2023 Wells Lake (Brule)

Wells Lake is located 10 miles east and 8 miles north of Chamberlain, SD. Wells Dam is a 7-acre WPA dam created in 1934 by the Federal Emergency Relief Administration and is located on private land. Similar to many dams of that time period, there is an easement for public access of the dam. Wells dam has a mean depth of 9 feet and maximum depth of 15 feet. There is no boat access, but much of the shoreline is accessible. It is managed as a multi-species fishery consisting of Black Crappie, Bluegill, Channel Catfish and Largemouth Bass.

In 2023, Wells net catches were dominated by Black Bullheads with few other species being caught.

Created 1/23/2024 BV

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Wells, Brule County
CRW-Lake-141-000
2023

Lake Information

Name: Wells

County: Brule

Legal Description: T105-R69-S22

Surface Area: 7 Acres

Maximum Depth: 15 Feet

Mean Depth: 9 Feet

Surveys and Investigations

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

Gear	Date	Effort
frame net (std 3/4 in)	Jul 04, 2023	6 net-nights

Common Fish Species Present

Yellow Perch

Largemouth Bass

Black Bullhead

Green Sunfish

Orangespotted Sunfish

O. Spotted X Gr. Sunfish Hybrid

Terminology

Catch per unit effort (**CPUE**) refers to the relative abundance of a species. It is defined as the number of fish captured per unit of effort (i.e., number of fish captured per net-night or number of fish captured per hour electrofishing). In this report CPUE is typically given for only stock-length fish (see length categories table for stock lengths).

A statewide effort to help make netting efforts comparable to all waters sampled across the state, occurred in 2017, with a switch to American Fisheries Society gill nets. Past gill netting efforts were completed with different style/types of nets and are not comparable side by side.

- **AFS std gill net** – 80 ft experimental gill net containing eight panels (10 ft each) of varying monofilament meshes of 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25 and 2.50 inches.
- **std experimental gill net for non-Missouri River waters** - 150 ft experimental gill net containing six panels (25 ft each) of varying monofilament meshes of 0.5, 0.75, 1.00, 1.25, 1.50 and 2.00 inches.
- s**td experimental gill net for Missouri River reservoirs** – 300 ft experimental gill net containing six panels (50 ft each) of varying multifilament meshes of 0.5, 0.75, 1.00, 1.25, 1.50 and 2.00 inches.

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

Population size structure is quantified using the indices proportional size distribution of quality-length fish (**PSD**) and proportional size distribution of preferred-length fish (**PSD-P**). These indices indicate the proportion of stock-length fish that are equal to or greater than a given length. Minimum lengths for stock, quality and preferred length fish are given in the length categories table.

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

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

Relative weight (**Wr**) is used to quantify fish plumpness. Relative weight is the ratio of what a fish weighs (W) compared to a length-specific standard weight (Ws) multiplied by 100. Relative weight values of 95-105 are commonly cited as optimum values, but values in the 80s are common during summer sampling in South Dakota.

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

Confidence intervals (**CI**) are provided for many of the estimates calculated in this report. The confidence interval provides a range in which the true mean is expected to fall. For example, with an 80% CI we are 80% confident that the interval contains the true value.

Length categories include stock (**S**), quality (**Q**), preferred (**P**), memorable (**M**) and trophy (**T**). Length categories for most species have been defined based on a percentage of the world record length for that species. Some species mentioned in this report do not have defined length categories. Length categories for species used in this report are provided in the following table. Measurements are the minimum total length for each category and are reported in inches (in) and centimeters (cm).

	Stock		Quality		Preferred		Memorable		Trophy	
Species Name	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)
Black Bullhead	6	15	9	23	12	30	15	38	18	46
Black Crappie	5	13	8	20	10	25	12	30	15	38
Bluegill	3	8	6	15	8	20	10	25	12	30
Brown Trout	8	20	12	30	16	40	20	50	18	46
Channel Catfish	11	28	16	41	24	61	28	71	36	91
Freshwater Drum	8	20	12	30	15	38	20	51	25	63
Lake Trout	12	30	20	50	26	65	31	80	39	100
Largemouth Bass	8	20	12	30	15	38	20	51	25	63
Muskellunge	20	51	30	76	38	97	42	107	50	127
Northern Pike	14	35	21	53	28	71	34	86	44	112
Pumpkinseed	3	8	6	15	8	20	10	25	12	30
Rainbow Trout	10	25	16	40	20	50	26	65	31	80
Rudd	6	15	10	25	12	30	15	38	19	48
Sauger	8	20	12	30	15	38	20	51	25	63
Smallmouth Bass	7	18	11	28	14	35	17	43	20	51
Walleye	10	25	15	38	20	51	25	63	30	76
White Bass	6	15	9	23	12	30	15	38	18	46
White Crappie	5	13	8	20	10	25	12	30	15	38
Yellow Bullhead	4	10	7	18	9	23	11	28	14	36
Yellow Perch	5	13	8	20	10	25	12	30	15	38

Catch Summary of Stock Length Fish

Catch per unit effort (CPUE), proportional size distribution (PSD), proportional size distribution of preferred length fish (PSD-P), and relative weight (Wr) for species sampled in survey with 80% confidence interval (CI-80).

*** Methods/Species that ignore stock length**

			Abundance		Stock Density Indices				Condition	
Gear	Species	Sample Size (n)	CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
frame net (std 3/4 in)	Black Bullhead	241	19.3	17.2	0		0		83	2
	Green Sunfish	3	0.5	0.5	0		0		124	4
	O. Spotted X Gr. Sunfish Hybrid	4	0.0	0.0						
	Orangespotted Sunfish	5	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**

		CPUE										
Gear	Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
boat shocker (night)	Black Bullhead					40.4						40.40
	Common Carp					8.3						8.30
	Green Sunfish					10.4						10.40
	Orangespotted Sunfish					0.0						0.00
frame net (std 3/4 in)	Black Bullhead			18.5							19.3	18.90
	Common Carp			0.1							0.0	0.05
	Green Sunfish			2.0							0.5	1.25
	O. Spotted X Gr. Sunfish Hybrid			0.0							0.0	0.00
	Orangespotted Sunfish			0.0							0.0	0.00
	Sunfish Hybrid			0.1							0.0	0.05

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	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
boat shocker (night)	Black Bullhead	PSD					25					
		PSD-P					0					
	Green Sunfish	PSD					40					
		PSD-P					0					
frame net (std 3/4 in)	Black Bullhead	PSD			8							0
		PSD-P			0							0
		Wr			76							83
	Green Sunfish	PSD			45							0
		PSD-P			0							0
		Wr			101							124

Fish Stocking

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

Year	Species	Size	Number
2017	Largemouth Bass	Fingerling	550