Pierpont Dam Survey Summary

Pierpont Dam, located 2.0 miles south of Pierpont, is managed as a northern pike and yellow perch fishery, but other fish species (e.g., bluegill, walleye) are present and may contribute to the fishery.

- **Northern pike.** Northern pike numbers were higher in 2020 than in 2016 and relative abundance was considered high (4.0/gill net). Those sampled ranged in length from 13.0 to 28.3 inches, most (11 of 13) were ≥21.0 inches but only one exceeded 28.0 inches. Northern pike respond to rising water levels and population increases are expected following recent high-water conditions experienced across northeast South Dakota.

- **Walleye.** Although the lake is managed as a northern pike and yellow perch fishery, walleye (includes saugeye) are occasionally stocked. In 2020, relative abundance of walleyes was low (1.0/gill net) as only three individuals that ranged in length from 19.8 to 23.8 inches were caught.

- **Yellow perch**. Yellow perch numbers were considerably higher in 2020 than in 2016. At 24.3/gill net, relative abundance was considered moderate to high. Sampled yellow perch ranged in length from 5.5 to 9.1 inches, nearly half (45%) were 8.0 inches or longer.

For more detailed results see the computer generated South Dakota Statewide Fisheries Survey for Pierpont (Day; below)

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Pierpont, Day County
MUD-Lake-43-000
2020

Lake Information

Name: Pierpont

County: Day

Surface Area: 71 Acres

Maximum Depth: 16 Feet

Mean Depth: 8 Feet

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jul 29, 2020	2 net-nights
AFS std gill net	Jul 30, 2020	1 net-nights
frame net (std 3/4 in)	Jul 29, 2020	4 net-nights
frame net (std 3/4 in)	Jul 30, 2020	4 net-nights

Common Fish Species Present

Yellow Perch

Northern Pike

Black Bullhead

Black Crappie

Bluegill

Walleye

Green Sunfish

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	286	86.0	34.2	0		0		99	1
	Black Crappie	12	4.0	2.9	58	24	8		112	2
	Bluegill	1	0.3	0.6	100		100		120	
	Northern Pike	13	4.0	2.2	92		8		85	3
	Walleye	3	1.0	1.1	100		67		96	2
	Yellow Perch	73	24.3	17.7	45	8	0		96	1
frame net (std 3/4 in)	Black Bullhead	264	8.8	8.1	0		0		95	2
	Black Crappie	5	0.6	0.7	100		0		114	3
	Bluegill	14	1.8	1.8	100		7		126	3
	Green Sunfish	2	0.3	0.2	50		0		121	16
	Northern Pike	15	0.5	0.7	50		0		86	3
	Yellow Perch	171	21.4	19.8	43	5	0		100	1

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.

***AFS standard frame net used in 2016**

		CPUE										
Gear	Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Avg
AFS std gill net	Black Bullhead						69.5				86.0	77.75
	Black Crappie						0.8				4.0	2.40
	Bluegill						0.2				0.3	0.25
	Northern Pike						1.8				4.0	2.90
	Walleye						0.7				1.0	0.85
	Yellow Perch						3.7				24.3	14.00
frame net (std 3/4 in)*	Black Bullhead		130.9				110.0				8.8	83.23
	Black Crappie		13.0				6.3				0.6	6.63
	Bluegill		0.0				0.3				1.8	0.70
	Green Sunfish		0.1				0.2				0.3	0.20
	Northern Pike		1.8				0.7				0.5	1.00
	Walleye		0.0				0.3				0.0	0.10
	Yellow Perch		3.3				1.3				21.4	8.67
std exp gill net	Black Bullhead		123.0									123.00
	Black Crappie		4.0									4.00
	Northern Pike		6.5									6.50
	Yellow Perch		19.0									19.00

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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AFS std gill net	Northern Pike	PSD						45				92
		PSD-P						0				8
		Wr						90				85
	Yellow Perch	PSD						77				45
		PSD-P						55				0
		Wr						95				96
std exp gill net	Northern Pike	PSD		62								
		PSD-P		0								
		Wr		83								
	Yellow Perch	PSD		21								
		PSD-P		0								
		Wr		93								

Fish Condition

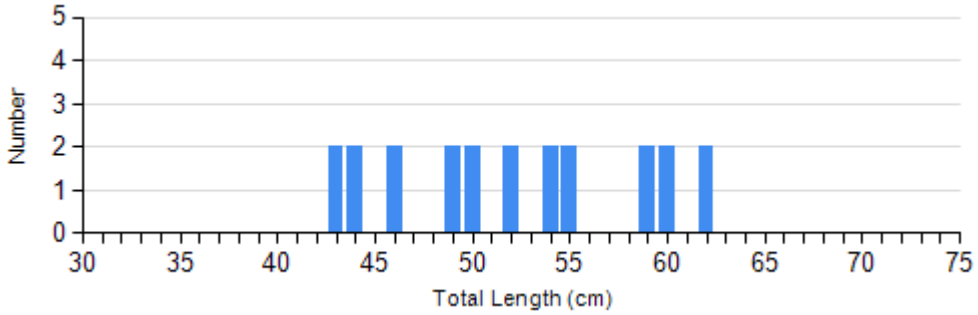
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		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	2016	12	92 (1.7)	10	87 (2.6)	0		0	
	2020	1	94	10	85 (2.7)	1	81	0	
Yellow Perch Gill Net	2016	10	100 (0.5)	10	98 (0.8)	22	92 (1.3)	2	91 (0.0)
	2020	40	101 (1.2)	33	90 (1.0)	0		0	

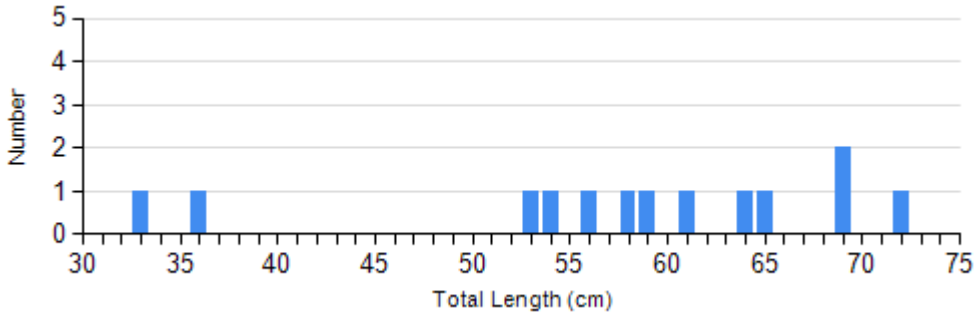
Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Northern Pike
Gear: AFS std gill net

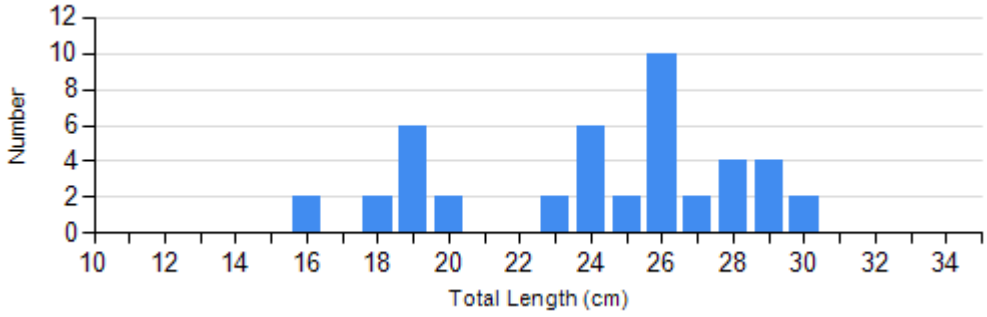


2016

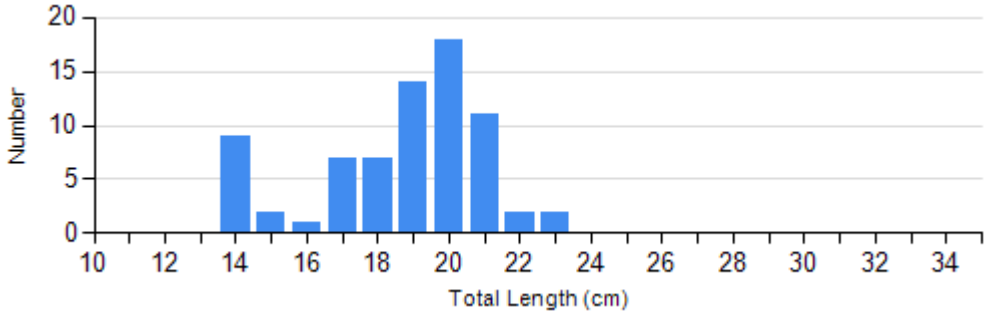


2020

Species: Yellow Perch
Gear: AFS std gill net



2016

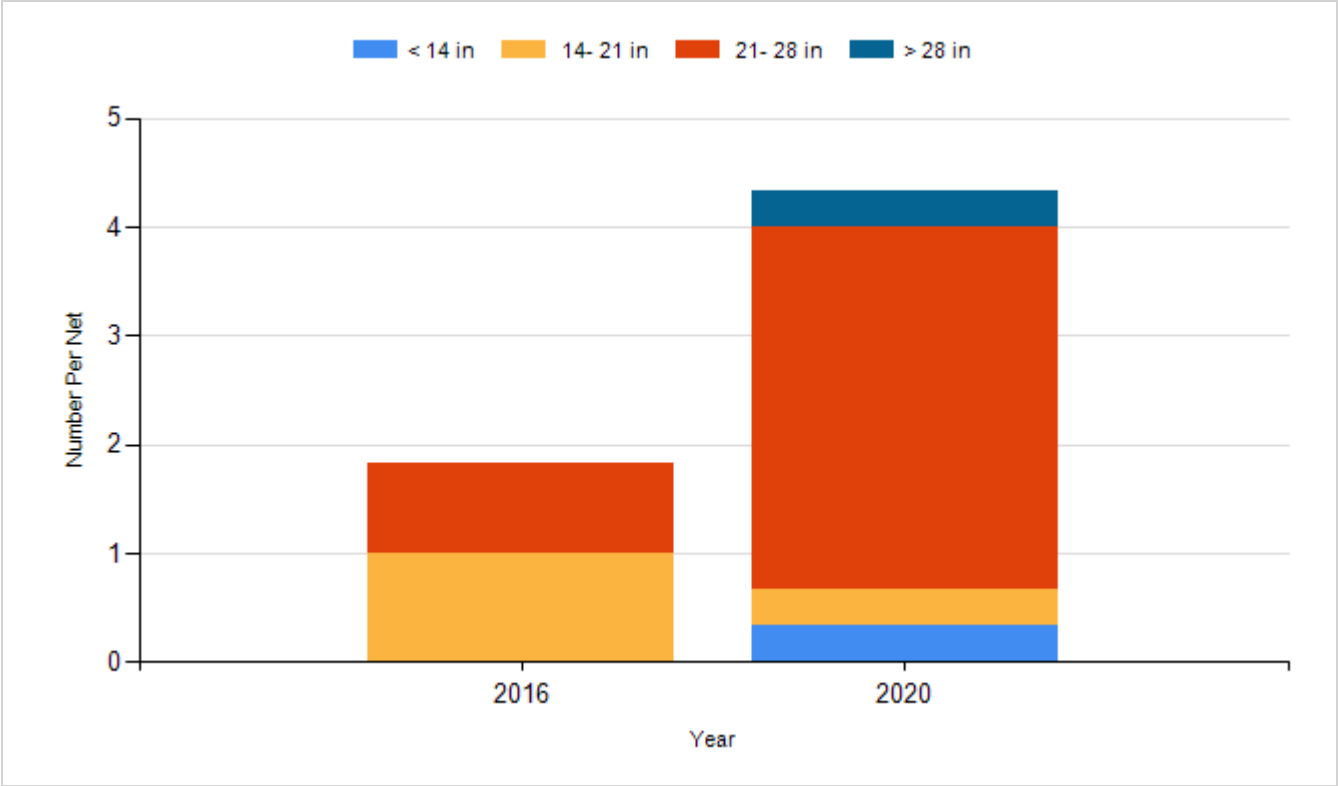


2020

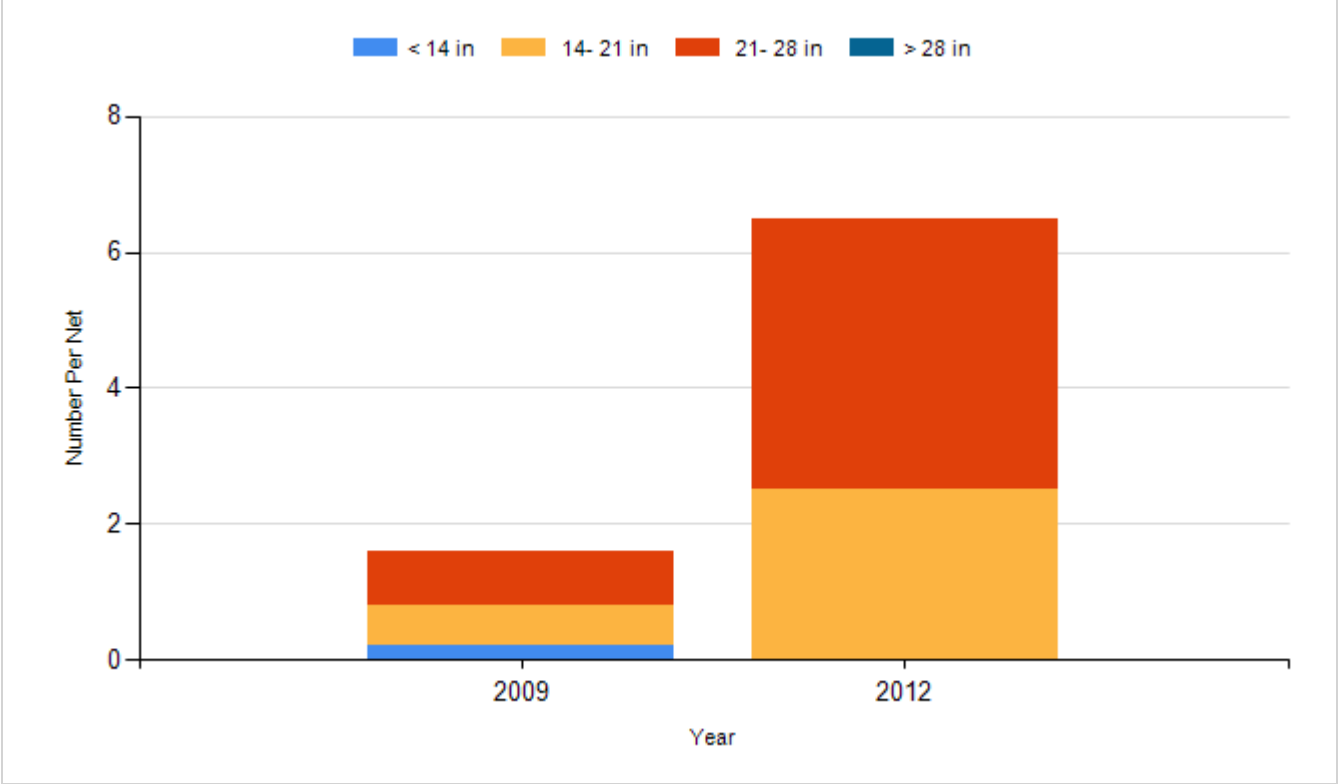
Historic Fish Sizes and Relative Abundance

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

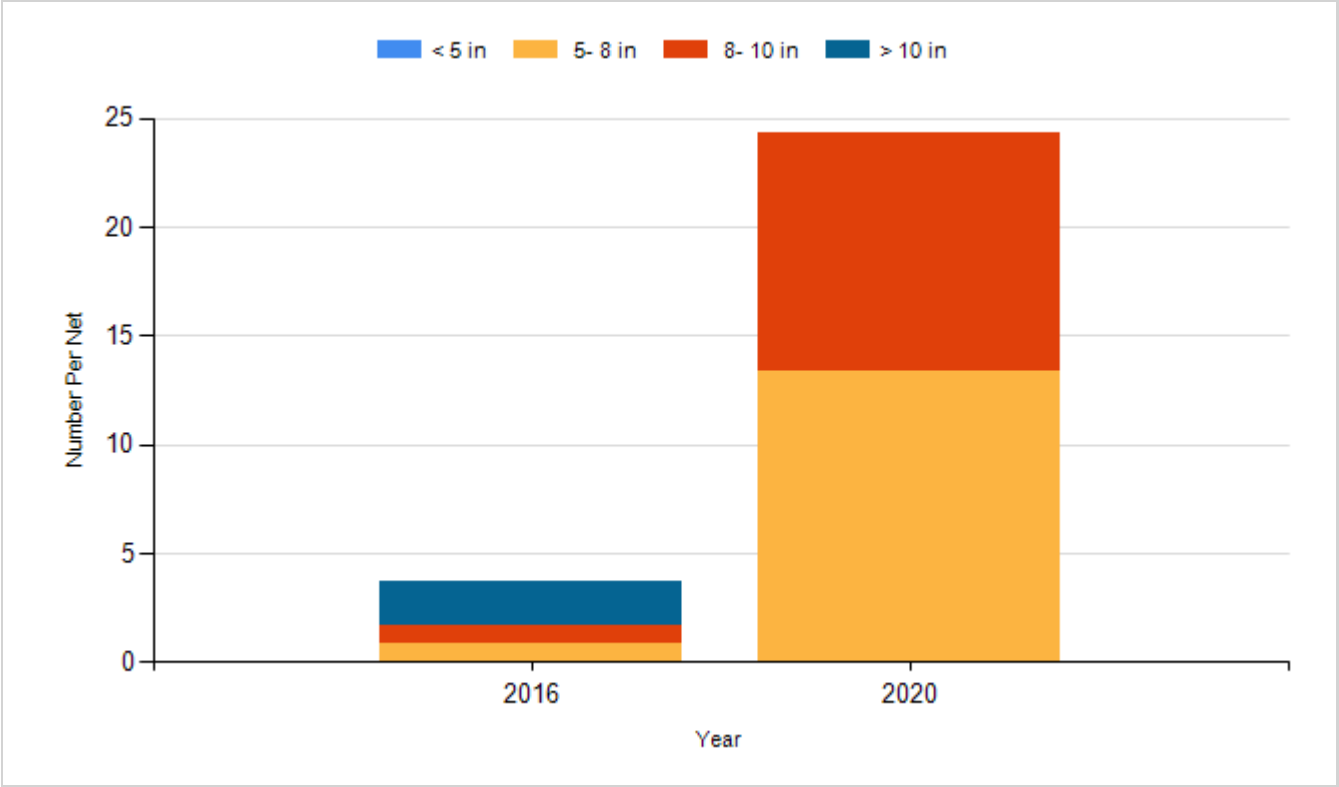
Species: Northern Pike
Gear: AFS std gill net



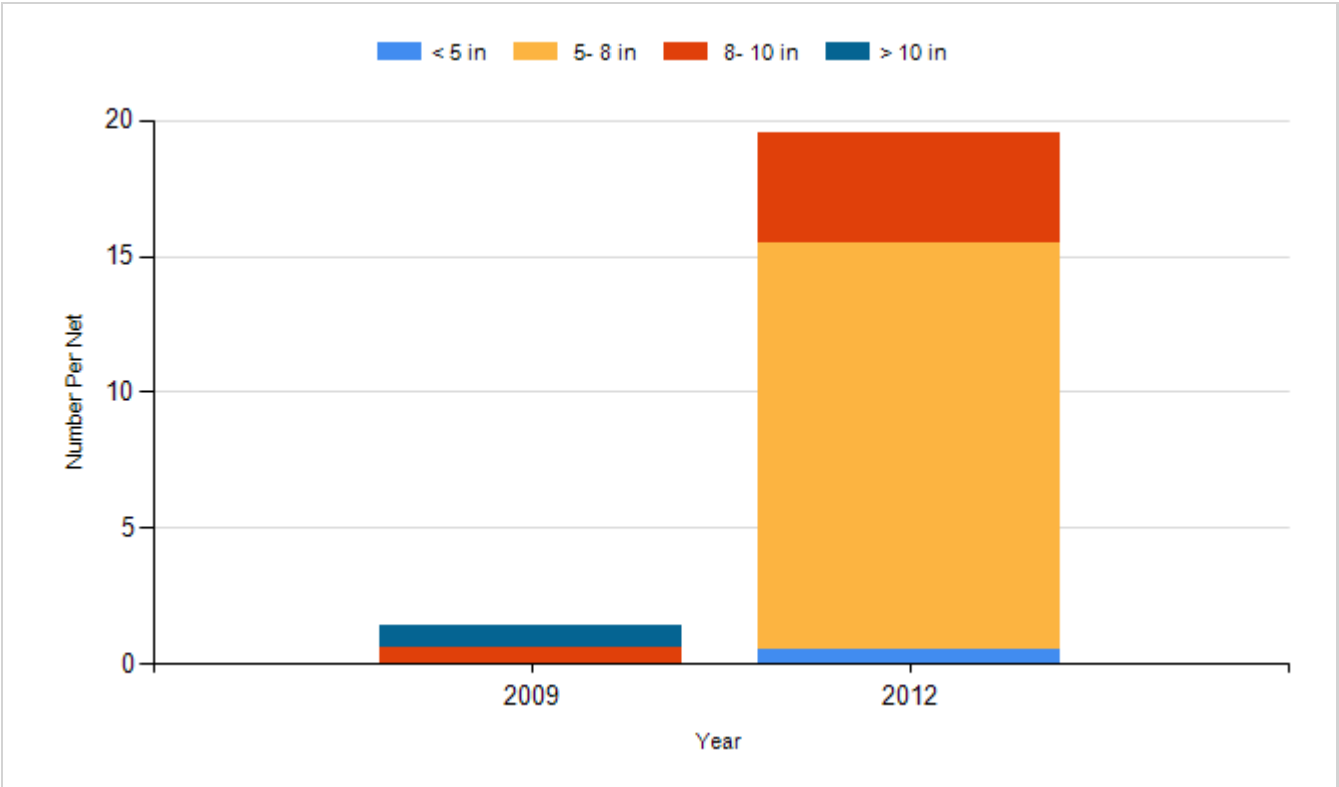
Species: Northern Pike
Gear: std exp gill net



Species: 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	77,000
2013	Channel Catfish	Large Fingerling	1,926
2014	Walleye	Fry	100,000
2017	Saugeye	Fry	100,000