Dry Lake #1 Survey Summary

Dry Lake #1, located 3.5 miles east and 5.0 miles north of Clark, is managed as a walleye and yellow perch fishery.

- **Walleye.** Walleye numbers were high (29.6/gill net). Sampled walleyes ranged in length from 8.7 to 21.3 inches; of those that were at least 10.0 inches, 37% were ≥15.0 inches and 2% ≥20.0 inches. Individuals from eight consecutive cohorts (2012 – 2019) contributed to the catch. Walleyes from the naturally-produced 2019 (age-1) year class were the most abundant accounting for 62% of fish in the sample; those from the 2014 (age-6) and 2016 (age-4) cohorts, which coincided with stocking events, made up an additional 23%. Walleye growth appears to be good with mean length at capture values of 16.4 inches at age 3 and 16.8 inches at age 4.

- **Yellow Perch**. At 29.3/gill net, relative abundance was considered moderate to high in 2020. Gill net captured yellow perch ranged in length from 6.3 to 13.8 inches, most (77%) were ≥8.0 inches and 50% were 10.0 inches or longer. Individuals from eight year classes produced between 2011 and 2019 were present; those from the 2018 (age 2) cohort, which had a mean length at capture of 9.8 inches, were the most abundant accounting for 64% of yellow perch sampled.

For more detailed results see the computer generated South Dakota Statewide Fisheries Survey for Dry 1 (Clark; below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Dry 1, Clark County
MBS-Lake-25-800
2020

Lake Information

Name: Dry 1

County: Clark

Surface Area: 3,799 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jul 21, 2020	6 net-nights
AFS std gill net	Jul 22, 2020	6 net-nights

Common Fish Species Present

Yellow Perch

Walleye

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	Walleye	363	29.6	2.7	37	3	2	1	96	0
	Yellow Perch	351	29.3	4.6	77	3	50	4	119	1

Length at Capture

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

Species: Walleye

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2020	363	278 (224)	380 (17)	416 (26)	426 (42)	428 (12)	440 (40)	508 (4)	452 (2)		

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2020	351	185 (83)	250 (226)	281 (7)	320 (4)	294 (7)	326 (4)	316 (18)		324 (4)	

Fish Condition

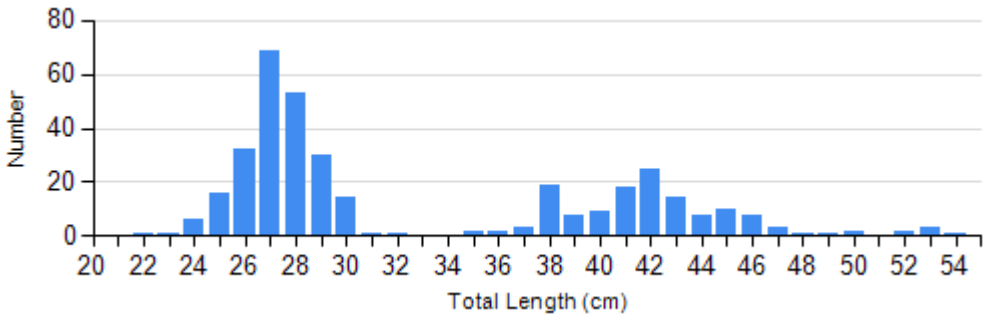
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Walleye Gill Net	2020	223	96 (0.4)	126	94 (0.6)	6	98 (1.5)	0	
Yellow Perch Gill Net	2020	79	117 (1.1)	95	120 (1.9)	144	122 (0.8)	33	113 (1.8)

Length Frequency Distribution

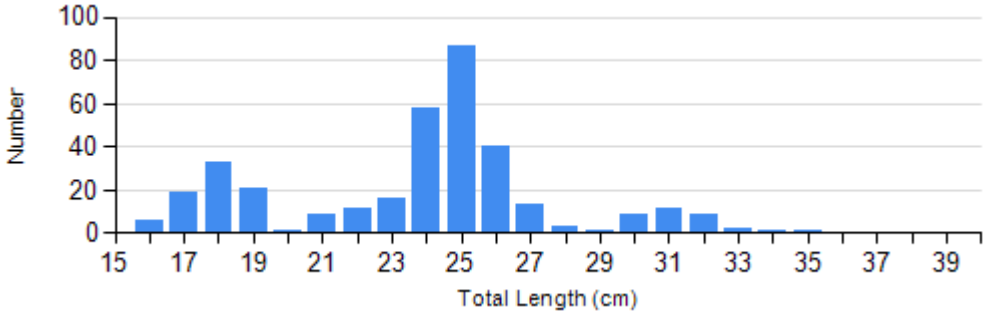
Length frequency histogram of species sampled by year.

Species: Walleye
Gear: AFS std gill net



2020

Species: Yellow Perch
Gear: AFS std gill net

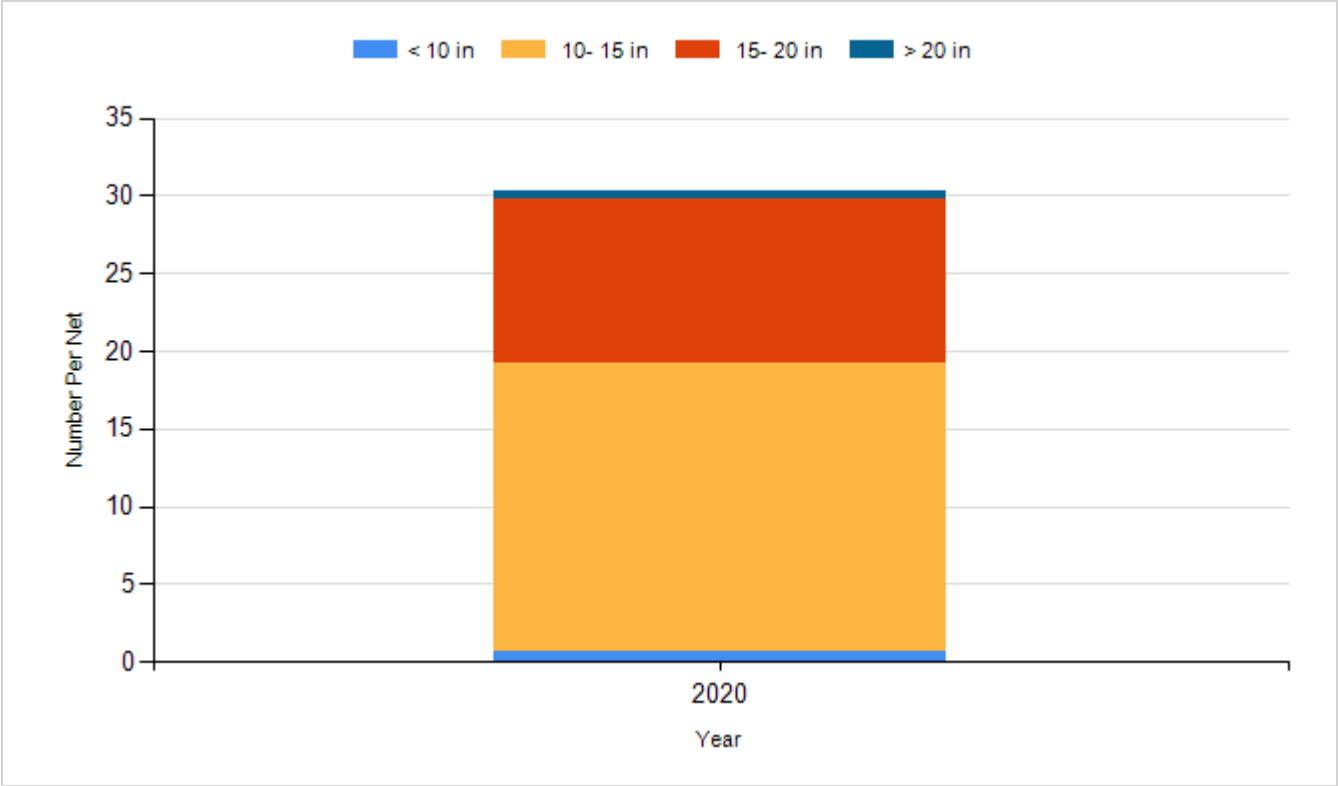


2020

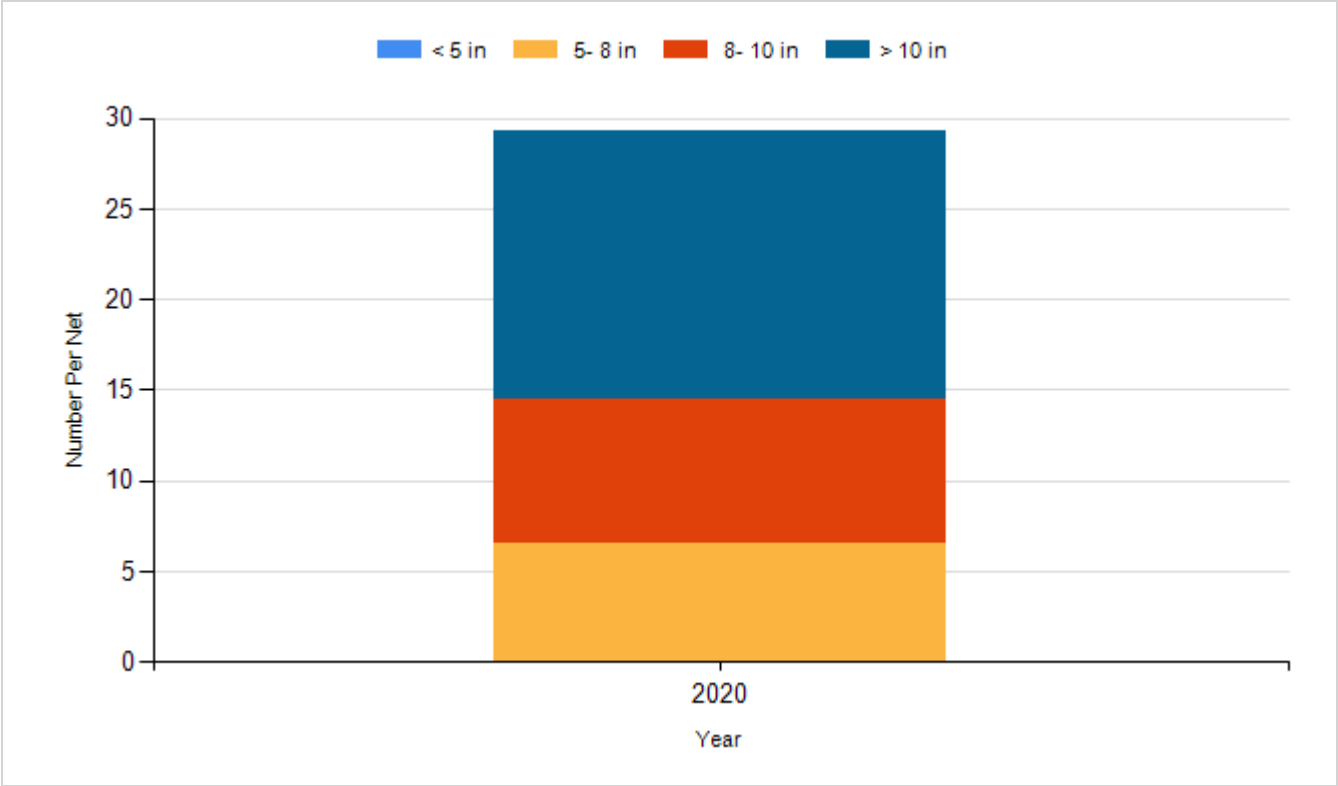
Historic Fish Sizes and Relative Abundance

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

Species: Walleye
Gear: AFS std 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
2010	Walleye	Small Fingerling	221,320
2012	Walleye	Fry	1,300,000
2014	Walleye	Fry	2,030,000
2016	Walleye	Small Fingerling	189,600
2018	Walleye	Fry	2,100,000