Note: Curlyleaf pondweed and zebra mussels are present in Pickerel Lake. Care should be taken by all user groups to prevent their spread. For more information regarding aquatic invasive species please visit https://sdleastwanted.sd.gov/

Pickerel Survey Summary

Pickerel Lake, located 6.0 miles northeast of Grenville, is managed as a multi-species fishery including panfish (i.e., black crappie, bluegill, and yellow perch), smallmouth bass and walleye; other fish species (e.g., northern pike, white bass, etc.) also contribute to the fishery.

The following summary is limited to those fish species typically assessed using gill nets (i.e., northern pike, walleye, and yellow perch). Frame netting (used to sample bluegill and black crappie populations) and daytime electrofishing (used to sample smallmouth bass populations) are included in fish sampling efforts on a rotational basis at Pickerel Lake (next survey scheduled for 2025).

- **Northern pike.** Northern pike numbers were similar to those observed in 2023. At 1.3 per gill net, relative abundance was considered moderate in 2024. Sampled northern pike ranged in length from 15.0 to 32.3 inches, 73% were ≥ 21.0 inches and 7% were ≥ 28.0 inches.

- **Walleye.** Although walleye numbers were slightly higher in 2024 than in 2023, relative abundance remained low (3.2 per gill net). Those sampled ranged in length from 9.8 to 22.8 inches, 71% were ≥ 15.0 inches and 3% were ≥ 20.0 inches. Nine year classes contributed to the catch, most (7 of 9) were represented by 5 or fewer individuals. Fish from the 2018 (age-6) and 2022 (age-2) cohorts, which coincided with stocking events, were the most abundant accounting for 53% of walleyes in the sample. Walleye growth has been variable with mean length at capture values at age 3 from 13.2 to 15.2 inches since 2015. In 2024, the mean length at capture of age-3 fish was 13.7 inches.

- **Yellow perch**. Yellow perch were not abundant (1.9 per gill net) in 2024. Fish from 4.7 to 6.7 inches representing two cohorts (2021 and 2022) contributed to the catch. Yellow perch growth tends to be slow to moderate at Pickerel Lake. Since 2015, mean length at capture values of age-3 yellow perch have ranged from 6.0 to 8.8 inches. In 2024, the mean length of age-3 fish was 6.0 inches.

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

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Pickerel, Day County
UBS-Lake-358-000
2024

Lake Information

Name:	Pickerel	**Maximum Depth:**	41 Feet
County:	Day	**Mean Depth:**	16 Feet
		OHWM Elevation:	1,846
Surface Area:	989 Acres	**Outlet Elevation:**	1,845

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
AFS std gill net	Jun 26, 2024	4 net-nights
AFS std gill net	Jun 27, 2024	4 net-nights
fall night EF-WAE	Sep 24, 2024	1800 seconds

Common Fish Species Present

Northern Pike

Bluegill

Black Crappie

Walleye

Smallmouth Bass

Yellow Perch

White Bass

White Sucker

Rock Bass

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	Bluegill	3	0.3	0.2	33		0		111	5
	Northern Pike	15	1.3	0.6	73		7		86	6
	Rock Bass	4	0.3	0.2	0		0		107	4
	Smallmouth Bass	15	1.3	0.7	87		73		100	3
	Walleye	38	3.2	0.9	71	11	3		89	1
	White Bass	61	5.1	2.0	100		100		79	1
	White Sucker	15	1.3	0.4	100		100		107	3
	Yellow Perch	24	1.9	1.6	0		0		100	2

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.
***SDGFP standard gill nets used in 2015 (Avg. excludes 2015); **Methods/Species that ignore stock length; ***AFS frame nets used 2017 (Avg. excludes 2017)**

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS std gill net*	Black Bullhead	3.2	0.1	1.3	0.0	0.2	0.2	0.8	0.1	0.0	0.0	0.30
	Black Crappie	2.5	0.2	0.2	0.9	0.6	0.9	4.6	0.6	0.3	0.0	0.92
	Bluegill	0.0	0.2	0.1	1.3	2.1	1.9	0.8	0.3	0.8	0.3	0.87
	Common Carp	0.3	0.1	0.2	0.4	0.2	0.3	0.0	0.3	0.1	0.0	0.18
	Northern Pike	3.3	0.5	1.3	1.5	2.5	3.0	2.9	0.6	1.1	1.3	1.63
	Rock Bass	0.0	0.0	0.1	0.5	0.2	1.1	0.1	0.5	0.3	0.3	0.34
	Smallmouth Bass	1.7	2.1	1.4	2.0	1.3	2.3	2.7	1.4	3.3	1.3	1.98
	Walleye	18.5	2.3	2.5	4.3	5.2	6.2	5.3	3.8	2.5	3.2	3.92
	White Bass	4.0	2.9	1.9	1.5	1.8	5.4	1.9	3.9	2.7	5.1	3.01
	White Sucker	1.7	1.1	1.7	1.8	1.6	0.8	1.5	0.9	0.8	1.3	1.28
	Yellow Perch	27.8	8.9	5.0	21.8	16.1	21.8	4.6	0.3	1.3	1.9	9.08
boat shocker	Smallmouth Bass	110.0			6.0	59.0			24.9			49.98
fall night EF-WAE**	Walleye	44.4	0.0	28.0	76.0			42.0	20.0	0.0	0.0	28.00
frame net (std 3/4 in)***	Black Bullhead	10.9		1.3		6.6	1.7	0.2	7.3	4.3		5.17
	Black Crappie	0.9		0.1		0.7	0.5	0.4	0.3	0.5		0.55
	Bluegill	0.4		11.6		24.5	20.3	3.0	1.5	9.7		9.90
	Common Carp	0.1		0.0		0.1	0.0	0.0	0.0	0.0		0.03
	Largemouth Bass	0.0		0.0		0.0	0.0	0.0	0.0	0.0		0.00
	Northern Pike	0.5		0.2		0.4	0.3	0.7	1.0	1.4		0.72
	Rock Bass	8.5		1.2		3.4	3.3	7.7	2.5	6.9		5.38
	Smallmouth Bass	2.3		0.9		2.6	2.7	2.9	1.3	4.1		2.65
	Walleye	0.3		0.2		0.2	0.2	0.3	0.4	2.1		0.58
	White Bass	0.2		0.2		0.6	0.3	0.1	0.1	4.4		0.95
	White Sucker	0.2		0.1		0.1	0.1	0.1	0.0	0.1		0.10
	Yellow Perch	0.1		0.3		0.6	2.9	0.9	0.9	0.2		0.93

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. ***SDGFP standard gill nets used in 2015**

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net*	Northern Pike	PSD	40	67	67	83	87	58	60	86	92	73
		PSD-P	5	33	0	11	3	6	0	43	15	7
		Wr	80	78	89	86	85	89	82	81	83	86
	Walleye	PSD	52	57	60	71	74	53	36	59	87	71
		PSD-P	1	7	3	10	18	16	11	7	17	3
		Wr	87	83	88	85	88	90	85	89	83	89
	Yellow Perch	PSD	79	98	60	48	32	21	33	0	0	0
		PSD-P	40	52	33	11	4	1	4	0	0	0
		Wr	110	109	101	100	103	104	97	99	93	100

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+
2024	38		288 (8)	347 (3)		475 (5)	447 (12)	532 (2)	432 (1)	467 (5)	486 (2)
2023	30		319 (3)	387 (1)	402 (3)	427 (7)	460 (6)		530 (4)	579 (2)	492 (4)
2022	47	211 (1)	310 (1)	345 (6)	389 (31)	393 (1)		459 (1)	587 (1)	473 (3)	528 (2)
2021	64		286 (3)	335 (37)	406 (9)	418 (1)	486 (6)	530 (2)			568 (6)
2020	77		275 (28)	371 (17)	418 (5)	480 (6)	481 (5)	536 (6)		511 (4)	578 (6)
2019	62		295 (14)	378 (2)	419 (21)	459 (4)	502 (9)		490 (3)	502 (5)	571 (4)
2018	52	180 (1)	311 (3)	367 (16)	443 (1)	460 (15)	474 (2)	457 (5)	463 (7)		677 (2)
2017	30		325 (10)	376 (3)	420 (9)		478 (3)	450 (4)	414 (1)		
2016	32	197 (4)	296 (1)	356 (10)	372 (1)	420 (9)	422 (6)				645 (1)
2015	114	186 (3)	298 (28)	373 (25)	388 (37)	410 (19)		604 (1)	427 (1)		

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	24		139 (8)	153 (16)							
2023	16		147 (9)	175 (5)	189 (2)						
2022	3			154 (3)							
2021	55		137 (4)	167 (28)	199 (12)	223 (9)	219 (3)				
2020	263		142 (107)	170 (87)	210 (52)	231 (17)					
2019	195		142 (62)	194 (100)	233 (30)	243 (2)		302 (1)			
2018	263		153 (122)	216 (108)	249 (10)	266 (8)	280 (2)	273 (10)	310 (3)	274 (1)	
2017	60		171 (25)	223 (11)	257 (12)	266 (2)	266 (4)	286 (3)	290 (3)		
2016	107		164 (1)	209 (10)	237 (18)	247 (26)	258 (26)	272 (24)	294 (1)		
2015	168	100 (1)	157 (16)	196 (24)	238 (50)	255 (46)	260 (23)	249 (4)			

Fish Condition

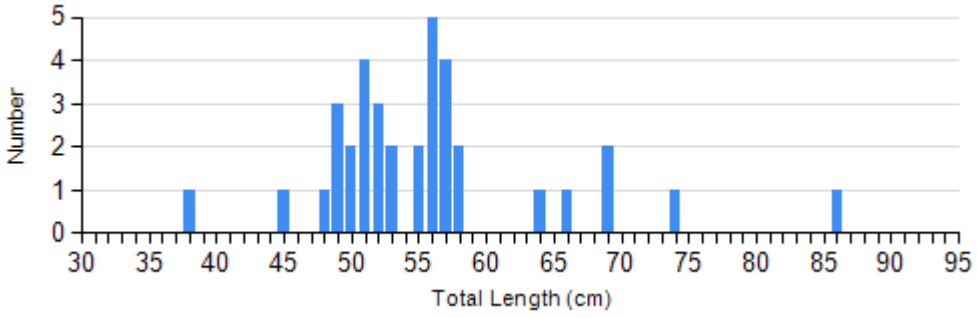
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		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	2020	15	92 (1.5)	19	87 (1.0)	1	94	1	85
	2021	14	84 (1.4)	21	81 (1.1)	0		0	
	2022	1	80	3	83 (2.0)	3	79 (3.2)	0	
	2023	1	92	10	82 (1.9)	1	79	1	84
	2024	4	95 (16.6)	10	83 (1.4)	1	87	0	
Walleye Gill Net	2020	35	88 (0.8)	27	91 (0.8)	10	93 (2.0)	2	88 (3.9)
	2021	41	85 (0.6)	16	86 (1.3)	6	82 (2.2)	1	75
	2022	19	98 (10.8)	24	83 (0.6)	3	86 (2.8)	0	
	2023	4	88 (3.0)	21	83 (1.0)	4	79 (2.2)	1	87
	2024	11	91 (1.6)	26	88 (0.8)	1	95	0	
Yellow Perch Gill Net	2020	206	105 (0.5)	54	100 (0.9)	2	92 (3.0)	0	
	2021	37	100 (1.2)	16	94 (2.0)	2	85 (5.4)	0	
	2022	3	99 (3.7)	0		0		0	
	2023	16	93 (2.1)	0		0		0	
	2024	23	100 (1.9)	0		0		0	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Northern Pike
Gear: AFS std gill net



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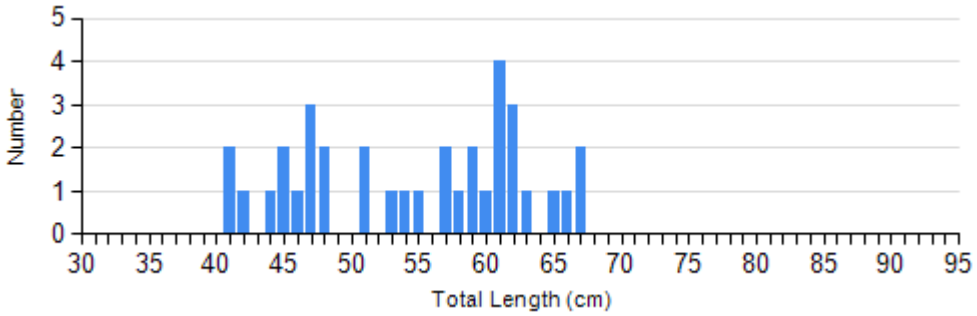

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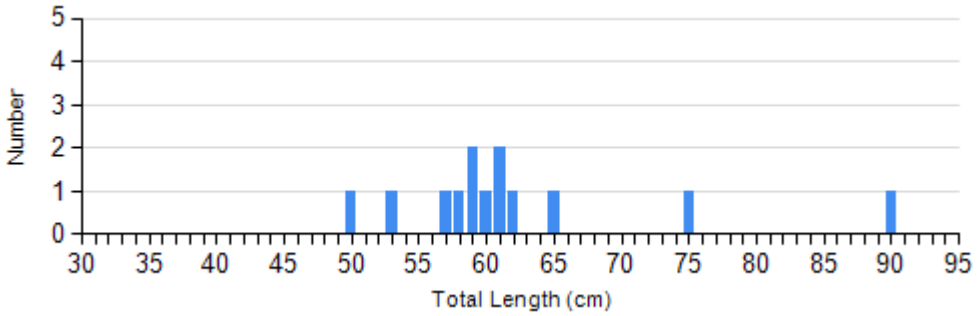

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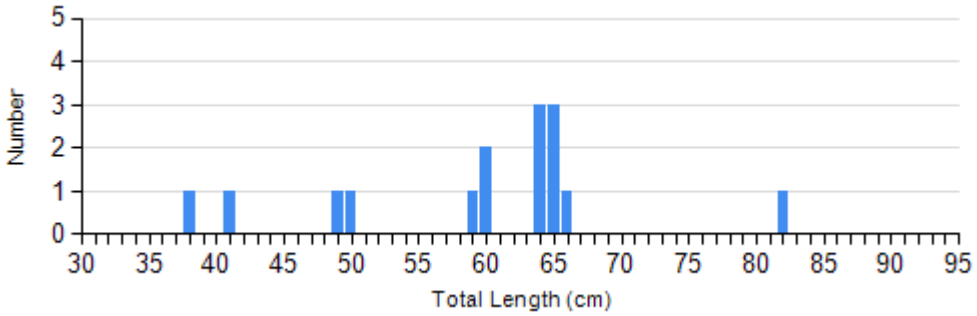
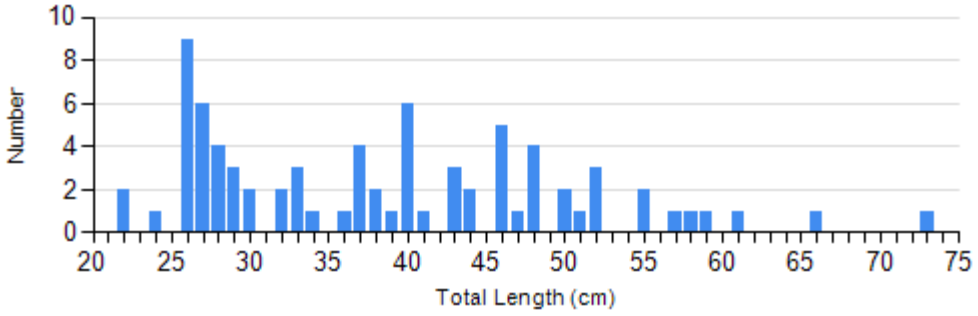


2024

Species: Walleye
Gear: AFS std gill net

2020



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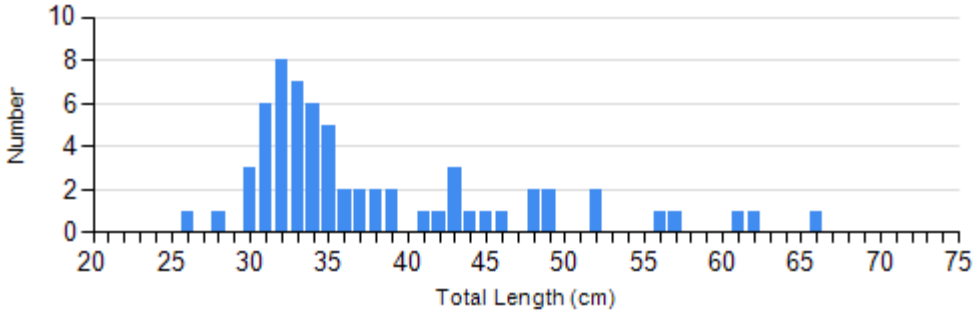

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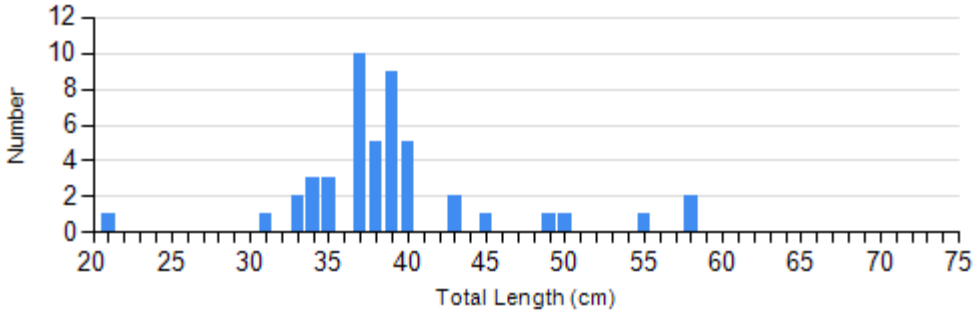

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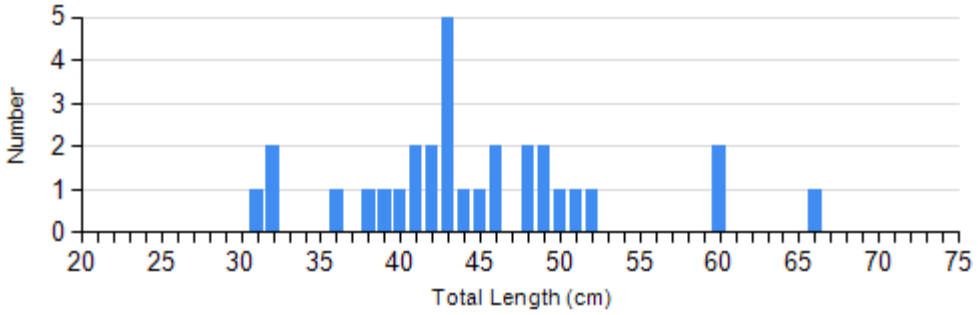
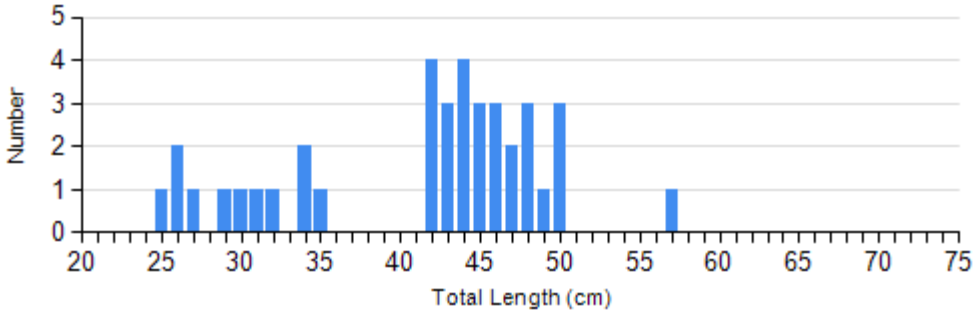
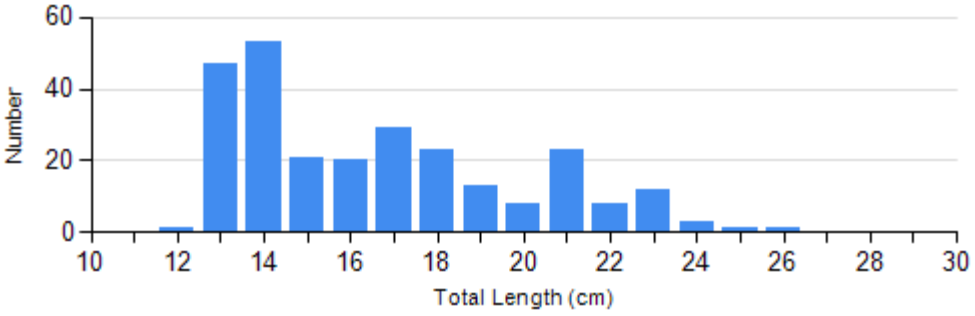


2024



Species: Yellow Perch
Gear: AFS std gill net



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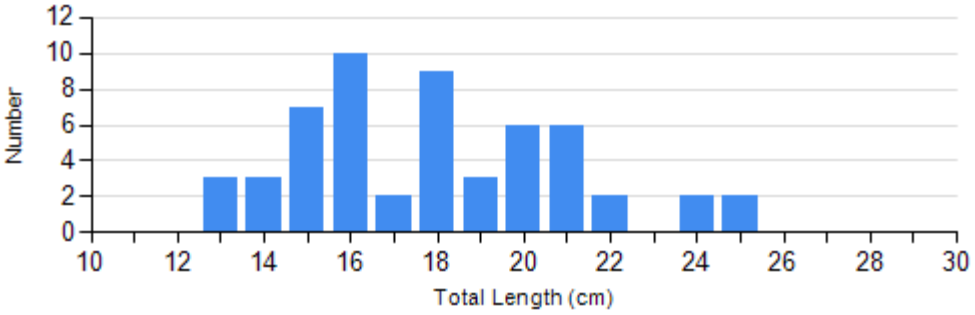
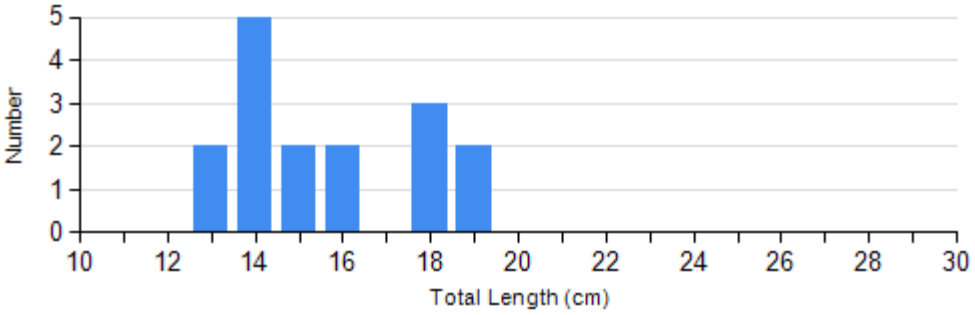
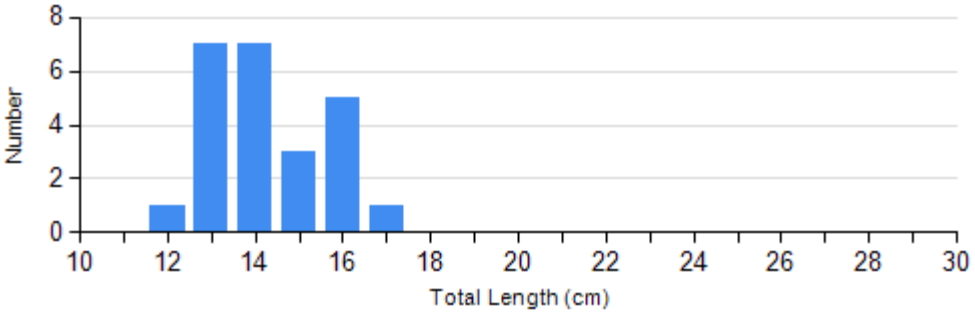


2021



2023

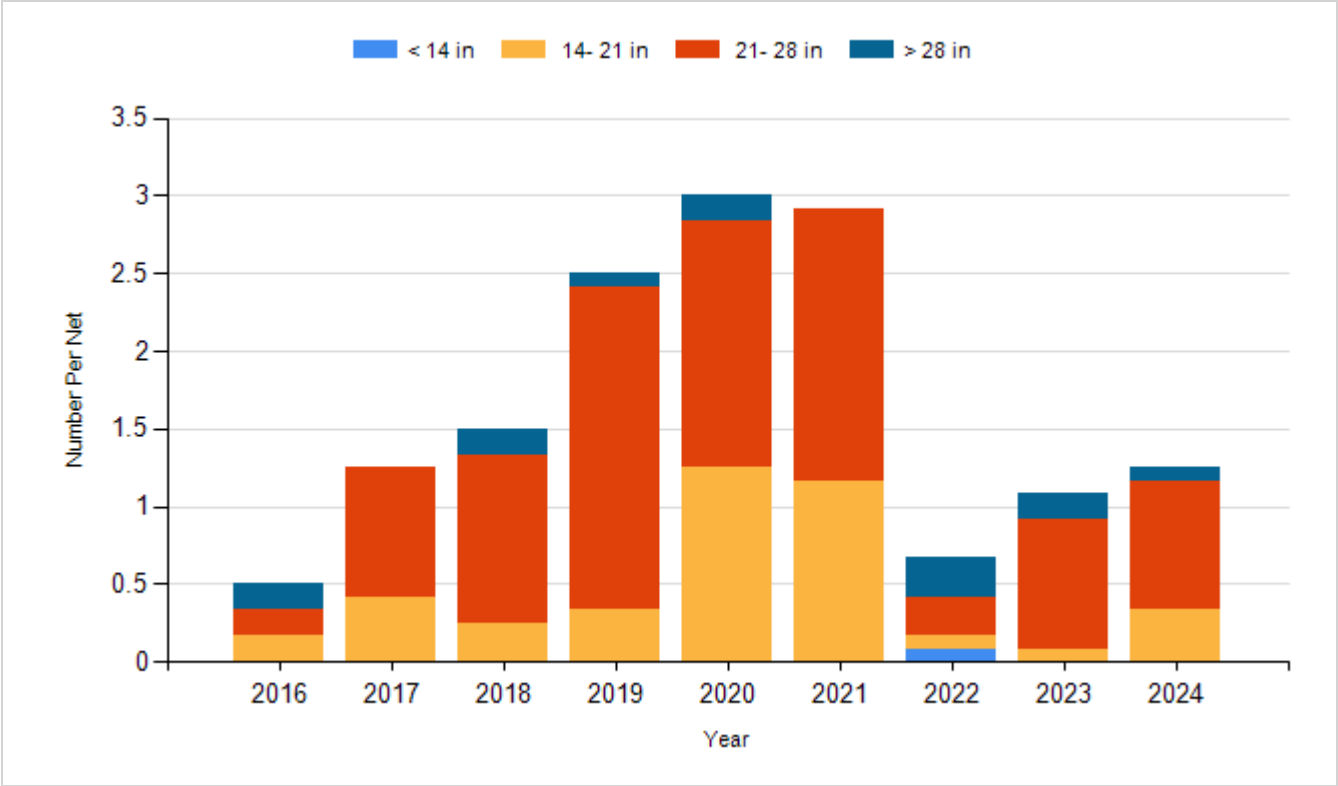


2024

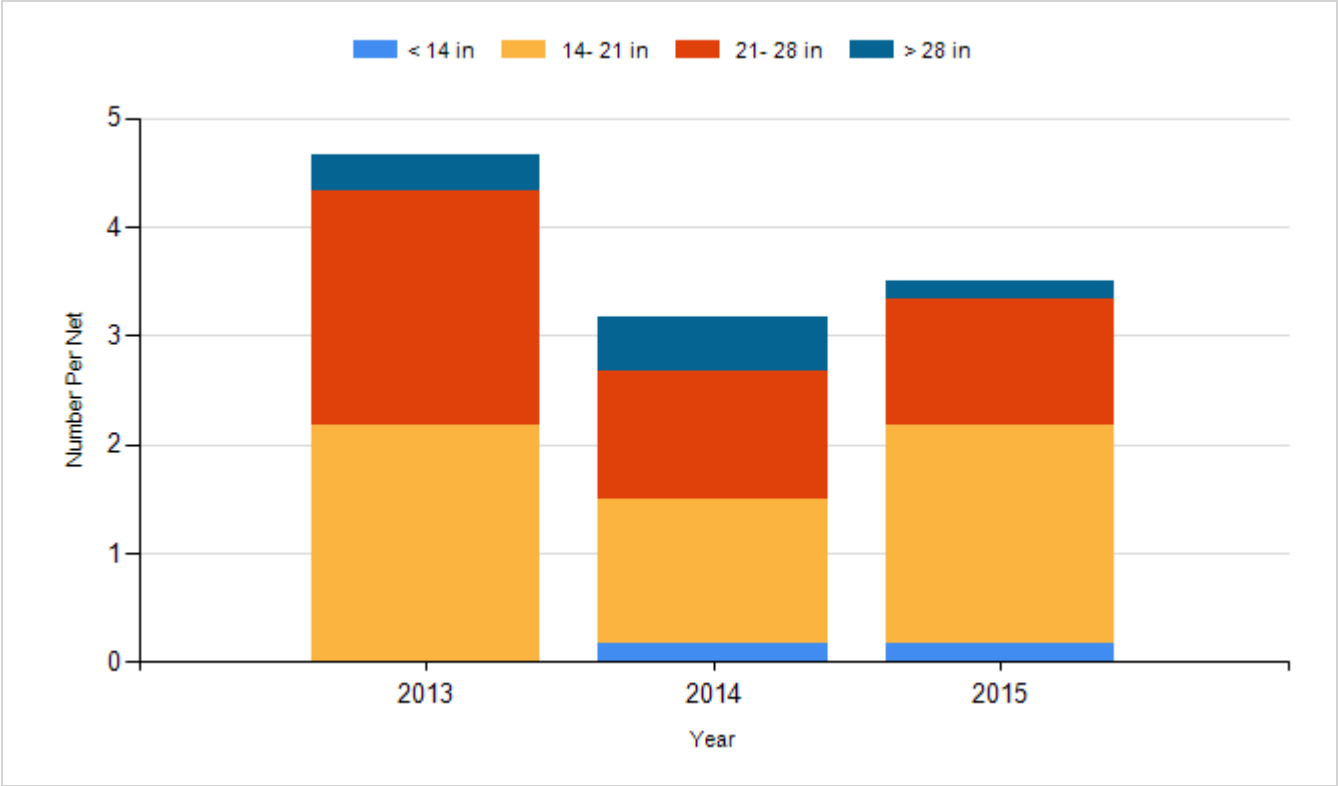
Historic Fish Sizes and Relative Abundance

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

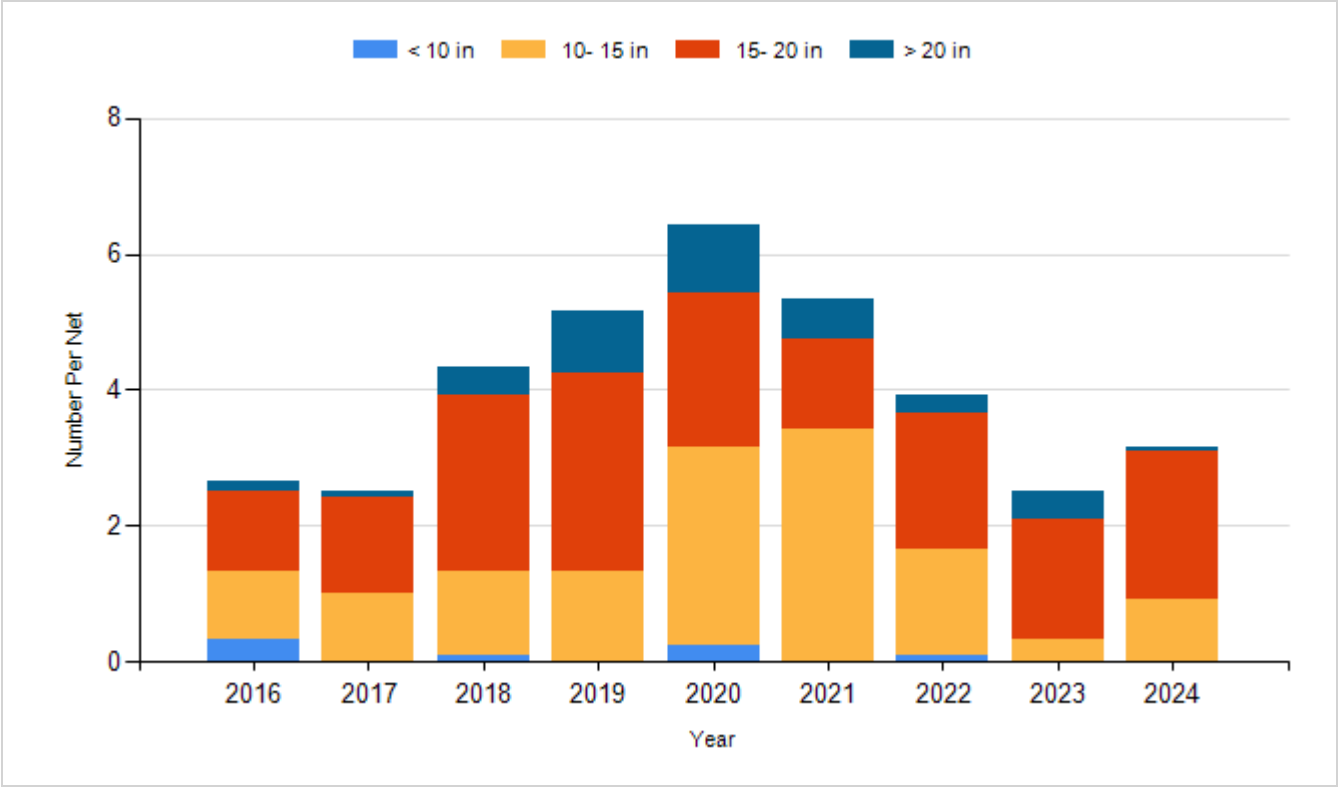
Species: Northern Pike
Gear: AFS std gill net



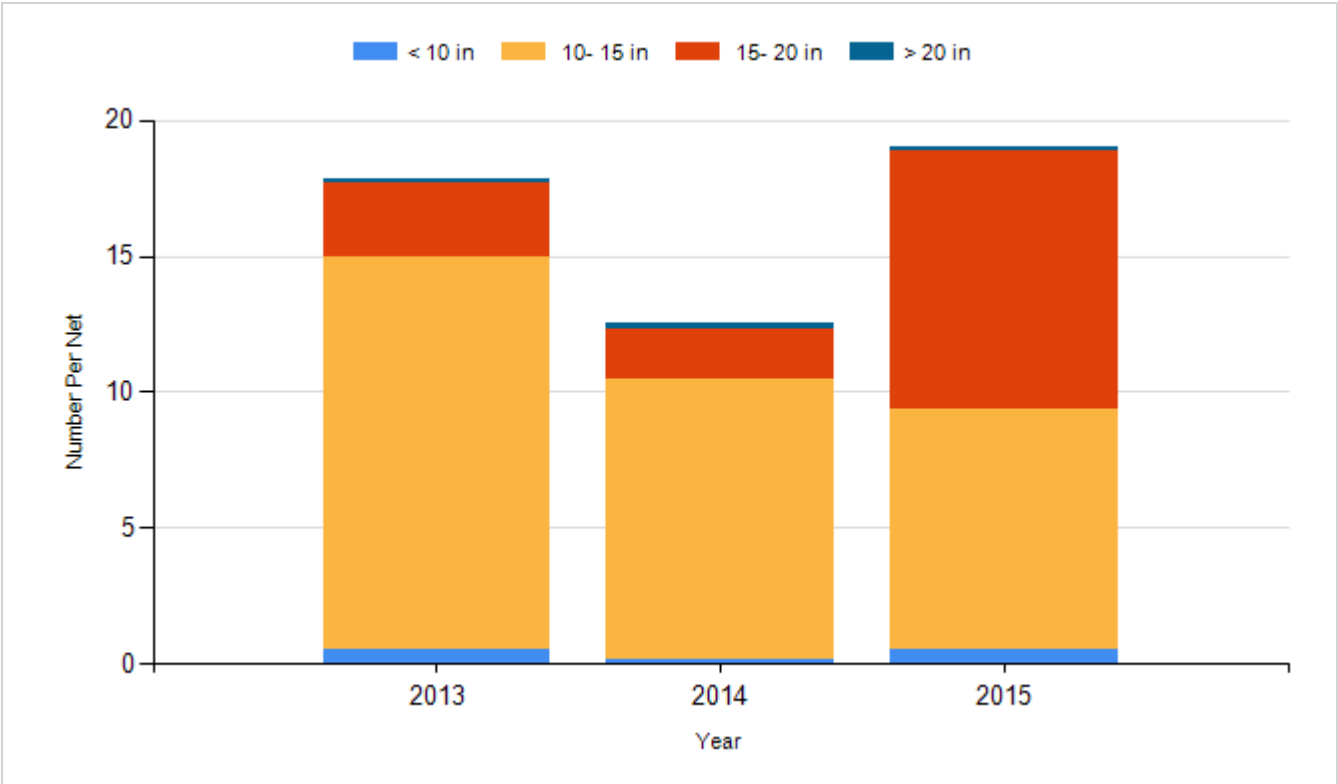
Species: Northern Pike
Gear: std exp gill net



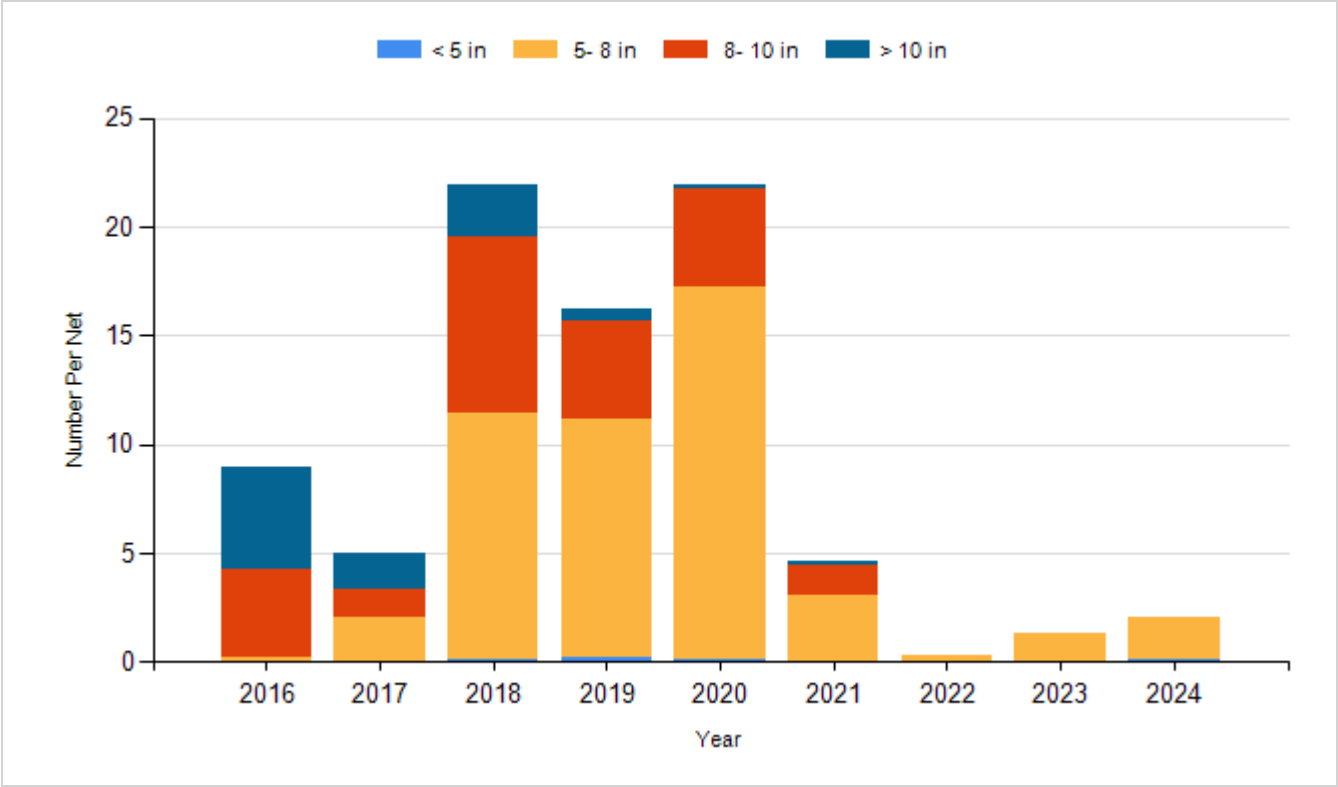
Species: Walleye
Gear: AFS std gill net



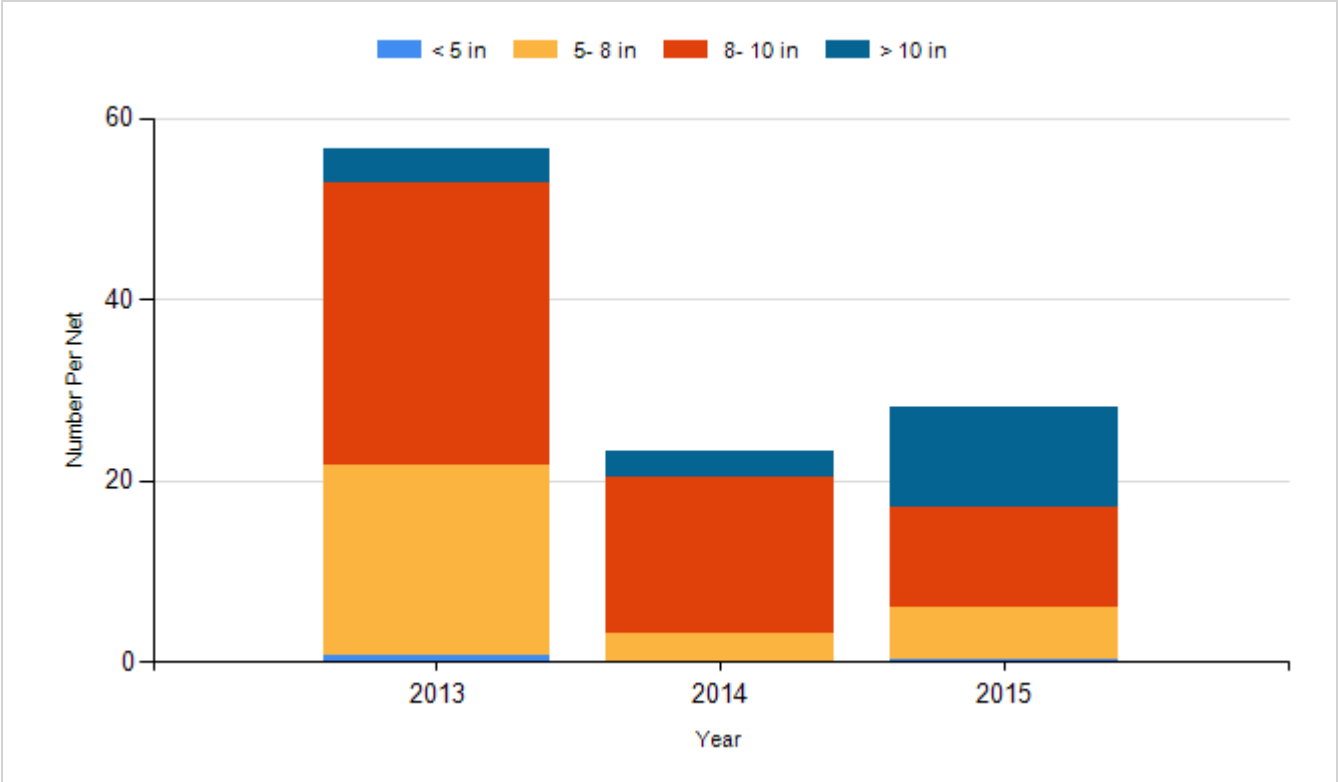
Species: Walleye
Gear: std exp gill net



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	Walleye	Small Fingerling	93,410
2015	Walleye	Small Fingerling	91,850
2017	Walleye	Small Fingerling	71,130
2018	Walleye	Fry	470,000
2021	Walleye	Fry	500,000
2022	Walleye	Juvenile	91,000
2023	Walleye	Fry	500,000