

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Owen Dam, Perkins County
LMO-Lake-397-000
2017

Lake Information

Name: Owen Dam
County: Perkins
Surface Area: 136 Acres

Surveys and Investigations

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

Gear	Date	Effort
std exp gill net	June 20, 2017	4 net-nights
std frame net (3/8 inch)	June 20, 2017	10 net-nights

Common Fish Species Present

Yellow Perch

Northern Pike

Largemouth Bass

Black Bullhead

Black Crappie

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).

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

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.

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

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

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.

$$Wr = \left(\frac{W}{W_s} \right) \times 100$$

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).

Species Name	Stock		Quality		Preferred		Memorable		Trophy	
	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)
Bigmouth Buffalo	11	28	18	46	24	61	30	76	37	94
Black Bullhead	6	15	9	23	12	30	15	38	18	46
Black Crappie	5	13	8	20	10	25	12	30	15	38

Species Name	Stock		Quality		Preferred		Memorable		Trophy	
	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)
Blue Catfish	12	30	20	51	30	76	35	89	45	114
Bluegill	3	8	6	15	8	20	10	25	12	30
Bluegill X Gr. Sunfish Hybrid	3	8	6	15	8	20	10	25	12	30
Brown Bullhead	5	13	8	20	11	28	14	36	17	43
Burbot	8	20	15	38	21	53	26	67	32	82
Channel Catfish	11	28	16	41	24	61	28	71	36	91
Common Carp	11	28	16	41	21	53	26	66	33	84
Flathead Catfish	14	35	20	51	28	71	34	86	40	102
Freshwater Drum	8	20	12	30	15	38	20	51	25	63
Gizzard Shad	7	18	11	28						
Green Sunfish	3	8	6	15	8	20	10	25	12	30
Lake Herring	5	13	8	20	11	28	14	35	17	43
Largemouth Bass	8	20	12	30	15	38	20	51	25	63
Longnose Gar	16	41	27	69	36	91	45	114	55	140
Muskellunge	20	51	30	76	38	97	42	107	50	127
Northern Pike	14	35	21	53	28	71	34	86	44	112
Paddlefish	16	41	26	66	33	84	41	104	51	130
Pumpkinseed	3	8	6	15	8	20	10	25	12	30
Redear Sunfish	4	10	7	18	9	23	11	28	13	33
River Carpsucker	7	18	11	28	14	36	18	46	22	56
Rock Bass	4	10	7	18	9	23	11	28	13	33
Rudd	6	15	10	25	12	30	15	38	19	48
Sauger	8	20	12	30	15	38	20	51	25	63
Saugeye	9	23	14	35	18	46	22	56	27	69
Shorthead Redhorse	6	15	10	25	13	33	16	41	20	51
Smallmouth Bass	7	18	11	28	14	35	17	43	20	51
Smallmouth Buffalo	11	28	18	46	24	61	30	76	37	94
Spotted Bass	7	18	11	28	14	35	17	43	20	51
Striped Bass	12	30	20	51	30	76	35	89	45	114
Striped Bass Hybrid (wiper)	8	20	12	30	15	38	20	51	25	63
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
White Perch	5	13	8	20	10	25	12	30	15	38
White Sucker	6	15	10	25	13	33	16	41	20	51
Yellow Bass	4	10	7	18	9	23	11	28	13	33
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).

Gear	Species	Abundance		Stock Density Indices			Condition		
		CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
std exp gill net	Black Bullhead	6.3	4.1	100		100		137	3
	Northern Pike	2.8	0.8	82		18		93	3
std frame net (3/8 inch)	Black Bullhead	1.7	0.6	100		100		125	3
	Black Crappie	0.2	0.3	100		100		108	6
	Bluegill	0.1	0.1	100		0		149	
	Largemouth Bass	0.1	0.1	100		100		123	
	Northern Pike	0.4	0.3	75		25		89	7

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.

Gear	Species	CPUE										Avg	
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
frame net (1/2 inch)	Black Bullhead			1.5									1.5
	Northern Pike			10.8									10.8
	Yellow Perch			0.3									0.3
frame net (std 3/4 in)	Black Bullhead					65.3	3.5	7.8	67.3	4.4			29.7
	Black Crappie							0.3	0.1	0.2			0.2
	Bluegill							1.6	20.5	0.2			7.4
	Green Sunfish								0.1				0.1
	Largemouth Bass									0.2			0.2
	Northern Pike					4.8	1.5	4.5	1.4	1.8			2.8
	Yellow Perch								0.1				0.1
std exp gill net	Black Bullhead									1.0	6.3		3.7
	Green Sunfish									0.5			0.5
	Northern Pike			8.0						4.0	2.8		4.9
	Yellow Perch			2.0									2.0
std exp gill net (150 ft)	Black Bullhead					91.0		1.5	2.5				31.7
	Northern Pike					8.0	9.0	7.5	7.5				8.0
	Yellow Perch							1.5					1.5
std frame net (3/8 inch)	Black Bullhead										1.7		1.7
	Black Crappie										0.2		0.2
	Bluegill										0.1		0.1
	Largemouth Bass										0.1		0.1
	Northern Pike										0.4		0.4

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.

Gear	Species	Index	Year										
			2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
frame net (1/2 inch)	Northern Pike	PSD			0								
		PSD-P			0								
		Wr			88								
	Yellow Perch	PSD			0								
		PSD-P			0								
		Wr			103								
frame net (std 3/4 in)	Black Crappie	PSD							100	0	0		
		PSD-P							50	0	0		
		Wr							100	121	126		
	Northern Pike	PSD					89	83	64	55	67		
		PSD-P					5	33	3	0	33		
		Wr					94	93	87	94	92		
	Yellow Perch	PSD								100			
		PSD-P								100			
	std exp gill net	Northern Pike	PSD			0						88	82
			PSD-P			0						0	18
			Wr			92						95	93
		Yellow Perch	PSD			0							
PSD-P					0								
Wr					93								
std exp gill net (150 ft)	Northern Pike	PSD					75	100	33	73			
		PSD-P					0	11	0	20			
		Wr					98	96	86	96			
	Yellow Perch	PSD								33			
		PSD-P								0			
		Wr								82			
std frame net (3/8 inch)	Black Crappie	PSD										100	
		PSD-P										100	
		Wr										108	
	Northern Pike	PSD										75	
		PSD-P										25	

			Year									
Gear	Species	Index	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
std frame net (3/8 inch)	Northern Pike	Wr										89

Fish Condition

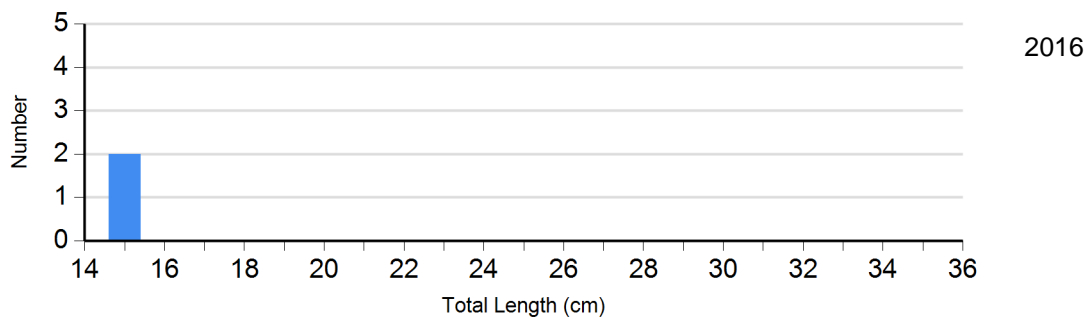
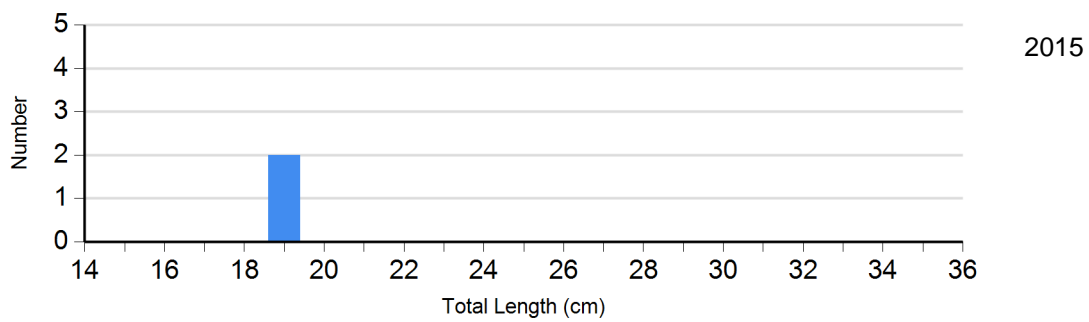
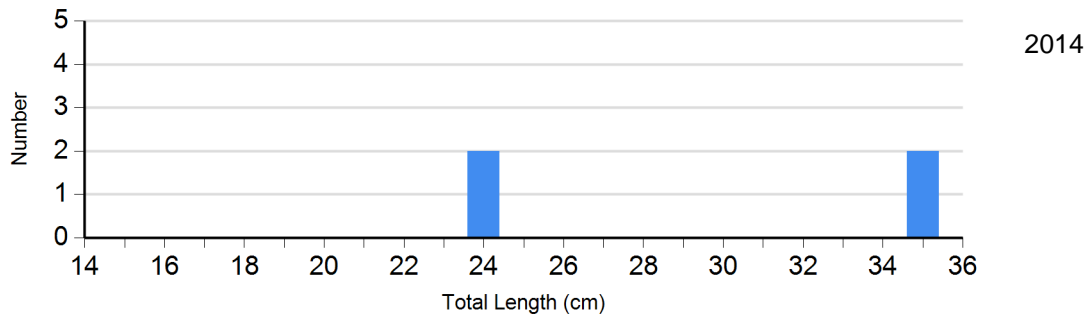
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2014	0		2	111 (0.0)	0		2	89 (0.0)
	2015	2	121 (0.0)	0		0		0	
	2016	2	126 (0.0)	0		0		0	
	2017	0		0		0		2	108 (4.6)
Northern Pike Gill Net	2013	0		16	95 (3.1)	2	102 (0.0)	0	
	2014	20	85 (1.0)	10	89 (1.3)	0		0	
	2015	8	96 (3.6)	16	96 (1.6)	2	89 (0.0)	4	101 (1.9)
	2016	2	81 (0.0)	14	97 (2.3)	0		0	
	2017	2	100 (1.7)	7	90 (3.3)	2	93 (0.2)	0	
Yellow Perch Gill Net	2014	4	72 (2.8)	2	103 (0.0)	0		0	

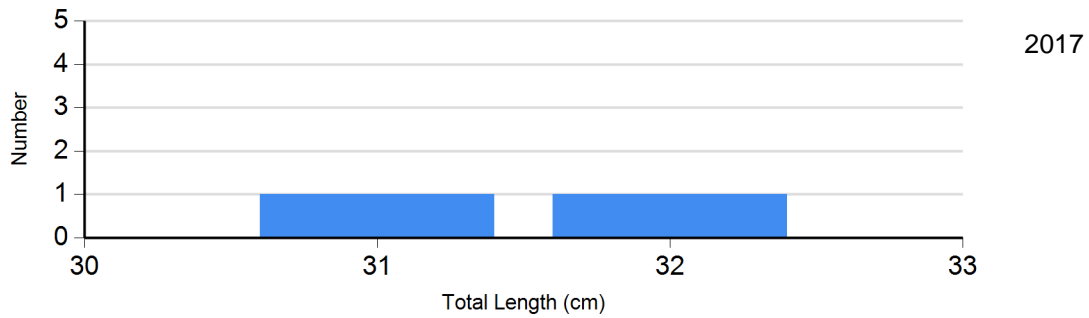
Length Frequency Distribution

Length frequency histogram of species sampled by year.

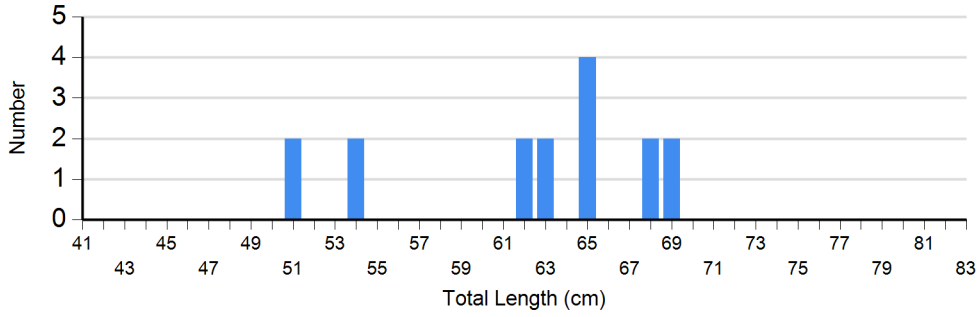
Species: Black Crappie
Gear: frame net (std 3/4 in)



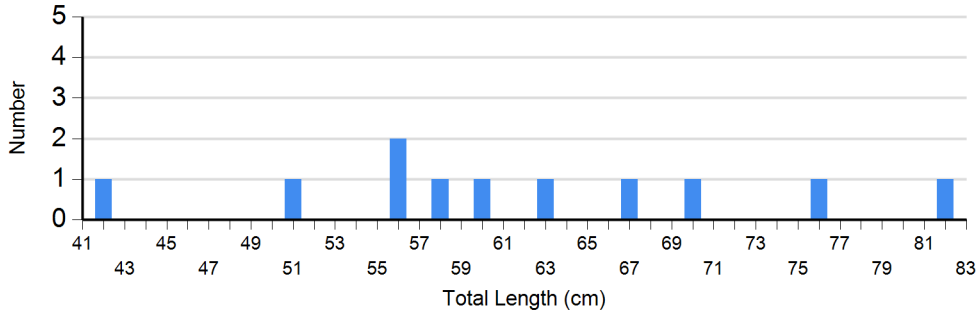
Species: Black Crappie
Gear: std frame net (3/8 inch)



Species: Northern Pike
 Gear: std exp gill net

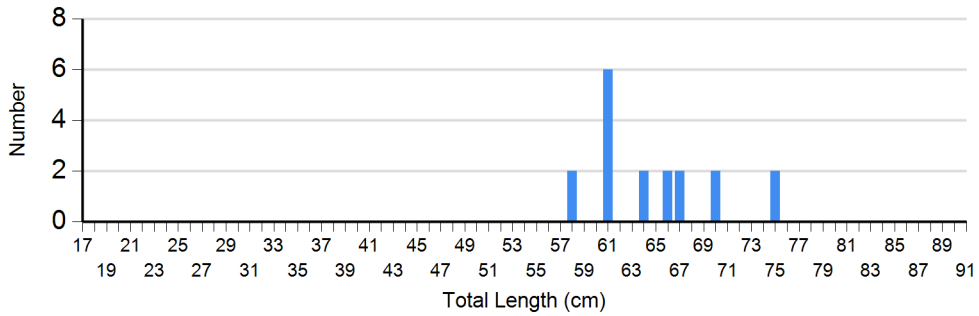


2016

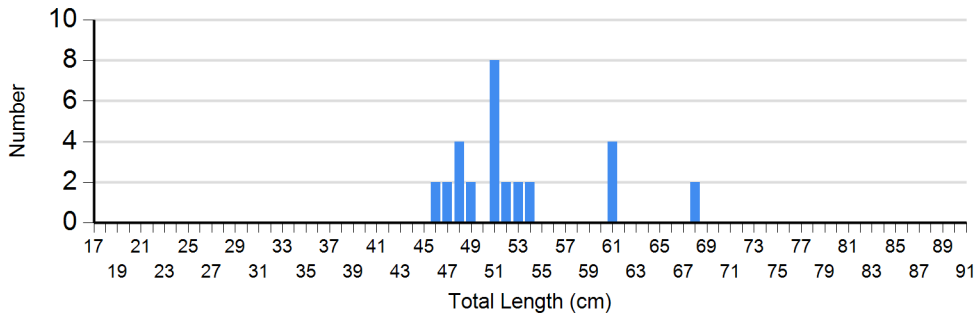


2017

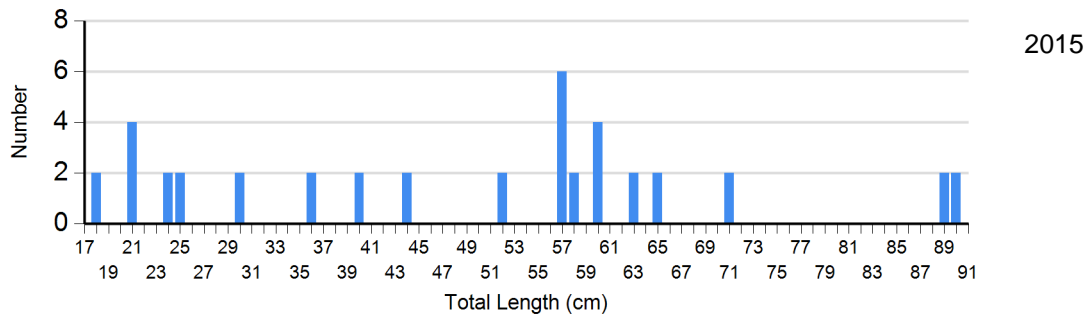
Species: Northern Pike
 Gear: std exp gill net (150 ft)



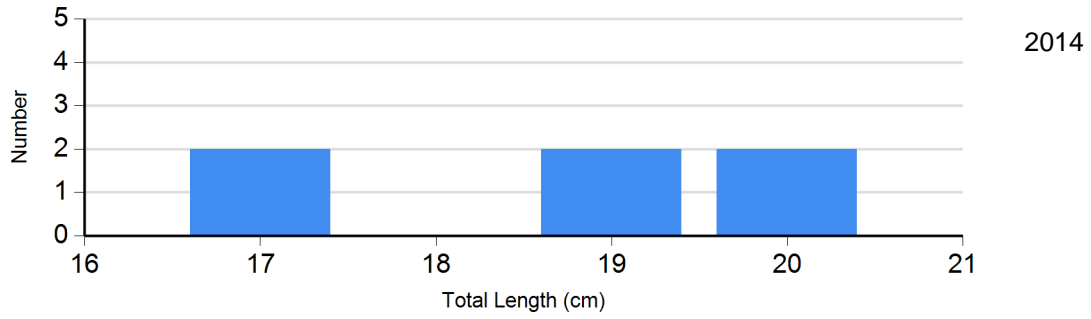
2013



2014



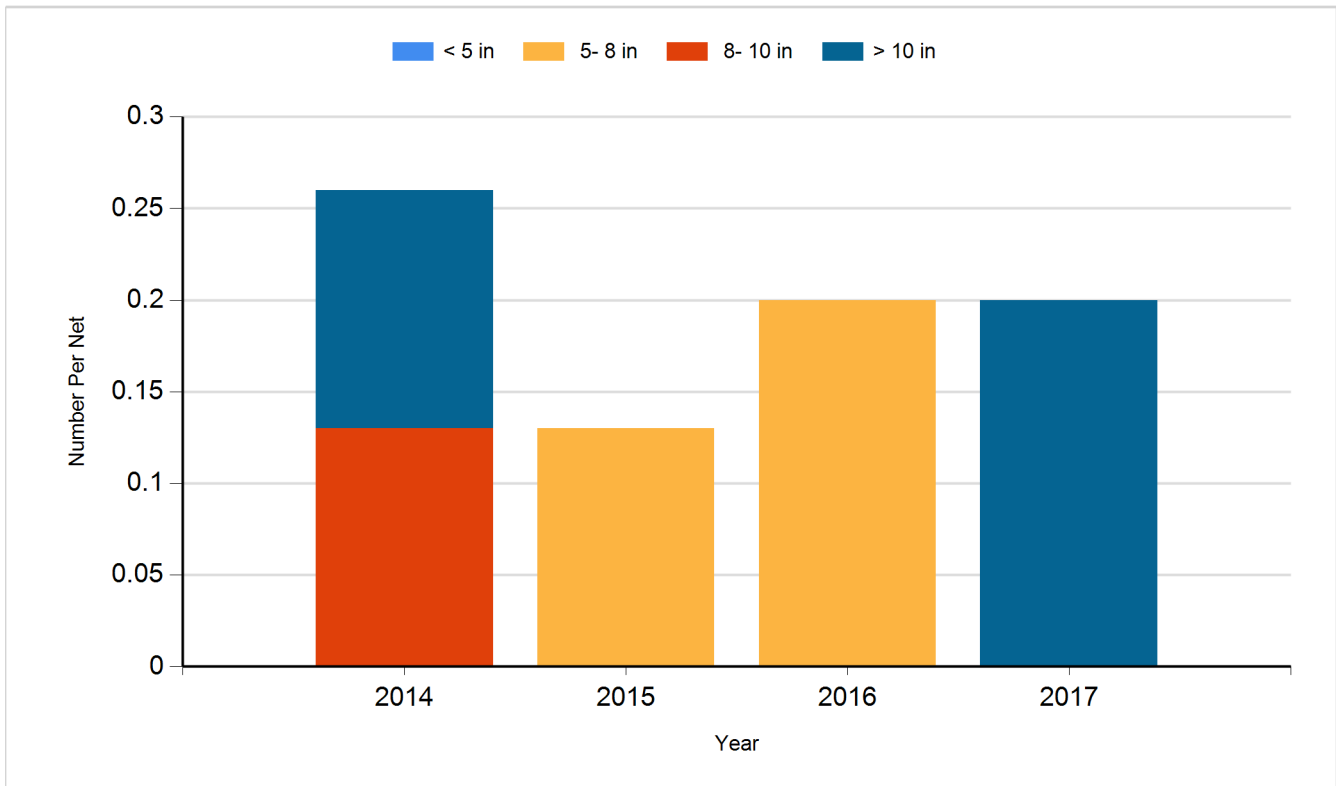
Species: Yellow Perch
 Gear: std exp gill net (150 ft)



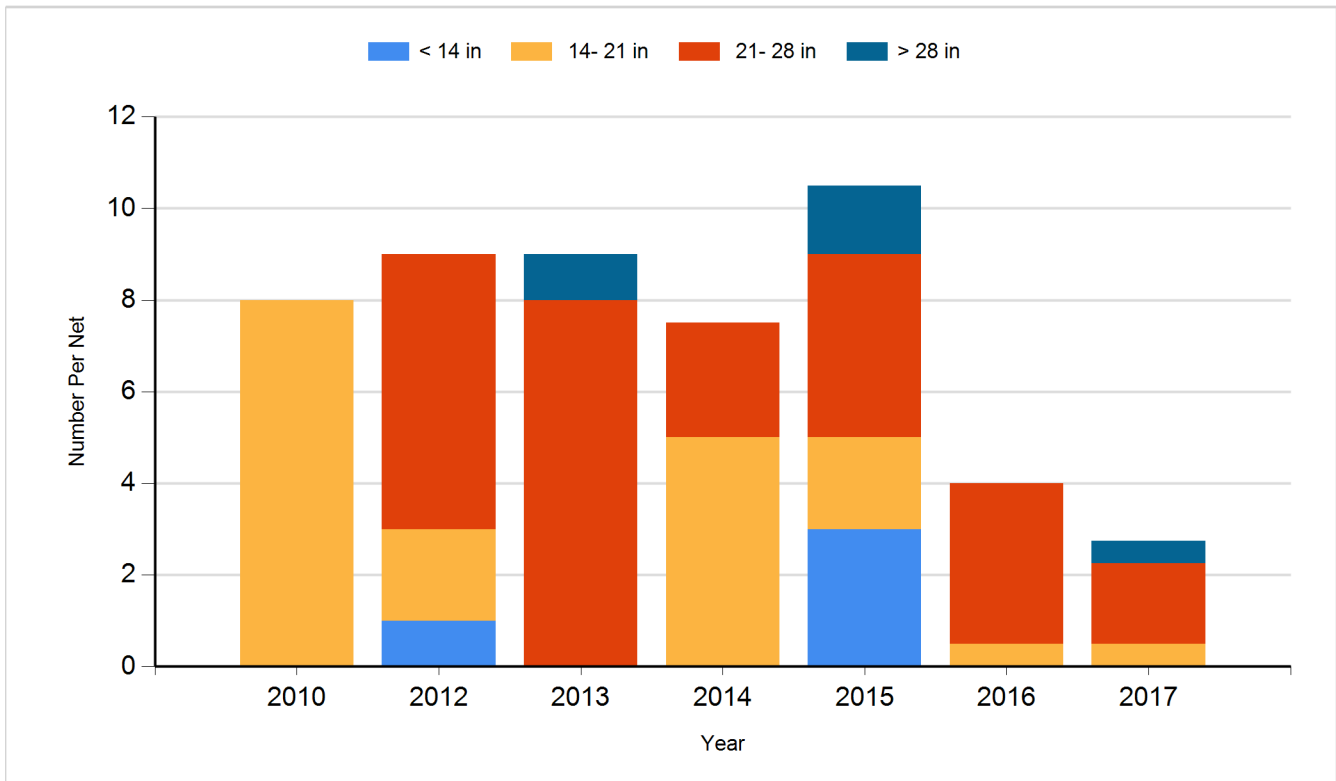
Historic Fish Sizes and Relative Abundance

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

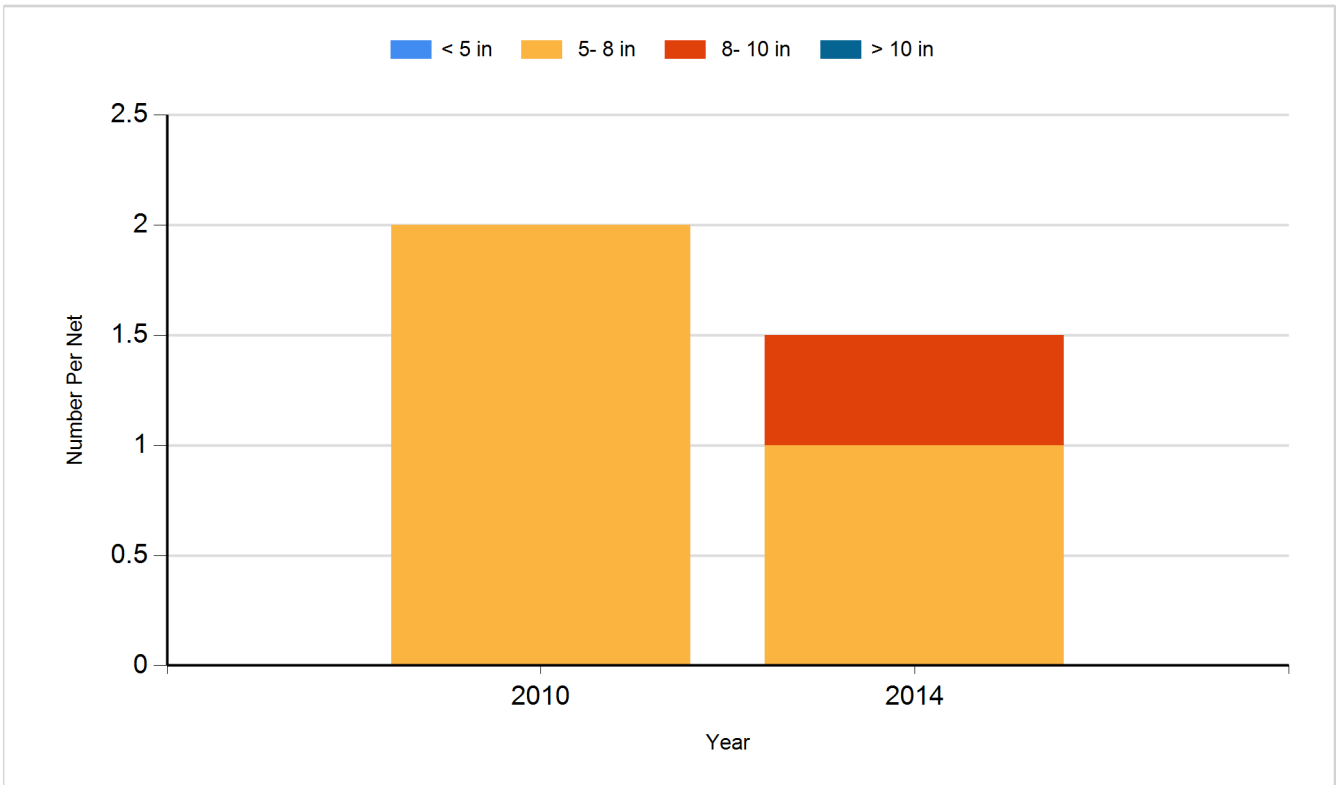
Species: Black Crappie
Gear: Frame Net



Species: Northern Pike
Gear: Gill Net



Species: Yellow Perch
Gear: Gill Net



Fish Stocking

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

Year	Species	Size	Number
2009	Yellow Perch	Adult	250
2010	Largemouth Bass	Fingerling	5,560
2010	Northern Pike	Fry	97,600
2012	Bluegill	Adult	835
2012	Largemouth Bass	Adult	320
2012	Yellow Perch	Adult	572
2014	Largemouth Bass	Juvenile	250
2014	Yellow Perch	Adult	800
2017	Black Crappie	Adult	200
2017	Bluegill	Adult	25
2017	Yellow Perch	Adult	25