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.

The fishery of Jones Lake consists of Largemouth Bass, Black Crappie, Black Bullhead, Yellow Perch, Bluegill, and Golden Shiner. The Largemouth Bass population has a fair abundance within the lake at 23 fish/hour of boat electrofishing. Abundance was below the 73 fish/hour collected in 2016. The sizes collected ranged from 4 to 17.5 inches with the average size Largemouth Bass around 8 inches. Approximately 11% were 15 inches or larger for the ones over 8 inches. The plumpness or condition was good and growth rates for Largemouth Bass was at the statewide average for Jones Lake. Natural production is occurring in Jones Lake.

Black Crappie is the dominant panfish collected in Jones Lake. Abundance remained fairly similar over time ranging from 1.0 fish/net (2011) to 10.8 (2016) with 4.9 fish/net Black Crappie collected in 2018. Fish size ranged from 6.5 to 9.5 inches and averaged 8.0 inches. Condition and growth of Black Crappie is good.

Yellow Perch catches dropped in 2018 to 4.8 fish/net from 31.5 in 2016. The size of Yellow Perch collected ranged from 6.5 to 10.5 inches with the average size at 8.5 inches. Approximately 13% of the perch over 5 inches were also larger than 10 inches. This is an increase in size of Yellow Perch in 2018 survey. Condition and growth rates were that of statewide average allowing good growth during each year. The Yellow Perch size is now what many anglers would consider “keepers”.

Black Bullhead population continues to be problem for Jones Lake. Net catches decreased from a high of 2,221 fish/net (2016) to 215 fish/net in 2018. Size ranged from 7 to 9 inches with an average size Black Bullhead at 7.5 inches. These sizes of fish are not attractive to anglers. Condition of fish was poor. To help lower Black Bullhead densities, Channel Catfish and a few Flathead Catfish were stocked during the summer of 2018. It is unknown if these catfish will help keep the Black Bullhead numbers down but they will provide additional fish for anglers to catch. Small Black Bullheads do provide forage for Largemouth Bass and Black Crappie.

Bluegill and Golden Shiner were also collected during the 2018 survey but numbers were low.

Jones Lake is a popular fishery for Largemouth Bass, Yellow Perch and Black Crappie. As long as water levels remain and Black Bullhead numbers are reduced, a quality fishery can be produced for Jones Lake.

For more information, please contact South Dakota Game, Fish and Parks Ft. Pierre office – (605) 223-7700.

Prepared 01-30-2019 by KDP

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Jones, Hand County
TUR-Lake-64-000
2018

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
boat shocker (night)	Sep 17, 2018	3600 seconds
boat shocker (night)	Sep 24, 2018	3600 seconds
frame net (std 3/4 in)	Jun 05, 2018	5 net-nights
frame net (std 3/4 in)	Jun 06, 2018	5 net-nights

Common Fish Species Present

Largemouth Bass

Black Crappie

Black Bullhead

Yellow Perch

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	6	15	9	23	12	30	15	38	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	CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
boat shocker (night)	Largemouth Bass	23.0	14.5	93		11	7	106	1
frame net (std 3/4 in)	Black Bullhead	215.2	69.8	0		0		68	1
	Black Crappie	4.9	3.3	88	7	0		103	2
	Bluegill	0.1	0.1	100		100		117	
	Golden Shiner	0.0	0.0						
	Largemouth Bass	0.1	0.1	0		0		75	
	Yellow Perch	4.8	2.5	77	9	13	8	92	2

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	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Avg
boat shocker (night)	Largemouth Bass			17.0		20.0			73.0		23.0	33.3
frame net (std 3/4 in)	Black Bullhead			6.7		8.9			2,221.3		215.2	613.0
	Black Crappie			1.0		8.4			10.8		4.9	6.3
	Bluegill			0.1		0.7			0.1		0.1	0.3
	Golden Shiner			0.0							0.0	0.0
	Largemouth Bass								0.3		0.1	0.2
	Yellow Perch			1.3		5.4			31.5		4.8	10.8
std exp gill net	Black Bullhead			17.5					337.0			177.3
	Yellow Perch			0.5					4.0			2.3

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	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
boat shocker (night)	Largemouth Bass	PSD			82		100			15		93
		PSD-P			0		70			4		11
		Wr			132		123			92		106
frame net (std 3/4 in)	Black Bullhead	PSD			40		44			0		0
		PSD-P			3		2			0		0
		Wr			97		85					68
	Black Crappie	PSD			20		4			37		88
		PSD-P			10		2			1		0
		Wr			127		115			108		103
	Bluegill	PSD			100		0			100		100
		PSD-P			0		0			100		100
		Wr			130		125					117
	Largemouth Bass	PSD								33		0
		PSD-P								33		0
		Wr								86		75
	Yellow Perch	PSD			23		4			81		77
		PSD-P			8		0			0		13
		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

			Mean back-calculated length (SE) at age									
Year Class	Age	N	1	2	3	4	5	6	7	8	9	10
2016	2	5	84 (2.2)	162 (3.6)								
2015	3	18	75 (2.2)	149 (4.4)	193 (4.1)							
2014	4	2	101 (1.2)	172 (9.4)	197 (.1)	221 (2.2)						
2013	5	3	68 (2)	108 (9.6)	176 (2.5)	199 (2)	220 (3.9)					
2012	6	1	67	110	159	185	201	214				
Weighted Mean		29	77	147	190	204	215	214				

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2016	2	5										
2015	3	18										
2014	4	2										
2013	5	3										
2012	6	1										
Weighted Mean		29										

Species: Bluegill

			Mean back-calculated length (SE) at age									
Year Class	Age	N	1	2	3	4	5	6	7	8	9	10
2012	6	1	51	112	143	173	192	205				
Weighted Mean		1	51	112	143	173	192	205				

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2012	6	1										
Weighted Mean		1										

Species: Largemouth Bass

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2017	1	39	100 (2.6)									
2016	2	2	116 (5.2)	219 (2.9)								
2015	3	13	84 (2.9)	196 (6.1)	263 (8.8)							
2014	4	1	107	174	234	262						
2014	4	16	90 (5.9)	194 (7.7)	257 (6.7)	305 (4.8)						
2013	5	1	104	229	295	314	340					
2012	6	1	162	319	369	414	432	443				
Weighted Mean		73	96	200	263	309	386	443				

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2017	1	39										
2016	2	2										
2015	3	13										
2014	4	1										
2014	4	16										
2013	5	1										
2012	6	1										
Weighted Mean		73										

Species: Yellow Perch

Year Class	Age	N	Mean back-calculated length (SE) at age									
			1	2	3	4	5	6	7	8	9	10
2016	2	8	100 (3.2)	180 (5.7)								
2015	3	14	91 (4.7)	153 (8.8)	199 (5.8)							
2014	4	10	100 (5.8)	165 (9.7)	201 (5.5)	231 (4.7)						
2013	5	3	98 (16.6)	149 (15.3)	199 (2)	225 (2.2)	246 (1.6)					
Weighted Mean		35	96	162	200	230	246					

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2016	2	8										
2015	3	14										
2014	4	10										
2013	5	3										
Weighted Mean		35										

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+
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+
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+
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+
2011	1		168 (1)								

Fish Condition

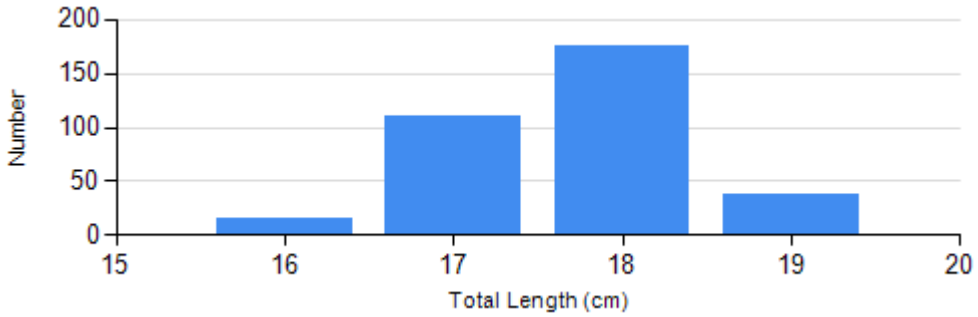
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		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	

Length Frequency Distribution

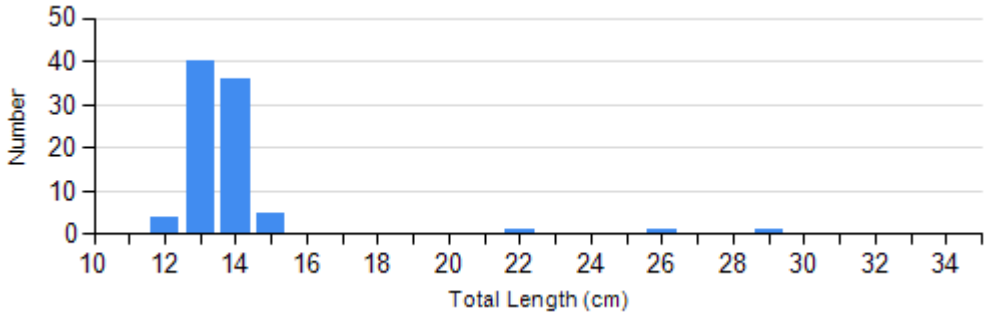
Length frequency histogram of species sampled by year.

Species: Black Bullhead
Gear: std exp gill net

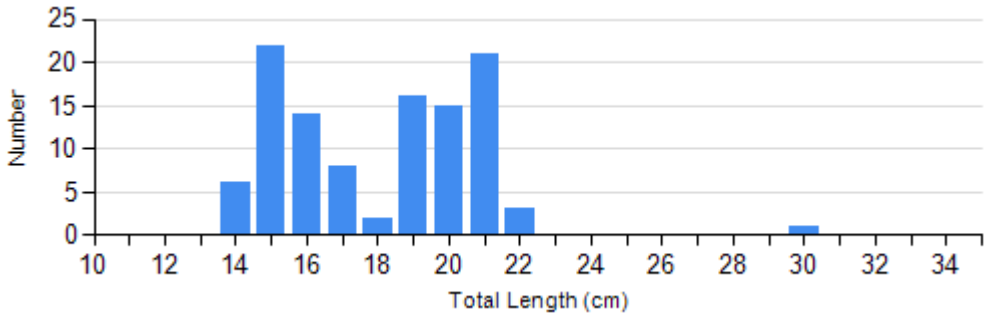


2016

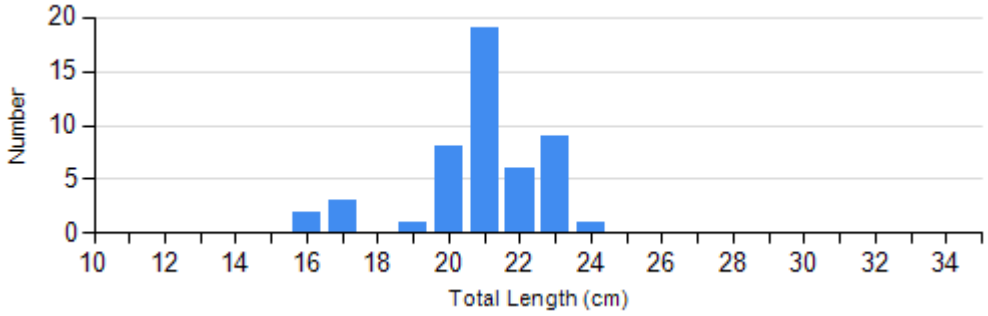
Species: Black Crappie
Gear: frame net (std 3/4 in)



2013

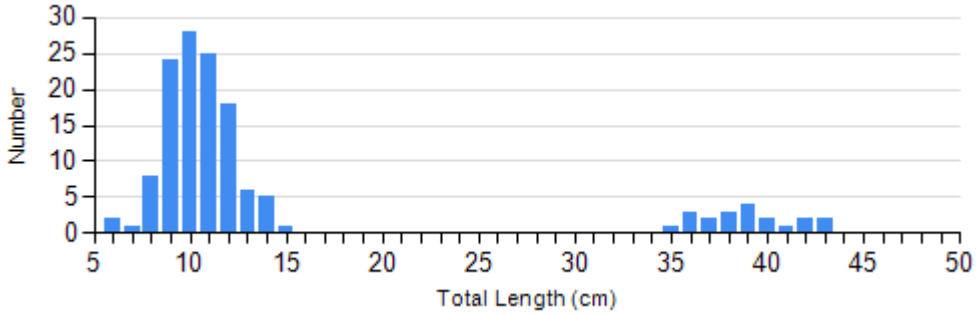


2016

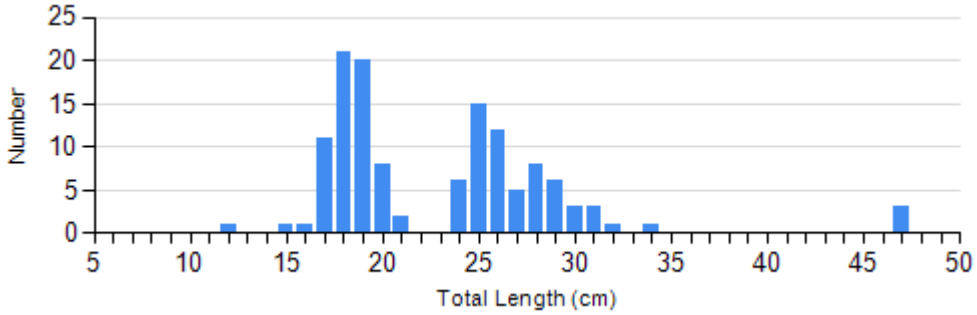


2018

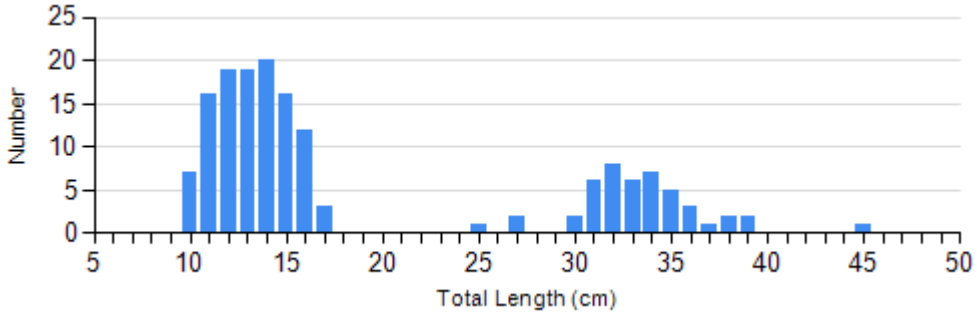
Species: Largemouth Bass
Gear: boat shocker (night)



2013



2016

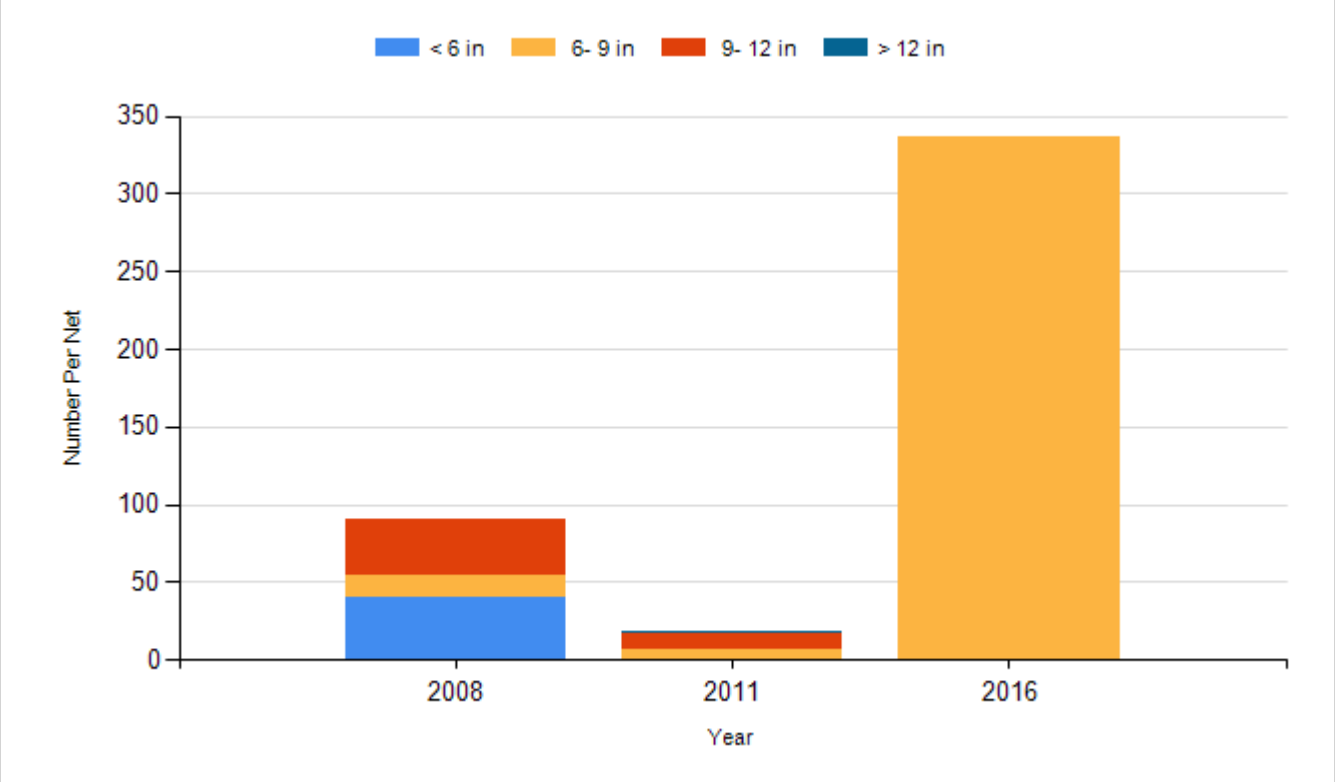


2018

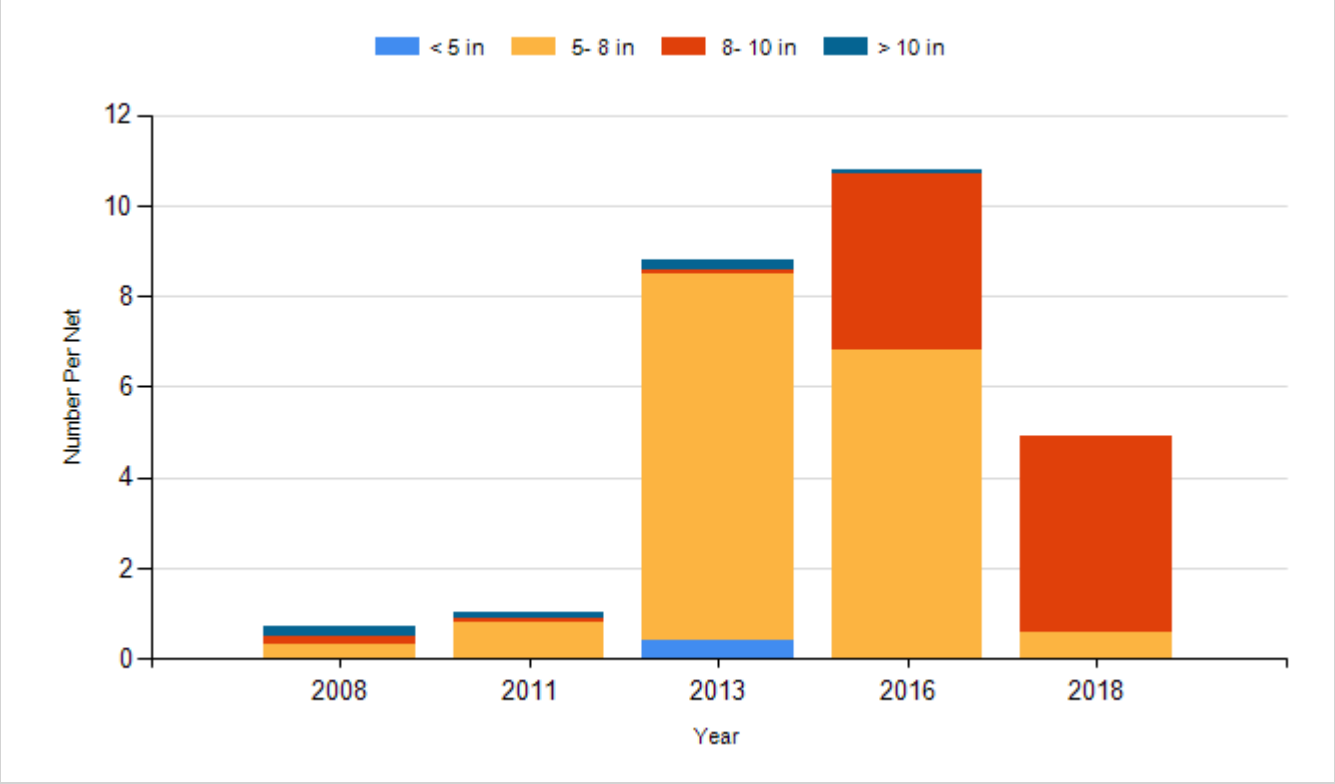
Historic Fish Sizes and Relative Abundance

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

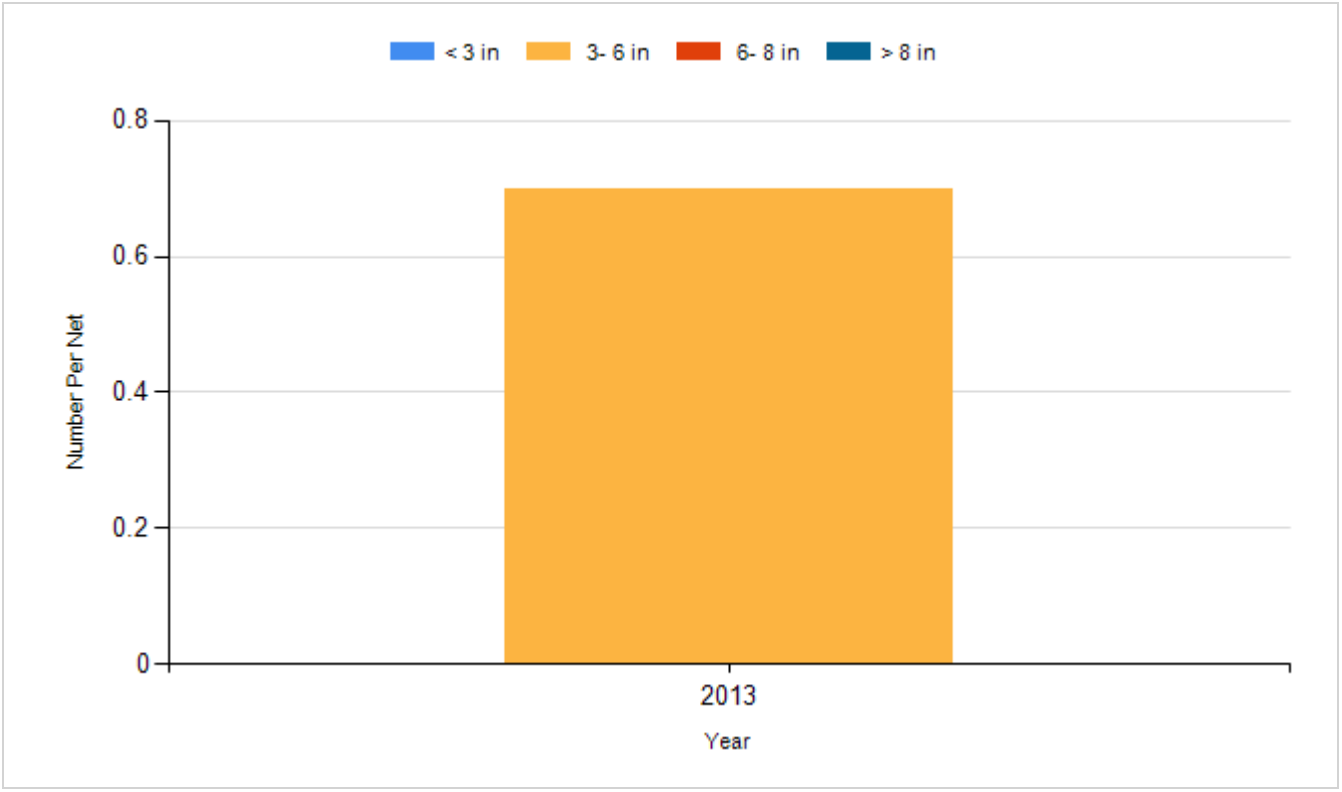
Species: Black Bullhead
Gear: std exp gill net



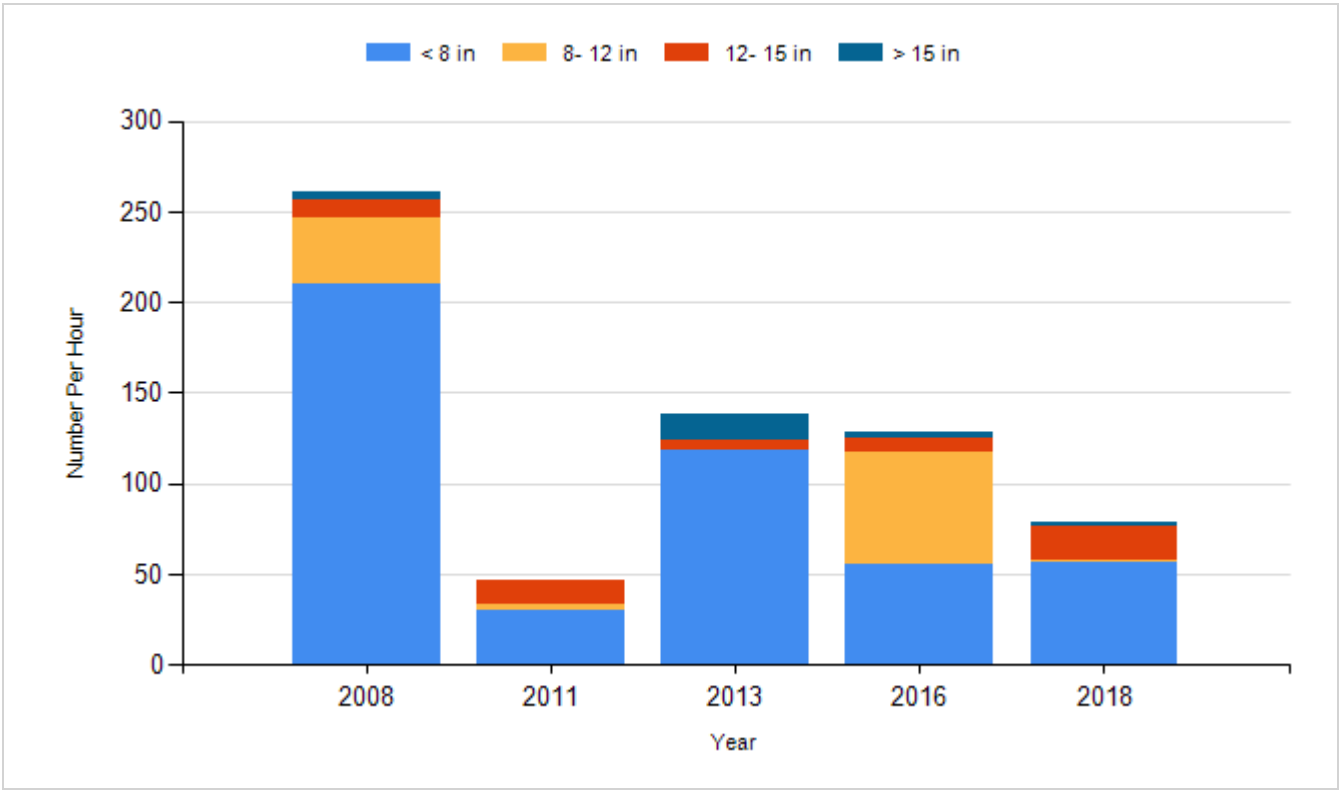
Species: Black Crappie
Gear: frame net (std 3/4 in)



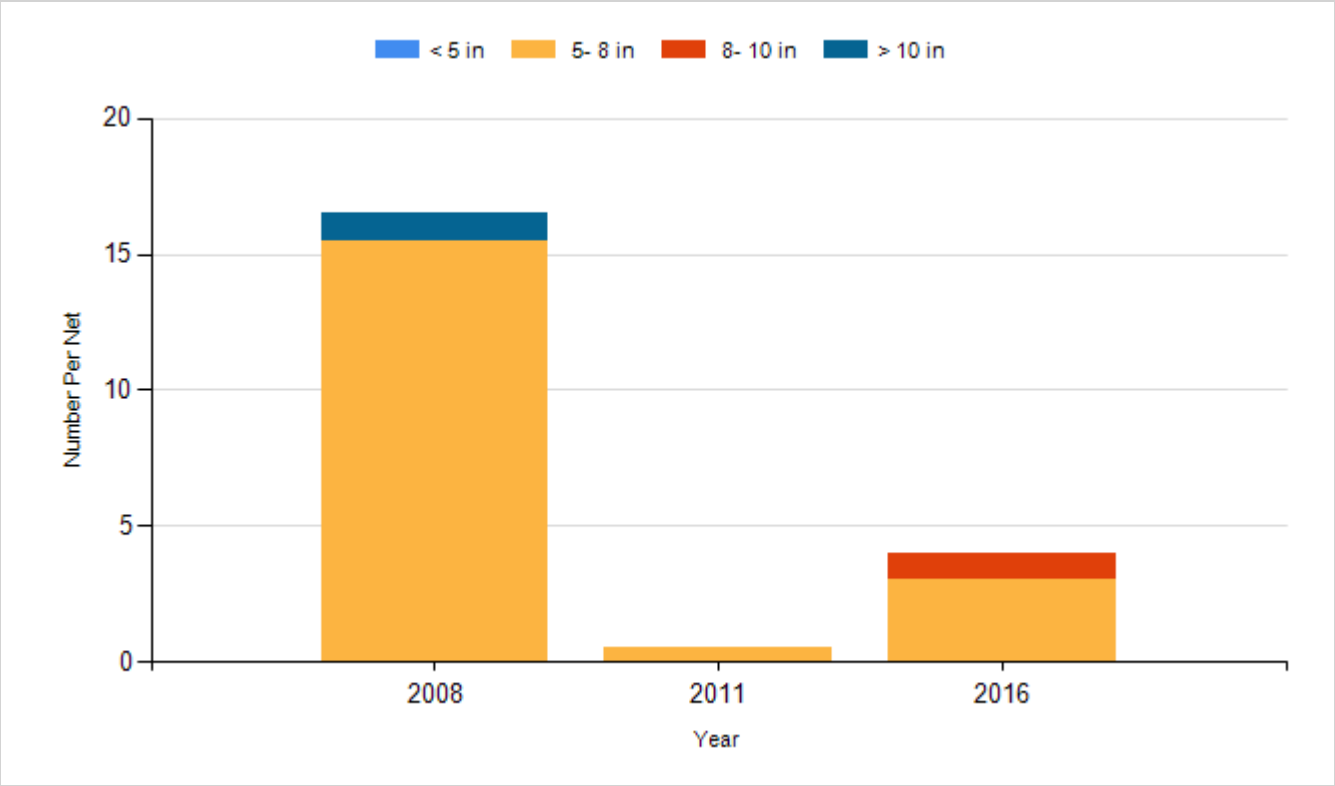
Species: Bluegill
Gear: frame net (std 3/4 in)



Species: Largemouth Bass
Gear: boat shocker (night)



Species: Yellow Perch
Gear: 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