SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Faulkton, Faulk County
SNK-Lake-196-000
2022

Lake Information

Name: Faulkton

County: Faulk

Surface Area: 97 Acres

Maximum Depth: 23 Feet

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 14, 2022	1 net-nights
frame net (std 3/4 in)	Jun 14, 2022	10 net-nights

Common Fish Species Present

Walleye

Largemouth Bass

Channel Catfish

Bluegill

Black Bullhead

Yellow Perch

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
frame net (std 3/4 in)	Black Bullhead	6439	302.7	158.9	0		0		76	2
	Bluegill	243	24.3	16.8	20	4	0		120	2
	Northern Pike	4	0.4	0.2	75		0		92	7
	Yellow Perch	48	4.5	2.8	49	11	31	10	98	6

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	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Avg
frame net (std 3/4 in)	Black Bullhead			142.0							302.7	222.35
	Black Crappie			0.8							0.0	0.40
	Bluegill			11.0							24.3	17.65
	Channel Catfish			0.1							0.0	0.05
	Golden Shiner			0.0							0.0	0.00
	Green Sunfish			0.1							0.0	0.05
	Northern Pike			1.1							0.4	0.75
	Western Painted Turtle			0.0							0.0	0.00
	Yellow Bullhead			0.7							0.0	0.35
	Yellow Perch			1.8							4.5	3.15
std exp gill net	Black Bullhead			42.3								42.30
	Black Crappie			2.7								2.70
	Bluegill			5.0								5.00
	Golden Shiner			0.0								0.00
	Northern Pike			2.7								2.70
	Yellow Bullhead			1.0								1.00
	Yellow Perch			9.0								9.00

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	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
frame net (std 3/4 in)	Black Bullhead	PSD			0							0
		PSD-P			0							0
		Wr			96							76
	Bluegill	PSD			28							20
		PSD-P			0							0
		Wr			93							120
	Channel Catfish	PSD			100							
		PSD-P			0							
		Wr			87							
	Northern Pike	PSD			92							75
		PSD-P			46							0
		Wr			87							92
	Yellow Perch	PSD			33							49
		PSD-P			0							31
		Wr			83							98
std exp gill net	Black Bullhead	PSD			0							
		PSD-P			0							
		Wr			87							
	Bluegill	PSD			13							
		PSD-P			0							
		Wr			97							
	Northern Pike	PSD			100							
		PSD-P			13							
		Wr			91							
	Yellow Perch	PSD			0							
		PSD-P			0							
		Wr			100							

Back-Calculated Lengths

Mean species back-calculated total length (mm) at age, standard error (SE), and sample size (N).

Species: Bluegill

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2020	2	8	82 (9.4)	105 (10.6)								
2019	3	1	76	97	112							
2018	4	18	72 (1.5)	95 (1.8)	116 (2.3)	133 (3.1)						
2017	5	1	82	124	136	145	155					
Weighted Mean		28	75	99	117	134	155					

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2020	2	8										
2019	3	1										
2018	4	18										
2017	5	1										
Weighted Mean		28										

Species: Yellow Perch

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2020	2	15	89 (3.1)	136 (4.7)								
2019	3	10	104 (3.7)	134 (3.7)	170 (3.7)							
2018	4	5	116 (4.7)	139 (5.3)	174 (4)	206 (3.7)						
2017	5	4	118 (24.1)	137 (26.4)	166 (29.3)	187 (27.3)	224 (15.5)					
2016	6	10	132 (3.9)	159 (4.1)	189 (5.3)	214 (5.4)	236 (5)	258 (4.5)				
Weighted Mean		44	108	141	177	206	233	258				

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2020	2	15										
2019	3	10										
2018	4	5										
2017	5	4										
2016	6	10										
Weighted Mean		44										

Length at Capture

Mean length at capture by age across years sampled, sample size (N).

Species: Bluegill

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2022	243		137 (58)	125 (7)	140 (175)	162 (4)					
2015	131				144 (126)	146 (5)					

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2015	28		134 (3)		158 (25)						

Fish Condition

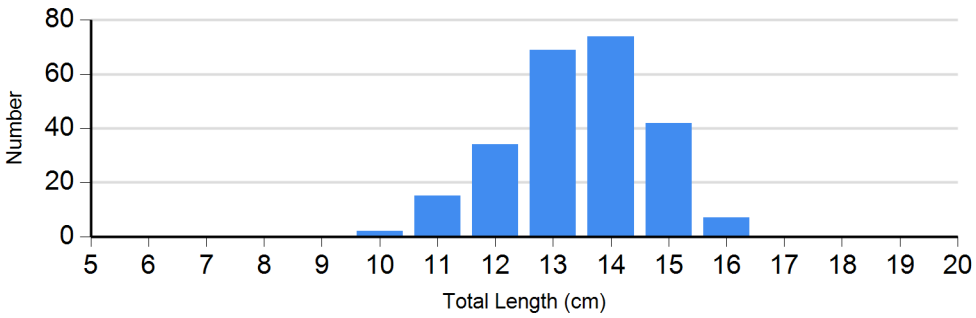
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Bluegill Frame Net	2022	194	123 (1.9)	49	108 (3.2)	0		0	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Bluegill
Gear: frame net (std 3/4 in)

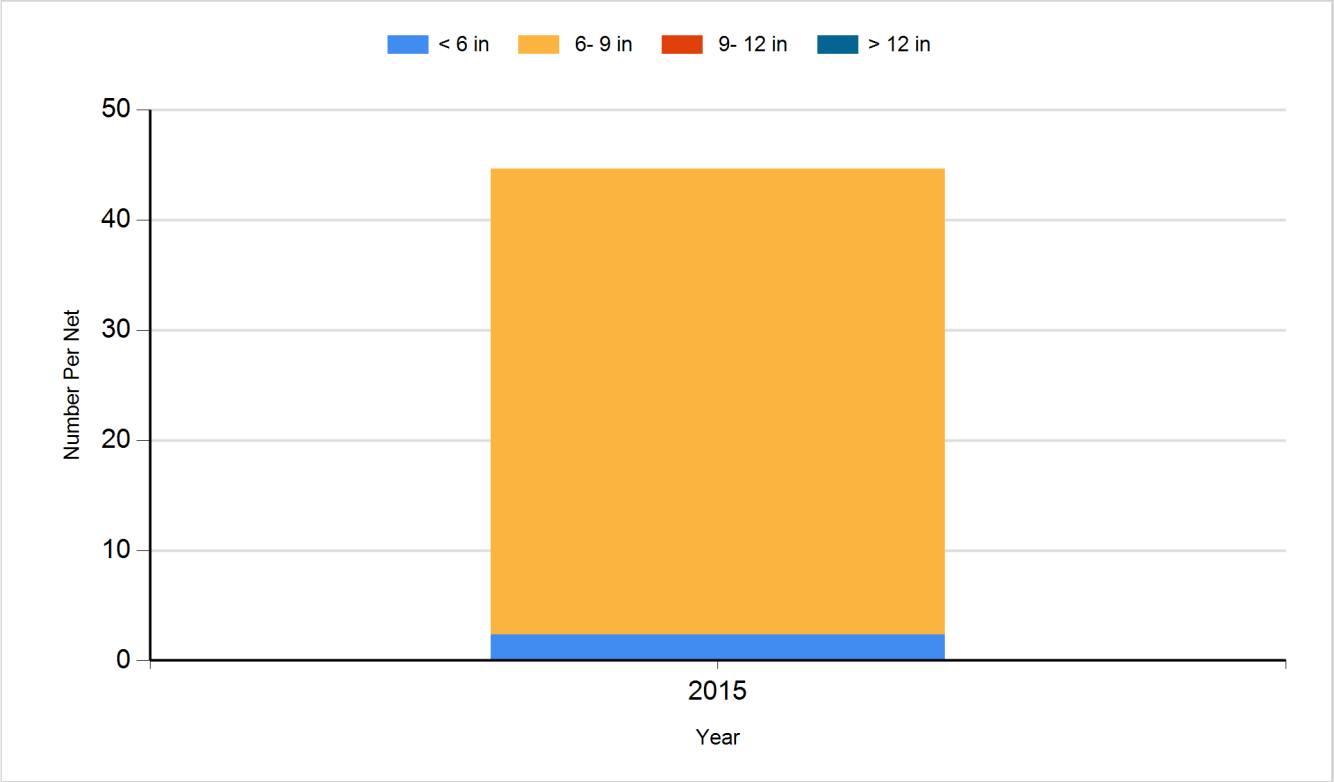


2022

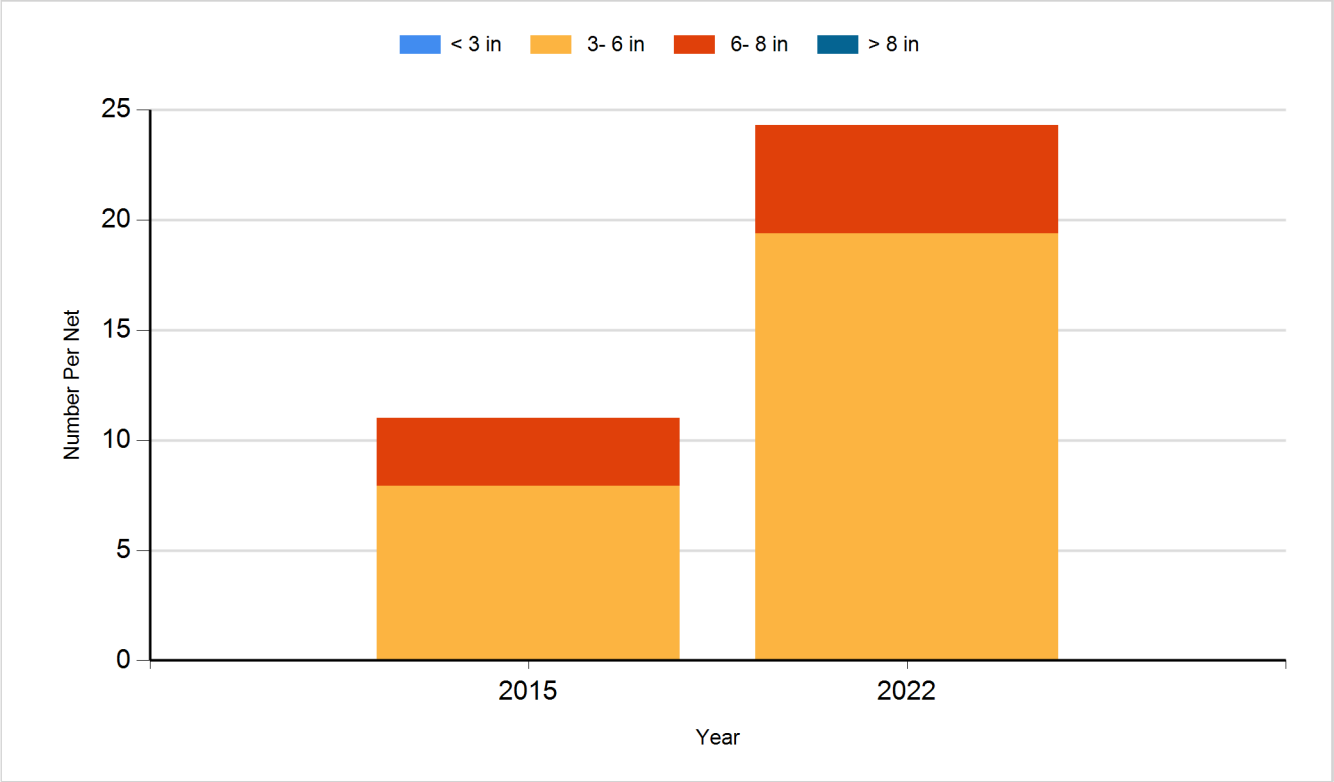
Historic Fish Sizes and Relative Abundance

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

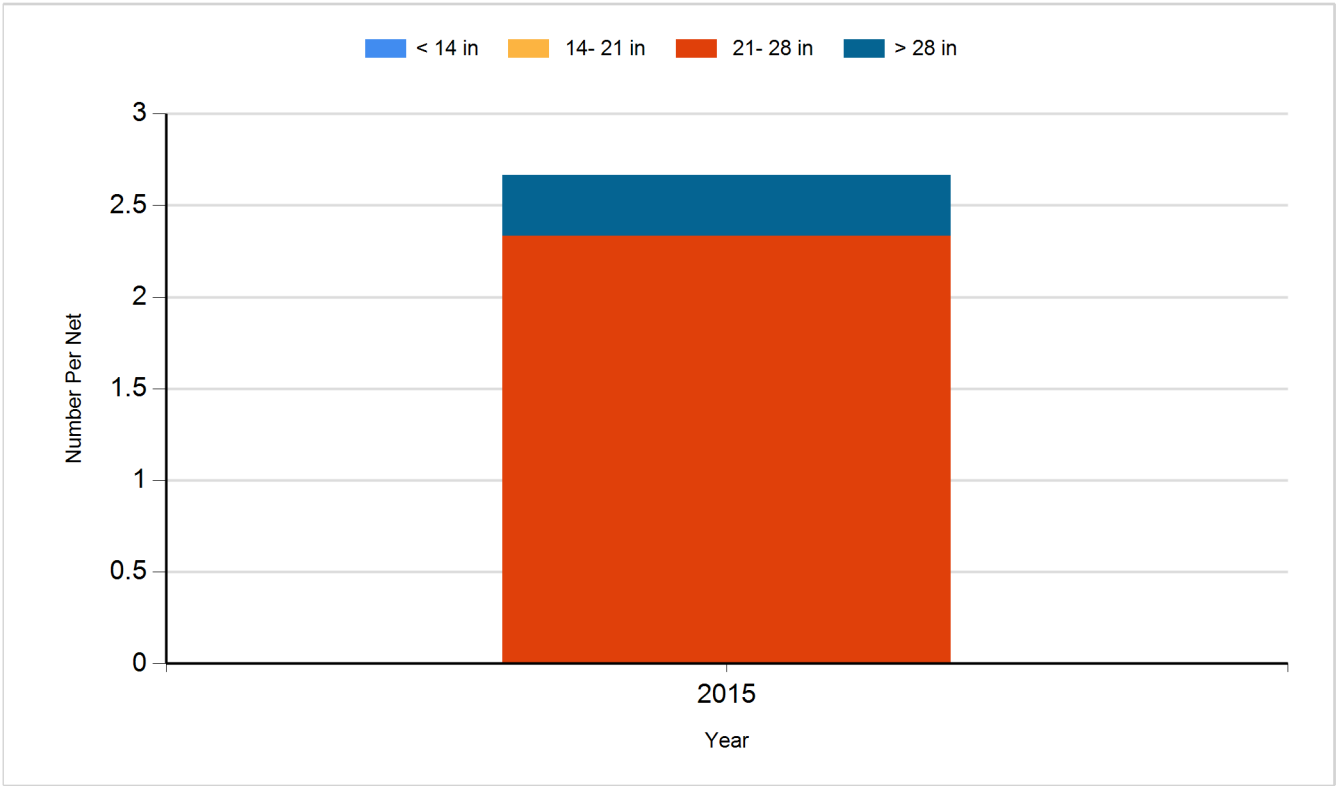
Species: Black Bullhead
Gear: std exp gill net



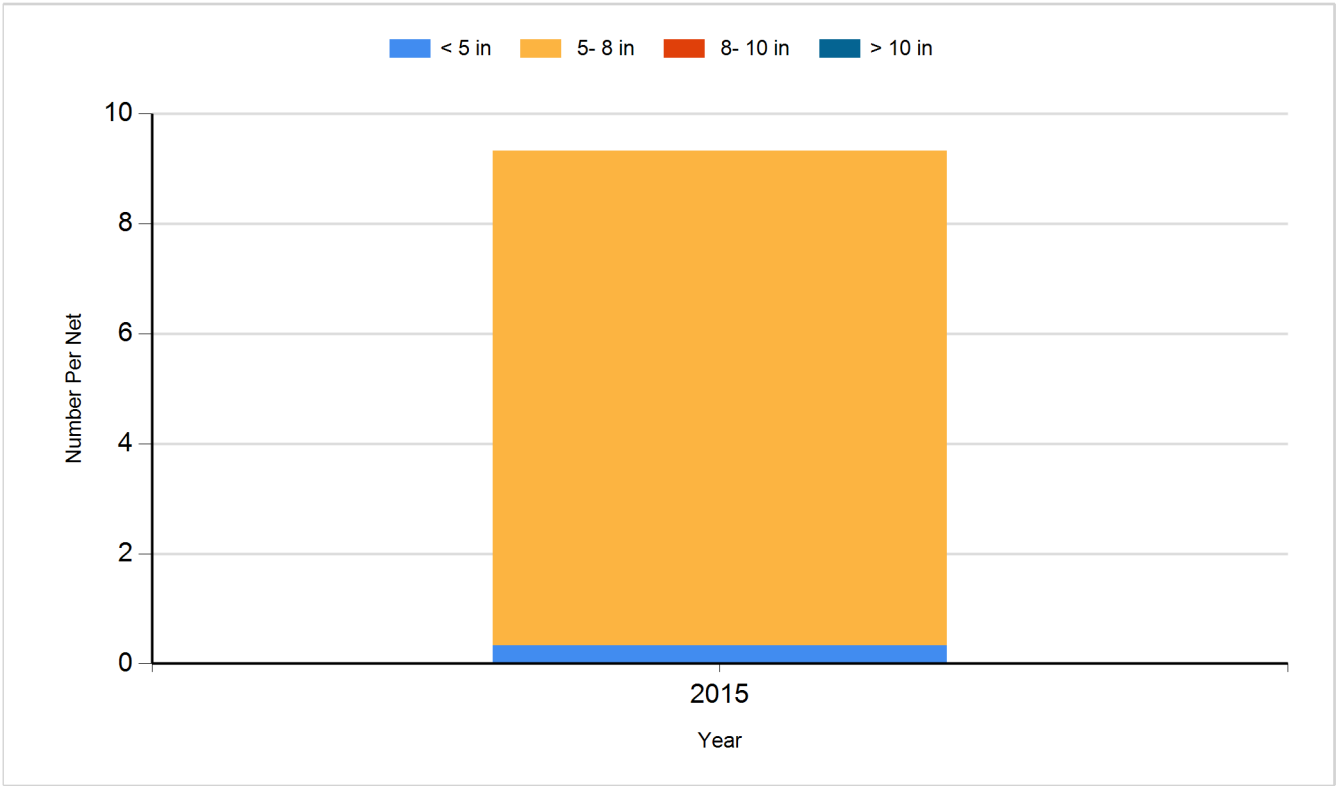
Species: Bluegill
Gear: frame net (std 3/4 in)



Species: Northern Pike
Gear: std exp 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
2011	Bluegill	Adult	1,000
2011	Yellow Perch	Adult	1,700
2012	Bluegill	Adult	1,300
2012	Walleye	Fry	55,000
2013	Channel Catfish	Large Fingerling	1,380
2013	Largemouth Bass	Fingerling	2,880
2014	Walleye	Fry	30,000
2017	Walleye	Fry	28,000
2018	Saugeye	Small Fingerling	5,300
2020	Bluegill	Adult	350
2020	Largemouth Bass	Juvenile	170
2022	Largemouth Bass	Juvenile	1,000