Note: Zebra mussels are present in Lake Kampeska. Care should be taken by all user groups to prevent their spread. For more information regarding aquatic invasive species please visit https://sdleastwanted.sd.gov/

Lake Kampeska Survey Summary

Lake Kampeska, located within the city limits of Watertown, is primarily managed as a walleye fishery; however, a variety of other fish species (e.g., bluegill, northern pike, smallmouth bass, white bass, yellow perch, etc.) contribute to the fishery.

- Bluegill. Although not abundant (1.3 per frame net), opportunities exist for anglers to catch bluegill at Lake Kampeska. In 2023, frame nets sampled 23 individuals from 3.6 to 9.4 inches, most (87%) were ≥ 6.0 inches and 74% were ≥ 8.0 inches.
- **Channel catfish.** In 2023, channel catfish were the third most abundant fish species sampled by gill nets (2.3 per net), behind only walleye and yellow perch. Twenty-eight individuals from 13.4 to 22.0 inches were netted.
- Smallmouth bass. Spring electrofishing was not completed in 2023.
- Walleye. Although more walleyes were sampled in 2023 than in 2022, relative abundance of those that were at least 10.0 inches remained low (2.8 per gill net). Sampled walleyes ranged in length from 7.5 to 23.2 inches, of those that were at least 10.0 inches 21% were ≥15.0 inches and 9% were ≥20.0 inches. Individuals from seven year classes (2013, 2014, and 2018 2022) contributed to the catch. Fish from 2021 (age-2) cohort, which coincided with a fry stocking, were more numerous than those from other cohorts and accounted for 47% of walleyes in the sample. Since 2014, the mean length at capture of age-3 fish has ranged from 10.9 to 15.6 inches, while age-4 fish had mean length at capture values from 12.3 to 19.3 inches. In 2023, the mean length at capture of age-3 and age-4 fish was 13.0 and 14.6 inches.
- White bass. Relative abundance of white bass has remained low (i.e., ≤2.0 per gill net) from 2016 to 2023. In 2023, 12 white bass from 11.0 to 15.0 inches were netted; most (83%) were ≥12.0 inches.
- Yellow perch. Yellow perch numbers were similar to those observed in 2022. At 4.4 per gill net, relative abundance was considered low to moderate for Lake Kampeska. Sampled yellow perch ranged in length from 5.1 to 11.4 inches, most (74%) were ≥8.0 inches and 23% were ≥10.0 inches. Fish from six consecutive year classes (2017 2022) contributed to the catch. The 2020 (age-3) cohort was the most represented with those individuals accounting for 36% of yellow perch in the sample. Growth appears to be moderate with mean length at capture values at age 3 from 8.0 to 9.8 inches since 2014. In 2023, the mean length at capture at age 3 was 8.7 inches.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Kampeska (Codington; below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Kampeska, Codington County UBS-Lake-171-000

2023

Lake Information

Kampeska	Maximum Depth:	16 Feet
Codington	Mean Depth:	7 Feet
	OHWM Elevation:	1,718
4,987 Acres	Outlet Elevation:	1,718
	Codington	Codington Mean Depth: OHWM Elevation:

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jul 18, 2023	4 net-nights
AFS std gill net	Jul 19, 2023	4 net-nights
AFS std gill net	Jul 20, 2023	4 net-nights
fall night EF-WAE	Sep 19, 2023	3000 seconds
frame net (std 3/4 in)	Jul 18, 2023	7 net-nights
frame net (std 3/4 in)	Jul 19, 2023	7 net-nights
frame net (std 3/4 in)	Jul 20, 2023	4 net-nights

Common Fish Species Present

Walleye Smallmouth Bass Black Crappie White Crappie Bigmouth Buffalo Yellow Perch Channel Catfish Bluegill Yellow Bullhead White Bass

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.
- std 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.

$$\textit{CPUE} = \frac{\textit{number of fish}}{\textit{effort}}$$

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.

$$PSD = \left(\frac{number \ of fish \ge quality \ length}{number \ of \ fish \ge stock \ length}\right) \ge 100$$

$$PSD - P = \left(\frac{number \ offish \ge preferred \ length}{number \ of \ fish \ge stock \ length}\right) \ge 100$$

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.

$$Wr = \left(\frac{W}{Ws}\right) \ge 100$$

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).

	St	ock	Qu	ality	Pref	erred	Mem	orable	Tro	ophy
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**

GearSpeciesSample Size (n)CPUECl-80PSDCl-80PSD-PCl-80WrCL-80AFS sid gill netBigmouth Buffalo181.50.894001001001003Channel Catfish282.31.396001001001003Common Carp30.30.2100100100100100100100Northern Pike70.60.4100100100100100100100Rock Bass10.10.1100100100100100100100100Smallmouth Bass90.80.478119202Walleye382.80.621111993White Carppic20.20.210010010093White Sucker10.10.110010010093White Sucker10.10.110010010010010Yellow Bulfhead100.10.1100100100100100100Yellow Buffhei100.10.1100100100100100100100Yellow Buffhei100.10.1100100100100100100100100Yellow Buffhei10.1 </th <th></th> <th></th> <th></th> <th>Abun</th> <th>dance</th> <th>St</th> <th>ock Der</th> <th>nsity Indic</th> <th>es</th> <th>Cor</th> <th>ndition</th>				Abun	dance	St	ock Der	nsity Indic	es	Cor	ndition
Channel Catfish 28 2.3 1.3 96 0 110 3 Common Carp 3 0.3 0.2 100 100 96 2 Northern Pike 7 0.6 0.4 100 71 71 3 Rock Bass 1 0.1 0.1 100 100 110 7 Shorthead 2 0.2 0.2 100 100 110 7 Smallmouth Bass 9 0.8 0.4 78 11 92 2 Walleye 38 2.8 0.6 21 11 9 85 2 White Bass 12 1.0 0.3 100 83 89 2 White Sucker 1 0.1 0.1 100 100 97 7 Yellow Bullhead 1 0.1 0.1 100 100 97 15 11 In Bigmouth Buffalo 100 5.6 </th <th>Gear</th> <th>Species</th> <th></th> <th>CPUE</th> <th>CI-80</th> <th>PSD</th> <th>CI-80</th> <th>PSD-P</th> <th>CI-80</th> <th>Wr</th> <th>CI-80</th>	Gear	Species		CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
Common Carp 3 0.3 0.2 100 100 96 2 Northern Pike 7 0.6 0.4 100 71 71 3 Rock Bass 1 0.1 0.1 100 100 110 71 Shorthead 2 0.2 0.2 100 100 110 7 Smallmouth Bass 9 0.8 0.4 78 11 92 2 Walleye 38 2.8 0.6 21 11 9 85 2 White Bass 12 1.0 0.3 100 63 89 2 White Crappie 2 0.2 0.2 100 0 99 3 Yellow Bulhead 1 0.1 0.1 100 100 99 3 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 Yellow Perch 53 4.4	AFS std gill net	Bigmouth Buffalo	18	1.5	0.8	94		0		89	2
Northern Pike 7 0.6 0.4 100 71 71 8 Rock Bass 1 0.1 0.1 100 100 110 7 Shorthead Redhorse 2 0.2 0.2 100 100 110 7 Smallmouth Bass 9 0.8 0.4 78 11 92 2 Walleye 38 2.8 0.6 21 11 9 85 2 White Bass 12 1.0 0.3 100 83 89 2 White Crappie 2 0.2 0.2 100 0 99 3 White Sucker 1 0.1 0.1 100 100 97 16 1 Yellow Parch 53 4.4 1.6 74 9 23 9 106 1 rame net (std 3/4 Bigmouth Buffalo 100 5.6 2.6 100 100 112 5 <		Channel Catfish	28	2.3	1.3	96		0		110	3
Rock Bass 1 0.1 0.1 100 100 116 Shorthead Redhorse 2 0.2 0.2 100 100 110 7 Smallmouth Bass 9 0.8 0.4 78 11 92 2 Walleye 38 2.8 0.6 21 11 9 85 2 Walleye 38 2.8 0.6 21 11 9 85 2 White Bass 12 1.0 0.3 100 83 89 2 White Crappie 2 0.2 0.2 100 0 99 3 White Sucker 1 0.1 0.1 100 100 97 15 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 In 9 0.5 0.2 6 100 100 112 5 Frame et (std 3/4 Bigmouth Buffalo <td></td> <td>Common Carp</td> <td>3</td> <td>0.3</td> <td>0.2</td> <td>100</td> <td></td> <td>100</td> <td></td> <td>96</td> <td>2</td>		Common Carp	3	0.3	0.2	100		100		96	2
Shorthead Rednorse 2 0.2 0.2 100 100 110 7 Smallmouth Bass 9 0.8 0.4 78 11 92 2 Walleye 38 2.8 0.6 21 11 9 85 2 White Bass 12 1.0 0.3 100 83 89 2 White Crappie 2 0.2 0.2 100 0 99 3 White Sucker 1 0.1 0.1 100 100 97 3 Yellow Bullhead 1 0.1 0.1 100 100 97 3 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 Bigmouth Buffalo 100 5.6 2.6 100 12 5 91 1 Biluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfi		Northern Pike	7	0.6	0.4	100		71		71	3
Redhorse 2 0.2 100 100 110 7 Smallmouth Bass 9 0.8 0.4 78 11 92 2 Walleye 38 2.8 0.6 21 11 9 85 2 White Bass 12 1.0 0.3 100 83 89 2 White Crappie 2 0.2 0.2 100 0 99 3 White Sucker 1 0.1 0.1 100 100 94 9 3 9 106 1 Yellow Bullhead 1 0.1 0.1 100 100 97 9 106 1 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 Trame net (std 3/4 Bigmouth Buffalo 100 5.6 2.6 100 100 83 3 Buegill 23 1.3 0.4 87 74		Rock Bass	1	0.1	0.1	100		100		116	
Walleye 38 2.8 0.6 21 11 9 85 2 White Bass 12 1.0 0.3 100 83 89 2 White Crappie 2 0.2 0.2 100 0 99 3 White Sucker 1 0.1 0.1 100 100 94 1 Yellow Bullhead 1 0.1 0.1 100 100 97 1 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 Bigmouth Buffalo 100 5.6 2.6 100 12 5 91 1 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 2 Rock Bass 1 0.1 0.1 100 100 116 2 Walleye			2	0.2	0.2	100		100		110	7
White Bass 12 1.0 0.3 100 83 89 2 White Crappie 2 0.2 0.2 100 0 99 3 White Sucker 1 0.1 0.1 100 100 94 Yellow Bullhead 1 0.1 0.1 100 100 97 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 trame net (std 3/4 Bigmouth Buffalo 100 5.6 2.6 100 12 5 91 1 Black Bullhead 2 0.1 0.1 100 100 88 3 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 2 Rock Bass 1 0.1 0.1 100 100 116 2 Walleye 6		Smallmouth Bass	9	0.8	0.4	78		11		92	2
White Crappie 2 0.2 0.2 100 0 99 3 White Sucker 1 0.1 0.1 100 100 94 Yellow Bullhead 1 0.1 0.1 100 100 97 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 Bigmouth Buffalo 100 5.6 2.6 100 12 5 91 1 Black Bullhead 2 0.1 0.1 100 100 88 3 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 112 Common Carp 3 0.2 0.1 100 100 92 8 Northern Pike 9 0.5 0.2 78 44 74 5 Rock Bass 1 0.1 <t< td=""><td></td><td>Walleye</td><td>38</td><td>2.8</td><td>0.6</td><td>21</td><td>11</td><td>9</td><td></td><td>85</td><td>2</td></t<>		Walleye	38	2.8	0.6	21	11	9		85	2
White Sucker 1 0.1 0.1 100 100 94 Yellow Bullhead 1 0.1 0.1 100 100 97 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 Irame net (std 3/4 in) Bigmouth Buffalo 100 5.6 2.6 100 12 5 91 1 Black Bullhead 2 0.1 0.1 100 100 88 3 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 74 Common Carp 3 0.2 0.1 100 100 92 8 Northern Pike 9 0.5 0.2 78 44 74 5 Rock Bass 1 0.1 0.1 100 100 116 7 Walleye 6<		White Bass	12	1.0	0.3	100		83		89	2
Yellow Bullhead 1 0.1 0.1 100 100 97 Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 in Bigmouth Buffalo 100 5.6 2.6 100 12 5 91 1 Black Bullhead 2 0.1 0.1 100 100 88 3 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 74 15 118 5 Common Carp 3 0.2 0.1 100 100 92 8 Northern Pike 9 0.5 0.2 78 44 74 5 Rock Bass 1 0.1 0.1 100 100 116 16 Walleye 6 0.3 0.2 50 17 83 2 <		White Crappie	2	0.2	0.2	100		0		99	3
Yellow Perch 53 4.4 1.6 74 9 23 9 106 1 in Bigmouth Buffalo 100 5.6 2.6 100 12 5 91 1 Black Bullhead 2 0.1 0.1 100 100 88 3 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 112 Common Carp 3 0.2 0.1 100 100 92 8 Northern Pike 9 0.5 0.2 78 44 74 5 Rock Bass 1 0.1 0.1 100 100 116 116 Smallmouth Bass 68 2.7 1.1 45 11 16 8 97 2 Walleye 6 0.3 0.2 50 17 83 2 </td <td></td> <td>White Sucker</td> <td>1</td> <td>0.1</td> <td>0.1</td> <td>100</td> <td></td> <td>100</td> <td></td> <td>94</td> <td></td>		White Sucker	1	0.1	0.1	100		100		94	
trame net (std 3/4 in)Bigmouth Buffalo1005.62.6100125911Black Bullhead20.10.1100100883Bluegill231.30.48774151185Channel Catfish10.10.1100100112100Common Carp30.20.1100100928Northern Pike90.50.27844745Rock Bass10.10.1100100116116Smallmouth Bass682.71.14511168972Walleye60.30.2501783322White Bass80.40.3100100981Yellow Bullhead211.20.41001001013		Yellow Bullhead	1	0.1	0.1	100		100		97	
in) Black Bullhead 2 0.1 0.1 100 100 88 3 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 112 Common Carp 3 0.2 0.1 100 100 92 8 Northern Pike 9 0.5 0.2 78 44 74 5 Rock Bass 1 0.1 0.1 100 100 116 16 Smallmouth Bass 68 2.7 1.1 45 11 16 8 97 2 Walleye 6 0.3 0.2 50 17 83 2 White Bass 8 0.4 0.3 100 100 86 2 White Sucker 3 0.2 0.1 100 100 98 1 Yellow Bullhead 21 1.2 0.4 100 100 101 3		Yellow Perch	53	4.4	1.6	74	9	23	9	106	1
Black Bullhead 2 0.1 0.1 100 100 88 3 Bluegill 23 1.3 0.4 87 74 15 118 5 Channel Catfish 1 0.1 0.1 100 100 112 112 Common Carp 3 0.2 0.1 100 100 92 8 Northern Pike 9 0.5 0.2 78 44 74 5 Rock Bass 1 0.1 0.1 100 100 116 116 Smallmouth Bass 68 2.7 1.1 45 11 16 8 97 2 Walleye 6 0.3 0.2 50 17 83 2 White Bass 8 0.4 0.3 100 100 86 2 White Sucker 3 0.2 0.1 100 100 98 1 Yellow Bullhead 21 1.2 0.4 100 100 101 3		Bigmouth Buffalo	100	5.6	2.6	100		12	5	91	1
Channel Catfish 1 0.1 0.1 100 112 Common Carp 3 0.2 0.1 100 100 92 8 Northern Pike 9 0.5 0.2 78 44 74 5 Rock Bass 1 0.1 0.1 100 100 116 Smallmouth Bass 68 2.7 1.1 45 11 16 8 97 2 Walleye 6 0.3 0.2 50 17 83 2 White Bass 8 0.4 0.3 100 100 98 1 Yellow Bullhead 21 1.2 0.4 100 101 3	in)	Black Bullhead	2	0.1	0.1	100		100		88	3
Common Carp30.20.1100100928Northern Pike90.50.27844745Rock Bass10.10.1100100116Smallmouth Bass682.71.14511168972Walleye60.30.25017832White Bass80.40.3100100862White Sucker30.20.11001013Yellow Bullhead211.20.41001001013		Bluegill	23	1.3	0.4	87		74	15	118	5
Northern Pike90.50.27844745Rock Bass10.10.1100116116Smallmouth Bass682.71.14511168972Walleye60.30.25017832White Bass80.40.3100100862White Sucker30.20.1100100981Yellow Bullhead211.20.41001001013		Channel Catfish	1	0.1	0.1	100		100		112	
Rock Bass10.10.1100100116Smallmouth Bass682.71.14511168972Walleye60.30.25017832White Bass80.40.3100100862White Sucker30.20.1100100981Yellow Bullhead211.20.41001001013		Common Carp	3	0.2	0.1	100		100		92	8
Smallmouth Bass682.71.14511168972Walleye60.30.25017832White Bass80.40.3100100862White Sucker30.20.1100100981Yellow Bullhead211.20.41001001013		Northern Pike	9	0.5	0.2	78		44		74	5
Walleye60.30.25017832White Bass80.40.3100100862White Sucker30.20.1100100981Yellow Bullhead211.20.41001001013		Rock Bass	1	0.1	0.1	100		100		116	
White Bass80.40.3100100862White Sucker30.20.1100100981Yellow Bullhead211.20.41001001013		Smallmouth Bass	68	2.7	1.1	45	11	16	8	97	2
White Sucker30.20.1100100981Yellow Bullhead211.20.41001001013		Walleye	6	0.3	0.2	50		17		83	2
Yellow Bullhead 21 1.2 0.4 100 101 3		White Bass	8	0.4	0.3	100		100		86	2
		White Sucker	3	0.2	0.1	100		100		98	1
Yellow Perch 2 0.1 0.1 100 50 97		Yellow Bullhead	21	1.2	0.4	100		100		101	3
		Yellow Perch	2	0.1	0.1	100		50		97	

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. *SDGFP standard gill nets used 2014 - 2015; avg calculated on data from 2016 – 2023; ** Includes day and night samples; *** Methods/Species that ignore stock length; ****AFS standard frame nets used in 2017

							CPUE					
Gear	Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
AFS std gill	Bigmouth Buffalo	0.0	0.0	0.0	0.0	8.3	5.6		6.1	3.6	1.5	3.59
net*	Black Bullhead	1.8	2.3	0.4	0.4	0.3	0.0		0.8	0.0	0.0	0.27
	Black Crappie	0.0	0.0	0.0	0.1	0.0	0.0		0.1	0.0	0.0	0.03
	Bluegill	0.0	0.0	0.0	0.1	0.0	0.0		0.0	0.1	0.0	0.03
	Channel Catfish	0.7	0.2	1.0	0.9	0.3	0.4		1.8	3.1	2.3	1.40
	Common Carp	0.3	0.0	0.1	0.0	0.3	0.6		0.1	0.0	0.3	0.20
	Northern Pike	0.2	1.0	0.5	0.2	0.7	0.8		0.9	0.6	0.6	0.61
	Rock Bass	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.1	0.1	0.03
	Shorthead Redhorse	0.0	0.3	0.2	0.0	0.1	0.2		0.0	0.0	0.2	0.10
	Smallmouth Bass	0.0	1.2	0.8	1.3	0.6	0.0		1.2	1.9	0.8	0.94
	Walleye	9.3	11.5	4.6	2.7	2.6	4.0		3.3	2.1	2.8	3.16
	White Bass	3.8	4.7	1.8	1.5	1.4	2.0		1.7	1.8	1.0	1.60
	White Crappie	1.3	0.3	1.1	0.5	0.2	2.6		0.9	0.6	0.2	0.87
	White Sucker	1.8	2.2	0.6	0.6	0.8	0.3		0.0	0.4	0.1	0.40
	Yellow Bullhead	1.5	0.8	1.1	0.7	0.6	0.3		6.6	0.3	0.1	1.39
	Yellow Perch	2.7	13.0	5.3	5.3	3.3	4.3		2.3	4.7	4.4	4.23
boat shocker**	Smallmouth Bass	171.0		159.8			97.0					142.60
fall night EF- WAE***	Walleye	179.0	7.0	7.0	41.0	75.0	54.2	0.0	36.6	0.0	126.0	52.58
frame net (std	Bigmouth Buffalo	0.4			0.6						5.6	2.20
3/4 in)****	Black Bullhead	15.5			0.7						0.1	5.43
	Black Crappie	0.5			1.2						0.0	0.57
	Bluegill	1.4			0.5						1.3	1.07
	Channel Catfish	0.0			0.1						0.1	0.07
	Common Carp	0.1			0.1						0.2	0.13
	Northern Pike	0.2			0.2						0.5	0.30
	Rock Bass	0.0			0.0						0.1	0.03
	Smallmouth Bass	0.5			0.4						2.7	1.20
	Walleye	0.6			0.1						0.3	0.33
	White Bass	3.0			3.1						0.4	2.17
	White Crappie	0.7			0.1						0.0	0.27
	White Sucker	0.5			0.0						0.2	0.23
	Yellow Bullhead	3.9			1.6						1.2	2.23
	Yellow Perch	0.1			0.1						0.1	0.10

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.

*SDGFP standard gill nets used 2014 - 2015;**AFS standard frame nets used in 2017

							Ye	ar				
Gear	Species	Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AFS std gill	Channel Catfish	PSD	75	100	100	100	100	100		33	92	96
net*		PSD-P	50	100	42	70	67	80		0	0	0
		Wr	101	102	101	100	112	114		95	107	110
	Walleye	PSD	25	12	18	7	3	69		51	40	21
		PSD-P	0	1	2	3	0	2		3	0	9
		Wr	78	82	79	75	85	88		84	81	85
	White Bass	PSD	100	96	48	94	100	92		90	100	100
		PSD-P	87	93	48	50	88	92		80	81	83
		Wr	81	84	86	80	88	85		87	81	89
	Yellow Perch	PSD	88	65	90	97	92	81		96	68	74
		PSD-P	19	41	40	48	67	73		26	14	23
		Wr	107	109	108	109	105	100		99	106	106
frame net (std	Bluegill	PSD	97			89						87
3/4 in)**		PSD-P	73			78						74
		Wr	120			126						118

Length at Capture

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

Species: Walleye

Year	Ν	1	2	3	4	5	6	7	8	9	10+
2023	38	193 (2)	258 (18)	329 (8)	371 (4)	463 (2)				598 (1)	539 (3)
2022	26	222 (1)	296 (8)	376 (9)	418 (3)	446 (1)			462 (3)	466 (1)	
2021	40	217 (1)	326 (8)	384 (24)	490 (1)	474 (1)		503 (2)	466 (3)		
2019	67	211 (20)	348 (8)	396 (1)	367 (2)	410 (23)	426 (6)	446 (1)	463 (6)		
2018	38	232 (7)		324 (2)	319 (14)	325 (10)	354 (2)	367 (2)			
2017	30			276 (12)	313 (10)		359 (7)			659 (1)	
2016	58	205 (1)	260 (14)	305 (19)		365 (20)		480 (1)	608 (1)	404 (1)	432 (1)
2015	88	198 (17)	264 (35)		334 (29)	351 (2)	555 (1)	432 (2)	422 (1)	414 (1)	
2014	62	193 (5)	223 (1)	305 (39)	353 (4)	382 (2)	418 (7)	427 (3)		457 (1)	

Species: Yellow Perch

				Mean Len	gth (expa	nded sam	ple numbe	er) at capt	ure by age	e	
Year	Ν	1	2	3	4	5	6	7	8	9	10+
2023	53	142 (7)	198 (11)	220 (19)	232 (1)	260 (13)	293 (2)				
2022	56		184 (16)	203 (6)	241 (33)			316 (1)			
2021	27		191 (2)	219 (16)	242 (3)	282 (1)	291 (3)		299 (2)		
2019	53	120 (1)	187 (13)	234 (1)	278 (17)		294 (13)	293 (1)	304 (4)	313 (1)	304 (2)
2018	38	138 (2)	214 (2)	249 (14)	274 (4)	271 (13)	287 (3)				307 (1)
2017	58	138 (1)	215 (22)	237 (4)	264 (22)	303 (5)	289 (3)	256 (1)			
2016	63	142 (3)	187 (3)	234 (31)		274 (11)	277 (11)	279 (3)	255 (1)		
2015	78		191 (33)	242 (7)	253 (22)	261 (7)	270 (9)	296 (1)			
2014	22	119 (5)	160 (2)	219 (7)	235 (1)	255 (6)	235 (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).

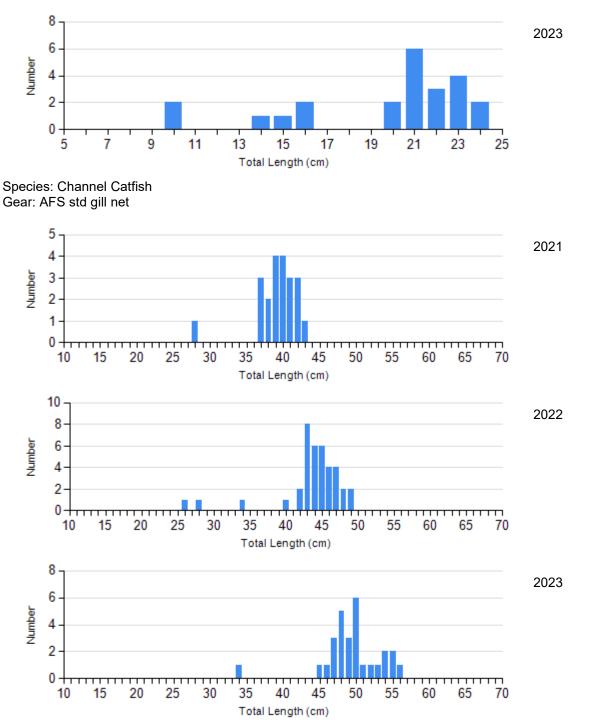
					Length	Group	S		
			S-Q		Q-P		P-M		М
Species	Year	Ν	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)
Bluegill Frame Net	2023	3	110 (4.5)	3	143 (4.9)	17	113 (3.3)	0	
Channel Catfish Gill Net	2019	0		1	132	4	110 (3.9)	0	
	2021	14	97 (2.1)	7	90 (3.0)	0		0	
	2022	3	103 (0.7)	34	107 (2.2)	0		0	
	2023	1	100	27	110 (2.4)	0		0	
Walleye Gill Net	2019	15	88 (2.3)	32	89 (0.9)	1	86	0	
	2021	19	84 (1.1)	19	83 (0.7)	1	84	0	
	2022	15	82 (1.5)	10	79 (1.5)	0		0	
	2023	26	86 (1.2)	4	79 (1.5)	3	80 (4.1)	0	
White Bass Gill Net	2019	2	86 (4.0)	0		22	85 (1.2)	0	
	2021	2	96 (0.2)	2	89 (2.7)	15	85 (0.9)	1	84
	2022	0		4	90 (1.8)	17	79 (1.1)	0	
	2023	0		2	94 (5.5)	9	89 (1.2)	1	80
Yellow Perch Gill Net	2019	10	106 (2.5)	4	98 (3.1)	27	99 (1.5)	11	98 (1.5)
	2021	1	115	19	101 (1.3)	5	93 (3.2)	2	87 (4.6)
	2022	18	106 (1.6)	30	108 (1.0)	7	100 (2.3)	1	90
	2023	14	105 (1.9)	27	106 (1.0)	12	106 (2.0)	0	

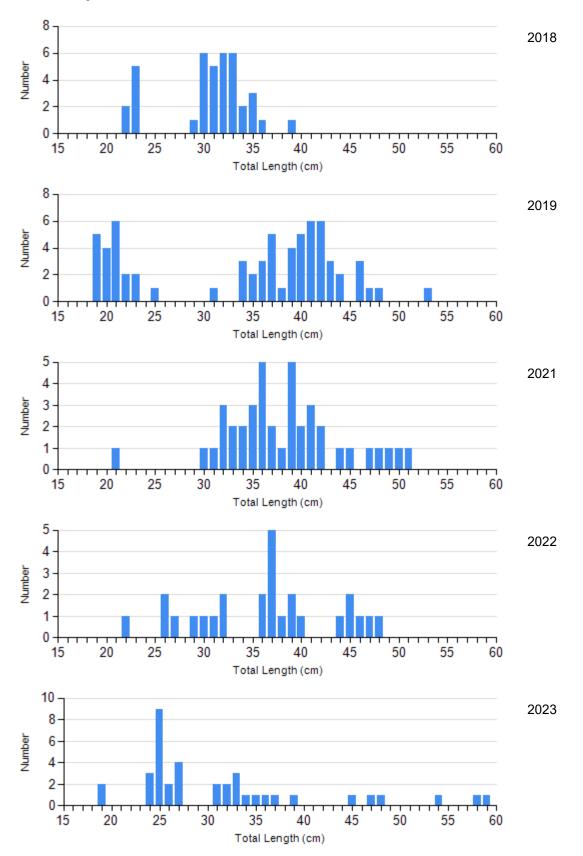
Length Frequency Distribution

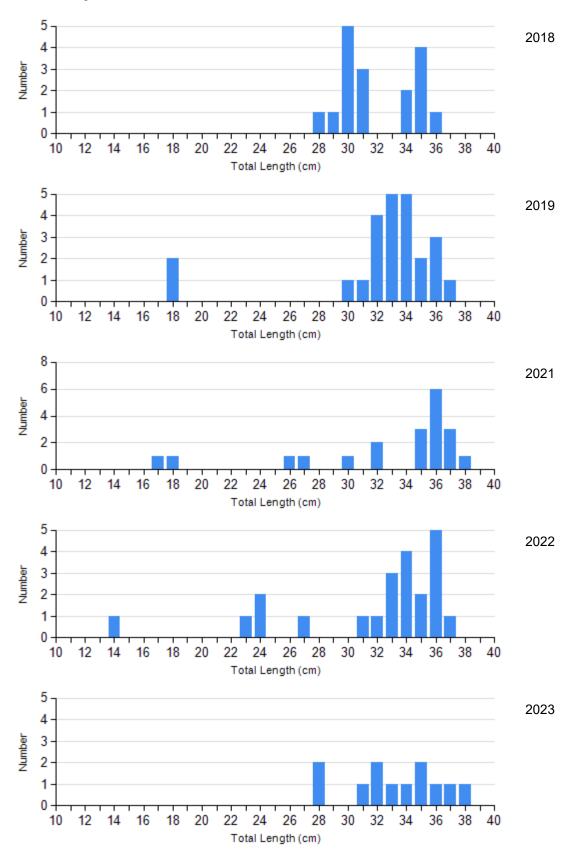
Length frequency histogram of species sampled by year.

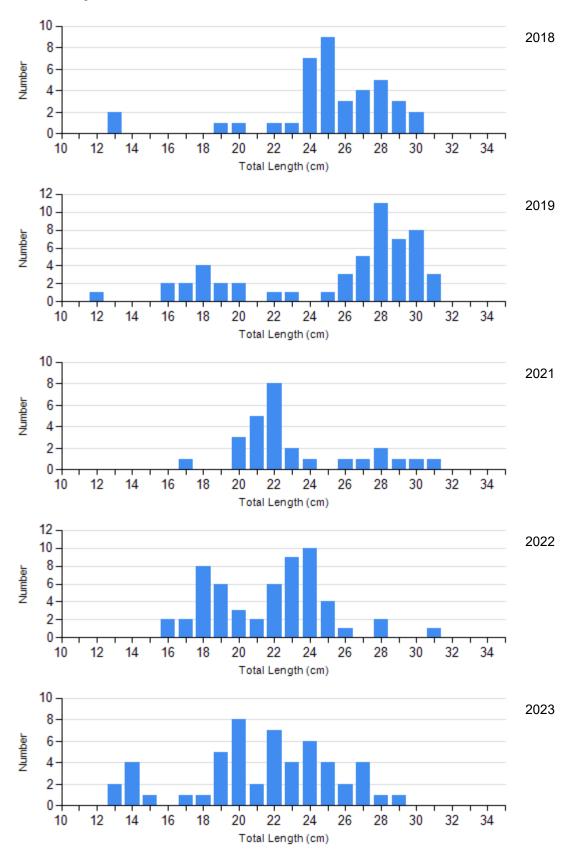
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Species: Bluegill
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Gear: frame net (std 3/4 in)





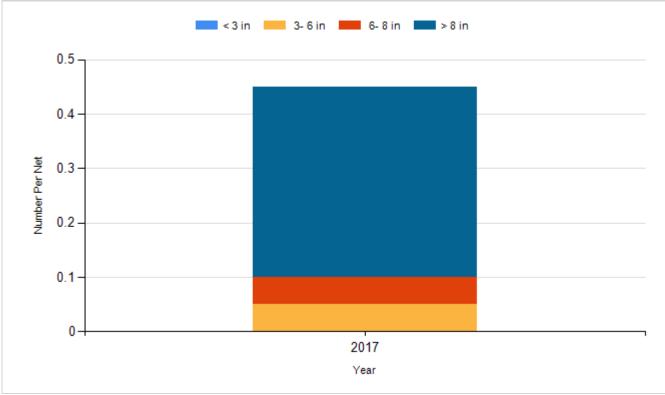




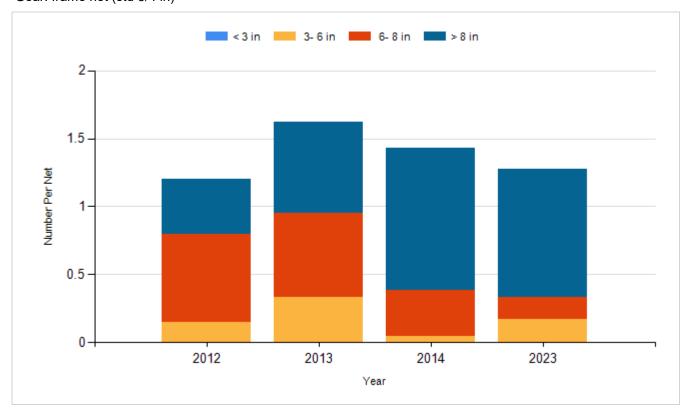
Historic Fish Sizes and Relative Abundance

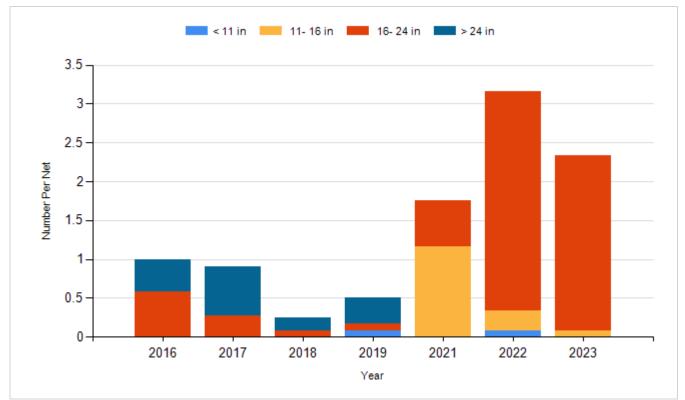
Size distribution per net by color for species sampled by year.

Species: Bluegill Gear: AFS std frame net

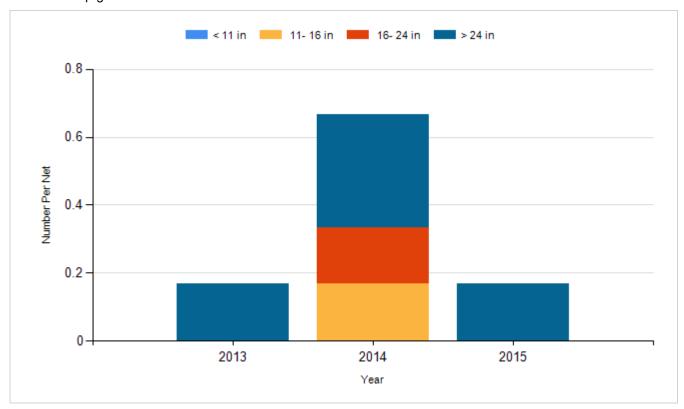


Species: Bluegill Gear: frame net (std 3/4 in)

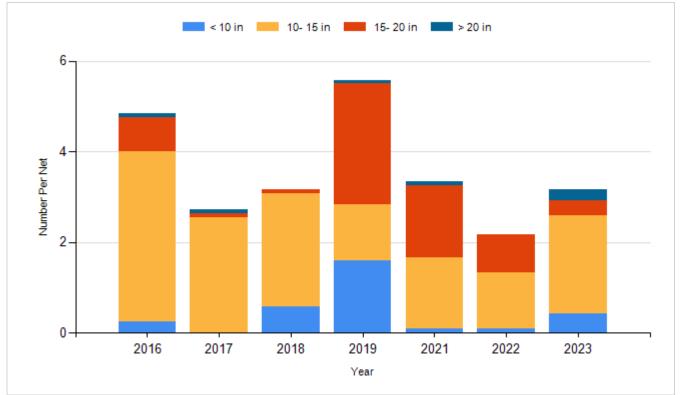




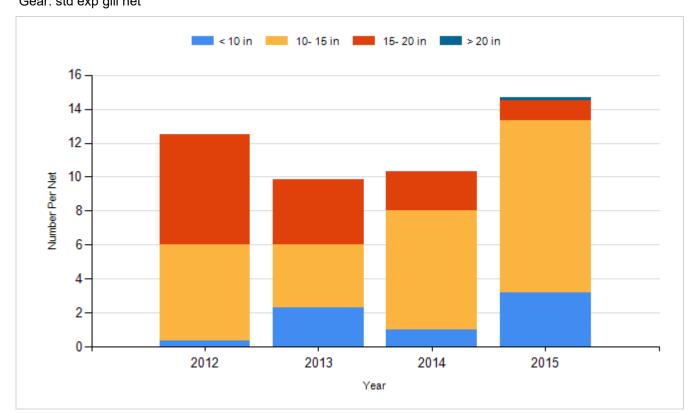
Species: Channel Catfish Gear: std exp gill net



Species: Walleye Gear: AFS std gill net



Species: Walleye Gear: std exp gill net

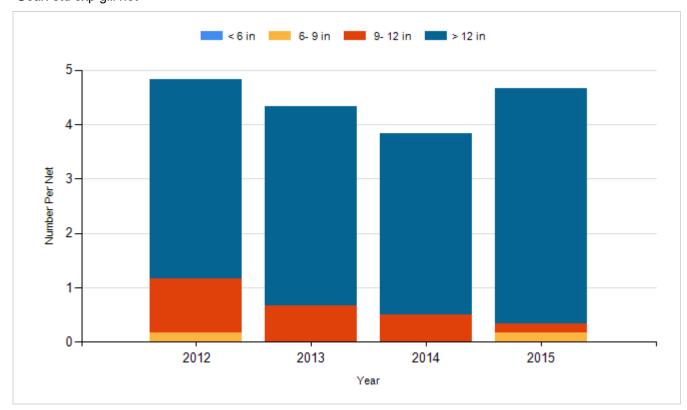


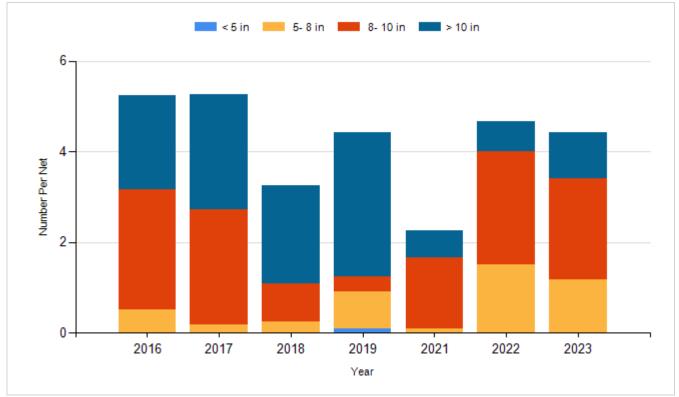
Lake Kampeska (2023)

Species: White Bass Gear: AFS std gill net

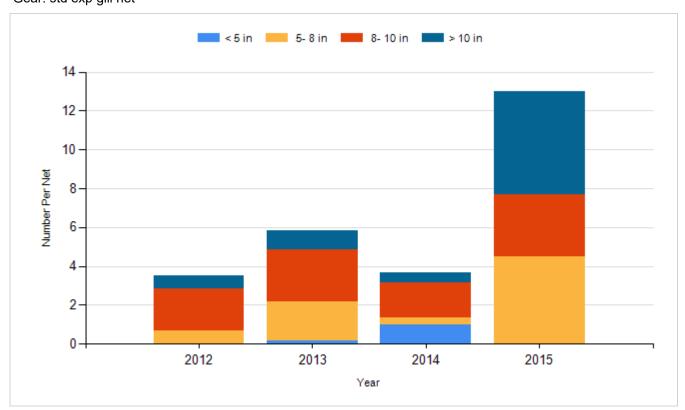


Species: White Bass Gear: std exp gill net





Species: Yellow Perch Gear: std exp gill net



Fish Stocking

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

Year	Species	Size	Number
2013	Walleye	Fry	2,400,000
2014	Walleye	Fry	2,500,000
2016	Walleye	Fry	2,400,000
2017	Walleye	Fry	2,400,000
2018	Walleye	Fry	2,400,000
2019	Walleye	Fry	2,400,000
2021	Walleye	Fry	2,400,000
2022	Walleye	Fry	2,500,000
2023	Walleye	Fry	5,100,000

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Kampeska, Codington County

UBS-Lake-171-000

2023

Lake Information

Name:	Kampeska	Maximum Depth:	16 Feet
County:	Codington	Mean Depth:	7 Feet
		OHWM Elevation:	1,718
Surface Area:	4,987 Acres	Outlet Elevation:	1,718

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jul 18, 2023	4 net-nights
AFS std gill net	Jul 19, 2023	4 net-nights
AFS std gill net	Jul 20, 2023	4 net-nights
fall night EF-WAE	Sep 19, 2023	3000 seconds
frame net (std 3/4 in)	Jul 18, 2023	7 net-nights
frame net (std 3/4 in)	Jul 19, 2023	7 net-nights
frame net (std 3/4 in)	Jul 20, 2023	4 net-nights

Common Fish Species Present

Walleye Smallmouth Bass Black Crappie White Crappie Bigmouth Buffalo Yellow Perch Channel Catfish Bluegill Yellow Bullhead White Bass

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.
- std 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.

$$\textit{CPUE} = \frac{\textit{number of fish}}{\textit{effort}}$$

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.

$$PSD = \left(\frac{number \ of fish \ge quality \ length}{number \ of \ fish \ge stock \ length}\right) \ge 100$$

$$PSD - P = \left(\frac{number \ offish \ge preferred \ length}{number \ of \ fish \ge stock \ length}\right) \ge 100$$

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.

$$Wr = \left(\frac{W}{Ws}\right) \ge 100$$

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).

	St	ock	Qu	ality	Pref	erred	Mem	orable	Tro	ophy
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

			Abun	dance	St	ock Der	nsity Indic	es	Cor	ndition
Gear	Species	Sample Size (n)	CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
AFS std gill net	Bigmouth Buffalo	18	1.5	0.8	94		0		89	2
	Channel Catfish	28	2.3	1.3	96		0		110	3
	Common Carp	3	0.3	0.2	100		100		96	2
	Northern Pike	7	0.6	0.4	100		71		71	3
	Rock Bass	1	0.1	0.1	100		100		116	
	Shorthead Redhorse	2	0.2	0.2	100		100		110	7
	Smallmouth Bass	9	0.8	0.4	78		11		92	2
	Walleye	38	2.8	0.6	21	11	9		85	2
	White Bass	12	1.0	0.3	100		83		89	2
	White Crappie	2	0.2	0.2	100		0		99	3
	White Sucker	1	0.1	0.1	100		100		94	
	Yellow Bullhead	1	0.1	0.1	100		100		97	
	Yellow Perch	53	4.4	1.6	74	9	23	9	106	1
rame net (std 3/4	Bigmouth Buffalo	100	5.6	2.6	100		12	5	91	1
in)	Black Bullhead	2	0.1	0.1	100		100		88	3
	Bluegill	23	1.3	0.4	87		74	15	118	5
	Channel Catfish	1	0.1	0.1	100		100		112	
	Common Carp	3	0.2	0.1	100		100		92	8
	Northern Pike	9	0.5	0.2	78		44		74	5
	Rock Bass	1	0.1	0.1	100		100		116	
	Smallmouth Bass	68	2.7	1.1	45	11	16	8	97	2
	Walleye	6	0.3	0.2	50		17		83	2
	White Bass	8	0.4	0.3	100		100		86	2
	White Sucker	3	0.2	0.1	100		100		98	1
	Yellow Bullhead	21	1.2	0.4	100		100		101	3
	Yellow Perch	2	0.1	0.1	100		50		97	

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	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
AFS std frame	Bigmouth Buffalo				0.6							0.60
net	Black Bullhead				0.7							0.70
	Black Crappie				1.2							1.20
	Bluegill				0.5							0.50
	Channel Catfish				0.1							0.10
	Common Carp				0.1							0.10
	Northern Pike				0.2							0.20
	Smallmouth Bass				0.4							0.40
	Walleye				0.1							0.10
	White Bass				3.1							3.10
	White Crappie				0.1							0.10
	Yellow Bullhead				1.6							1.60
	Yellow Perch				0.1							0.10
AFS std gill net	Bigmouth Buffalo			0.0	0.0	8.3	5.6		6.1	3.6	1.5	3.59
	Black Bullhead			0.4	0.4	0.3	0.0		0.8	0.0	0.0	0.27
	Black Crappie			0.0	0.1	0.0	0.0		0.1	0.0	0.0	0.03
	Bluegill			0.0	0.1	0.0	0.0		0.0	0.1	0.0	0.03
	Channel Catfish			1.0	0.9	0.3	0.4		1.8	3.1	2.3	1.40
	Common Carp			0.1	0.0	0.3	0.6		0.1	0.0	0.3	0.20
	Northern Pike			0.5	0.2	0.7	0.8		0.9	0.6	0.6	0.61
	Rock Bass			0.0	0.0	0.0	0.0		0.0	0.1	0.1	0.03
	Shorthead Redhorse			0.2	0.0	0.1	0.2		0.0	0.0	0.2	0.10
	Smallmouth Bass			0.8	1.3	0.6	0.0		1.2	1.9	0.8	0.94
	Walleye			4.6	2.7	2.6	4.0		3.3	2.1	2.8	3.16
	White Bass			1.8	1.5	1.4	2.0		1.7	1.8	1.0	1.60
	White Crappie			1.1	0.5	0.2	2.6		0.9	0.6	0.2	0.87
	White Sucker			0.6	0.6	0.8	0.3		0.0	0.4	0.1	0.40
	Yellow Bullhead			1.1	0.7	0.6	0.3		6.6	0.3	0.1	1.39
	Yellow Perch			5.3	5.3	3.3	4.3		2.3	4.7	4.4	4.23
boat shocker (day)	Smallmouth Bass						97.0					97.00
boat shocker (night)	Walleye*	179.0	7.0	7.0	41.0							58.50
boat shocker (night, DC)	Smallmouth Bass	171.0		159.8								165.4 0

							CPUE					
Gear	Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
fall night EF- WAE*	Walleye					75.0	54.2		36.6		126.0	72.95
frame net (std	Bigmouth Buffalo	0.4									5.6	3.00
3/4 in)	Black Bullhead	15.5									0.1	7.80
	Black Crappie	0.5									0.0	0.25
	Bluegill	1.4									1.3	1.35
	Channel Catfish	0.0									0.1	0.05
	Common Carp	0.1									0.2	0.15
	Northern Pike	0.2									0.5	0.35
	Rock Bass	0.0									0.1	0.05
	Shorthead Redhorse	0.0									0.0	0.00
	Smallmouth Bass	0.5									2.7	1.60
	Walleye	0.6									0.3	0.45
	White Bass	3.0									0.4	1.70
	White Crappie	0.7									0.0	0.35
	White Sucker	0.5									0.2	0.35
	Yellow Bullhead	3.9									1.2	2.55
	Yellow Perch	0.1									0.1	0.10
std exp gill net	Black Bullhead	1.8	2.3									2.05
	Channel Catfish	0.7	0.2									0.45
	Common Carp	0.3	0.0									0.15
	Northern Pike	0.2	1.0									0.60
	Shorthead Redhorse	0.0	0.3									0.15
	Smallmouth Bass	0.0	1.2									0.60
	Walleye	9.3	11.5									10.40
	White Bass	3.8	4.7									4.25
	White Crappie	1.3	0.3									0.80
	White Sucker	1.8	2.2									2.00
	Yellow Bullhead	1.5	0.8									1.15
	Yellow Perch	2.7	13.0									7.85

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.

							Ye	ar				
Gear	Species	Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AFS std frame	Bigmouth Buffalo	PSD				100						
net		PSD-P				100						
	Black Crappie	PSD				65						
		PSD-P				17						
		Wr				104						
	Bluegill	PSD				89						
		PSD-P				78						
		Wr				126						
	Channel Catfish	PSD				100						
		PSD-P				100						
	Smallmouth Bass	PSD				57						
		PSD-P				0						
		Wr				93						
	Walleye	PSD				0						
		PSD-P				0						
		Wr				76						
	White Bass	PSD				100						
		PSD-P				87						
		Wr				79						
	White Crappie	PSD				100						
		PSD-P				100						
		Wr				82						
	Yellow Bullhead	PSD				100						
		PSD-P				100						
		Wr				98						
	Yellow Perch	PSD				100						
		PSD-P				0						
		Wr				86						
	Diamouth Duffele						0	7		04	77	04
Aro sia gili net	Bigmouth Buffalo	PSD					3	27		81	77	94
		PSD-P					1	0		5	2	0
	Diagle Orașe în	Wr				400	89	90		89	87	89
	Black Crappie	PSD				100				100		
		PSD-P				100				100		
							11/12	/2024	F	Page 8		

AFS std gill net		Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AFS std gill net		۱۸/-										2020
		Wr				73				99		
	Bluegill	PSD				100					100	
		PSD-P				100					0	
		Wr				104					117	
	Channel Catfish	PSD			100	100	100	100		33	92	96
		PSD-P			42	70	67	80		0	0	0
		Wr			101	100	112	114		95	107	110
	Smallmouth Bass	PSD			33	57	100			71	74	78
		PSD-P			0	21	14			14	9	11
		Wr			88	90	88			85	86	92
	Walleye	PSD			18	7	3	69		51	40	21
		PSD-P			2	3	0	2		3	0	9
		Wr			79	75	85	88		84	81	85
	White Bass	PSD			48	94	100	92		90	100	100
		PSD-P			48	50	88	92		80	81	83
		Wr			86	80	88	85		87	81	89
	White Crappie	PSD			100	100	100	6		100	100	100
		PSD-P			100	100	100	6		18	14	0
		Wr			90	91	97	112		93	94	99
	Yellow Bullhead	PSD			100	100	100	100		100	100	100
		PSD-P			100	100	100	100		99	100	100
		Wr			94	100	95	97		97	98	97
	Yellow Perch	PSD			90	97	92	81		96	68	74
		PSD-P			40	48	67	73		26	14	23
		Wr			108	109	105	100		99	106	106
boat shocker (day)	Smallmouth Bass	PSD						66				
		PSD-P						13				
		Wr						90				
boat shocker	Walleye	PSD	0	0	0	0						
(night)		PSD-P	0	0	0	0						
		Wr	89	91	92	90						
boat shocker	Smallmouth Bass	PSD	87		61							
(night, DC)		PSD-P	15		18							
		Wr	98		96							
frame not (atd	Rigmouth Puffele	PSD	100									100
frame net (std 3/4 in)	Bigmouth Buffalo	PSD PSD-P	100 56									100

frame net (std 3/4 in) Bigmouth Buffato Black Crappie Wr 91 Side in) PSD 91 PSD-P 55 Wr 100 Wr 100 Bluegill PSD 97 87 PSD-P 73 74 Wr 120 118 Channel Catfish PSD 97 100 PSD-P 73 74 100 Wr 120 118 100 Channel Catfish PSD 100 100 Wr 91 97 36 Wr 91 97 100 Wr 91 97 100 Wr 91 97 100 Wr 91 97 100 Wr 95D 100 100 PSD-P 97 100 100 PSD-P 97 100 100 PSD-P 97 100 100 PSD-P 97								Ye	ar				
3'4 in) Black Crappie PSD 91 PSD-P 55 Wr 100 PSD-P 73 PSD-P 73 Wr 120 Wr 120 Channel Catfish PSD PSD-P 64 PSD-P 73 Mr 120 Smallmouth Bass PSD PSD-P 9 Wr 91 Wr 92 Wr 93 Wr 94 Wr 95 Wr 97 Wr 97 Wr 97 Wr 91 Wr 91 Wr 91 Wr 91 Wr 92 Wr 93 Wr 94 Wr 94 Wr 95 Wr 95 Wr </th <th>Gear</th> <th>Species</th> <th>Index</th> <th>2014</th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> <th>2022</th> <th>2023</th>	Gear	Species	Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Black Crapple PSD 9 PSD-P 55 Wr 100 Bluegill PSD-P 73 PSD-P 73 74 Wr 120 118 Channel Catfish PSD 9 112 Smallmouth Bass PSD 64 45 PSD-P 9 16 172 Smallmouth Bass PSD 64 45 PSD-P 9 16 172 Wr 91 97 172 Walleye PSD 17 173 Walleye PSD 17 173 Wr 91 173 174 Wr 91 173 174 Walleye PSD-P 0 174 Wr 91 174 175 Write Crappie PSD 100 100 PSD-P 97 100 100 Yellow Bulhead PSD 100 100<	frame net (std	Bigmouth Buffalo	Wr										91
Wr100BluegillPSD9787PSD-P7374Vr120118Channel CatfishPSD112Smallmouth BassPSD64112Wr91112Smallmouth BassPSD1716VP91117112Wr91117116VP92117116Wr91117116VP92117116VP92100116PSD-P100110PSD-P100100PSD-P100100PSD-P97100PSD-P100100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P96100PSD-P100100PSD-P100100PSD-P101102PSD-P101102PSD-P101102PSD-P114PSD-P114PSD-P114PSD-P114PSD-P114PSD-P114PSD-P114PSD-P114<	3/4 IN)	Black Crappie	PSD	91									
BluegillPSD9797PSD-P7374Wr12018PAD-P73100PSD-PPSD112Smallmouth BassPSD64PSD-P916PSD-P916PSD-P916PSD-P916PSD-P916PSD-P917WalleyePSD17PSD-P017PSD-P017PSD-P9100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P100100PSD-P50100Wr101102PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71PSD-P71<			PSD-P	55									
PSD-P 73 74 Wr 120 118 Wr 120 118 Channel Catfish PSD 95 PSD-P 9 100 Wr 91 112 Smallmouth Bass PSD 64 45 PSD-P 9 16 16 Wr 91 95 16 Walleye PSD-P 0 17 Wr 91 100 100 PSD-P 0 100 100 PSD-P 97 100 100 PSD-P 96 100 100 PSD-P 96 100 100 PSD-P 50 100 100 PSD-P 50 100 100 PSD-P			Wr	100									
Wr120118Channel CatfishPSDPSDPSD-PWr112PSD-BPSD64PSD-P916Wr9197WalleyePSD17PSD-P017PSD-P017White BassPSD100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P96100PSD-P96100PSD-P96100PSD-P96100PSD-P97100Std exp gill netChannel CatfishPSDPSD-P75100PSD-P74PSD-P101PSD-P102Smallmouth BassPSD-P14PSD-P14PSD-P14PSD-P10PSD-P14PSD-P10PSD-P14PSD-P10PSD-P10PSD-P14PSD-P10PSD-P10PSD-P14PSD-P14PSD-P10PSD-P14PSD-P14PSD-P14PSD-P14PSD-P14 <tr< td=""><td></td><td>Bluegill</td><td>PSD</td><td>97</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>87</td></tr<>		Bluegill	PSD	97									87
Channel Catfish PSD			PSD-P	73									74
PSD-PPSD-P100WrPSD-P9PSD-P916PSD-P916Wr9117PSD-P017Wr76100PSD-P97100PSD-P97100PSD-P97100PSD-P97100PSD-P97100Wr78100PSD-P97100PSD-P97100PSD-P97100Wr91100PSD-P96100Std exp gill niChannel CatfishPSDPSD-P50100Wr9797std exp gill niChannel CatfishPSD-PPSD-P50100Wr101102101Smallmouth BassPSD-P50PSD-P50100Wr98101ImagePSD-P50Wr102Smallmouth BassPSD-P12WalleyPSD-P14WalleyPSD-P12WalleyPSD-P12WalleyPSD-P12WalleyPSD-P14WalleyPSD-P12WalleyPSD-P12WalleyPSD-P14WalleyPSD-P14WalleyPSD-P14WalleyPSD-P14WalleyPSD-P14Walley </td <td></td> <td></td> <td>Wr</td> <td>120</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>118</td>			Wr	120									118
Wr 112 Smallmouth Bass PSD 64 45 PSD-P 9 16 Wr 91 97 Wr 91 97 Walleye PSD 17 PSD-P 0 17 PSD-P 0 17 Wr 76 33 White Bass PSD 100 100 PSD-P 97 100 100 PSD-P 96 100 100 PSD-P 50 100 100 PSD-P 50 100 100 PSD-P 50 100 100		Channel Catfish	PSD										100
Smallmouth Bass PSD 64 16 PSD-P 9 16 Wr 91 97 Wr 91 17 PSD-P 0 17 PSD-P 0 17 PSD-P 0 17 Wr 76 33 White Bass PSD 100 100 PSD-P 97 100 100 White Crappie PSD 100 100 PSD-P 97 100 100 PSD-P 97 100 100 PSD-P 97 100 100 PSD-P 97 100 100 PSD-P 96 100 100 PSD-P 96 100 100 PSD-P 97 100 100 PSD-P 97 100 100 PSD-P 50 100 100 Wr 101 102 100 <			PSD-P										100
PSD-P99Wr9197PSD1750PSD-P017PSD-P76100PSD-P97100PSD-P97100PSD-P78100PSD-P67100PSD-P96100PSD-P97100PSD-P96100PSD-P96100PSD-P96100PSD-P96100PSD-P96100PSD-P96100PSD-P50100PSD-P50100PSD-P50100PSD-P50100PSD-P50100PSD-P50100PSD-P50100Wr101PSD-P50100Wr102PSD-P71WalleyePSD72PSD-P14Wr89WalleyePSD25PSD-P0PSD-P0PSD-P0PSD-P14Wr89WalleyePSDPSD-P12PSD-P14PSD-P12PSD-P14PSD-P14PSD-P14PSD-P14PSD-P14PSD-P14PSD-P14PSD-P14PSD-P14PSD-P14 <td></td> <td></td> <td>Wr</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>112</td>			Wr										112
Walleye Wr 91 97 Walleye PSD 17 97 PSD-P 0 17 PSD-P 0 17 White Bass PSD 100 100 PSD-P 97 100 100 PSD-P 97 100 100 PSD-P 67 100 100 PSD-P 67 100 100 PSD-P 67 100 100 Yellow Bullhead PSD 100 100 PSD-P 67 100 100 Yellow Perch PSD 100 100 PSD-P 50 100 100 Yellow Perch PSD 75 100 Wr 97 50 100 Stratifish PSD-P 50 100 PSD-P 50 100 100 PSD-P 50 100 100 PSD-P 50 100		Smallmouth Bass	PSD	64									45
Walleye PSD 17 50 PSD-P 0 77 Wr 76 33 White Bass PSD 100 100 PSD-P 97 100 100 PSD-P 97 100 100 White Crappie PSD 100 100 PSD-P 67 100 100 PSD-P 67 100 100 PSD-P 67 100 100 PSD-P 67 100 100 PSD-P 96 100 100 Wr 91 100 100 PSD-P 96 100 100 Yellow Perch PSD 75 100 Wr 97 97 97 std exp gill net Channel Catfish PSD 75 Wr 101 102 100 PSD-P 50 100 100 Wr 101 102 <			PSD-P	9									16
PSD-P 0 17 Wr 76 83 White Bass PSD 100 100 PSD-P 97 100 100 Wr 78 86 100 100 Wr 78 86 100 100 100 Wr 78 86 100			Wr	91									97
Write Bass PSD 100 100 PSD-P 97 100 Write Crappie PSD 100 PSD-P 97 100 Write Crappie PSD 100 PSD-P 67 100 PSD-P 67 100 PSD-P 67 100 PSD-P 96 100 Yellow Bullhead PSD 100 PSD-P 96 100 Yellow Perch PSD 100 PSD-P 50 100 PSD-P 50 50 Wr 97 97 std exp gill net Channel Catfish PSD 75 100 Wr 101 102 101 102 101 Smallmouth Bass PSD 71 101 102 Wr 89 11 102 101 PSD-P 14 102 101 102 Wr 89 12 <td></td> <td>Walleye</td> <td>PSD</td> <td>17</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>50</td>		Walleye	PSD	17									50
White Bass PSD 100 100 PSD-P 97 100 Wr 78 86 White Crappie PSD 100 PSD-P 67 100 Wr 91 100 Yellow Bullhead PSD 100 PSD-P 96 100 Yellow Perch PSD 100 PSD-P 96 100 Yellow Perch PSD 100 PSD-P 50 100 Yellow Perch PSD 75 Wr 97 97 Std exp gill net Channel Catfish PSD PSD-P 50 100 Wr 97 97 Std exp gill net Channel Catfish PSD PSD-P 50 100 Wr 102 100 Wr 102 100 Wr 89 100 Wr 89 12 Walleye <			PSD-P	0									17
PSD-P 97 100 Wr 78 86 PSD 100 100 PSD-P 67 100 Wr 91 100 Wr 91 100 PSD-P 67 100 PSD-P 67 100 PSD-P 96 100 PSD-P 96 100 PSD-P 96 100 PSD-P 96 100 PSD-P 97 100 PSD-P 50 100 PSD-P 102 102 Wr 89 11 Walleye PSD 12 PSD-P 12			Wr	76									83
Write Crappie Write Crappie PSD 100 PSD-P 67 100 100 Write Orappie Write Orappie 100 100 Write Orappie PSD 100 100 Write Orappie PSD 100 100 PSD-P 96 100 100 PSD-P 96 100 100 PSD-P 50 100 100 PSD-P 100 100 100 PSD-P 100 100 100 PSD-P 11 100 100		White Bass	PSD	100									100
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PSD-P 67 Wr 91 Yellow Bullhead PSD 100 PSD-P 96 100 PSD-P 96 100 Vr 94 101 Yellow Perch PSD 100 PSD-P 50 100 PSD-P 50 50 Wr 97 97 std exp gill net Channel Catfish PSD 75 100 PSD-P 50 100 102 101 Wr 101 102 100 100 Smallmouth Bass PSD 71 102 PSD-P 101 102 100 100 Wr 89 101 102 100 100 Wr 89 101 102 100 100 Wr 89 12 12 12 12 Walleye PSD 25 12 12			Wr	78									86
Wr 91 100 Yellow Bullhead PSD 100 PSD-P 96 100 Yellow Perch PSD 100 PSD-P 50 100 PSD-P 50 50 Wr 97 97 std exp gill net Channel Catfish PSD-P 50 Wr 97 97 std exp gill net Channel Catfish PSD-P 50 Wr 101 102 PSD-P 50 100 PSD-P 50 100 Wr 101 102 Wr 101 102 Wr 89 Wr 89 Walleye PSD-P 12 PSD-P 0 1		White Crappie	PSD	100									
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Yellow Perch PSD 100 100 PSD-P 50 50 50 Wr 97 97 97 std exp gill net Channel Catfish PSD 75 100 PSD-P 50 100 102 101 102 Smallmouth Bass PSD 71 102 101 PSD-P 14 102 101 102 Wr 89 12 12 12 Walleye PSD-P 12 12 PSD-P 0 1 12			PSD-P	96									100
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			Wr	94									101
std exp gill net Channel Catfish PSD 75 100 PSD-P 50 100 PSD-P 50 100 Wr 101 102 Smallmouth Bass PSD 71 PSD-P 14 Wr 89 Walleye PSD-P 12 PSD-P 0 1		Yellow Perch	PSD	100									100
std exp gill net Channel Catfish PSD 75 100 PSD-P 50 100 Wr 101 102 Smallmouth Bass PSD 71 PSD-P 14 Wr 89 Walleye PSD-P 12 PSD-P 0 1			PSD-P	50									50
PSD-P 50 100 Wr 101 102 Smallmouth Bass PSD 71 PSD-P 14 Wr 89 Walleye PSD 25 PSD-P 0 1			Wr	97									97
Wr 101 102 Smallmouth Bass PSD 71 PSD-P 14 Wr 89 Walleye PSD 25 PSD-P 0 1	std exp gill net	Channel Catfish	PSD	75	100								
Smallmouth BassPSD71PSD-P14Wr89WalleyePSD25PSD-P01			PSD-P	50	100								
PSD-P 14 Wr 89 Walleye PSD 25 12 PSD-P 0 1			Wr	101	102								
Wr89WalleyePSD2512PSD-P01		Smallmouth Bass	PSD		71								
Walleye PSD 25 12 PSD-P 0 1			PSD-P		14								
PSD-P 0 1			Wr		89								
		Walleye	PSD	25	12								
Wr 78 82			PSD-P	0	1								
			Wr	78	82								

							Ye	ar				
Gear	Species	Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
std exp gill net	White Bass	PSD	100	96								
		PSD-P	87	93								
		Wr	81	84								
	White Crappie	PSD	100	100								
		PSD-P	38	50								
		Wr	97	94								
	Yellow Bullhead	PSD	100	100								
		PSD-P	100	100								
		Wr	94	111								
	Yellow Perch	PSD	88	65								
		PSD-P	19	41								
		Wr	107	109								

Length at Capture

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

Species: Smallmouth Bass

				Mean Len	gth (expa	nded sam	ple numbe	er) at capt	ure by ag	е	
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	91		196 (20)	248 (10)	284 (24)	333 (28)	339 (10)	384 (1)			
2016	160		196 (5)	256 (45)	278 (24)	310 (32)	337 (26)	341 (20)	386 (2)	414 (5)	
2014	171			279 (41)	315 (51)	322 (28)	318 (29)	363 (7)	361 (6)	414 (8)	

Species: Walleye

		<u> </u>		Mean Len				, .			
Year	N	1	2	3	4	5	6	7	8	9	10+
2023	38	193 (2)	258 (18)	329 (8)	371 (4)	463 (2)				598 (1)	539 (3)
2022	26	222 (1)	296 (8)	376 (9)	418 (3)	446 (1)			462 (3)	466 (1)	
2021	40	217 (1)	326 (8)	384 (24)	490 (1)	474 (1)		503 (2)	466 (3)		
2019	67	211 (20)	348 (8)	396 (1)	367 (2)	410 (23)	426 (6)	446 (1)	463 (6)		
2018	38	232 (7)		324 (2)	319 (14)	325 (10)	354 (2)	367 (2)			
2017	30			276 (12)	313 (10)		359 (7)			659 (1)	
2016	58	205 (1)	260 (14)	305 (19)		365 (20)		480 (1)	608 (1)	404 (1)	432 (1)
2015	88	198 (17)	264 (35)		334 (29)	351 (2)	555 (1)	432 (2)	422 (1)	414 (1)	
2014	62	193 (5)	223 (1)	305 (39)	353 (4)	382 (2)	418 (7)	427 (3)		457 (1)	

Species: Yellow Perch

				Mean Len	gth (expa	nded sam	ple numb	er) at capt	ure by ag	е	
Year	Ν	1	2	3	4	5	6	7	8	9	10+
2023	53	142 (7)	198 (11)	220 (19)	232 (1)	260 (13)	293 (2)				
2022	56		184 (16)	203 (6)	241 (33)			316 (1)			
2021	27		191 (2)	219 (16)	242 (3)	282 (1)	291 (3)		299 (2)		
2019	53	120 (1)	187 (13)	234 (1)	278 (17)		294 (13)	293 (1)	304 (4)	313 (1)	304 (2)
2018	38	138 (2)	214 (2)	249 (14)	274 (4)	271 (13)	287 (3)				307 (1)
2017	58	138 (1)	215 (22)	237 (4)	264 (22)	303 (5)	289 (3)	256 (1)			
2016	63	142 (3)	187 (3)	234 (31)		274 (11)	277 (11)	279 (3)	255 (1)		

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				Mean Ler	ngth (expa	nded sam	ple numb	er) at captu	ure by age	;	
Year	Ν	1	2	3	4	5	6	7	8	9	10+
2015	78		191 (33)	242 (7)	253 (22)	261 (7)	270 (9)	296 (1)			
2014	22	119 (5)	160 (2)	219 (7)	235 (1)	255 (6)	235 (1)				

Fish Condition

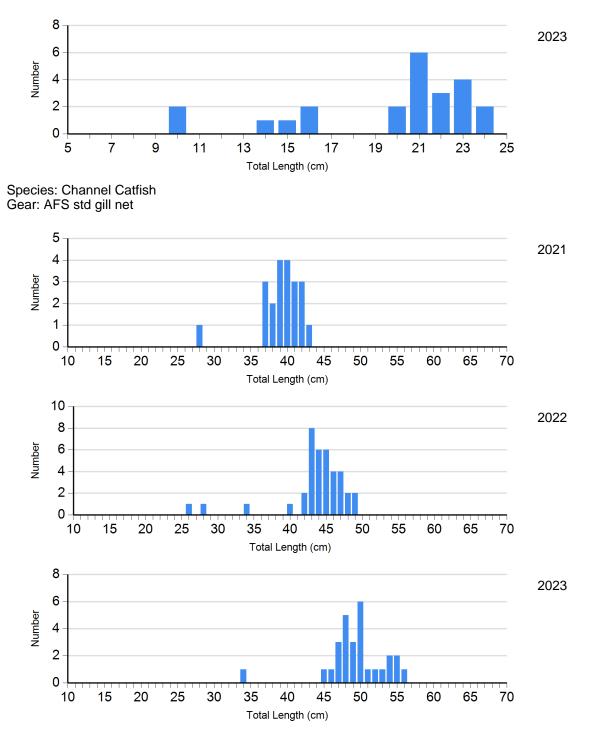
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

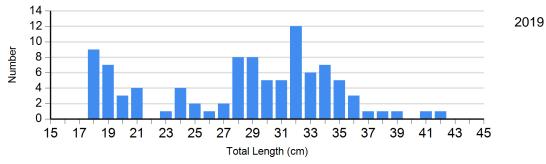
Species	Year	Length Groups							
		S-Q		Q-P		P-M		М	
		N	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)
Bluegill Frame Net	2023	3	110 (4.5)	3	143 (4.9)	17	113 (3.3)	0	
Channel Catfish Gill Net	2019	0		1	132	4	110 (3.9)	0	
	2021	14	97 (2.1)	7	90 (3.0)	0		0	
	2022	3	103 (0.7)	34	107 (2.2)	0		0	
	2023	1	100	27	110 (2.4)	0		0	
Smallmouth Bass Electro Fishing	2019	33	97 (1.1)	51	86 (0.9)	13	86 (2.1)	0	
Walleye Gill Net	2019	15	88 (2.3)	32	89 (0.9)	1	86	0	
	2021	19	84 (1.1)	19	83 (0.7)	1	84	0	
	2022	15	82 (1.5)	10	79 (1.5)	0		0	
	2023	26	86 (1.2)	4	79 (1.5)	3	80 (4.1)	0	
White Bass Gill Net	2019	2	86 (4.0)	0		22	85 (1.2)	0	
	2021	2	96 (0.2)	2	89 (2.7)	15	85 (0.9)	1	84
	2022	0		4	90 (1.8)	17	79 (1.1)	0	
	2023	0		2	94 (5.5)	9	89 (1.2)	1	80
Yellow Perch Gill Net	2019	10	106 (2.5)	4	98 (3.1)	27	99 (1.5)	11	98 (1.5)
	2021	1	115	19	101 (1.3)	5	93 (3.2)	2	87 (4.6)
	2022	18	106 (1.6)	30	108 (1.0)	7	100 (2.3)	1	90
	2023	14	105 (1.9)	27	106 (1.0)	12	106 (2.0)	0	

Length Frequency Distribution

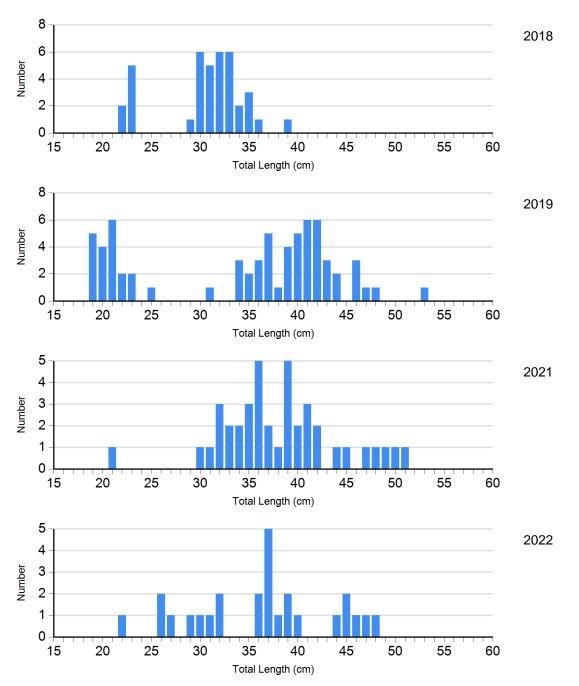
Length frequency histogram of species sampled by year.

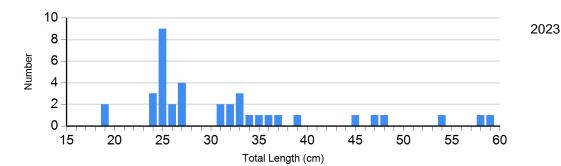
Species: Bluegill Gear: frame net (std 3/4 in)



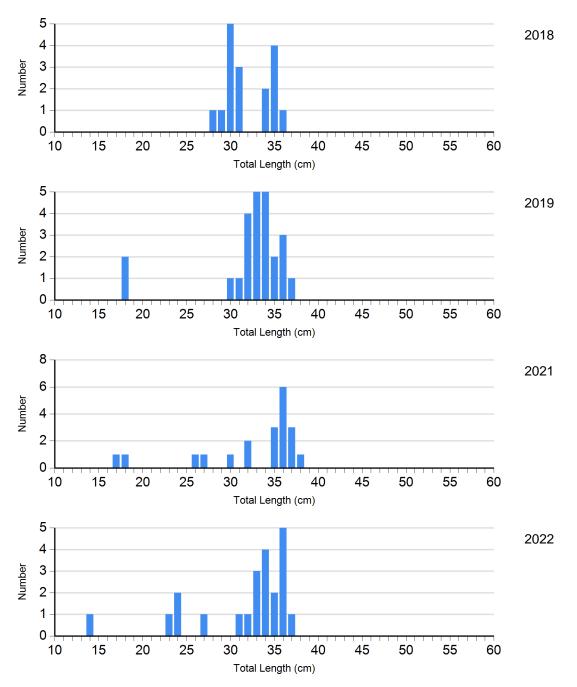


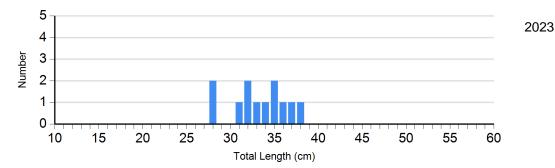
Species: Walleye Gear: AFS std gill net



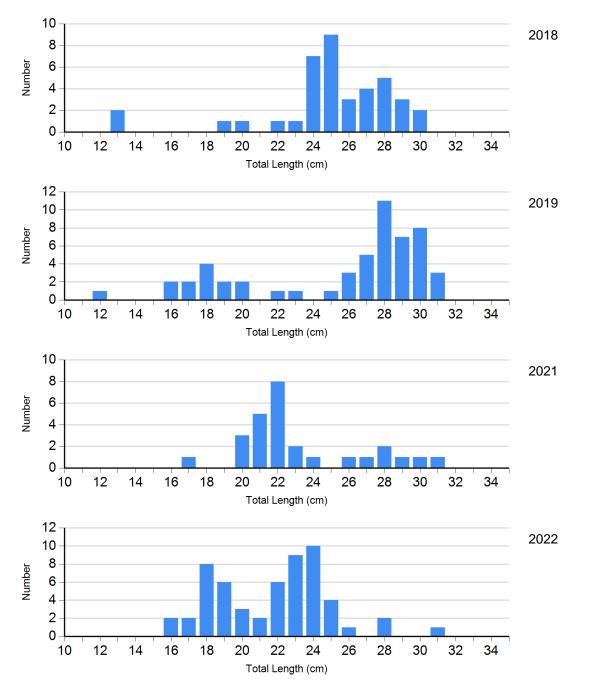


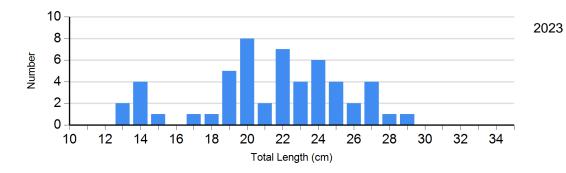
Species: White Bass Gear: AFS std gill net





Species: Yellow Perch Gear: AFS std gill net

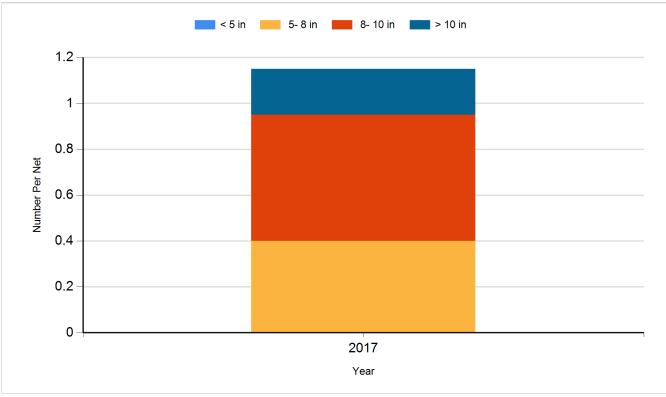




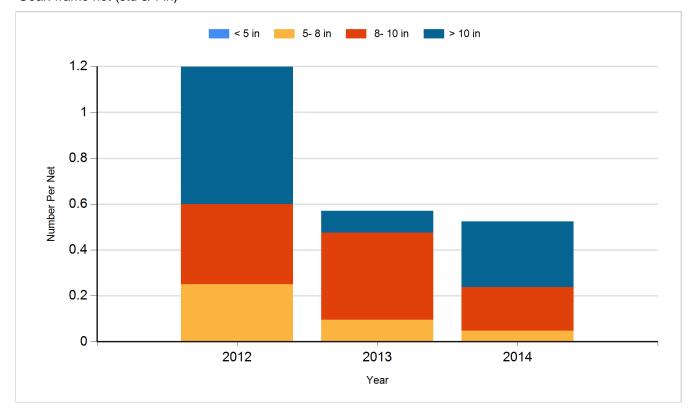
Historic Fish Sizes and Relative Abundance

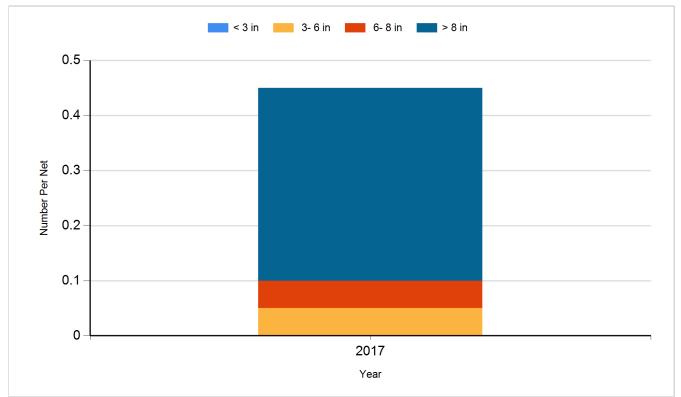
Size distribution per net by color for species sampled by year.

Species: Black Crappie Gear: AFS std frame net

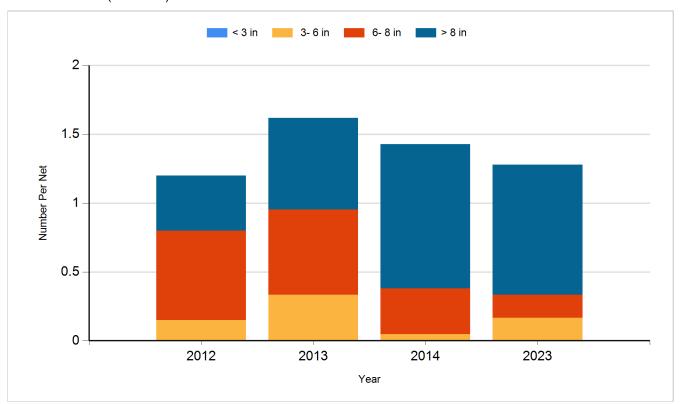


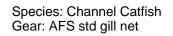
Species: Black Crappie Gear: frame net (std 3/4 in)

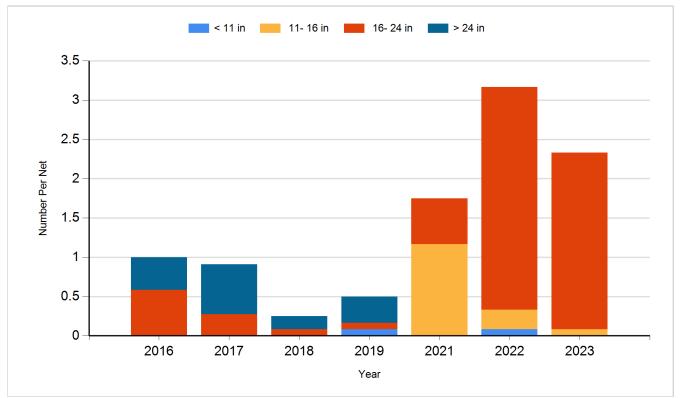




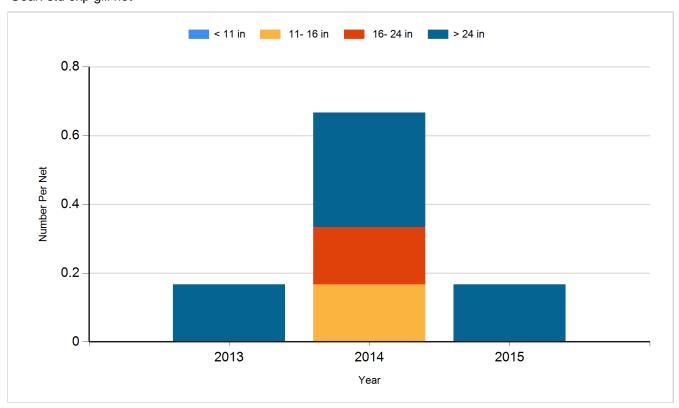
Species: Bluegill Gear: frame net (std 3/4 in)

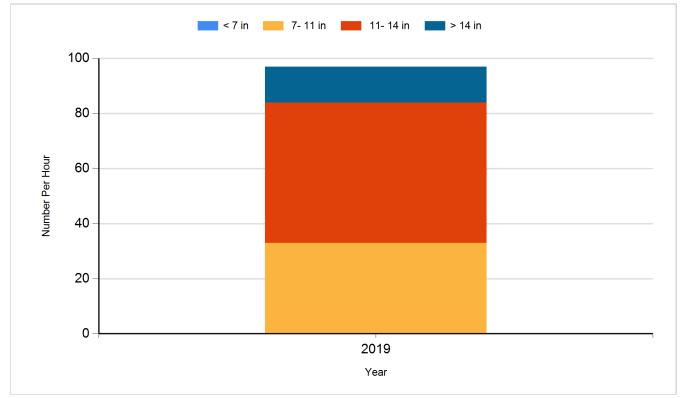




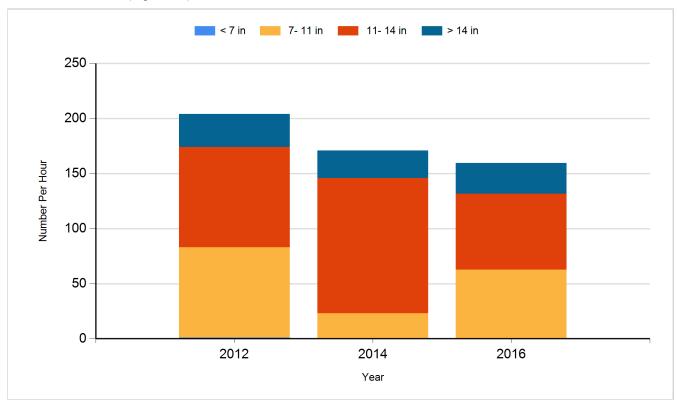


Species: Channel Catfish Gear: std exp gill net

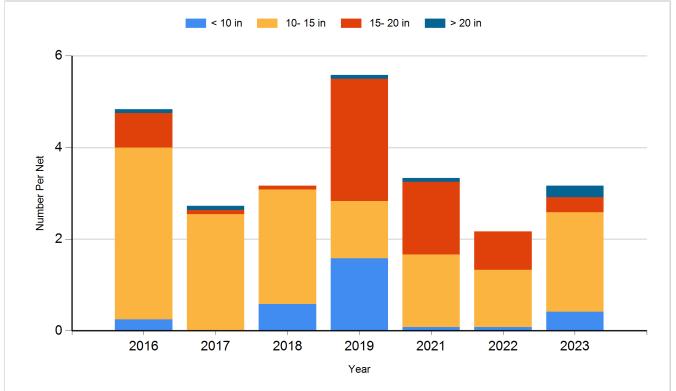




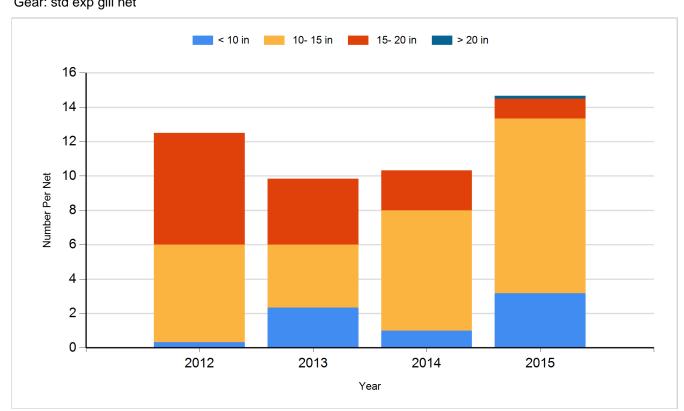
Species: Smallmouth Bass Gear: boat shocker (night, DC)

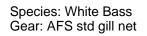


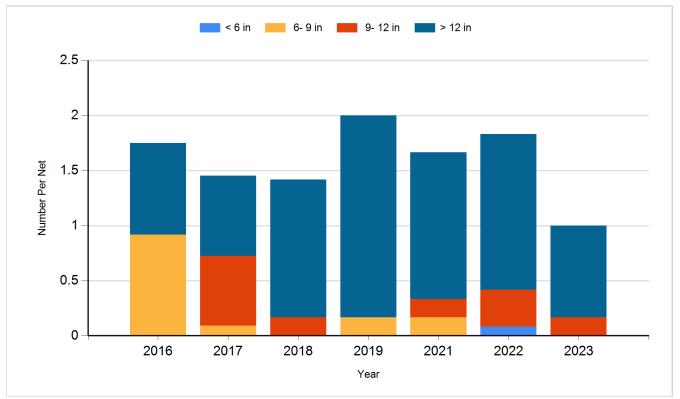
Species: Walleye Gear: AFS std gill net



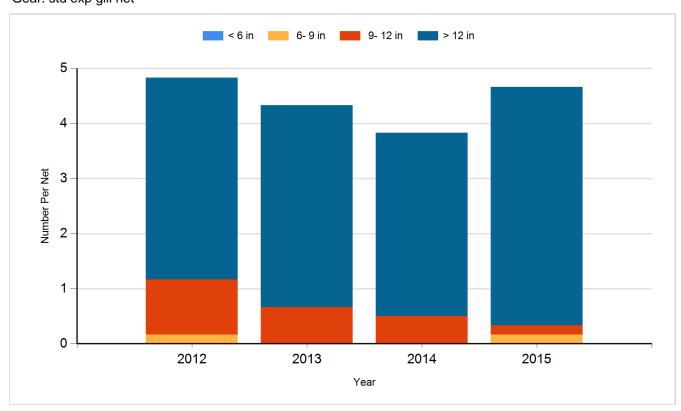
Species: Walleye Gear: std exp gill net

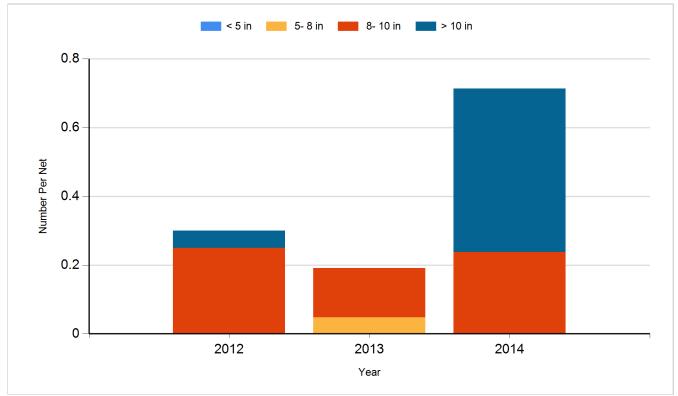




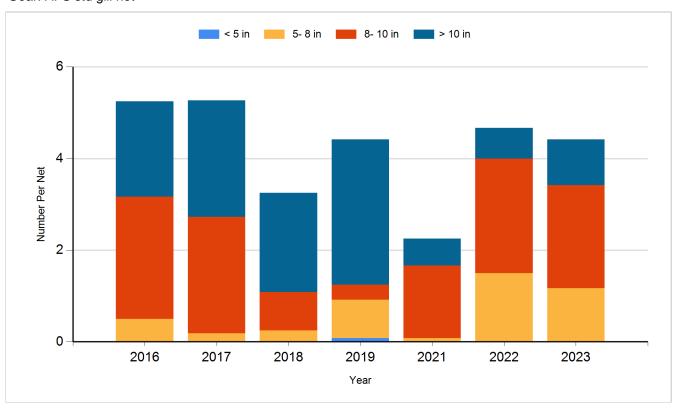


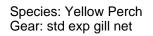
Species: White Bass Gear: std exp gill net

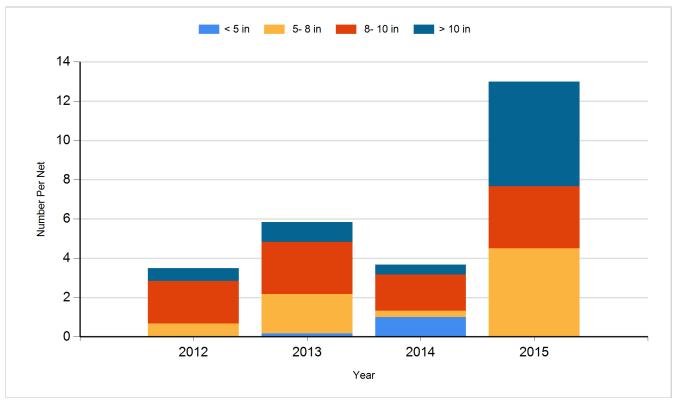




Species: Yellow Perch Gear: AFS std gill net







Fish Stocking

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

Year	Species	Size	Number
2013	Walleye	Fry	2,400,000
2014	Walleye	Fry	2,500,000
2016	Walleye	Fry	2,400,000
2017	Walleye	Fry	2,400,000
2018	Walleye	Fry	2,400,000
2019	Walleye		2,400,000
2021	Walleye	Fry	2,400,000
2022	Walleye	Fry	2,500,000
2023	Walleye	Fry	5,100,000