Reetz Lake Survey Summary

Reetz Lake, located 5.5 miles south of Webster, is managed under an agreement reached between the Reetz family and South Dakota Department of Game, Fish and Parks. The agreement allows for public fishing access from May 1st to September 30th with special regulations in place for black crappie (15-inch minimum length, daily limit of one fish), bluegill (10-inch minimum length, daily limit of one), yellow perch (14-inch minimum length, daily limit of one), and walleye (28-inch minimum length, daily limit of one). During the remainder of the year (October to April), public fishing access is restricted without permission and statewide regulations apply for all fish species.

- **Smallmouth bass.** The 2019 mean spring electrofishing CPUE was 43.5/hour. Smallmouth bass ranging in length from 12.6 to 18.1 inches were sampled, most (89%) were ≥14.0 inches and 32% were 17.0 inches or longer.

- **Walleye. R**elative abundance of walleyes was high (14.8/gill net). Sampled walleyes ranged in length from 9.1 to 26.8 inches, of those that were at least 10.0 inches 85% were ≥15.0 inches and 48% were 20.0 inches or longer. Fourteen consecutive year classes (2005 – 2018), of varying strength, were represented in the gill net catch. Currently, growth appears to be moderate to fast with mean length at capture values of 16.1 and 18.4 inches at ages 3 and 4.

- **Yellow perch**. Yellow perch were not abundant (1.3/gill net) in 2019. Those sampled ranged in length from 6.3 to 11.8 inches with fish from four cohorts (2014 – 2017) contributing to the catch, each represented by six or fewer individuals.

For more detailed results see the computer generated South Dakota Statewide Fisheries Survey for Reetz (Day; below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Reetz, Day County
MUD-Lake-317-801
2019

Lake Information

Name: Reetz

County: Day

Surface Area: 1,395 Acres

Maximum Depth: 25 Feet

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	May 29, 2019	4 net-nights
AFS std gill net	May 30, 2019	4 net-nights
boat shocker (day)	Jun 10, 2019	2300 seconds

Common Fish Species Present

Black Crappie

Walleye

Smallmouth Bass

Yellow Perch

White Sucker

Bluegill

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
AFS std gill net	Bluegill	1	0.1	0.2	100		100		122	
	Smallmouth Bass	1	0.1	0.2	100		100		94	
	Walleye	119	14.8	4.4	85	5	48	6	88	1
	White Sucker	1	0.1	0.2	100		100		97	
	Yellow Perch	10	1.3	1.0	60		40		100	3
boat shocker (day)	Smallmouth Bass	28	43.5	4.7	100		89		103	2

Length at Capture

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

Species: Smallmouth Bass

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	5			326 (1)	346 (4)						

Species: Walleye

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	119	230 (1)	330 (17)	408 (16)	468 (3)	485 (6)	482 (5)	494 (2)	522 (16)	540 (34)	555 (21)

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	10		191 (6)	266 (2)	273 (1)	301 (1)					

Fish Condition

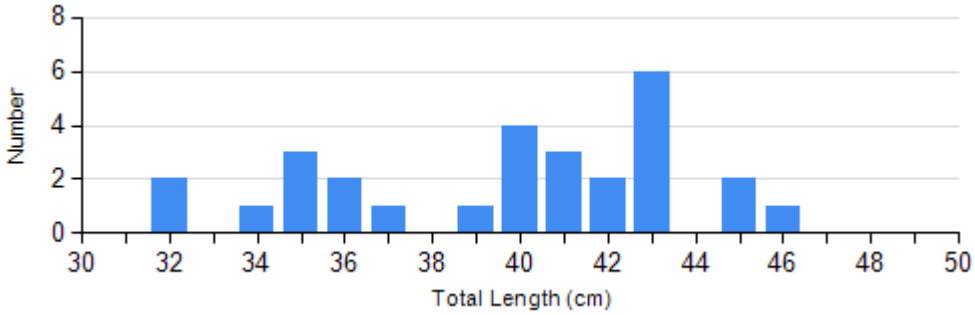
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Smallmouth Bass Electro Fishing	2019	0		3	105 (3.4)	16	105 (2.4)	9	100 (3.0)
Walleye Gill Net	2019	18	100 (1.5)	43	91 (1.0)	55	83 (0.8)	2	72 (0.6)
Yellow Perch Gill Net	2019	4	101 (5.7)	2	102 (8.0)	3	96 (1.9)	1	100

Length Frequency Distribution

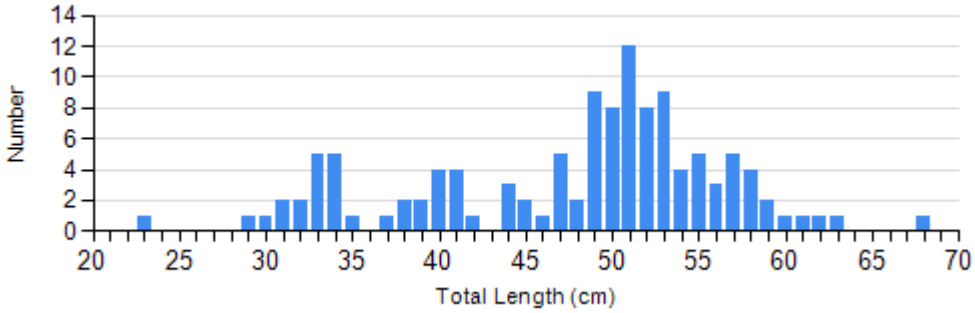
Length frequency histogram of species sampled by year.

Species: Smallmouth Bass
Gear: boat shocker (day)



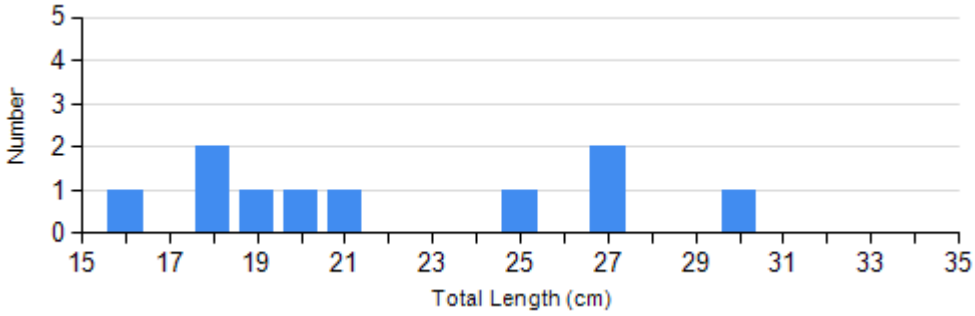
2019

Species: Walleye
Gear: AFS std gill net



2019

Species: Yellow Perch
Gear: AFS std gill net



2019