Jones Lake Survey Summary

Jones Lake is an 85 acres impoundment located 3 miles south and 2 miles east of Miller, South Dakota. Jones Lake is a popular recreation lake for residents of Hand County. An access trail and boat ramp exists on the west side of the lake. Shore fishing access is limited due to dense cattails along much of the shoreline where public access is accessible. The entire shoreline is open for public access (12 foot buffer strip above high watermark) where private land encircles the lake. Access for ice fishing is good. Submergent vegetation exists around the lake out to depths of about 4 feet.

At the time of survey, dissolved oxygen was good throughout the lake and no thermocline was established. Typically a thermocline will be established around 8 to 10 feet of depth and void of dissolved oxygen below.

Jones Lake is a popular fishery for largemouth bass, yellow perch, black bullhead, and black crappie. Golden shiner also exists as a forage species. As long as water levels remain adequate and Black Bullhead numbers are reduced, a quality fishery can be produced for Jones Lake.

- **Largemouth Bass:** Electrofish survey catch rates of largemouth bass during the 2020 survey was higher (87 fish/hr) than the average (45 fish/hr). Sizes collected ranged from 3 to 21 inches with the average length of 9 inches. Approximately 8% of the fish were 15 inches or larger for the ones over 8 inches. The plumpness or condition was good and growth rates for largemouth bass was above the statewide average for Jones Lake. A largemouth bass reaches about 13 inches at the age of 5 for Jones Lake.

- **Black Crappie**: Frame net catches for black crappie remained above average at 15.2 fish/net in 2020. Many of these fish were age-3 and averaged around 7.5 inches in length. Black crappie collected ranged in sizes from 4 to 12 inches. Approximately 7% of the fish were larger than 8 inches of the fish over 5 inches. Condition and growth of Black Crappie is good.

- **Yellow Perch**: Net catches for yellow perch in the 2020 survey bounced up to 53 fish/net in trap nets and 100 fish/net in gill nets. The size of yellow perch collected ranged from 6 to 9.5 inches with the average size at 7.5 inches. Approximately 24% of the perch over 5 inches were also larger than 8 inches. The yellow perch size is now what many anglers would consider “keepers”. Condition and growth rates were that of statewide average allowing good growth during each year.

- **Black Bullhead**: The population of black bullhead dramatically was reduced in 2020 survey. Sizes ranged from 5 to 11 inches and averaged around 9.5 inches. These sizes are approaching a size anglers may consider taking them home. Small black bullheads do provide forage for largemouth bass, black crappie and channel catfish.

- **Bluegill:** Abundance of bluegill is low but increased during the 2020 survey. Hopefully, in the future, the population abundance for bluegill can increase for Jones Lake.

- **Other Species:** Golden shiner were also collected during the 2020 frame net survey and was very abundant during the fall electrofishing survey. They provide an excellent forage for largemouth bass. Channel catfish were stocked into Jones Lake, as an additional species, in 2018. No catfish were collected during the 2020 survey.

For more information, please contact South Dakota Game, Fish and Parks Ft. Pierre office – (605) 223-7705.

Prepared 03-02-2021 by KDP

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Jones, Hand County
TUR-Lake-64-000
2020

Lake Information

Name: Jones

County: Hand

Legal Description: T112-R68-R25

Surface Area: 85 Acres

Maximum Depth: 18 Feet

Mean Depth: 9 Feet

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 16, 2020	1 net-nights
boat shocker (night)	Oct 04, 2020	3600 seconds
boat shocker (night)	Oct 05, 2020	3600 seconds
boat shocker (night)	Sep 22, 2020	3600 seconds
frame net (std 3/4 in)	Jun 16, 2020	5 net-nights
frame net (std 3/4 in)	Jun 17, 2020	5 net-nights

Common Fish Species Present

Largemouth Bass

Black Crappie

Yellow Perch

Black Bullhead

Bluegill

Golden Shiner

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	Black Bullhead	19	19.0	0.0						
	Yellow Perch	100	100.0		15	5	0		99	1
boat shocker (night)	Largemouth Bass	332	87.0	14.2	19	3	8	2	106	1
frame net (std 3/4 in)	Black Bullhead	581	56.9	20.6	91	2	0			
	Black Crappie	153	15.2	9.2	20	5	7	3		
	Bluegill	13	1.3	1.4	100		62			
	Golden Shiner	4	0.0	0.0						
	Largemouth Bass	3	0.1	0.1	0		0			
	Yellow Perch	535	53.5	25.7	24	2	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.

		CPUE										
Gear	Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Avg
AFS std gill net	Black Bullhead										19.0	19.00
	Yellow Perch										100.0	100.00
boat shocker (night)	Largemouth Bass	17.0		20.0			73.0		23.0	52.7	87.0	45.45
frame net (std 3/4 in)	Black Bullhead	6.7		8.9			2,221.3		215.2		56.9	501.80
	Black Crappie	1.0		8.4			10.8		4.9		15.2	8.06
	Bluegill	0.1		0.7			0.1		0.1		1.3	0.46
	Golden Shiner	0.0		0.0			0.0		0.0		0.0	0.00
	Largemouth Bass	0.0		0.0			0.3		0.1		0.1	0.10
	Yellow Perch	1.3		5.4			31.5		4.8		53.5	19.30
std exp gill net	Black Bullhead	17.5					337.0					177.25
	Yellow Perch	0.5					4.0					2.25

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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AFS std gill net	Yellow Perch	PSD										15
		PSD-P										0
		Wr										99
boat shocker (night)	Largemouth Bass	PSD	82		100			15		93	23	19
		PSD-P	0		70			4		11	12	8
		Wr	132		123			92		106	102	106
frame net (std 3/4 in)	Black Bullhead	PSD	40		44			0		0		91
		PSD-P	3		2			0		0		0
		Wr	97		85					68		
	Black Crappie	PSD	20		4			37		88		20
		PSD-P	10		2			1		0		7
		Wr	127		115			108		103		
	Bluegill	PSD	100		0			100		100		100
		PSD-P	0		0			100		100		62
		Wr	130		125					117		
	Largemouth Bass	PSD						33		0		0
		PSD-P						33		0		0
		Wr						86		75		
	Yellow Perch	PSD	23		4			81		77		24
		PSD-P	8		0			0		13		0
		Wr	106		100			91		92		
std exp gill net	Black Bullhead	PSD	69					0				
		PSD-P	6					0				
		Wr	105									
	Yellow Perch	PSD	0					25				
		PSD-P	0					0				
		Wr	117									

Back-Calculated Lengths

Mean species back-calculated total length (mm) at age, standard error (SE), and sample size (N).

Species: Black Crappie

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2017	3	20	114 (30.2)	190 (58)	257 (79.1)							
2016	4	4	70 (2.4)	168 (13.6)	204 (10.4)	234 (3.5)						
2015	5	2	79 (4.5)	170 (2.2)	207 (3.6)	231 (1.5)	251 (7.2)					
2014	6	3	83 (8.4)	163 (6)	203 (1.9)	227 (2.9)	254 (5.8)	274 (8.3)				
Weighted Mean		29	102	183	241	231	253	274				

Species: Bluegill

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2017	3	3	38 (.8)	76 (4.5)	130 (2.1)							
2016	4	5	45 (3.1)	119 (10.7)	151 (4)	185 (6.6)						
2015	5	3	47 (3.2)	112 (20.8)	153 (7)	174 (9.4)	197 (2.7)					
2014	6	2	53 (7)	108 (8.3)	146 (10.4)	164 (13.3)	185 (9.1)	200 (6)				
Weighted Mean		13	45	106	146	178	192	200				

Species: Largemouth Bass

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2019	1	14	92 (2.7)									
2018	2	21	112 (3.2)	195 (5.4)								
2017	3	21	121 (3)	238 (6.5)	292 (4.5)							
2016	4	5	128 (11)	233 (29.7)	295 (14)	328 (9.8)						
2015	5	2	86 (3.7)	204 (6.7)	282 (12.7)	351 (2.5)	407 (6)					
2014	6	5	94 (3.6)	224 (6.1)	282 (11)	339 (13.3)	391 (11.1)	422 (8.9)				
2013	7	8	93 (6.6)	199 (9)	260 (7.6)	303 (7.4)	349 (10.2)	400 (6.4)	431 (3.2)			
2012	8	1	90	215	257	282	323	362	430	458		
2010	10	1	69	141	306	371	407	452	477	489	503	519
Weighted Mean		78	107	215	284	323	370	408	436	474	503	519

Species: Yellow Perch

Year Class	Age	N	Mean back-calculated length (SE) at age								
			1	2	3	4	5	6	7	8	9	10
2018	2	26	100 (3)	166 (3.4)								
2017	3	5	98 (6.5)	143 (7.5)	189 (10.9)							
2016	4	1	96	146	192	233						
Weighted Mean		32	100	162	190	233						

Length at Capture

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

Species: Black Crappie

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2020	152			201 (138)	243 (6)	258 (5)	274 (5)				
2018	49		171 (5)	214 (35)	232 (4)	234 (5)	222 (1)				
2016	108		173 (78)		211 (30)		303 (1)				
2013	88	127 (1)	140 (84)		267 (1)	221 (1)		298 (1)			
2011	10		155 (8)	247 (2)							

Species: Bluegill

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2020	13			156 (3)	195 (5)	203 (3)	207 (2)				
2018	1						216 (1)				
2013	7		131 (7)								

Species: Largemouth Bass

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2020	312	205 (153)	225 (109)	320 (24)	345 (5)	439 (2)	438 (5)	447 (10)	480 (2)		530 (1)
2018	134	146 (91)	286 (2)	323 (17)	348 (21)	396 (2)	451 (1)				
2016	127	188 (64)	257 (27)	285 (32)	315 (1)		473 (1)	473 (2)			
2013	20		371 (8)	408 (9)	406 (2)	422 (1)					
2011	17	309 (14)	333 (2)			323 (1)					

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	100		186 (100)								
2011	1		168 (1)								

Fish Condition

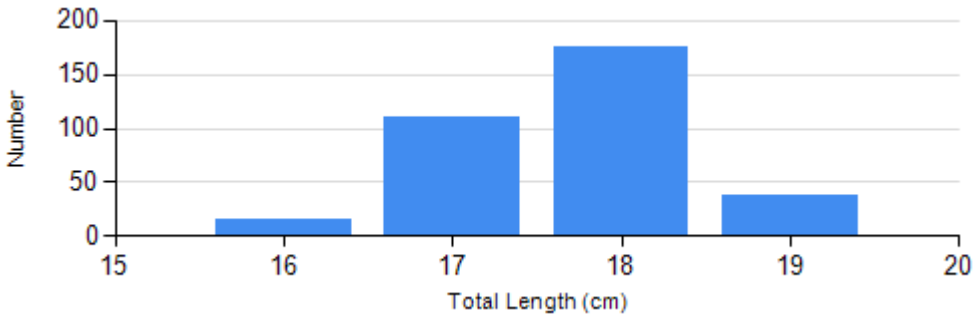
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2016	68	114 (2.8)	39	100 (1.3)	0		1	91
	2018	6	121 (1.9)	43	101 (1.1)	0		0	
Bluegill Frame Net	2018	0		0		1	117	0	
Largemouth Bass Electro Fishing	2016	62	91 (1.0)	8	90 (1.6)	3	110 (1.9)	0	
	2018	3	117 (0.7)	38	106 (1.0)	5	101 (3.0)	0	
	2019	122	102 (0.6)	17	103 (4.8)	19	106 (1.8)	0	
	2020	211	106 (0.5)	29	102 (1.5)	20	108 (2.0)	1	113
Yellow Perch Gill Net	2020	85	100 (1.1)	15	95 (2.1)	0		0	

Length Frequency Distribution

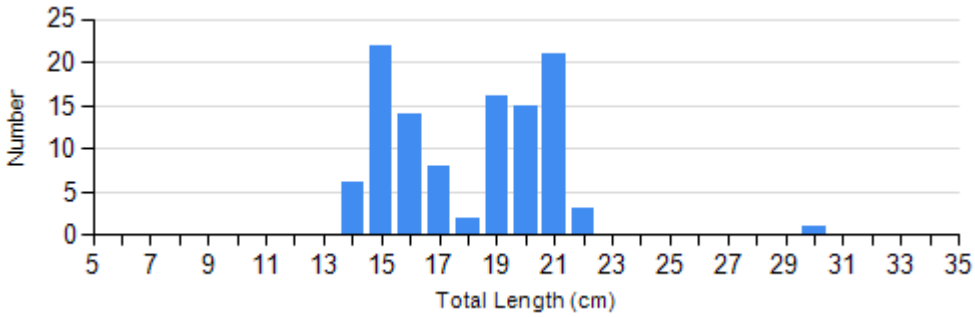
Length frequency histogram of species sampled by year.

Species: Black Bullhead
Gear: std exp gill net

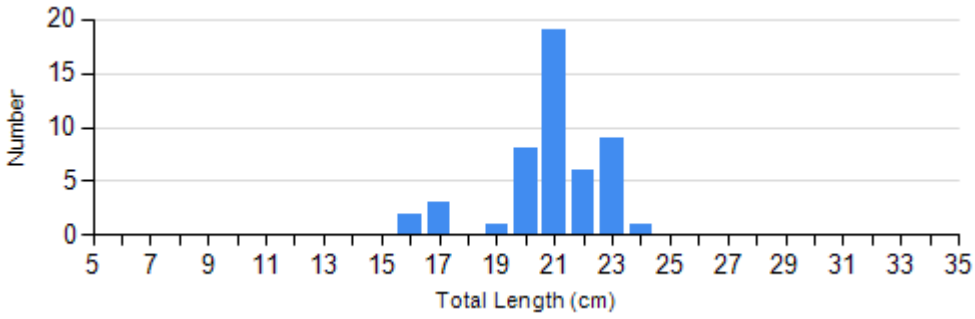


2016

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



2016



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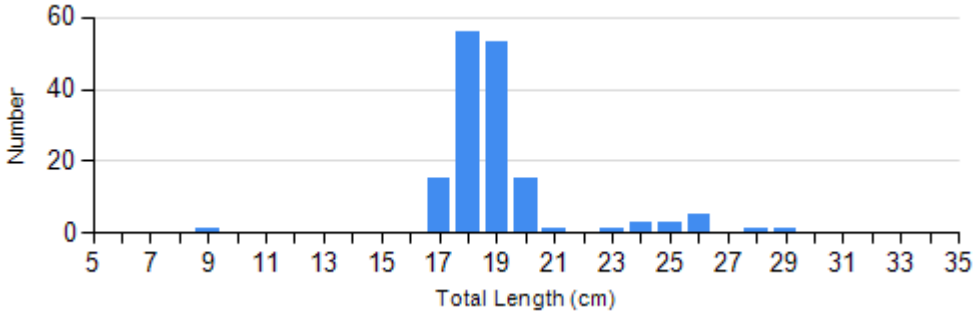
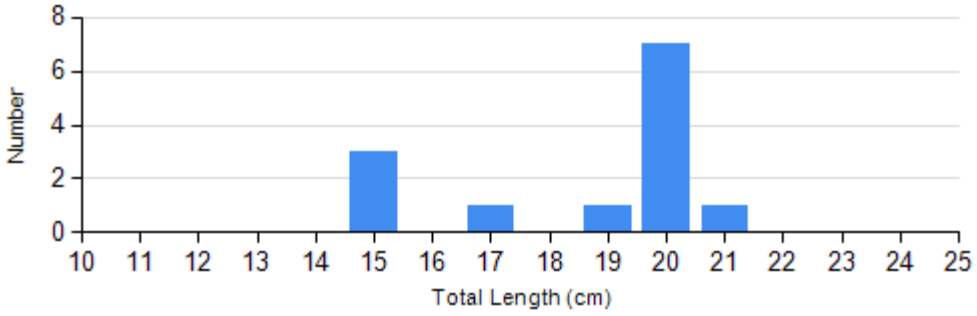


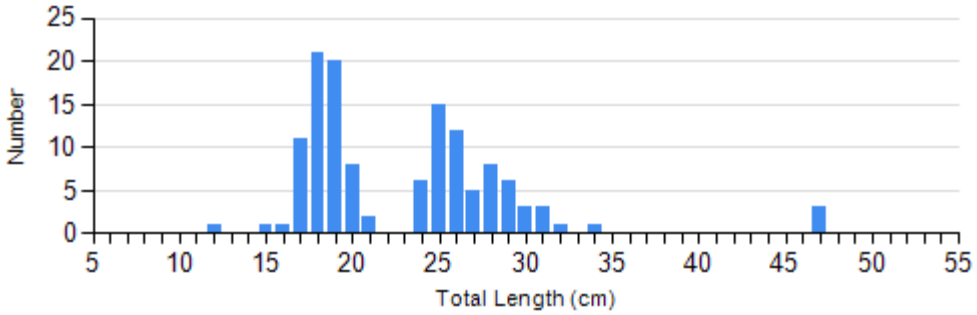
2020

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

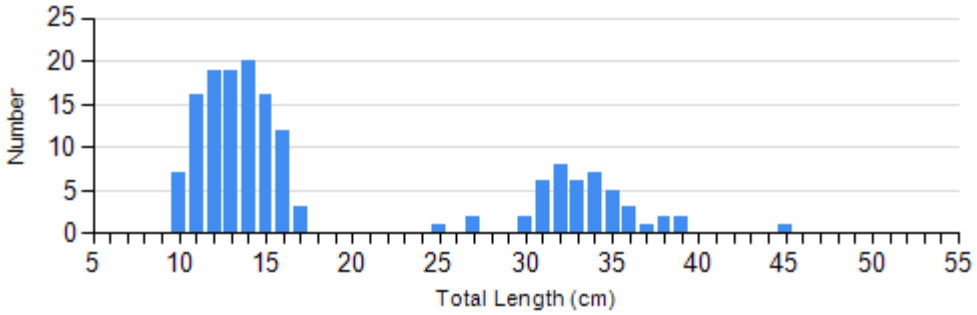


2020

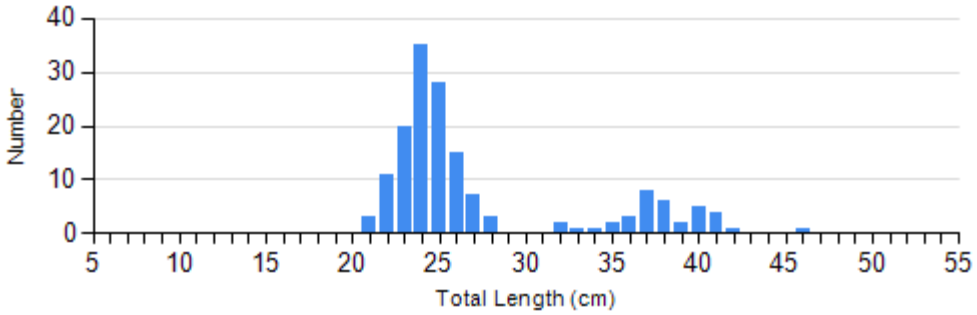
Species: Largemouth Bass
Gear: boat shocker (night)



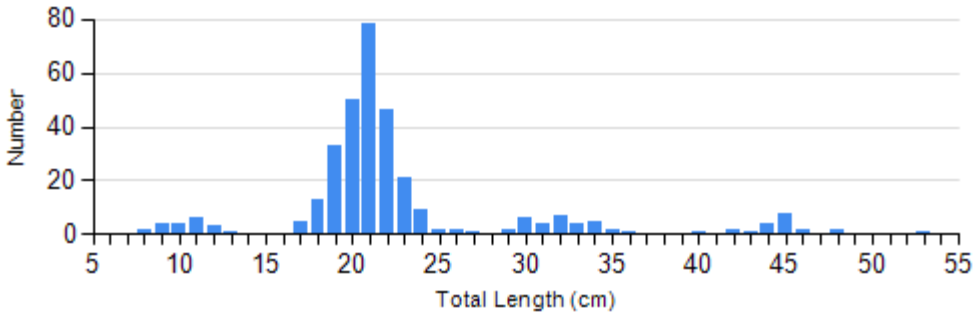
2016



2018

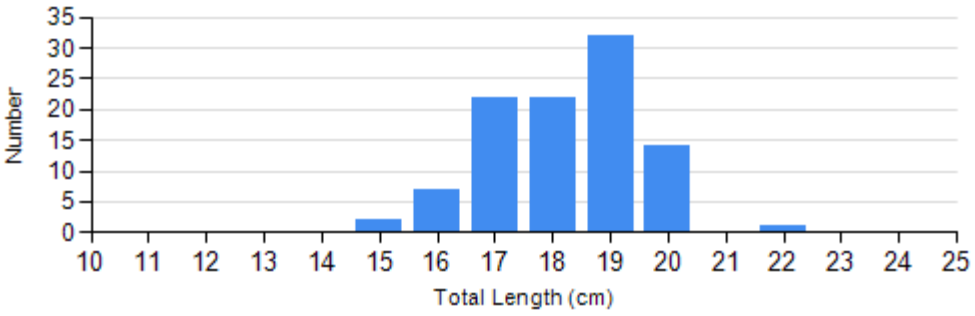


2019



2020

Species: Yellow Perch
Gear: AFS std gill net

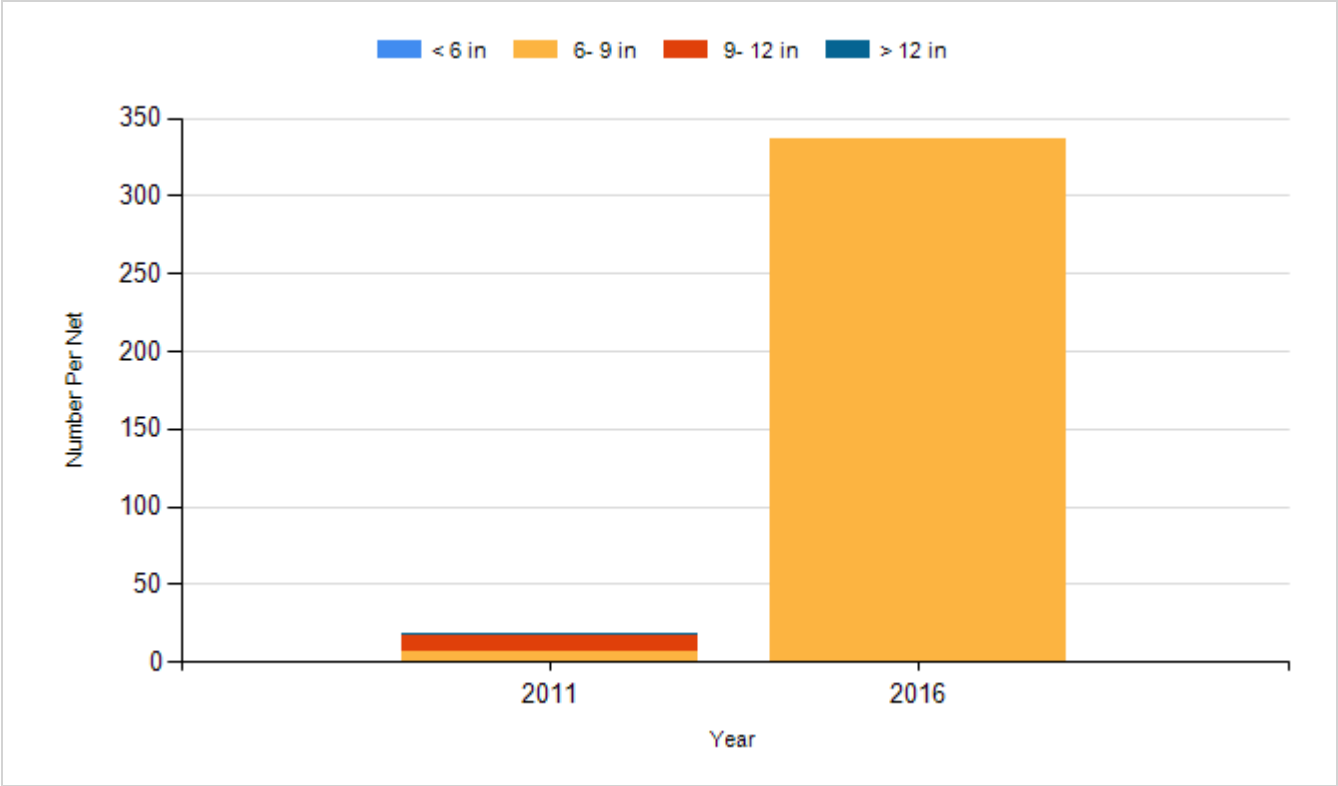


2020

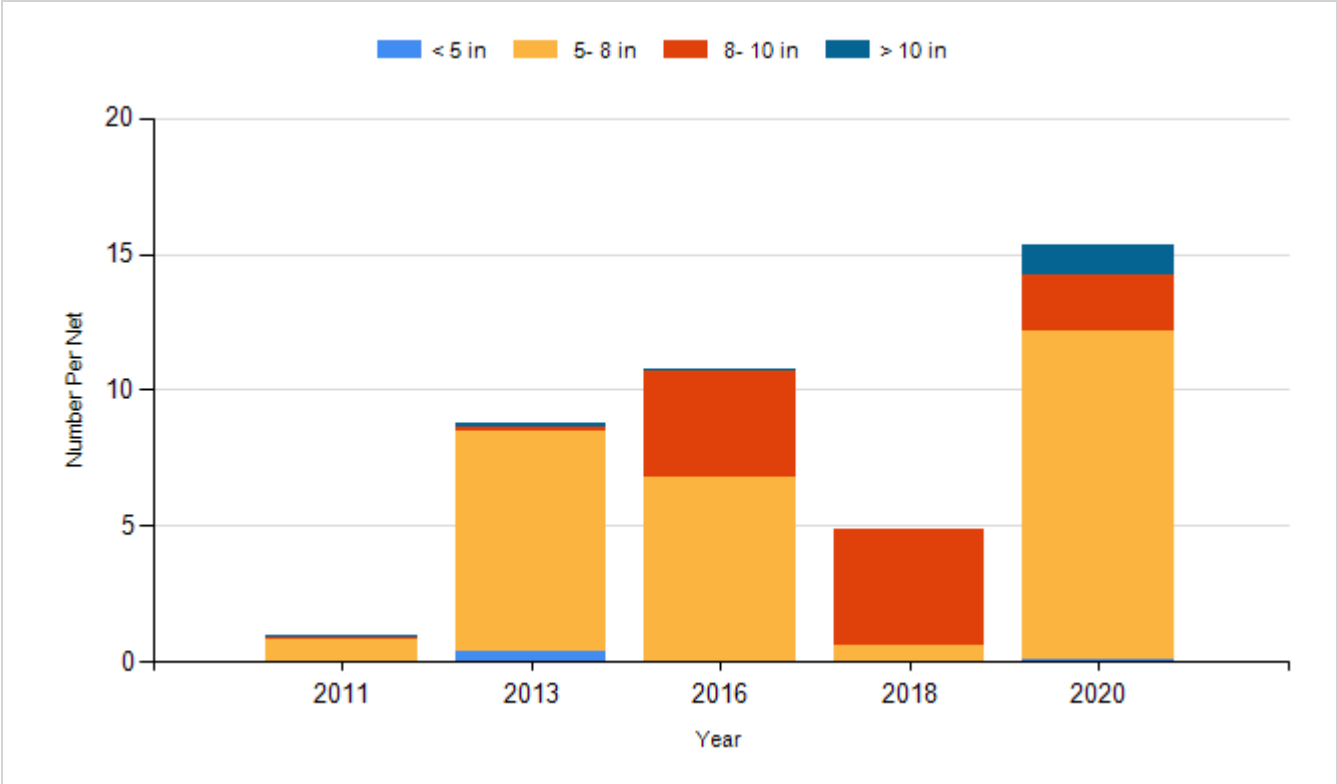
Historic Fish Sizes and Relative Abundance

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

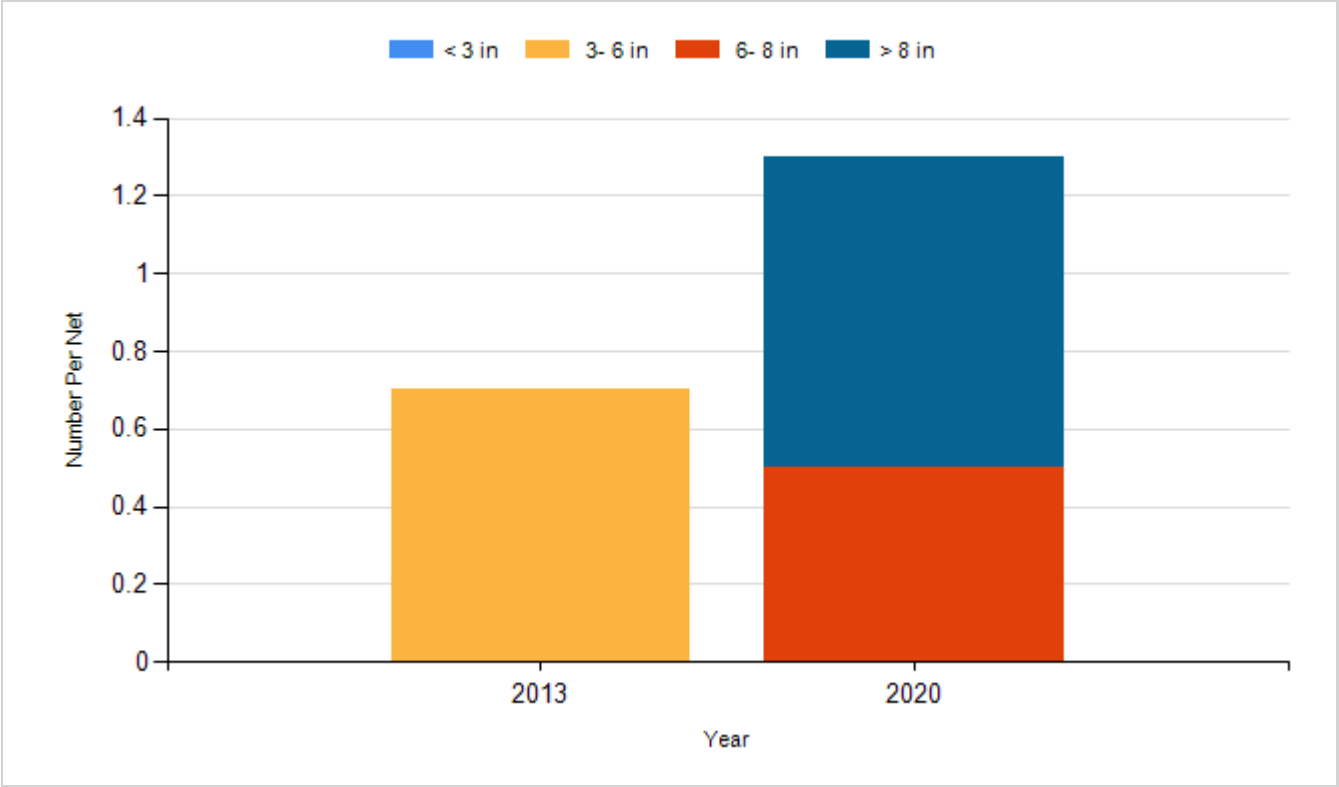
Species: Black Bullhead
Gear: std exp gill net



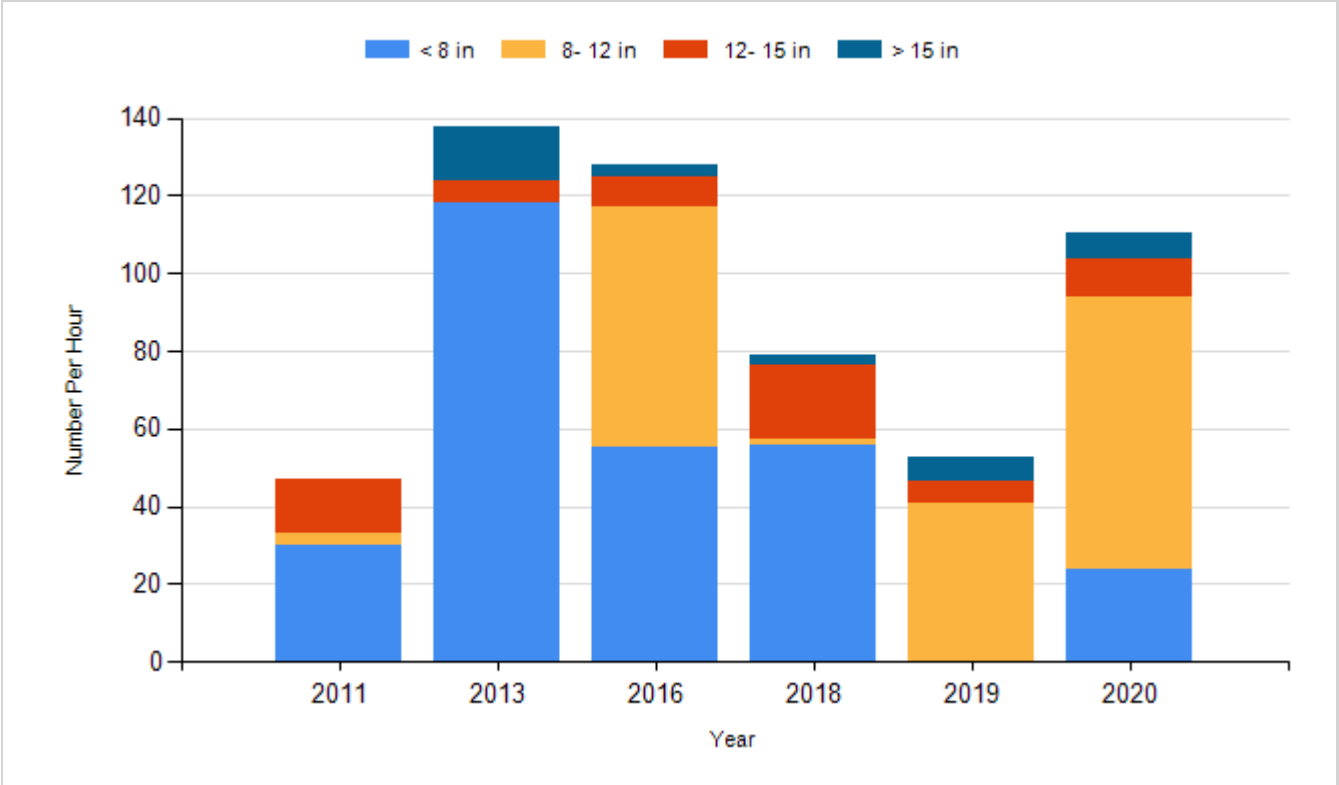
Species: Black Crappie
Gear: frame net (std 3/4 in)



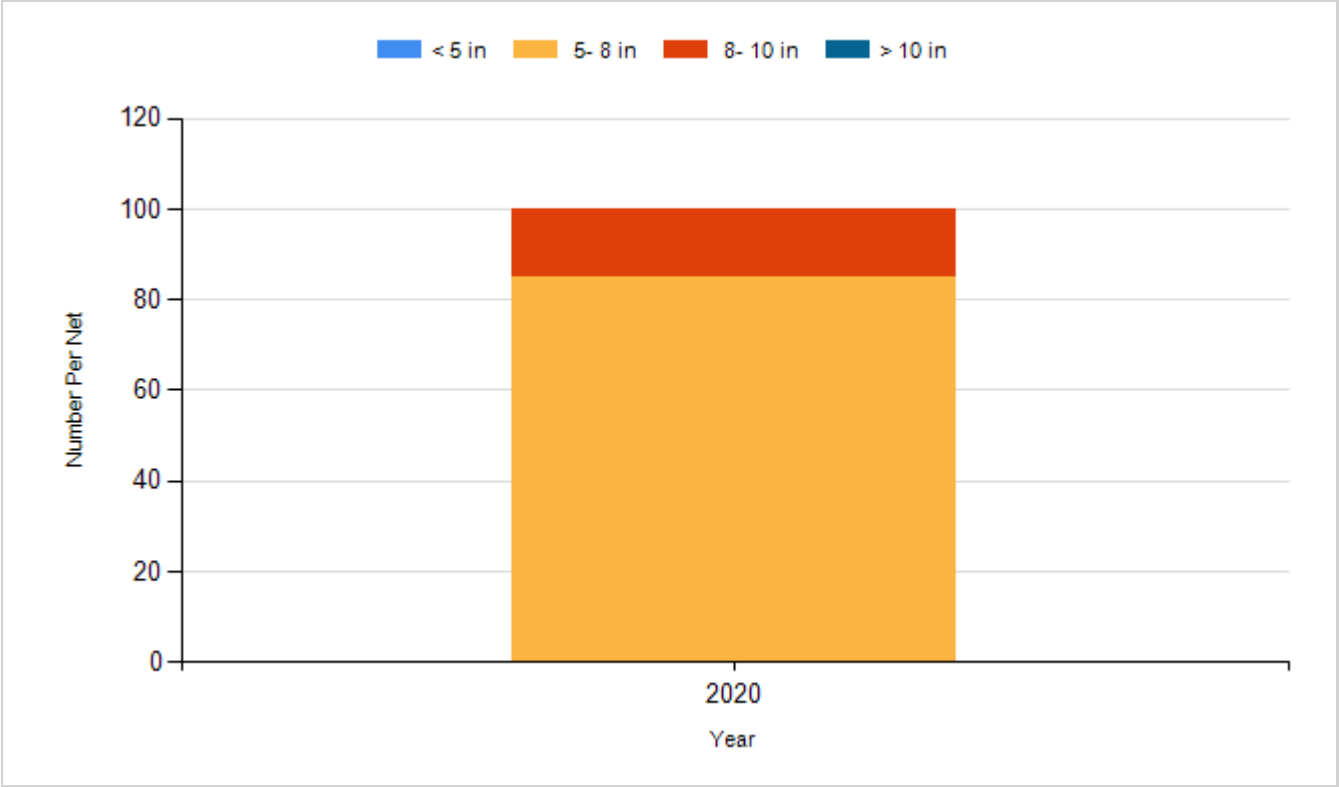
Species: Bluegill
Gear: frame net (std 3/4 in)



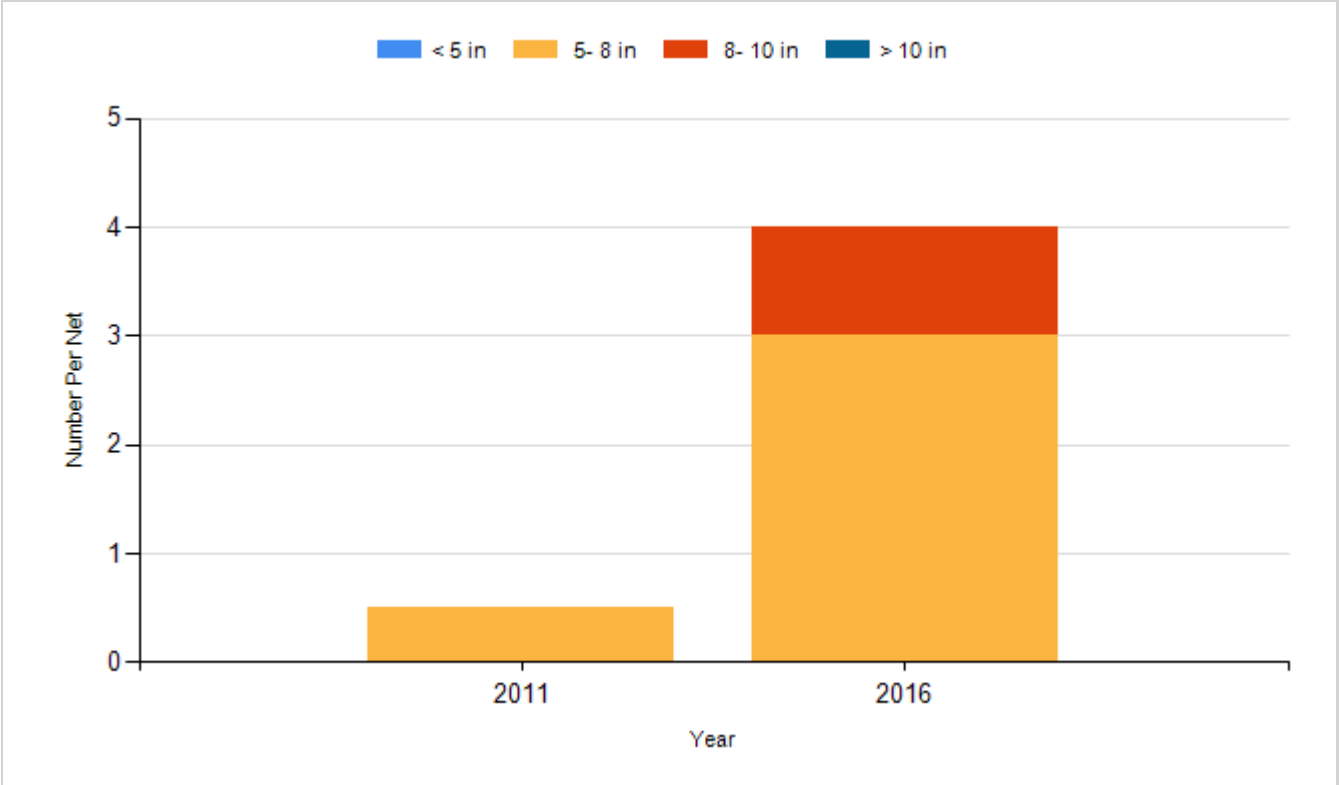
Species: Largemouth Bass
Gear: boat shocker (night)



Species: Yellow Perch
Gear: AFS std 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
2018	Channel Catfish	Adult	97
2018	Flathead Catfish	Adult	4