Round Lake Survey Summary

Round Lake, located 6.0 miles north and 1.5 miles east of Goodwin, is managed as a northern pike, walleye, and yellow perch fishery. Other fish species (e.g., black bullhead) are present and may contribute to the fishery.

- **Northern pike.** Northern pike numbers increased slightly from those observed in 2016. At 4.7/gill net relative abundance was considered high in 2020. Sampled northern pike ranged in length from 12.2 to 36.6 inches, more than half (55%) were ≥21.0 inches and 14% were 28 inches or longer. Northern pike respond to rising water levels and population increases are expected following high-water conditions experienced in recent years across northeast South Dakota.

- **Walleye.** Although fewer walleyes were sampled in 2020 than in 2016, relative abundance of those ≥10.0 inches remained high (11.5/gill net). Sampled walleyes ranged in length from 6.3 to 26.0 inches, of the fish that were at least 10.0 inches 88% were ≥15.0 inches and 19% were 20.0 inches or longer. Individuals from seven cohorts produced between 2010 and 2019 contributed to the catch. The 2017 (age-3) year class, which coincided with a fry stocking, was the most abundant accounting for 45% of walleyes in the sample, while the naturally produced 2018 (age-2) cohort made up an additional 26%. Growth appears to be fast with a mean length at capture at age 3 of 18.5 inches in 2020.

- **Yellow perch**. Yellow perch was the most abundant species in the 2020 gill net catch. At 17.6/gill net, relative abundance was moderate to high for Round Lake. Sampled yellow perch ranged in length from 4.7 to 12.6 inches, of those ≥5.0 inches 27% were ≥8.0 inches and 15% were 10 inches or longer. Four consecutive year classes (2016 – 2019) were present. Individuals from the 2019 (age-1) cohort, which had a mean length at capture of 7.0 inches, were the most abundant accounting for 80% of sampled yellow perch.

For more detailed results see the computer generated South Dakota Statewide Fisheries Survey for Round (Deuel; below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Round, Deuel County
UBS-Lake-320-001
2020

Lake Information

Name: Round

County: Deuel

Surface Area: 969 Acres

Maximum Depth: 12 Feet

OHWM Elevation: 1,860

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Sep 09, 2020	6 net-nights
AFS std gill net	Sep 10, 2020	6 net-nights

Common Fish Species Present

Walleye

Northern Pike

Yellow Perch

White Sucker

Black Bullhead

Common Carp

Bigmouth Buffalo

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	2	0.0	0.0	0		0			
	Black Bullhead	26	2.0	0.7	58	16	42	16	101	2
	Common Carp	2	0.0	0.0	0		0			
	Northern Pike	57	4.7	1.2	55	10	14	7	95	1
	Walleye	157	11.5	1.2	88	4	19	5	97	1
	White Sucker	63	5.3	1.3	100		100		113	2
	Yellow Perch	212	17.6	5.4	27	4	15	3	111	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.

		CPUE										
Gear	Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Avg
AFS std gill net	Bigmouth Buffalo						0.0				0.0	0.00
	Black Bullhead						1.8				2.0	1.90
	Common Carp						0.3				0.0	0.15
	Northern Pike						4.3				4.7	4.50
	Walleye						16.8				11.5	14.15
	White Sucker						3.3				5.3	4.30
	Yellow Perch						1.5				17.6	9.55
frame net (std 3/4 in)	Bigmouth Buffalo	1.2										1.20
	Black Bullhead	48.2										48.20
	Common Carp	0.6										0.60
	Northern Pike	0.6										0.60
	Tadpole Madtom	0.0										0.00
	Walleye	0.0										0.00
	White Sucker	0.5										0.50
	Yellow Perch	2.0										2.00
std exp gill net	Black Bullhead	2.5										2.50
	Northern Pike	10.5										10.50
	White Sucker	6.5										6.50
	Yellow Perch	23.5										23.50

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						31				55
		PSD-P						18				14
		Wr						110				95
	Walleye	PSD						82				88
		PSD-P						22				19
		Wr						102				97
	Yellow Perch	PSD						83				27
		PSD-P						61				15
		Wr						100				111
std exp gill net	Northern Pike	PSD	86									
		PSD-P	8									
		Wr	82									
	Yellow Perch	PSD	43									
		PSD-P	28									
		Wr	97									

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+
2020	138	308 (16)	418 (36)	470 (62)	566 (2)		607 (16)		629 (2)		655 (4)
2016	204	234 (2)	387 (115)		500 (67)		577 (20)				

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2020	211	179 (169)	248 (18)	284 (16)	309 (7)						
2016	18	139 (3)	220 (4)	283 (5)		323 (6)					
2011	232	104 (92)	163 (73)	222 (28)	274 (36)	341 (1)	318 (2)				

Fish Condition

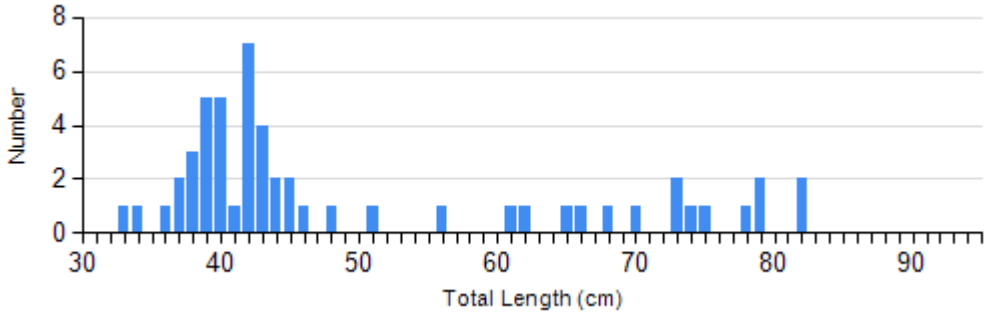
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		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	35	119 (24.0)	7	95 (3.4)	9	86 (2.2)	0	
	2020	25	97 (1.2)	23	94 (1.5)	6	91 (3.7)	2	86 (1.5)
Walleye Gill Net	2016	36	102 (1.3)	122	101 (0.6)	44	102 (0.9)	0	
	2020	17	99 (1.8)	95	97 (0.5)	18	96 (1.7)	8	100 (3.3)
Yellow Perch Gill Net	2016	3	103 (3.0)	4	105 (3.3)	5	102 (2.7)	6	94 (3.3)
	2020	155	112 (0.6)	25	112 (1.5)	22	106 (1.9)	9	94 (3.1)

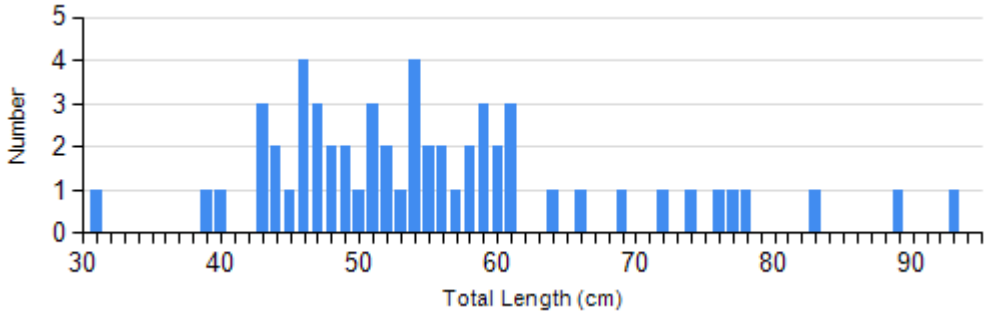
Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Northern Pike
Gear: AFS std gill net

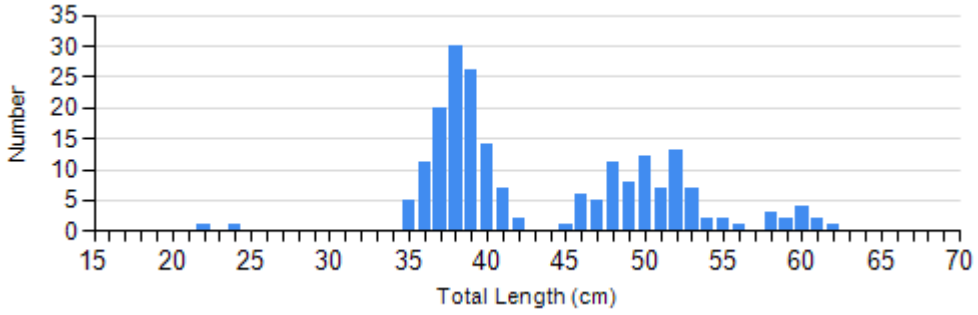


2016

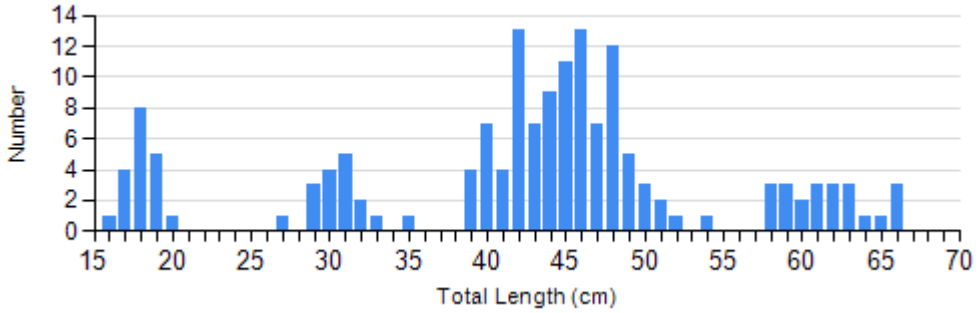


2020

Species: Walleye
Gear: AFS std gill net

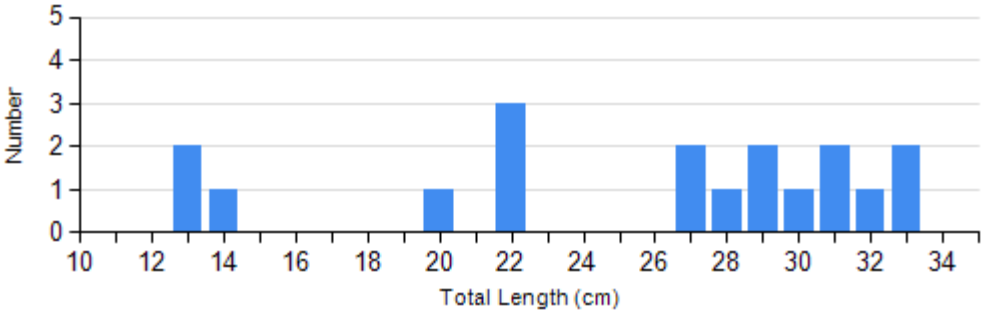


2016

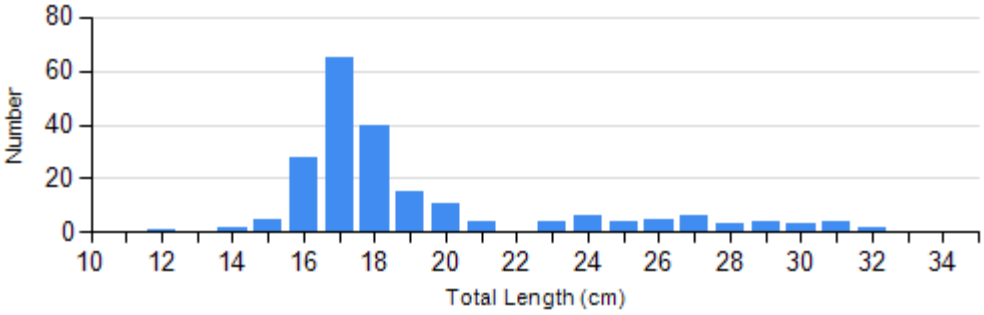


2020

Species: Yellow Perch
Gear: AFS std gill net



2016

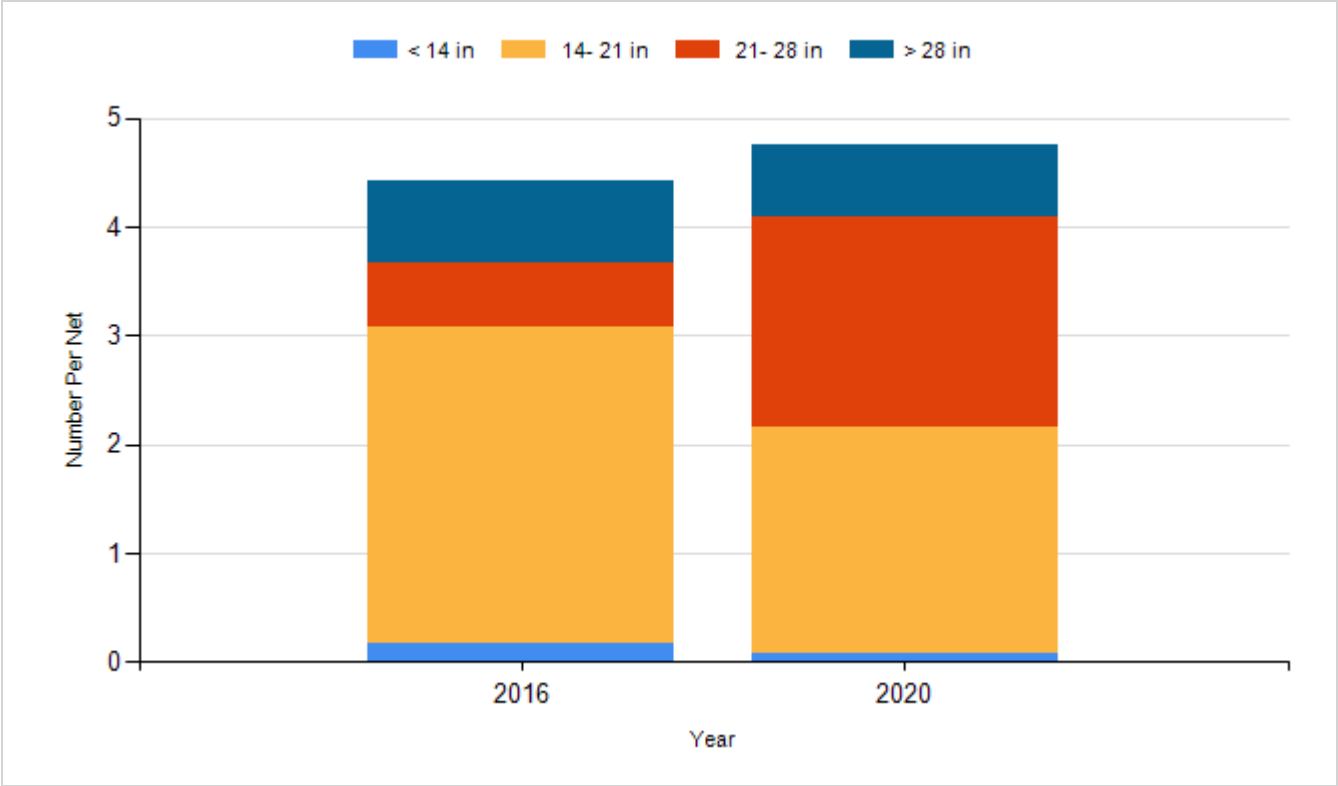


2020

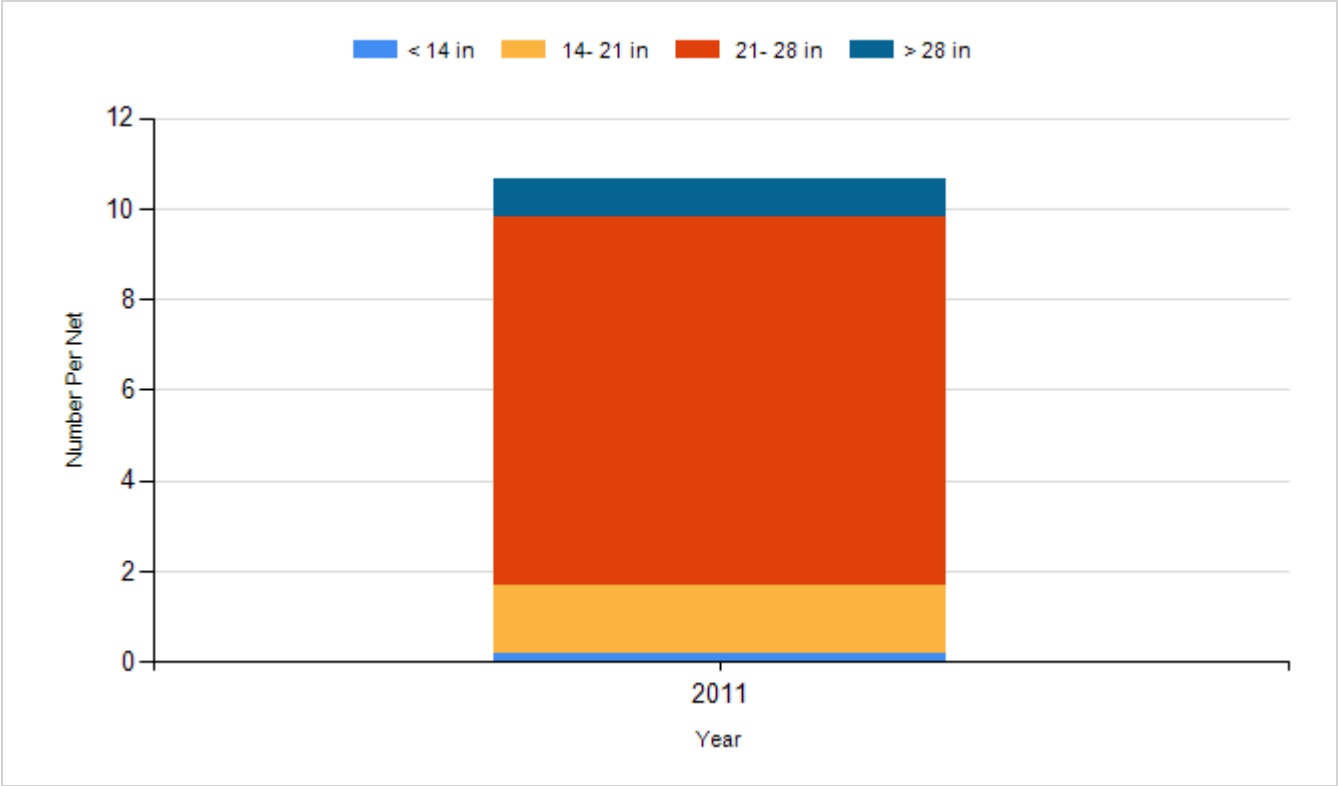
Historic Fish Sizes and Relative Abundance

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

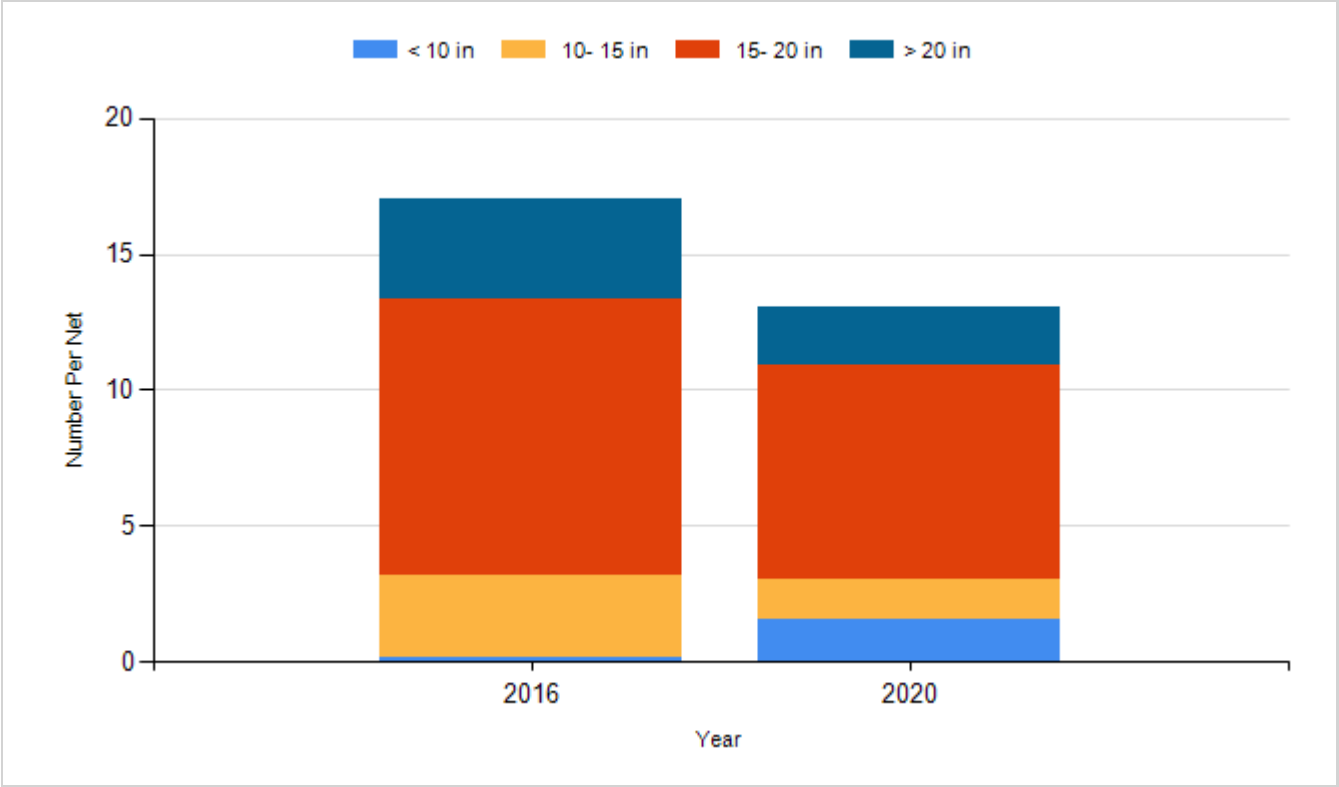
Species: Northern Pike
Gear: AFS std gill net



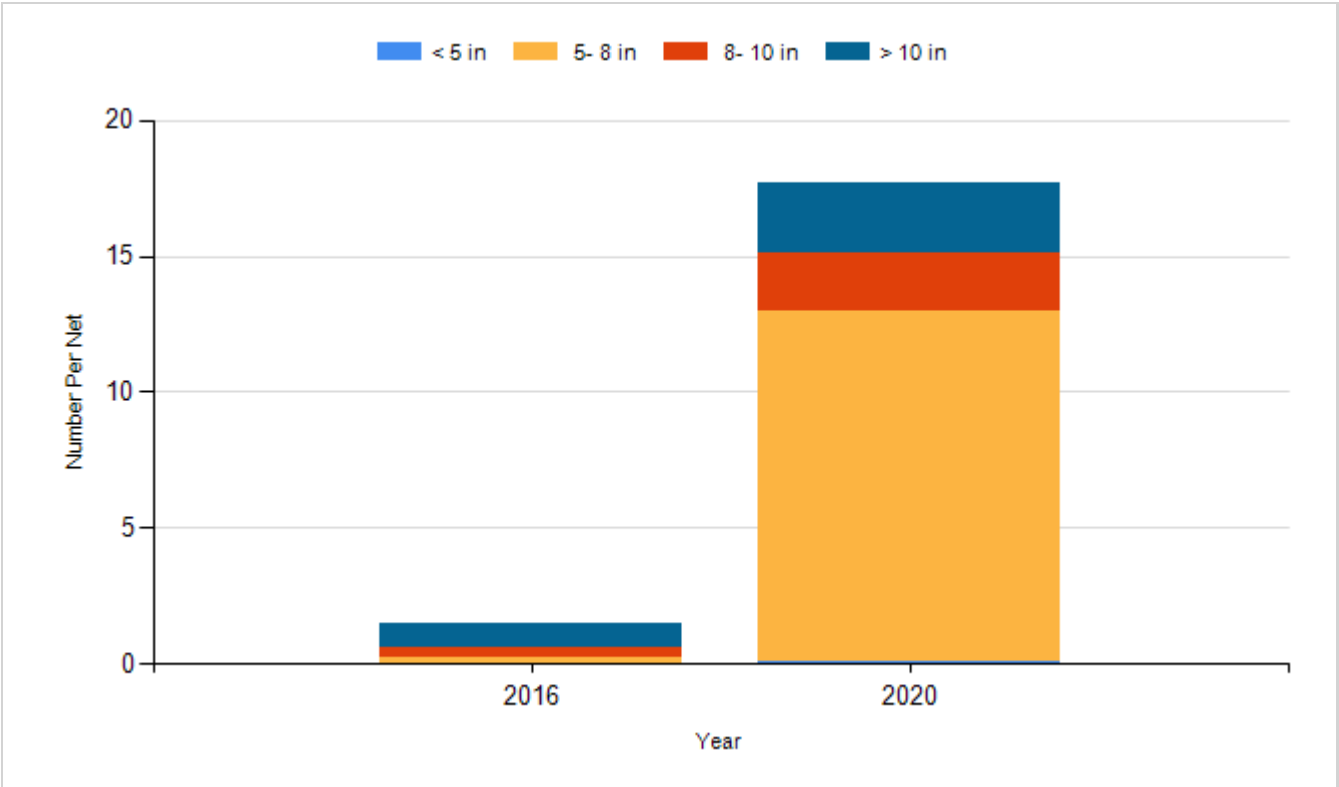
Species: Northern Pike
Gear: std exp gill net



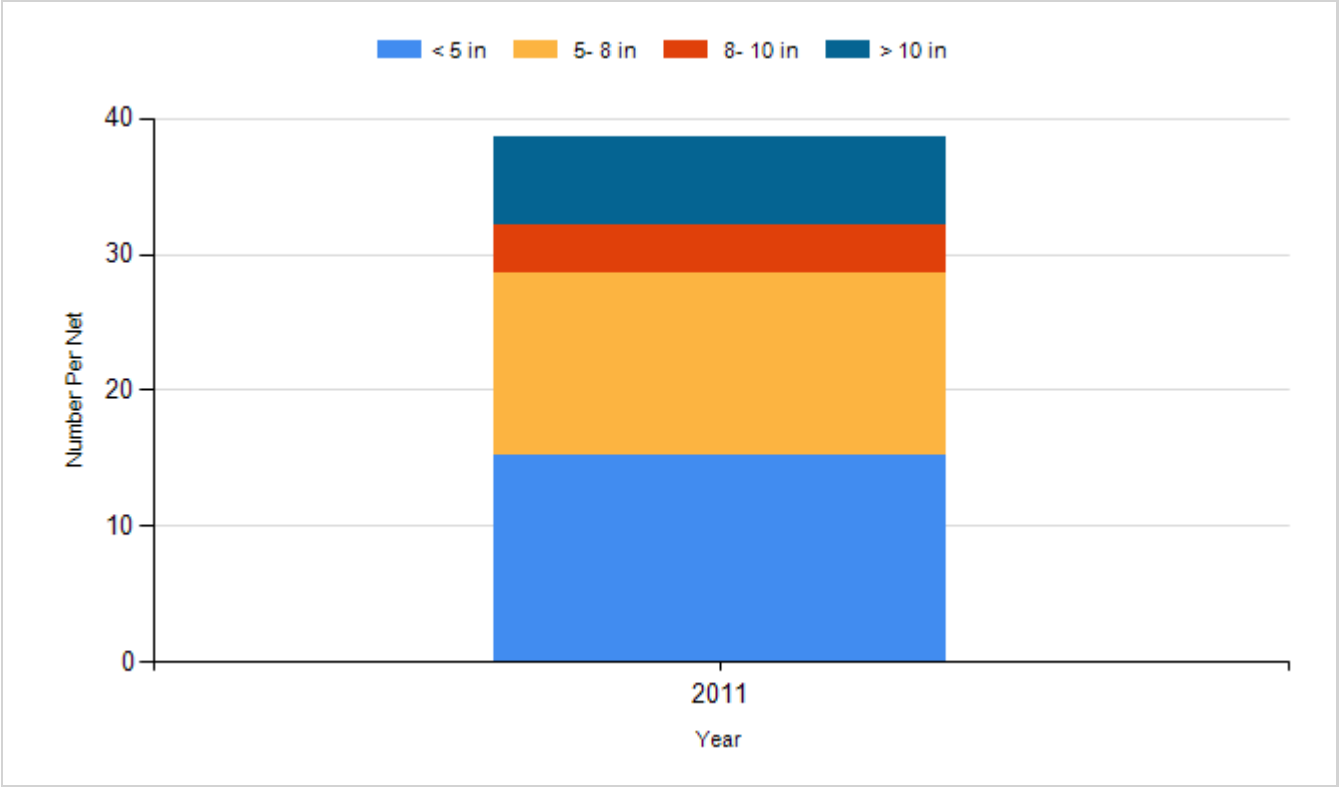
Species: Walleye
Gear: AFS std gill net



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
2010	Walleye	Fry	500,000
2012	Walleye	Fry	500,000
2014	Walleye	Fry	500,000
2016	Saugeye	Fry	500,000
2017	Walleye	Fry	550,000
2019	Walleye	Small Fingerling	83,055