Lake Menno Survey Summary

Lake Menno, located 1 mile west and 2 miles north of Menno, SD, is managed as a bluegill and largemouth bass fishery; other fish species (e.g., black crappie and channel catfish) provide additional angling opportunities.

- **Bluegill.** Bluegill abundance increased to a catch rate of 20.8 fish per frame net in 2024, which is higher than the previous sample year (CPUE = 13.8 fish per net in 2022) and long-term mean (CPUE = 14.8 fish per net). Sampled fish ranged from 4.7 to 8.3 inches in length with most (93%) measuring in the quality to preferred length category (6 to 8 inches). Four year classes of fish were present in the sample with the age 4 cohort (2020 year class) dominating catches (70% of sample). Lacking from this year's sample were older fish (>5 years old) which were observed in the last few surveys. Growth was close to the statewide mean with fish averaging 7.0 inches by age 4 and 8.3 inches by age 5. Lake Menno remains an excellent choice for any angler targeting bluegill in the southeast region.

- **Black crappie.** Frame netting efforts produced 19.6 black crappie per net in 2024 resulting in one of the highest catch rates in the region. Catches were slightly below the previous sample year, however, (CPUE = 26.6 fish per net) but above the ten year mean (CPUE = 10.3 fish per net). Sampled fish ranged in length from 4.3 to 11.0 inches with most (74%) measuring in the quality to preferred length category (8 to 10 inches). Average fish condition remains high (Wr = 113) despite the large panfish population currently in the lake. Any angler targeting black crappie in the southeast region may want to give Lake Menno a look.

- **Other.** Poor fishing immediately following the severe winter of 2022-23 caused concern of a severe winterkill. Electrofishing in 2022 and 2023 and our netting survey this summer have shown that although fish may have been lost that winter, the kill was not severe. Also in 2024, there was a large increase in the frame net catch of black bullhead (mean of 633/net) with most of those fish measuring less than 8 inches.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Lake Menno (below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Menno, Hutchinson County
LJA-Lake-52-000
2024

Lake Information

Name: Menno

County: Hutchinson

Legal Description: T98N-R57W-Sec. 32

Surface Area: 39 Acres

Maximum Depth: 34 Feet

Mean Depth: 13 Feet

Surveys and Investigations

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

Gear	Date	Effort
frame net (std 3/4 in)	May 16, 2024	5 net-nights

Common Fish Species Present

Largemouth Bass

Bluegill

Black Crappie

Black Bullhead

Sunfish Hybrid

Green Sunfish

Channel Catfish

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	3504	632.8	372.4	53	1	49	1		
	Black Crappie	100	19.6	14.8	76	6	1		113	1
	Bluegill	104	20.8	16.2	92	4	3		109	2
	Channel Catfish	5	0.2	0.3	0		0		83	
	Green Sunfish	2	0.4	0.6	100		0		111	3
	Largemouth Bass	1	0.0	0.0	0		0			
	Sunfish Hybrid	2	0.4	0.4	100		0		121	

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			0.4								0.40
	Black Crappie			0.0								0.00
	Bluegill			5.6								5.60
	Green Sunfish			0.4								0.40
	Sunfish Hybrid			0.2								0.20
AFS std gill net	Black Bullhead			3.8								3.80
	Channel Catfish			0.5								0.50
	Green Sunfish			0.3								0.30
	Largemouth Bass			1.8								1.80
	White Sucker			0.3								0.30
boat shocker (day)	Largemouth Bass					162.0			54.0	43.5		86.50
boat shocker (night)	Largemouth Bass	48.0	132.6									90.30
frame net (std 3/4 in)	Black Bullhead	3.2	0.8		0.2	8.3			18.2		632.8	110.58
	Black Crappie	13.3	1.9		0.2	0.0			26.6		19.6	10.27
	Bluegill	13.7	8.9		13.6	17.8			13.8		20.8	14.77
	Channel Catfish	0.1	0.0		0.0	0.0			0.0		0.2	0.05
	Green Sunfish	0.3	0.4		0.6	0.5			0.0		0.4	0.37
	Largemouth Bass	0.2	2.4		0.2	0.5			0.4		0.0	0.62
	Sunfish Hybrid	0.0	0.3		1.0	0.8			0.4		0.4	0.48
	White Sucker	0.9	0.1		0.0	0.0			0.0		0.0	0.17
	Yellow Perch	0.1	0.0		0.0	0.0			0.0		0.0	0.02

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			100							
		PSD-P			100							
	Black Crappie	PSD			0							
		PSD-P			0							
	Bluegill	PSD			50							
		PSD-P			39							
		Wr			108							
	Green Sunfish	PSD			100							
		PSD-P			50							
		Wr			119							
AFS std gill net	Black Bullhead	PSD			93							
		PSD-P			73							
	Channel Catfish	PSD			100							
		PSD-P			100							
		Wr			106							
	Green Sunfish	PSD			100							
		PSD-P			0							
	Largemouth Bass	PSD			100							
		PSD-P			14							
		Wr			102							
boat shocker (day)	Largemouth Bass	PSD					38			61	52	
		PSD-P					0			28	14	
		Wr					90			94	85	
boat shocker (night)	Largemouth Bass	PSD	64	7								
		PSD-P	64	5								
		Wr	94	101								
frame net (std 3/4 in)	Black Bullhead	PSD	88	88		100	94			100		53
		PSD-P	84	63		100	36			96		49
	Black Crappie	PSD	89	84		100				24		76
		PSD-P	71	68		100				2		1
		Wr	101	99		95				115		113

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
frame net (std 3/4 in)	Bluegill	PSD	100	98		85	90			86		92
		PSD-P	91	93		25	58			39		3
		Wr	104	112		104	113			102		109
	Channel Catfish	PSD	100									0
		PSD-P	0									0
		Wr										83
	Green Sunfish	PSD	0	50		100	100					100
		PSD-P	0	0		0	0					0
		Wr	90	126		156	113					111
	Largemouth Bass	PSD	0	0		100	100			100		0
		PSD-P	0	0		0	0			100		0
		Wr	93	109		100	93			95		

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+
2015	133	162 (14)	218 (6)			255 (113)					

Species: Bluegill

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	104		143 (11)	172 (18)	177 (73)	209 (2)					
2022	69		98 (7)	142 (4)	181 (28)	208 (20)	220 (6)	237 (5)			
2015	137				202 (19)	214 (24)	215 (84)	214 (11)			

Fish Condition

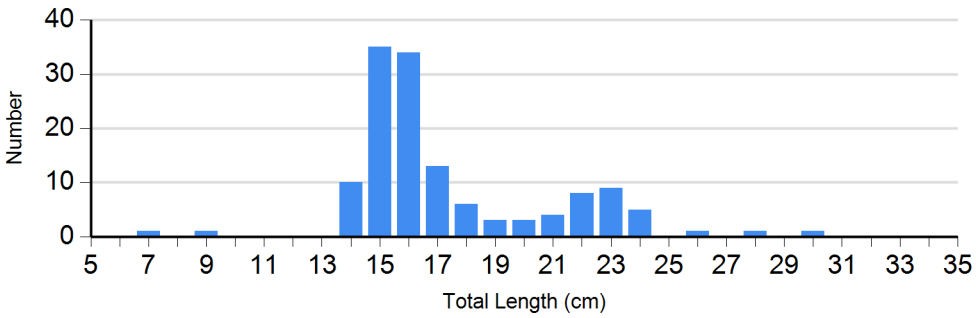
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2022	101	116 (0.8)	29	102	2		1	
	2024	24	123 (2.9)	73	111 (0.7)	1	98	0	
Bluegill Frame Net	2022	10	102 (9.1)	32	101 (1.8)	27	103 (1.6)	0	
	2024	8	104 (2.5)	93	110 (2.1)	3	101 (1.0)	0	
Largemouth Bass Electro Fishing	2022	14	91 (5.2)	12	98 (2.9)	10	93 (2.7)	0	
	2023	14	84 (1.2)	11	84 (1.8)	4	91 (2.3)	0	

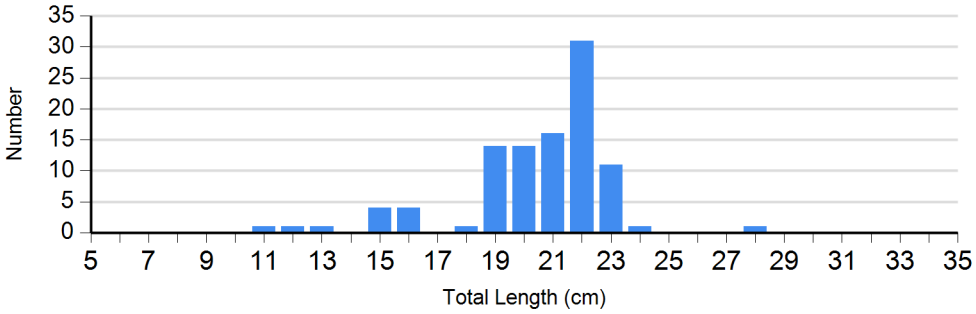
Length Frequency Distribution

Length frequency histogram of species sampled by year.

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

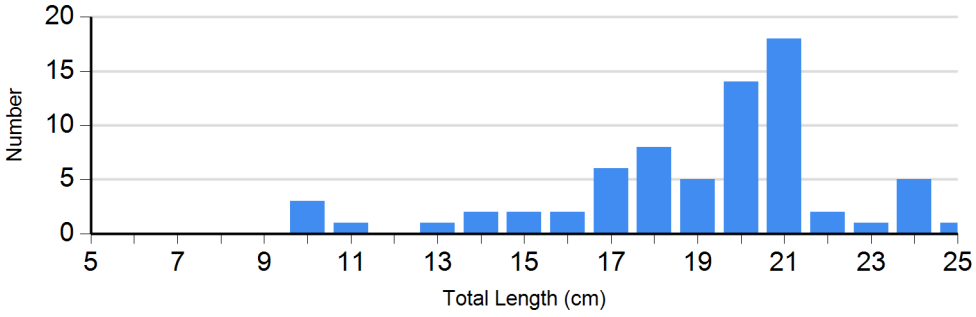


2022

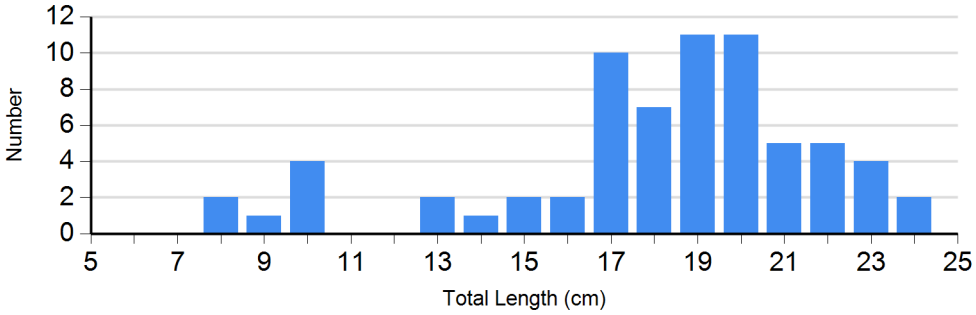


2024

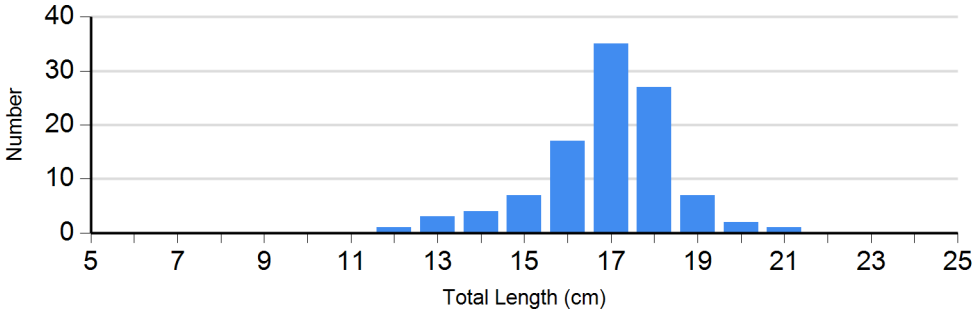
Species: Bluegill
Gear: frame net (std 3/4 in)



2019

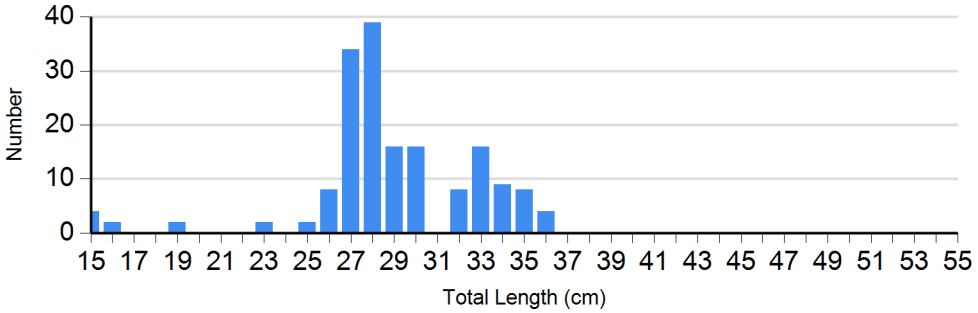


2022

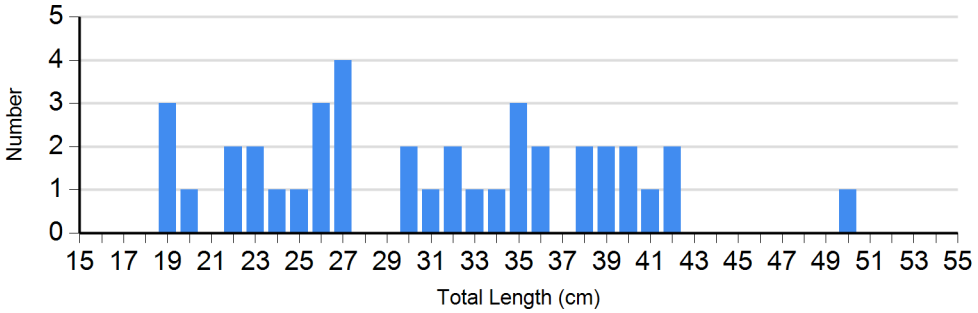


2024

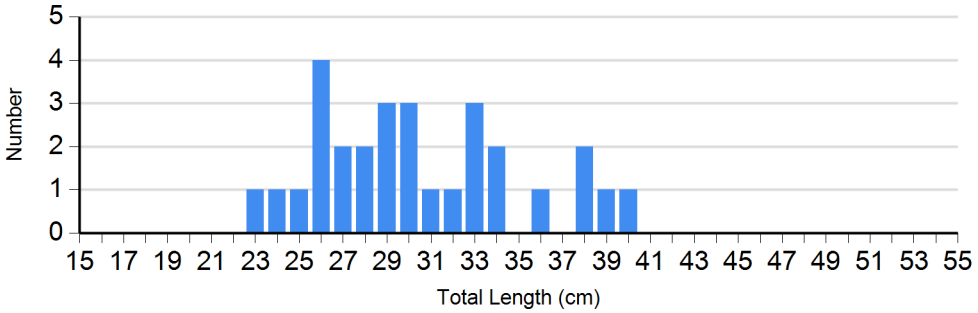
Species: Largemouth Bass
Gear: boat shocker (day)



2019



2022

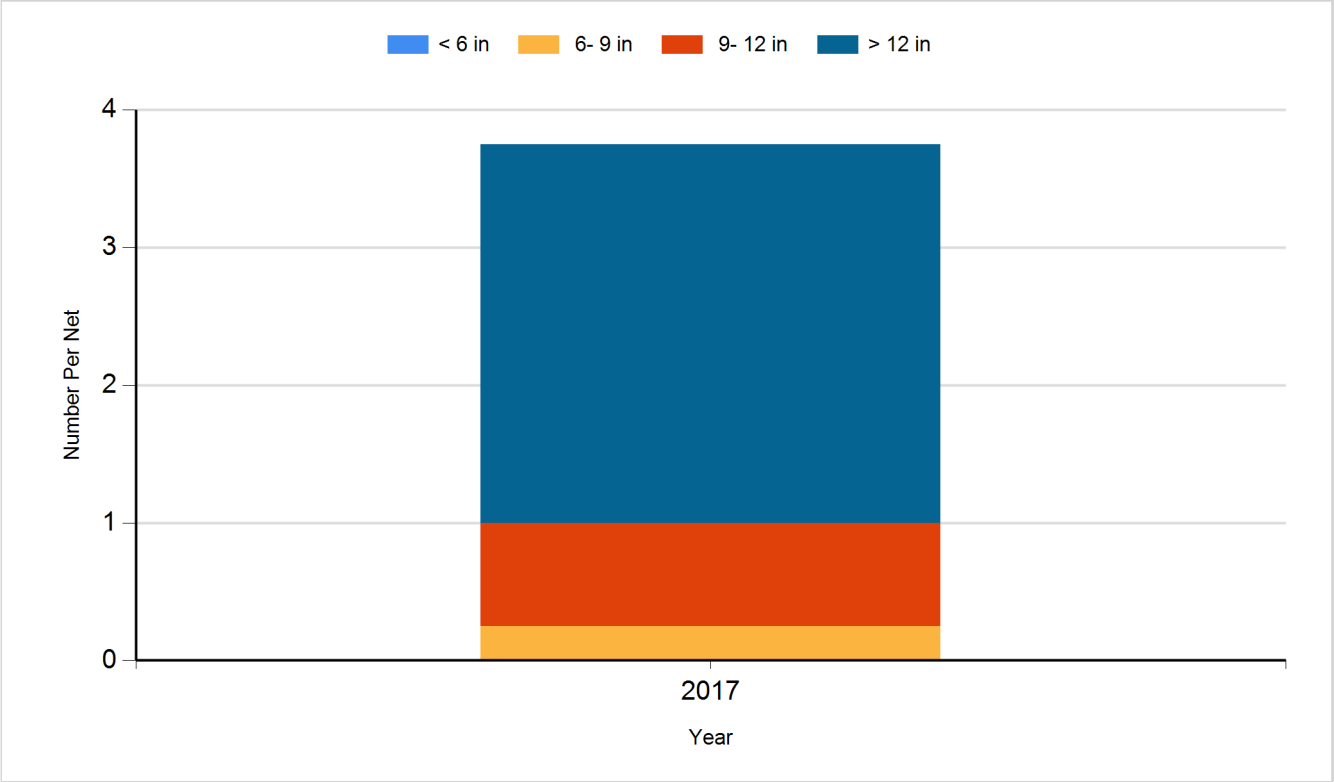


2023

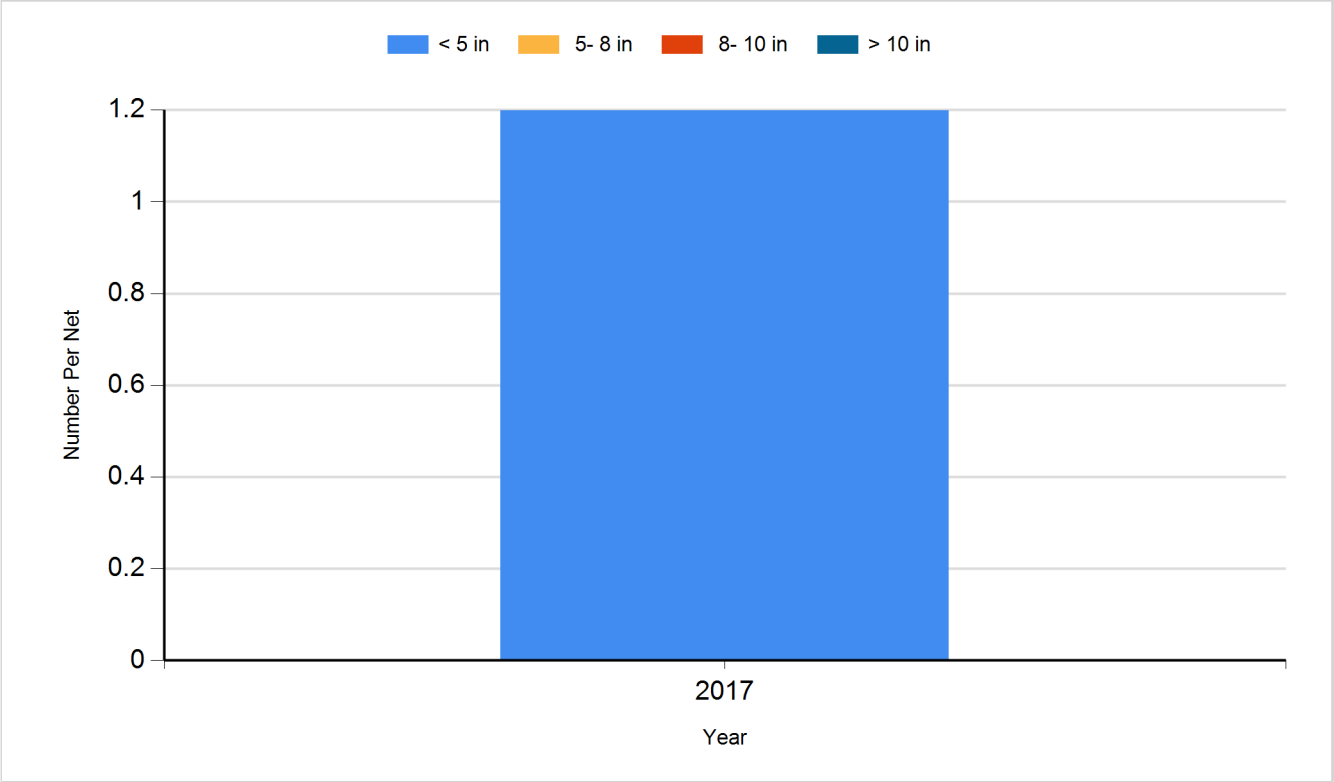
Historic Fish Sizes and Relative Abundance

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

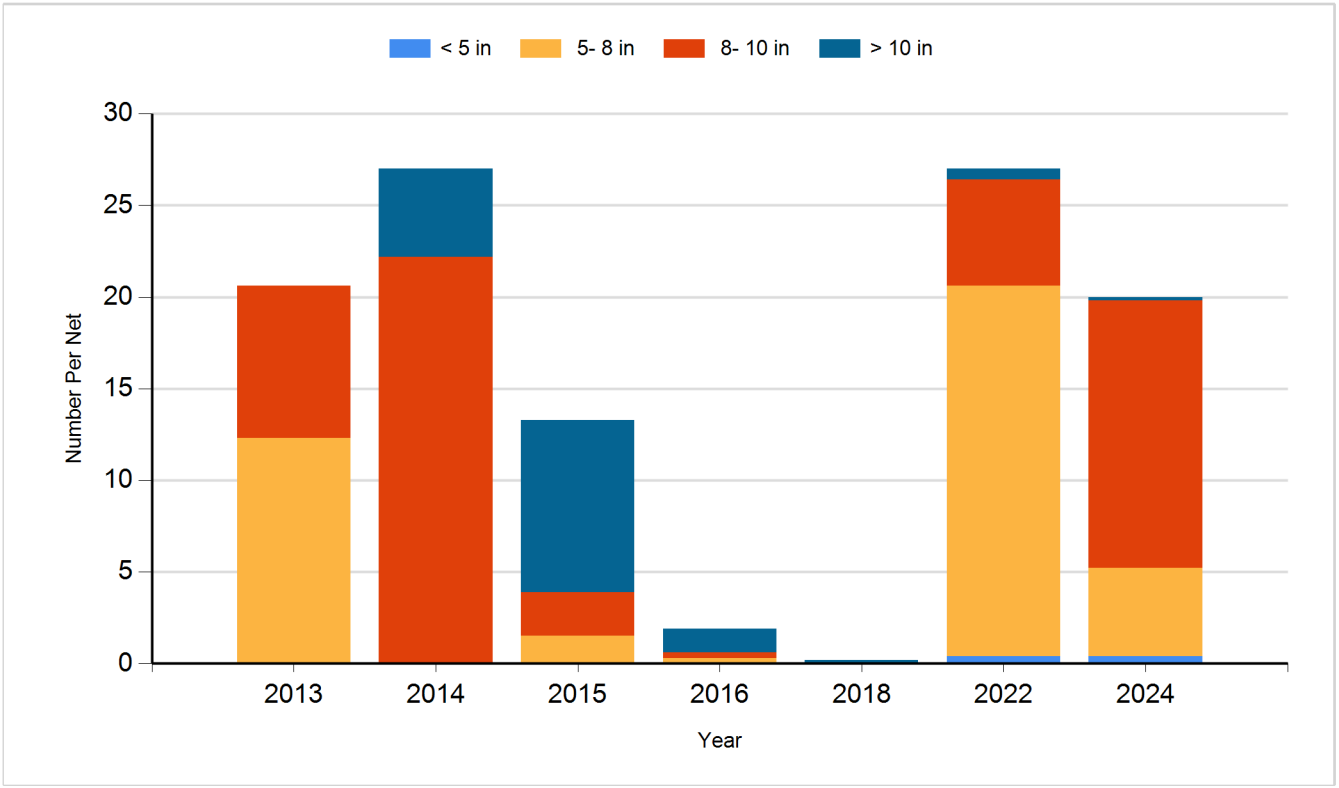
Species: Black Bullhead
Gear: AFS std gill net



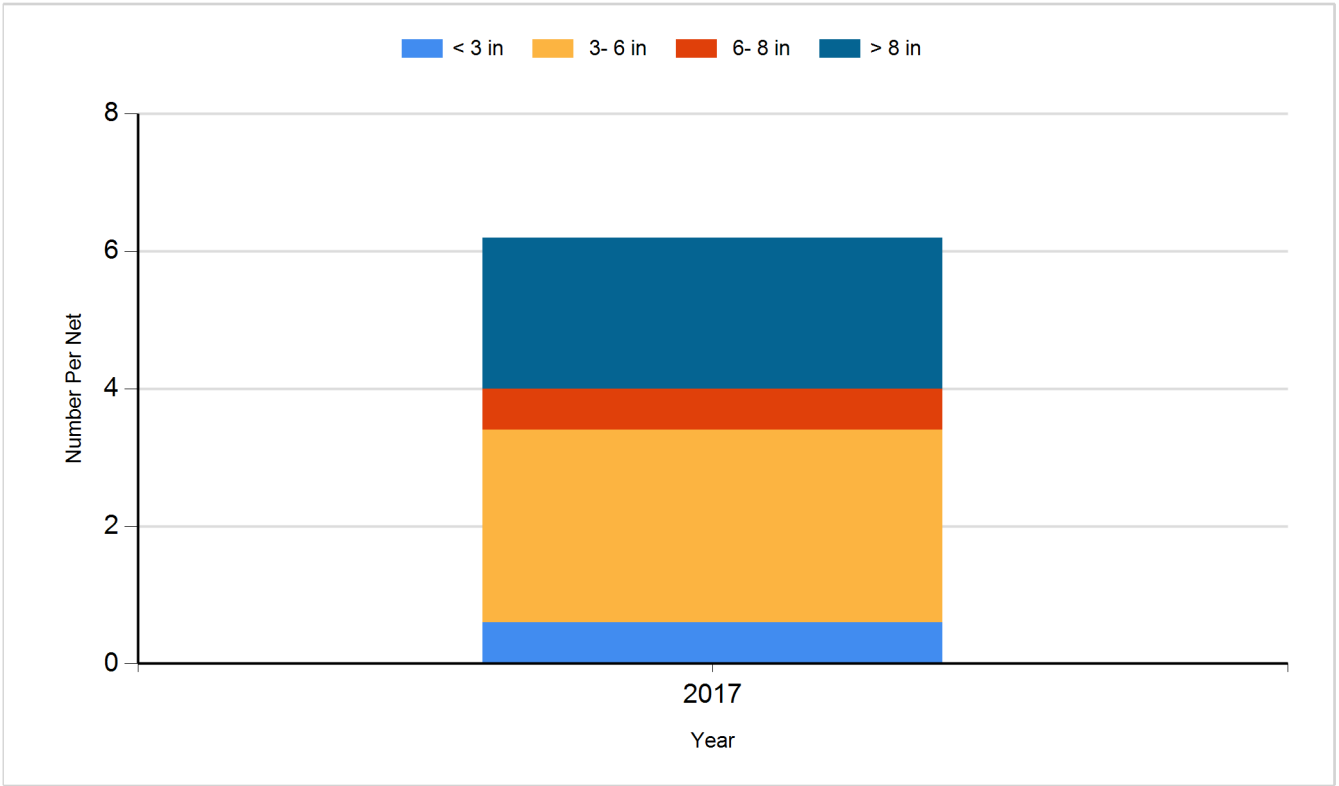
Species: Black Crappie
Gear: AFS std frame net



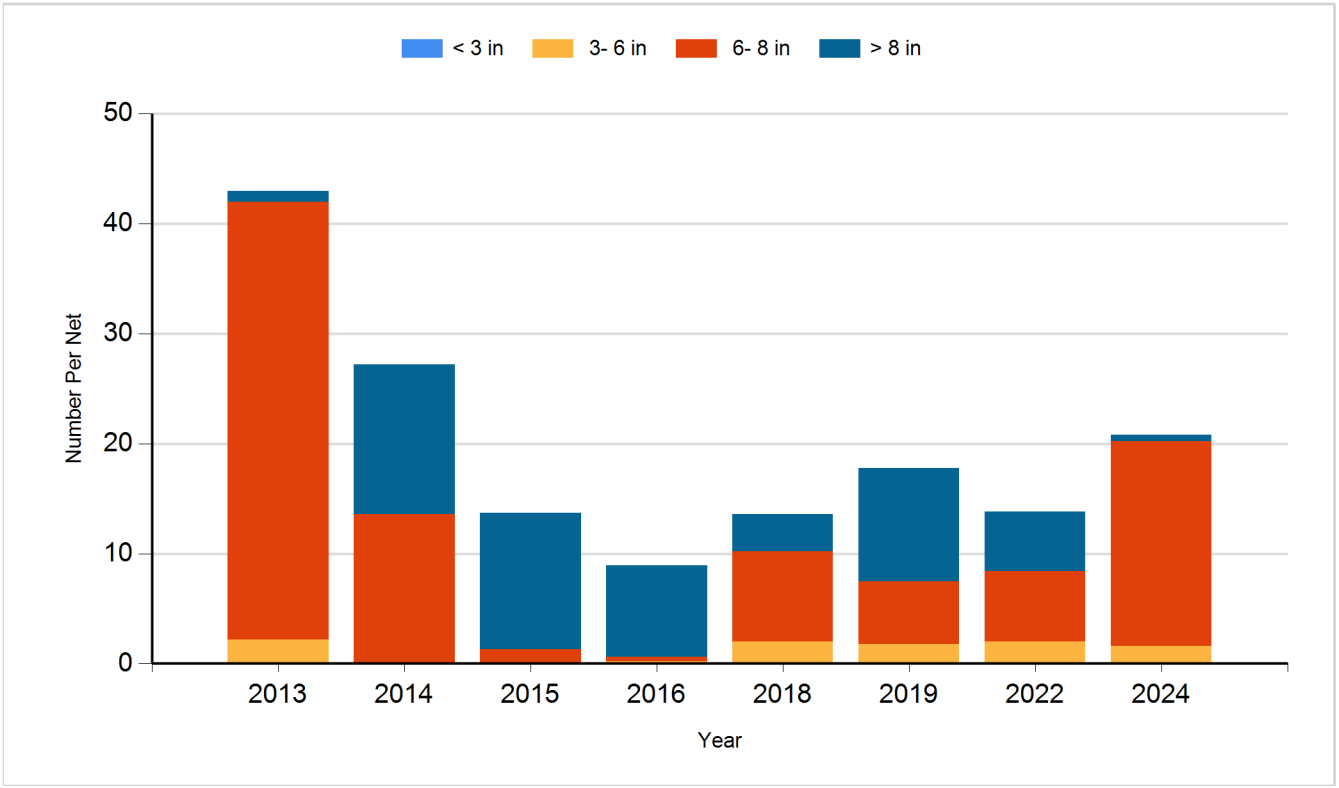
Species: Black Crappie
Gear: frame net (std 3/4 in)



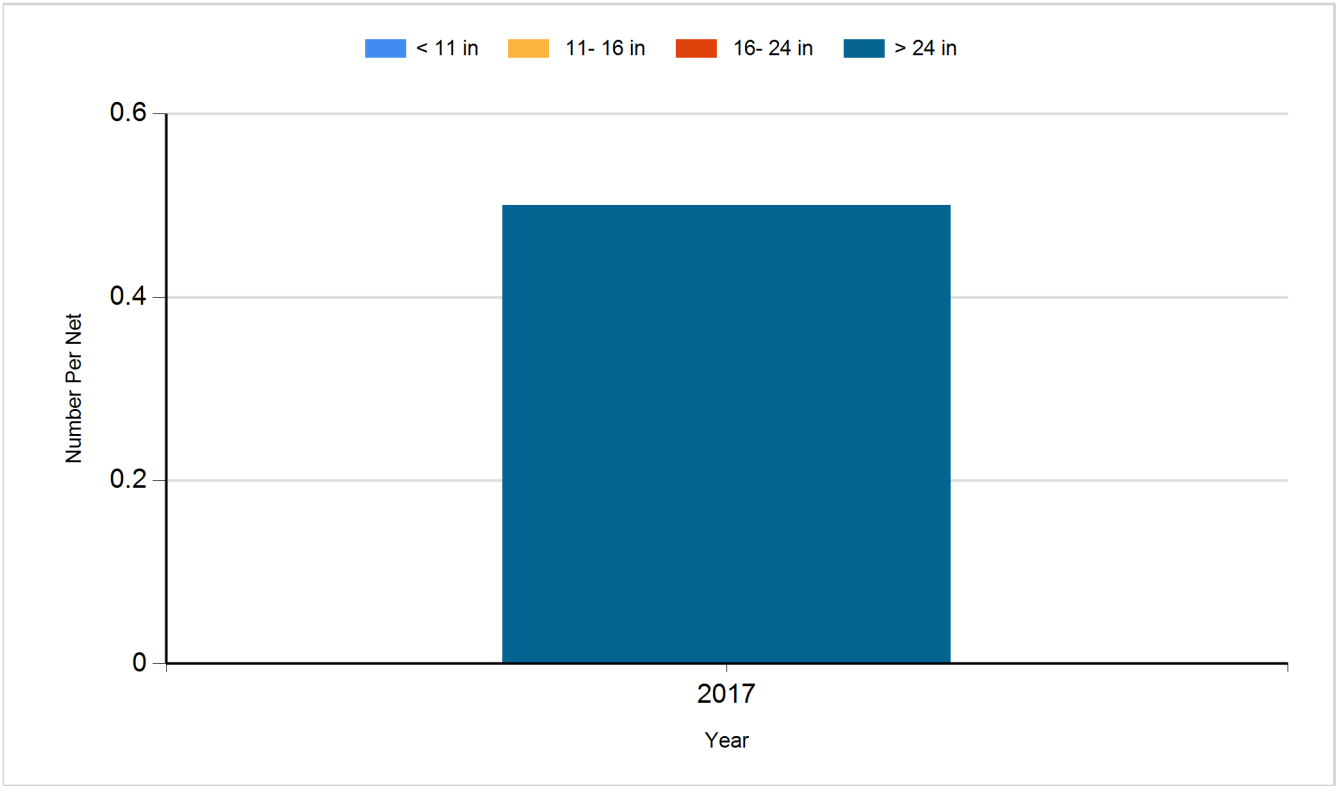
Species: Bluegill
Gear: AFS std frame net



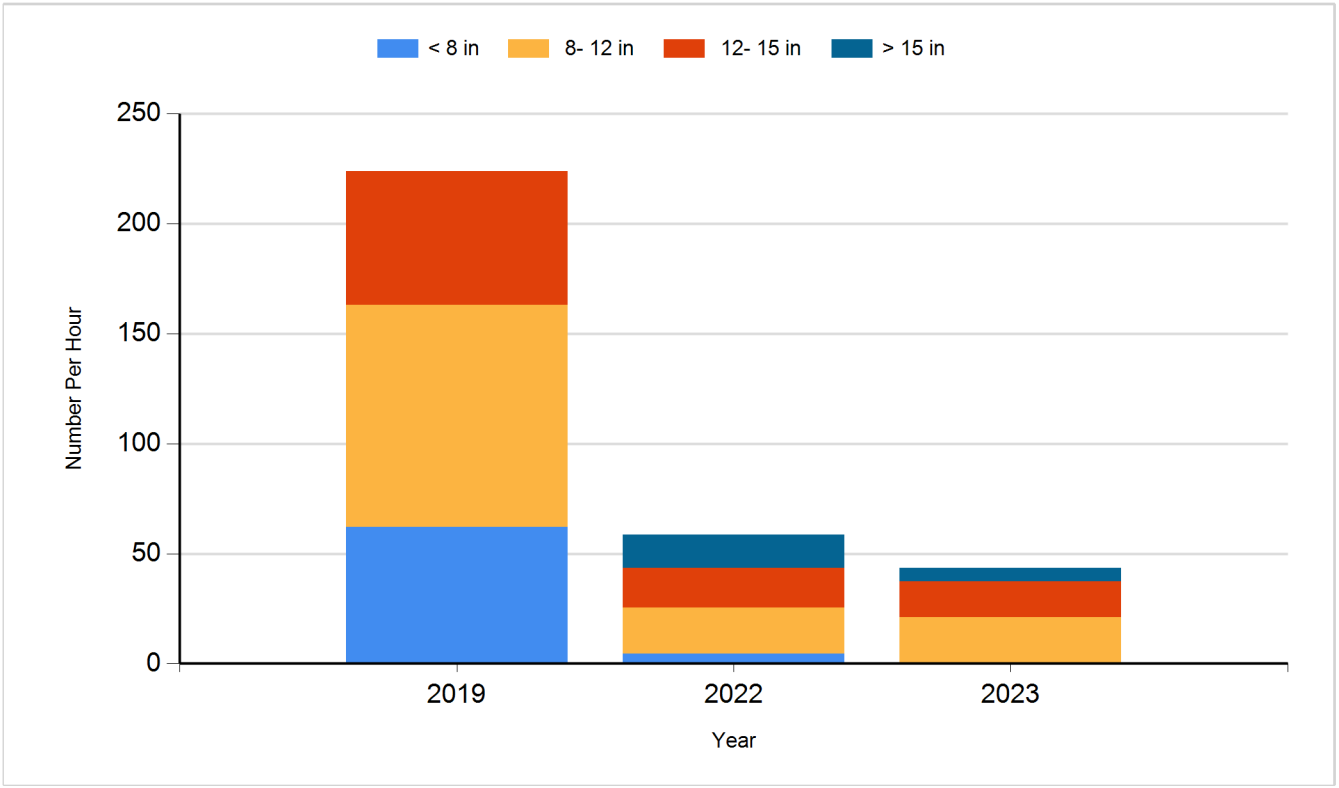
Species: Bluegill
Gear: frame net (std 3/4 in)



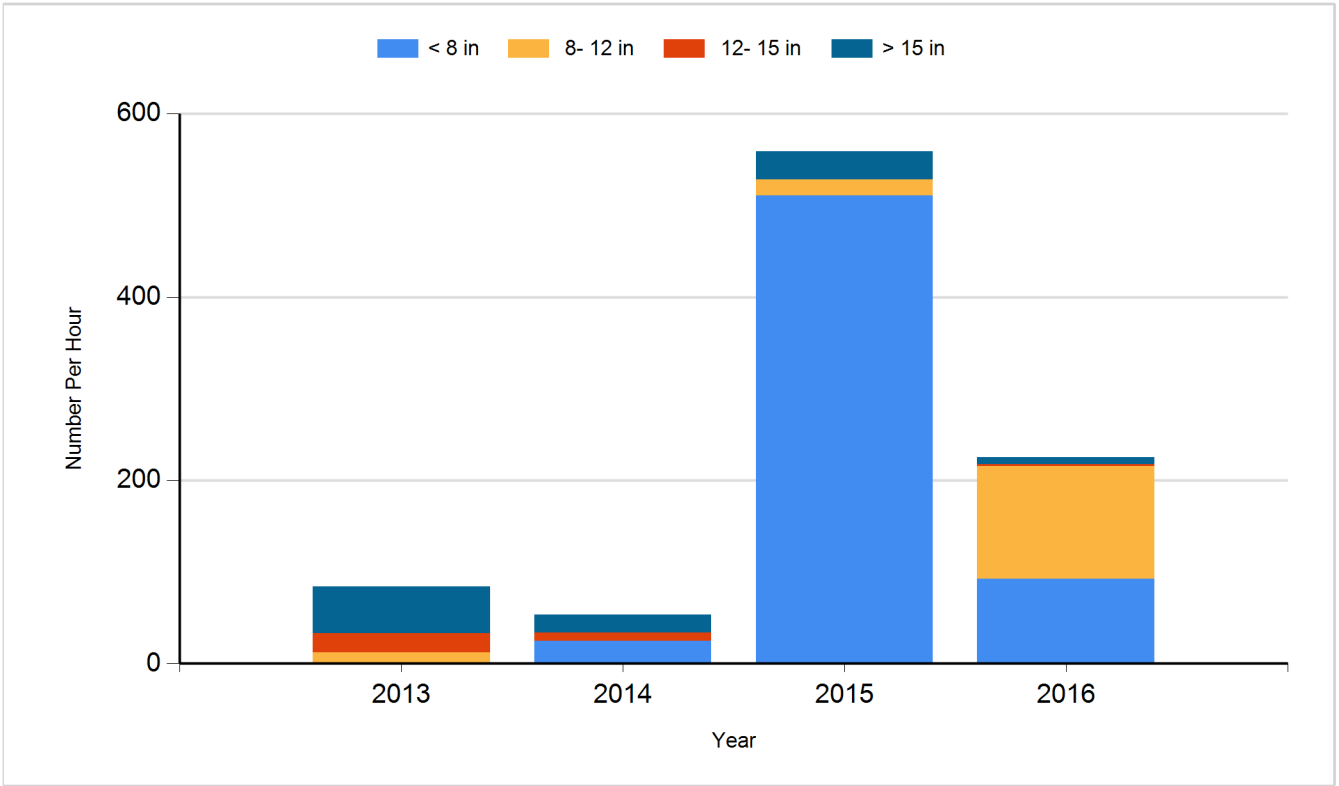
Species: Channel Catfish
Gear: AFS std gill net



Species: Largemouth Bass
Gear: boat shocker (day)



Species: Largemouth Bass
Gear: boat shocker (night)



Fish Stocking

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

Year	Species	Size	Number
2013	Channel Catfish	Large Fingerling	4,950
2023	Channel Catfish	Juvenile	948