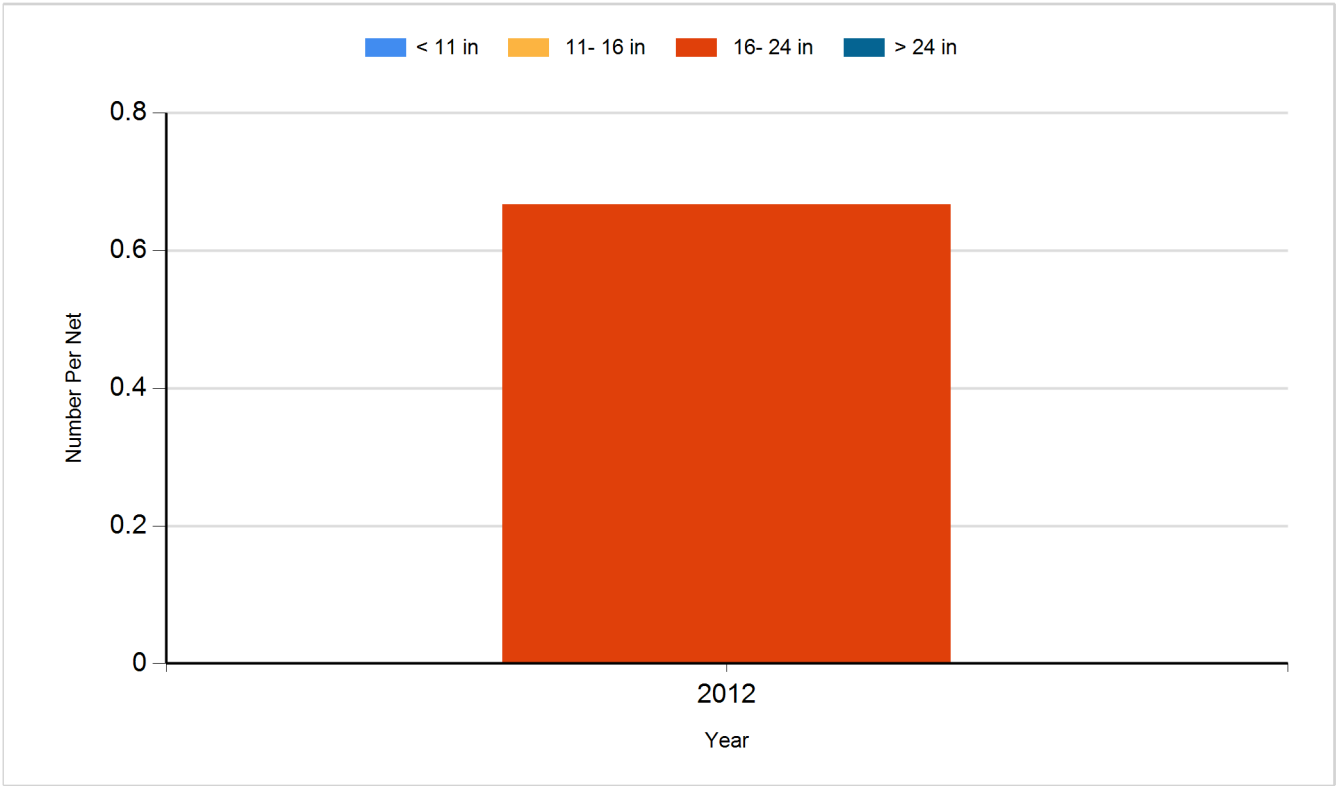
Species: Black Bullhead
Gear: std exp gill net



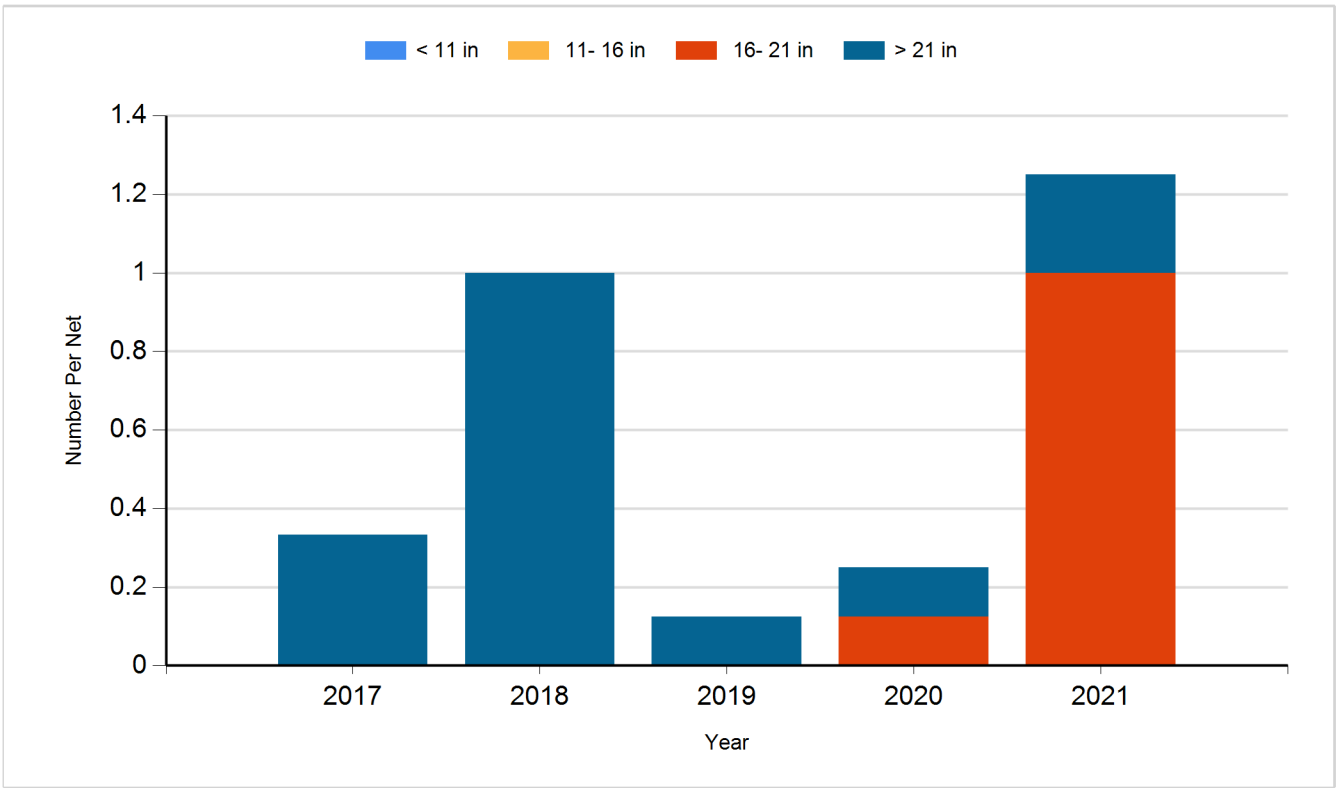
Species: Channel Catfish
Gear: AFS std gill net



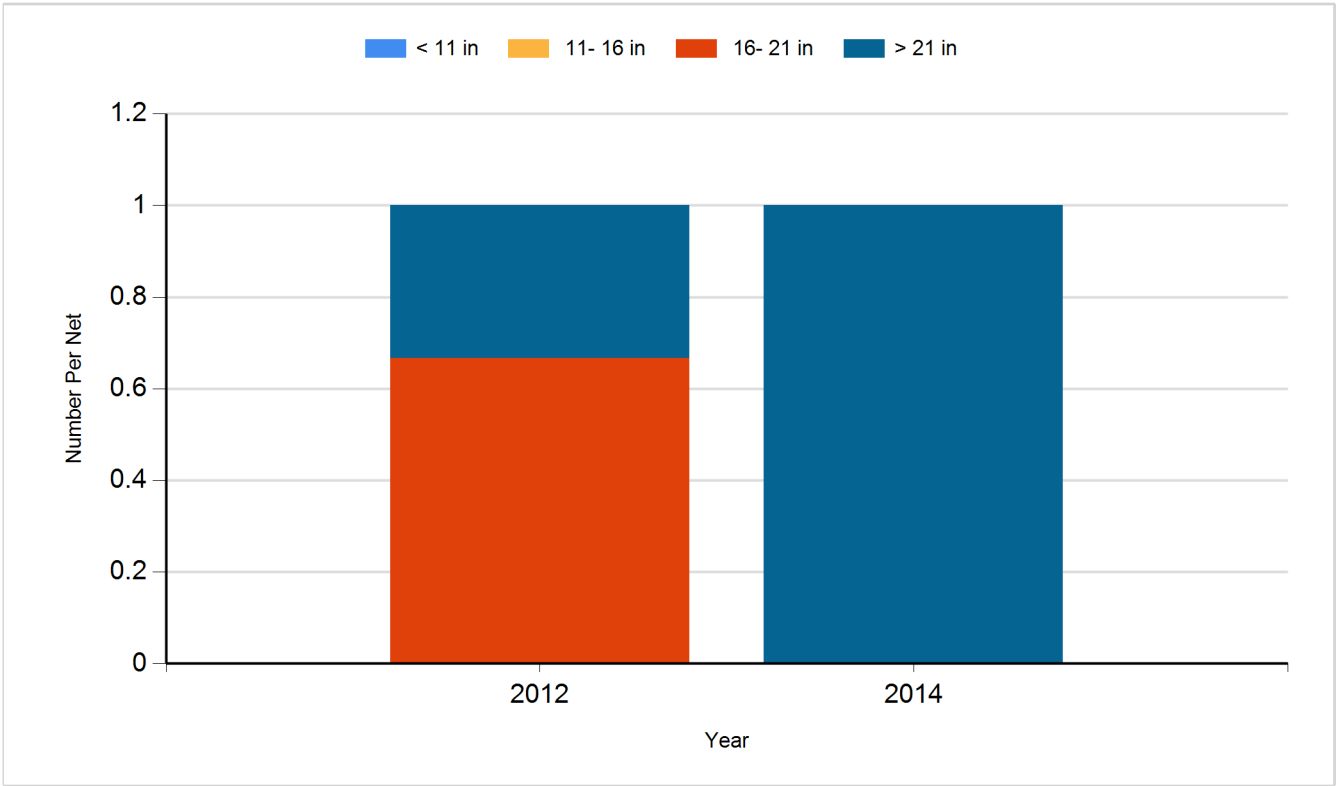
Species: Channel Catfish
Gear: std exp gill net



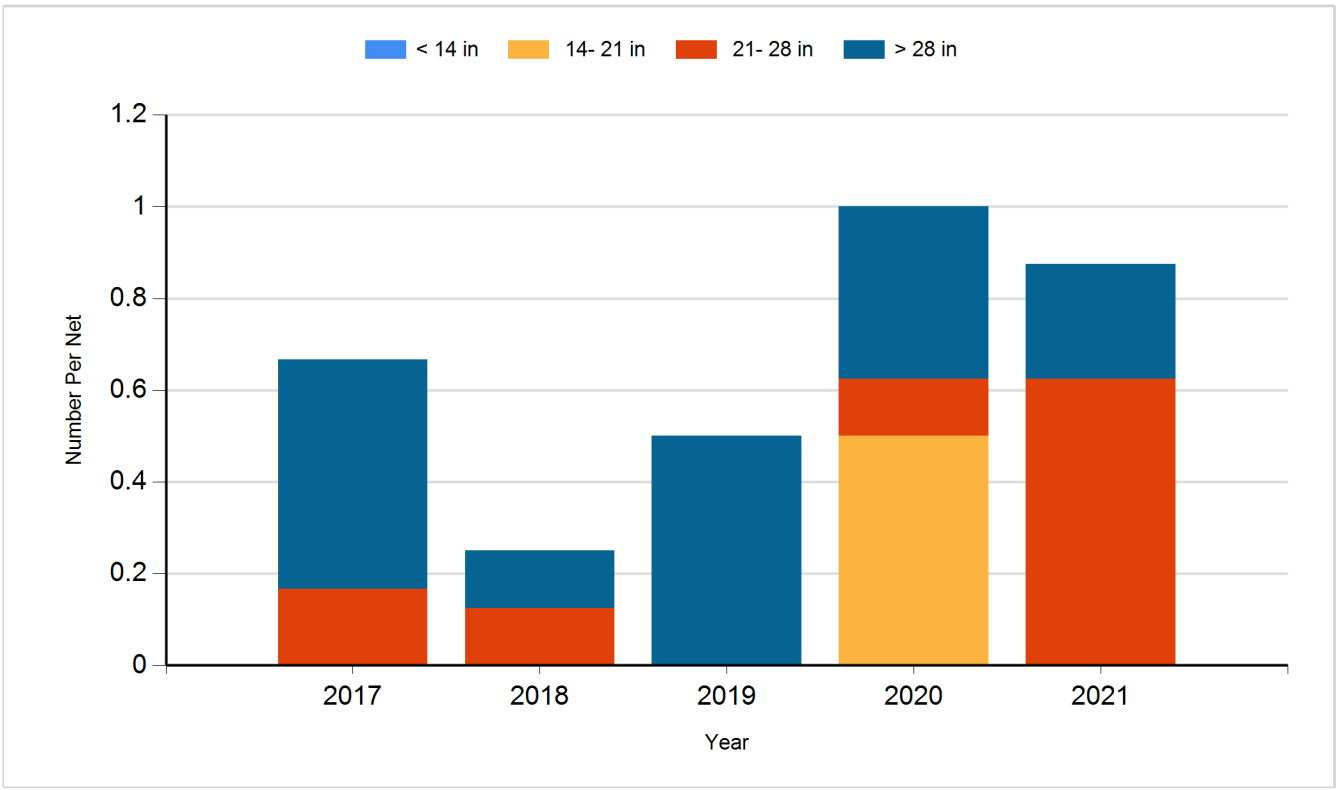
Species: Common Carp
Gear: AFS std gill net



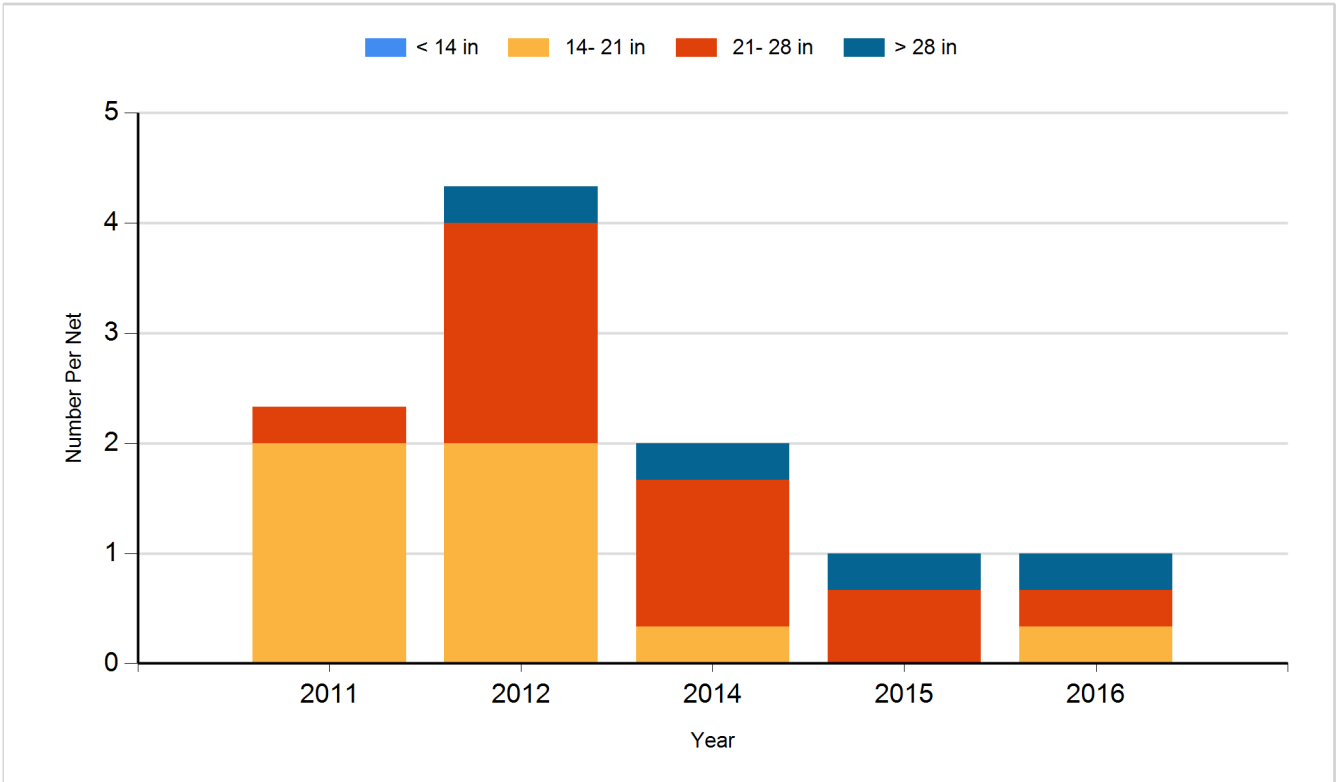
Species: Common Carp
Gear: std exp gill net



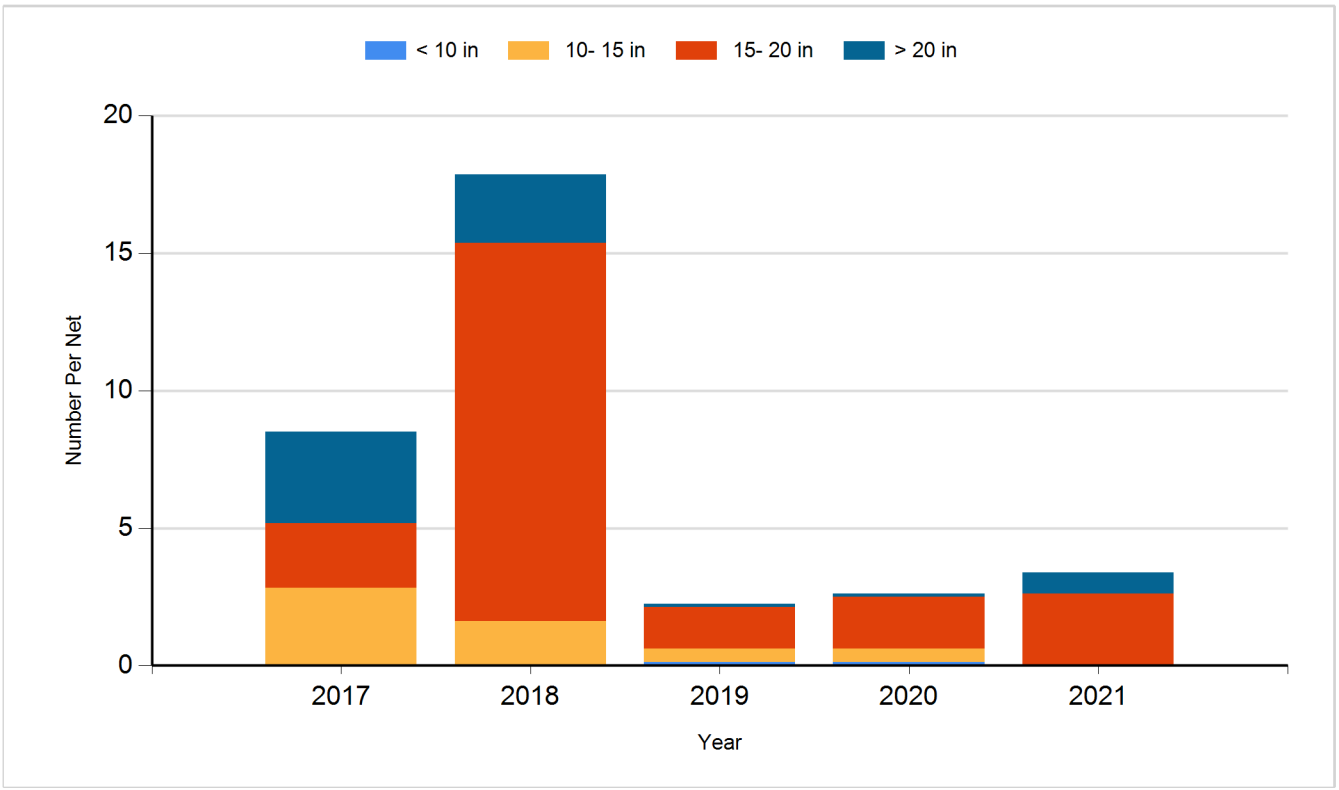
Species: Northern Pike
Gear: AFS std gill net



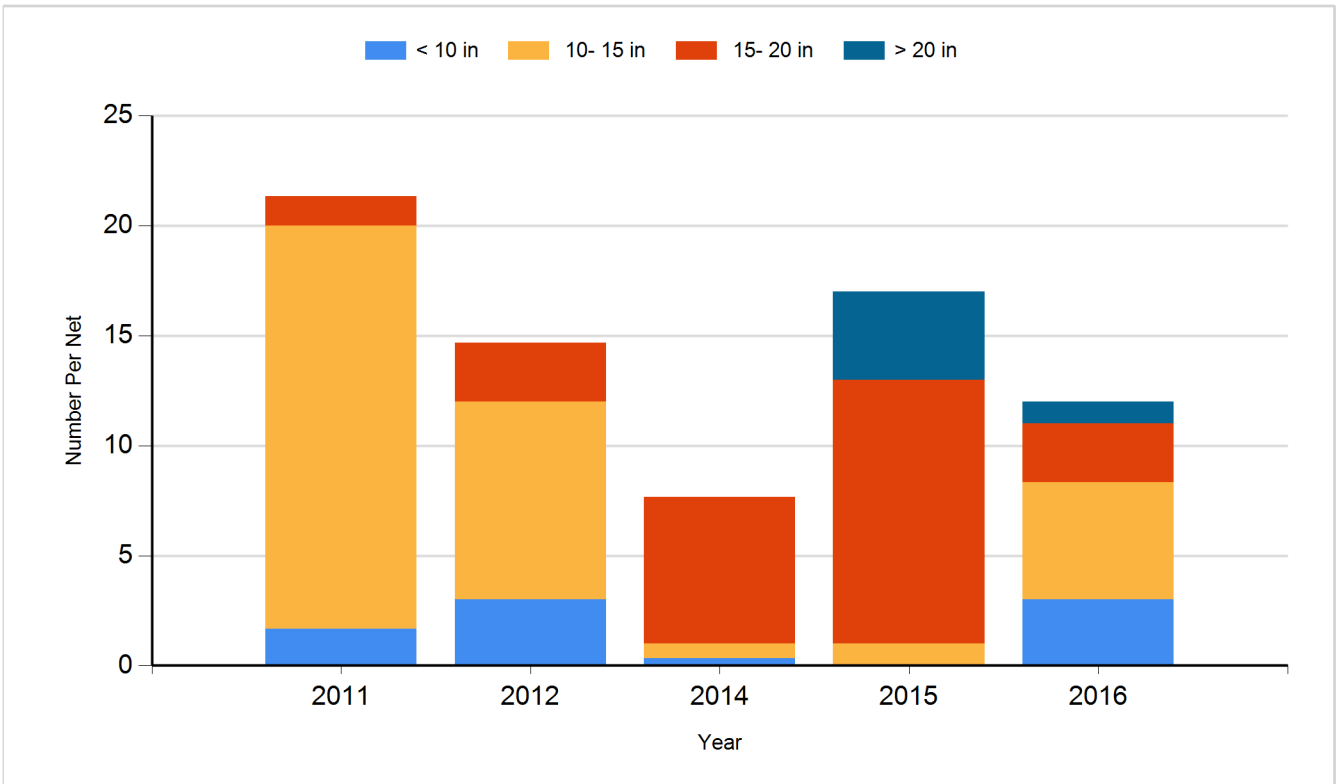
Species: Northern Pike
Gear: std exp gill net



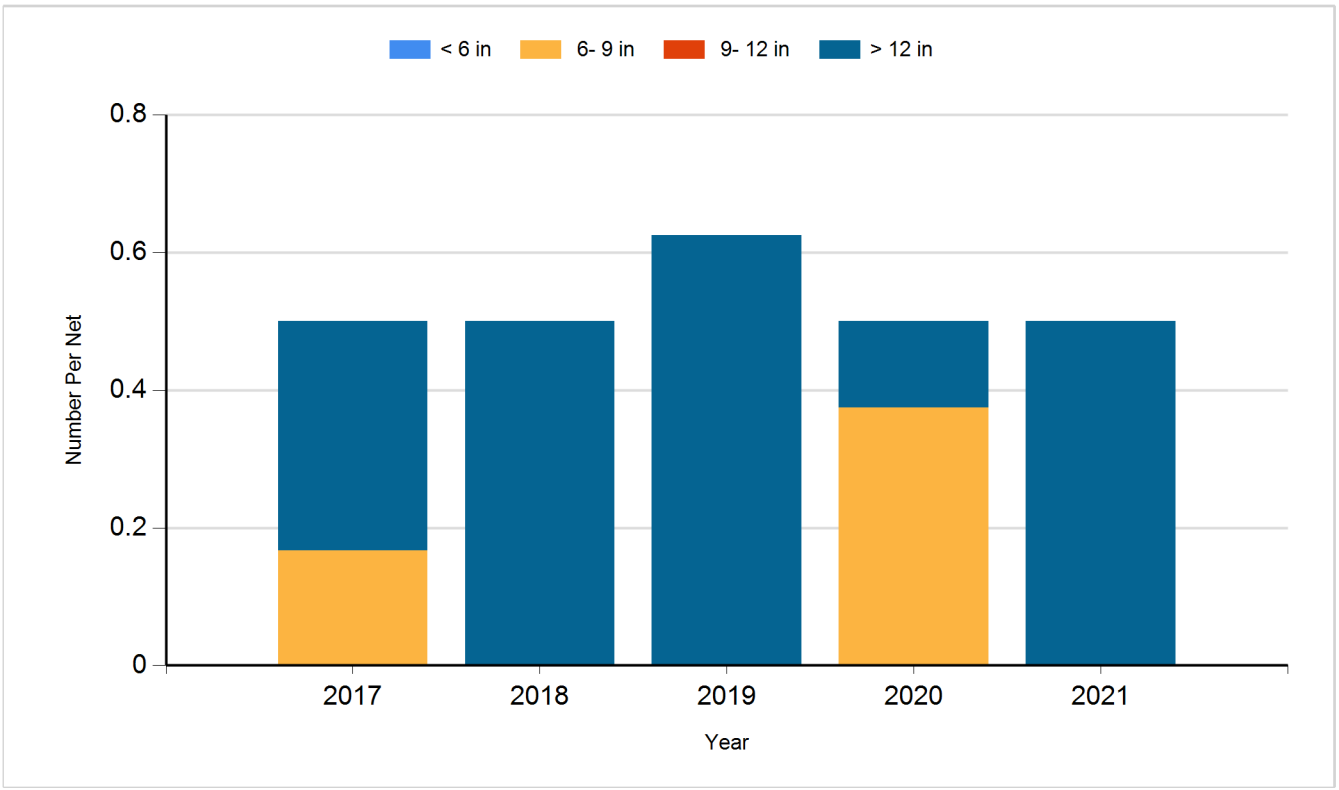
Species: Walleye
Gear: AFS std gill net



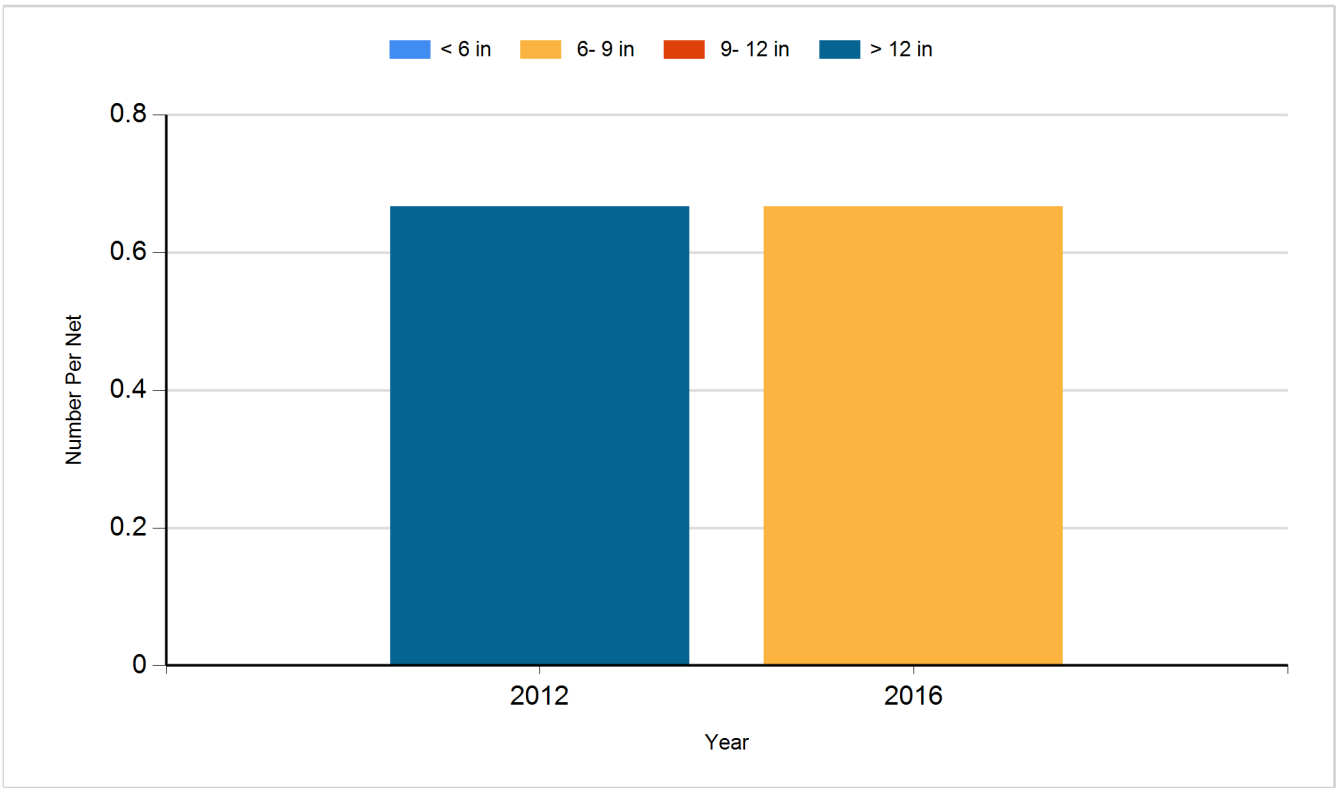
Species: Walleye
Gear: std exp gill net



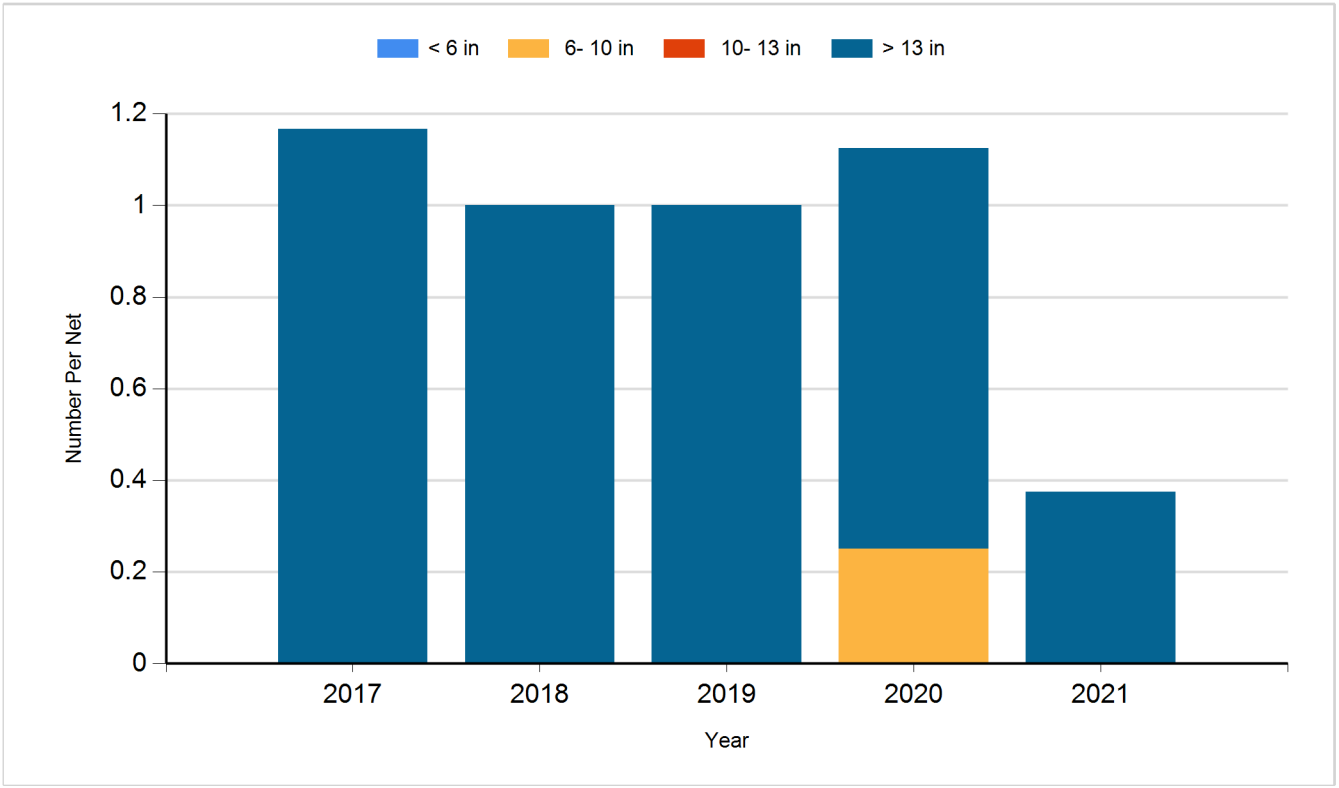
Species: White Bass
Gear: AFS std gill net



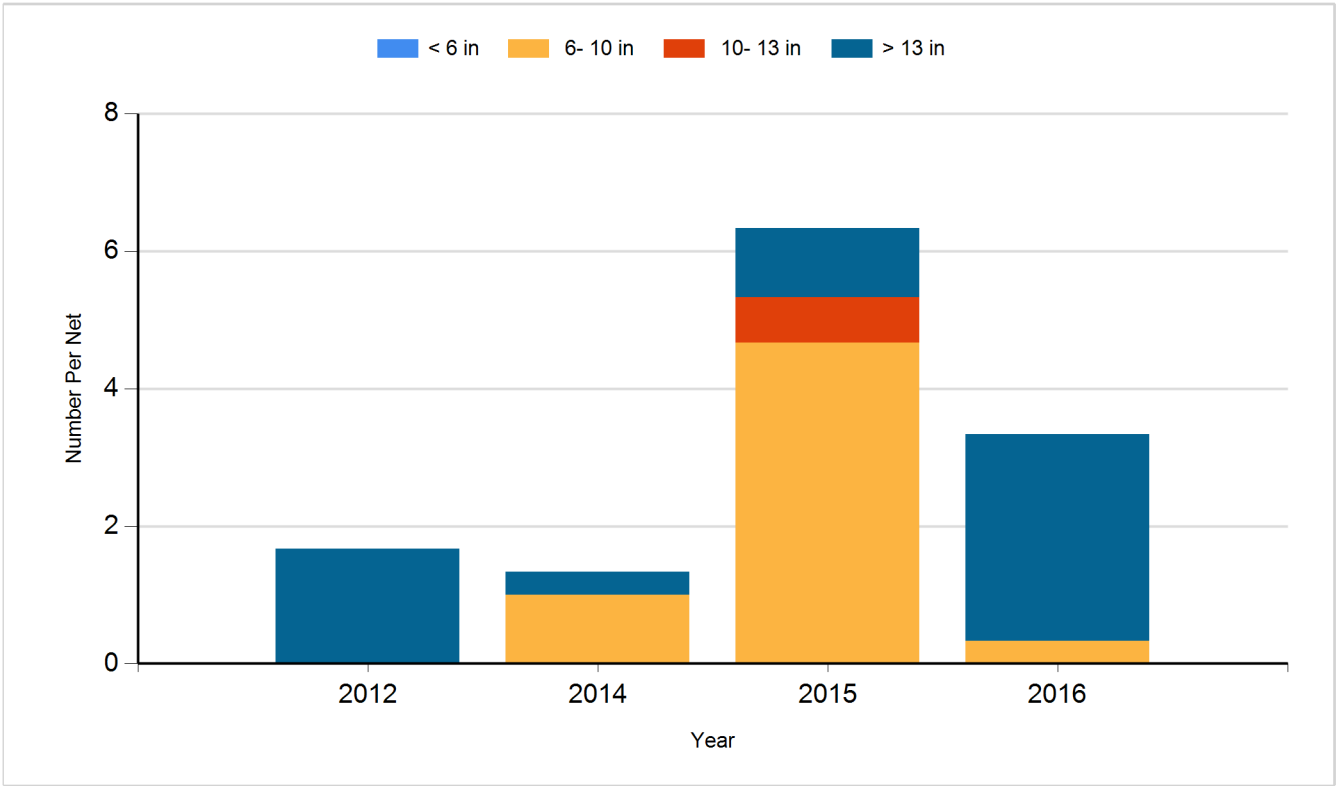
Species: White Bass
Gear: std exp gill net



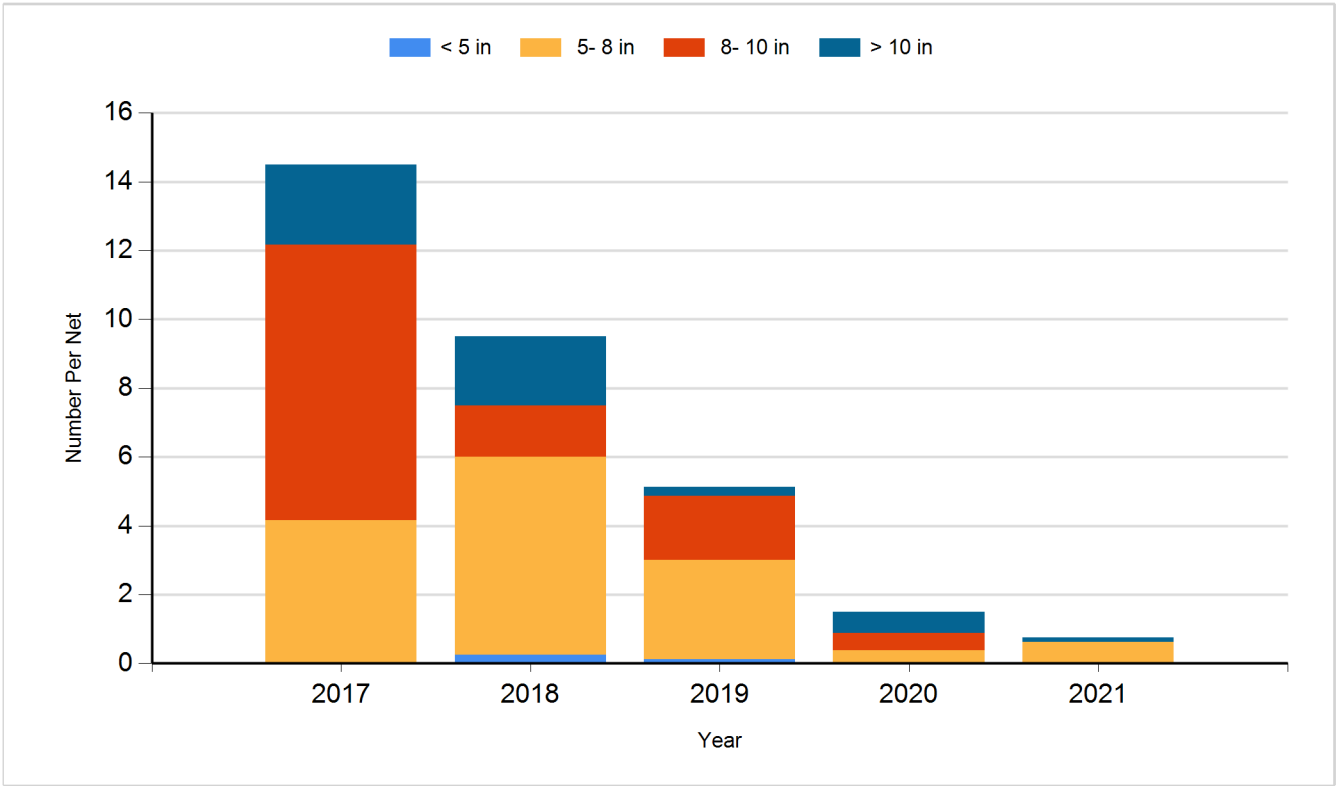
Species: White Sucker
Gear: AFS std gill net



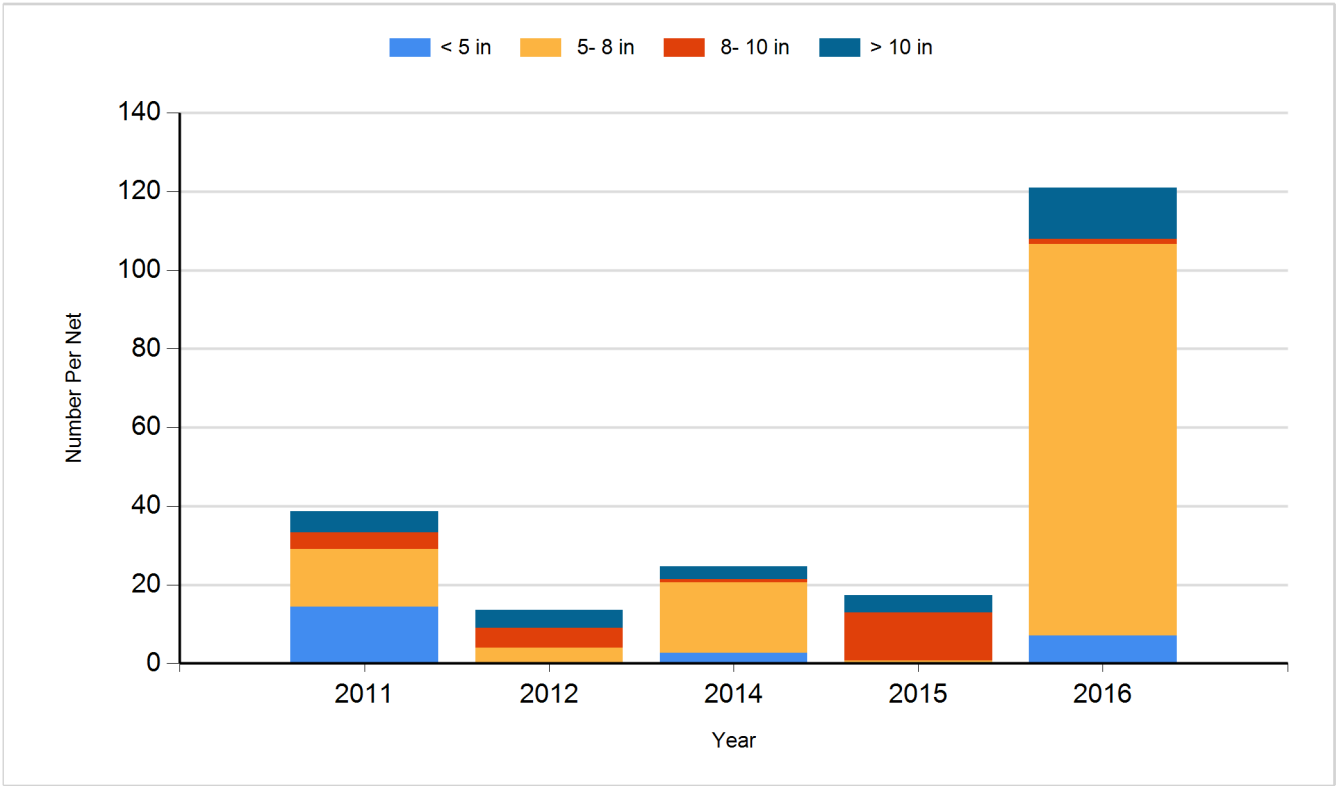
Species: White Sucker
Gear: std exp gill net



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
2011	Walleye	Fry	3,700,000
2014	Walleye	Fry	1,850,000
2015	Walleye	Fry	1,850,000
2018	Walleye	Fry	3,700,000
2021	Walleye	Fry	7,500,000