Stink Lake Survey Summary

Stink Lake, located 6.0 miles north and 3.0 miles east of Henry, is managed as a walleye and yellow perch fishery. White sucker have historically been present, and common carp and northern pike were sampled for the first time in 2023.

- **Walleye**. Similar to surveys since 2011, walleye numbers were low (0.7/gill net) in 2023. Sampled walleyes ranged in length from 7.5 to 27.0 inches, and all four walleyes sampled that were >10.0 inches were ≥23.0 inches. Five cohorts produced between 2011 and 2023 were represented in the gill net catch, with the majority (71%) from the 2023 (age-0) year-class.

- **Yellow perch**. At 2.7/gill net, relative abundance was low. Sampled yellow perch ranged in length from 5.7 to 9.7 inches, most (93%) were from the 2022 (age-1) cohort, which had a mean length at capture of 7.3 inches.

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

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Stink, Codington County
UBS-Lake-143-001
2023

Lake Information

Name: Stink

County: Codington

Surface Area: 595 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Sep 12, 2023	6 net-nights

Common Fish Species Present

Yellow Perch

Walleye

Northern Pike

Common Carp

White Sucker

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	Common Carp	32	2.3	1.8	86		36	22	131	5
	Northern Pike	5	0.8	0.5	100		60		98	4
	Walleye	19	0.7	0.5	100		100		99	5
	White Sucker	1	0.2	0.2	100		100		107	
	Yellow Perch	16	2.7	1.8	25		0		95	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.

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

		CPUE										
Gear	Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
AFS std gill net	Common Carp						0.0				2.3	1.15
	Northern Pike						0.0				0.8	0.40
	Walleye						2.3				0.7	1.50
	White Sucker						0.0				0.2	0.10
	Yellow Perch						60.2				2.7	31.45
std exp gill net	Walleye		2.7									2.70
	White Sucker		0.7									0.70
	Yellow Perch		3.7									3.70

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	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AFS std gill net	Northern Pike	PSD										100
		PSD-P										60
		Wr										98
	Walleye	PSD						79				100
		PSD-P						57				100
		Wr						96				99
	Yellow Perch	PSD						6				25
		PSD-P						1				0
		Wr						102				95
std exp gill net	Walleye	PSD		0								
		PSD-P		0								
		Wr		81								
	Yellow Perch	PSD		73								
		PSD-P		9								
		Wr		102								

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+
2023	4				595 (1)				625 (1)		641 (2)
2019	16	295 (5)	473 (2)		536 (2)	532 (1)	593 (1)		591 (3)	633 (2)	

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2023	15	186 (14)	247 (1)								
2019	361	163 (340)	228 (21)								

Fish Condition

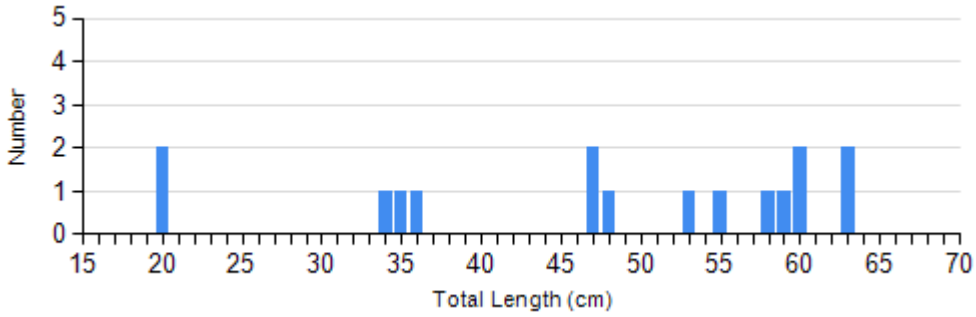
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		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	2023	0		2	104 (3.6)	3	94 (1.7)	0	
Walleye Gill Net	2019	3	95 (7.4)	3	100 (3.4)	6	98 (3.6)	2	89 (10.9)
	2023	0		0		3	102 (3.8)	1	90
Yellow Perch Gill Net	2019	339	103 (0.5)	20	92 (1.0)	2	94	0	
	2023	12	97 (1.4)	4	92 (2.1)	0		0	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Walleye
Gear: AFS std gill net



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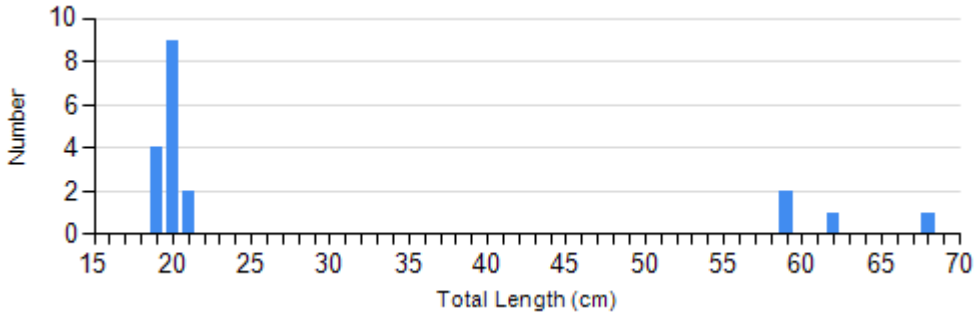
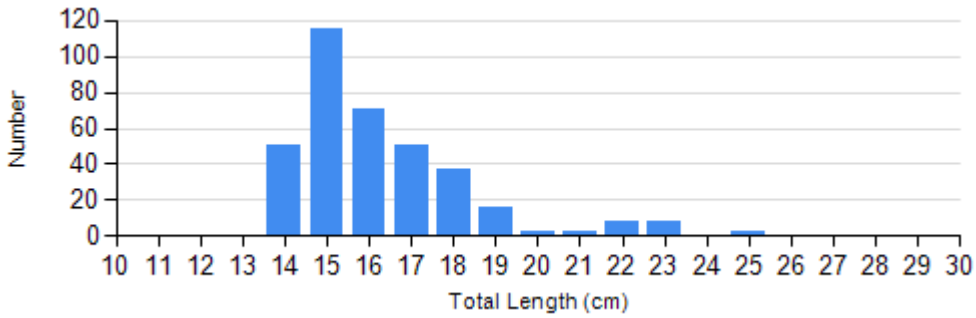


2023

Species: Yellow Perch
Gear: AFS std gill net



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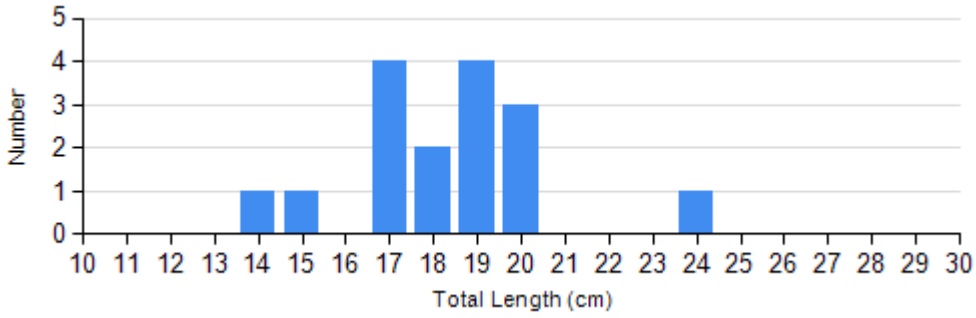
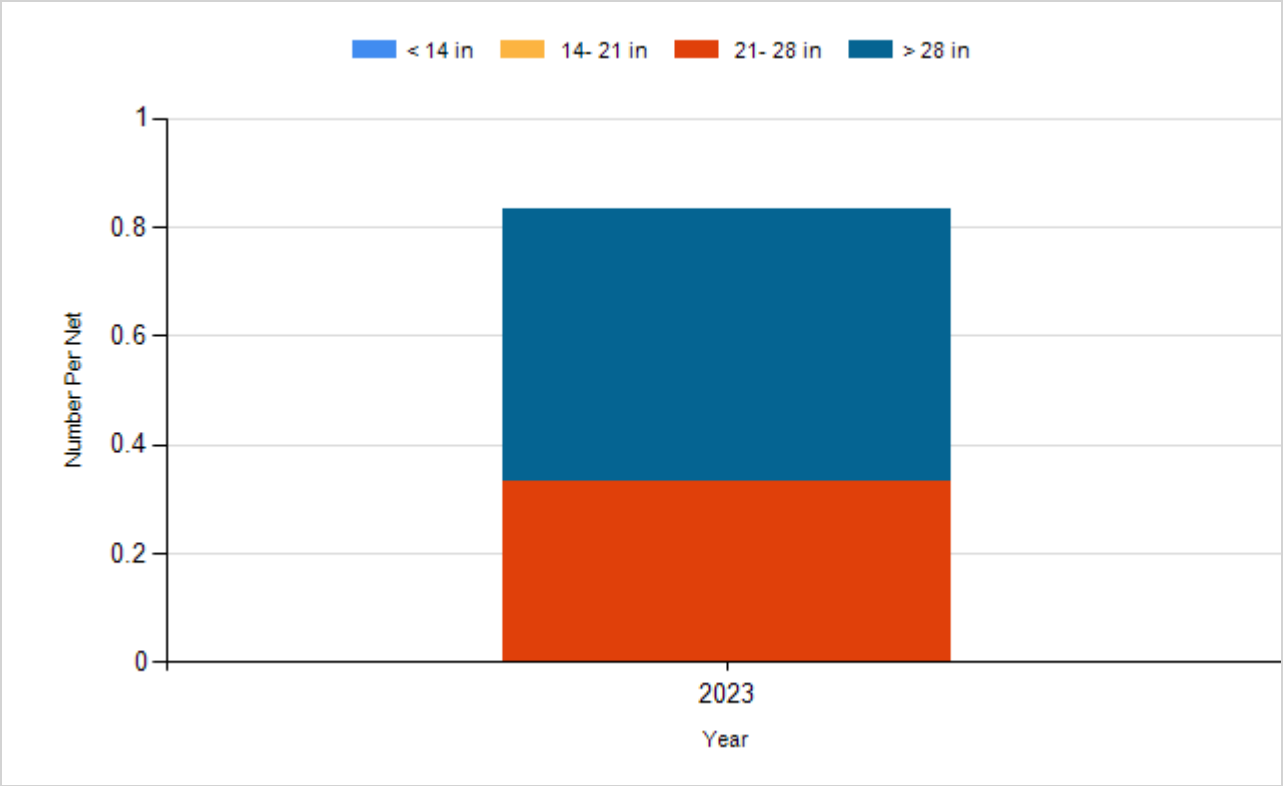


2023

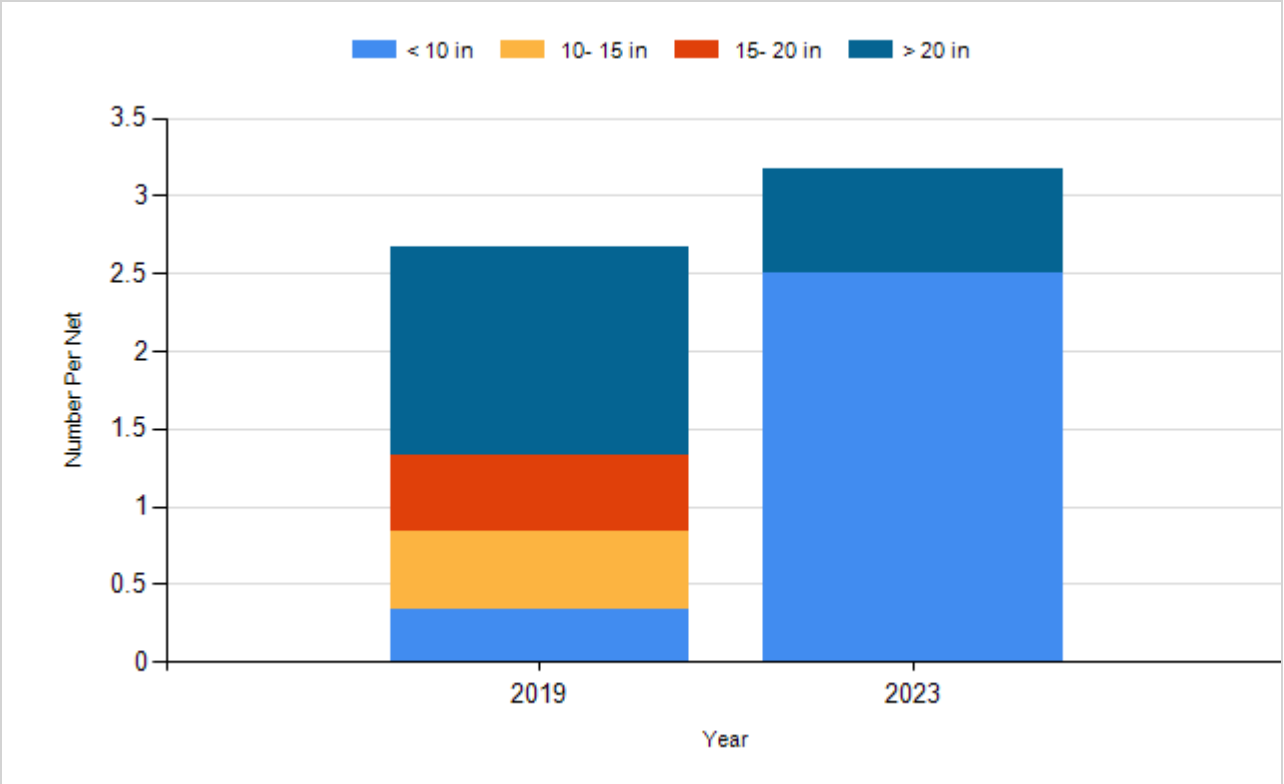
Historic Fish Sizes and Relative Abundance

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

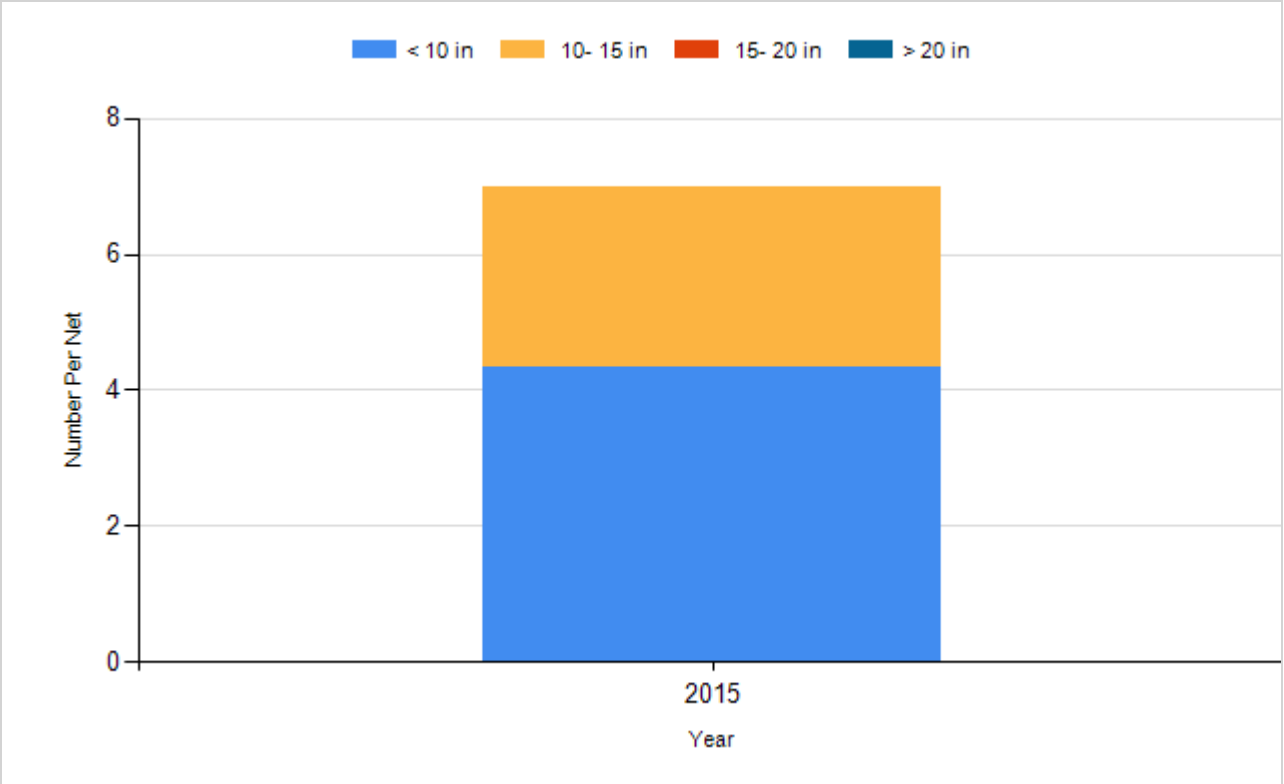
Species: Northern Pike
Gear: AFS std gill net



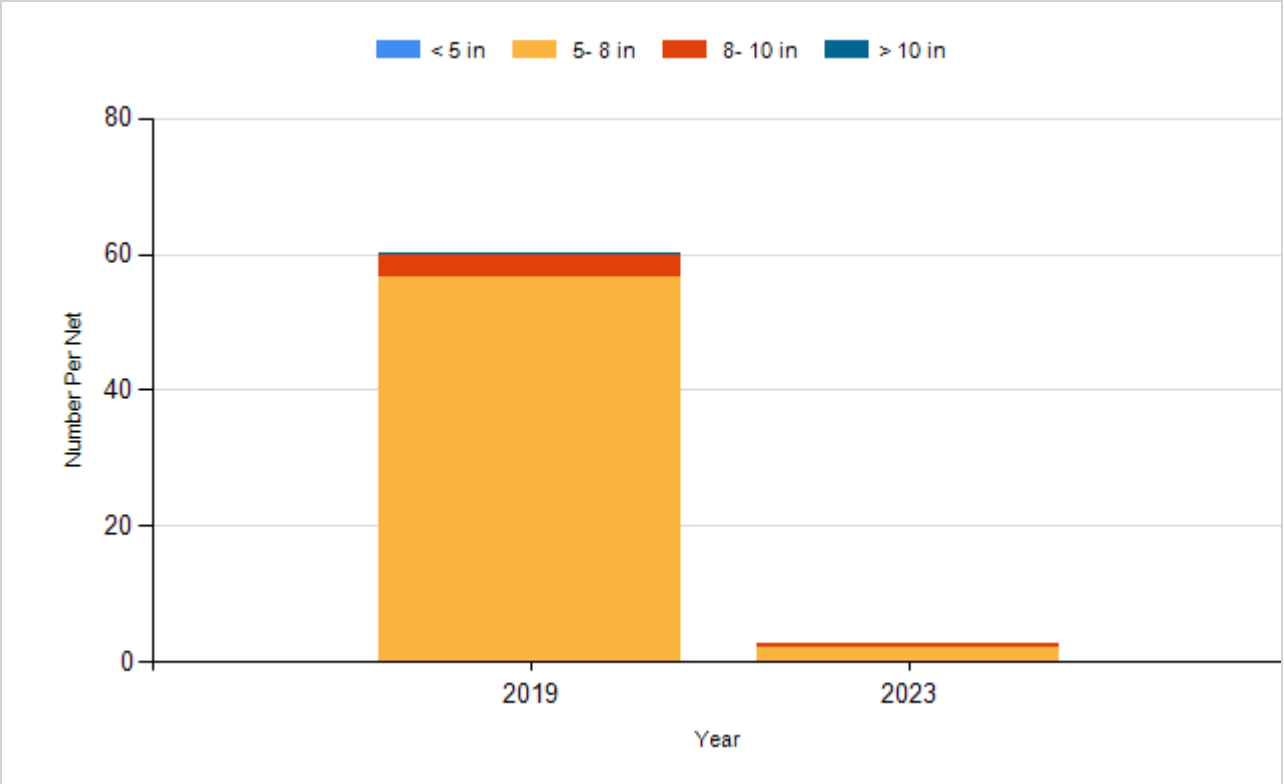
Species: Walleye
Gear: AFS std gill net



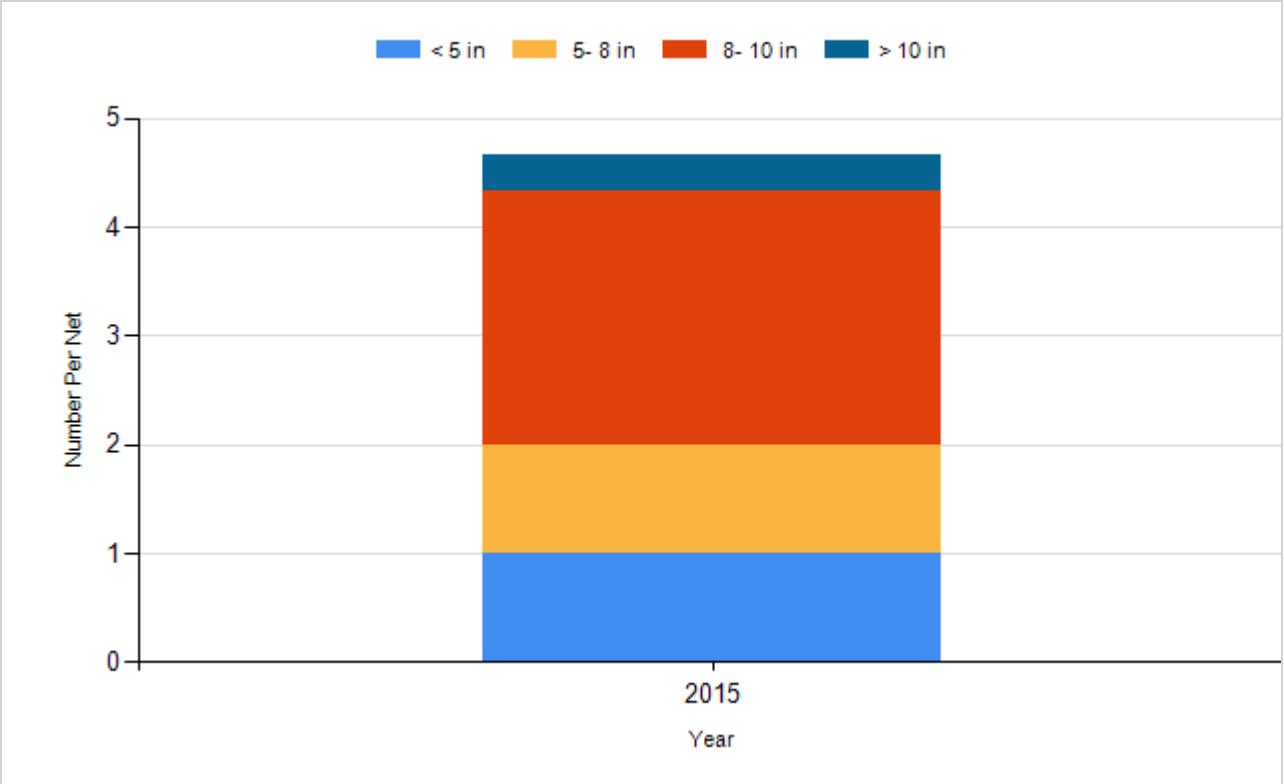
Species: Walleye
Gear: std exp gill net



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
2012	Walleye	Fry	180,000
2014	Walleye	Fry	200,000
2017	Walleye	Fry	185,000
2019	Saugeye	Small Fingerling	28,000
2021	Walleye	Fry	200,000
2022	Walleye	Fry	200,000
2023	Walleye	Fry	200,000

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Stink, Codington County
UBS-Lake-143-001
2023

Lake Information

Name: Stink

County: Codington

Surface Area: 595 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Sep 12, 2023	6 net-nights

Common Fish Species Present

Yellow Perch

Walleye

Northern Pike

Common Carp

White Sucker

Terminology

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- 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.

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$$PSD - P = \left(\frac{number\ of\ fish \geq preferred\ length}{number\ of\ fish \geq stock\ length}\right) \text{x } 100$$

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	Common Carp	32	2.3	1.8	86		36	22	131	5
	Northern Pike	5	0.8	0.5	100		60		98	4
	Walleye	19	0.7	0.5	100		100		99	5
	White Sucker	1	0.2	0.2	100		100		107	
	Yellow Perch	16	2.7	1.8	25		0		95	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.

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

		CPUE										
Gear	Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
AFS std gill net	Common Carp						0.0				2.3	1.15
	Northern Pike						0.0				0.8	0.40
	Walleye						2.3				0.7	1.50
	White Sucker						0.0				0.2	0.10
	Yellow Perch						60.2				2.7	31.45
std exp gill net	Walleye		2.7									2.70
	White Sucker		0.7									0.70
	Yellow Perch		3.7									3.70

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	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AFS std gill net	Common Carp	PSD										86
		PSD-P										36
		Wr										131
	Northern Pike	PSD										100
		PSD-P										60
		Wr										98
	Walleye	PSD						79				100
		PSD-P						57				100
		Wr						96				99
	White Sucker	PSD										100
		PSD-P										100
		Wr										107
	Yellow Perch	PSD						6				25
		PSD-P						1				0
		Wr						102				95
std exp gill net	Walleye	PSD		0								
		PSD-P		0								
		Wr		81								
	White Sucker	PSD		100								
		PSD-P		100								
		Wr		103								
	Yellow Perch	PSD		73								
		PSD-P		9								
		Wr		102								

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+
2023	4				595 (1)				625 (1)		641 (2)
2019	16	295 (5)	473 (2)		536 (2)	532 (1)	593 (1)		591 (3)	633 (2)	

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2023	15	186 (14)	247 (1)								
2019	361	163 (340)	228 (21)								

Fish Condition

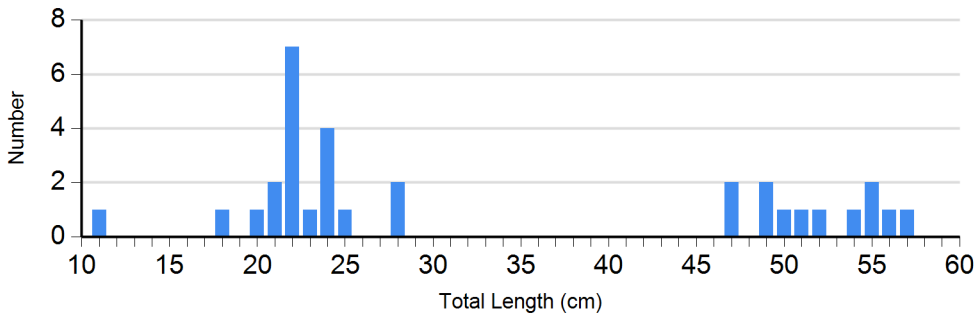
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Common Carp Gill Net	2023	2	135 (16.8)	7	121 (3.9)	5	143 (3.6)	0	
Northern Pike Gill Net	2023	0		2	104 (3.6)	3	94 (1.7)	0	
Walleye Gill Net	2019	3	95 (7.4)	3	100 (3.4)	6	98 (3.6)	2	89 (10.9)
	2023	0		0		3	102 (3.8)	1	90
White Sucker Gill Net	2023	0		0		0		1	107
Yellow Perch Gill Net	2019	339	103 (0.5)	20	92 (1.0)	2	94	0	
	2023	12	97 (1.4)	4	92 (2.1)	0		0	

Length Frequency Distribution

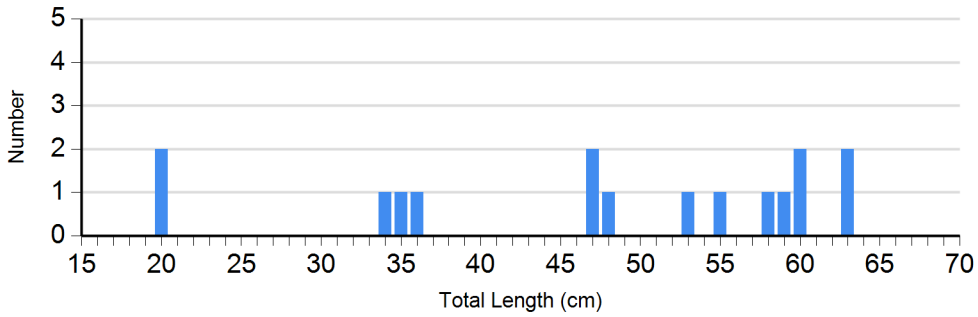
Length frequency histogram of species sampled by year.

Species: Common Carp
Gear: AFS std gill net



2023

Species: Walleye
Gear: AFS std gill net



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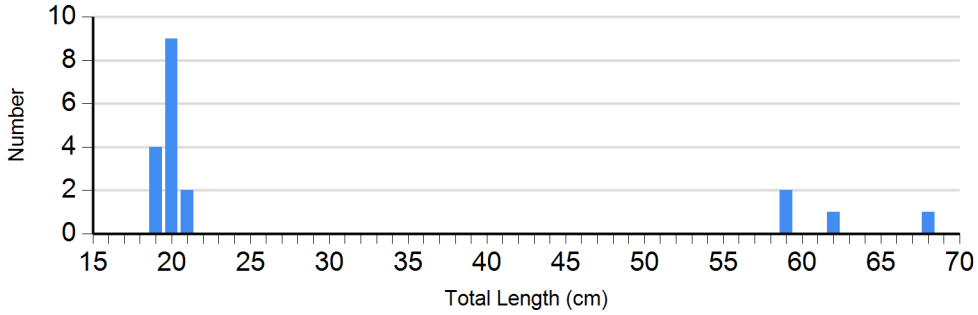
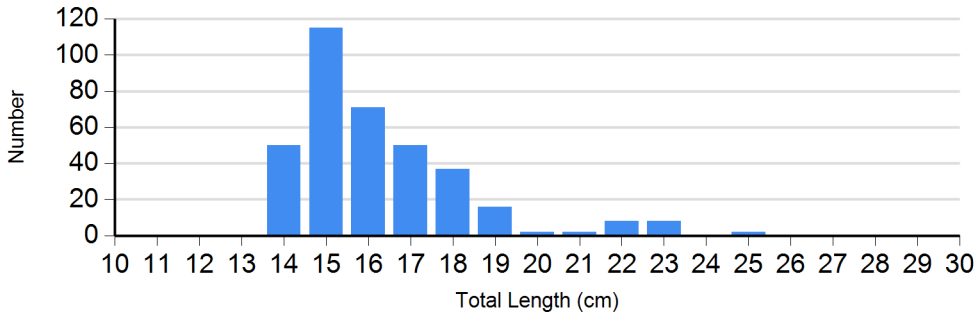
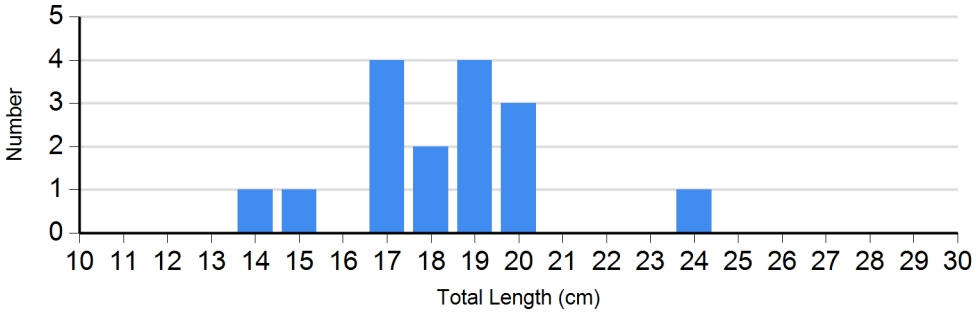


2023

Species: Yellow Perch
Gear: AFS std gill net



2019

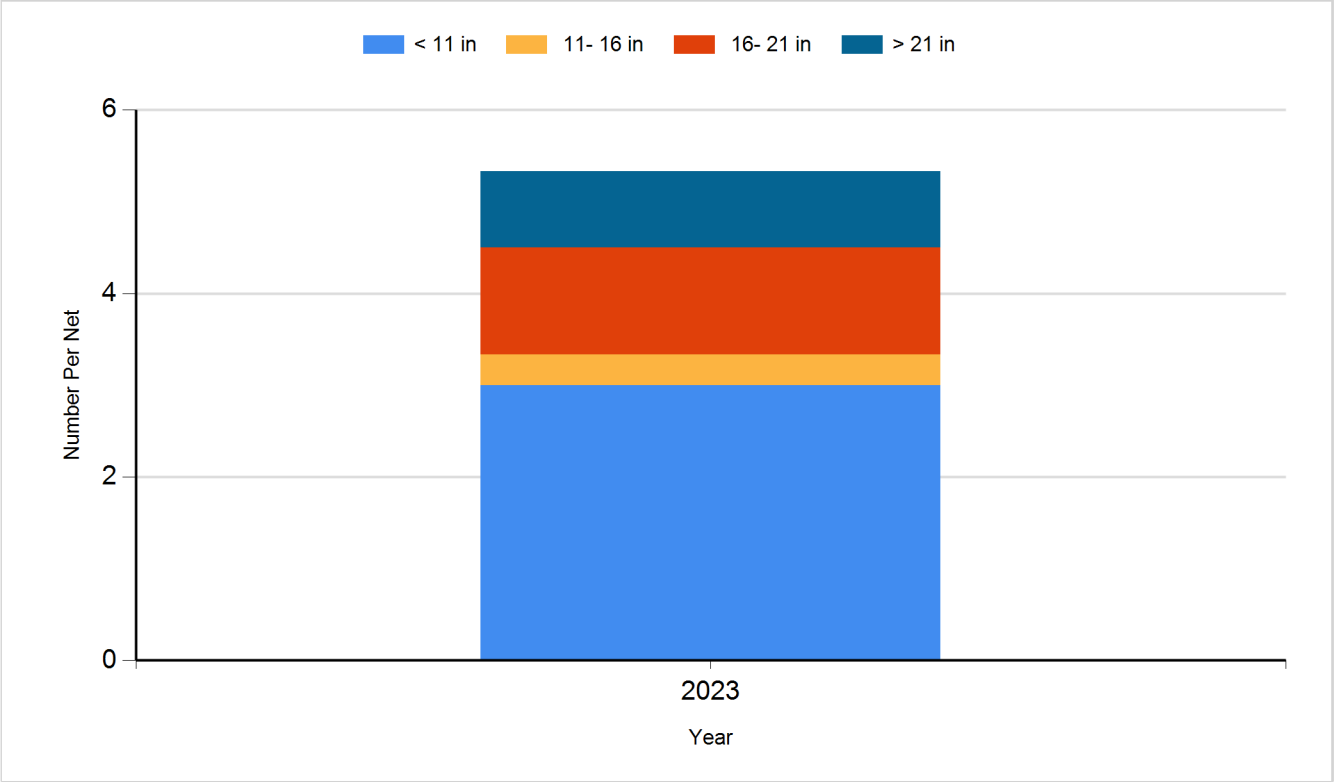

Number
5
4
3
2
1
0
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Total Length (cm)

2023

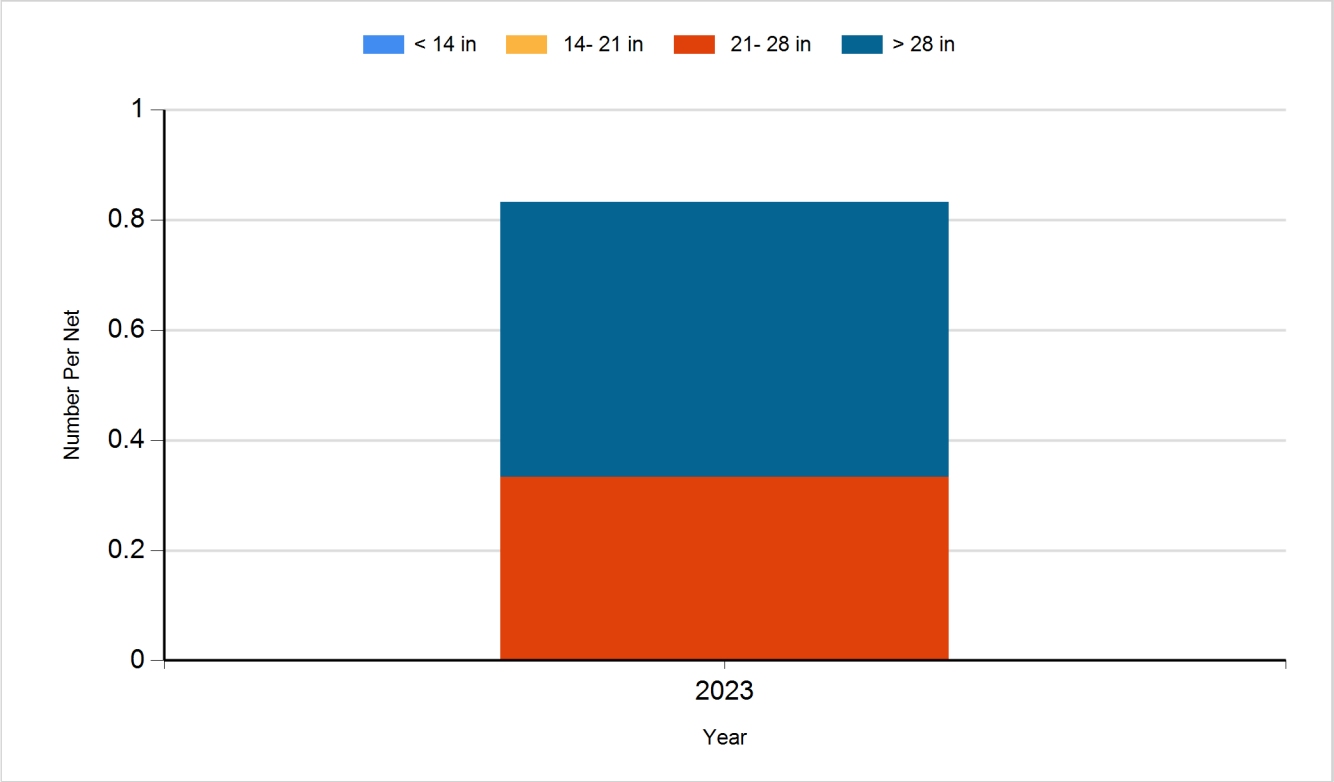
Historic Fish Sizes and Relative Abundance

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

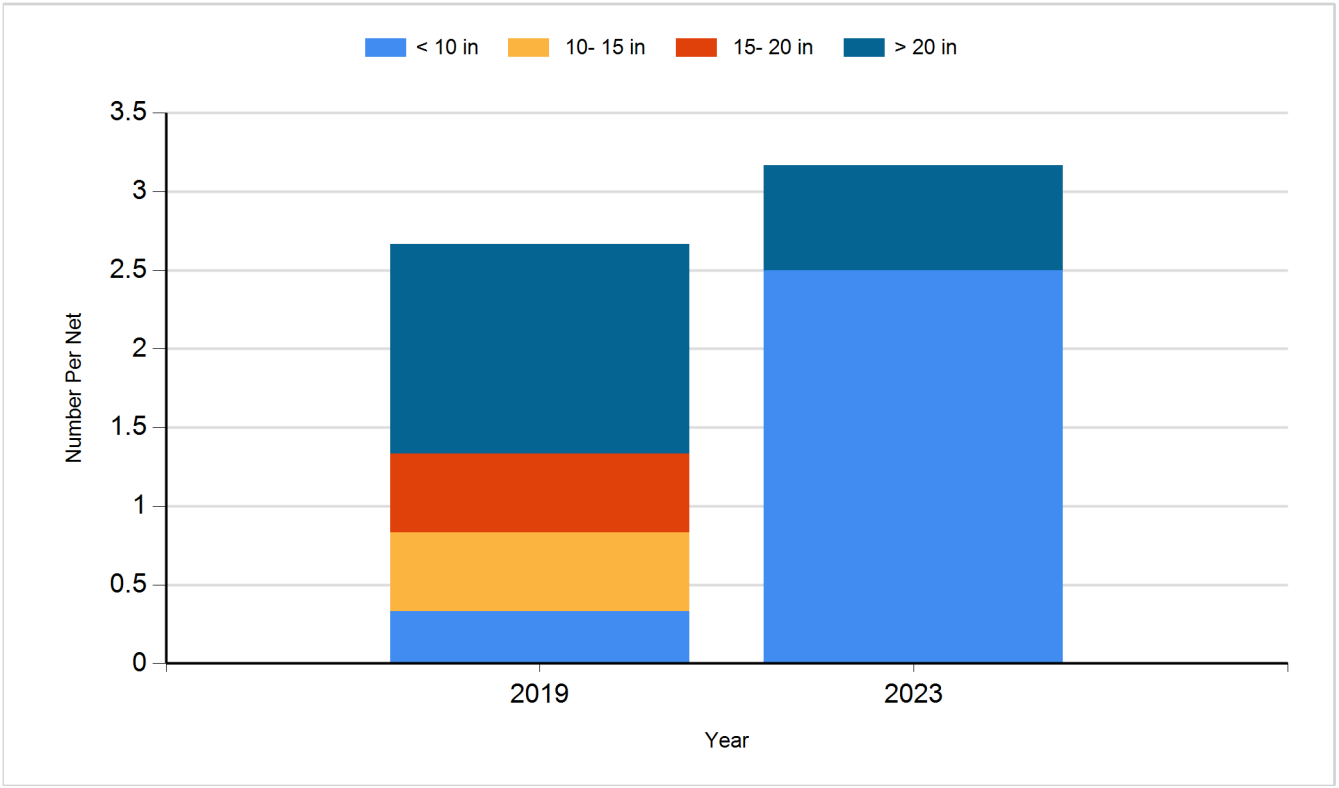
Species: Common Carp
Gear: AFS std gill net



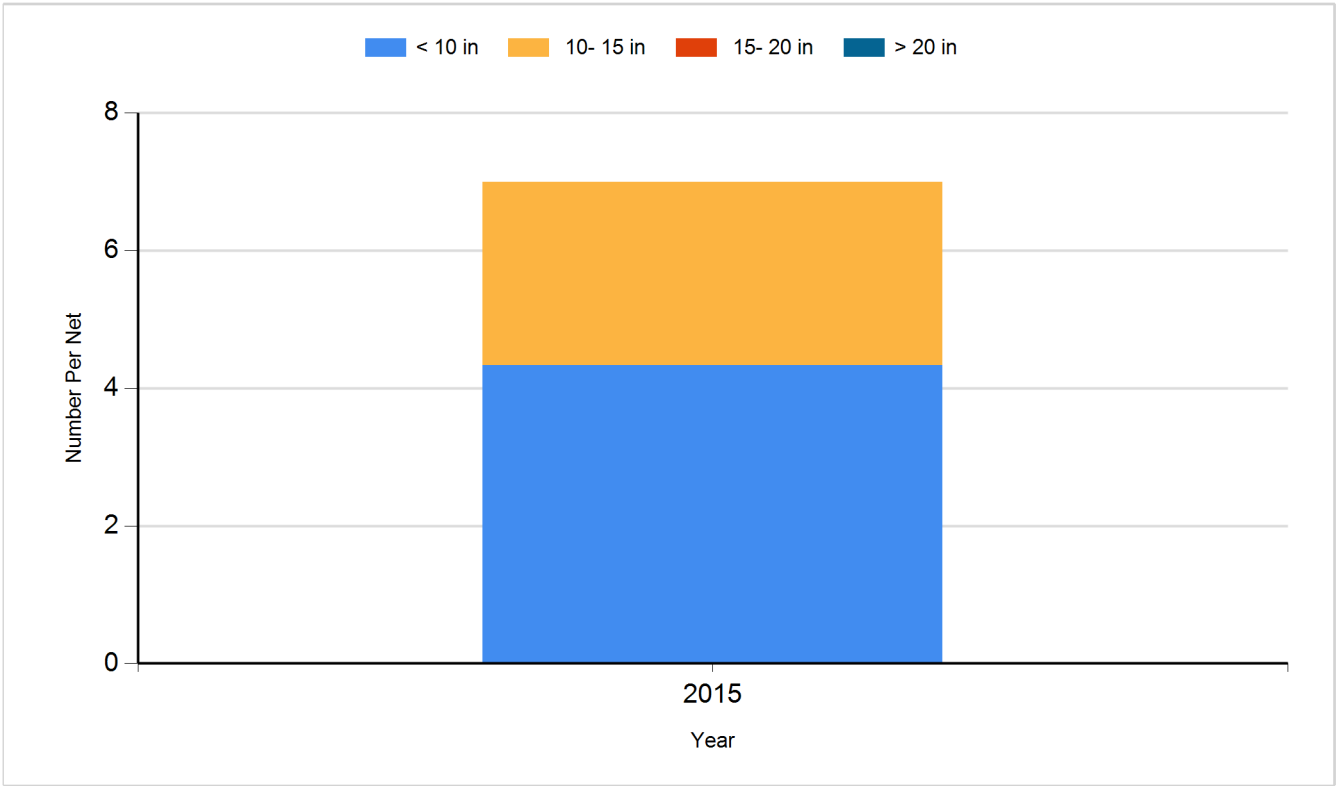
Species: Northern Pike
Gear: AFS std gill net



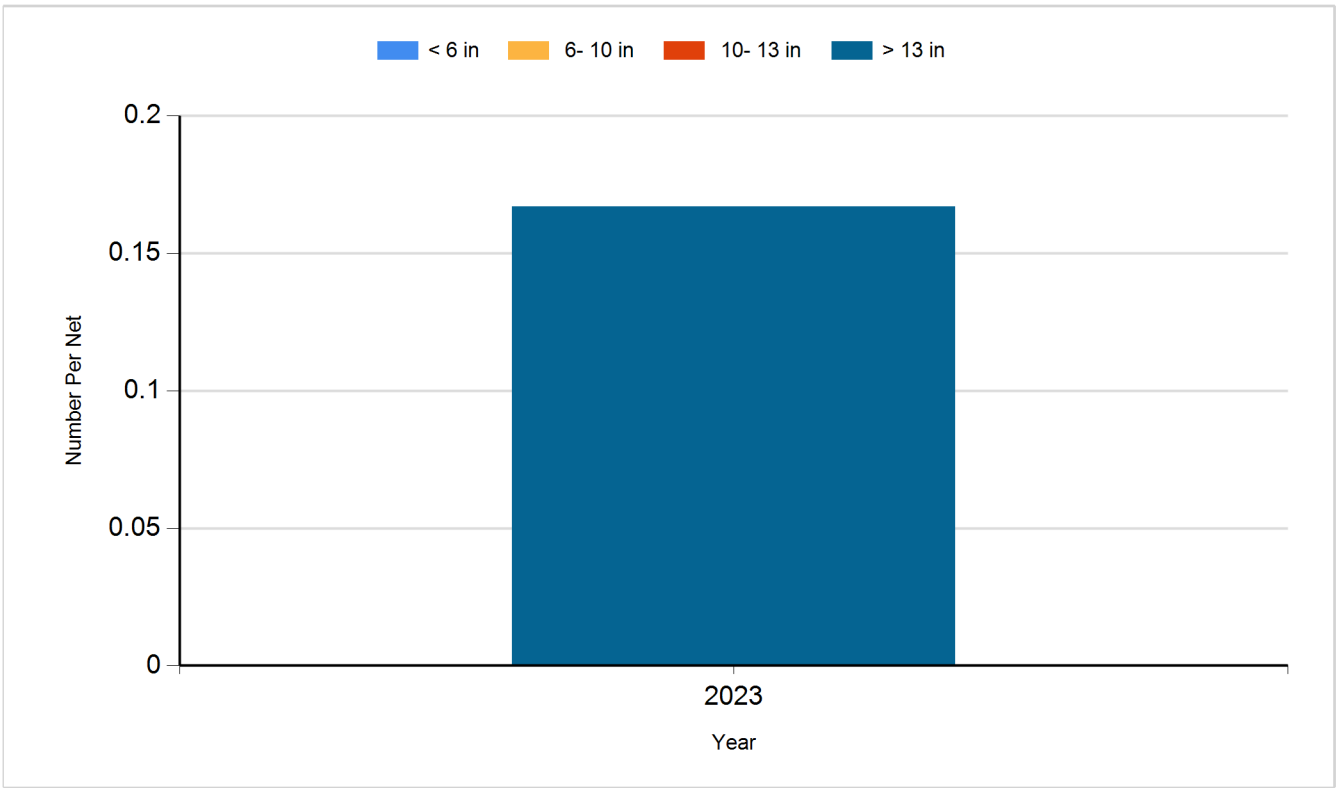
Species: Walleye
Gear: AFS std gill net



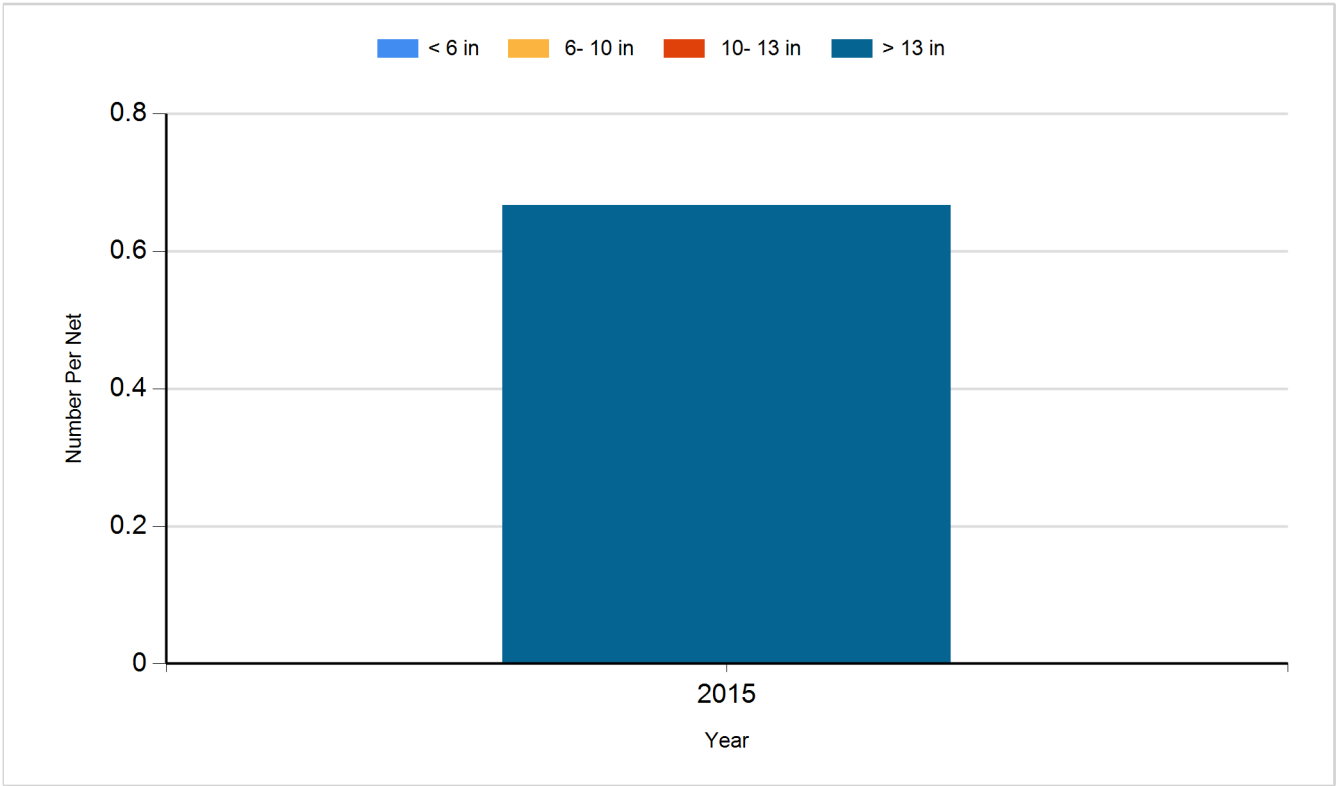
Species: Walleye
Gear: std exp gill net



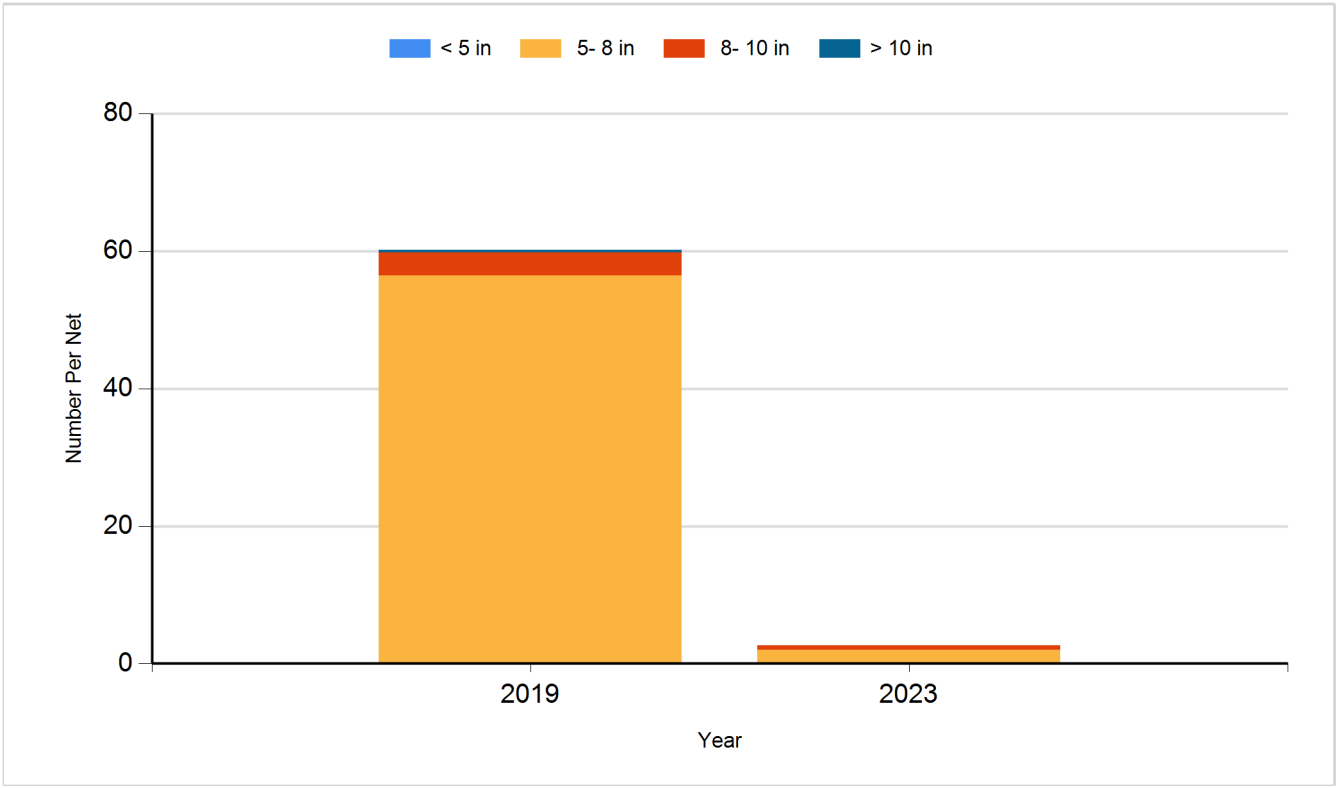
Species: White Sucker
Gear: AFS std gill net



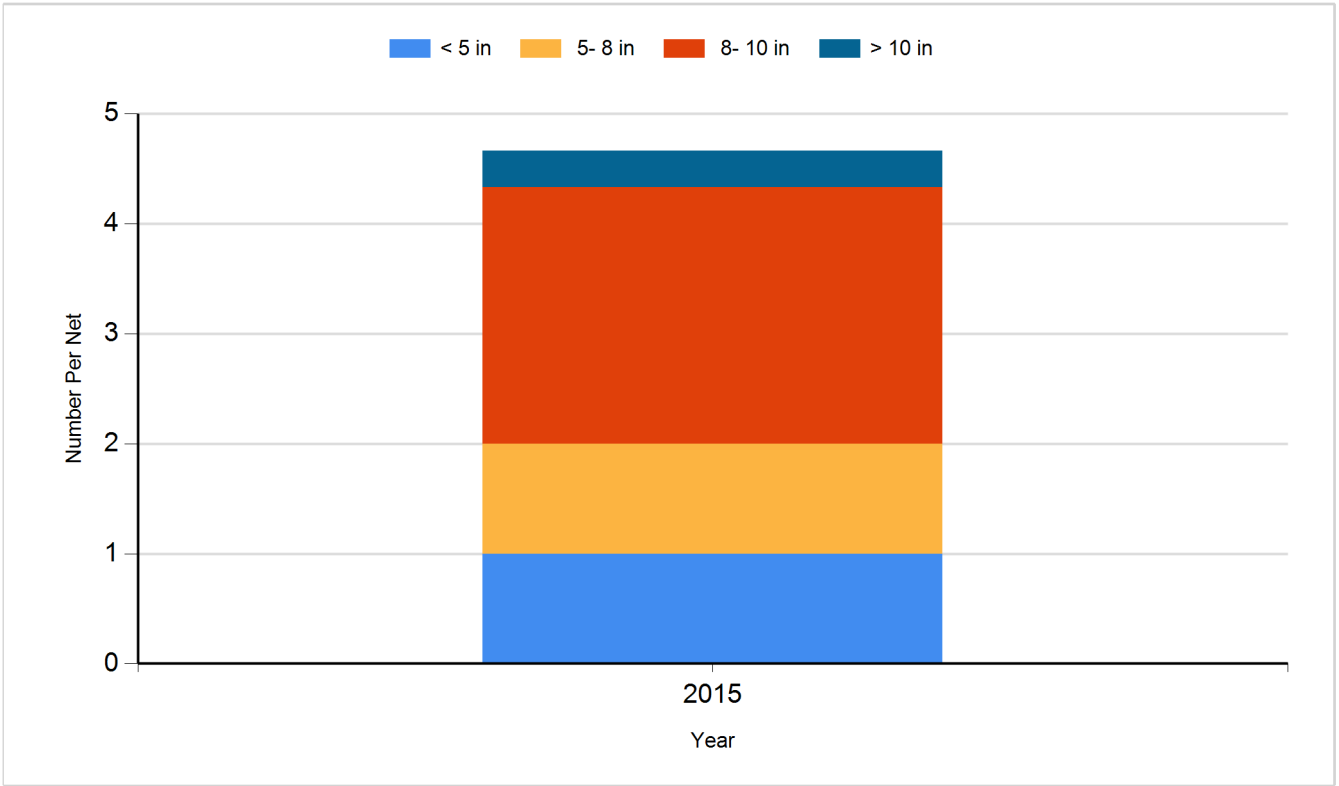
Species: White Sucker
Gear: std exp gill net



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
2012	Walleye	Fry	180,000
2014	Walleye	Fry	200,000
2017	Walleye	Fry	185,000
2019	Saugeye	Small Fingerling	28,000
2021	Walleye	Fry	200,000
2022	Walleye	Fry	200,000
2023	Walleye	Fry	200,000