

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Francis Case, Charles Mix County
FTR-Lake-6327-000
2018

Lake Information

Name: Francis Case
County: Charles Mix
Surface Area: 88,007 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS gill net (1/2 inch)	Sep 04, 2018	21 net-nights
AFS gill net (1/2 inch)	Sep 06, 2018	17 net-nights
AFS gill net (1/2 inch)	Sep 10, 2018	20 net-nights
AFS gill net (1/2 inch)	Sep 13, 2018	23 net-nights
AFS std gill net	Sep 04, 2018	21 net-nights
AFS std gill net	Sep 06, 2018	17 net-nights
AFS std gill net	Sep 10, 2018	20 net-nights
AFS std gill net	Sep 13, 2018	23 net-nights
boat shocker (night)	Jun 04, 2018	2700 seconds
boat shocker (night)	Jun 05, 2018	2700 seconds
boat shocker (night)	May 29, 2018	2700 seconds
boat shocker (night)	May 30, 2018	2700 seconds
boat shocker (night)	May 31, 2018	2700 seconds
fall night EF-WAE	Oct 15, 2018	3668 seconds
fall night EF-WAE	Oct 17, 2018	3734 seconds
fall night EF-WAE	Oct 25, 2018	3615 seconds
large seine	Jul 16, 2018	16 hauls
large seine	Jul 18, 2018	12 hauls

Common Fish Species Present

Gizzard Shad

Smallmouth Bass

Walleye

Sauger

Emerald Shiner

White Bass

Channel Catfish

Spottail Shiner

Yellow Perch

Freshwater Drum

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.
- **std 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.

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

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)
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

Gear	Species	Sample Size (n)	Abundance		Stock Density Indices			Condition		
			CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
AFS gill net (1/2 inch)*	Black Crappie	2	0.0	0.0	0		0		163	112
	Channel Catfish	1	0.0	0.0	0		0		70	
	Common Carp	1	0.0	0.0	0		0		80	
	Emerald Shiner	1	0.0	0.0						
	Freshwater Drum	24	0.3	0.1	0		0		116	17
	Gizzard Shad	31	0.4	0.2	0				90	5
	Goldeye	3	0.0	0.0						
	Sauger	36	0.4	0.1	50		50		85	2
	Shortnose Gar	1	0.0	0.0						
	Smallmouth Bass	1	0.0	0.0	0		0		85	
	Spottail Shiner	19	0.2	0.1						
	Walleye	109	1.3	0.3	0		0		90	5
	White Bass	7	0.1	0.1	0		0		94	3
	Yellow Perch	38	0.5	0.2	5		0		93	4
AFS std gill net	Bigmouth Buffalo	3	0.0	0.0	100		100		82	5
	Black Bullhead	1	0.0	0.0	0		0		91	
	Channel Catfish	272	3.1	0.3	60	4	7	2	81	1
	Common Carp	64	0.8	0.1	92	5	5		83	1
	Freshwater Drum	89	1.1	0.2	81	6	22	6	89	1
	Gizzard Shad	8	0.1	0.1	100				100	4
	Goldeye	47	0.0	0.0						
	Largemouth Bass	1	0.0	0.0	0		0			
	Paddlefish	1	0.0	0.0	100		100			
	River Carpsucker	16	0.2	0.1	100		94		100	3
	Sauger	121	1.4	0.2	74	6	36	6	78	1
	Shorthead Redhorse	2	0.0	0.0	100		100		97	1
	Shortnose Gar	16	0.0	0.0						
	Shovelnose Sturgeon	4	0.0	0.0						
	Smallmouth Bass	33	0.4	0.3	73	12	33	13	106	2
	Smallmouth Buffalo	12	0.1	0.1	75		67		77	5
Walleye	313	3.6	0.6	38	4	3	1	83	0	

Gear	Species	Sample Size (n)	Abundance		Stock Density Indices			Condition		
			CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
AFS std gill net	White Bass	50	0.6	0.2	88	7	86	8	100	2
	Yellow Perch	18	0.2	0.1	17		0		90	3
boat shocker (night)	Smallmouth Bass	395	89.9	13.1	59	3	18	2	94	1
fall night EF-WAE*	Sauger	103	34.2	19.6						
	Walleye	263	86.8	34.1						
large seine*	Black Crappie	2	0.1	0.0						
	Bluntnose Minnow	2	0.1	0.0						
	Channel Catfish	2	0.1	0.0						
	Common Carp	6	0.2	0.0						
	Emerald Shiner	417	14.9	0.1						
	Flathead Chub	6	0.2	0.0						
	Freshwater Drum	10	0.4	0.0						
	Gizzard Shad	24114	861.2	7.6						
	Goldeye	6	0.2	0.0						
	Johnny Darter	9	0.3	0.0						
	Lake Herring	20	0.7	0.0						
	Largemouth Bass	2	0.1	0.0						
	Red Shiner	2	0.1	0.0						
	Sauger	10	0.4	0.2						
	Smallmouth Bass	180	6.4	0.1						
	Smallmouth Buffalo	1	0.0	0.0						
	Spotfin Shiner	1	0.0	0.0						
	Spottail Shiner	48	1.7	0.1						
	Walleye	18	0.6	0.3						
	Western Mosquitofish	1	0.0	0.0						
	Western Silvery Minnow	32	1.1	0.1						
	White Bass	98	3.5	0.1						
	White Crappie	4	0.1	0.0						
	Yellow Perch	44	1.6	0.0						

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.

Gear	Species	CPUE										Avg	
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
AFS gill net (1/2 inch)	Black Crappie										0.0	0.0	
	Channel Catfish										0.1	0.0	0.1
	Common Carp										0.2	0.0	0.1
	Emerald Shiner										0.0	0.0	0.0
	Freshwater Drum										0.2	0.3	0.3
	Gizzard Shad										1.2	0.4	0.8
	Goldeye										0.2	0.0	0.1
	Sauger										0.2	0.4	0.3
	Shortnose Gar											0.0	0.0
	Silverband Shiner										0.0		0.0
	Smallmouth Bass											0.0	0.0
	Spottail Shiner										0.1	0.2	0.2
	Walleye										0.8	1.3	1.1
	White Bass										0.1	0.1	0.1
Yellow Perch										0.1	0.5	0.3	
AFS std gill net	Bigmouth Buffalo										0.0	0.0	0.0
	Black Bullhead											0.0	0.0
	Channel Catfish										3.7	3.1	3.4
	Common Carp										1.1	0.8	1.0
	Freshwater Drum										1.4	1.1	1.3
	Gizzard Shad										0.8	0.1	0.5
	Goldeye										0.0	0.0	0.0
	Lake Herring										0.0		0.0
	Largemouth Bass											0.0	0.0
	Paddlefish											0.0	0.0
	River Carpsucker										0.1	0.2	0.2
	Sauger										1.7	1.4	1.6
	Shorthead Redhorse										0.0	0.0	0.0
	Shortnose Gar										0.0	0.0	0.0
	Shovelnose Sturgeon											0.0	0.0
	Smallmouth Bass										1.2	0.4	0.8
	Smallmouth Buffalo										0.3	0.1	0.2
	Walleye										4.3	3.6	4.0
	White Bass										1.4	0.6	1.0

CPUE

Gear	Species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Avg
AFS std gill net	Yellow Perch									0.4	0.2	0.3
boat shocker (night)	Smallmouth Bass	68.0	181.6	73.6	80.7	66.7	86.0	68.9	118.4	109.9	89.9	94.4
fall night EF-WAE	Sauger										34.2	34.2
	Walleye										86.8	86.8
large seine	Black Crappie										0.1	0.1
	Bluntnose Minnow										0.1	0.1
	Channel Catfish										0.1	0.1
	Common Carp										0.2	0.2
	Emerald Shiner										14.9	14.9
	Flathead Chub										0.2	0.2
	Freshwater Drum										0.4	0.4
	Gizzard Shad										861.2	861.2
	Goldeye										0.2	0.2
	Johnny Darter										0.3	0.3
	Lake Herring										0.7	0.7
	Largemouth Bass										0.1	0.1
	Red Shiner										0.1	0.1
	Sauger										0.4	0.4
	Smallmouth Bass										6.4	6.4
	Smallmouth Buffalo										0.0	0.0
	Spotfin Shiner										0.0	0.0
	Spottail Shiner										1.7	1.7
	Walleye										0.6	0.6
	Western Mosquitofish										0.0	0.0
	Western Silvery Minnow										1.1	1.1
	White Bass										3.5	3.5
	White Crappie										0.1	0.1
	Yellow Perch										1.6	1.6
std exp gill net	Bigmouth Buffalo						0.1					0.1
	Black Bullhead		0.4	0.1								0.3
	Black Crappie			0.1	0.1	0.0	0.0	0.0				0.0
	Bluegill						0.0					0.0
	Brown Trout			0.0								0.0
	Channel Catfish	4.4	3.9	2.5	2.8	3.1	3.2	4.7	5.3			3.7
	Chinook Salmon			0.0								0.0
	Common Carp	1.0	0.7	1.0	1.8	1.3	1.0	1.8	2.0			1.3
	Flathead Catfish		0.1									0.1

		CPUE										
Gear	Species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Avg
std exp gill net	Freshwater Drum	0.3	0.2	0.2	0.5	0.7	0.4	0.2	0.3			0.4
	Gizzard Shad	0.1	0.2	0.4	0.1	0.6	0.0	0.3	4.4			0.8
	Goldeye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
	Lake Herring		0.0					0.0	0.0			0.0
	Northern Pike	0.1	0.4	0.4	0.4	0.1		0.1	0.0			0.2
	Orangespotted Sunfish		0.0									0.0
	River Carpsucker	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1			0.1
	Sauger	1.9	4.0	7.2	7.4	5.9	5.4	3.7	4.1			5.0
	Shorthead Redhorse	0.1	0.3	0.3	0.2	0.3	0.2	0.3	0.2			0.2
	Shortnose Gar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
	Shovelnose Sturgeon					0.0						0.0
	Smallmouth Bass	0.6	0.6	0.8	0.6	0.2	0.2	1.0	0.1			0.5
	Smallmouth Buffalo	0.1	0.0		0.0	0.0	0.1	0.1	0.1			0.1
	Spottail Shiner		0.0	0.0					0.0			0.0
	Walleye	10.0	14.9	11.9	9.4	5.8	6.2	3.9	5.0			8.4
	Western Silvery Minnow					0.0						0.0
	White Bass	0.5	0.0	0.5	0.1	0.3	0.1	0.2	0.8			0.3
	White Crappie	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1			0.0
Yellow Perch	0.3	4.7	3.6	1.4	0.4	0.8	0.9	1.2			1.7	

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											
			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
AFS gill net (1/2 inch)	Channel Catfish	PSD										0	0	
		PSD-P										0	0	
		Wr										87	70	
	Sauger	PSD											75	50
		PSD-P											50	50
		Wr											83	85
	Smallmouth Bass	PSD												0
		PSD-P												0
		Wr												85
	Walleye	PSD											14	0
		PSD-P											0	0
		Wr											91	90
	White Bass	PSD											0	0
		PSD-P											0	0
		Wr											102	94
	Yellow Perch	PSD											9	5
		PSD-P											0	0
		Wr											90	93
AFS std gill net	Channel Catfish	PSD										59	60	
		PSD-P										5	7	
		Wr											80	81
	Sauger	PSD											86	74
		PSD-P											49	36
		Wr											77	78
	Smallmouth Bass	PSD											70	73
		PSD-P											18	33
		Wr											104	106
	Walleye	PSD											63	38
		PSD-P											5	3
		Wr											81	83
	White Bass	PSD											99	88
		PSD-P											80	86
		Wr											97	100

Gear	Species	Index	Year										
			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
AFS std gill net	Yellow Perch	PSD										51	17
		PSD-P										3	0
		Wr										83	90
boat shocker (night)	Smallmouth Bass	PSD	48	56	30	42	44	41	37	46	45	59	
		PSD-P	7	11	17	7	12	12	12	16	14	18	
		Wr	94			84		91	92	97	91	94	
std exp gill net	Channel Catfish	PSD	35	60	63	43	51	43	46	52			
		PSD-P	0	0	1	1	0	3	2	3			
		Wr	81	81	85	84	84	81	79	83			
	Sauger	PSD	82	38	70	73	65	73	74	78			
		PSD-P	25	15	26	35	16	19	32	29			
		Wr	77	82	77	74	73	76	76	80			
	Smallmouth Bass	PSD	65	12	76	47	40	29	62	67			
		PSD-P	6	0	19	33	0	0	12	0			
		Wr	117	104	108	107	97	109	100	110			
	Walleye	PSD	46	47	44	40	20	33	60	46			
		PSD-P	1	1	2	9	4	2	9	4			
		Wr	81	88	83	82	82	84	84	86			
	White Bass	PSD	100	0	92	100	100	100	100	50			
		PSD-P	86	0	69	50	89	100	100	27			
		Wr	100		97	105	102	103	97	107			
	Yellow Perch	PSD	33	26	22	28	8	22	8	21			
		PSD-P	0	3	0	5	8	0	0	3			
		Wr	81	83	85	84	82	84	79	80			

Back-Calculated Lengths

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

Species: Smallmouth Bass

Year Class	Age	N	Mean back-calculated length (SE) at age																	
			1	2	3	4	5	6	7	8	9	10								
2017	1	23	126 (3)																	
2016	2	96	86 (1.2)	212 (3.1)																
2015	3	119	92 (1.1)	203 (3.5)	292 (3.5)															
2014	4	65	87 (1.2)	189 (4.5)	286 (3.8)	339 (3.5)														
2013	5	12	97 (6.2)	189 (14.8)	278 (11.9)	347 (7.6)	379 (7.5)													
2012	6	4	93 (3.6)	150 (18.8)	263 (17.2)	316 (32.5)	375 (19.6)	385 (23.3)												
Weighted Mean		319	92	202	289	339	378	385												
Year Class	Age	N	11	12	13	14	15	16	17	18	19	20								
2017	1	23																		
2016	2	96																		
2015	3	119																		
2014	4	65																		
2013	5	12																		
2012	6	4																		
Weighted Mean		319																		

Length at Capture

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

Species: Channel Catfish

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2016	152	100 (1)	226 (5)	302 (12)	324 (7)	351 (14)	395 (21)	416 (26)	425 (11)	487 (12)	535 (41)
2011	70		270 (5)	311 (8)	337 (10)	377 (6)	416 (5)	463 (6)	492 (6)	506 (9)	525 (16)
2010	108	187 (2)	292 (4)	333 (15)	383 (11)	406 (18)	449 (16)	448 (14)	460 (7)	475 (5)	513 (14)
2009	134		237 (6)	285 (19)	336 (30)	362 (10)	381 (21)	416 (15)	425 (6)	444 (4)	484 (23)

Species: Sauger

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2018	109	305 (39)	367 (29)	390 (19)	409 (14)	465 (4)		384 (3)		541 (1)	
2017	140	305 (41)	368 (40)	403 (42)	451 (8)	450 (6)	450 (2)	404 (2)			
2016	110	295 (37)	355 (38)	405 (13)	388 (9)	406 (10)	435 (2)	479 (1)			
2015	98	258 (25)	360 (33)	363 (5)	396 (26)	430 (4)	443 (4)				365 (1)
2014	177	261 (21)	293 (36)	350 (89)	390 (10)	400 (21)					
2013	159	237 (16)	300 (86)	371 (36)	402 (20)	433 (1)					
2012	199	267 (61)	360 (69)	405 (58)	459 (4)	455 (2)	440 (4)				462 (1)
2011	194	277 (73)	361 (99)	449 (8)	468 (9)	460 (2)	473 (3)				
2010	111	267 (88)	391 (10)	446 (7)	420 (5)	430 (1)					
2009	51	288 (12)	348 (28)	376 (8)	400 (3)						

Species: Smallmouth Bass

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2018	378	127 (27)	218 (110)	297 (148)	341 (77)	382 (12)	389 (4)				
2017	490	129 (14)	213 (273)	301 (137)	360 (42)	392 (17)	443 (6)	425 (1)			
2016	590	121 (66)	199 (253)	289 (176)	348 (58)	390 (17)	414 (15)	424 (3)	413 (1)	484 (1)	
2015	432	108 (84)	187 (210)	277 (63)	314 (44)	353 (22)	406 (8)	447 (1)			
2014	333	110 (43)	194 (98)	269 (104)	303 (71)	360 (14)	369 (2)				

Mean Length (expanded sample number) at capture by age

Year	N	1	2	3	4	5	6	7	8	9	10+
2013	307	128 (10)	182 (56)	234 (145)	316 (74)	344 (15)	404 (3)	417 (2)	440 (1)		
2012	475	123 (50)	197 (200)	279 (162)	318 (44)	389 (17)	415 (2)				
2011	308	118 (26)	217 (161)	281 (71)	362 (28)	396 (11)	422 (7)	437 (3)	473 (1)		
2010	298	111 (32)	177 (69)	284 (156)	344 (33)	399 (5)	414 (2)	434 (1)			
2009	299	104 (13)	202 (139)	297 (112)	339 (34)	383 (2)					

Species: Walleye

Mean Length (expanded sample number) at capture by age

Year	N	1	2	3	4	5	6	7	8	9	10+
2018	299	297 (143)	377 (80)	407 (30)	423 (26)		576 (2)	468 (9)	534 (2)	492 (3)	521 (4)
2017	346	295 (76)	378 (83)	405 (91)	448 (6)	445 (13)	472 (37)	464 (16)	470 (15)	443 (1)	538 (4)
2016	142	273 (38)	353 (47)	411 (7)	450 (13)	463 (26)	488 (7)	467 (3)			446 (1)
2015	135	237 (46)	334 (9)	394 (13)	398 (37)	466 (7)	474 (6)	484 (3)	496 (3)		509 (11)
2014	208	255 (11)	316 (36)	353 (89)	392 (27)	405 (31)	441 (3)	482 (1)	519 (2)	509 (5)	505 (3)
2013	175	232 (21)	312 (107)	376 (31)	430 (8)	469 (2)	533 (3)	526 (1)	526 (1)		504 (1)
2012	298	256 (114)	350 (76)	398 (48)	477 (10)	475 (5)	475 (7)	513 (26)	513 (8)	465 (1)	526 (3)
2011	345	269 (99)	369 (156)	417 (41)	446 (11)	456 (10)	462 (25)	446 (1)		483 (1)	615 (1)
2010	427	267 (178)	359 (77)	416 (35)	437 (68)	441 (58)	456 (6)	493 (2)		478 (2)	526 (1)
2009	296	240 (41)	318 (45)	368 (71)	392 (118)	415 (10)	425 (5)	562 (1)		454 (2)	576 (3)

Species: White Bass

Mean Length (expanded sample number) at capture by age

Year	N	1	2	3	4	5	6	7	8	9	10+
2009	16	189 (4)	312 (2)	358 (4)	361 (4)	372 (1)	335 (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+
2010	1				482 (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).

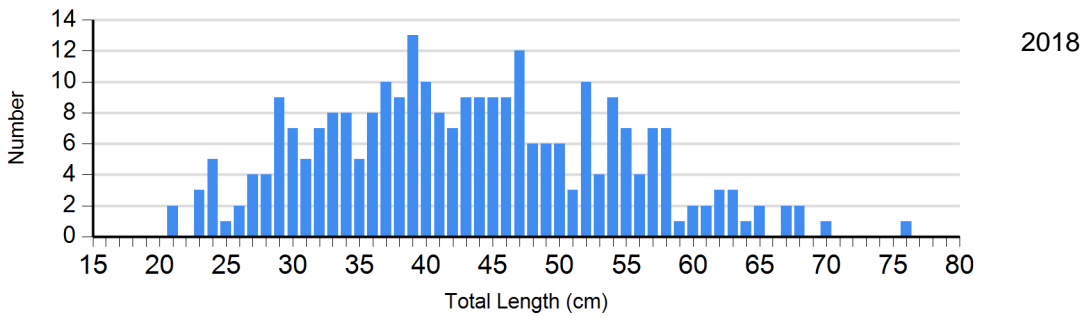
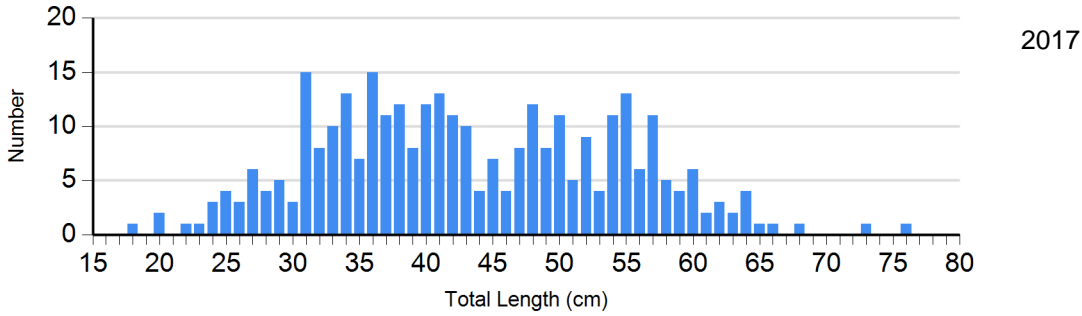
Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Channel Catfish Gill Net	2014	61	81 (0.9)	43	81 (1.3)	3	88 (8.1)	0	
	2015	68	81 (0.8)	56	77 (1.1)	2	79 (3.4)	0	
	2016	69	85 (2.0)	71	80 (1.0)	4	88 (3.1)	0	
	2017	123	81 (1.2)	162	80 (0.7)	14	79 (2.5)	2	87 (8.3)
	2018	103	81 (0.7)	135	81 (0.7)	16	87 (3.0)	1	90
Sauger Gill Net	2014	47	81 (3.5)	96	74 (0.6)	34	75 (0.9)	0	
	2015	26	76 (1.7)	41	77 (1.2)	31	74 (1.8)	1	74
	2016	25	83 (1.5)	54	80 (0.7)	32	76 (1.1)	1	83
	2017	19	79 (1.2)	53	78 (1.1)	68	76 (1.3)	0	
	2018	31	81 (1.0)	44	79 (0.8)	41	76 (0.8)	1	71
Smallmouth Bass Electro Fishing	2014	153	90 (1.0)	73	90 (1.1)	31	100 (1.5)	1	92
	2015	159	91 (0.9)	64	93 (1.6)	29	95 (1.8)	2	99 (18.2)
	2016	241	99 (3.2)	130	95 (0.6)	66	96 (0.9)	7	97 (4.7)
	2017	227	91 (1.0)	129	92 (0.9)	49	90 (1.3)	7	90 (2.3)
	2018	139	97 (1.7)	137	93 (0.6)	58	90 (1.3)	3	82 (1.8)
Walleye Gill Net	2014	136	85 (0.5)	64	81 (0.6)	4	71 (2.7)	0	
	2015	42	84 (0.9)	54	84 (1.0)	9	80 (1.9)	0	
	2016	73	86 (0.8)	57	87 (1.0)	6	80 (1.2)	0	
	2017	127	83 (0.4)	203	81 (0.4)	17	73 (1.7)	0	
	2018	183	83 (0.3)	101	83 (0.7)	10	75 (3.4)	0	
White Bass Gill Net	2014	0		0		4	103 (2.5)	0	
	2015	0		0		3	102 (2.2)	3	93 (2.8)

Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
White Bass Gill Net	2016	11	110 (1.9)	5	108 (1.3)	1	111	5	98 (2.8)
	2017	1	77	21	100 (1.4)	38	104 (1.4)	50	92 (1.3)
	2018	6	99 (4.0)	1	101	22	103 (1.5)	20	96 (2.9)
Yellow Perch Gill Net	2014	21	85 (1.8)	6	81 (2.2)	0		0	
	2015	23	79 (1.2)	2	79 (7.3)	0		0	
	2016	26	81 (2.7)	6	79 (2.2)	1	52	0	
	2017	17	86 (1.9)	17	79 (1.4)	1	91	0	
	2018	15	90 (2.8)	3	86 (6.8)	0		0	

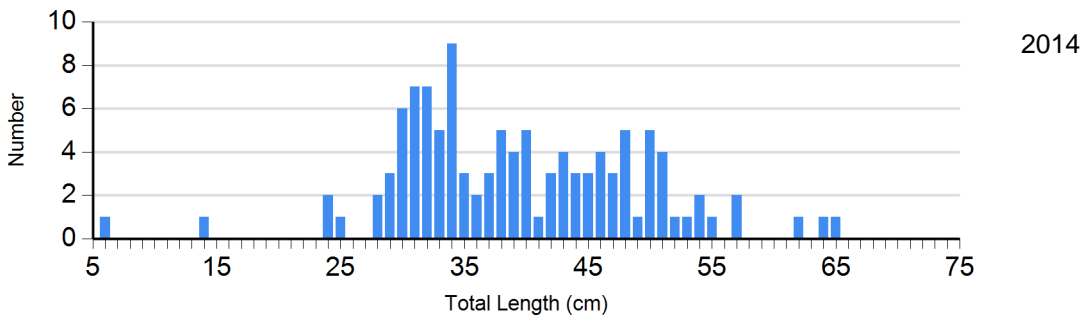
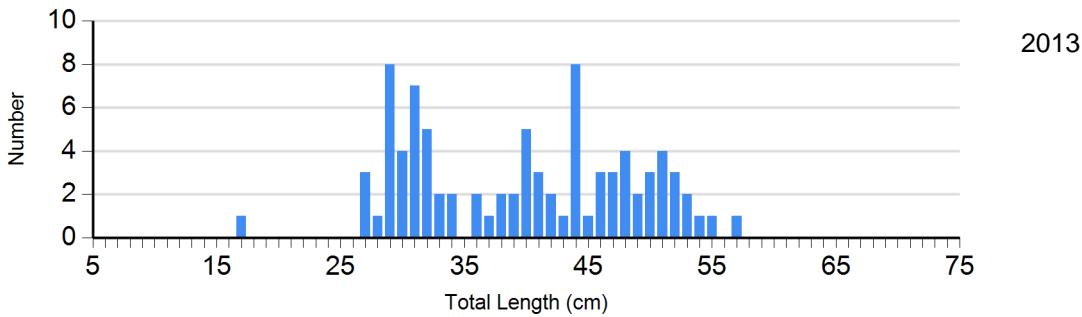
Length Frequency Distribution

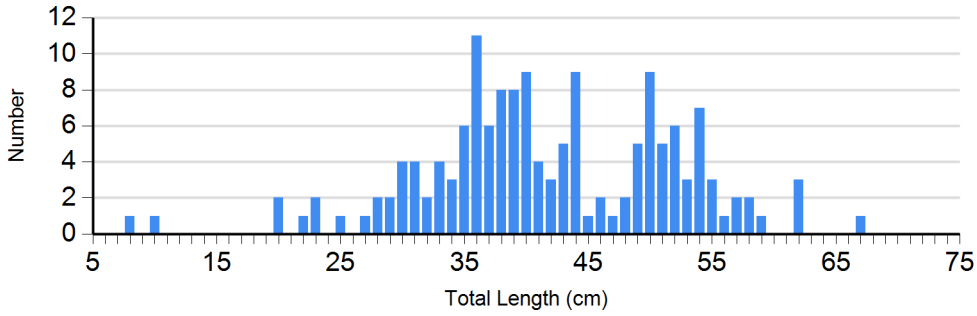
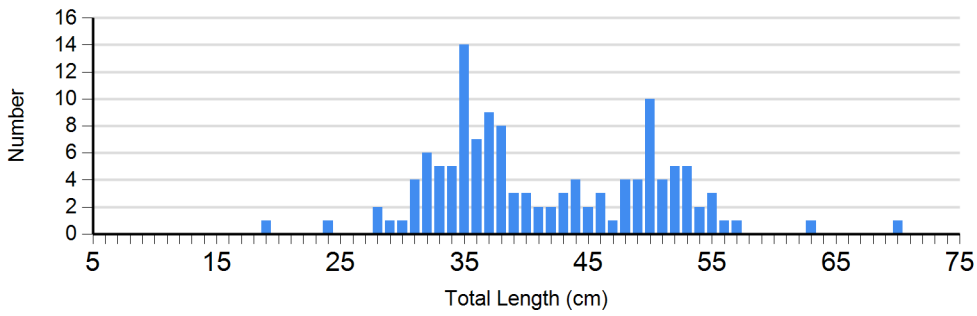
Length frequency histogram of species sampled by year.

Species: Channel Catfish
Gear: AFS std gill net

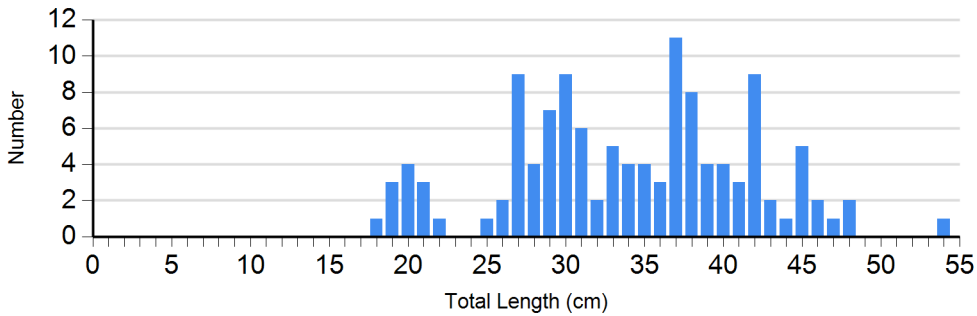
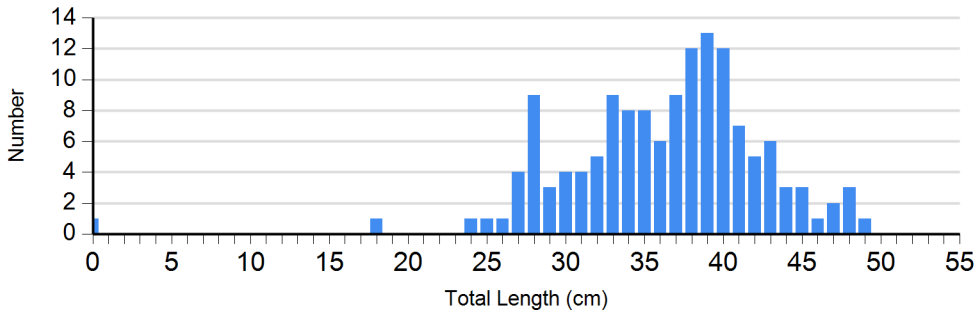


Species: Channel Catfish
Gear: std exp gill net

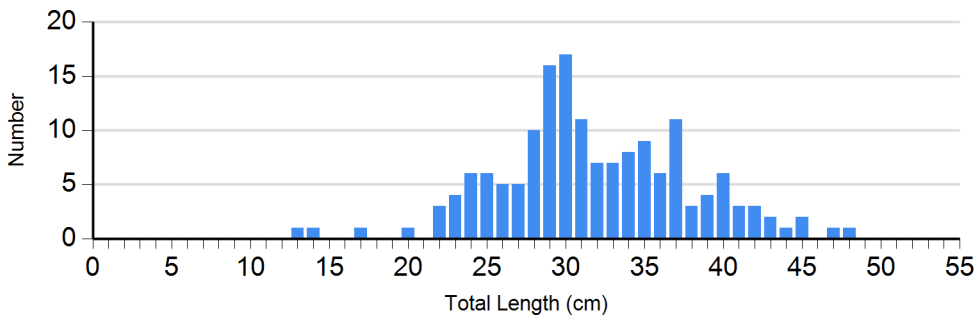


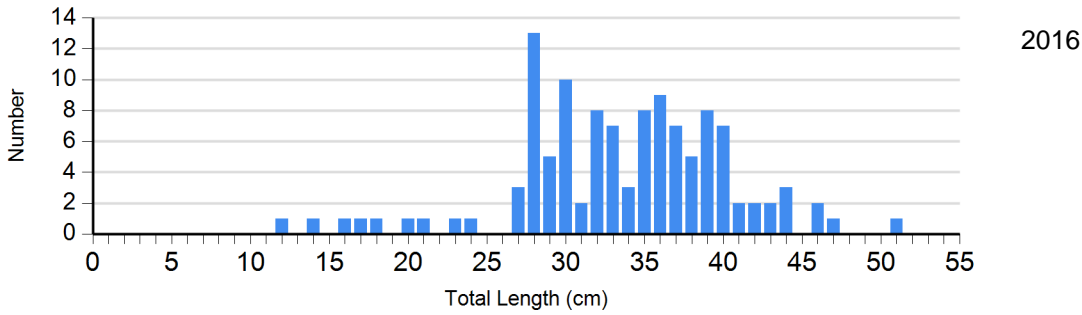
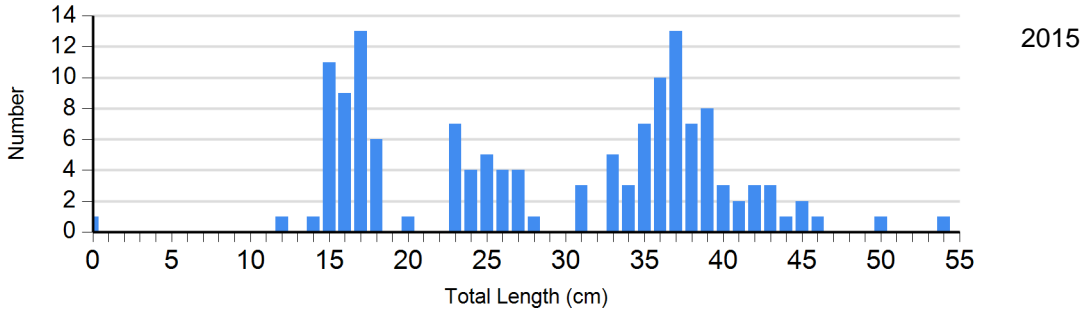
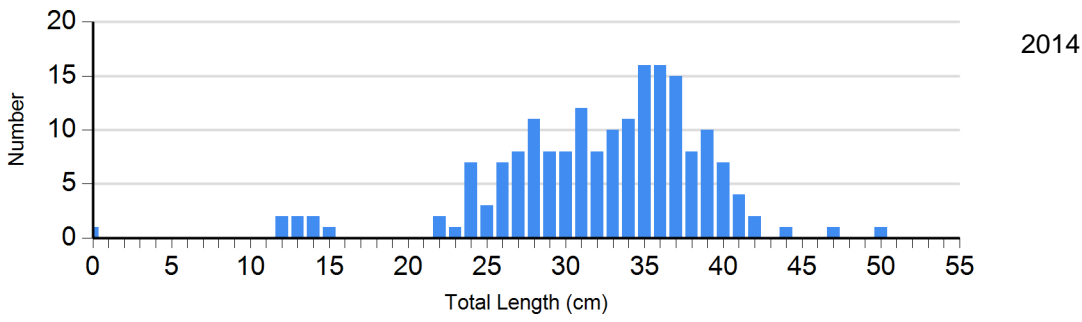


Species: Sauger
Gear: AFS std gill net

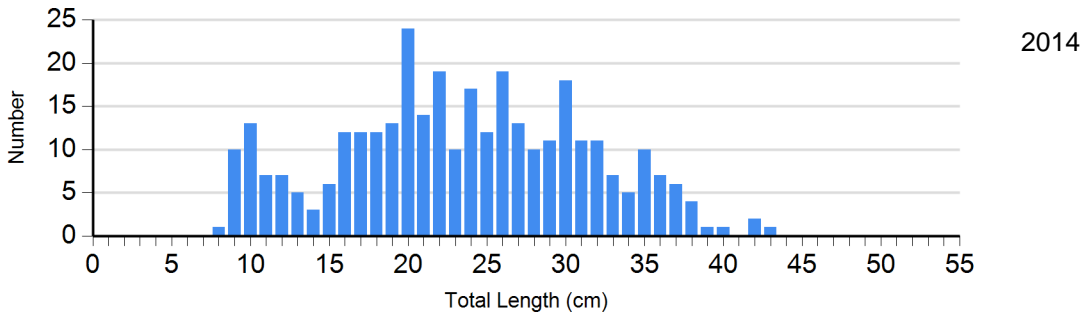
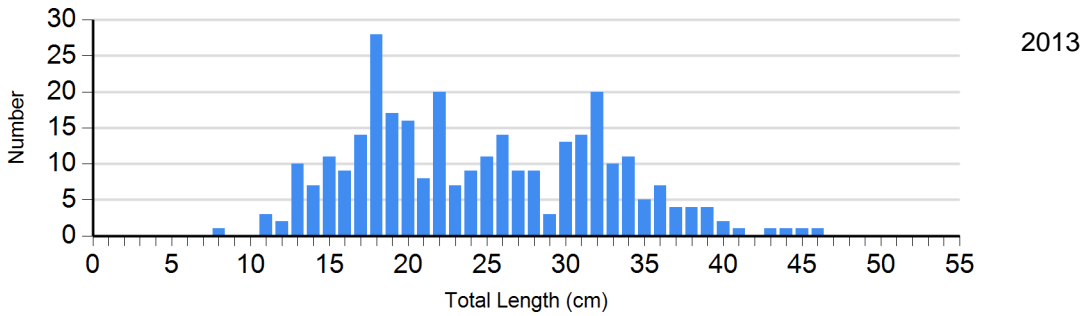


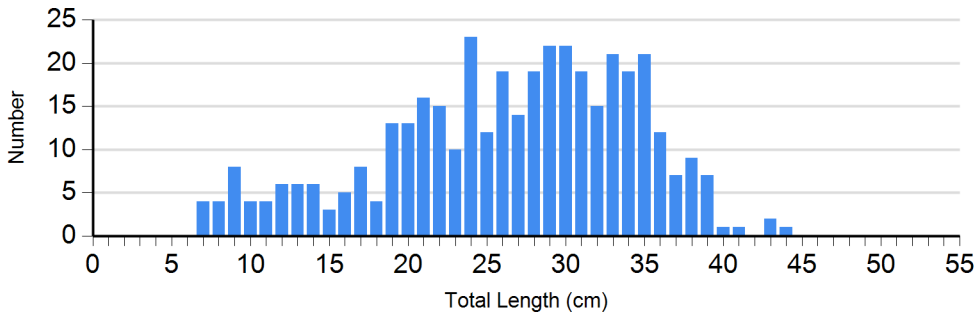
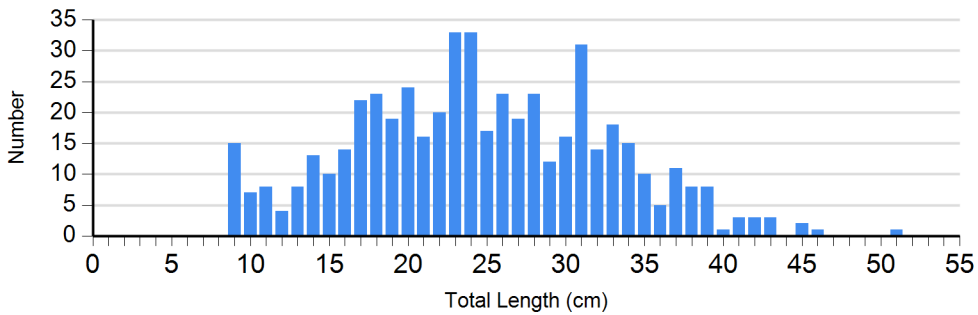
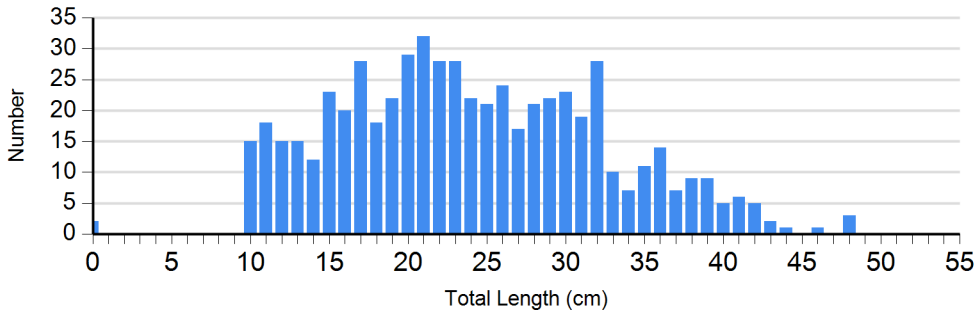
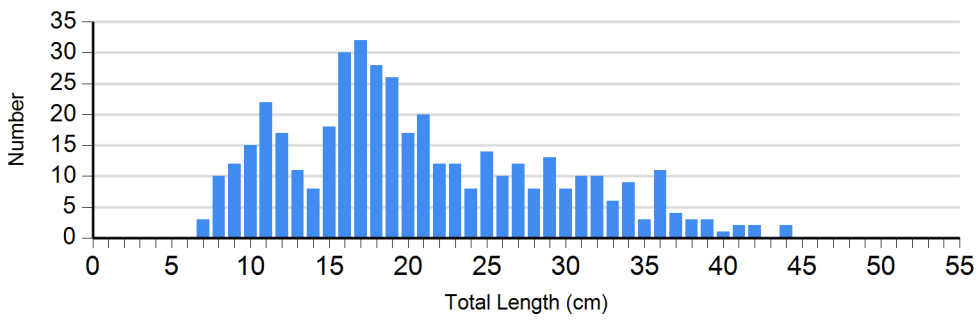
Species: Sauger
Gear: std exp gill net



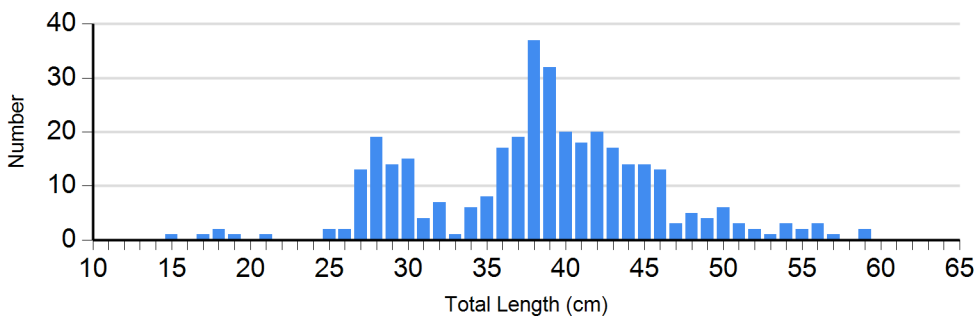


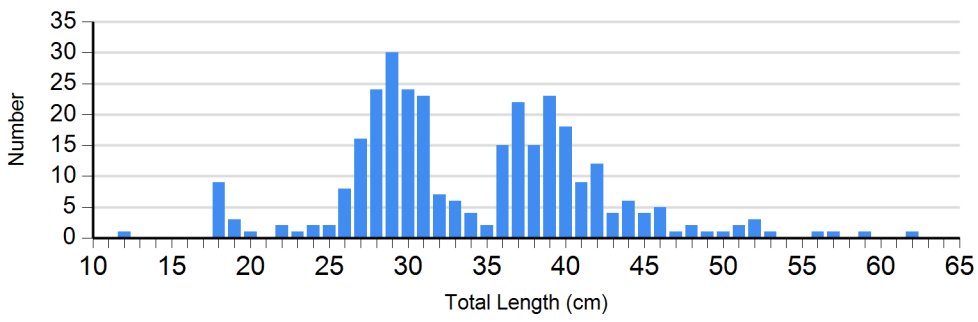
Species: Smallmouth Bass
 Gear: boat shocker (night)



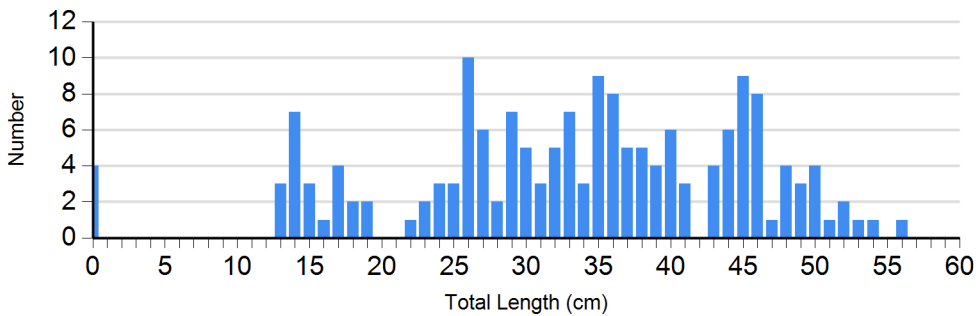
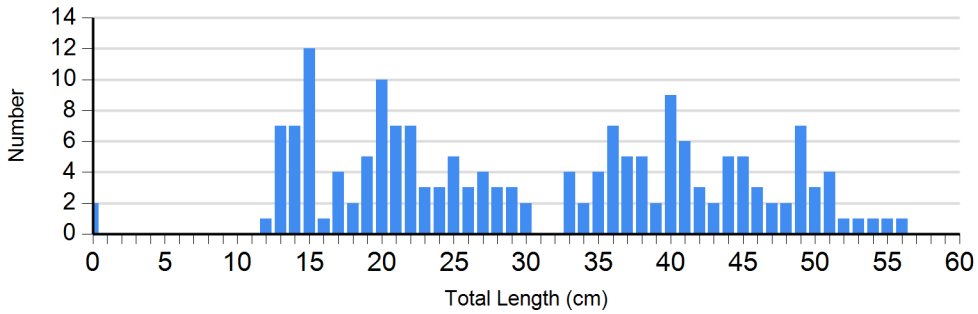
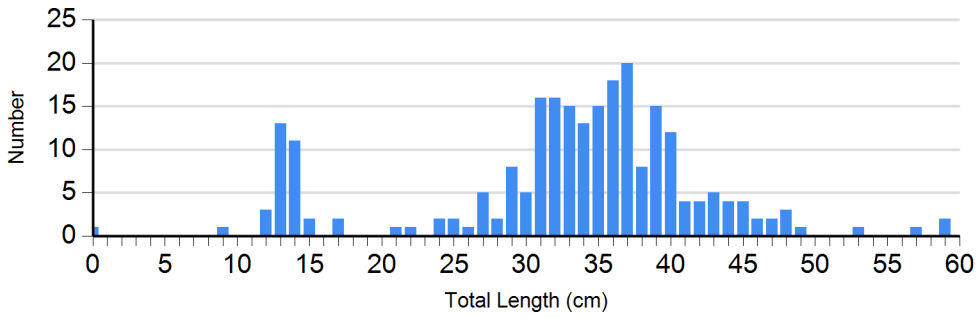
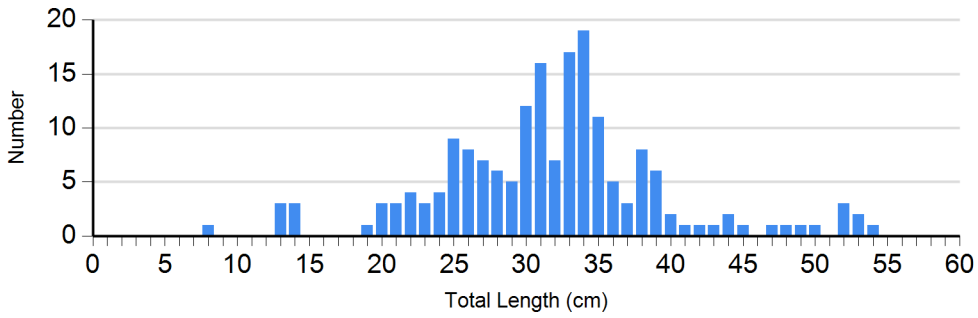


Species: Walleye
 Gear: AFS std gill net

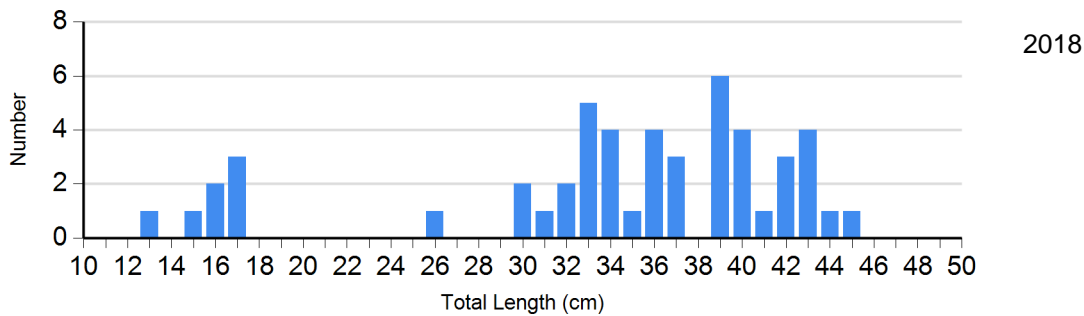
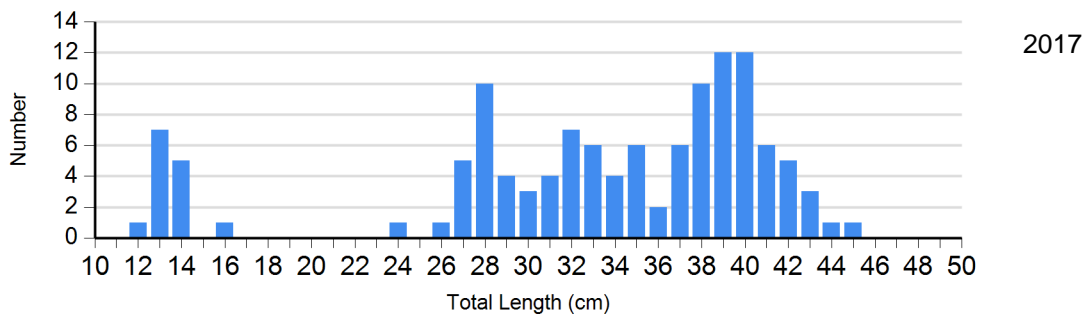




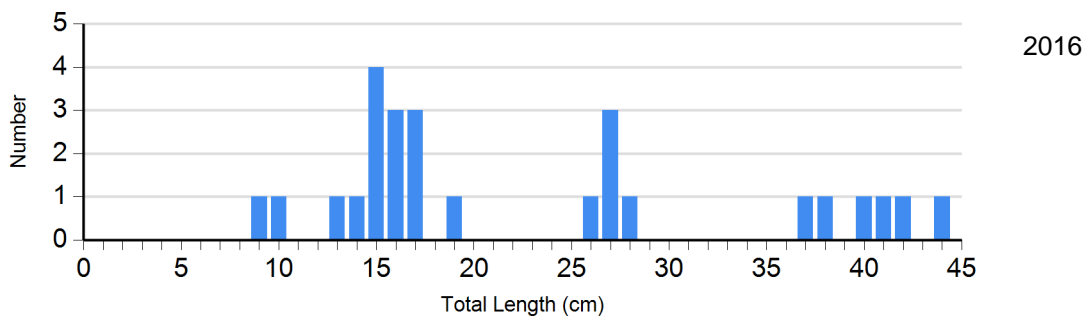
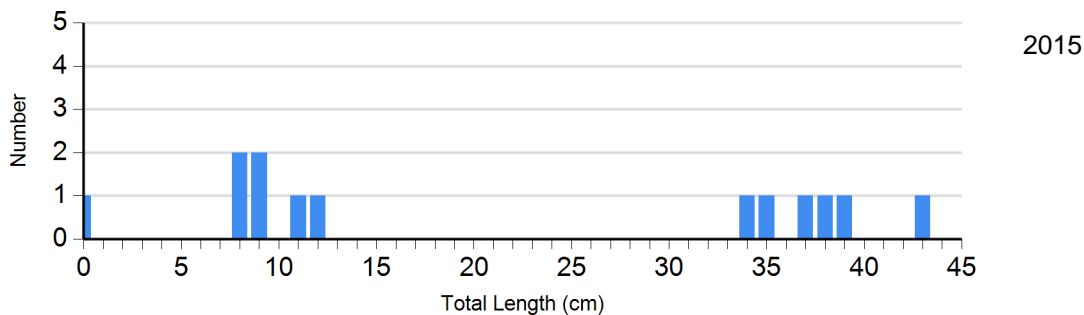
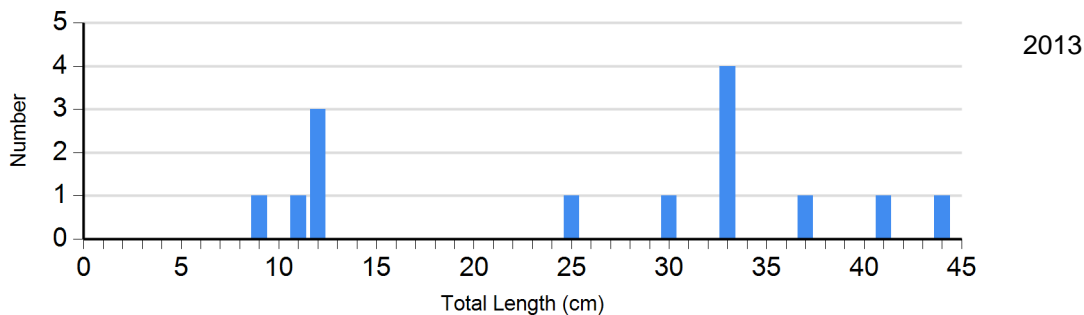
Species: Walleye
 Gear: std exp gill net



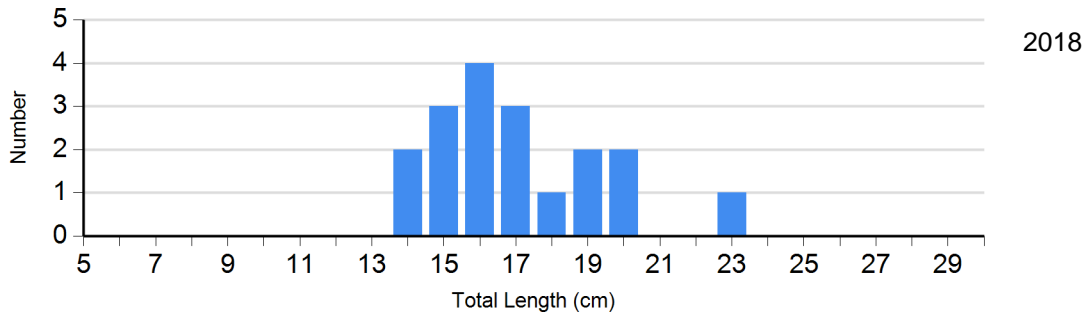
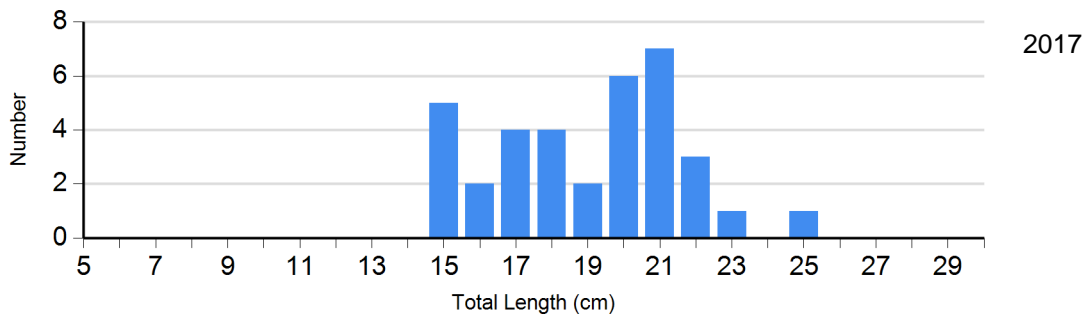
Species: White Bass
 Gear: AFS std gill net



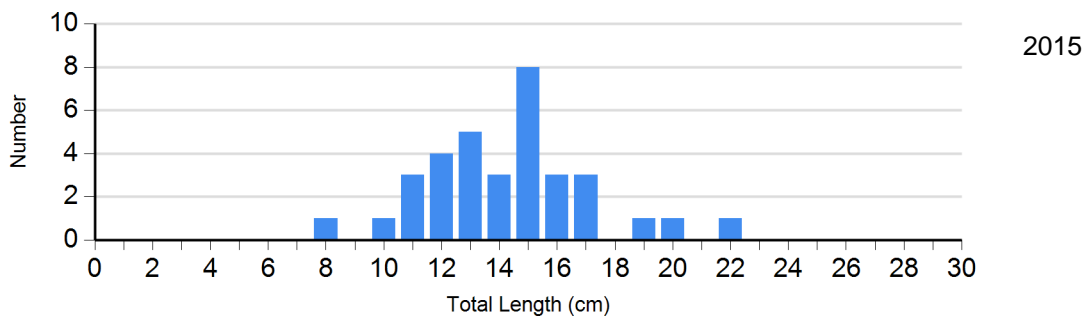
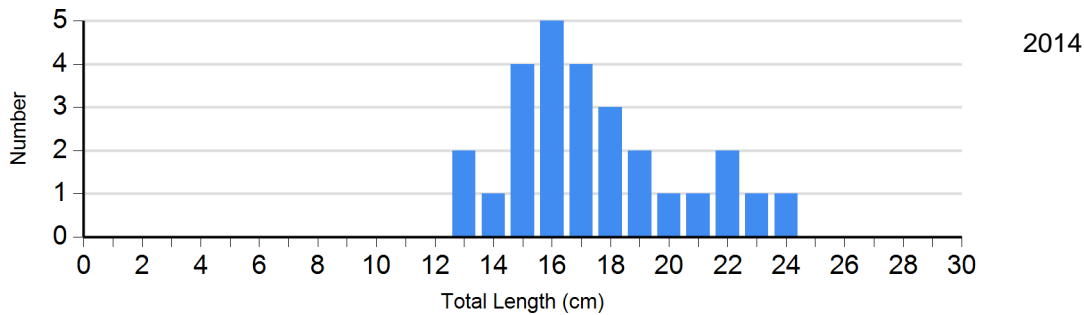
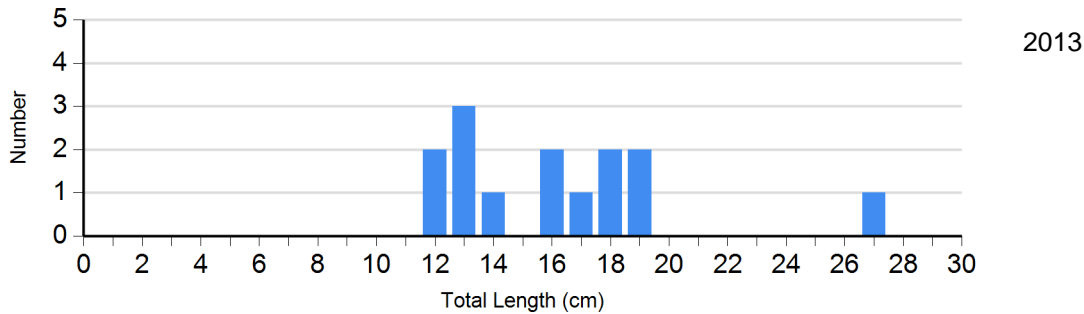
Species: White Bass
 Gear: std exp gill net

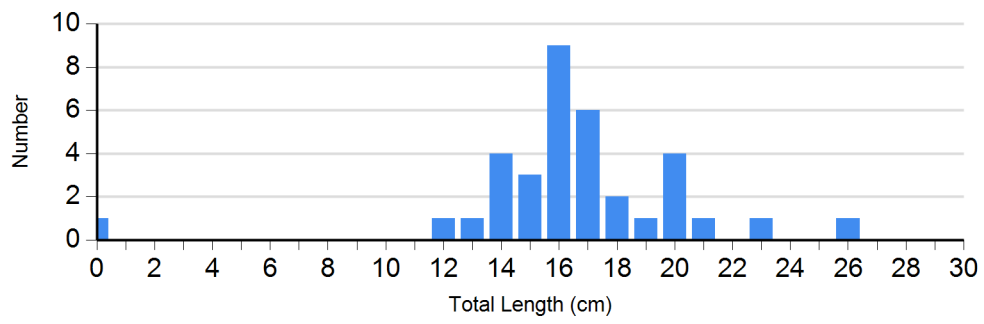


Species: Yellow Perch
Gear: AFS std gill net



Species: Yellow Perch
Gear: std exp gill net



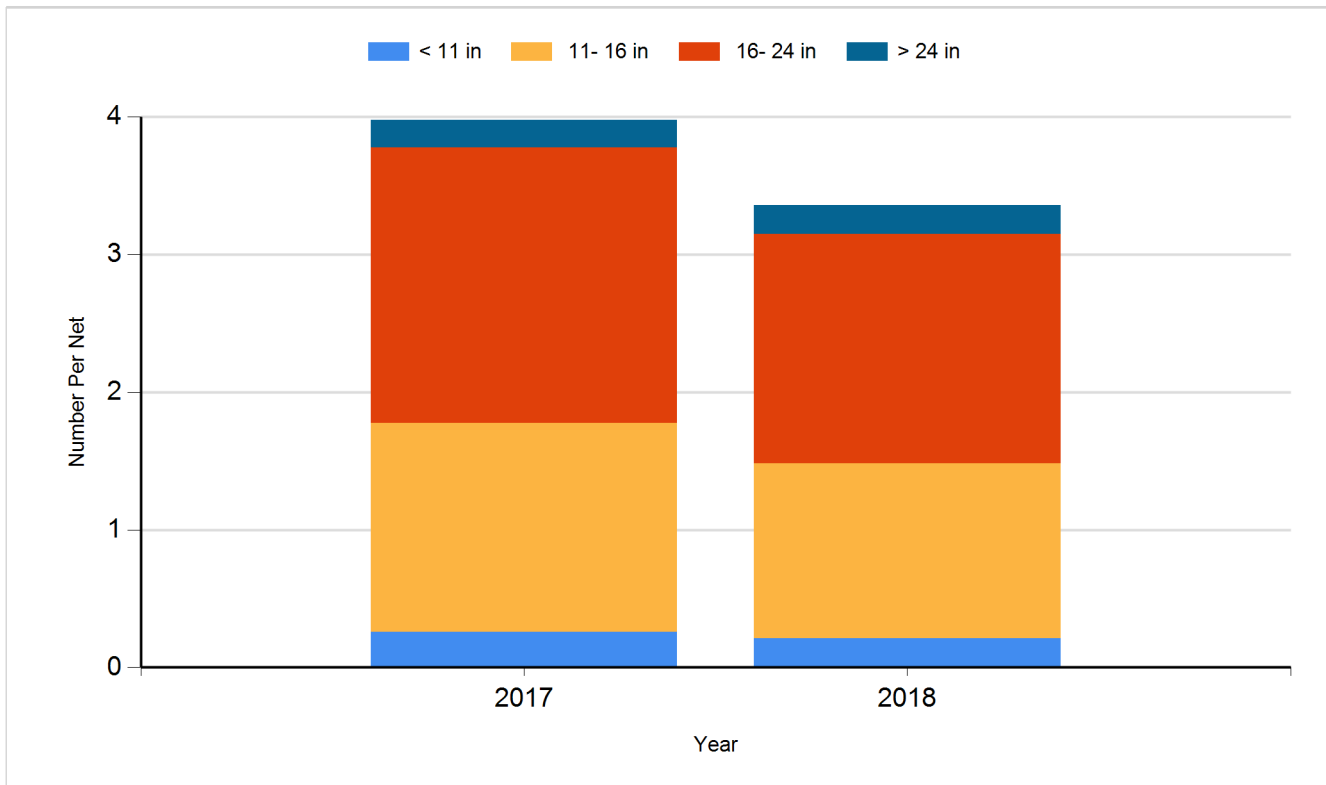


2016

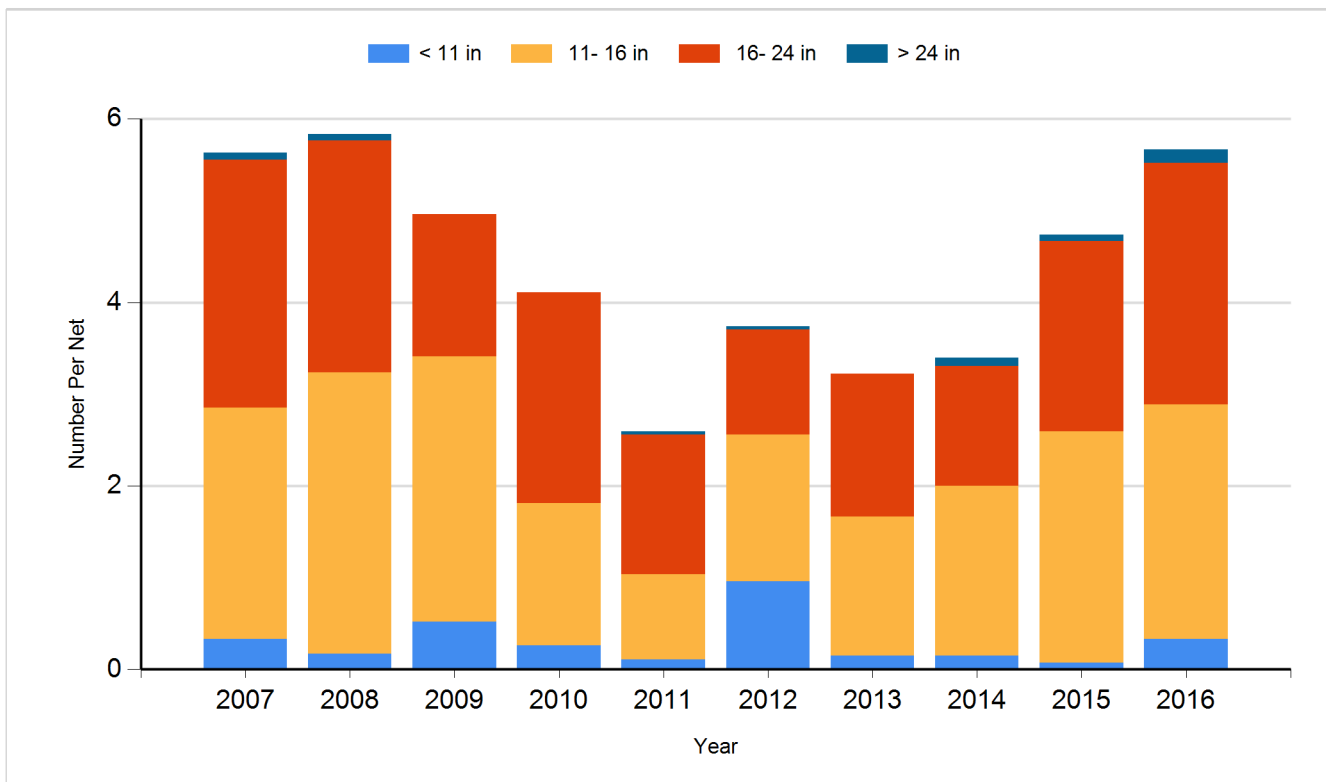
Historic Fish Sizes and Relative Abundance

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

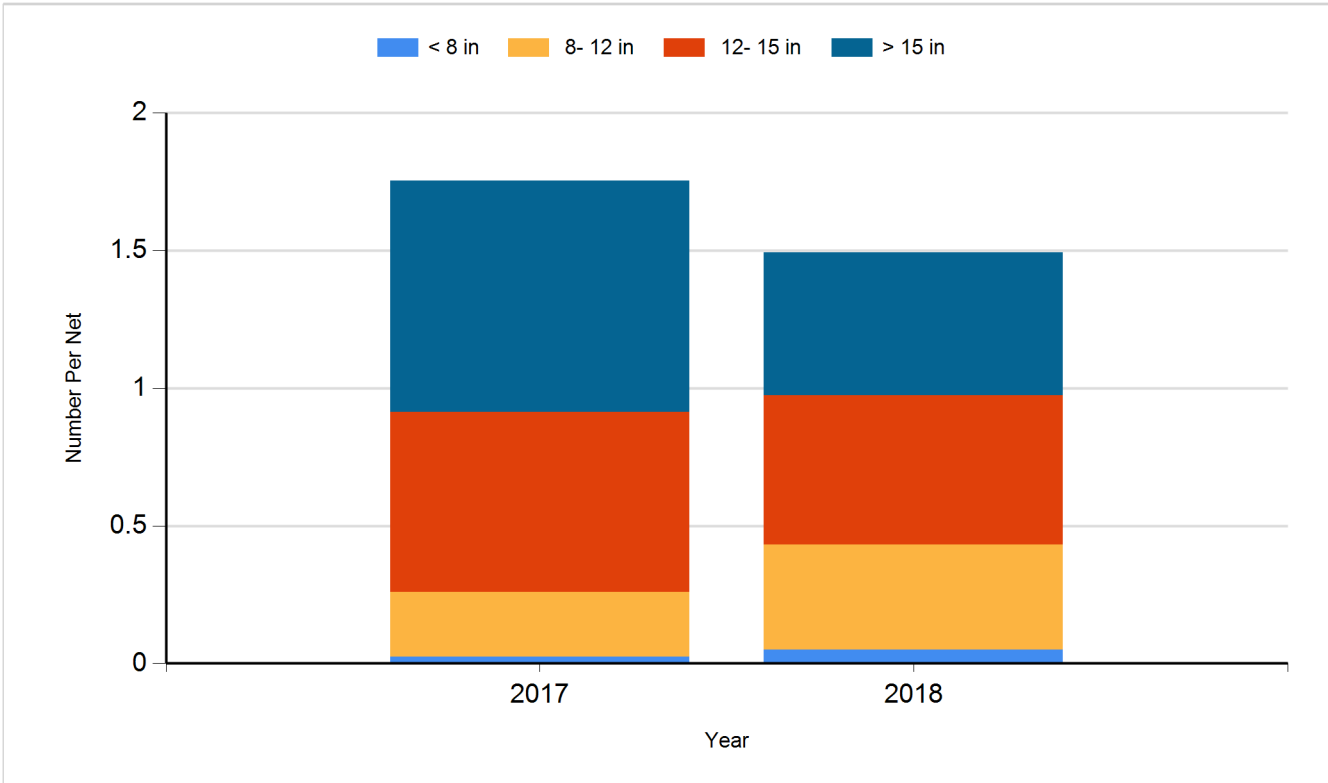
Species: Channel Catfish
Gear: AFS std gill net



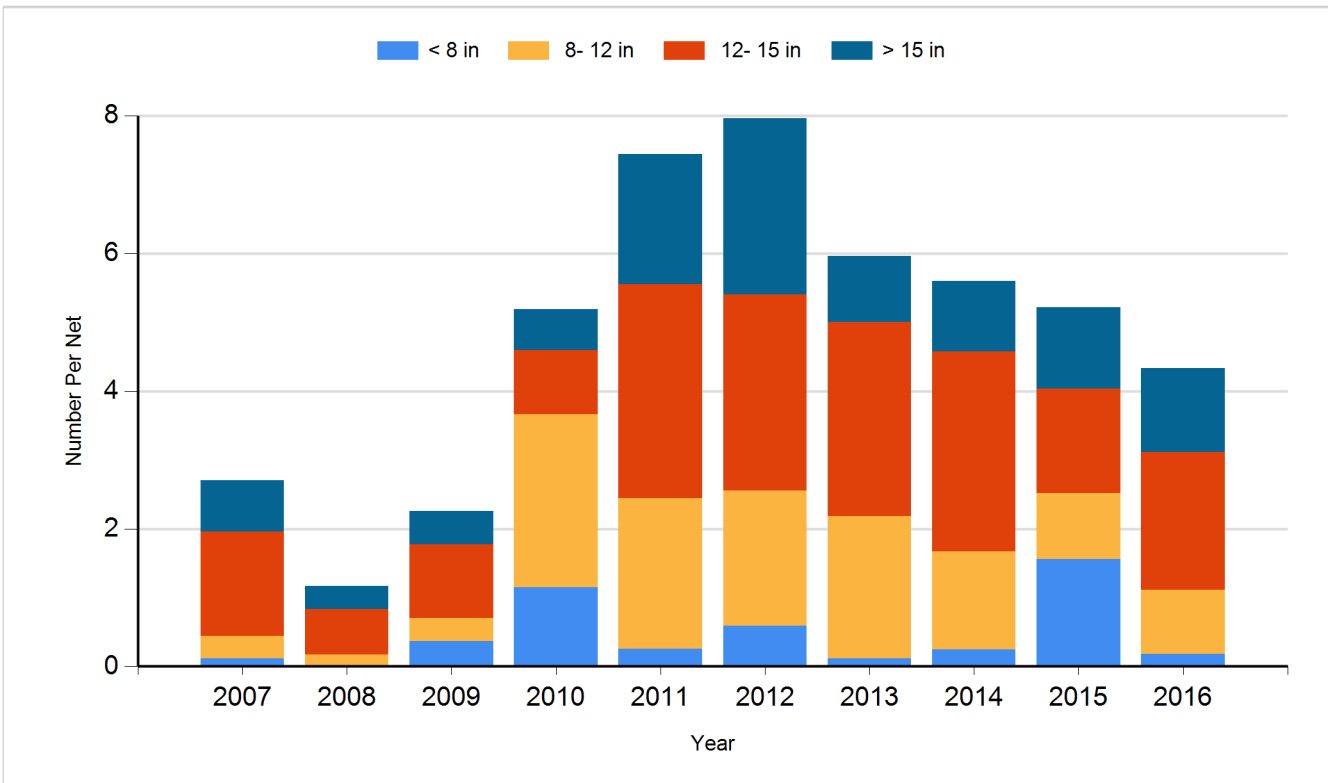
Species: Channel Catfish
Gear: std exp gill net



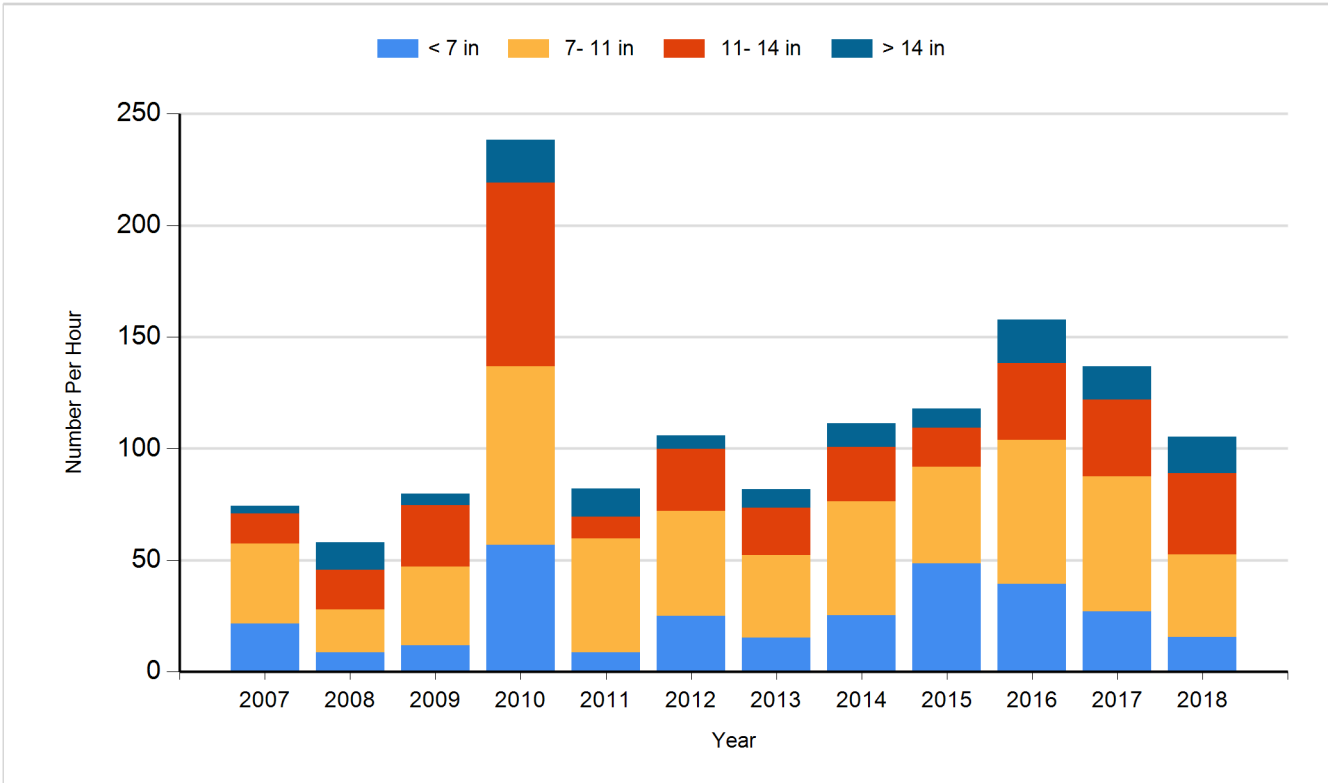
Species: Sauger
Gear: AFS std gill net



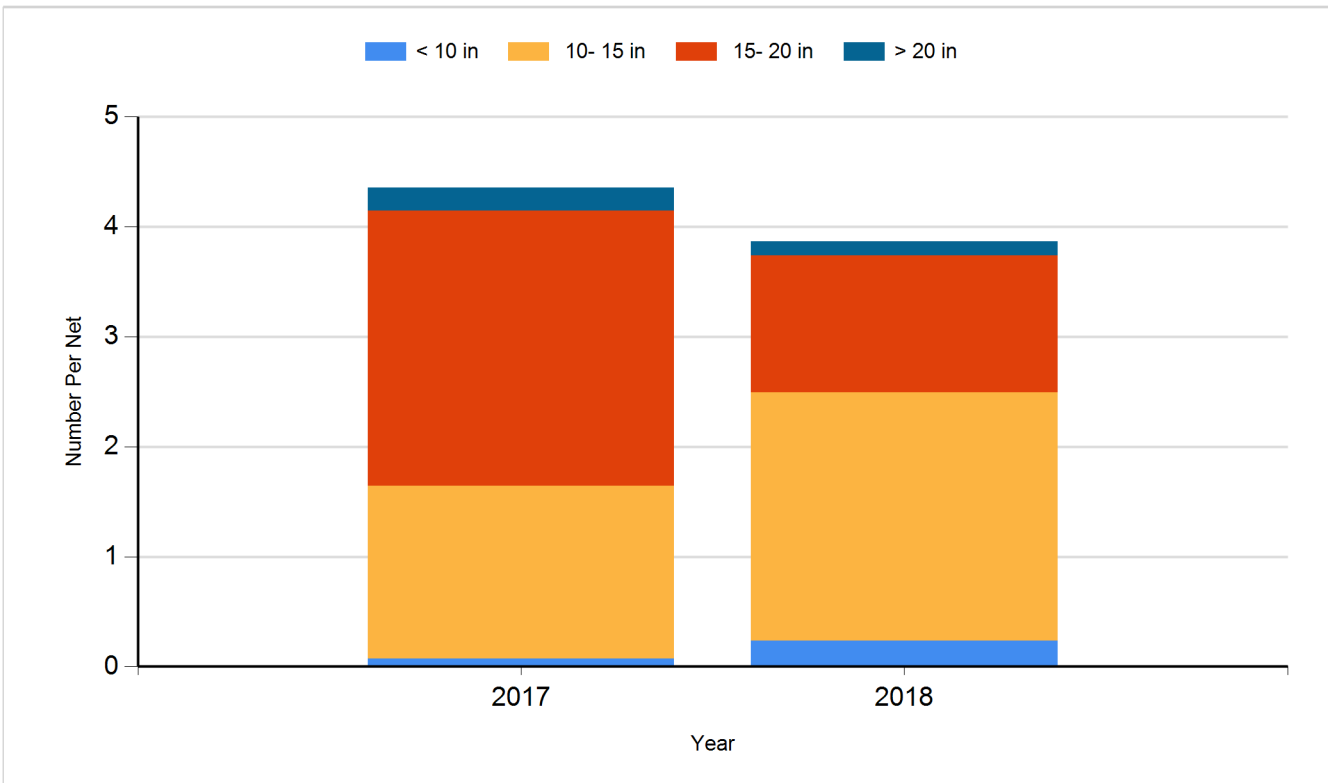
Species: Sauger
Gear: std exp gill net



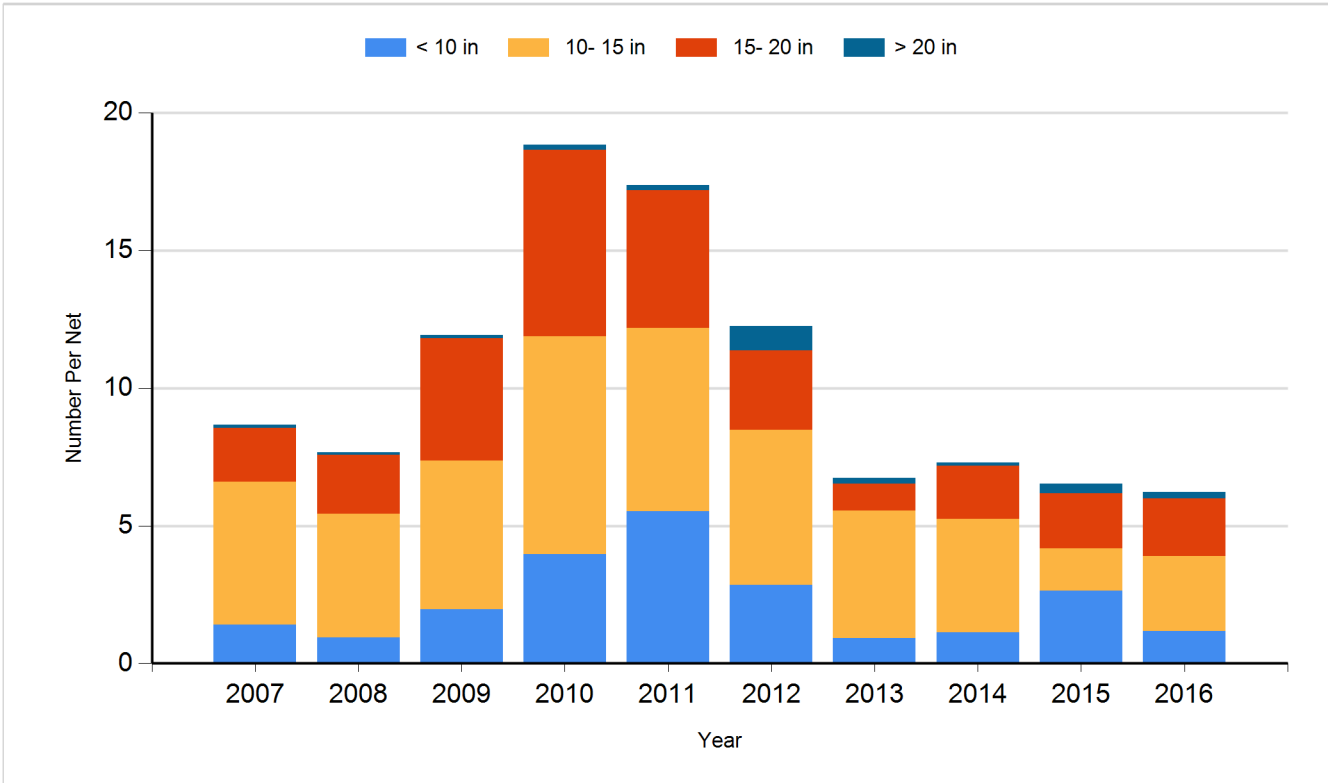
Species: Smallmouth Bass
Gear: boat shocker (night)



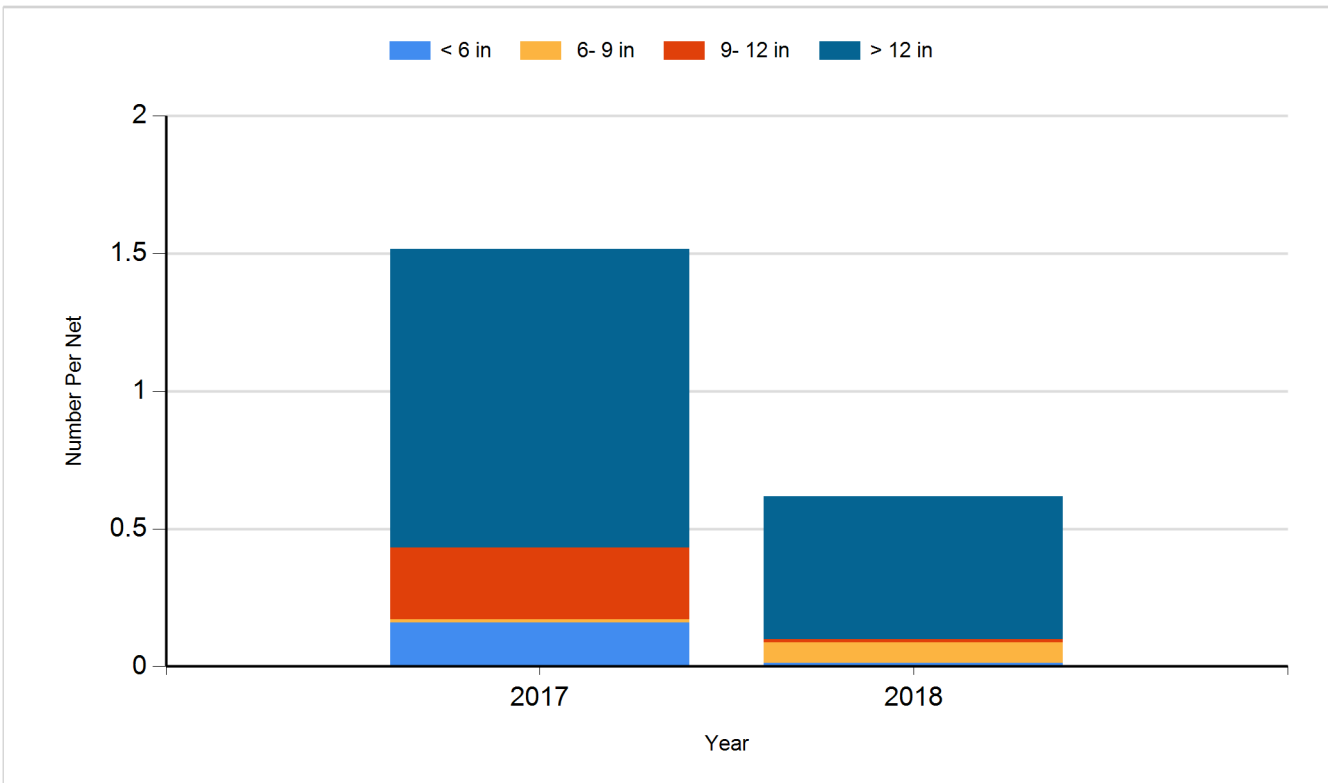
Species: Walleye
Gear: AFS std gill net



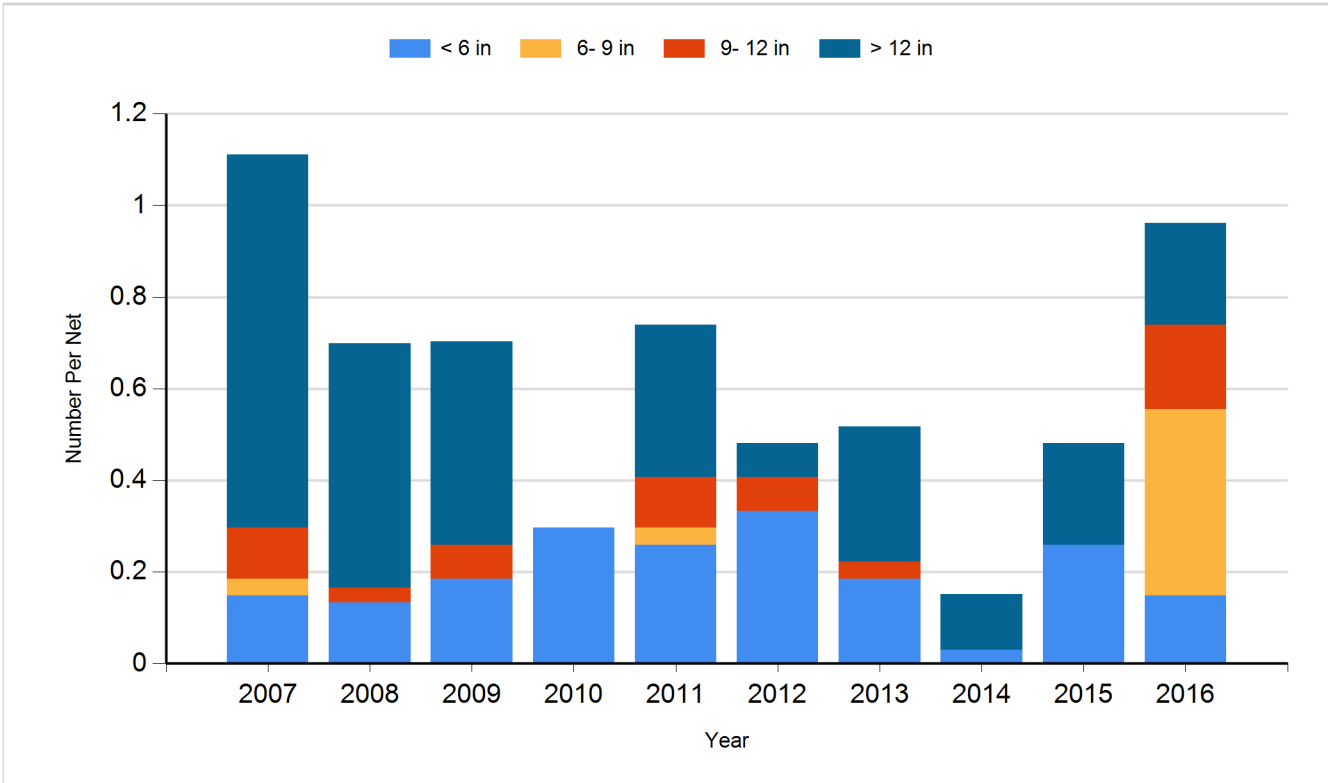
Species: Walleye
Gear: std exp gill net



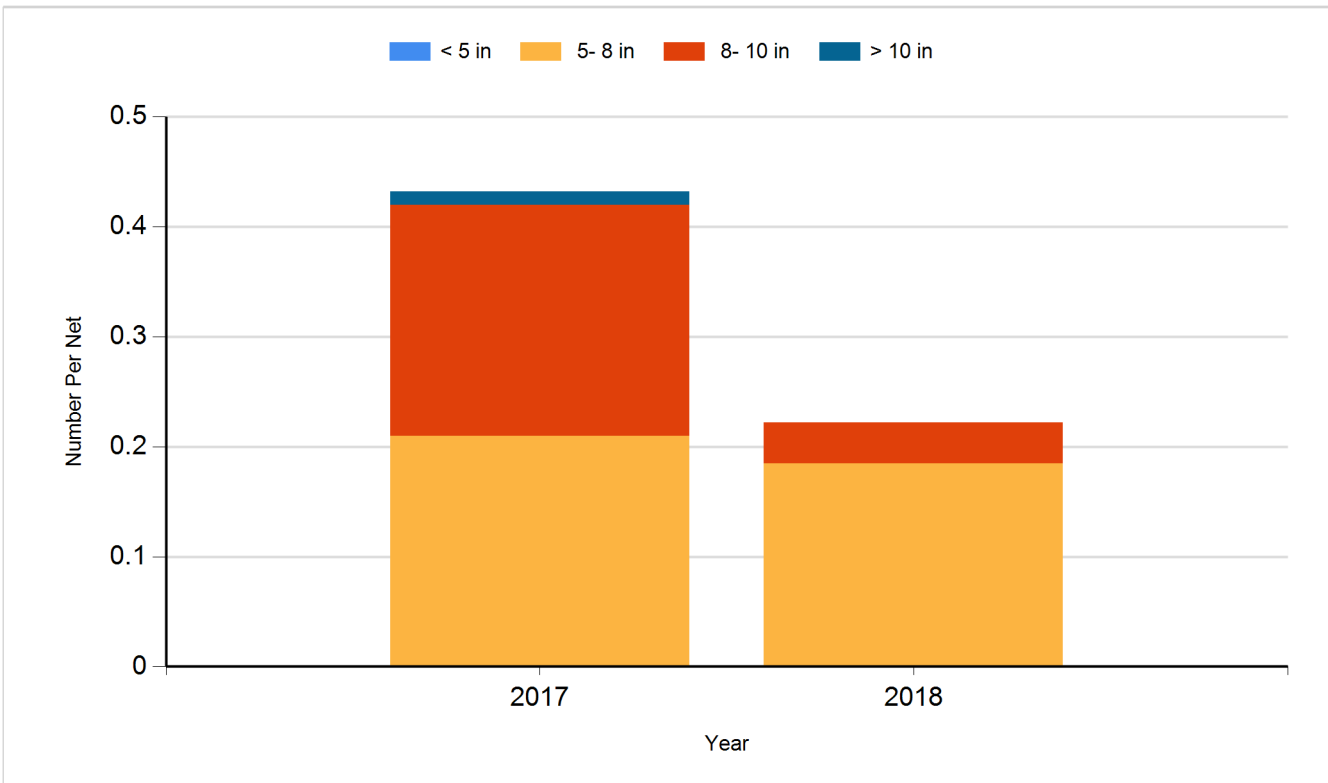
Species: White Bass
Gear: AFS std gill net



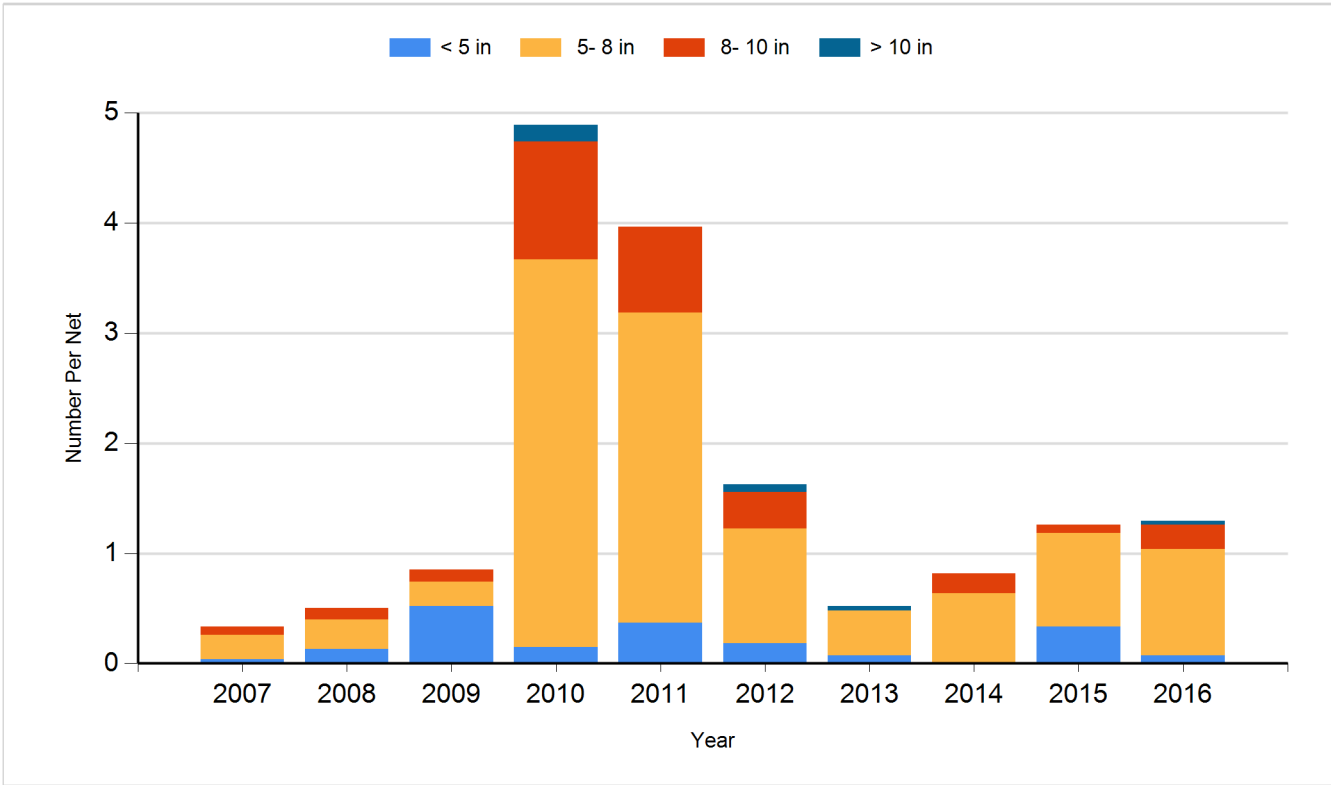
Species: White Bass
Gear: std exp gill net



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
2007	Paddlefish	Fingerling	27,462
2008	Paddlefish	Large Fingerling	7,140
2012	Paddlefish	Large Fingerling	1,896
2013	Paddlefish	Large Fingerling	3,750
2014	Paddlefish	Juvenile	3,980
2015	Paddlefish	Large Fingerling	31,862
2018	Paddlefish	Large Fingerling	24,679