Whitewood Lake Survey Summary

Whitewood Lake, located 3 ½ miles south and ½ a mile east of Lake Preston, is managed as a walleye and yellow perch fishery; other fish species (e.g., northern pike, black crappie) provide additional angler opportunity.

- **Walleye**. Gill netting efforts produced 3.4 walleye per net in 2024. Relative abundance was slightly lower than the previous sample year (3.9 fish per net in 2022) and about half the 10-year average (6.6 fish per net). Netted fish ranged from 10.6 to 17.3 inches long with approximately 37% of catches measuring in the quality (>15 inch) length category. Average relative weights (a measure of fish plumpness) for walleye improved from the previous sample year (Wr = 93 in 2024 and 85 in 2022). Despite a slightly lower catch rate in 2024 Whitewood Lake remains an excellent option for anglers targeting walleyes.

- **Yellow Perch**. Sampling efforts produced 9.1 yellow perch per gill net in 2024 resulting in one of the highest catch rates in the southeast region. Relative abundance was higher than the previous sample year (6.6 fish per net in 2022) but lower than the long-term mean (13.0 fish per net). Netted fish ranged from 5.9 to 11.4 inches in length with a majority (77%) measuring >8 inches long. Average fish condition improved to a 10 year high in 2024 (Wr = 117). Any angler targeting yellow perch in southeast South Dakota should be sure to give Whitewood Lake a look.

- **Black Crappie**. Frame nets produced a catch rate of 5.8 black crappie per net in 2024. This was the first year since 2012 that frame nets had been included in the Lake Whitewood survey so this year's catch cannot be compared to past years. Sampled fish ranged in length from 10.6 to 12.6 inches. Preferred length fish (>10 inches) accounted for a majority of the sample (69%) while memorable length fish (>12 inches) accounted for the rest (31%). No other lake sampled in 2024 produced a catch comprised solely of large (>10 inch) fish. Average relative weight for black crappie (Wr = 103) indicates sampled fish were in good condition.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Whitewood (below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Whitewood, Kingsbury County
LKT-Lake-55-800
2024

Lake Information

Name: Whitewood

County: Kingsbury

Legal Description: T110N- R54W-Sec. 2, 3, 9-21; T110N- R53W-Sec.18-19

Surface Area: 5,815 Acres

Maximum Depth: 7 Feet

Mean Depth: 4 Feet

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Aug 07, 2024	8 net-nights
frame net (std 3/4 in)	Aug 07, 2024	5 net-nights

Common Fish Species Present

Walleye

Common Carp

Yellow Perch

Black Crappie

White Sucker

Northern Pike

Bigmouth Buffalo

White Bass

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	11	1.4	1.3	18		9			
	Black Bullhead	3	0.4	0.3	67		0			
	Black Crappie	2	0.3	0.2	50		50		105	6
	Common Carp	125	15.3	4.7	18	5	0			
	Northern Pike	5	0.6	0.5	100		20		89	3
	Walleye	27	3.4	1.3	37	15	0		93	2
	White Bass	7	0.9	0.6	100		100		88	3
	White Sucker	11	1.4	0.5	100		100			
	Yellow Perch	73	9.1	2.8	77	7	12	6	117	2
frame net (std 3/4 in)	Black Bullhead	3	0.6	0.9	100		100			
	Black Crappie	29	5.8	4.0	100		100		103	2
	Common Carp	28	5.6	3.3	43	15	18	12		
	Northern Pike	9	1.8	0.6	100		56		84	4
	Walleye	4	0.6	0.9	33		0		91	8
	White Sucker	19	3.8	2.3	100		95			
	Yellow Perch	1	0.2	0.3	100		100		91	

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	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS std gill net	Bigmouth Buffalo			0.0	5.8	10.3	4.1	0.3	0.1		1.4	3.14
	Black Bullhead			13.8	12.4	0.3	5.8	14.4	4.0		0.4	7.30
	Black Crappie			0.0	0.0	0.0	0.1	2.6	0.4		0.3	0.49
	Common Carp			19.2	6.3	0.3	1.5	0.9	1.3		15.3	6.40
	Northern Pike			2.0	0.6	0.0	4.0	6.9	2.0		0.6	2.30
	Walleye			4.7	5.6	0.5	7.6	20.5	3.9		3.4	6.60
	White Bass			0.0	0.0	0.0	0.1	1.4	0.3		0.9	0.39
	White Sucker			2.3	1.0	0.8	2.9	6.8	6.5		1.4	3.10
	Yellow Perch			21.0	19.0	9.3	10.0	15.8	6.6		9.1	12.97
frame net (std 3/4 in)	Black Bullhead										0.6	0.60
	Black Crappie										5.8	5.80
	Common Carp										5.6	5.60
	Northern Pike										1.8	1.80
	Walleye										0.6	0.60
	White Sucker										3.8	3.80
	Yellow Perch										0.2	0.20
std exp gill net	Black Bullhead	17.0	25.7									21.35
	Common Carp	3.0	13.7									8.35
	Northern Pike	10.3	3.7									7.00
	Walleye	22.7	11.3									17.00
	White Sucker	7.3	3.3									5.30
	Yellow Perch	79.0	69.7									74.35

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	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net	Bigmouth Buffalo	PSD				0	0	0	50	0		18
		PSD-P				0	0	0	0	0		9
	Black Bullhead	PSD			90	93	0	35	36	97		67
		PSD-P			0	0	0	0	1	6		0
	Black Crappie	PSD						100	95	100		50
		PSD-P						0	71	67		50
		Wr						147	117	110		105
	Common Carp	PSD			65	86	50	8	57	80		18
		PSD-P			8	16	50	0	0	40		0
	Northern Pike	PSD			83	40	0	31	89	94		100
		PSD-P			8	20	0	0	2	19		20
		Wr			85	88		96	83	86		89
	Walleye	PSD			100	29	100	8	74	81		37
		PSD-P			57	9	100	3	1	0		0
		Wr			98	89	92	101	96	85		93
	White Bass	PSD						100	100	100		100
		PSD-P						100	18	100		100
		Wr						106	101	97		88
	White Sucker	PSD			100	100	100	39	100	100		100
		PSD-P			100	100	100	13	100	100		100
	Yellow Perch	PSD			94	35	0	63	90	87		77
		PSD-P			66	11	0	6	48	60		12
		Wr			95	100	112	113	102	97		117
frame net (std 3/4 in)	Black Bullhead	PSD										100
		PSD-P										100
	Black Crappie	PSD										100
		PSD-P										100
		Wr										103
	Common Carp	PSD										43
		PSD-P										18
	Northern Pike	PSD										100
		PSD-P										56
		Wr										84

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
frame net (std 3/4 in)	Walleye	PSD										33
		PSD-P										0
		Wr										91
	White Sucker	PSD										100
		PSD-P										95
	Yellow Perch	PSD										100
		PSD-P										100
		Wr										91
std exp gill net	Black Bullhead	PSD	20	61								
		PSD-P	0	0								
	Common Carp	PSD	78	39								
		PSD-P	44	15								
	Northern Pike	PSD	32	64								
		PSD-P	0	0								
		Wr	89	81								
	Walleye	PSD	87	94								
		PSD-P	12	24								
		Wr	99	92								
	White Sucker	PSD	100	100								
		PSD-P	36	100								
	Yellow Perch	PSD	64	75								
		PSD-P	5	8								
		Wr	97	88								

Fish Condition

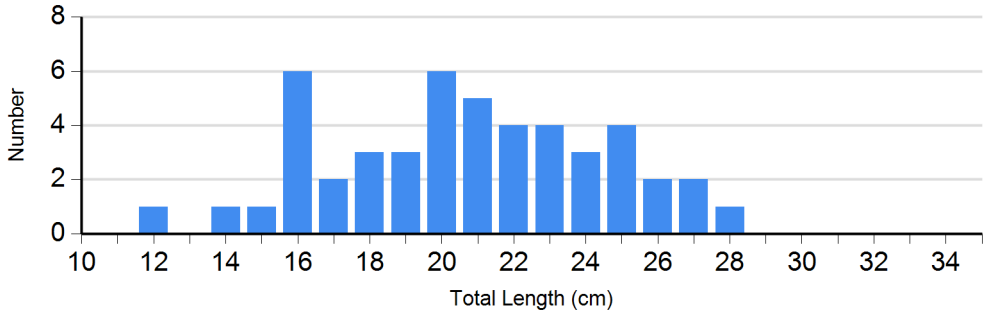
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2024	0		0		20	105 (1.7)	9	97 (3.0)
Northern Pike Gill Net	2020	22	96 (1.4)	10	96 (2.0)	0		0	
	2021	6	87 (1.4)	48	83 (1.0)	1	82	0	
	2022	1	78	12	81 (1.8)	3	106 (2.7)	0	
	2024	0		4	89 (3.1)	1	92	0	
Walleye Gill Net	2020	56	101 (1.0)	3	101 (3.6)	1	93	1	95
	2021	42	93 (0.8)	121	97 (0.8)	0		1	72
	2022	6	80 (5.2)	25	87 (1.0)	0		0	
	2024	17	96 (1.8)	10	89 (1.6)	0		0	
White Bass Gill Net	2020	0		0		0		1	106
	2021	0		9	103 (1.8)	0		2	94 (2.1)
	2022	0		0		2	97 (0.0)	0	
	2024	0		0		7	88 (2.6)	0	
Yellow Perch Gill Net	2020	30	113 (2.2)	45	113 (1.7)	4	118 (1.8)	1	105
	2021	13	103 (3.1)	52	99 (0.7)	59	103 (0.9)	2	105 (3.2)
	2022	7	104 (3.7)	14	98 (1.7)	31	94 (1.8)	1	92
	2024	17	119 (4.2)	47	117 (1.5)	9	111 (2.4)	0	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Black Bullhead
Gear: AFS std gill net



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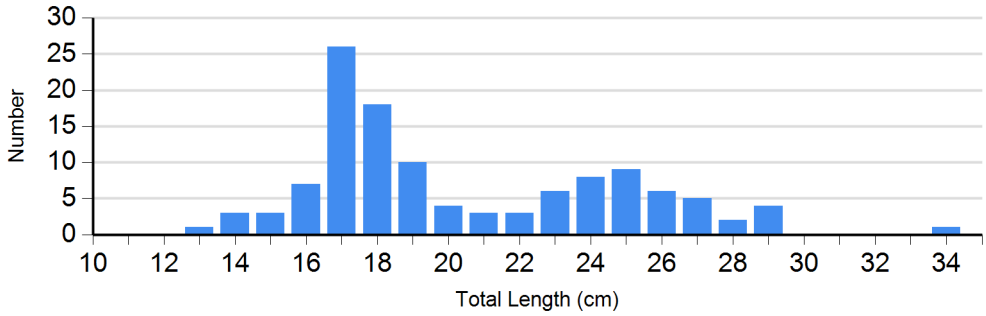
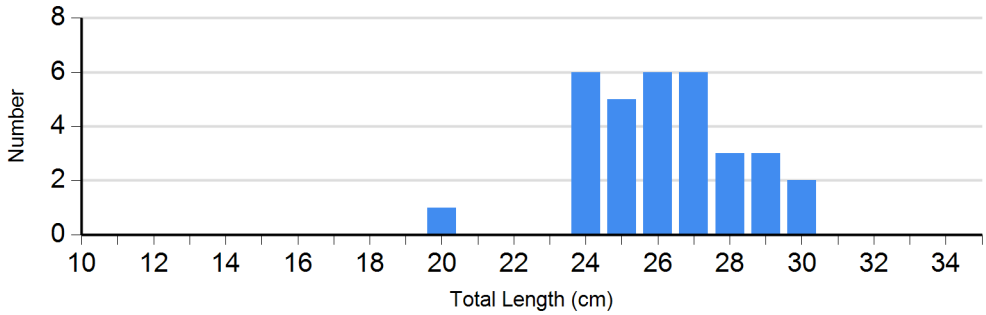
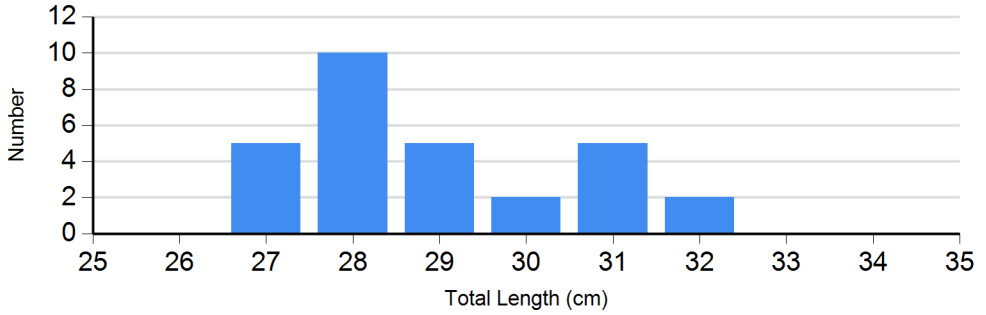


2021



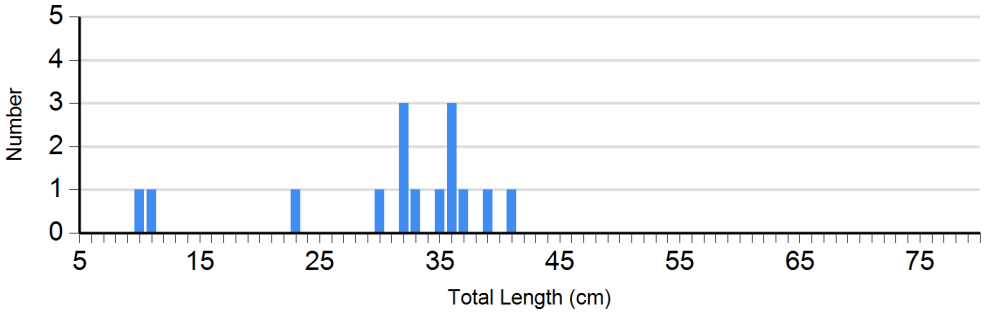
2022

Species: Black Crappie
Gear: frame net (std 3/4 in)



2024

Species: Common Carp
Gear: AFS std gill net



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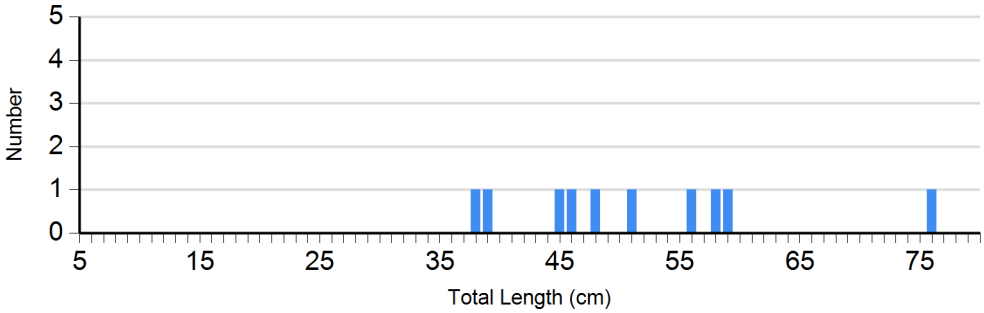

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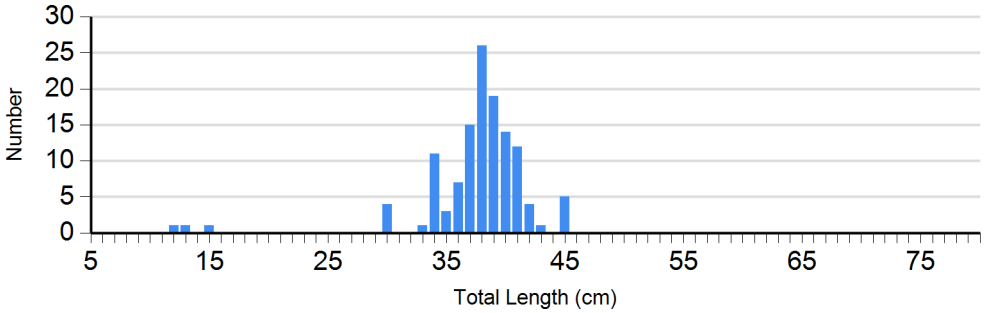
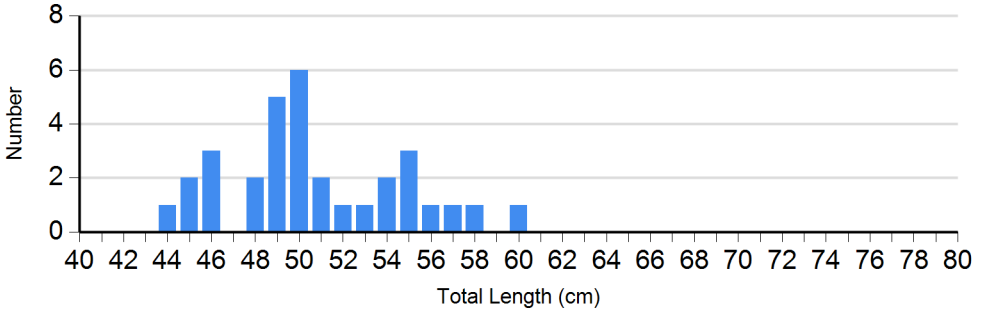


2024

Species: Northern Pike
Gear: AFS std gill net



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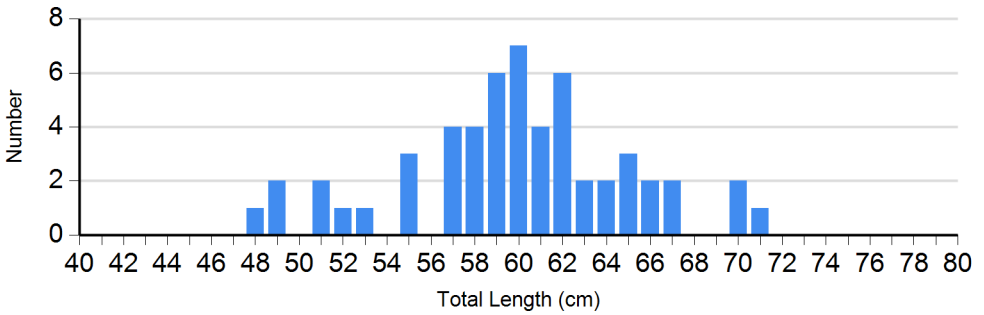

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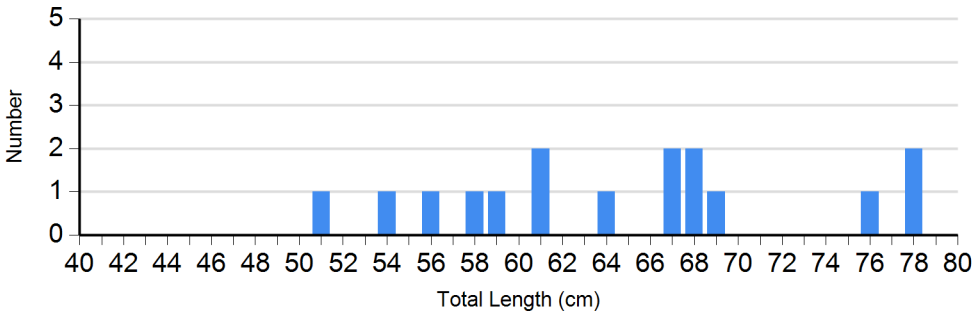
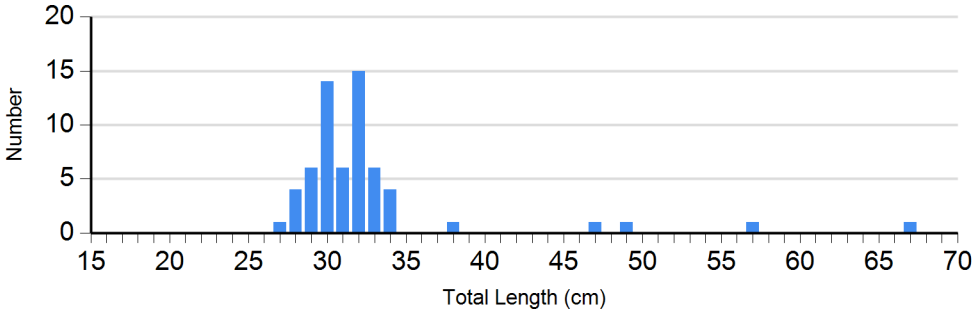


2022

Species: Walleye
Gear: AFS std gill net



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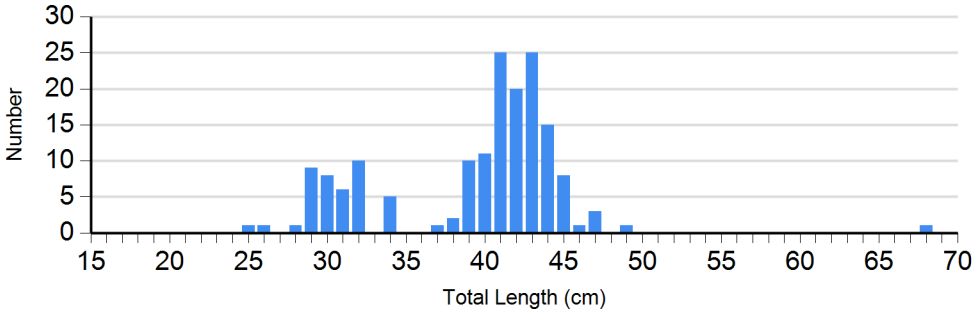

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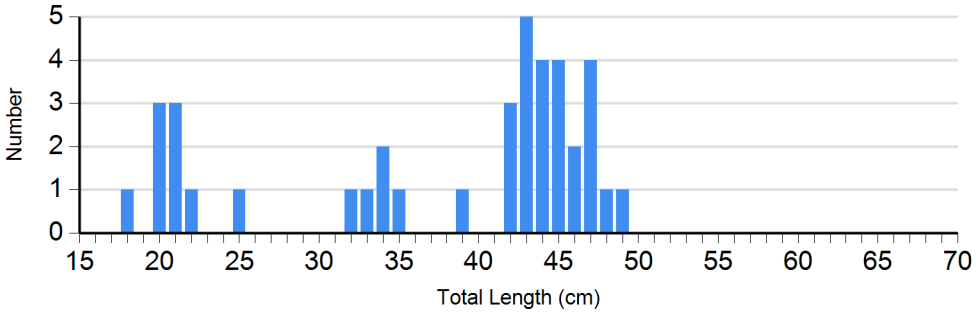

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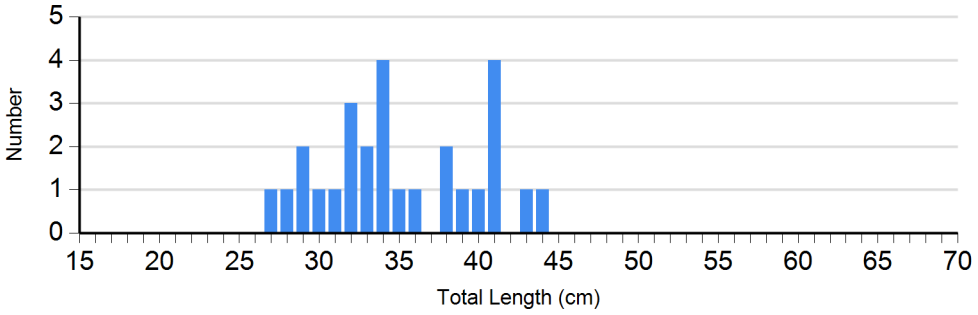
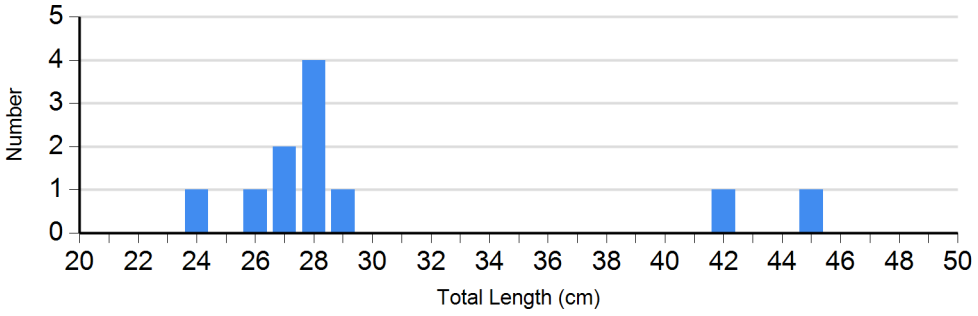


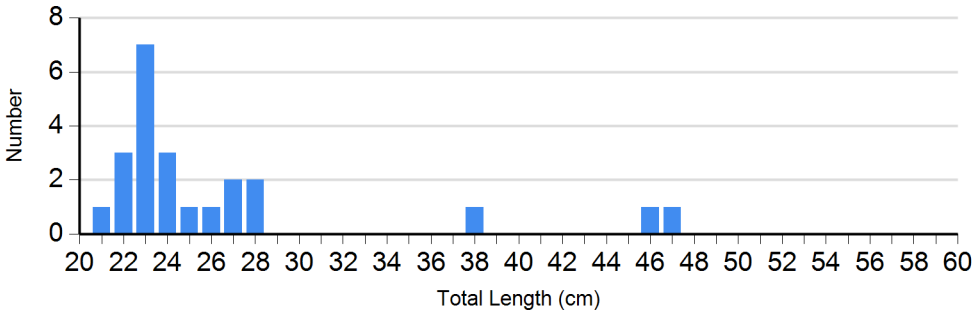
2024

Species: White Bass
Gear: AFS std gill net



2021

Species: White Sucker
Gear: AFS std gill net



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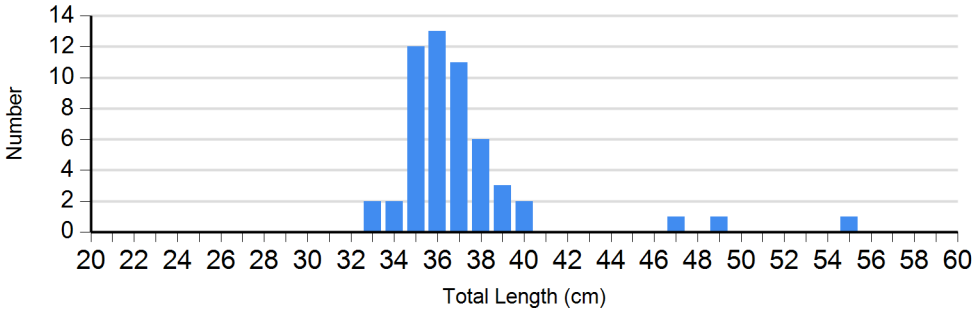
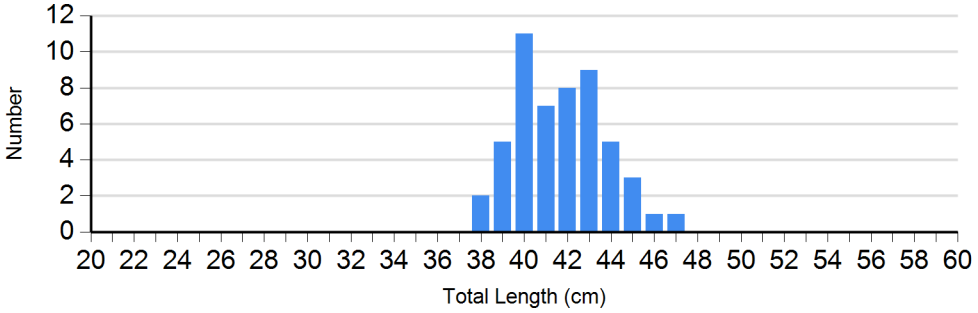


2021



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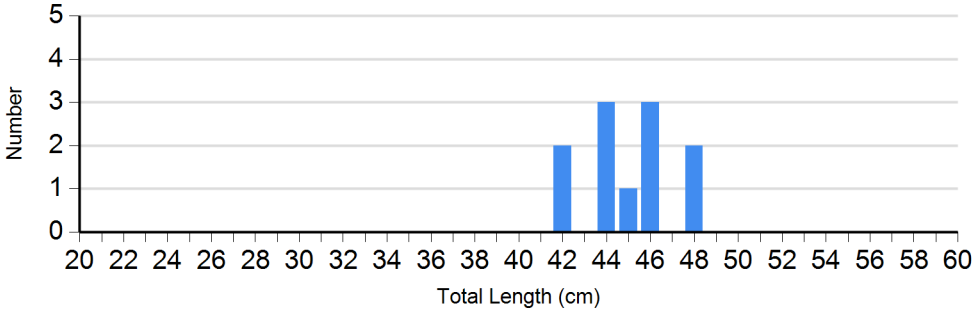
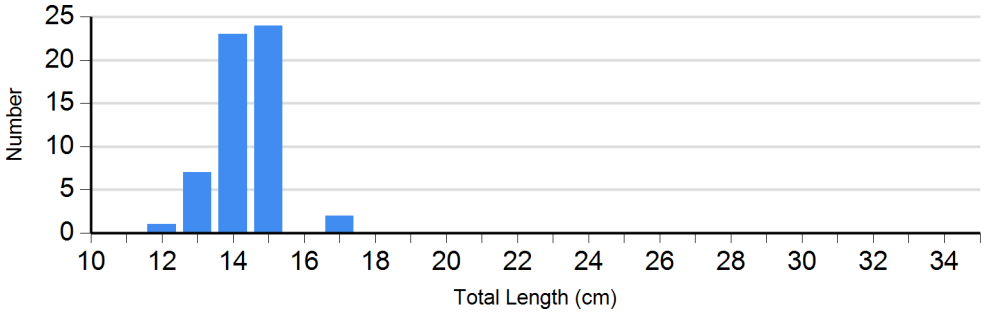
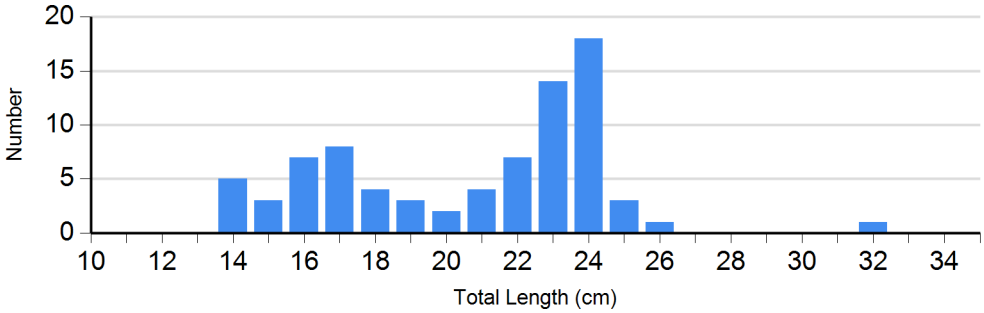


2024

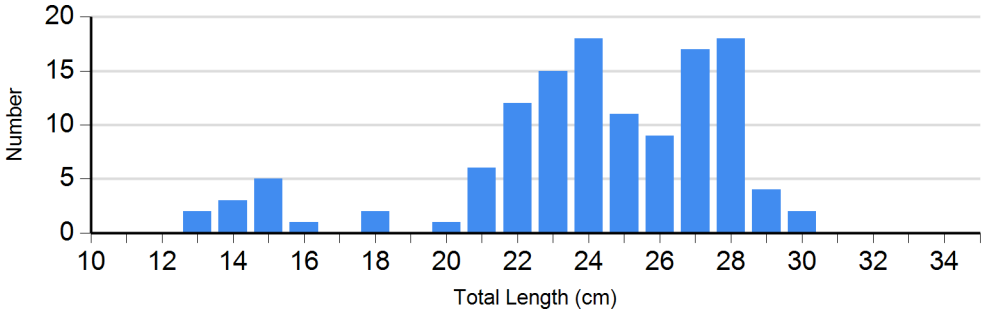
Species: Yellow Perch
Gear: AFS std gill net



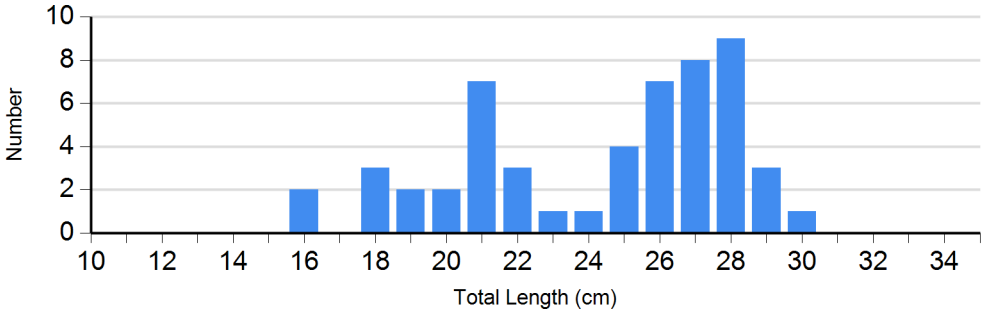
2019



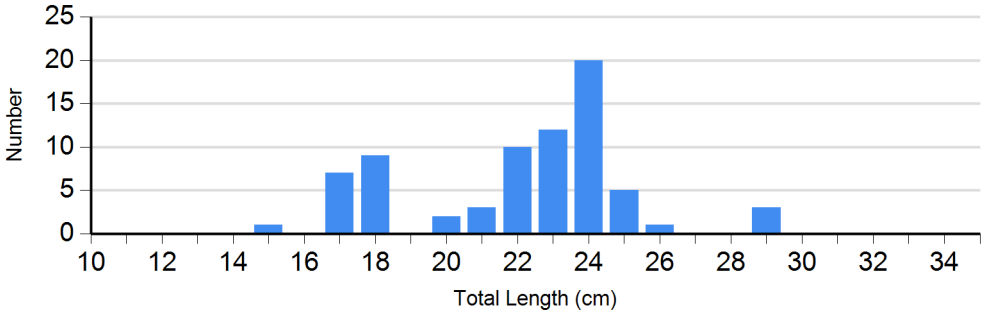
2020



2021



2022

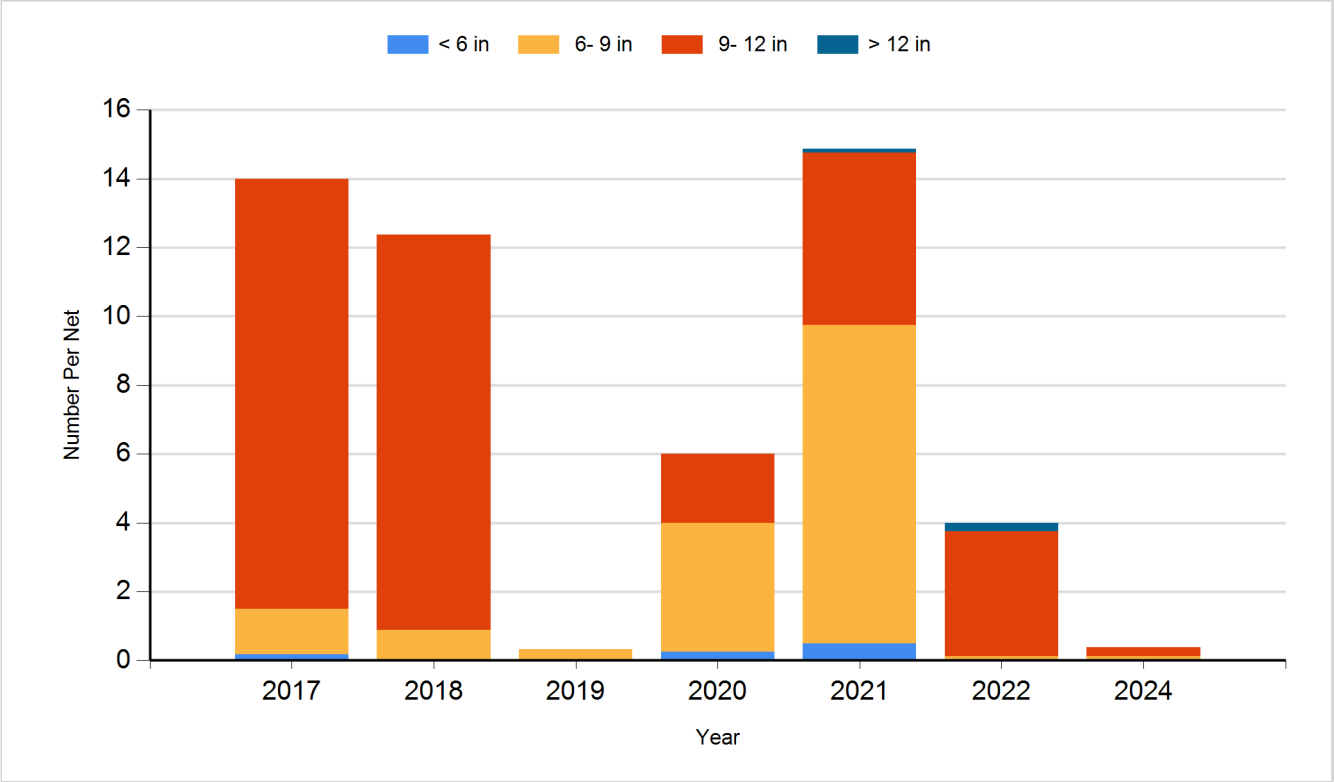


2024

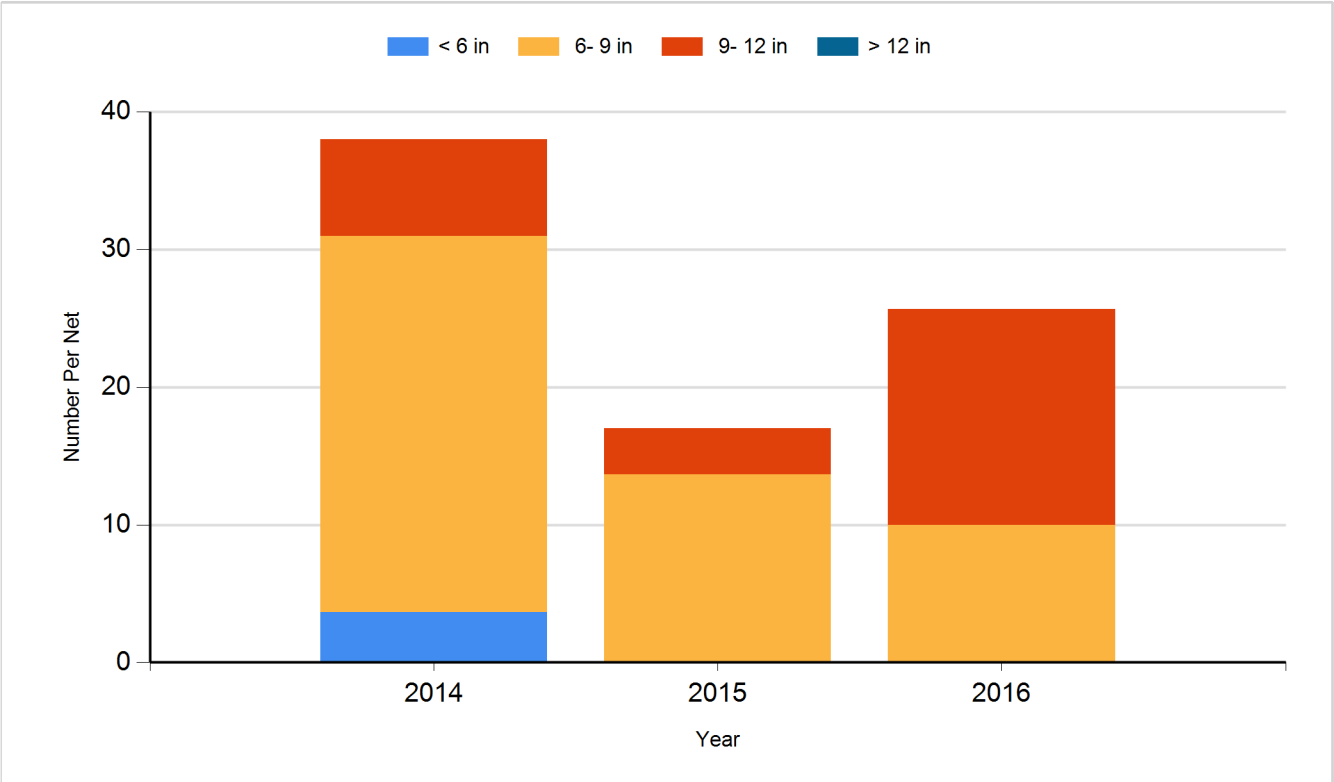
Historic Fish Sizes and Relative Abundance

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

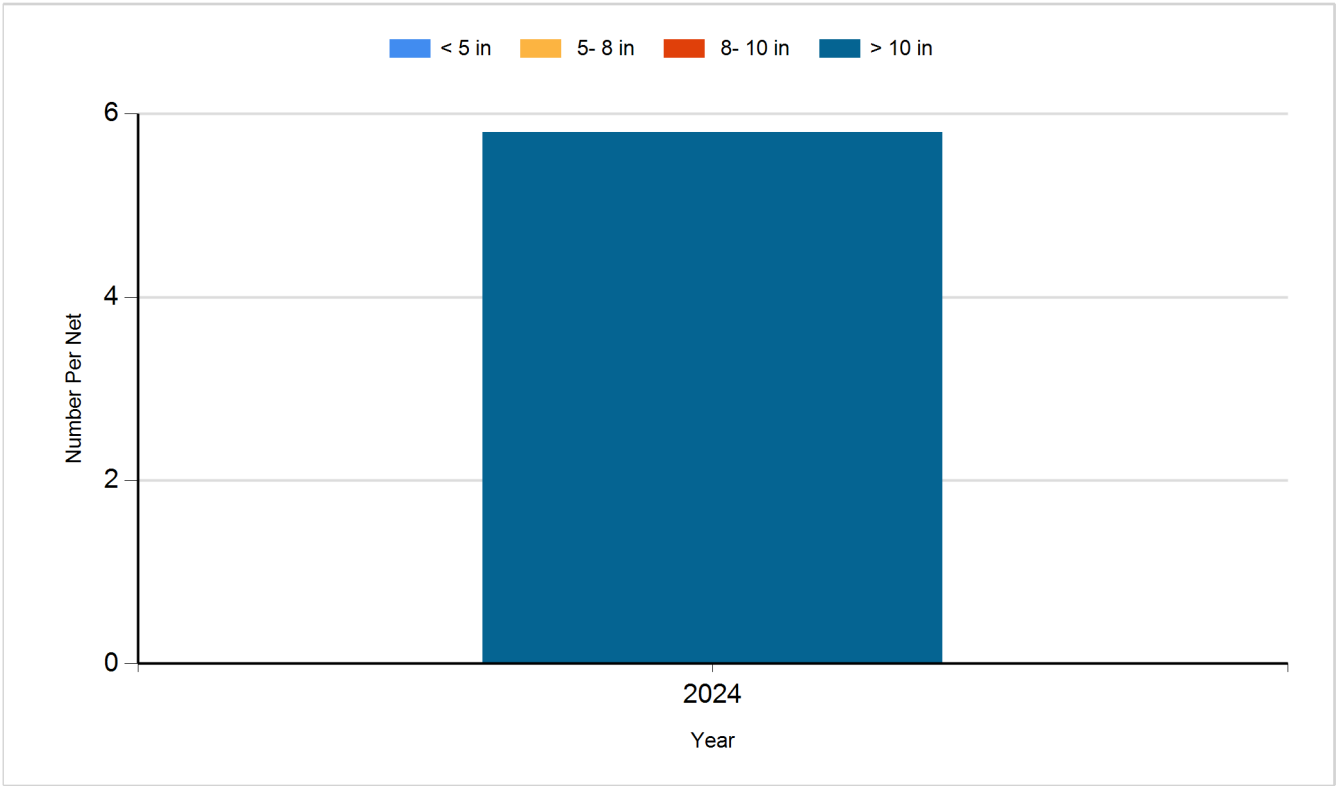
Species: Black Bullhead
Gear: AFS std gill net



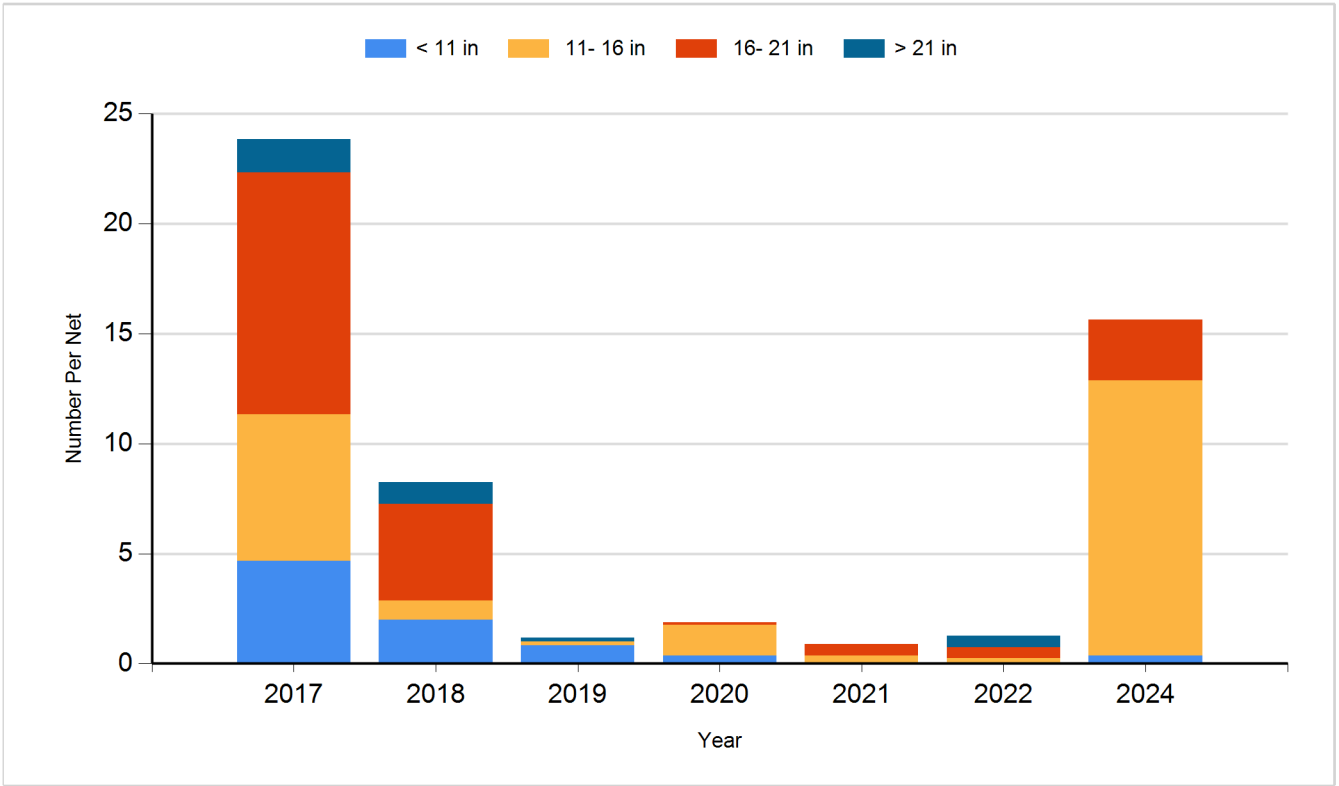
Species: Black Bullhead
Gear: std exp gill net



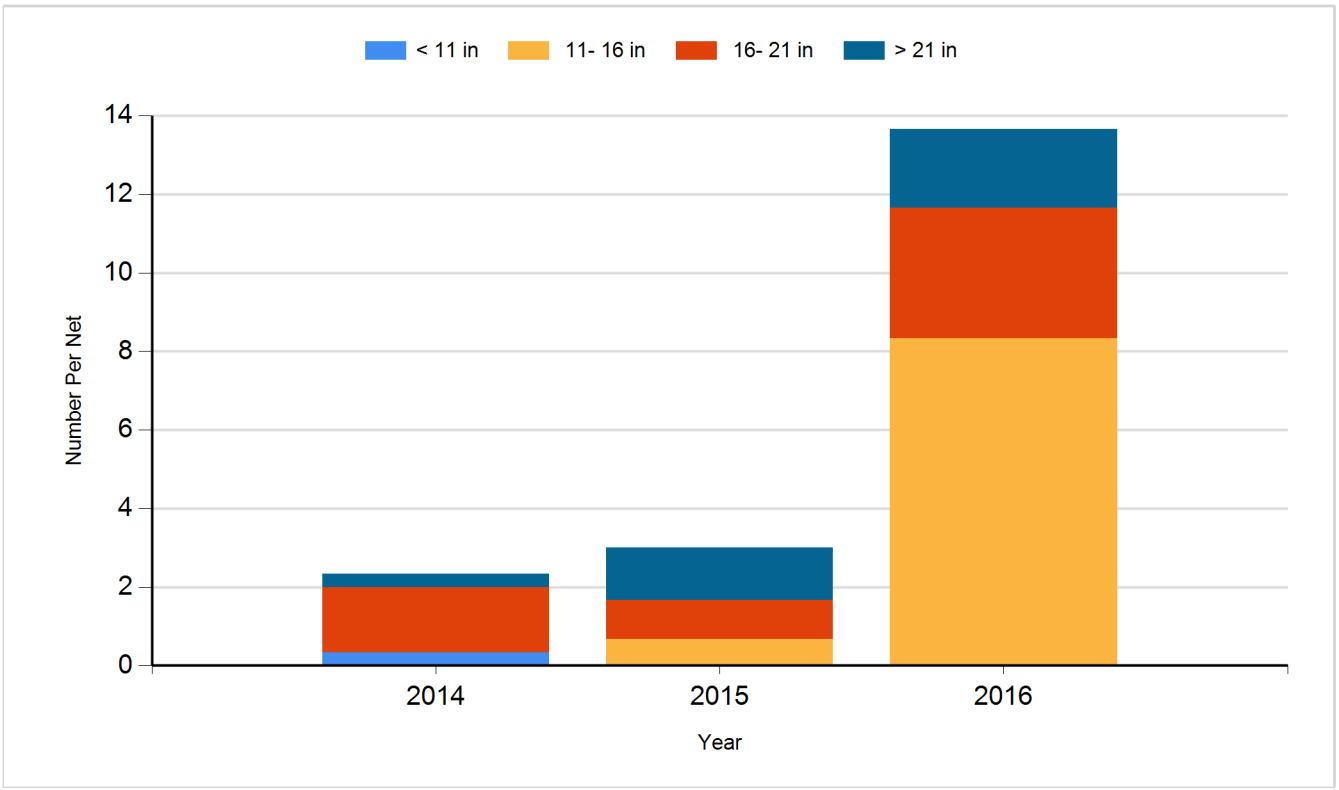
Species: Black Crappie
Gear: frame net (std 3/4 in)



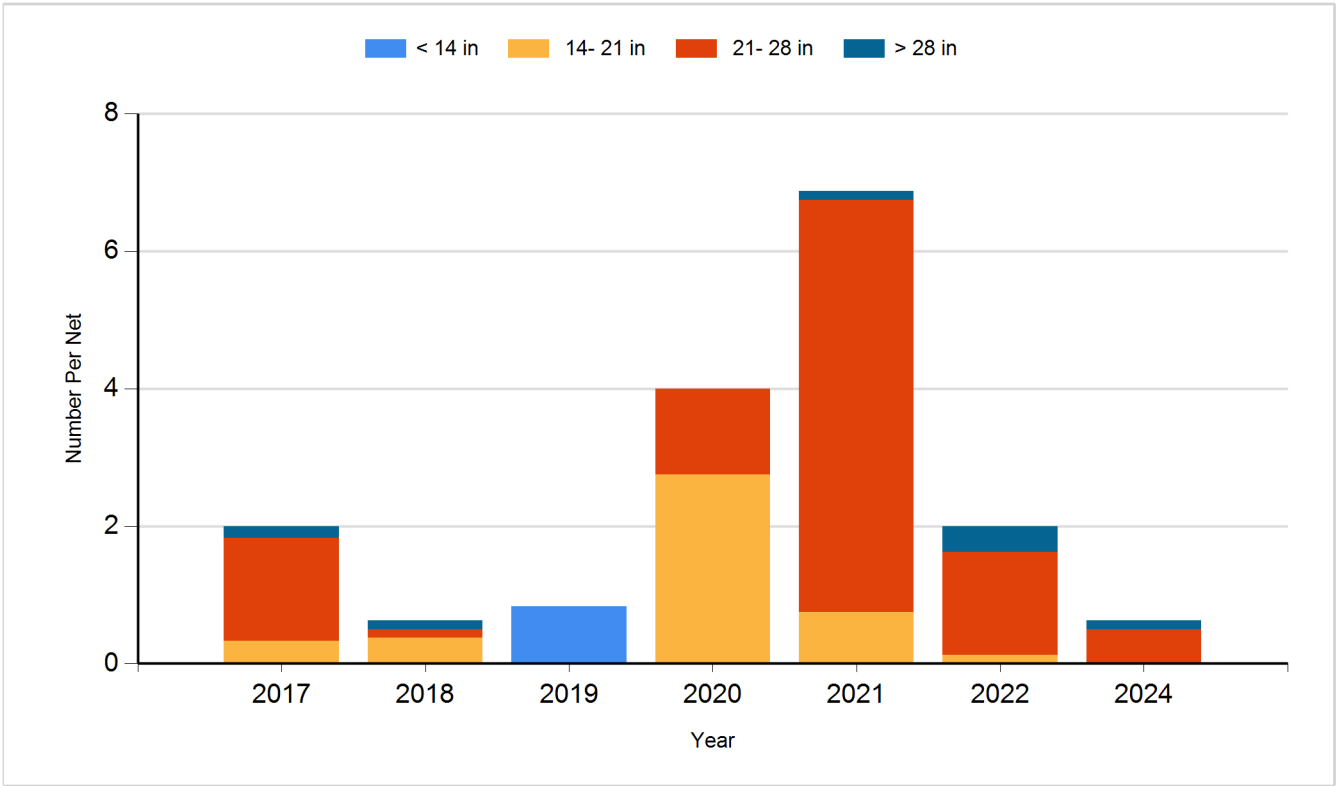
Species: Common Carp
Gear: AFS std gill net



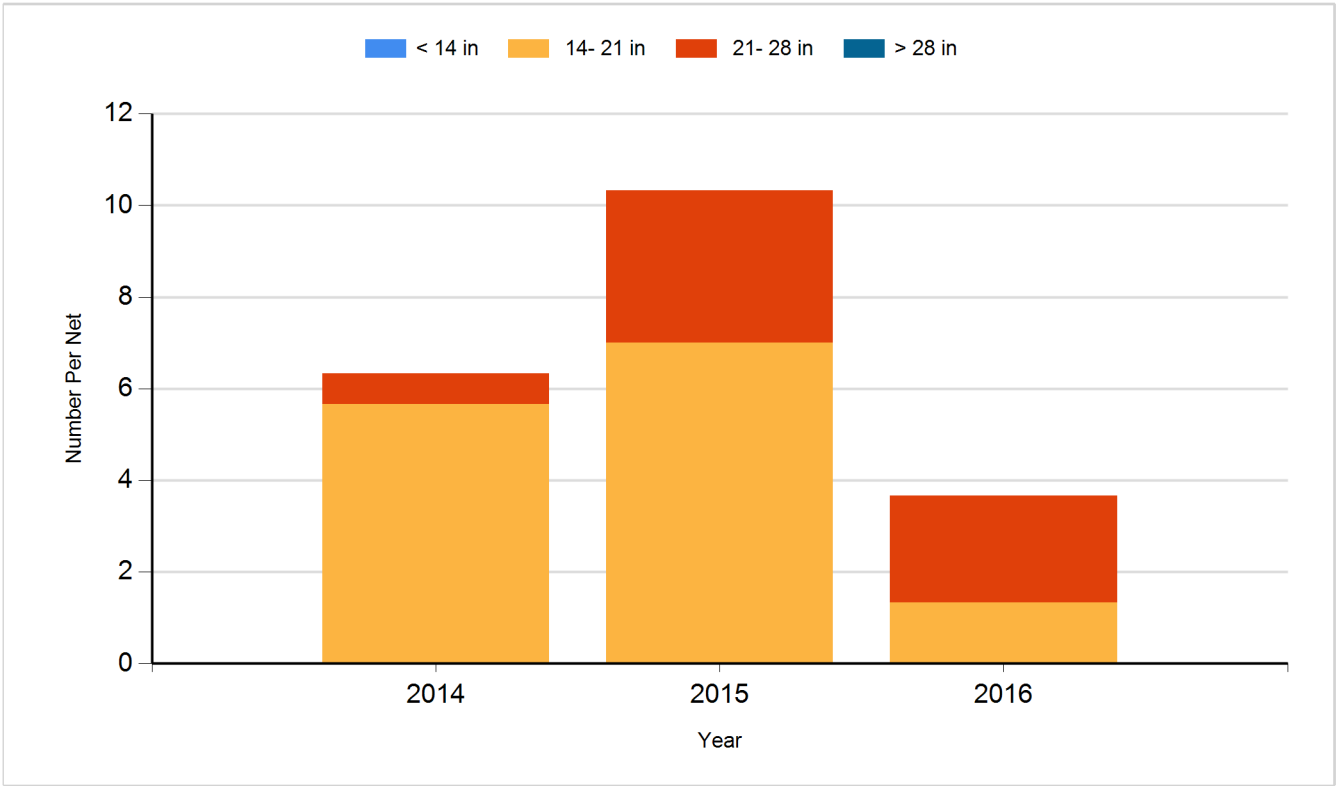
Species: Common Carp
Gear: std exp gill net



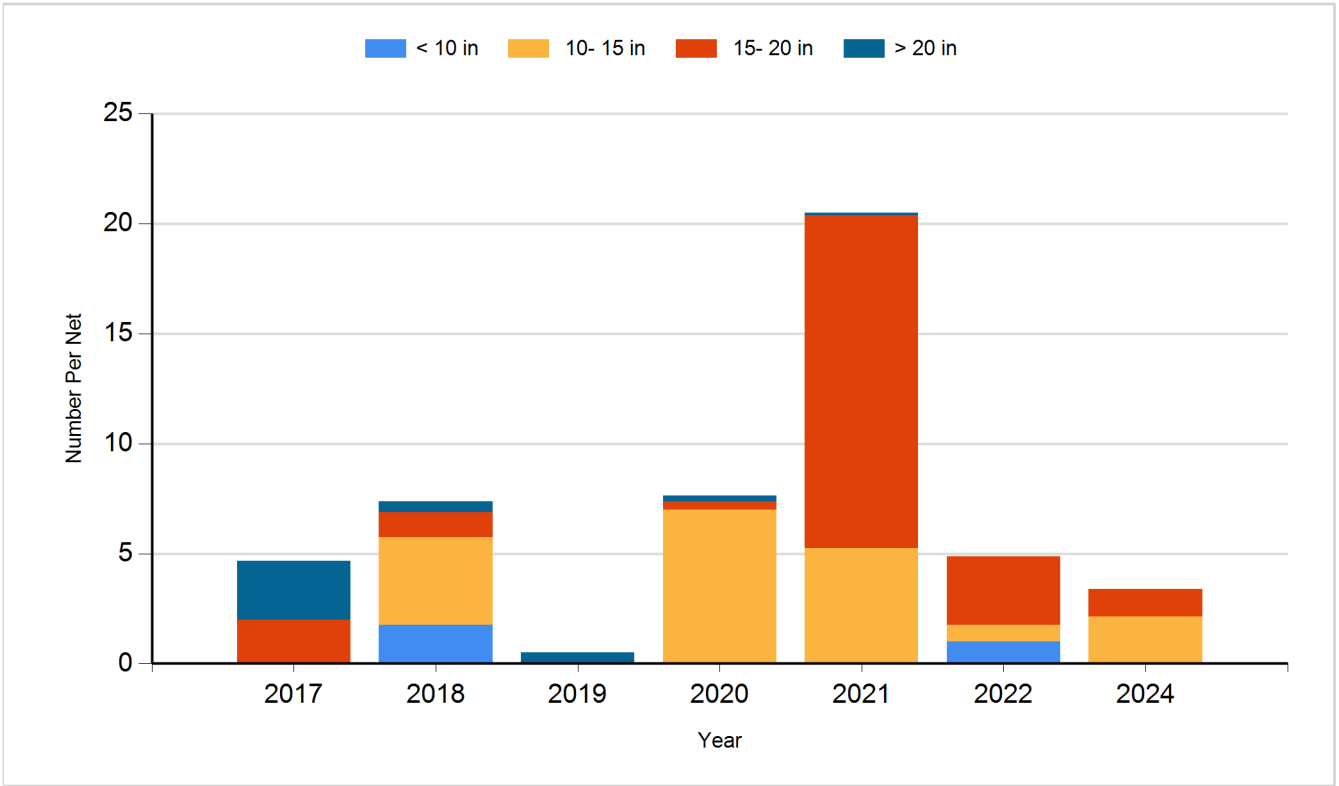
Species: Northern Pike
Gear: AFS std gill net



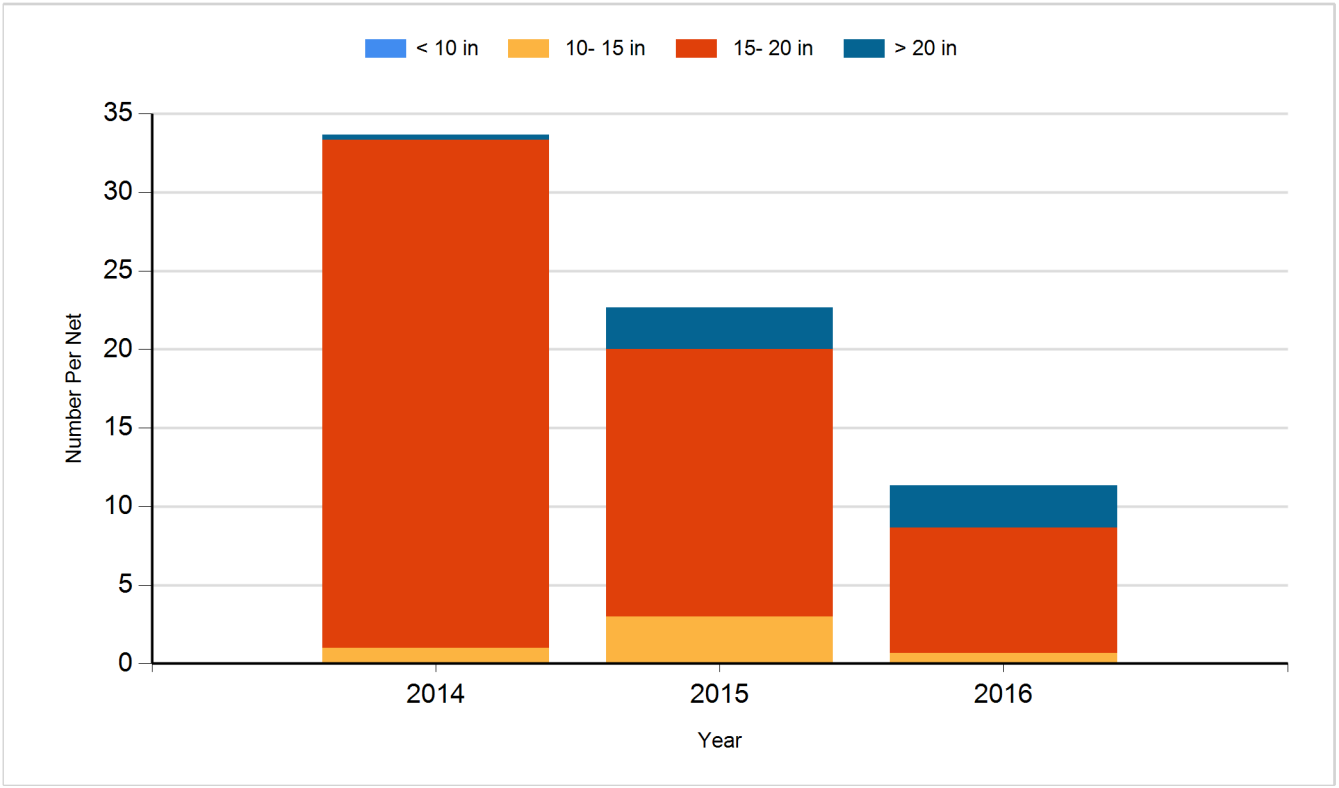
Species: Northern Pike
Gear: std exp gill net



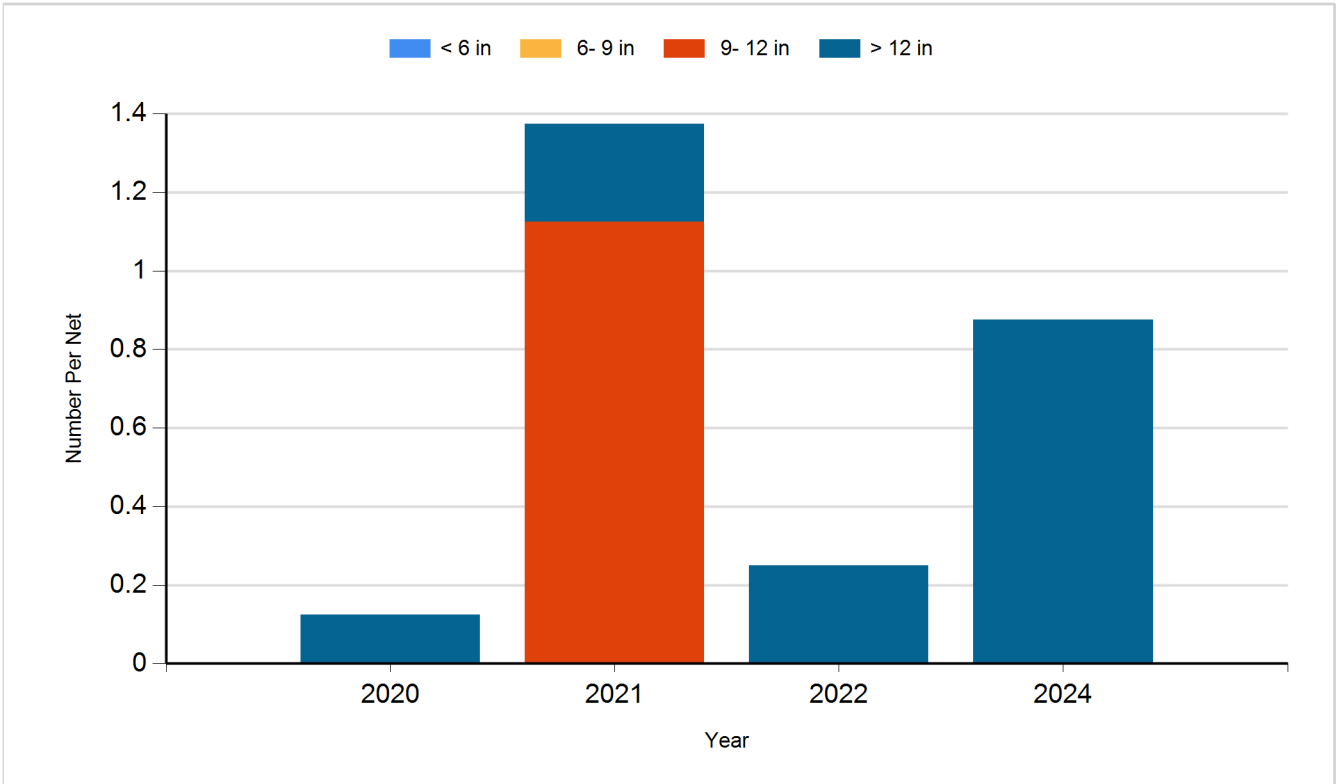
Species: Walleye
Gear: AFS std gill net



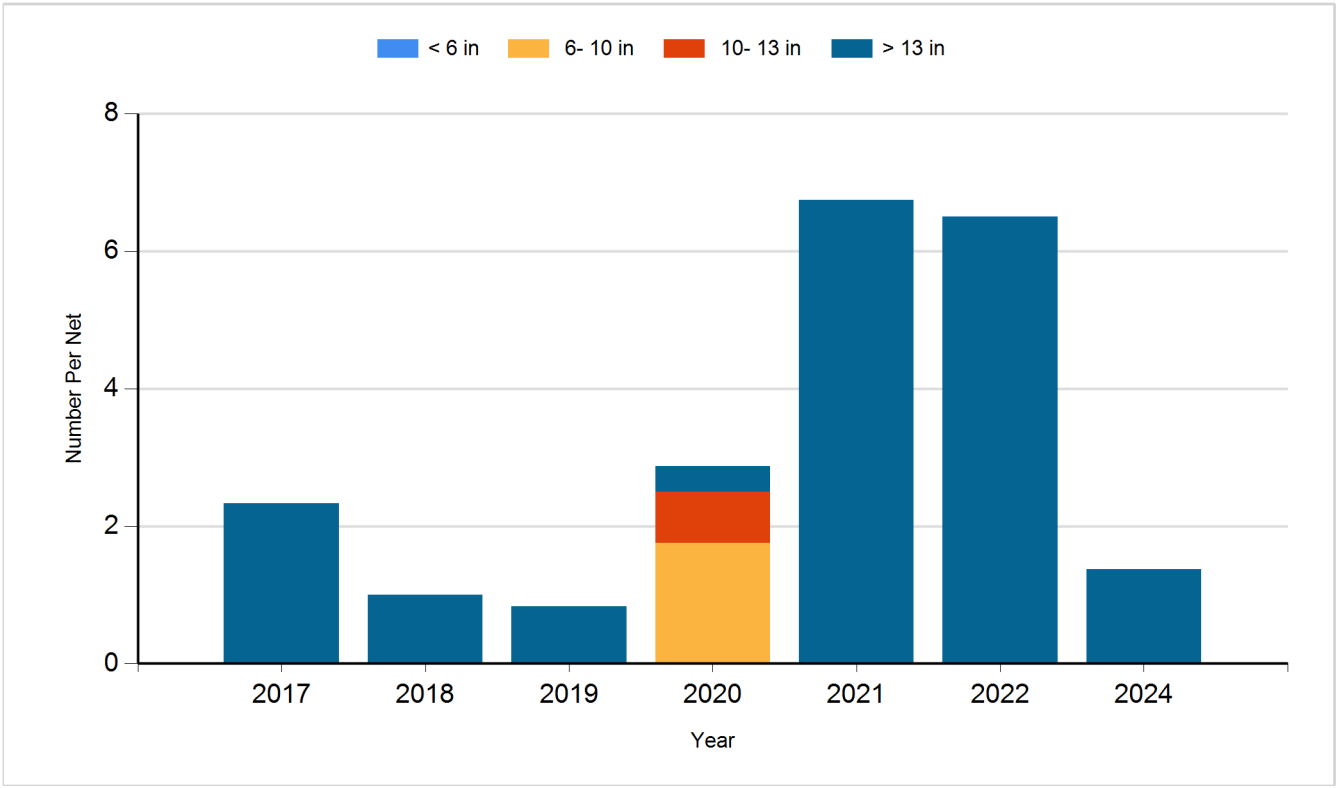
Species: Walleye
Gear: std exp gill net



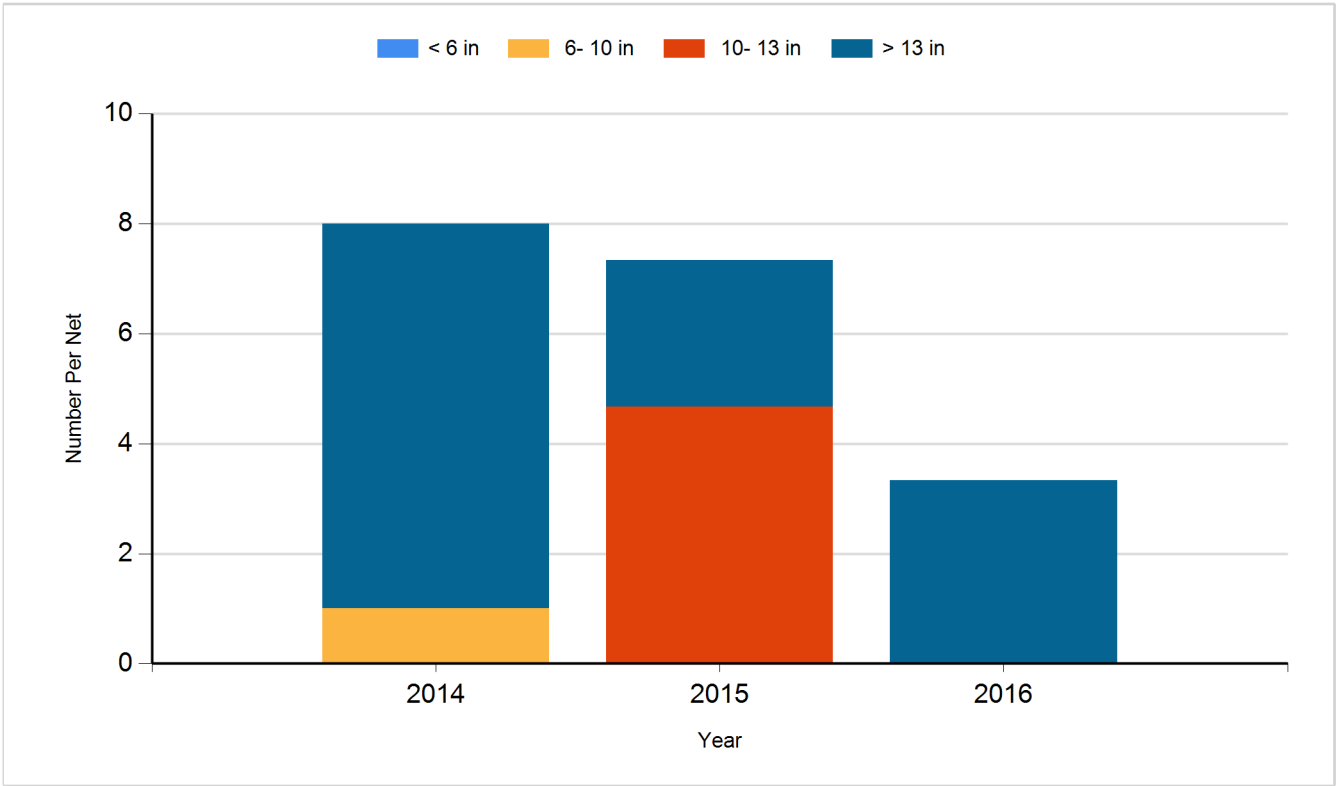
Species: White Bass
Gear: AFS std gill net



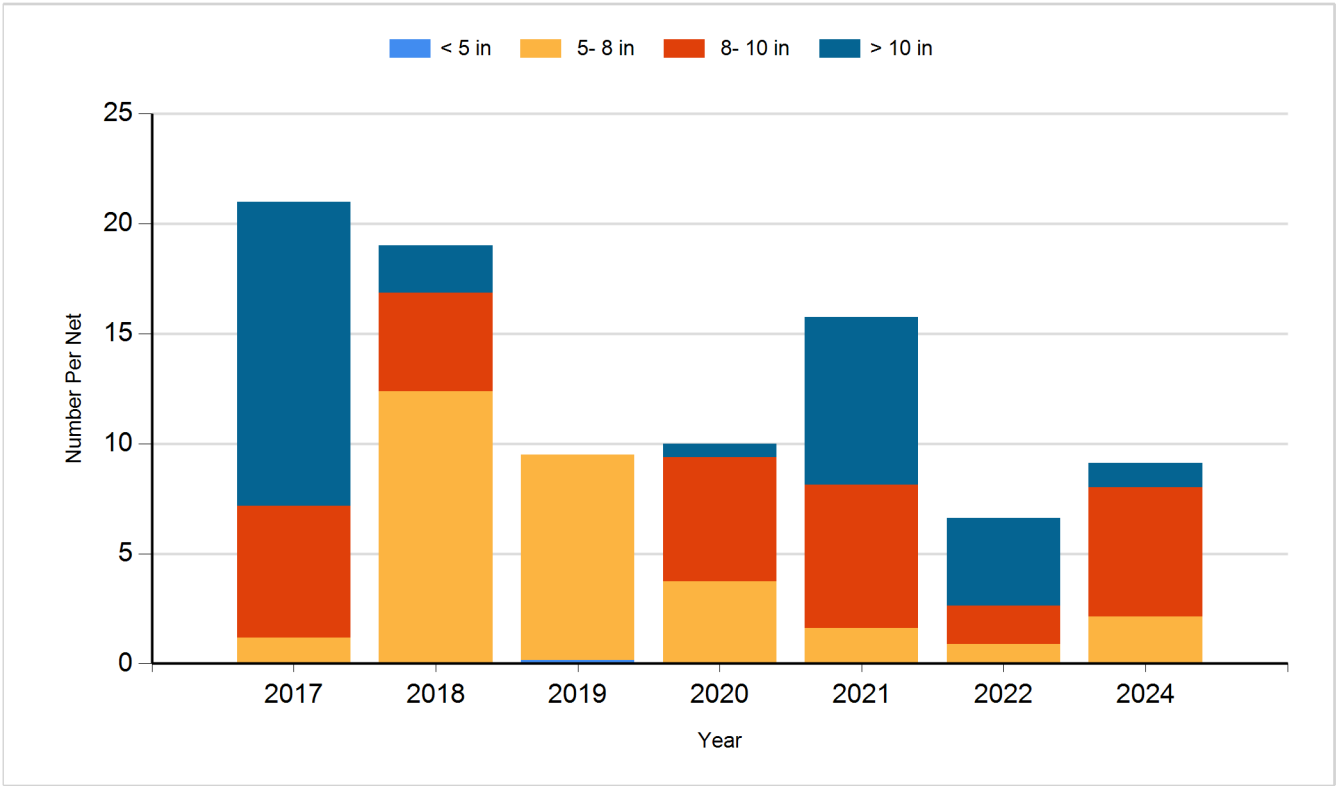
Species: White Sucker
Gear: AFS std gill net



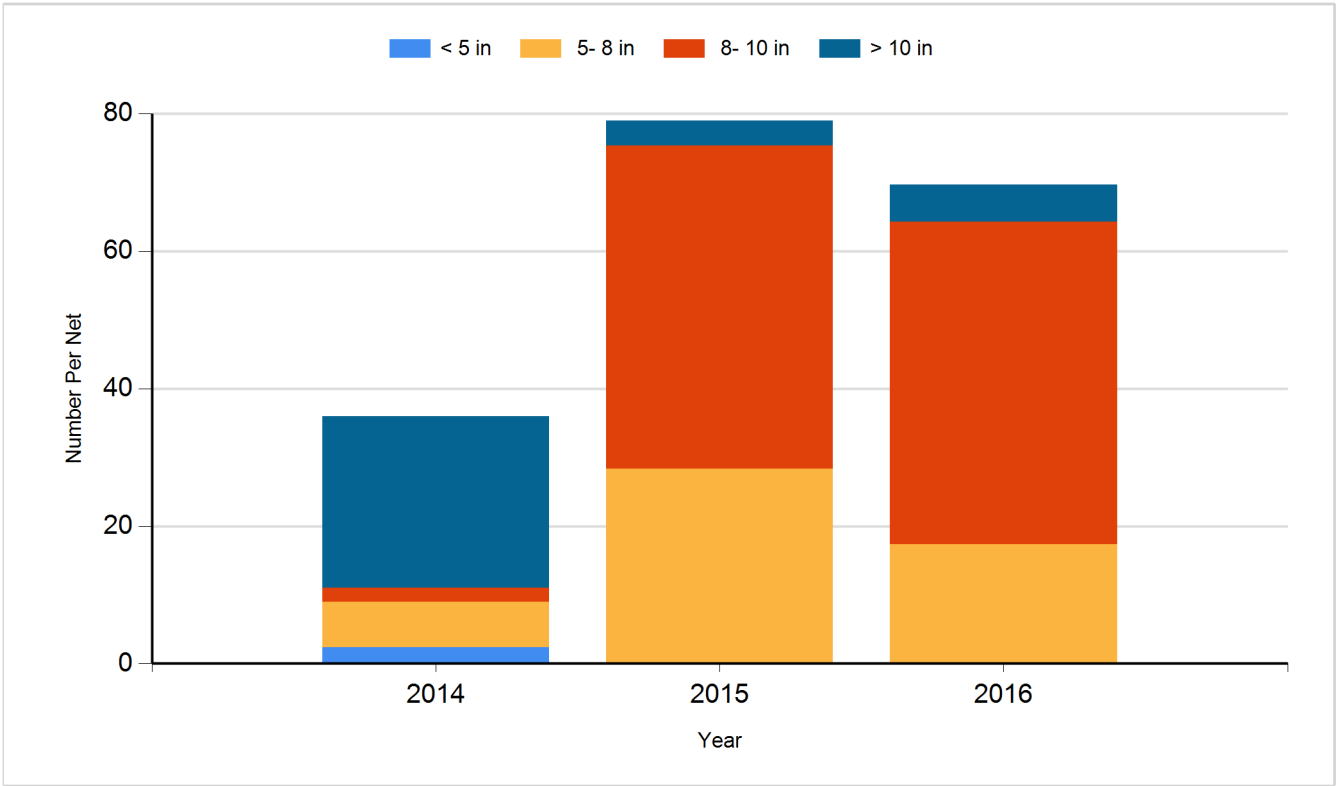
Species: White Sucker
Gear: std exp gill net



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
2019	Walleye	Fry	4,500,000
2021	Walleye	Fry	4,600,000
2022	Walleye	Fry	4,600,000
2023	Walleye	Fry	5,000,000
2024	Walleye	Juvenile	387,425