SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Dog Ear, Tripp County
KYP-Lake-116-000
2024

Lake Information

Name:	Dog Ear	**Maximum Depth:**	8 Feet
County:	Tripp	**Mean Depth:**	5 Feet
Legal Description:	T96-R77-S1		
Surface Area:	252 Acres		

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 24, 2024	2 net-nights
boat shocker (night)	Oct 28, 2024	3613 seconds
frame net (std 3/4 in)	Jun 24, 2024	10 net-nights

Common Fish Species Present

Yellow Perch

Northern Pike

Largemouth Bass

Black Crappie

Bluegill

Black Bullhead

Green Sunfish

Walleye

Sunfish Hybrid

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 Crappie	3	0.5	1.5	100		100		106	
	Largemouth Bass	1	0.0	0.0	0		0			
	Northern Pike	7	2.5	4.6	20		0		92	3
	Yellow Perch	14	7.0	0.0	21		7		104	6
boat shocker (night)	Largemouth Bass	96	88.3	69.1	73	7	0		141	1
frame net (std 3/4 in)	Black Bullhead	5	0.5	0.3	20		0		98	4
	Black Crappie	145	10.8	4.5	78	6	57	7	106	2
	Bluegill	63	6.3	3.5	90	6	59	9	124	3
	Green Sunfish	2	0.2	0.2	0		0		123	9
	Northern Pike	86	1.9	1.0	16		5		89	4
	Sunfish Hybrid	1	0.1	0.1	0		0		190	
	Walleye	1	0.1	0.1	100		0		86	
	Yellow Perch	39	3.9	2.8	18	10	3		107	3

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	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS std frame net	Black Bullhead				18.0							18.00
	Black Crappie				1.1							1.10
	Bluegill				8.8							8.80
	Bluegill X Gr. Sunfish Hybrid				2.0							2.00
	Northern Pike				0.3							0.30
	Yellow Perch				6.6							6.60
AFS std gill net	Black Bullhead				46.0			40.0			0.0	28.67
	Black Crappie				2.5			6.0			0.5	3.00
	Bluegill				2.5			5.5			0.0	2.67
	Golden Shiner				0.0			0.0			0.0	0.00
	Largemouth Bass				1.5			0.5			0.0	0.67
	Northern Pike				3.5			12.0			2.5	6.00
	Yellow Perch				19.5			12.0			7.0	12.83
boat shocker (night)	Largemouth Bass				24.0			11.0			88.3	41.10
frame net (std 3/4 in)	Black Bullhead	5.1						1.5			0.5	2.37
	Black Crappie	0.0						36.5			10.8	15.77
	Bluegill	3.5						40.0			6.3	16.60
	Green Sunfish	0.5						0.0			0.2	0.23
	Northern Pike	0.4						1.9			1.9	1.40
	Sunfish Hybrid	0.0						17.4			0.1	5.83
	Walleye	0.0						0.0			0.1	0.03
	Yellow Perch	9.4						3.9			3.9	5.73

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	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std frame net	Black Bullhead	PSD				3						
		PSD-P				0						
		Wr				79						
	Black Crappie	PSD				0						
		PSD-P				0						
		Wr				104						
	Bluegill	PSD				36						
		PSD-P				3						
		Wr				114						
	Northern Pike	PSD				33						
		PSD-P				33						
		Wr				90						
	Yellow Perch	PSD				94						
		PSD-P				20						
		Wr				110						
AFS std gill net	Black Bullhead	PSD				2			86			
		PSD-P				0			0			
		Wr				81			93			
	Black Crappie	PSD				0			17			100
		PSD-P				0			0			100
		Wr				102			111			106
	Bluegill	PSD				20			45			
		PSD-P				20			0			
		Wr				94			134			
	Largemouth Bass	PSD				33			100			0
		PSD-P				0			100			0
		Wr				105			74			
	Northern Pike	PSD				14			92			20
		PSD-P				14			42			0
		Wr				82			89			92
	Yellow Perch	PSD				82			21			21
		PSD-P				21			0			7

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net	Yellow Perch	Wr				79			101			104
boat shocker (night)	Largemouth Bass	PSD				63			18			73
		PSD-P				50			18			0
		Wr				117			107			141
frame net (std 3/4 in)	Black Bullhead	PSD	47						73			20
		PSD-P	0						0			0
		Wr	82						94			98
	Black Crappie	PSD							40			78
		PSD-P							23			57
		Wr							107			106
	Bluegill	PSD	29						54			90
		PSD-P	3						17			59
		Wr	124						99			124
	Green Sunfish	PSD	0									0
		PSD-P	0									0
		Wr	145									123
	Northern Pike	PSD	25						74			16
		PSD-P	0						47			5
		Wr	89						84			89
	Walleye	PSD										100
		PSD-P										0
		Wr										86
	Yellow Perch	PSD	37						28			18
		PSD-P	26						8			3
		Wr	101						101			107

Back-Calculated Lengths

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

Species: Black Crappie

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2023	1	5	79 (3.4)									
2022	2	6	78 (1.6)	109 (1.7)								
2019	5	15	71 (2.1)	140 (4.5)	185 (5.9)	217 (3.5)	240 (3.8)					
2018	6	5	73 (4.8)	130 (15.1)	177 (10.4)	211 (9.8)	231 (7.9)	251 (6.6)				
Weighted Mean		31	74	131	183	216	238	251				

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2023	1	5										
2022	2	6										
2019	5	15										
2018	6	5										
Weighted Mean		31										

Species: Bluegill

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2022	2	1	41	89								
2021	3	8	67 (3.7)	123 (5.3)	166 (8.4)							
2020	4	5	64 (4.2)	128 (6.7)	160 (6.4)	186 (6.7)						
2019	5	5	57 (6.4)	90 (7.6)	128 (8.2)	156 (5.1)	180 (4.6)					
Weighted Mean		19	62	114	154	171	180					

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2022	2	1										
2021	3	8										
2020	4	5										
2019	5	5										
Weighted Mean		19										

Length at Capture

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

Species: Black Crappie

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	121	117 (19)	123 (21)			254 (68)	260 (14)				
2021	278		171 (197)	199 (47)	217 (9)	247 (25)					

Species: Bluegill

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	57		111 (2)	185 (23)	206 (18)	202 (15)					
2021	316	107 (51)	119 (122)	157 (58)	172 (76)	167 (9)					
2015	35		138 (34)			216 (1)					

Species: Largemouth Bass

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2021	20	117 (8)	183 (2)	240 (4)	263 (5)			496 (1)			
2018	25	173 (1)		287 (8)	314 (4)	414 (8)	440 (2)	454 (1)	489 (1)		

Species: Northern Pike

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2021	23			548 (1)	535 (3)	616 (2)	568 (4)	565 (1)	762 (5)	695 (3)	827 (4)

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2021	24		143 (6)	152 (12)	198 (3)	216 (1)		216 (1)	225 (1)		
2018	44		116 (3)	159 (5)	218 (24)	254 (11)	270 (2)				

Fish Condition

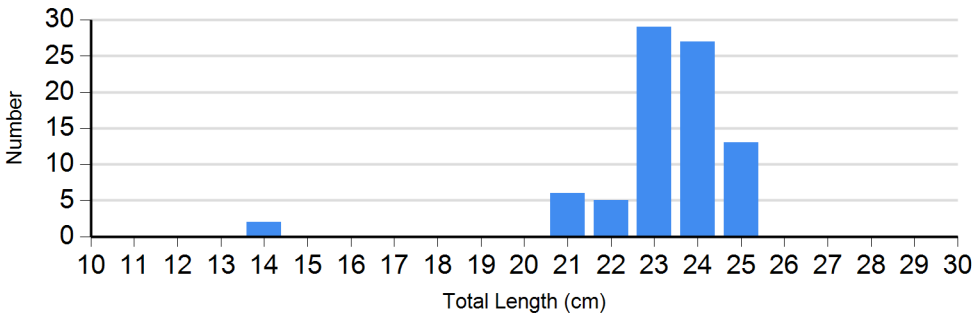
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Bullhead Gill Net	2021	11	98 (2.3)	69	92 (1.3)	0		0	
Black Crappie Frame Net	2021	220	108 (1.0)	62	102 (1.2)	83		0	
	2024	24	150 (4.7)	22	110 (3.3)	62	102 (1.1)	0	
Bluegill Frame Net	2021	185	102 (1.2)	147	94 (0.9)	68		0	
	2024	6	124 (5.6)	20	113 (3.7)	37	130 (2.7)	0	
Largemouth Bass Electro Fishing	2021	9	105 (2.0)	0		2	116 (9.6)	0	
	2024	24	140 (1.3)	65	141 (0.8)	0		0	
Northern Pike Gill Net	2021	2	87	12	87 (1.6)	9	90 (1.5)	1	106
	2024	4	94 (2.2)	1	85	0		0	
Yellow Perch Gill Net	2021	19	102 (3.0)	5	97 (4.5)	0		0	
	2024	11	106 (5.8)	2	94 (3.1)	1	103	0	

Length Frequency Distribution

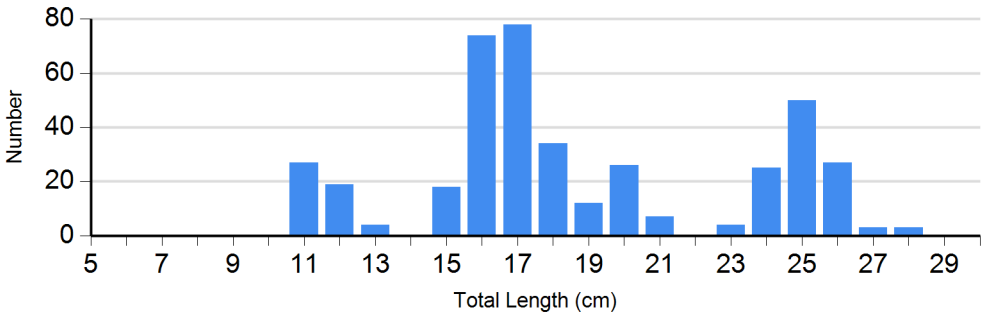
Length frequency histogram of species sampled by year.

Species: Black Bullhead
Gear: AFS std gill net

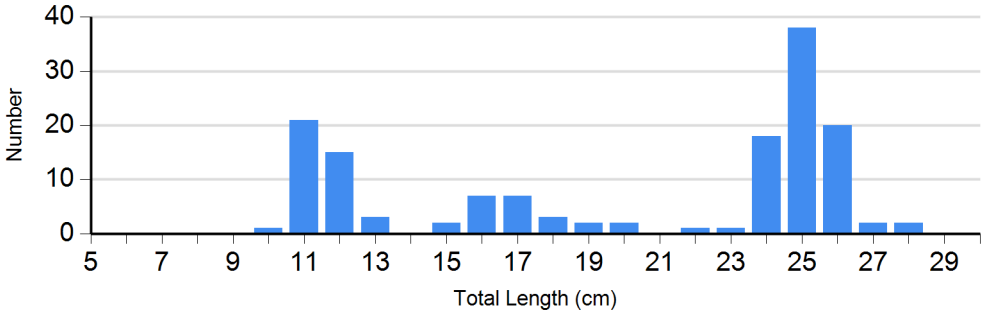


2021

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

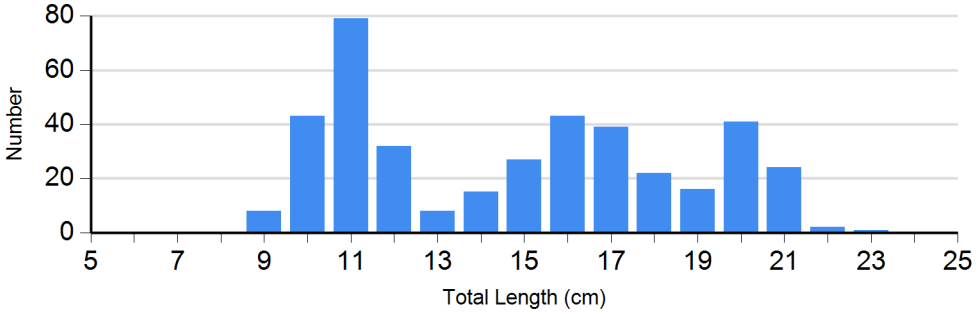


2021

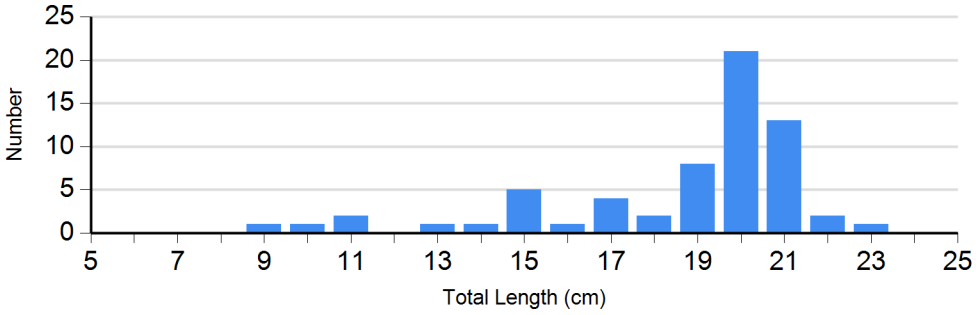


2024

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

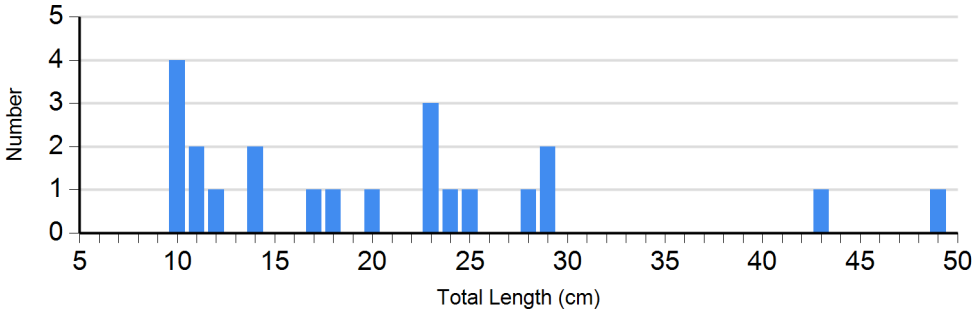


2021

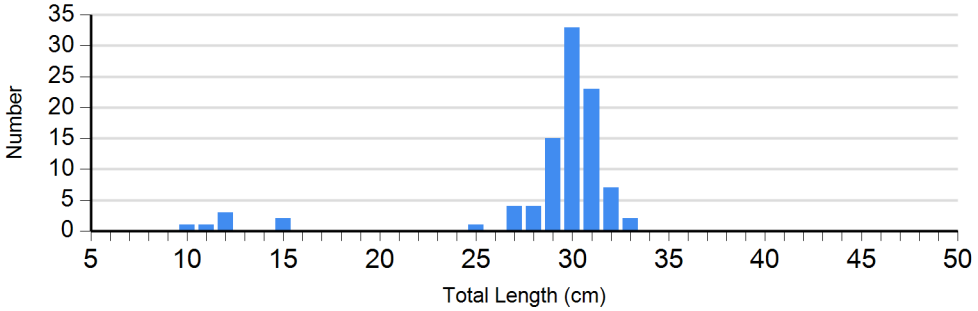


2024

Species: Largemouth Bass
Gear: boat shocker (night)

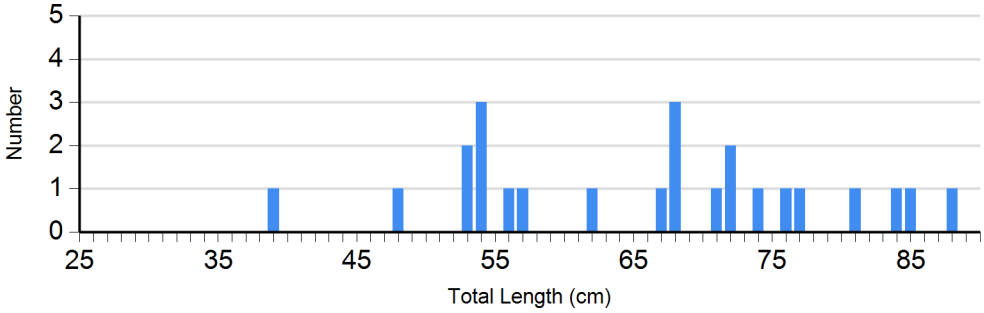


2021



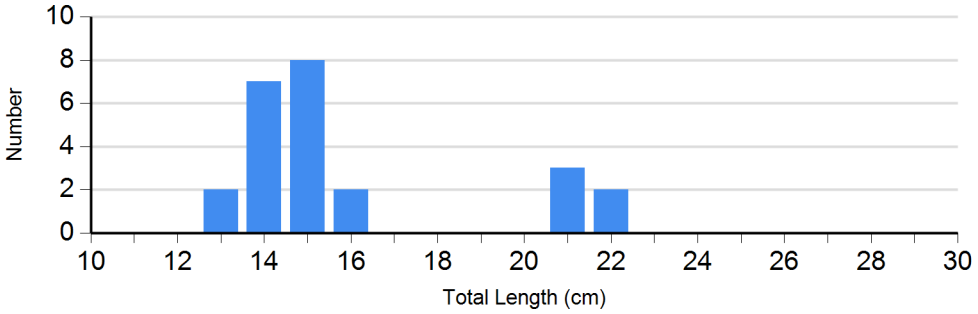
2024

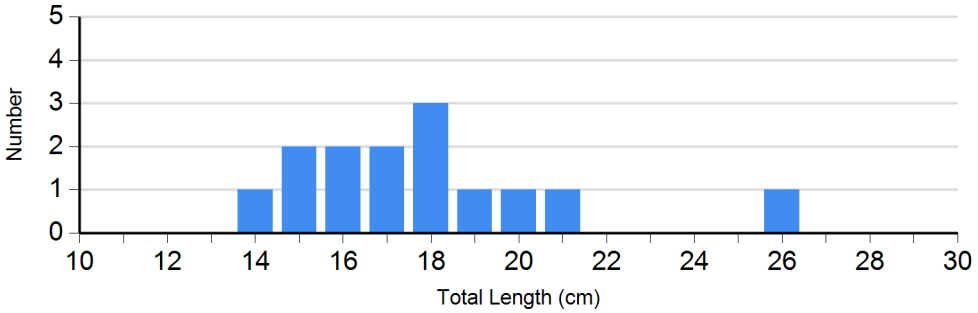
Species: Northern Pike
Gear: AFS std gill net



2021

Species: Yellow Perch
Gear: AFS std gill net

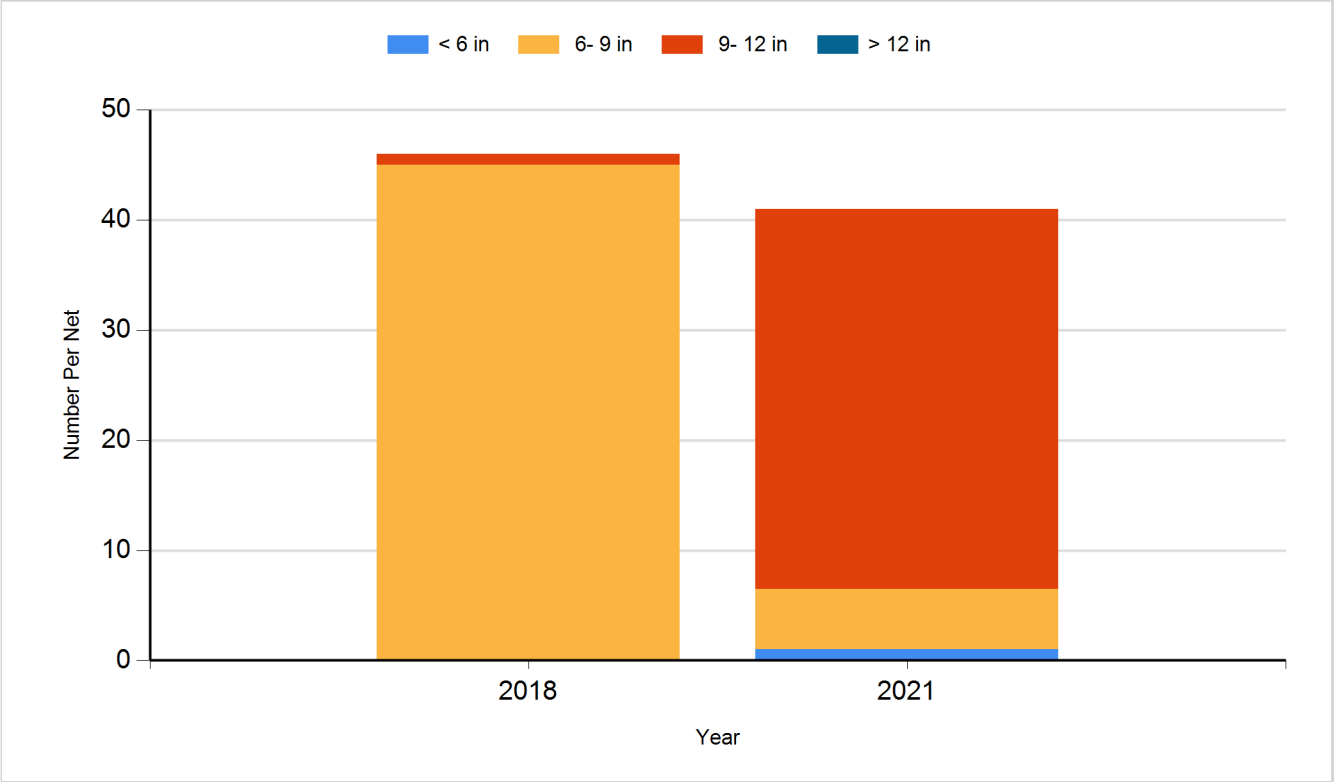




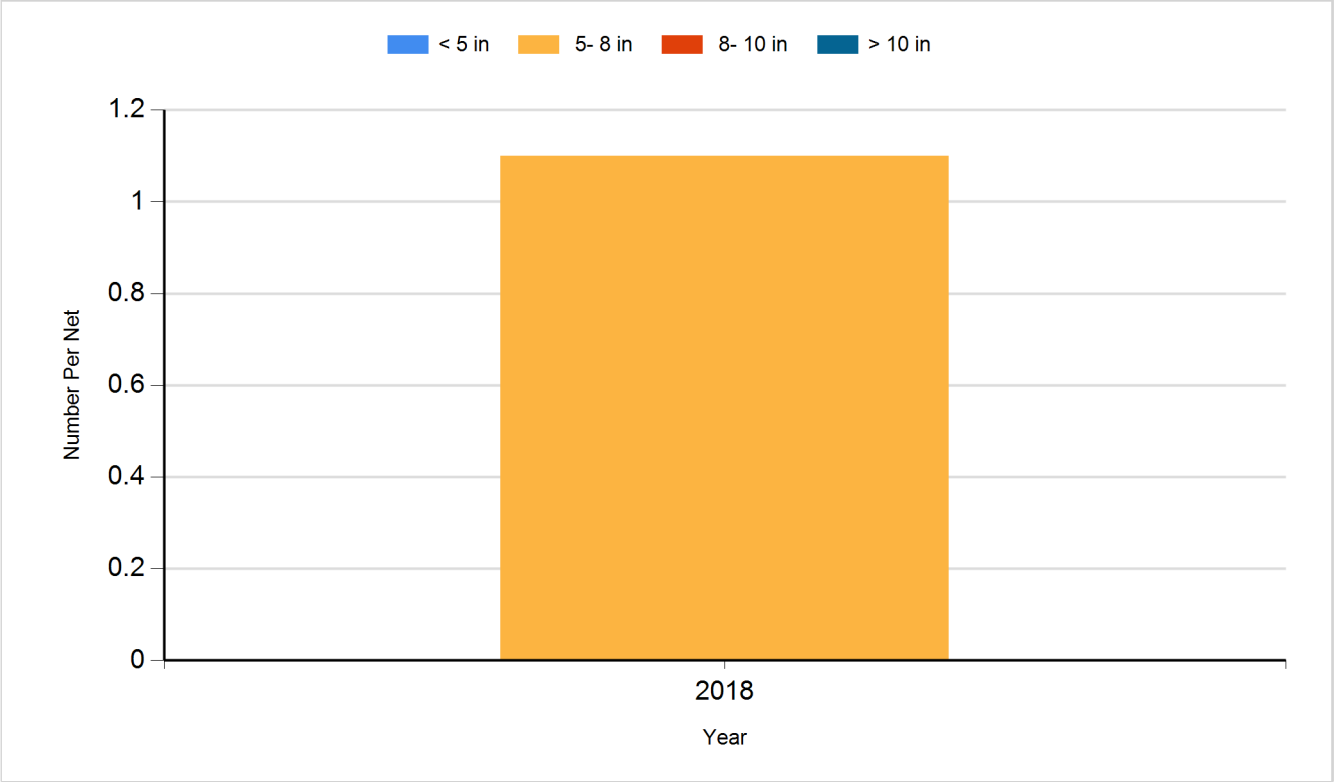
Historic Fish Sizes and Relative Abundance

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

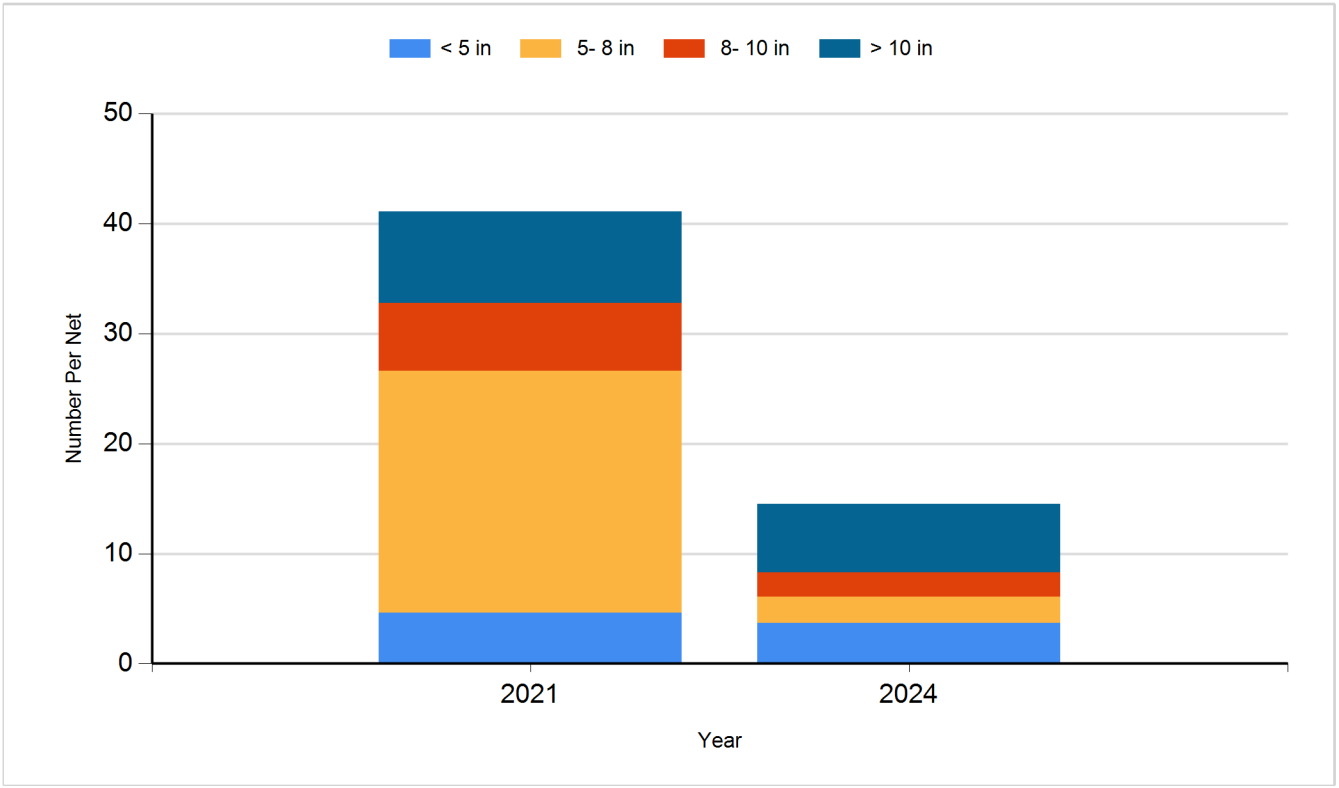
Species: Black Bullhead
Gear: AFS std gill net



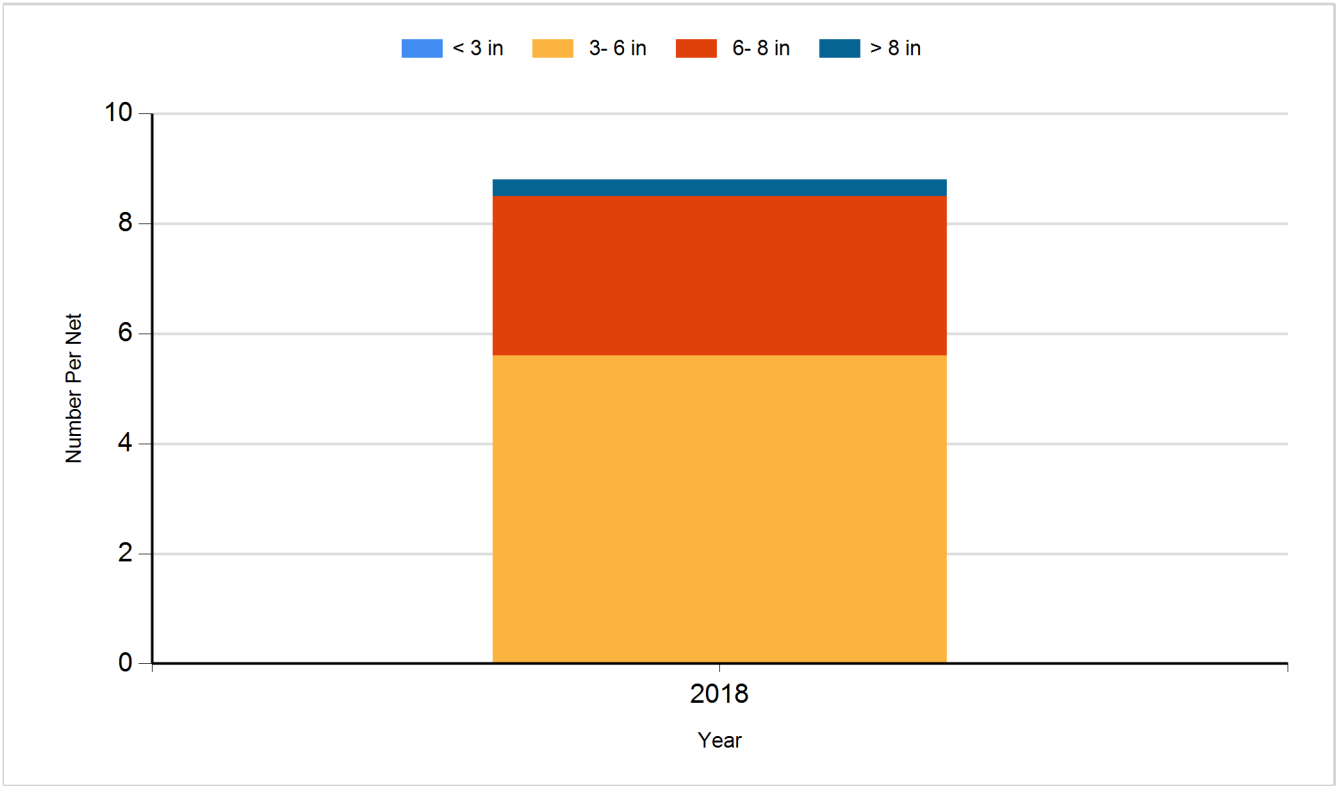
Species: Black Crappie
Gear: AFS std frame net



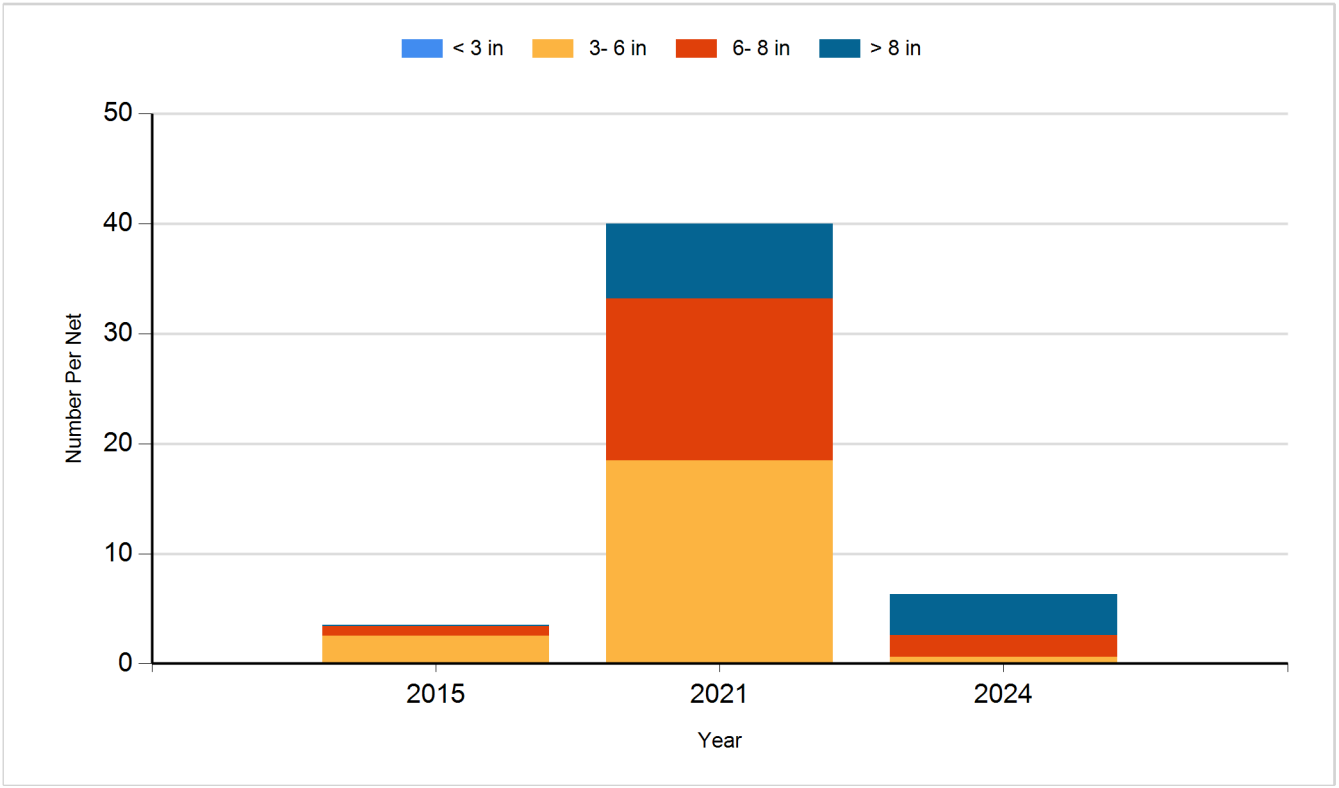
Species: Black Crappie
Gear: frame net (std 3/4 in)



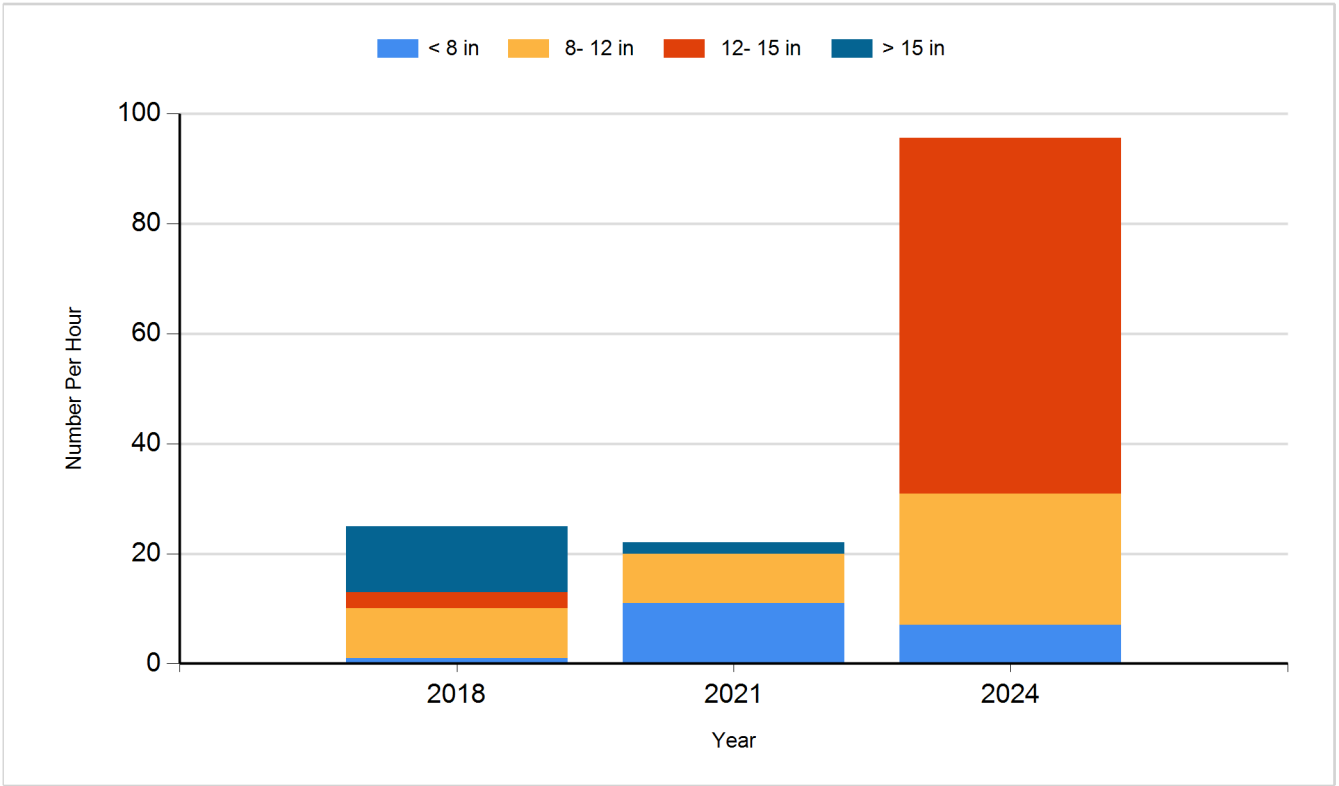
Species: Bluegill
Gear: AFS std frame net



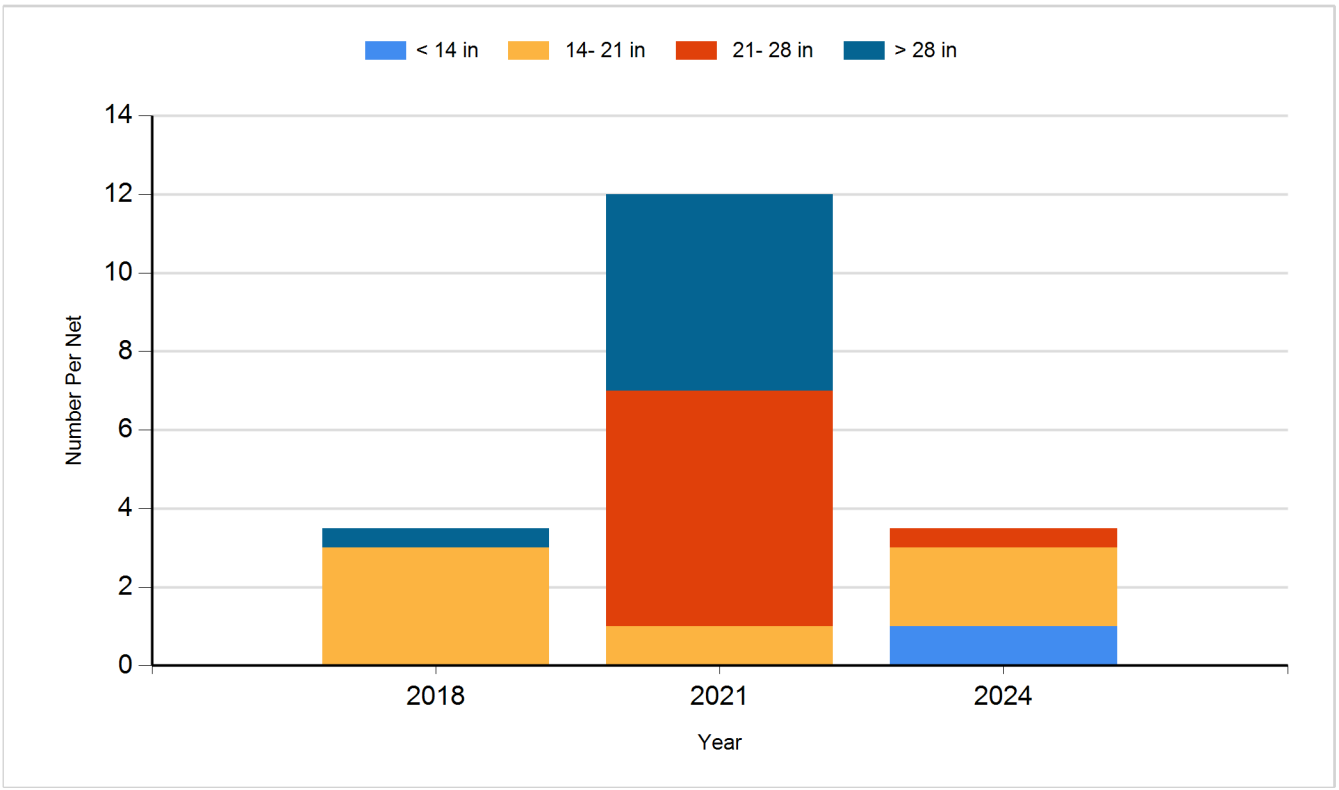
Species: Bluegill
Gear: frame net (std 3/4 in)



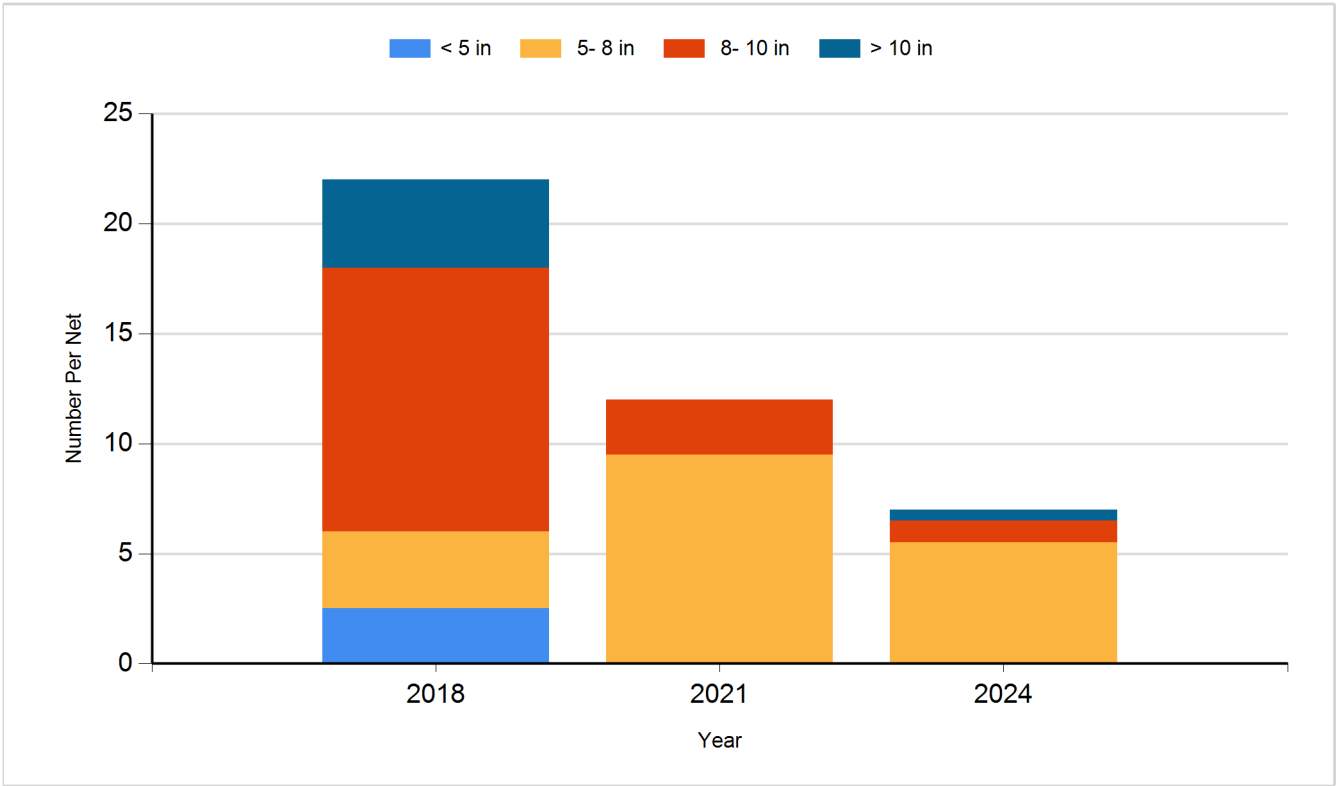
Species: Largemouth Bass
Gear: boat shocker (night)



Species: Northern Pike
Gear: AFS std gill net



Species: Yellow Perch
Gear: AFS std gill net



Fish Stocking

Number of fish stocked by year, species, and size.

Year	Species	Size	Number
2023	Black Crappie	Adult	1,356
2023	Bluegill	Adult	300
2023	Largemouth Bass	Fry	18,000
2023	Northern Pike	Adult	500
2023	Yellow Perch	Adult	4,500
2024	Bluegill	Adult	1,140
2024	Bluegill	Juvenile	450
2024	Largemouth Bass	Juvenile	3,555
2024	Yellow Perch	Adult	5,000