2024 King Dam (Tripp County)

King Dam is located 1.5 miles east and 11.5 miles north of the town of Winner on 318th avenue. It is a 9-acre impoundment. Access locations at King Dam consist of a steep dirt boat ramp and shoreline on the whole lake. It is managed as a multi-species fishery consisting of Bluegill and Largemouth Bass. Another fish species present is Yellow Perch. Sampling occurs every three years, consisting of frame nets targeting all species and fall electrofishing targeting Largemouth Bass.

- **Bluegill:** The catch rate of Bluegill in 2024 was 82.8 fish per frame net. Of the Bluegill sampled, 42% were 6 inches or larger. Bluegill have a relative weight (Wr) of 108*.

- **Largemouth Bass:** The catch rate of Largemouth Bass in 2024 was 17.6 fish per hour of electrofishing. Of the Largemouth Bass sampled, 29% were 12 inches or larger. Largemouth Bass have a relative weight (Wr) of 113*.

- **Yellow Perch:** The catch rate of Yellow Perch in 2024 was 27.3 fish per frame net. Of the Yellow Perch sampled, 15% were 8 inches or larger. Yellow Perch relative weight (Wr) was 86*.

In 2023, 125 bluegill and 66 adult Largemouth Bass were stocked. In 2024, 288 adult Yellow Perch were stocked.

* 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.

Created 12/31/2024 BV

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
King, Tripp County
LWH-Lake-529-000
2024

Lake Information

Name: King

County: Tripp

Surface Area: 9 Acres

Surveys and Investigations

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

Gear	Date	Effort
boat shocker (night)	Oct 24, 2024	1575 seconds
frame net (std 3/4 in)	Jul 01, 2024	6 net-nights

Common Fish Species Present

Largemouth Bass

Bluegill

Yellow Perch

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
boat shocker (night)	Largemouth Bass	33	17.6	16.8	29		29		113	4
frame net (std 3/4 in)	Bluegill	497	82.8	20.8	42	3	14	2	108	1
	Yellow Perch	164	27.3	14.4	15	4	6	3	86	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.

*** 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 Crappie				4.5							4.50
	Bluegill				13.3							13.30
	Yellow Perch				0.3							0.30
boat shocker (night)	Largemouth Bass				79.1			99.0			17.6	65.23
frame net (std 3/4 in)	Black Crappie	11.8						25.9			0.0	12.57
	Bluegill	12.5						78.5			82.8	57.93
	Largemouth Bass	0.1						0.6			0.0	0.23
	Yellow Perch	8.4						4.0			27.3	13.23

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	Bluegill	PSD				85						
		PSD-P				6						
		Wr				101						
	Yellow Perch	PSD				0						
		PSD-P				0						
		Wr				93						
boat shocker (night)	Largemouth Bass	PSD				22			45			29
		PSD-P				22			6			29
		Wr				101			100			113
frame net (std 3/4 in)	Bluegill	PSD	46						58			42
		PSD-P	25						19			14
		Wr	112						97			108
	Largemouth Bass	PSD	0						0			
		PSD-P	0						0			
		Wr	107						97			
	Yellow Perch	PSD	61						97			15
		PSD-P	19						63			6
		Wr	86						89			86

Back-Calculated Lengths

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

Species: Largemouth Bass

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2023	1	1	75									
2022	2	1	95	152								
2021	3	5	84 (5.7)	134 (4.7)	191 (6.4)							
2020	4	1	89	148	184	223						
2018	6	1	104	210	296	349	371	399				
2017	7	1	92	186	225	277	322	358	380			
Weighted Mean		10	88	152	208	283	347	379	380			

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2023	1	1										
2022	2	1										
2021	3	5										
2020	4	1										
2018	6	1										
2017	7	1										
Weighted Mean		10										

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+
2021	442		138 (100)	161 (77)	173 (36)	198 (143)	196 (87)				
2018	53			156 (18)	178 (34)	193 (1)					
2015	100		101 (54)	169 (9)	169 (2)	195 (10)	205 (10)	210 (14)	223 (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+
2024	10	110 (1)	177 (1)	215 (5)	243 (1)		424 (1)	403 (1)			
2021	33			237 (11)	294 (8)	337 (8)	368 (4)	449 (1)	482 (1)		
2018	27		245 (11)	261 (10)		431 (2)	447 (3)		505 (1)		

Fish Condition

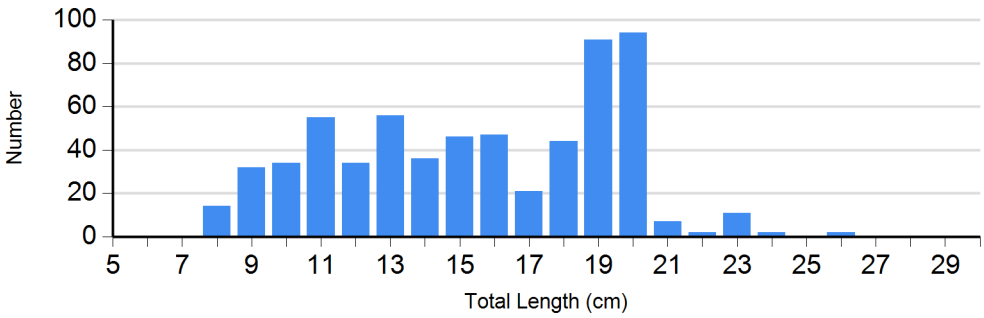
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		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	2021	261	95 (0.8)	249	97 (0.8)	116	98 (0.8)	2	
	2024	288	108 (1.2)	138	120	69	112 (1.4)	2	101
Largemouth Bass Electro Fishing	2021	18	100 (1.4)	13	99 (2.0)	2	109 (2.0)	0	
	2024	5	117 (2.8)	0		2	103 (1.7)	0	

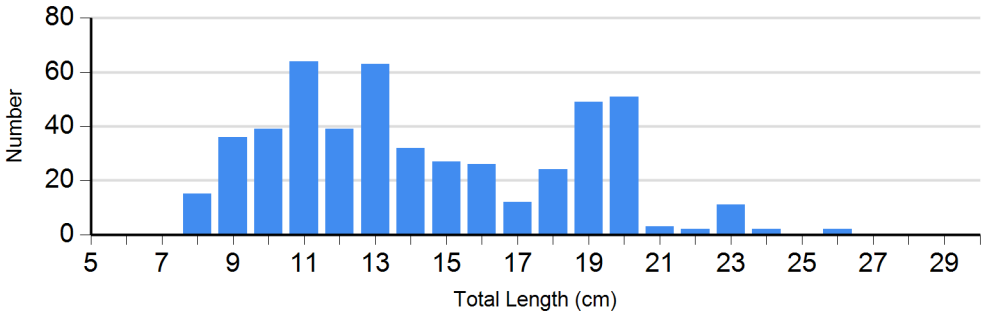
Length Frequency Distribution

Length frequency histogram of species sampled by year.

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

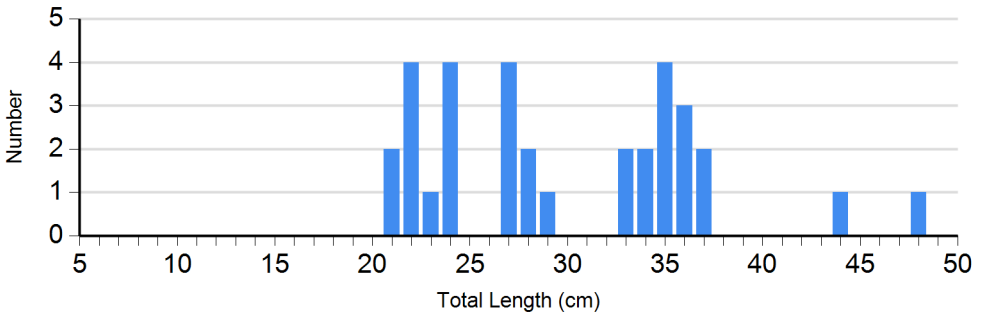


2021

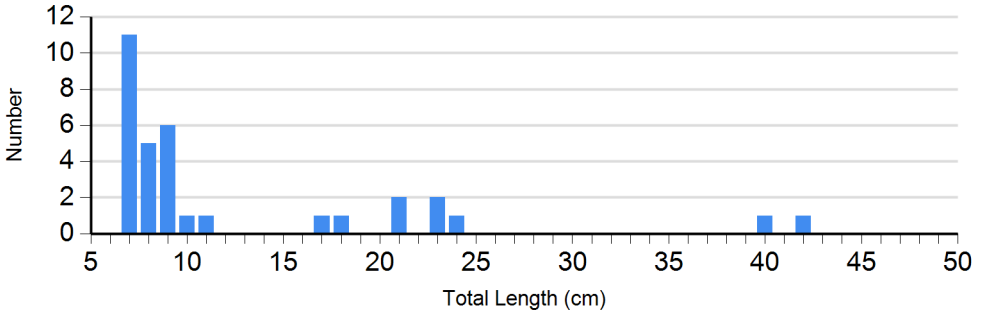


2024

Species: Largemouth Bass
Gear: boat shocker (night)



2021

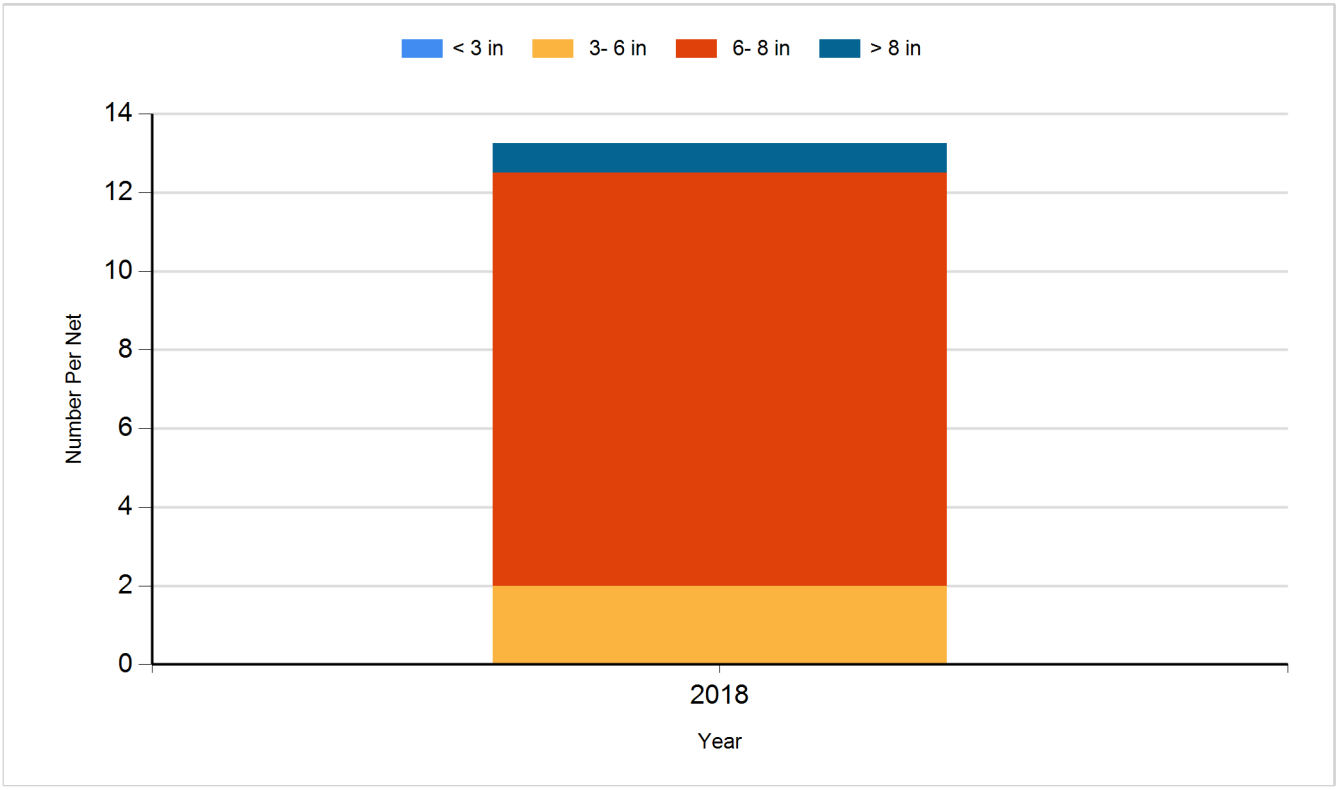


2024

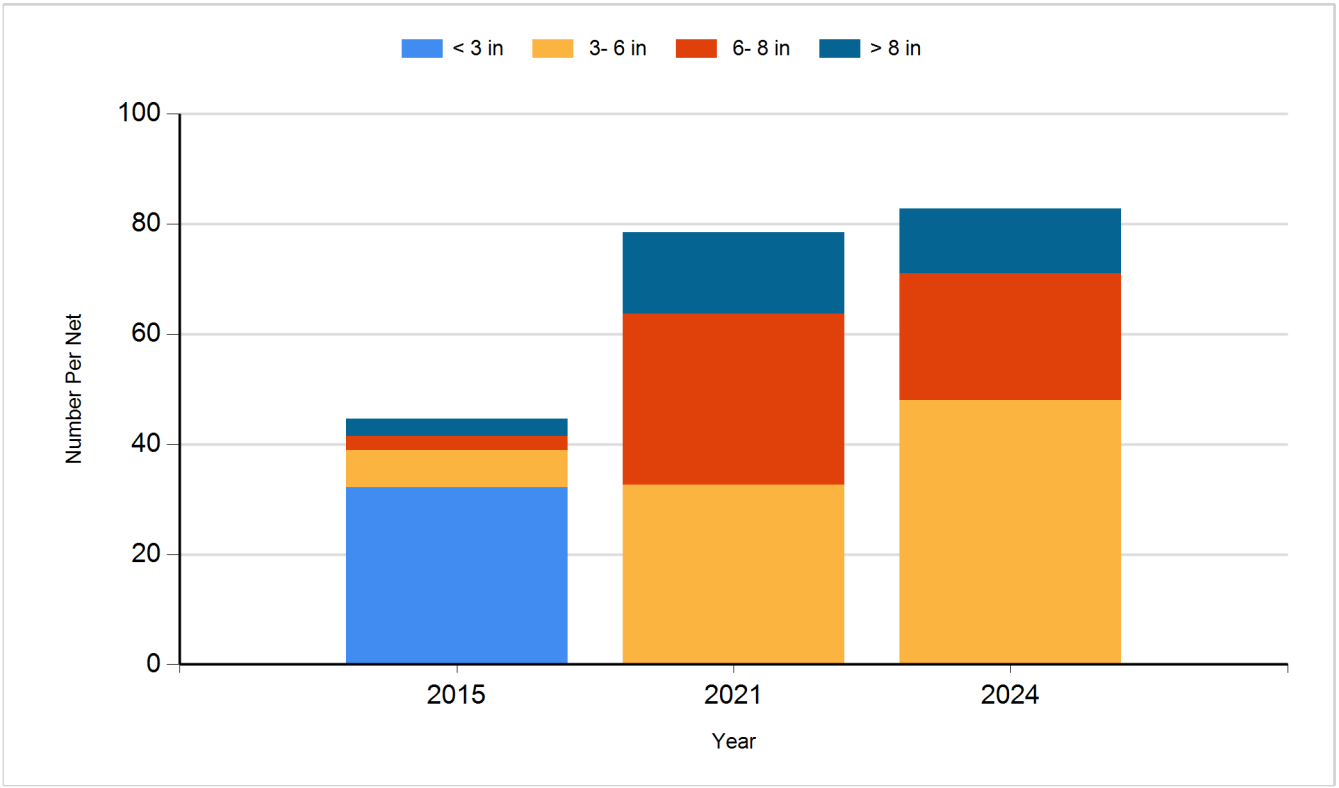
Historic Fish Sizes and Relative Abundance

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

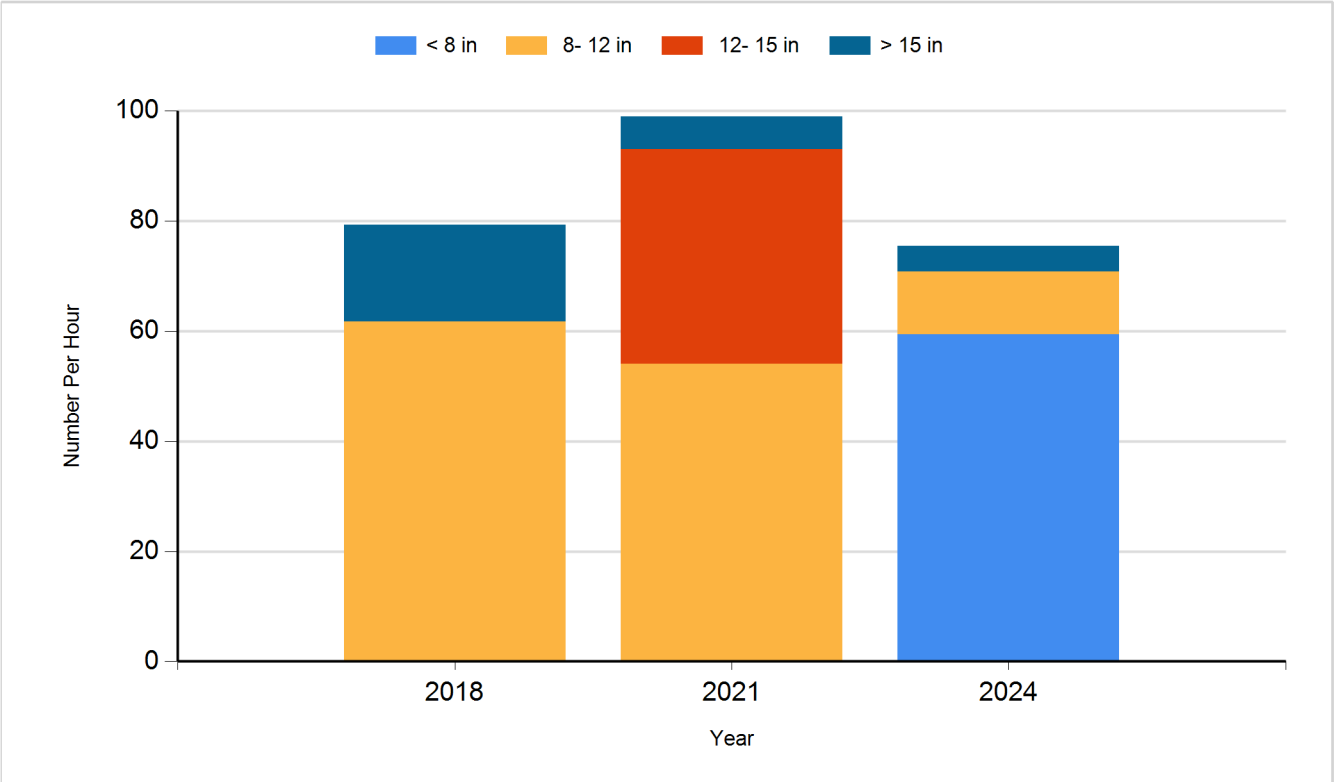
Species: Bluegill
Gear: AFS std frame net



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



Species: Largemouth Bass
Gear: boat shocker (night)



Fish Stocking

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

Year	Species	Size	Number
2023	Bluegill		125
2023	Largemouth Bass	Adult	66
2024	Yellow Perch	Adult	288