

2023 Corsica Lake (Douglas County)

Corsica Lake is located 5.5 miles east of Corsica, SD. It is a 111-acre impoundment with a mean depth of 6 feet and maximum depth of 12 feet. Access locations at Corsica Lake consist of a concrete plank boat ramp, handicap accessible fishing pier and shore fishing access is maintained around the fishing pier. It is managed as a multi-species fishery consisting of Black Crappie, Channel Catfish and Largemouth Bass. Sampling occurs every three years, consisting of frame nets targeting all species and fall electrofishing targeting Largemouth Bass. Fall electrofishing assessment of Saugeye stocking also occurred in 2023. This fishery experienced a winterkill in 2022/2023. Stocking in the spring and summer of 2023 occurred to help reestablish fish populations.

- **Black Crappie:** The catch rate of Black Crappie in 2023 was 9.2 fish per frame net. Of the Black Crappie sampled, 92% were 8 inches or larger, with 2% being 10 inches or larger. Black Crappie condition was good with a relative weight (Wr) of 97*.
- **Channel Catfish:** The catch rate of Channel Catfish in 2023 was 2.4 fish per frame net. Of the Channel Catfish sampled, 79% were 16 inches or larger. Channel Catfish condition was good with a relative weight (Wr) of 93*.
- **Largemouth Bass:** No Largemouth Bass were sampled during fall electrofishing.
- **Saugeye:** No Saugeye were sampled during fall electrofishing.

In 2023, 1,434 adult Black Crappie, 270 adult Channel Catfish and 27,512 juvenile Saugeye were stocked in response to winterkill.

* 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 1/29/2024 BV

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Corsica, Douglas County

LCL-Lake-16-000

2023

Lake Information

Name: Corsica **Maximum Depth:** 12 Feet
County: Douglas **Mean Depth:** 6 Feet
Legal Description: T99-R63-S4
Surface Area: 111 Acres

Surveys and Investigations

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

Gear	Date	Effort
boat shocker (night)	Sep 28, 2023	3000 seconds
fall night EF-WAE	Sep 28, 2023	3000 seconds
frame net (std 3/4 in)	Jun 21, 2023	5 net-nights
frame net (std 3/4 in)	Jun 22, 2023	5 net-nights

Common Fish Species Present

Yellow Perch

Northern Pike

Largemouth Bass

Black Crappie

Black Bullhead

Channel Catfish

Orangespotted Sunfish

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.

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

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.

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

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

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.

$$Wr = \left(\frac{W}{W_s} \right) \times 100$$

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).

Species Name	Stock		Quality		Preferred		Memorable		Trophy	
	(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**

Gear	Species	Sample Size (n)	Abundance		Stock Density Indices			Condition	
			CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr
frame net (std 3/4 in)	Black Bullhead	724	66.3	15.0	0		0	110	1
	Black Crappie	92	9.2	7.3	92	4	3	97	1
	Channel Catfish	26	2.4	0.9	79	14	0	93	4
	Largemouth Bass	1	0.1	0.1	100		0	69	
	Orangespotted Sunfish	15	0.0	0.0					

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

Gear	Species	CPUE										Avg
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
AFS std frame net	Black Bullhead				153.6							153.6
	Black Crappie				35.2							35.20
	Common Carp				0.2							0.20
	Orangespotted Sunfish				0.0							0.00
fall night EF-WAE*	Walleye						1.0					1.00
frame net (std 3/4 in)	Black Bullhead							388.8			66.3	227.5
	Black Crappie							8.6		9.2		8.90
	Channel Catfish							0.0		2.4		1.20
	Common Carp							13.8		0.0		6.90
	Largemouth Bass							0.0		0.1		0.05
	Northern Pike							7.2		0.0		3.60
	Orangespotted Sunfish							0.0		0.0		0.00

10-Year Size Structure and Condition Statistics by Gear and Species

Species proportional size distribution (PSD), proportional size distribution of preferred length fish (PSD-P), and relative weight (Wr) collected by different gear types across 10 years.

Gear	Species	Index	Year											
			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		
AFS std frame net	Black Bullhead	PSD				33								
		PSD-P				3								
		Wr				96								
	Black Crappie	PSD				59								
		PSD-P				0								
		Wr				109								
frame net (std 3/4 in)	Black Bullhead	PSD								0			0	
		PSD-P								0			0	
		Wr								82			110	
	Black Crappie	PSD									30			92
		PSD-P									14			3
		Wr									106			97
	Channel Catfish	PSD												79
		PSD-P												0
		Wr												93
	Largemouth Bass	PSD												100
		PSD-P												0
		Wr												69
	Northern Pike	PSD									11			
		PSD-P									3			
		Wr									85			

Length at Capture

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

Species: Black Crappie

Year	N	Mean Length (expanded sample number) at capture by age									
		1	2	3	4	5	6	7	8	9	10+
2020	43		177 (25)	199 (9)	223 (3)	292 (5)	295 (1)				
2017	364	123 (12)	156 (46)	193 (195)	228 (113)						

Fish Condition

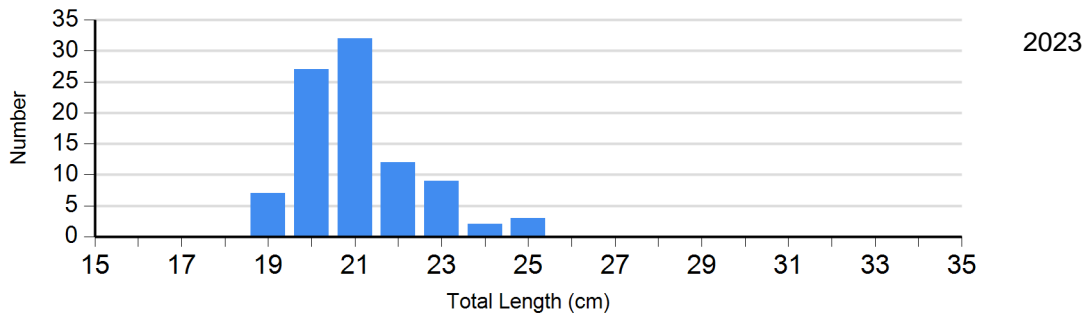
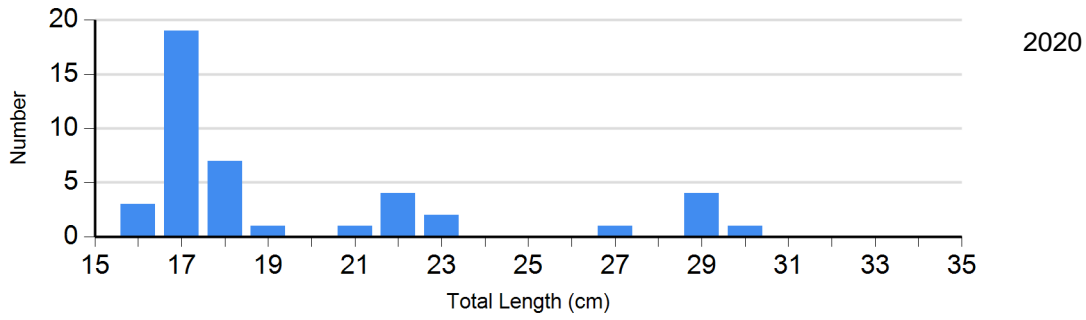
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2020	30	108 (1.7)	7	108 (2.5)	5	95 (3.5)	1	98
	2023	7	100 (3.0)	82	97 (0.8)	3	91 (4.2)	0	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

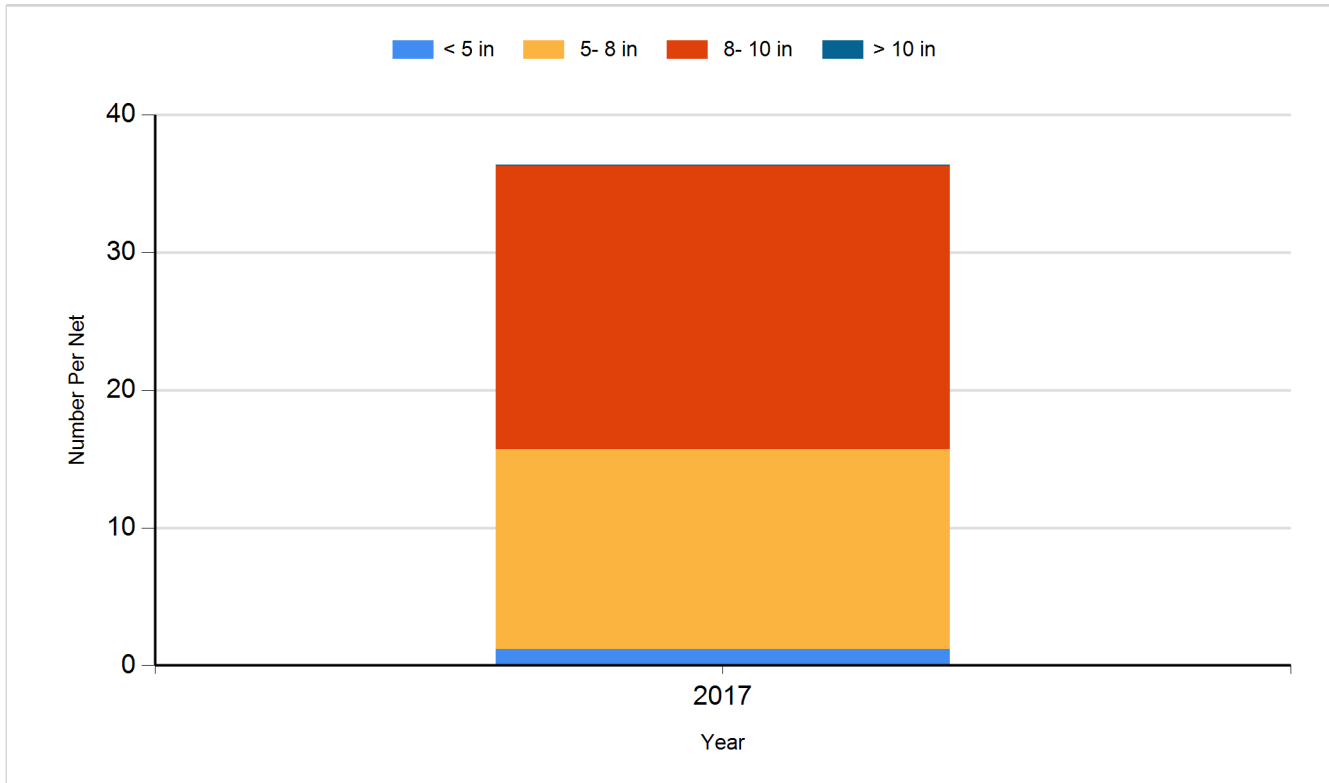
Species: Black Crappie
Gear: frame net (std 3/4 in)



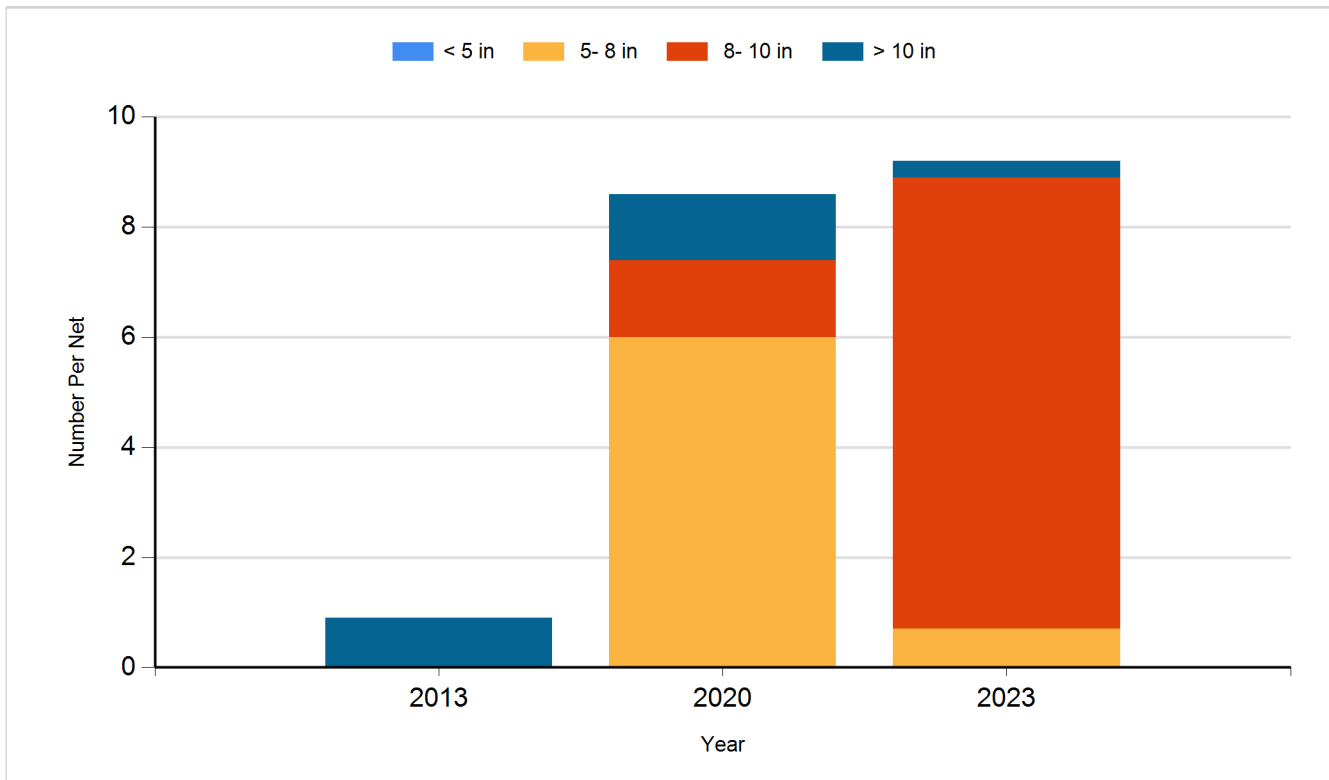
Historic Fish Sizes and Relative Abundance

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

Species: Black Crappie
Gear: AFS std frame net



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



Fish Stocking

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

Year	Species	Size	Number
2019	Walleye	Small Fingerling	8,500
2021	Channel Catfish	Adult	459
2021	Walleye	Juvenile	9,120
2022	Saugeye	Juvenile	13,300
2023	Black Crappie	Adult	1,434
2023	Channel Catfish	Adult	270
2023	Saugeye	Juvenile	14,212