Scott Lake Survey Summary

Scott Lake, located 1 mile north and 2 miles west of Hartford, SD, is managed as a walleye and yellow perch fishery; other fish species (e.g., black bullhead, common carp, and saugeye) are also present.

- **Walleye**. Gill nets produced a catch rate of 5.5 walleye per net in 2024. Relative abundance was similar to the previous sample year (CPUE = 5.0 fish per net in 2022) and the long term mean (CPUE = 5.5 fish per net). Sampled fish ranged from 10.6 to 25.3 inches in length with most (91%) measuring >15 inches. Just a few other lakes in the region produced more of these quality sized (>15 inches) and larger fish. This above average catch rate is likely the result of frequent stocking (trap and transfer) efforts. An average relative weight score of 96 indicates sampled fish were in excellent condition.

- **Yellow Perch**. Sampling efforts produced very few yellow perch in 2024 (CPUE = 0.8 fish per gill net). Catches were lower than the previous sample year (CPUE = 3.7 fish per net in 2022) and the long term mean (CPUE = 3.3 fish per net). Netted fish ranged from 8.4 to 10.2 inches in length and were in excellent condition (Wr = 106). There appears to be little natural production of yellow perch in Scott Lake, and therefore, the fishery is heavily dependent of stocking of larger juvenile and adult fish when available. Fisheries personnel stocked some additional yellow perch late in the fall of 2024 in order to increase abundance.

- **Black Bullhead.** Gill net catch of black bullheads showed a steep decline from numbers observed since 2017. Hopefully, a reduction in bullhead abundance will coincide with an increase in other gamefish populations. The reduction in bullhead numbers might also mean decreased forage abundance for walleyes which often coincides with higher catchability or simply a better walleye bite.

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

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Scott, Minnehaha County
LBS-Lake-65-000
2024

Lake Information

Name: Scott

County: Minnehaha

Legal Description: T102-R51-Sec. 7-8

Surface Area: 115 Acres

Maximum Depth: 11 Feet

Mean Depth: 4 Feet

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 25, 2024	4 net-nights

Common Fish Species Present

Yellow Perch

Walleye

Black Bullhead

Northern Pike

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	Black Bullhead	72	1.8	1.8	0		0			
	Northern Pike	4	1.0	0.7	100		0		87	9
	Walleye	22	5.5	1.9	91		23	15	96	4
	Yellow Perch	3	0.8	0.8	100		33		106	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.

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

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS std frame net	Black Bullhead			271.4								271.40
	Black Crappie			1.6								1.60
	Bluegill			0.0								0.00
	Green Sunfish			0.8								0.80
	Orangespotted Sunfish			0.0								0.00
	Sunfish Hybrid			5.2								5.20
	Walleye			0.8								0.80
	Yellow Perch			2.0								2.00
AFS std gill net	Black Bullhead			102.3	92.8	63.7			67.7		1.8	65.66
	Black Crappie			0.5	0.0	0.3			0.3		0.0	0.22
	Common Carp			0.0	0.0	0.0			0.3		0.0	0.06
	Northern Pike			0.3	0.0	1.3			1.0		1.0	0.72
	O. Spotted X Gr. Sunfish Hybrid			0.0	0.0	0.0			0.0		0.0	0.00
	Orangespotted Sunfish			0.0	0.0	0.0			0.0		0.0	0.00
	Pumpkinseed			0.8	0.0	0.0			0.0		0.0	0.16
	Walleye			7.5	6.8	2.7			5.0		5.5	5.50
	Yellow Perch			5.0	6.5	0.7			3.7		0.8	3.34
frame net (std 3/4 in)	Black Bullhead		448.6									448.60
	Green Sunfish		1.4									1.40
	Yellow Perch		0.6									0.60
std exp gill net	Black Bullhead	88.7	327.0									207.85
	Black Crappie	0.7	0.0									0.35
	Northern Pike	0.0	0.3									0.15
	Walleye	5.7	0.0									2.85
	Yellow Perch	26.0	31.7									28.85

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 frame net	Black Bullhead	PSD			3							
		PSD-P			0							
	Walleye	PSD			75							
		PSD-P			50							
		Wr			80							
	Yellow Perch	PSD			50							
		PSD-P			0							
		Wr			91							
AFS std gill net	Black Bullhead	PSD			3	4	6			1		0
		PSD-P			0	0	0			0		0
	Northern Pike	PSD			100		25			100		100
		PSD-P			0		0			0		0
		Wr			92		89			82		87
	Walleye	PSD			90	67	100			100		91
		PSD-P			60	19	25			40		23
		Wr			95	98	93			94		96
	Yellow Perch	PSD			55	54	100			18		100
		PSD-P			5	0	0			0		33
		Wr			101	96	105			99		106
frame net (std 3/4 in)	Black Bullhead	PSD		1								
		PSD-P		0								
	Yellow Perch	PSD		0								
		PSD-P		0								
		Wr		106								
std exp gill net	Black Bullhead	PSD	12	1								
		PSD-P	0	0								
	Northern Pike	PSD		0								
		PSD-P		0								
		Wr		97								
	Walleye	PSD	88									
		PSD-P	0									
		Wr	91									

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
std exp gill net	Yellow Perch	PSD	0	2								
		PSD-P	0	0								
		Wr	104	101								

Fish Condition

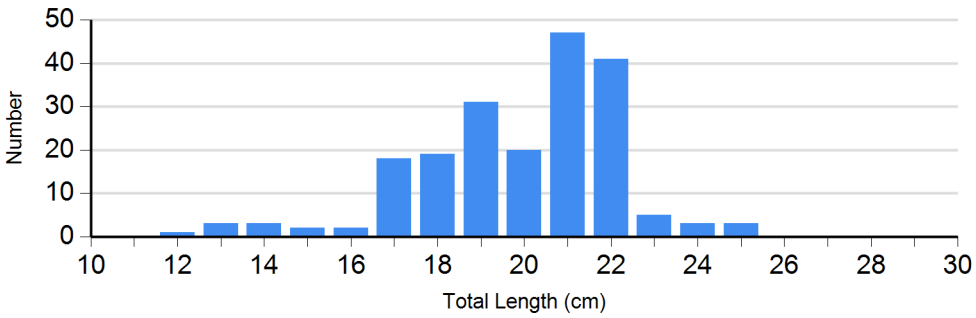
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Northern Pike Gill Net	2022	0		3	82 (4.1)	0		0	
	2024	0		4	87 (7.1)	0		0	
Walleye Gill Net	2022	0		9	94 (2.3)	4	94 (1.2)	2	89 (5.6)
	2024	2	107 (6.2)	15	99 (3.6)	3	83 (16.2)	2	90 (1.1)
Yellow Perch Gill Net	2022	9	98 (3.2)	2	104 (5.9)	0		0	
	2024	0		2	109 (3.2)	1	100	0	

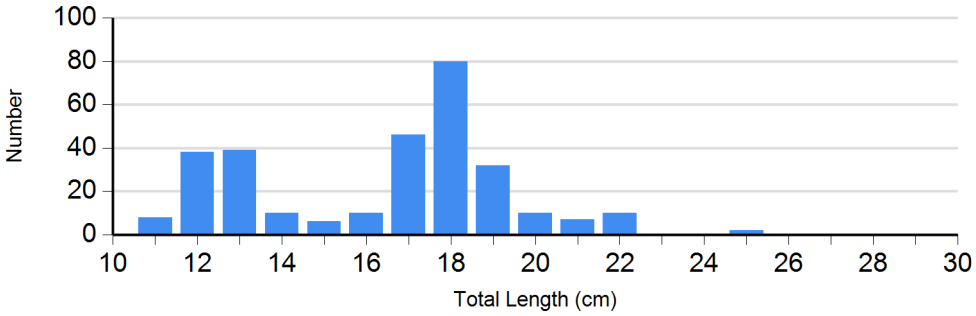
Length Frequency Distribution

Length frequency histogram of species sampled by year.

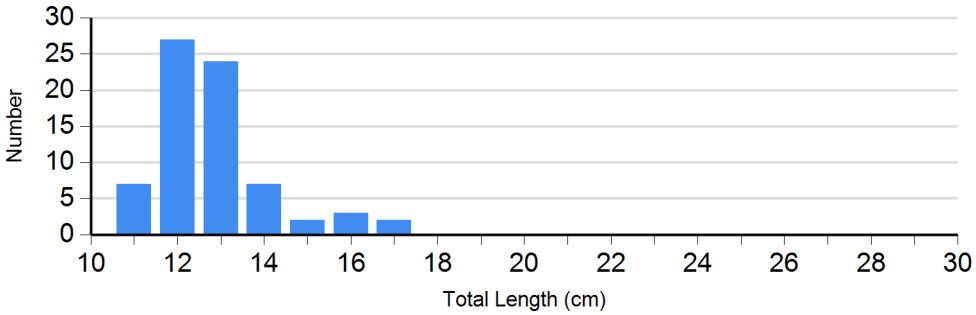
Species: Black Bullhead
Gear: AFS std gill net



2019

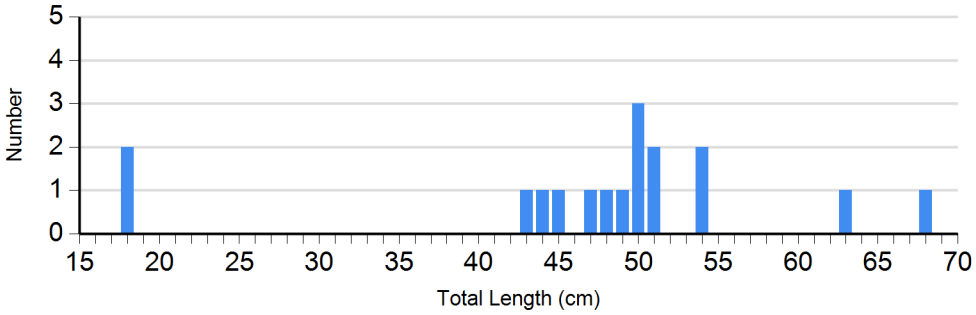


2022

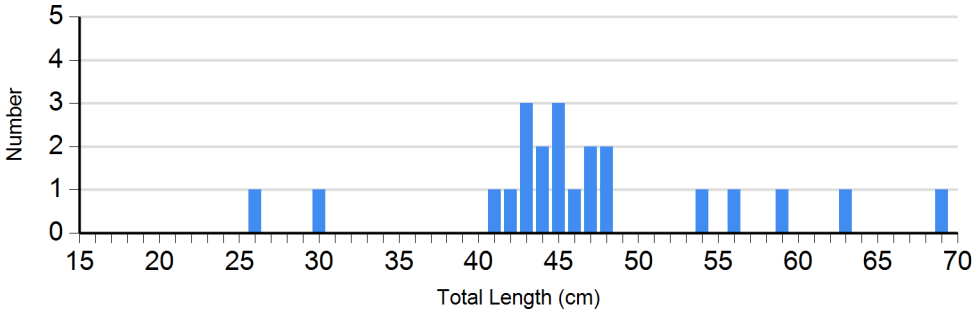


2024

Species: Walleye
Gear: AFS std gill net

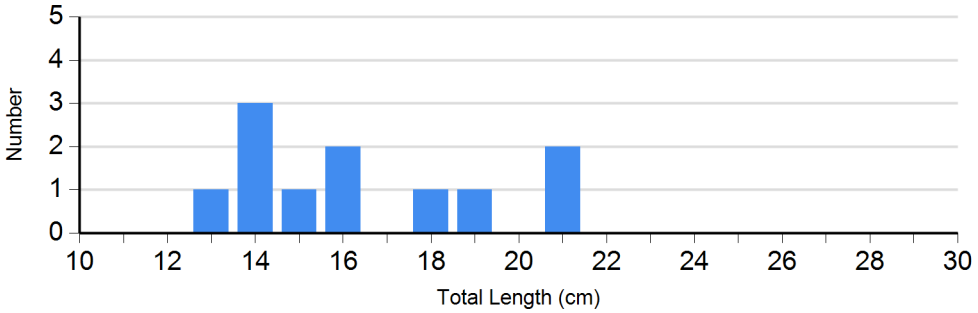


2022



2024

Species: Yellow Perch
Gear: AFS std gill net

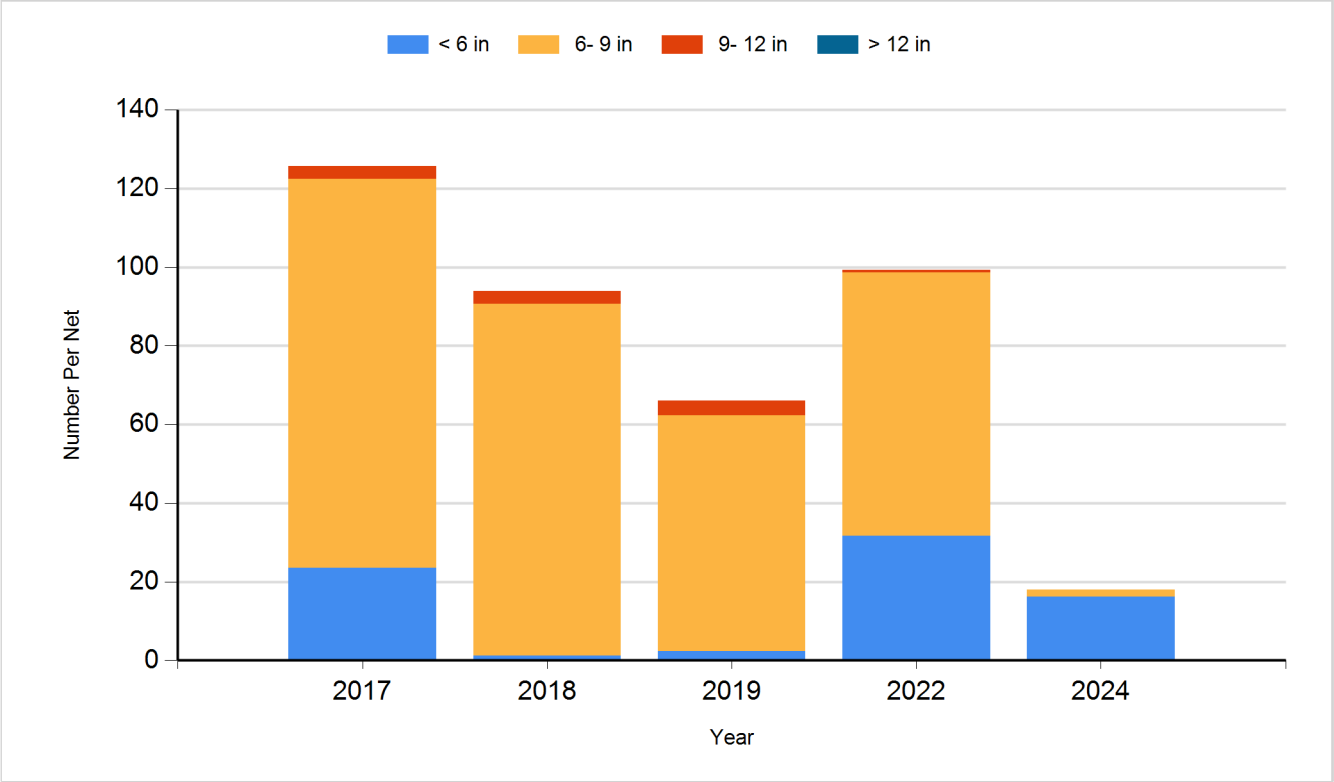


2022

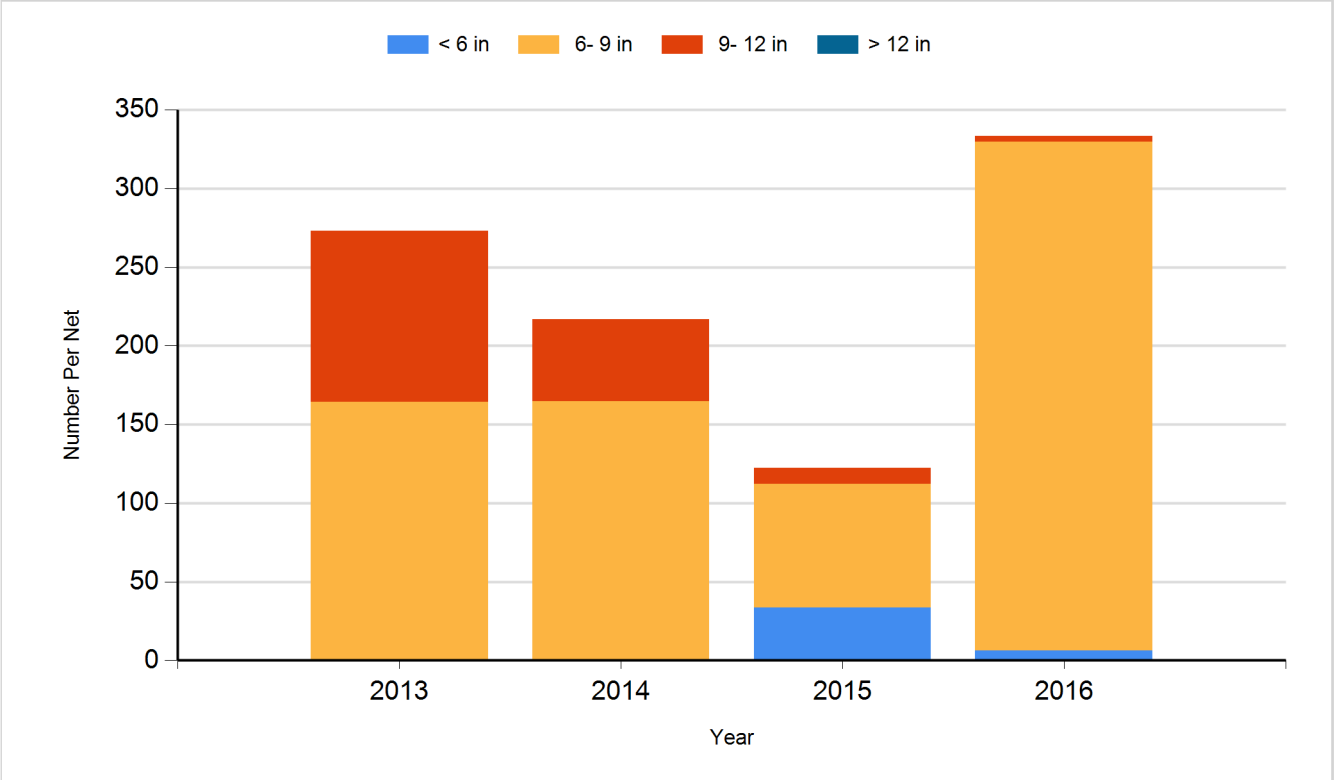
Historic Fish Sizes and Relative Abundance

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

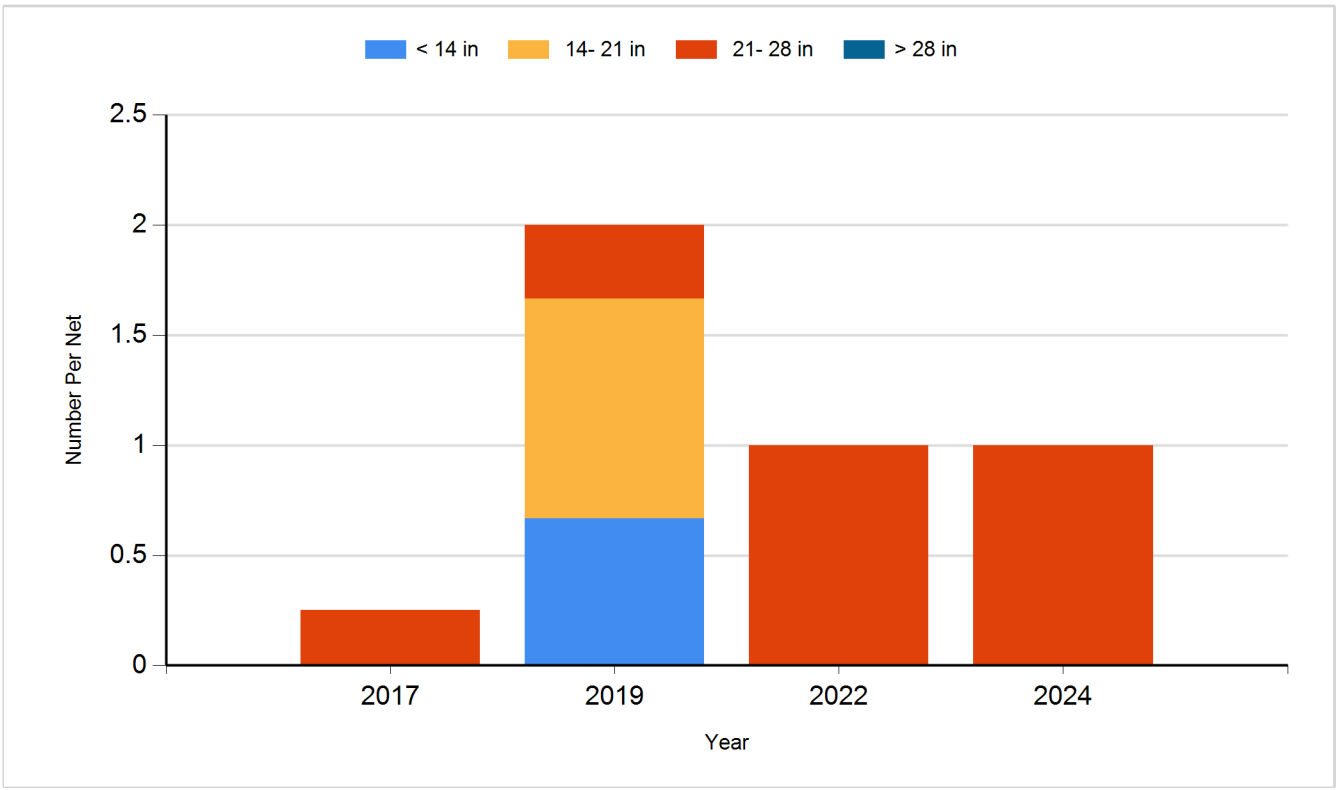
Species: Black Bullhead
Gear: AFS std gill net



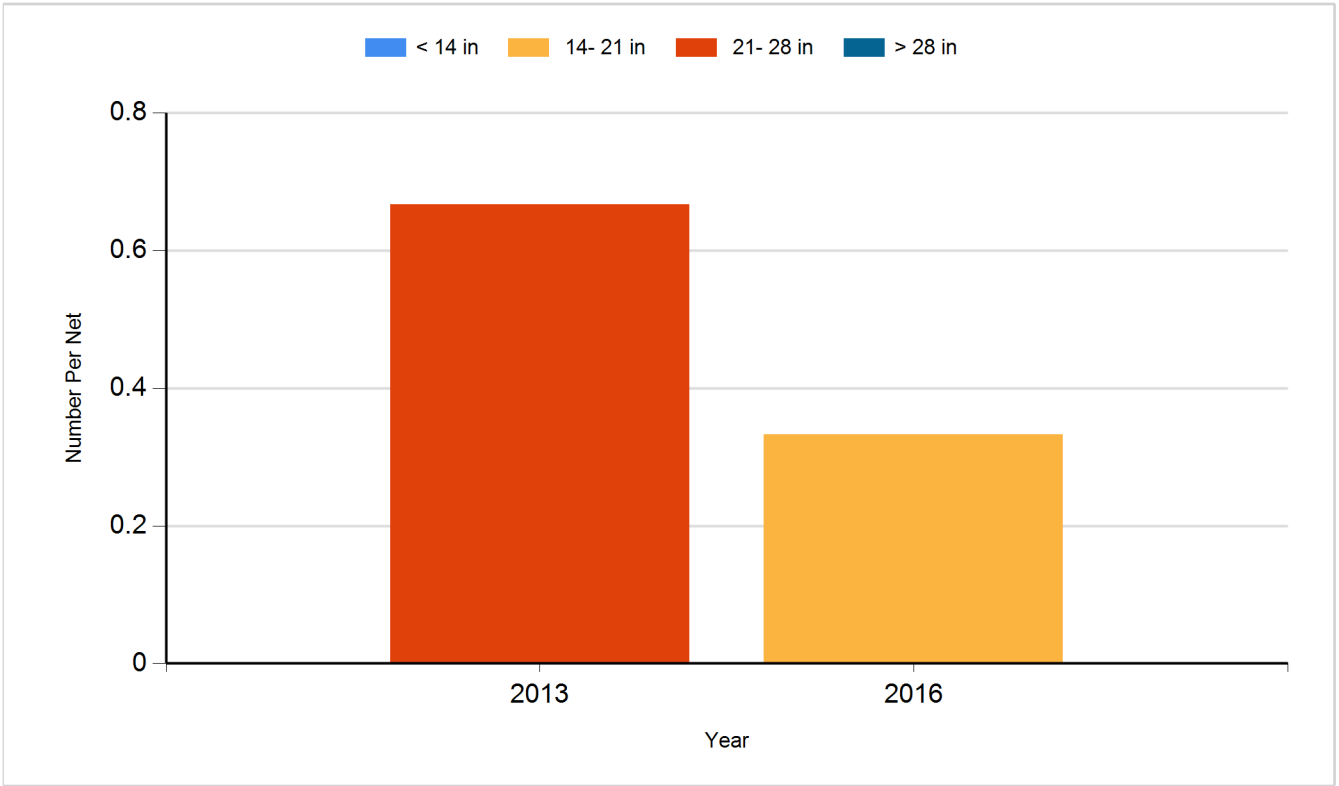
Species: Black Bullhead
Gear: std exp gill net



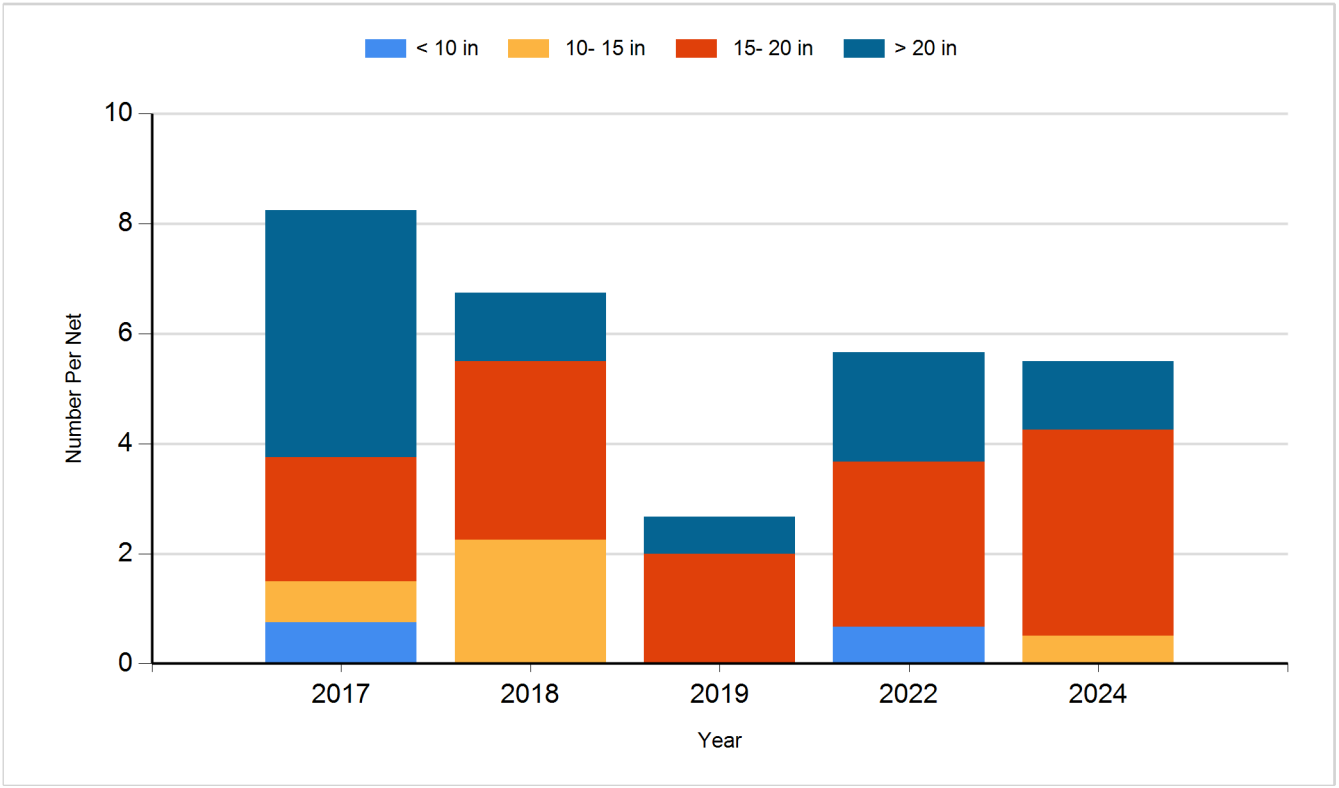
Species: Northern Pike
Gear: AFS std gill net



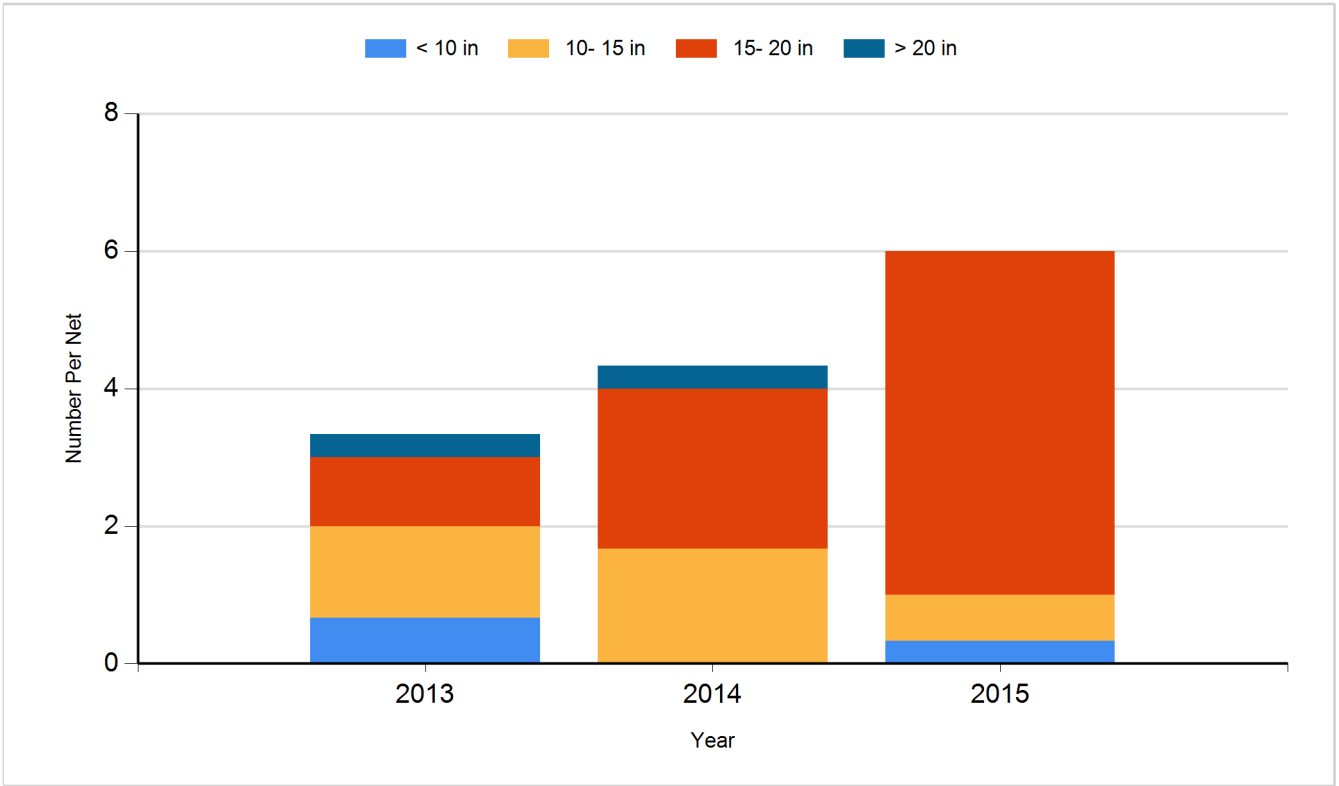
Species: Northern Pike
Gear: std exp gill net



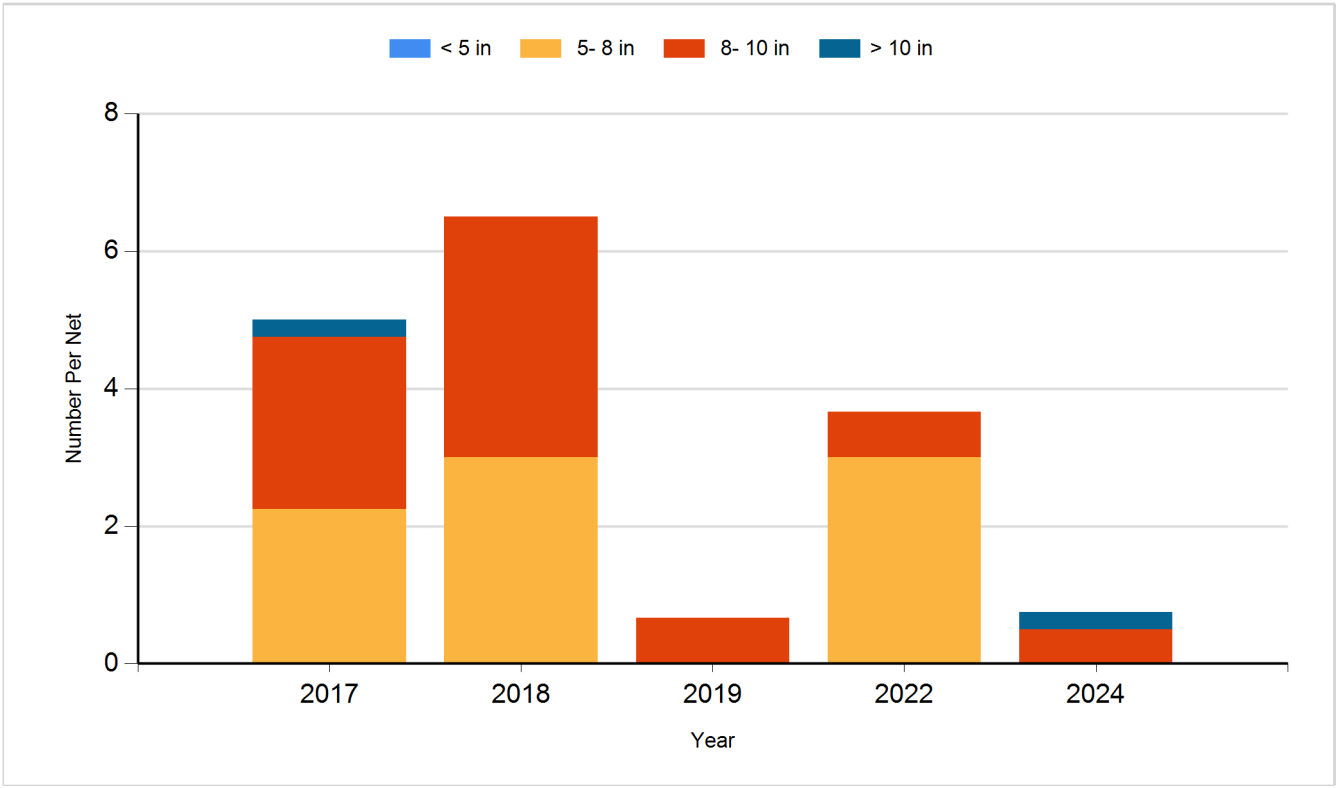
Species: Walleye
Gear: AFS std gill net



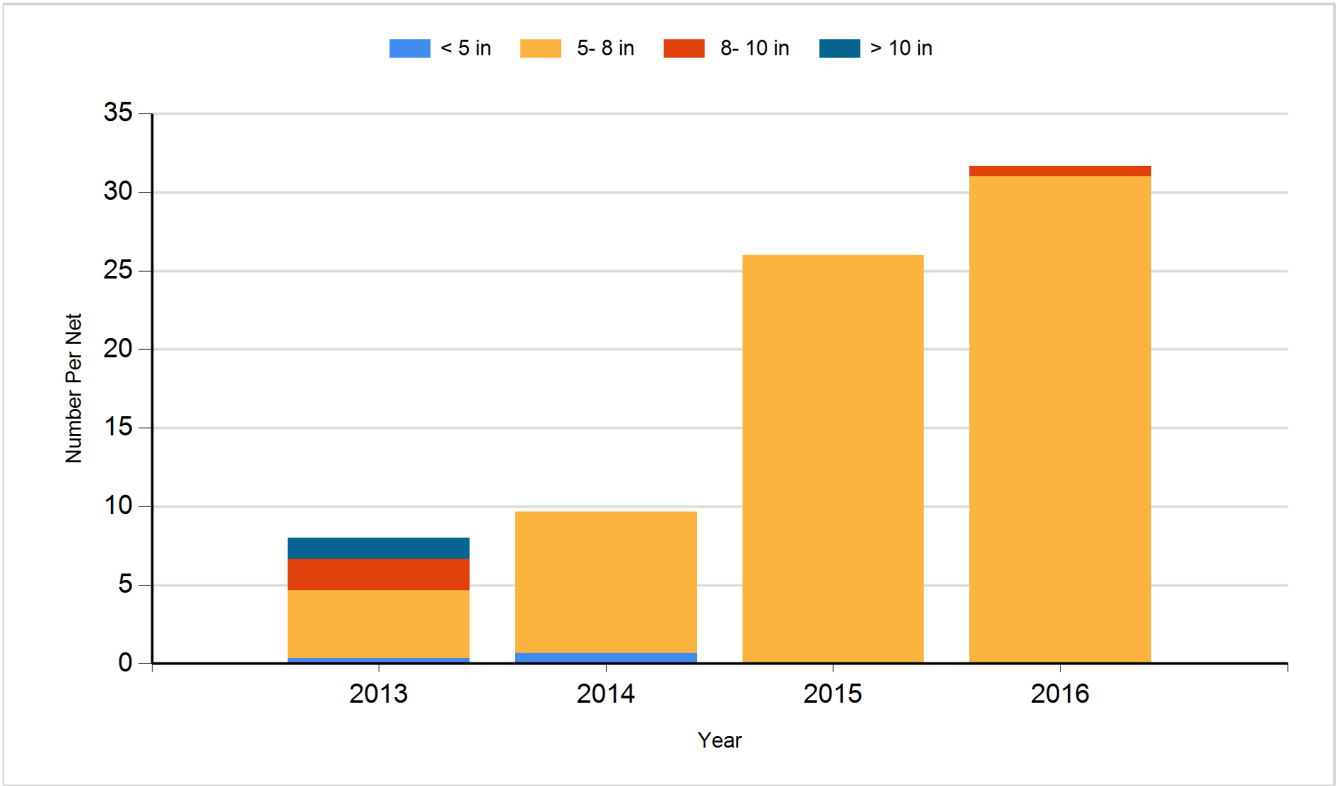
Species: Walleye
Gear: std exp gill net



Species: 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
2013	Yellow Perch	Adult	3,516
2014	Walleye	Fry	108,000
2014	Yellow Perch	Adult	3,570
2015	Walleye	Juvenile	212
2015	Walleye	Small Fingerling	7,560
2015	Yellow Perch	Adult	6,147
2015	Yellow Perch	Fingerling	11,060
2016	Walleye	Juvenile	1,390
2016	Walleye	Small Fingerling	7,560
2016	Yellow Perch	Adult	2,063
2016	Yellow Perch	Juvenile	3,630
2017	Walleye	Large Fingerling	1,280
2017	Yellow Perch	Adult	11,428
2018	Walleye	Large Fingerling	919
2018	Yellow Perch	Adult	5,379
2019	Walleye	Juvenile	140
2019	Walleye	Small Fingerling	9,150
2020	Yellow Perch	Adult	1,068
2021	Walleye	Adult	1,134
2021	Walleye	Juvenile	1,980
2021	Yellow Perch	Adult	2,441
2022	Black Crappie	Adult	1,041
2022	Black Crappie	Juvenile	939
2024	Channel Catfish	Juvenile	2,036
2024	Saugeye	Fry	75,000
2024	Saugeye	Juvenile	8,555
2024	Walleye	Adult	145
2024	Walleye	Juvenile	293
2024	Yellow Perch	Juvenile	671