

**SOUTH DAKOTA STATEWIDE FISHERIES SURVEY**  
**Thompson, Kingsbury County**  
**LKT-Lake-55-801**  
**2021**

**Lake Information**

<b>Name:</b>	Thompson	<b>Maximum Depth:</b>	26 Feet
<b>County:</b>	Kingsbury	<b>Mean Depth:</b>	15 Feet
<b>Legal Description:</b>	T110N-R55W-Sec.20-22, 28-33; T109N-R55W-Sec.4-9, 16-17;		
<b>Surface Area:</b>	14,526 Acres		

**Surveys and Investigations**

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

Gear	Date	Effort
AFS std gill net	Jul 26, 2021	8 net-nights
AFS std gill net	Jul 27, 2021	5 net-nights
frame net (std 3/4 in)	Jul 26, 2021	4 net-nights
frame net (std 3/4 in)	Jul 27, 2021	4 net-nights

## **Common Fish Species Present**

Walleye

Bigmouth Buffalo

Black Bullhead

Northern Pike

Black Crappie

Common Carp

Yellow Perch

White Bass

Smallmouth Bass

White Sucker

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## 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 std gill net	Bigmouth Buffalo	1	0.1	0.1	100		0			
	Black Bullhead	15	1.2	0.4	67		27			
	Black Crappie	20	1.5	1.0	95		70	17	111	2
	Common Carp	14	1.0	0.8	92		46	23		
	Northern Pike	25	1.9	0.4	88		4		78	2
	Smallmouth Bass	1	0.1	0.1	100		100		100	
	Walleye	60	4.4	1.3	28	9	11	6	86	1
	White Bass	29	2.2	0.6	100		100		94	1
	White Sucker	1	0.1	0.1	100		100			
	Yellow Perch	32	2.5	0.8	91		47	13	114	2
frame net (std 3/4 in)	Bigmouth Buffalo	222	27.8	13.6	96	2	3	2		
	Black Bullhead	132	15.5	10.4	32	6	3			
	Black Crappie	75	9.4	3.8	95		53	8	115	1
	Bluegill	1	0.1	0.2	100		0		135	
	Common Carp	28	3.4	2.7	93		74	13		
	Northern Pike	91	11.4	4.8	70	7	11	5	77	1
	Smallmouth Bass	12	1.4	0.7	45		18		138	38
	Walleye	53	5.9	3.2	17	8	11	7	88	1
	White Bass	19	2.4	3.4	100		84		95	1
	White Sucker	1	0.1	0.2	100		100			

## 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.

\* Methods/Species that ignore stock length

Gear	Species	CPUE										Avg	
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
AFS std frame net	Black Bullhead						0.3						0.30
	Black Crappie						0.2						0.20
	Common Carp						5.0						5.00
	Northern Pike						0.8						0.80
	Smallmouth Bass						0.7						0.70
	Walleye						2.0						2.00
	White Bass						0.7						0.70
	Yellow Perch						0.2						0.20
AFS std gill net	Bigmouth Buffalo						0.2	0.1	0.3	0.6	0.1	0.26	
	Black Bullhead						0.5	0.0	0.0	0.5	1.2	0.44	
	Black Crappie						0.6	0.1	0.1	1.5	1.5	0.76	
	Common Carp						2.7	2.2	0.9	1.7	1.0	1.70	
	Northern Pike						0.5	0.3	0.0	0.8	1.9	0.70	
	Smallmouth Bass						0.0	0.1	0.0	0.0	0.1	0.04	
	Walleye						6.0	3.1	2.1	3.9	4.4	3.90	
	White Bass						14.0	5.9	2.6	3.4	2.2	5.62	
	White Sucker						0.0	0.0	0.0	0.0	0.1	0.02	
	Yellow Perch						4.6	1.6	8.9	8.2	2.5	5.16	
fall night EF-WAE*	Walleye	3.5	31.0	40.5	35.5							27.63	
frame net (std 3/4 in)	Bigmouth Buffalo	3.5	0.5	0.0	0.3	0.4		1.7	1.4	8.4	27.8	4.89	
	Black Bullhead	29.7	4.7	3.6	0.4	0.4		0.3	3.1	3.5	15.5	6.80	
	Black Crappie	20.4	6.3	5.6	1.7	0.6		6.4	10.1	10.1	9.4	7.84	
	Bluegill	0.3	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.1	0.04	
	Common Carp	15.9	4.6	2.1	10.0	6.7		1.5	5.0	5.0	3.4	6.02	
	Northern Pike	13.6	3.4	2.5	5.8	5.4		1.2	0.0	3.3	11.4	5.18	
	Smallmouth Bass	0.3	0.2	0.2	0.1	1.0		0.1	0.1	0.7	1.4	0.46	
	Walleye	4.9	3.1	1.7	1.0	3.1		2.5	1.6	2.8	5.9	2.96	
	White Bass	2.0	1.0	0.5	0.6	3.6		4.4	0.6	1.8	2.4	1.88	
	White Sucker	0.0	0.3	0.6	0.0	0.4		0.1	0.1	0.1	0.1	0.19	
Yellow Perch	0.2	0.1	0.1	0.0	0.0		0.0	0.4	0.3	0.0	0.12		
std exp gill net	Black Bullhead	0.0	0.0	1.2	0.0	0.3						0.30	
	Black Crappie	4.7	10.8	1.6	2.3	2.3						4.34	
	Common Carp	0.7	1.8	1.0	1.0	1.0						1.10	

		CPUE										
Gear	Species	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg
std exp gill net	Lamprey Family	0.0	0.0	0.0	0.0	0.0						0.00
	Northern Pike	3.3	1.8	4.0	1.5	0.7						2.26
	Spottail Shiner	0.0	0.0	0.0	0.0	0.0						0.00
	Walleye	26.7	15.2	13.4	20.5	22.3						19.62
	White Bass	5.7	4.0	4.6	6.8	5.3						5.28
	White Sucker	0.0	0.0	0.2	0.0	0.0						0.04
	Yellow Perch	18.0	13.0	20.2	12.8	10.7						14.94

## 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											
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
AFS std frame net	Black Bullhead	PSD							50					
		PSD-P							50					
		Wr							113					
	Black Crappie	PSD								0				
		PSD-P								0				
		Wr												
	Common Carp	PSD								97				
		PSD-P								87				
		Wr												
	Northern Pike	PSD								100				
		PSD-P								60				
		Wr								83				
	Smallmouth Bass	PSD								25				
		PSD-P								0				
		Wr								91				
	Walleye	PSD								25				
		PSD-P								17				
		Wr								82				
	White Bass	PSD								25				
		PSD-P								0				
		Wr								90				
Yellow Perch	PSD								100					
	PSD-P								100					
	Wr								105					
AFS std gill net	Bigmouth Buffalo	PSD							0	50	0	13	100	
		PSD-P							0	0	0	13	0	
	Black Bullhead	PSD								100			29	67
		PSD-P								57			0	27
	Black Crappie	PSD								100	100	0	100	95
		PSD-P								100	100	0	5	70
		Wr								98	99	110	117	111
	Common Carp	PSD								97	100	58	86	92
		PSD-P								46	81	50	50	46
	Northern Pike	PSD								100	100		50	88
		PSD-P								43	75		0	4



Gear	Species	Index	Year											
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
AFS std gill net	Northern Pike	Wr							80	89		87	78	
	Smallmouth Bass	PSD								0			100	
		PSD-P								0			100	
		Wr								97			100	
	Walleye	PSD							15	42	17	22	28	
		PSD-P							1	7	3	4	11	
		Wr							83	79	86	85	86	
	White Bass	PSD							99	100	100	93	100	
		PSD-P							51	90	100	91	100	
		Wr							92	86	97	101	94	
	White Sucker	PSD											100	
		PSD-P											100	
	Yellow Perch	PSD								78	100	49	90	91
		PSD-P								48	70	38	21	47
		Wr								114	106	112	118	114
	frame net (std 3/4 in)	Bigmouth Buffalo	PSD	94	100		67	75			88	9	6	96
			PSD-P	17	0		33	50			76	9	1	3
			Wr	91	81									
Black Bullhead		PSD	5	42	17	100	75			100	12	37	32	
		PSD-P	0	8	0	25	0			33	4	0	3	
		Wr	97	90										
Black Crappie		PSD	98	100	91	100	100			98	27	95	95	
		PSD-P	32	93	88	88	100			95	16	48	53	
		Wr	115	103	112	106	115			97	110	113	115	
Common Carp		PSD	96	94	90	95	98			87	98	92	93	
		PSD-P	23	73	90	57	83			80	83	44	74	
		Wr	101	95										
Northern Pike		PSD	35	76	80	95	100			100	0	67	70	
		PSD-P	3	14	32	31	65			67	0	24	11	
		Wr	73	70	86	79	91			71		87	77	
Smallmouth Bass		PSD	100	100	50	0	22			100	100	0	45	
		PSD-P	0	50	0	0	11			100	100	0	18	
		Wr	91	97	100	98	134			74	98	107	138	
Walleye		PSD	41	62	41	60	50			36	46	39	17	
		PSD-P	14	41	18	10	21			20	23	18	11	
		Wr	81	78	84	86	89			77	87	84	88	
White Bass		PSD	100	100	100	50	44			100	100	94	100	

Gear	Species	Index	Year									
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
frame net (std 3/4 in)	White Bass	PSD-P	90	100	100	17	41		100	100	94	84
		Wr	97	90	91	89	103		83	97	100	95
	White Sucker	PSD		100	83		100		100	100	100	100
		PSD-P		100	83		100		100	100	100	100
		Wr		93								
	Yellow Perch	PSD	50	100	0						0	100
		PSD-P	50	100	0						0	67
		Wr	101	103	116						104	112
	std exp gill net	Black Bullhead	PSD				0		0			
PSD-P						0		0				
Black Crappie		PSD	64	100	100	100	100					
		PSD-P	7	83	100	100	86					
		Wr	120	88	107	101	104					
Common Carp		PSD	100	100	80	100	100					
		PSD-P	50	56	60	75	100					
		Wr	101	92								
Northern Pike		PSD	50	67	80	100	100					
		PSD-P	0	22	15	33	0					
		Wr	85	74	83	80	80					
Walleye		PSD	15	21	22	20	12					
		PSD-P	0	0	0	5	0					
		Wr	85	81	80	86	83					
White Bass		PSD	100	100	96	100	69					
		PSD-P	100	90	96	96	69					
		Wr	97	87	90	93	91					
White Sucker		PSD			100							
		PSD-P			100							
Yellow Perch		PSD	80	94	54	82	63					
		PSD-P	20	46	23	31	44					
	Wr	114	105	106	110	100						

## 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+
2013	69		237 (4)	270 (51)	257 (12)		346 (2)	366 (1)			

Species: Walleye

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2020	52	251 (2)	307 (36)	378 (3)		427 (4)	444 (3)	486 (2)			628 (2)
2019	70	209 (42)	275 (1)	317 (2)	348 (15)	380 (8)	382 (1)				647 (1)
2018	49	250 (7)	259 (5)	338 (17)	387 (10)	412 (4)		509 (3)	515 (2)		703 (1)
2017	81	219 (3)	291 (40)	352 (23)	391 (11)		343 (1)				507 (2)
2016	88	218 (21)	294 (41)	346 (19)	412 (3)	471 (4)					
2015	129	214 (49)	280 (45)	363 (7)	374 (17)	412 (8)	434 (1)	544 (1)	525 (1)	555 (1)	
2014	93	209 (26)	324 (2)	326 (50)	398 (11)			465 (4)			
2013	83	201 (1)	279 (55)	376 (20)	407 (2)	463 (1)	433 (4)				
2012	109	212 (34)	331 (63)	419 (5)	407 (3)	415 (4)					

Species: Yellow Perch

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	125	163 (63)	230 (15)	263 (11)	278 (13)	305 (1)	290 (18)	310 (2)		322 (1)	
2018	23		230 (5)	268 (12)	270 (3)	292 (2)			337 (1)		
2015	51	153 (4)	210 (27)	255 (4)	264 (11)	286 (4)	245 (1)				
2014	102	147 (45)	215 (14)	240 (27)	268 (9)	260 (6)					
2013	65	173 (2)	215 (18)	257 (40)	290 (2)	296 (1)	294 (2)				
2012	54	161 (10)	229 (34)	259 (8)	254 (1)	284 (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).

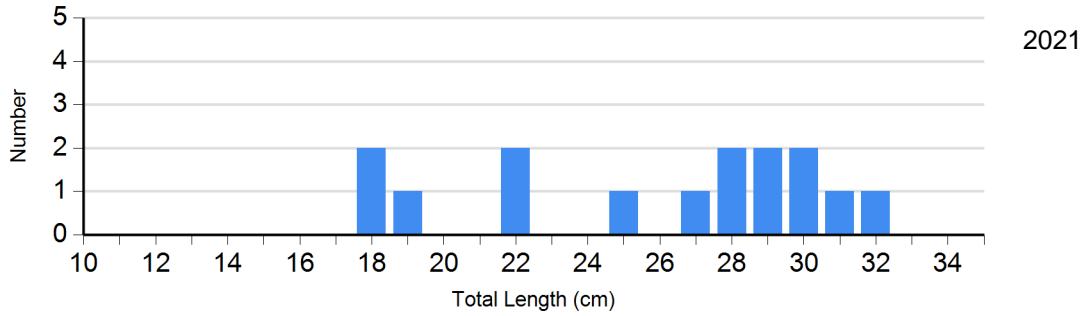
Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2017	1	113	0		0		0	
	2018	1		2	106	28	97 (1.0)	33	96 (1.1)
	2019	59	111 (3.5)	9	113 (1.9)	5	106 (0.3)	8	100 (1.9)
	2020	5	139 (6.4)	48	118 (1.5)	12	111 (1.5)	36	107 (1.1)
	2021	4	114	31	119 (1.3)	36	112 (1.0)	4	106 (5.2)
Northern Pike Gill Net	2017	0		4	78 (1.2)	2	83 (3.3)	1	86
	2018	0		1		2	94 (23.2)	1	79
	2020	5	82 (3.9)	5	92 (3.7)	0		0	
	2021	3	79 (7.7)	21	78 (1.4)	0		1	83
Walleye Gill Net	2017	66	83 (0.6)	11	80 (0.9)	1	115	0	
	2018	25	79 (1.3)	15	79 (1.4)	2	73 (5.7)	1	74
	2019	24	86 (1.2)	4	83 (3.6)	0		1	96
	2020	40	85 (1.1)	9	85 (1.0)	1	89	1	89
	2021	41	86 (1.0)	10	90 (2.1)	5	84 (2.5)	1	90
White Bass Gill Net	2017	1		88	93 (0.7)	62	92 (0.9)	31	90 (0.6)
	2018	0		8	84 (2.9)	60	87 (0.4)	15	85 (0.4)
	2019	0		0		33	98 (0.6)	4	91 (1.7)
	2020	3	103 (2.2)	1	105	18	101 (1.2)	22	100 (1.0)
	2021	0		0		12	95 (1.3)	17	93 (1.0)
Yellow Perch Gill Net	2017	13	114 (2.8)	18	114 (2.8)	25	115 (3.0)	4	108 (0.4)
	2018	0		7	102 (2.5)	15	109 (2.2)	1	94
	2019	64	107 (1.3)	13	124 (3.0)	37	117 (1.3)	11	104 (6.7)

Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Yellow Perch Gill Net	2020	11	114 (3.8)	73	118 (1.0)	17	119 (2.8)	6	123 (3.3)
	2021	3	105 (1.2)	14	113 (2.8)	15	117 (2.6)	0	

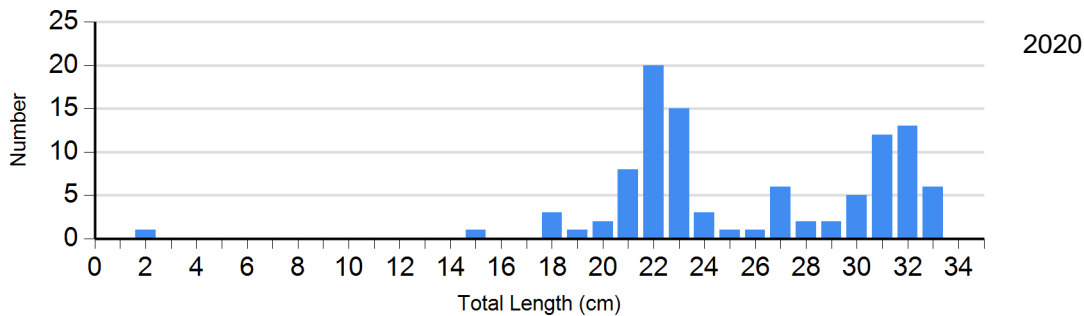
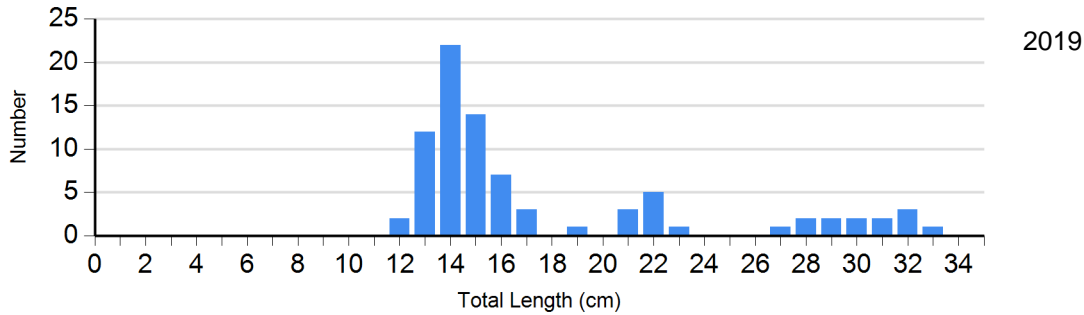
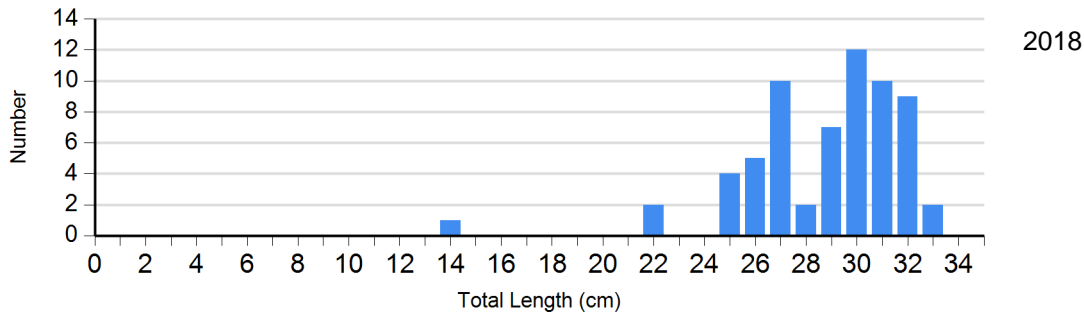
## Length Frequency Distribution

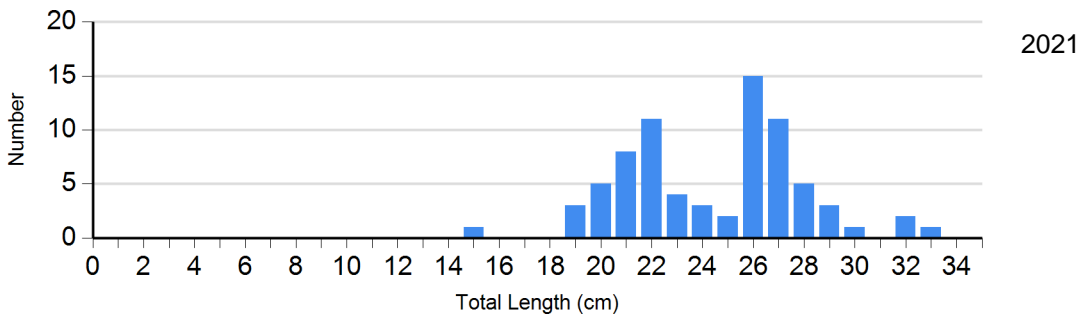
Length frequency histogram of species sampled by year.

Species: Black Bullhead  
Gear: AFS std gill net

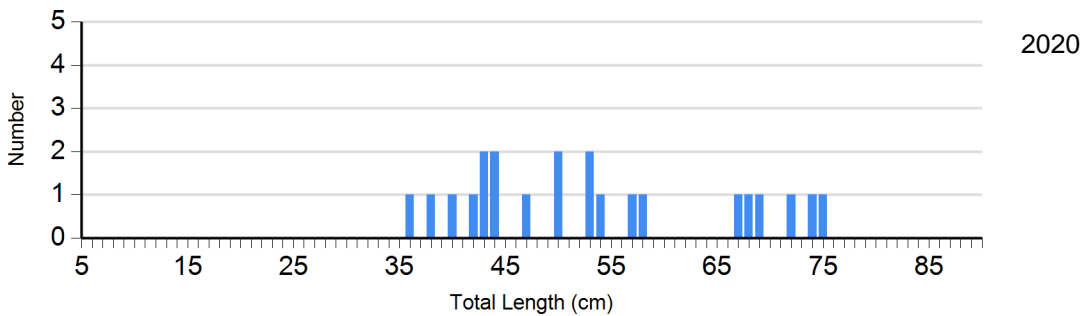
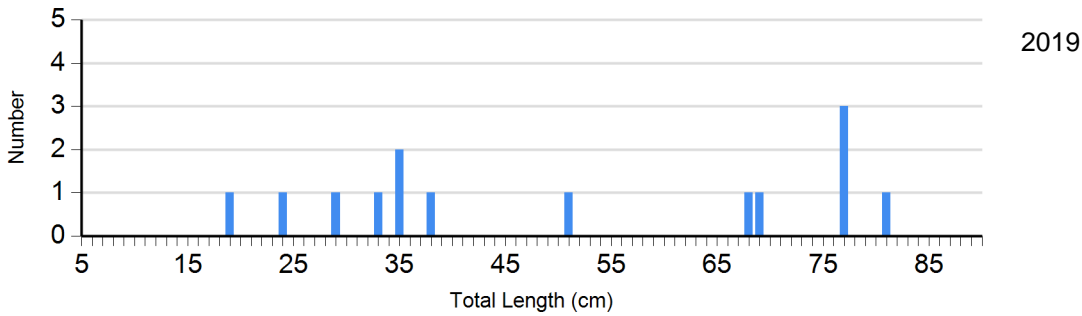
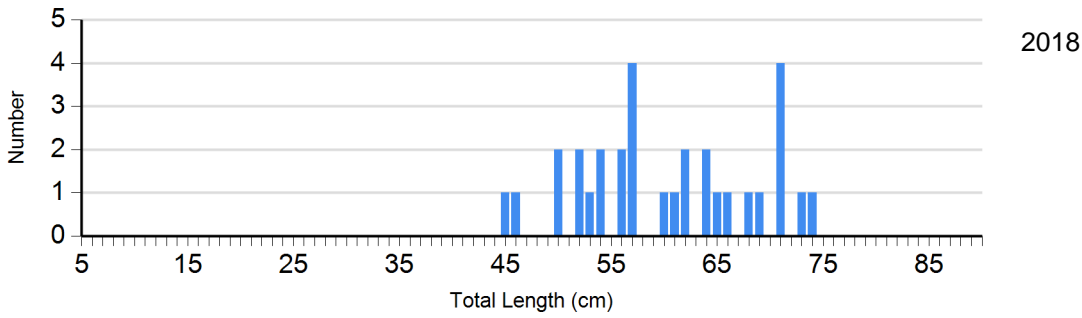
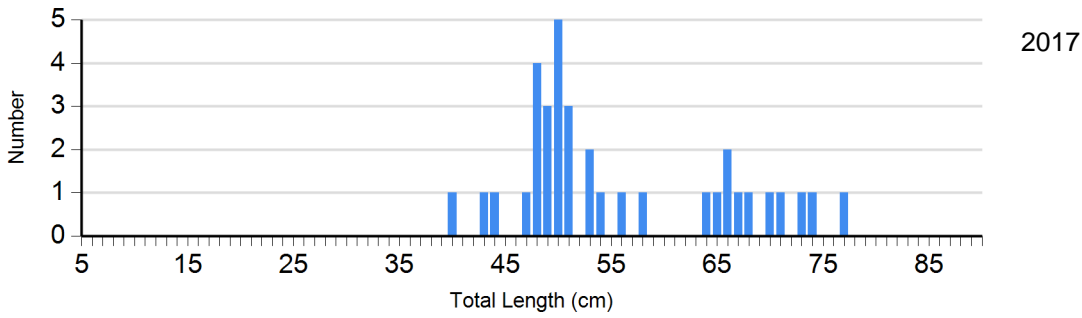


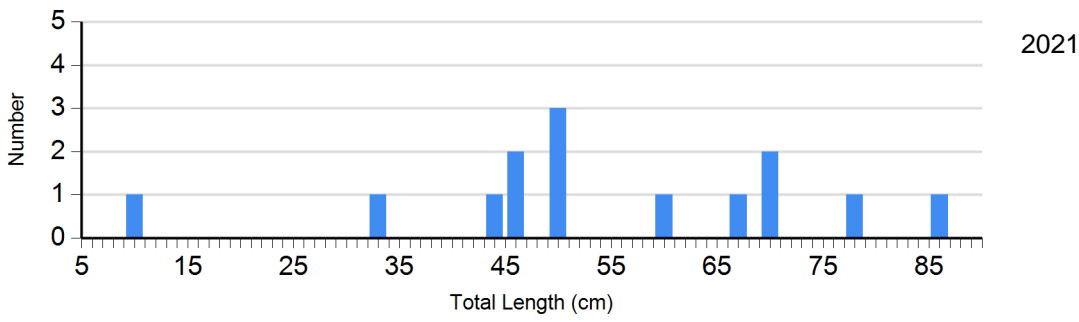
Species: Black Crappie  
Gear: frame net (std 3/4 in)



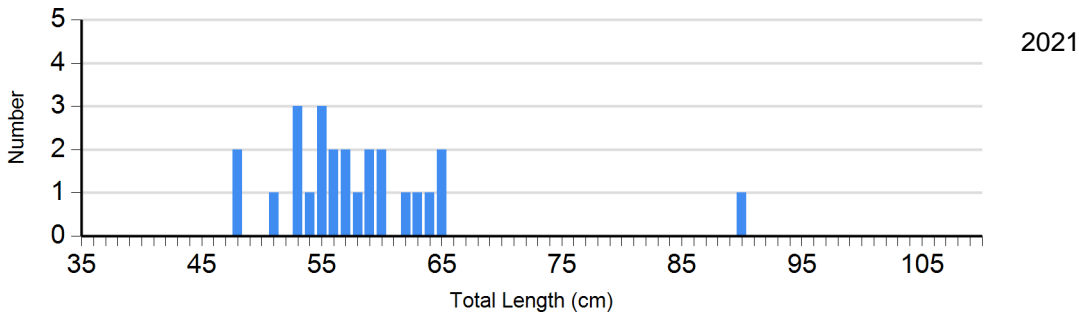
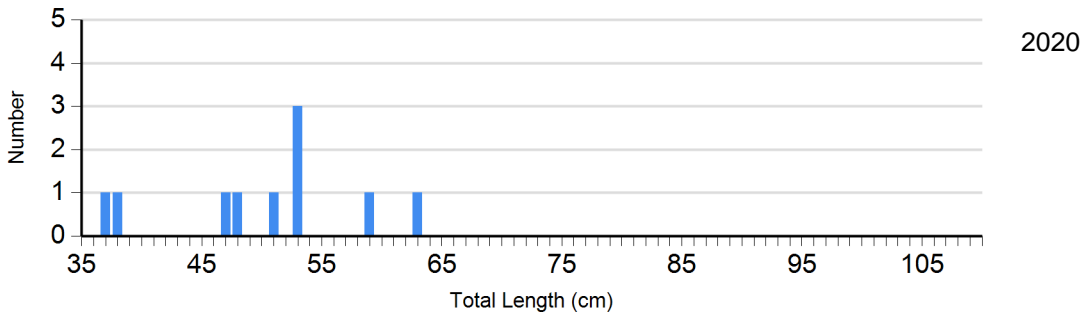


Species: Common Carp  
Gear: AFS std gill net

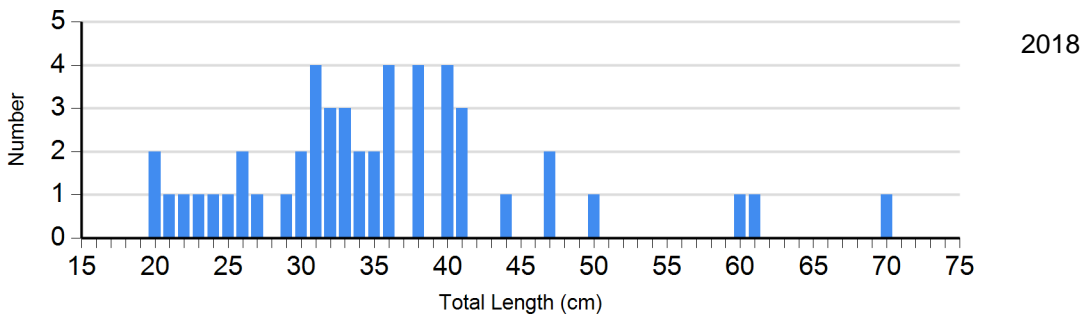
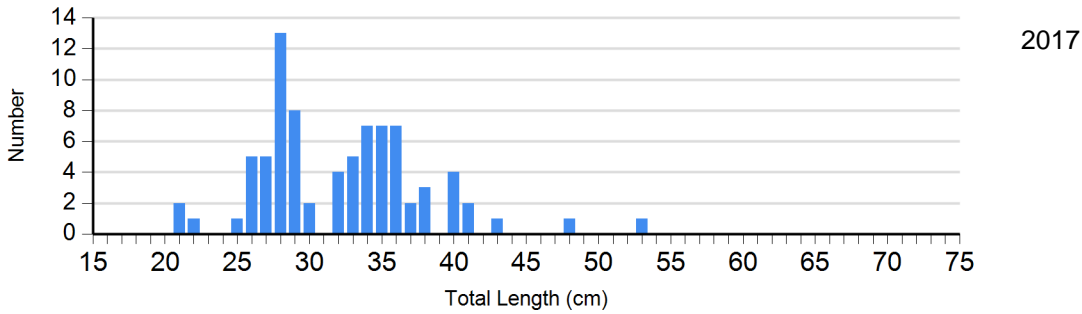




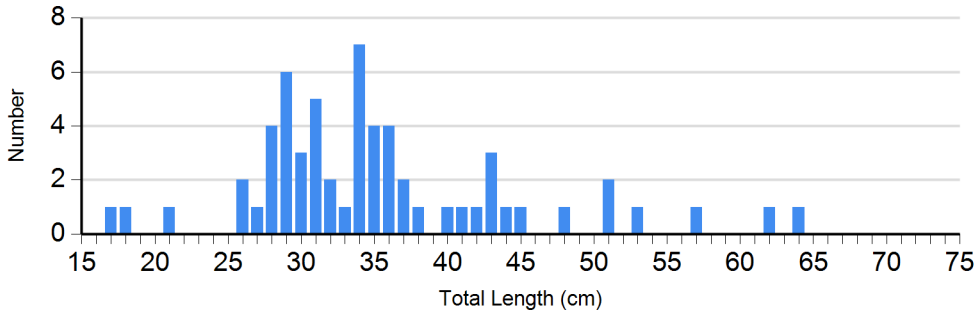
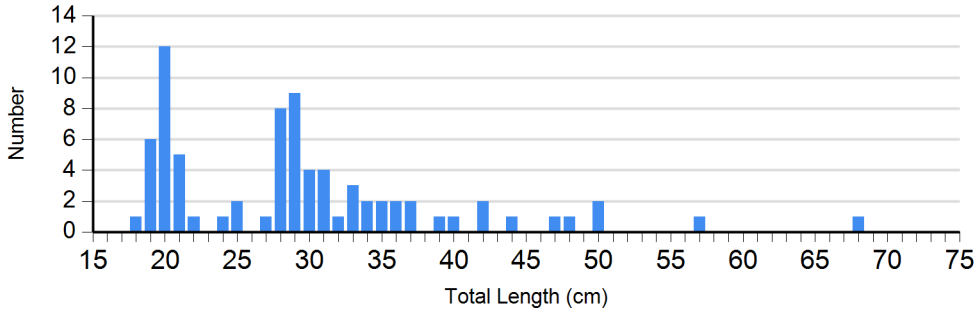
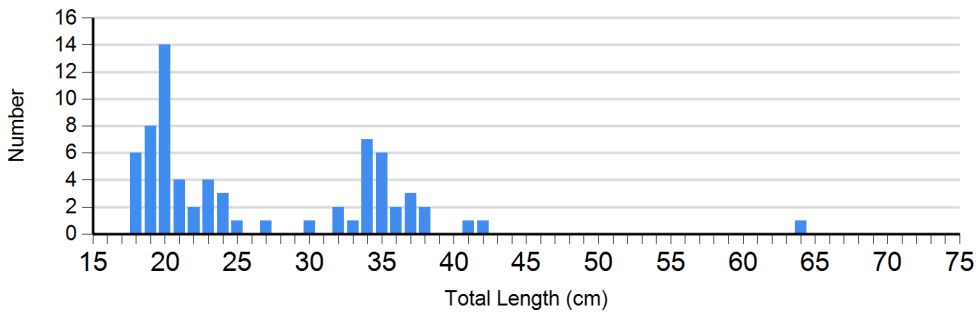
Species: Northern Pike  
Gear: AFS std gill net



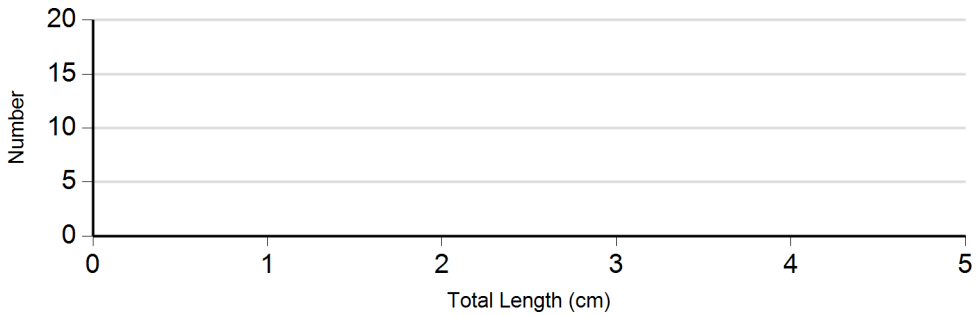
Species: Walleye  
Gear: AFS std gill net



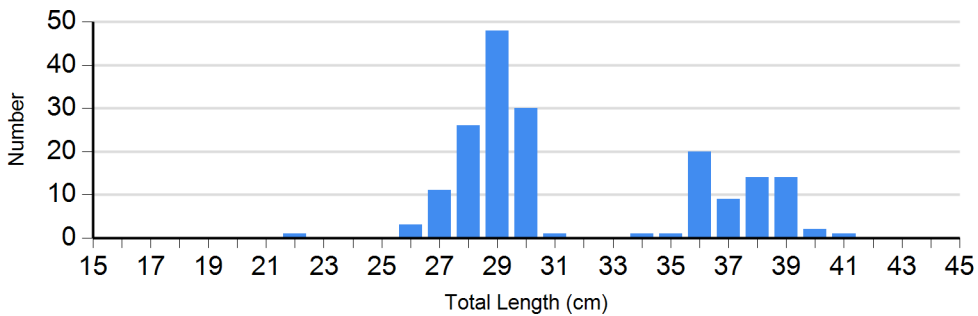


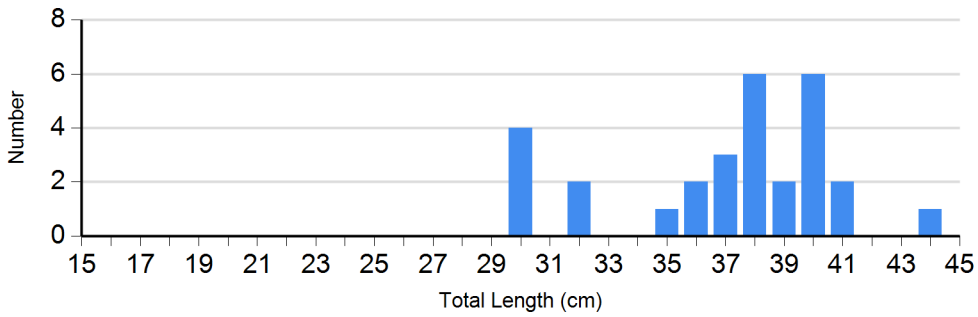
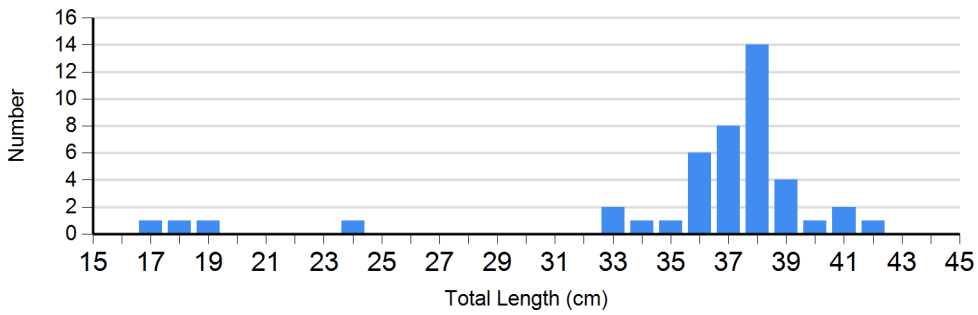
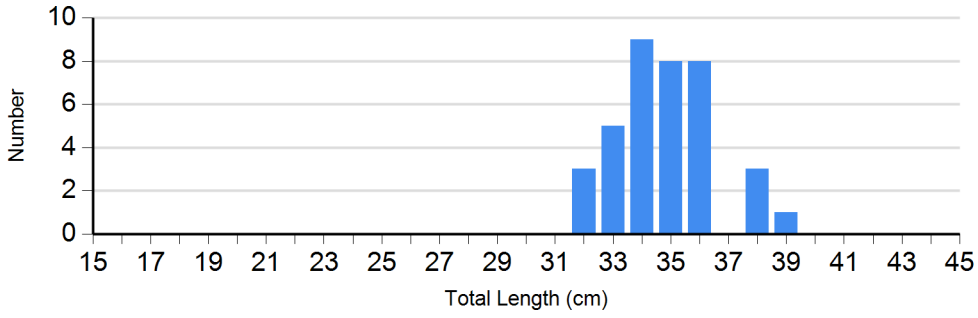
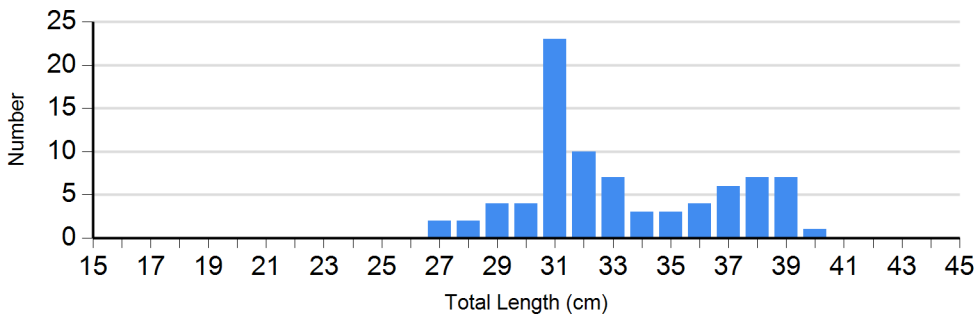


Species: Walleye  
Gear: std exp gill net

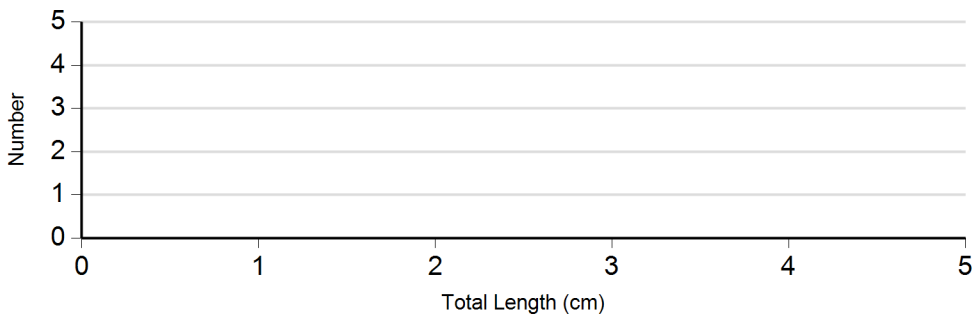


Species: White Bass  
Gear: AFS std gill net

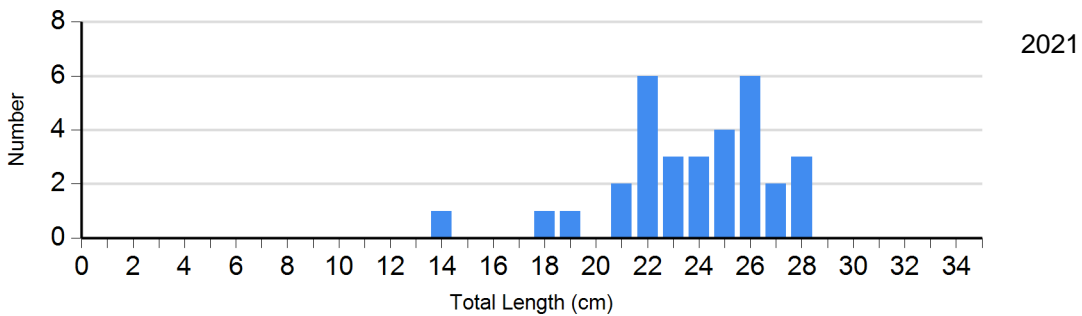
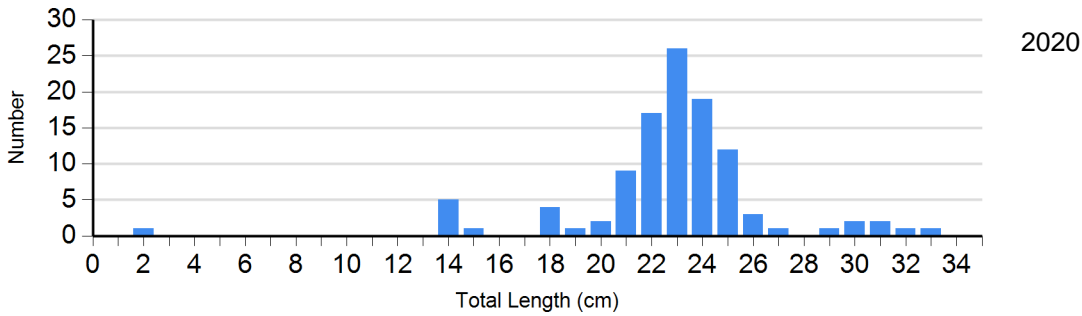
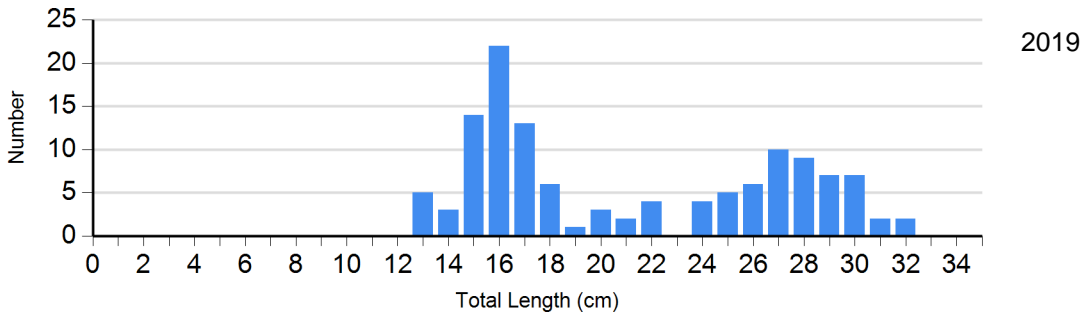
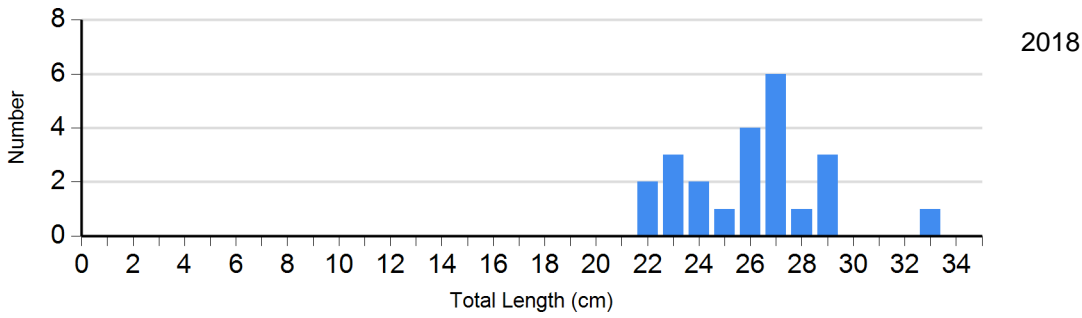
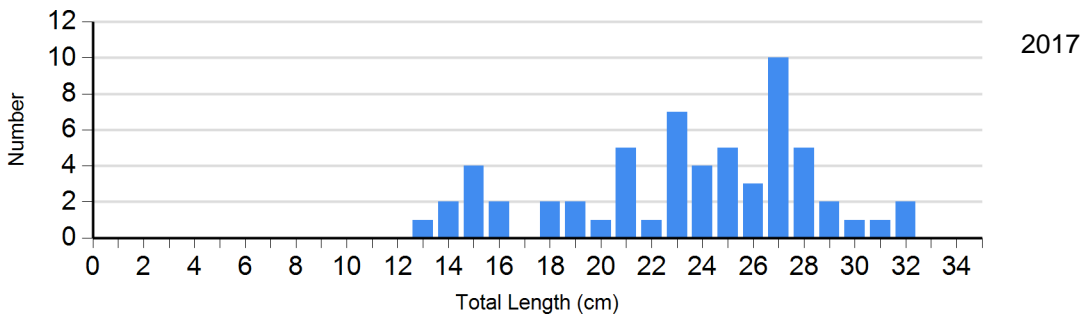




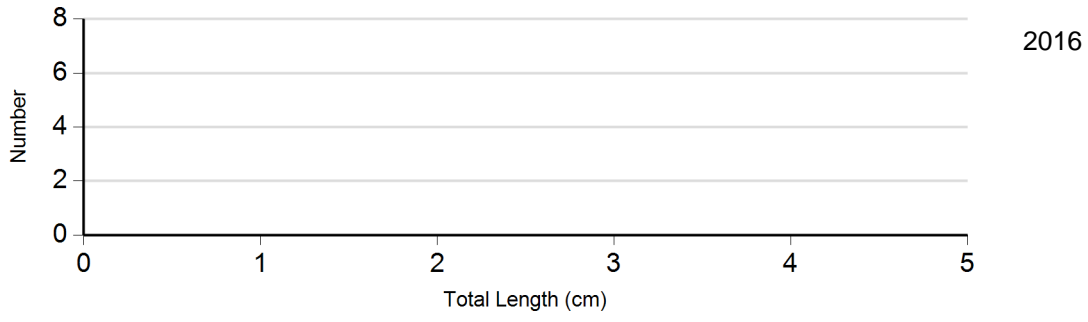
Species: White Bass  
 Gear: std exp gill net



Species: Yellow Perch  
Gear: AFS std gill net



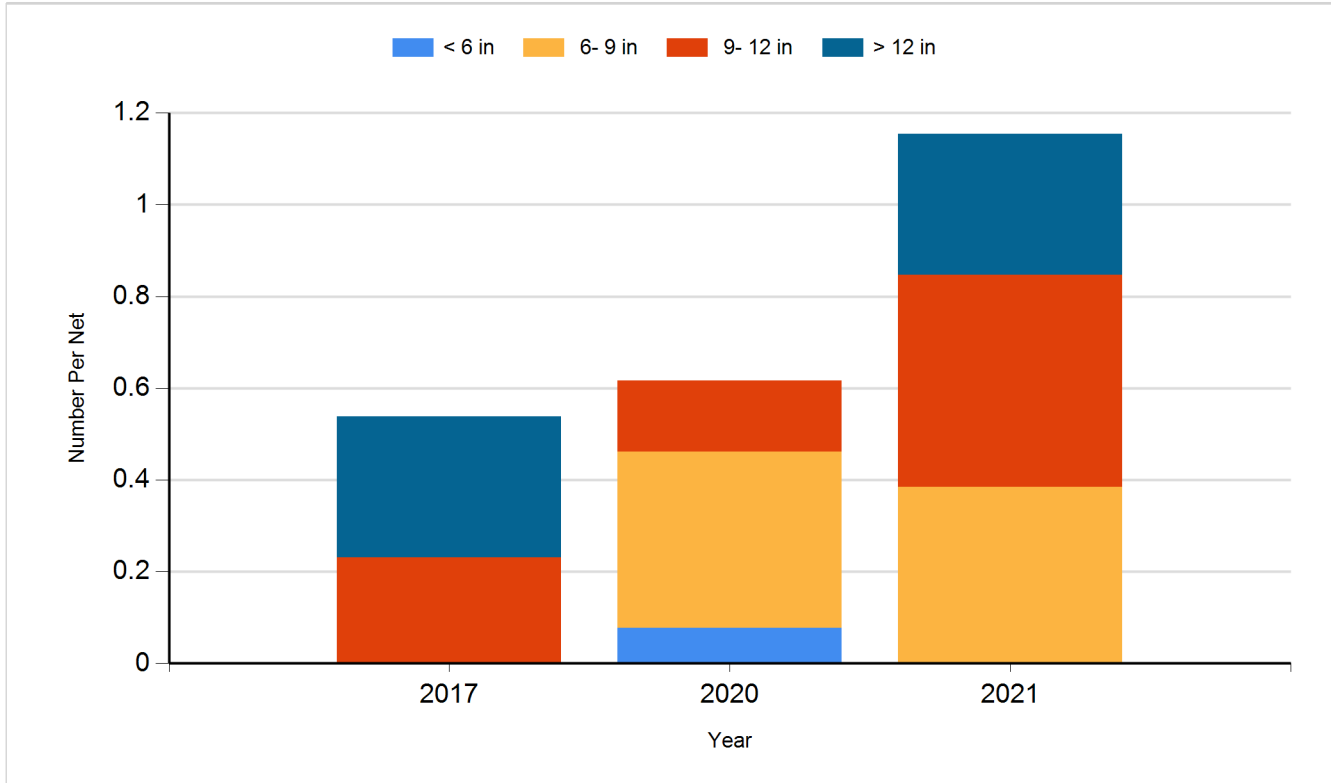
Species: Yellow Perch  
Gear: std exp gill net



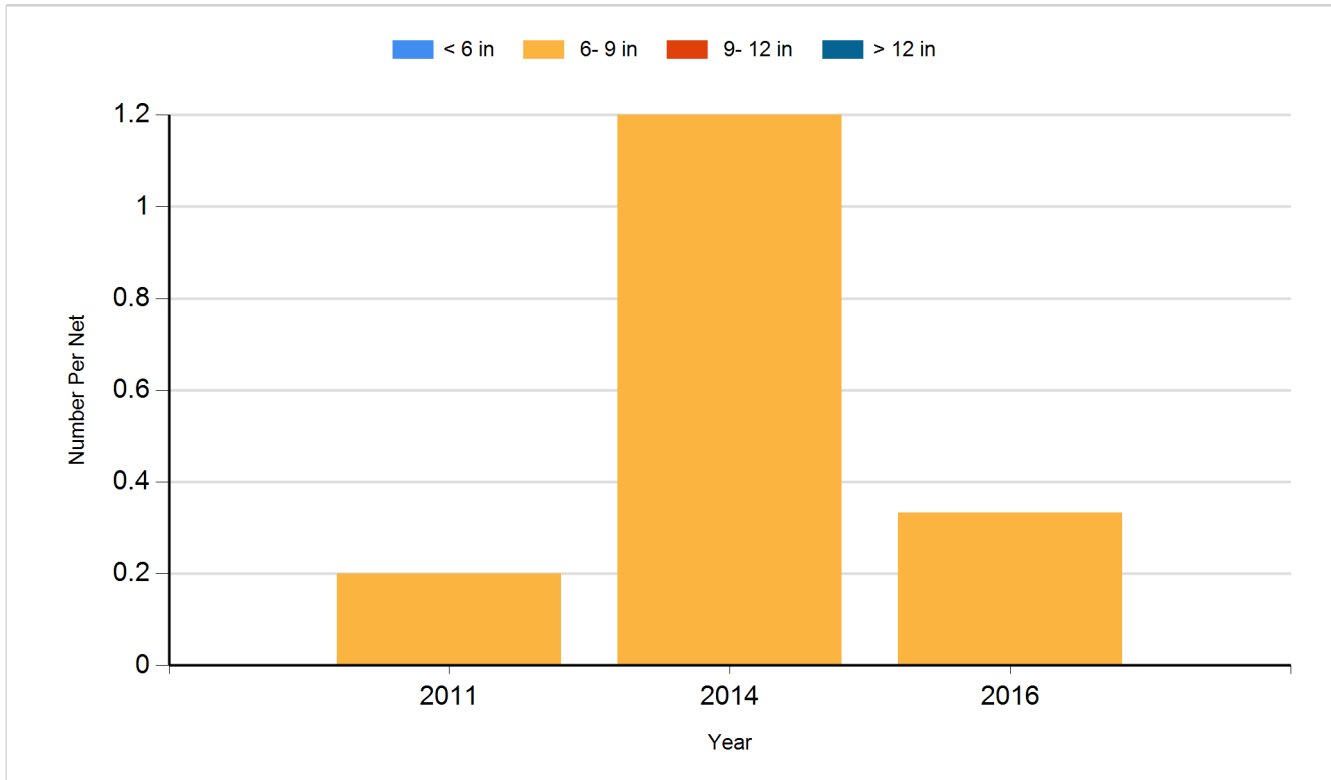
## Historic Fish Sizes and Relative Abundance

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

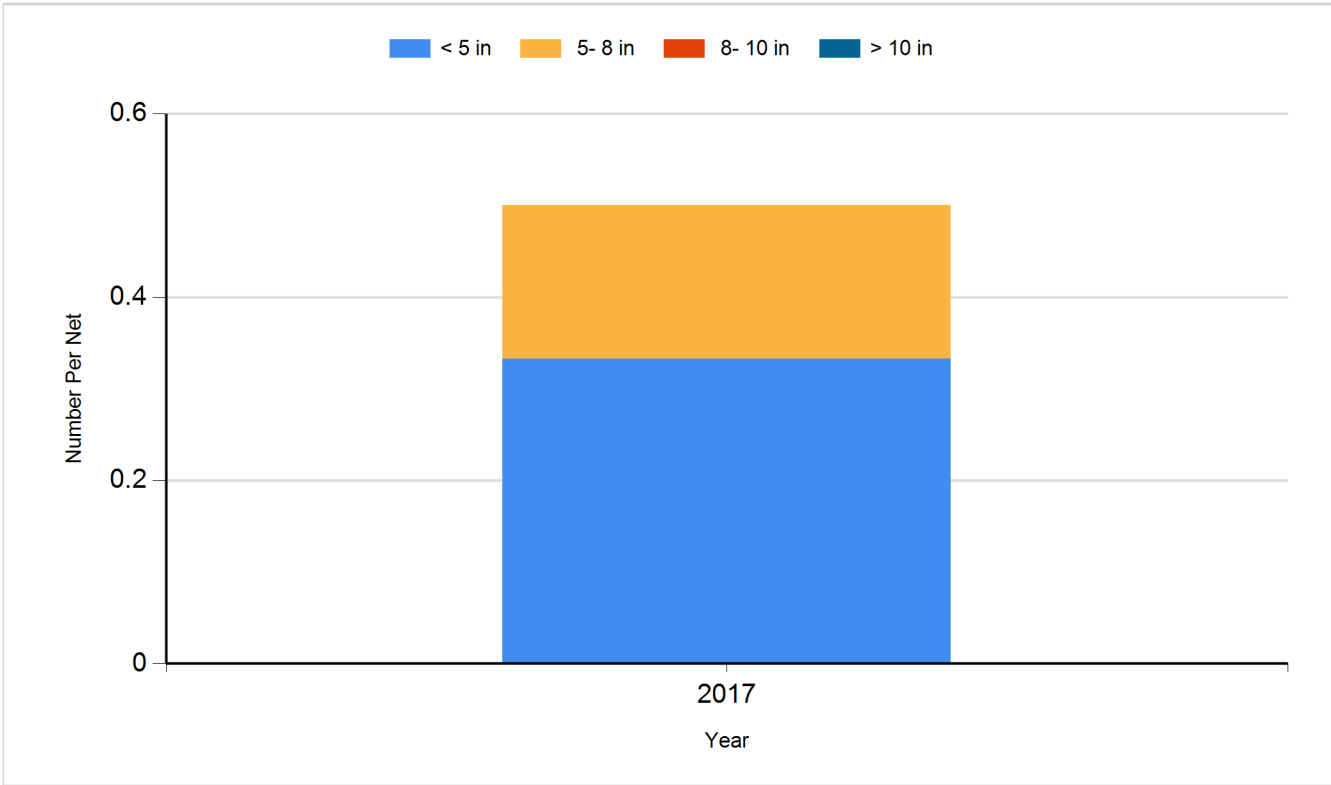
Species: Black Bullhead  
Gear: AFS std gill net



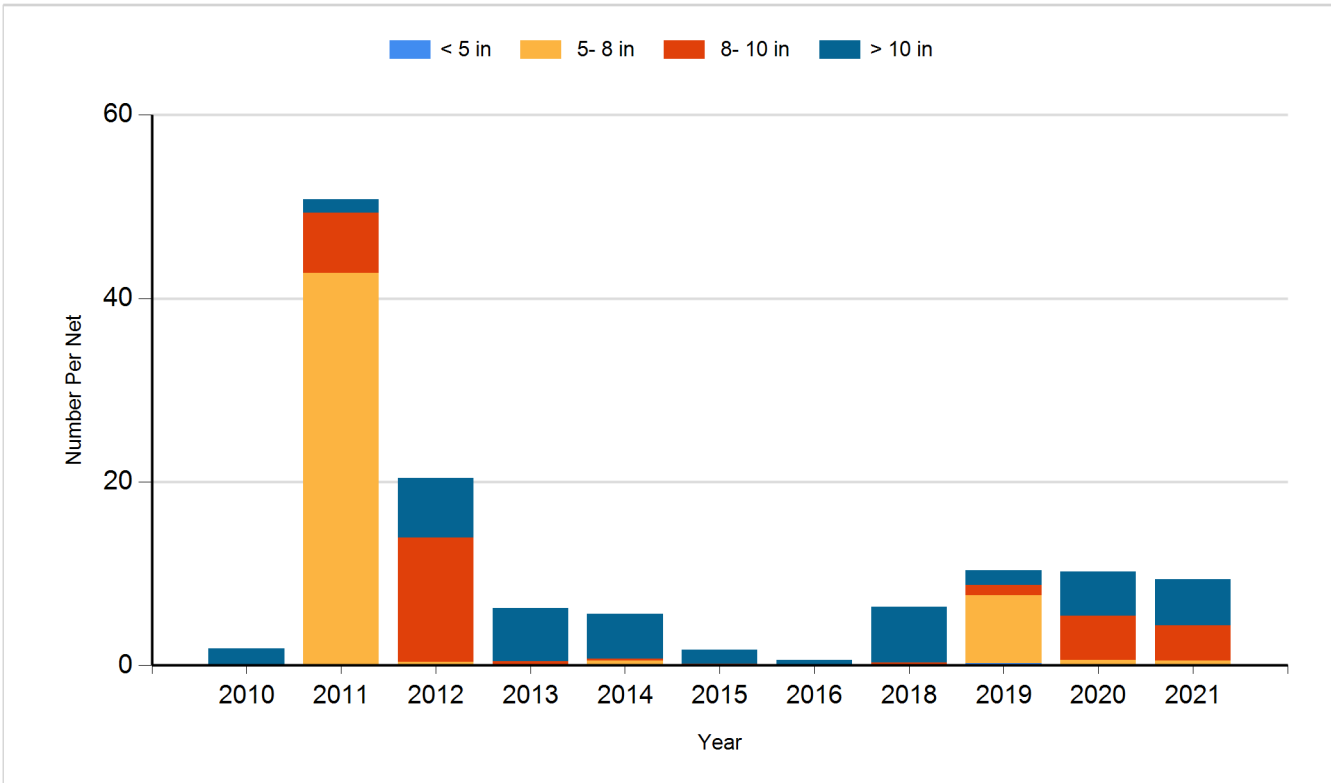
Species: Black Bullhead  
Gear: std exp gill net



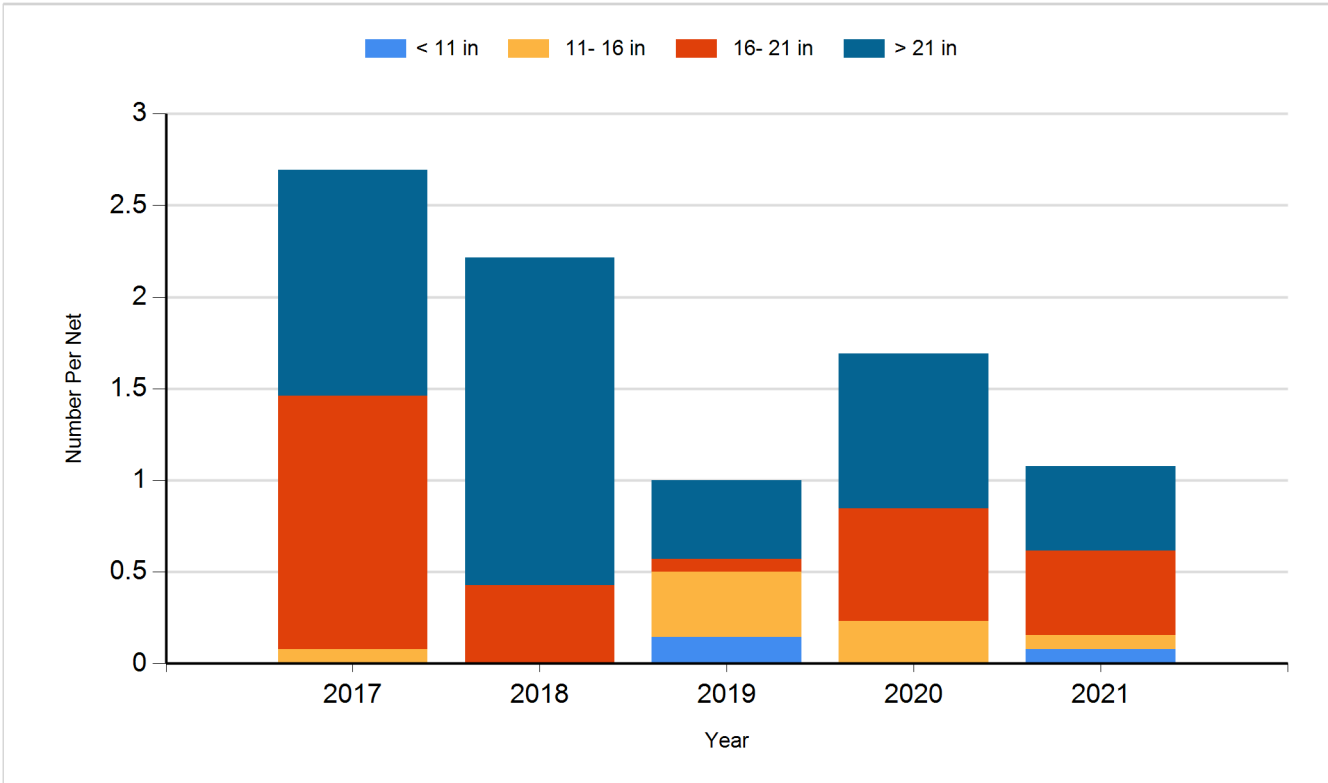
Species: Black Crappie  
Gear: AFS std frame net



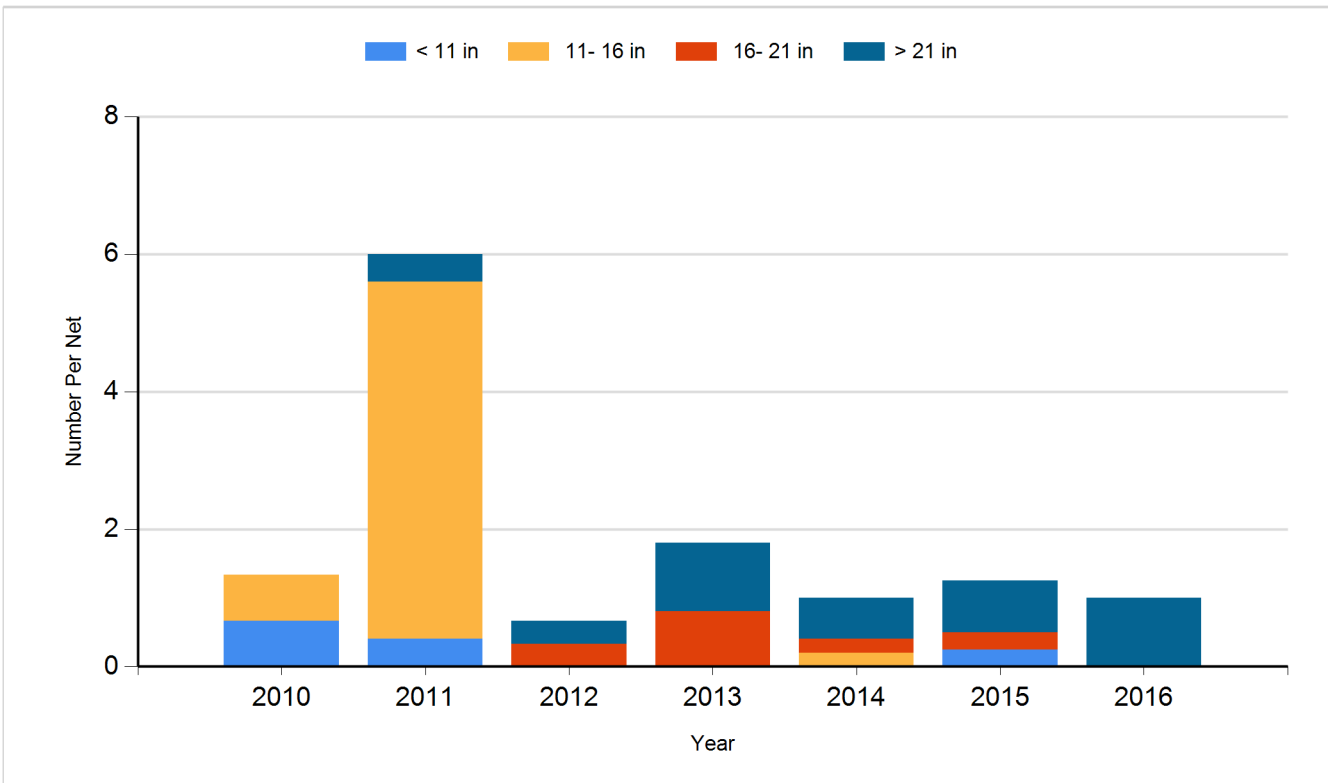
Species: Black Crappie  
Gear: frame net (std 3/4 in)



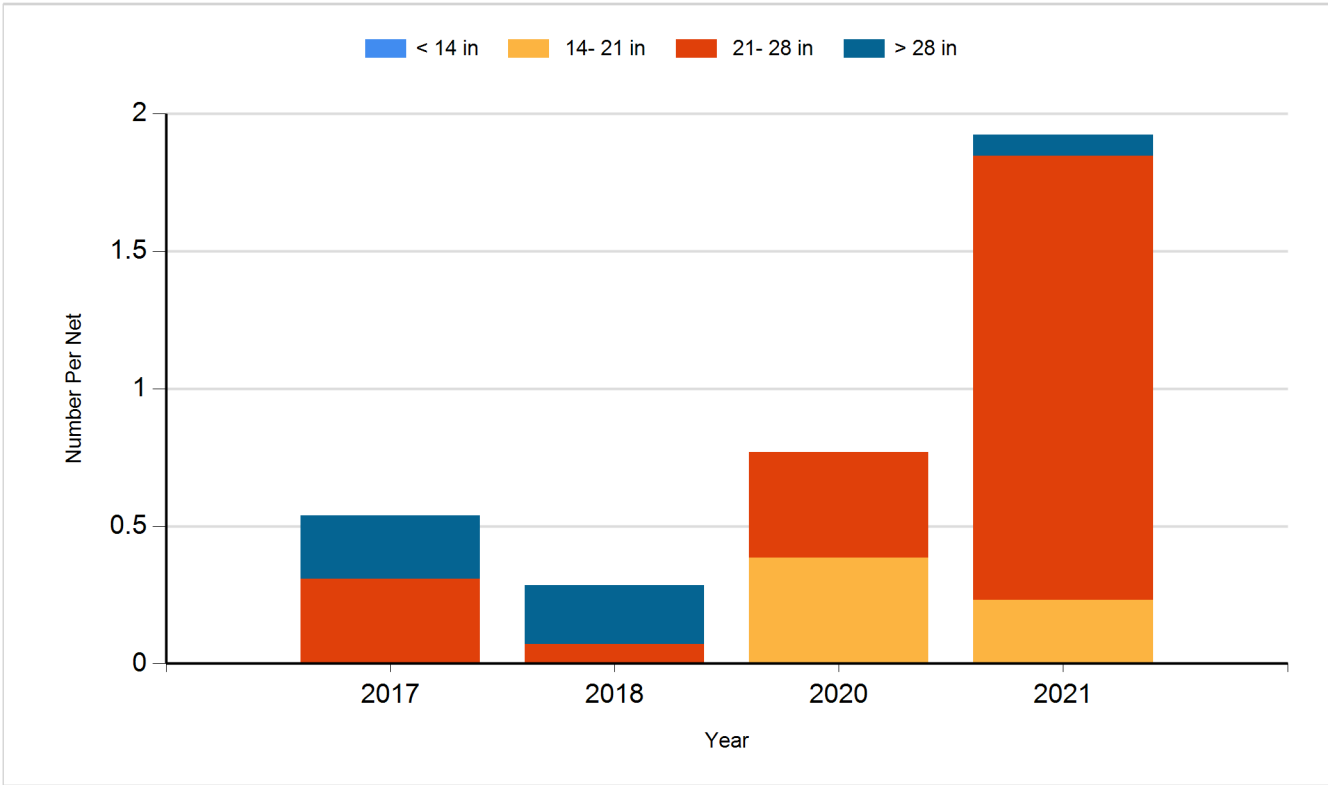
Species: Common Carp  
Gear: AFS std gill net



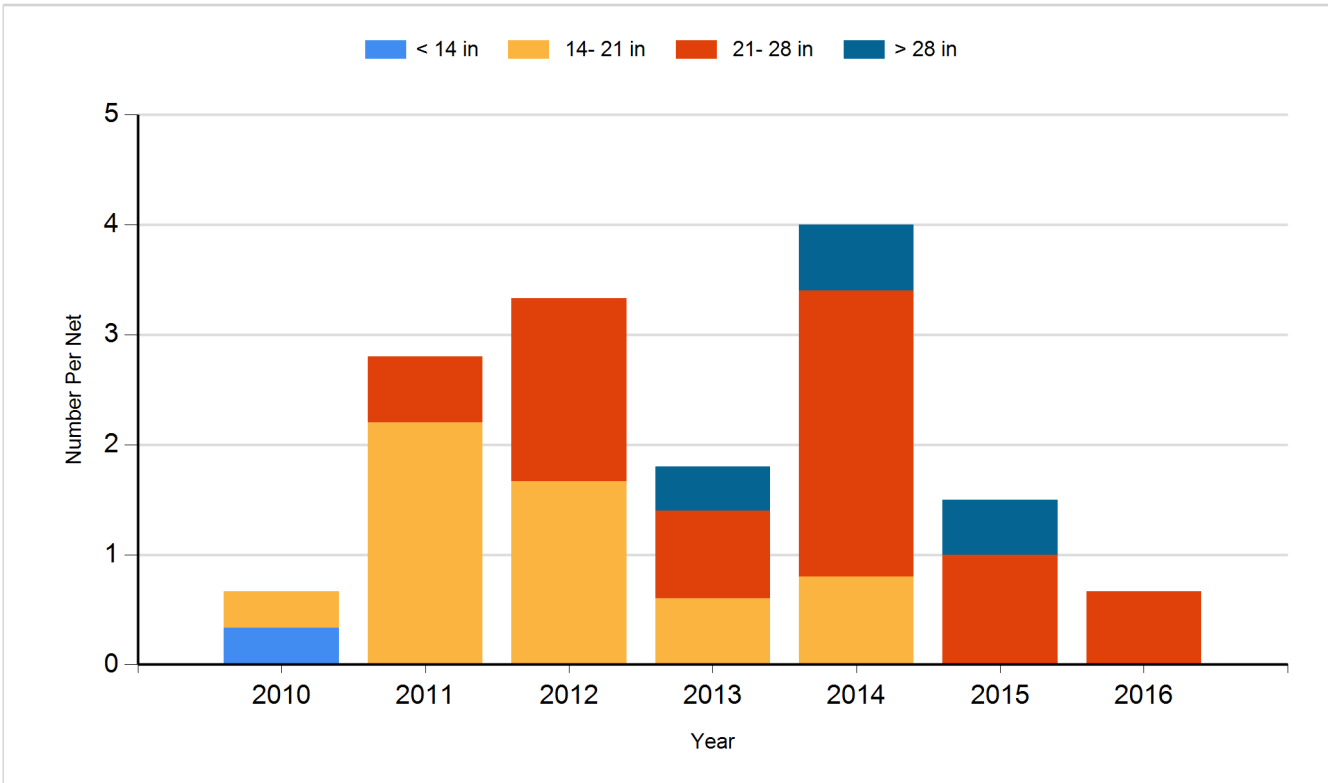
Species: Common Carp  
Gear: std exp gill net



Species: Northern Pike  
Gear: AFS std gill net

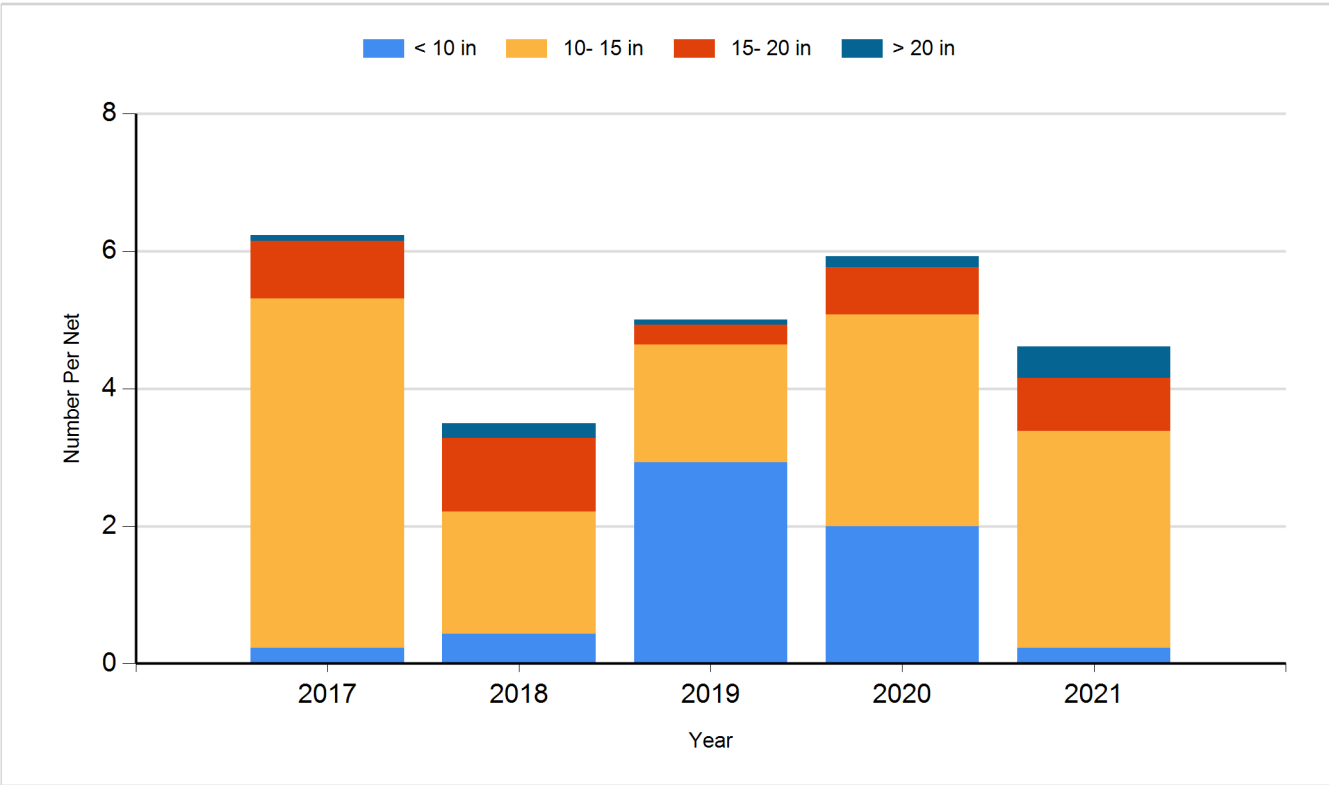


Species: Northern Pike  
Gear: std exp gill net

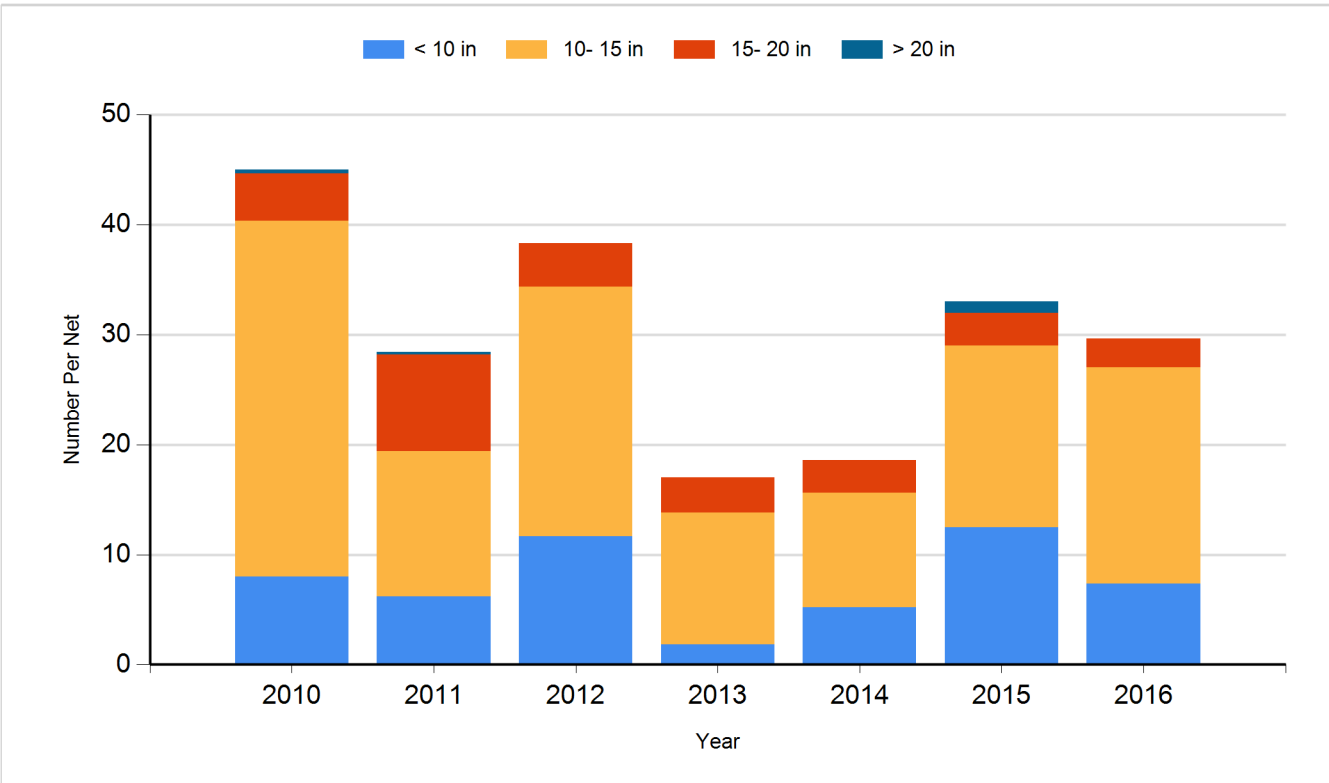




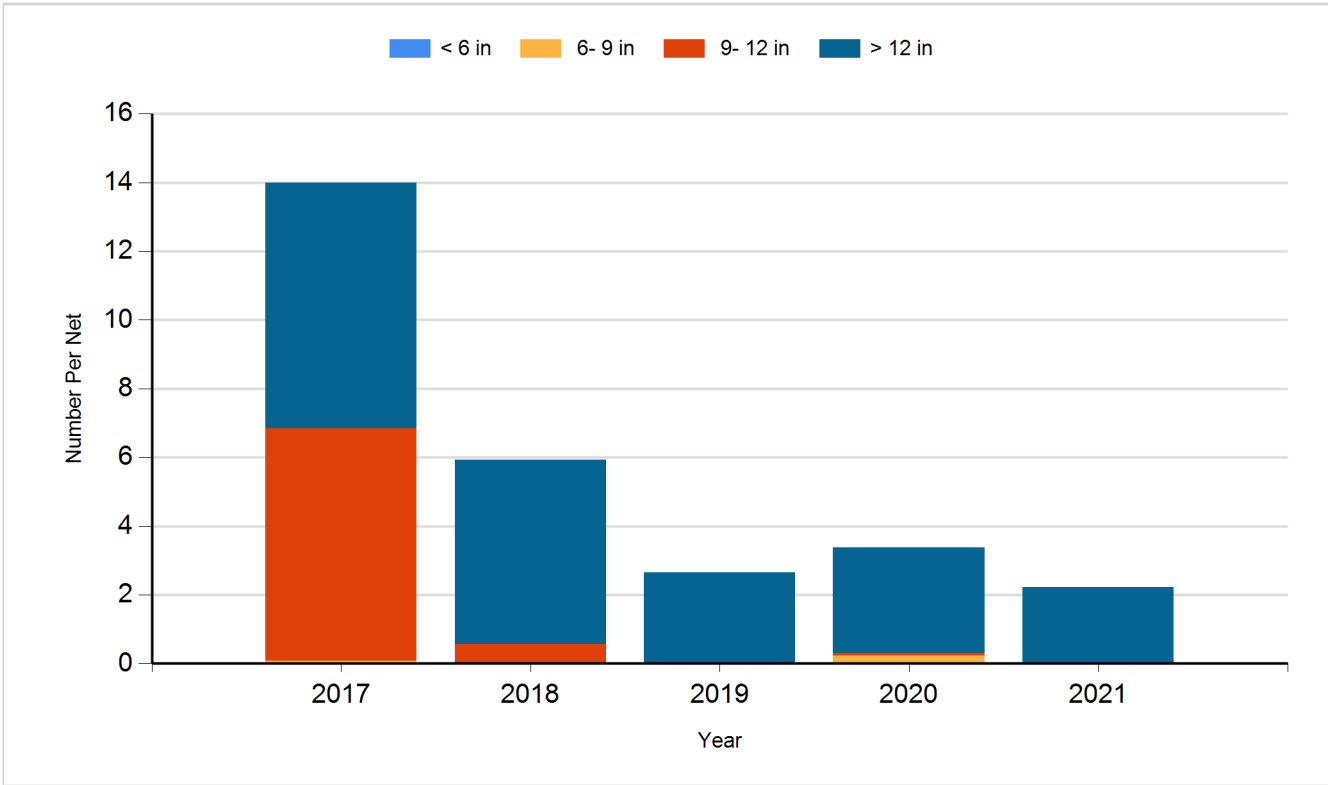
Species: Walleye  
Gear: AFS std gill net



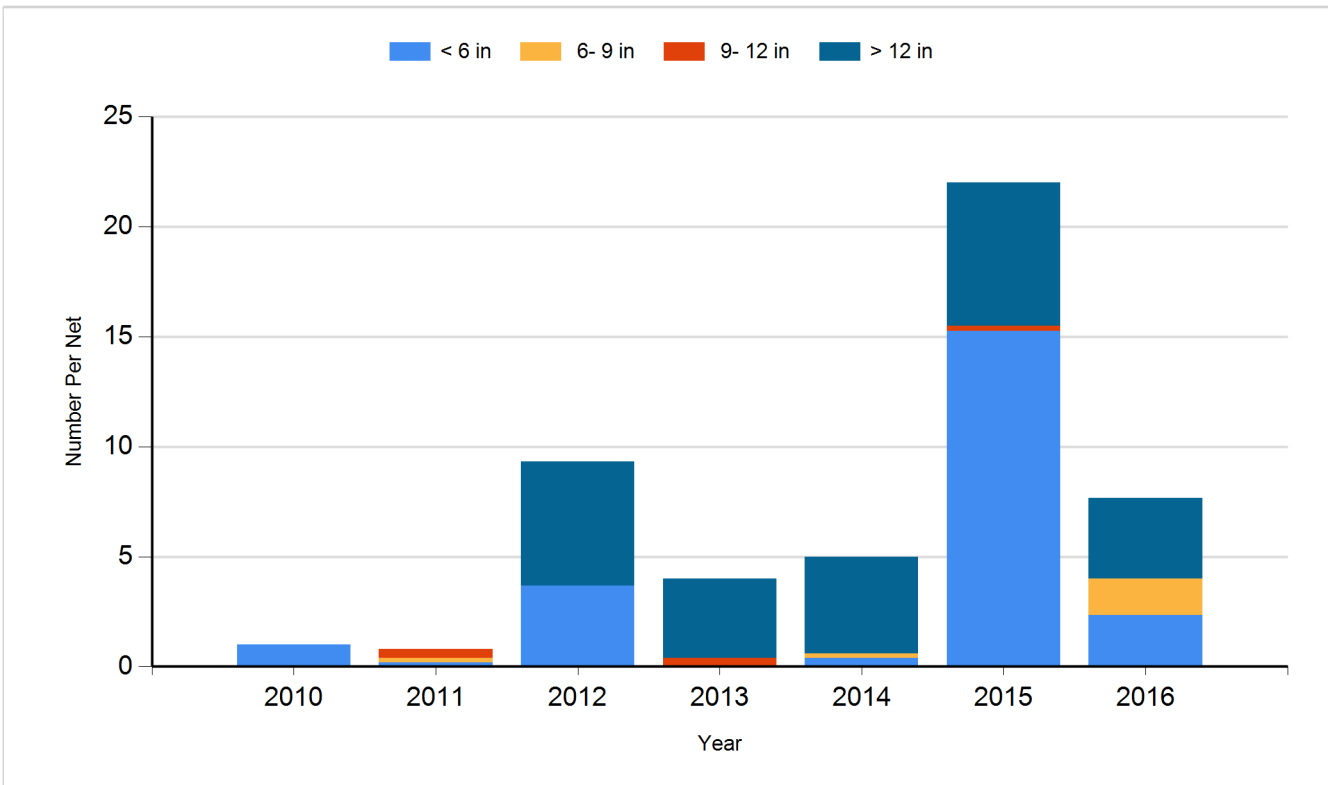
Species: Walleye  
Gear: std exp gill net



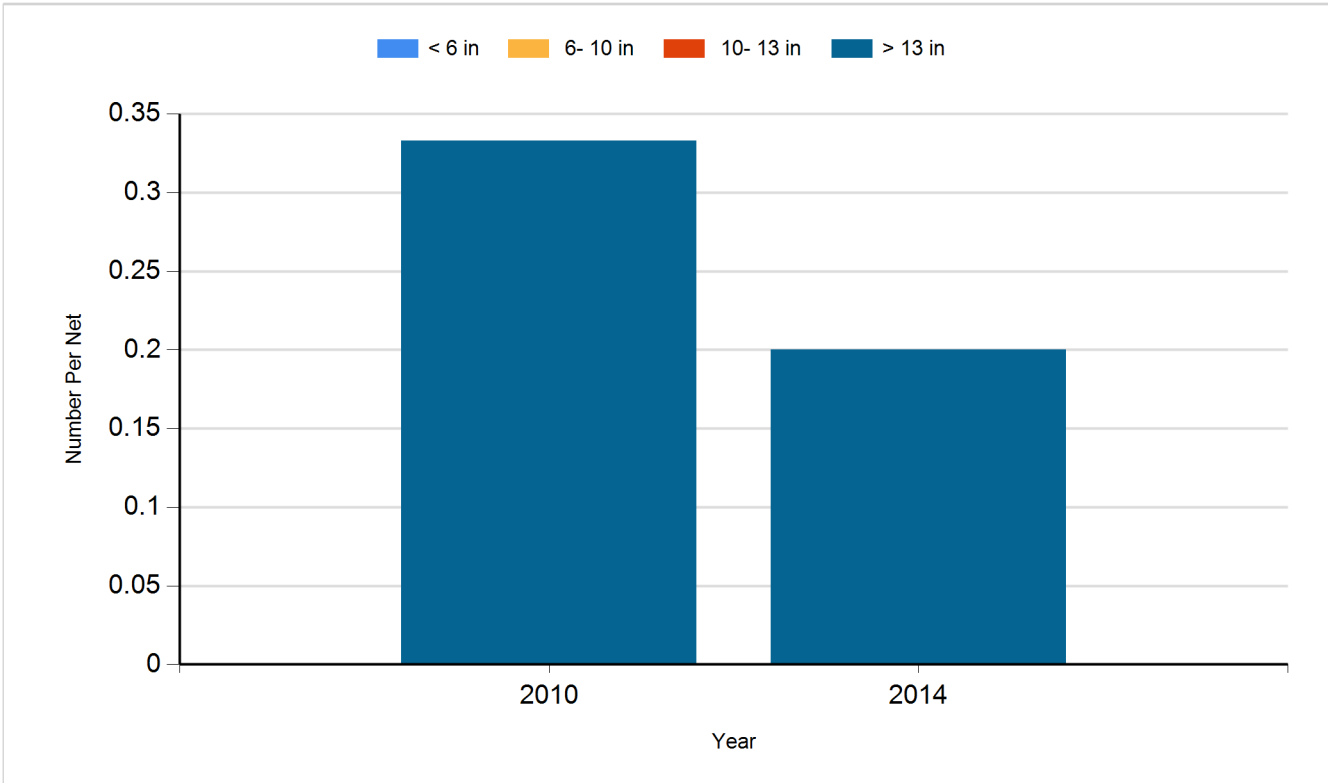
Species: White Bass  
Gear: AFS std gill net



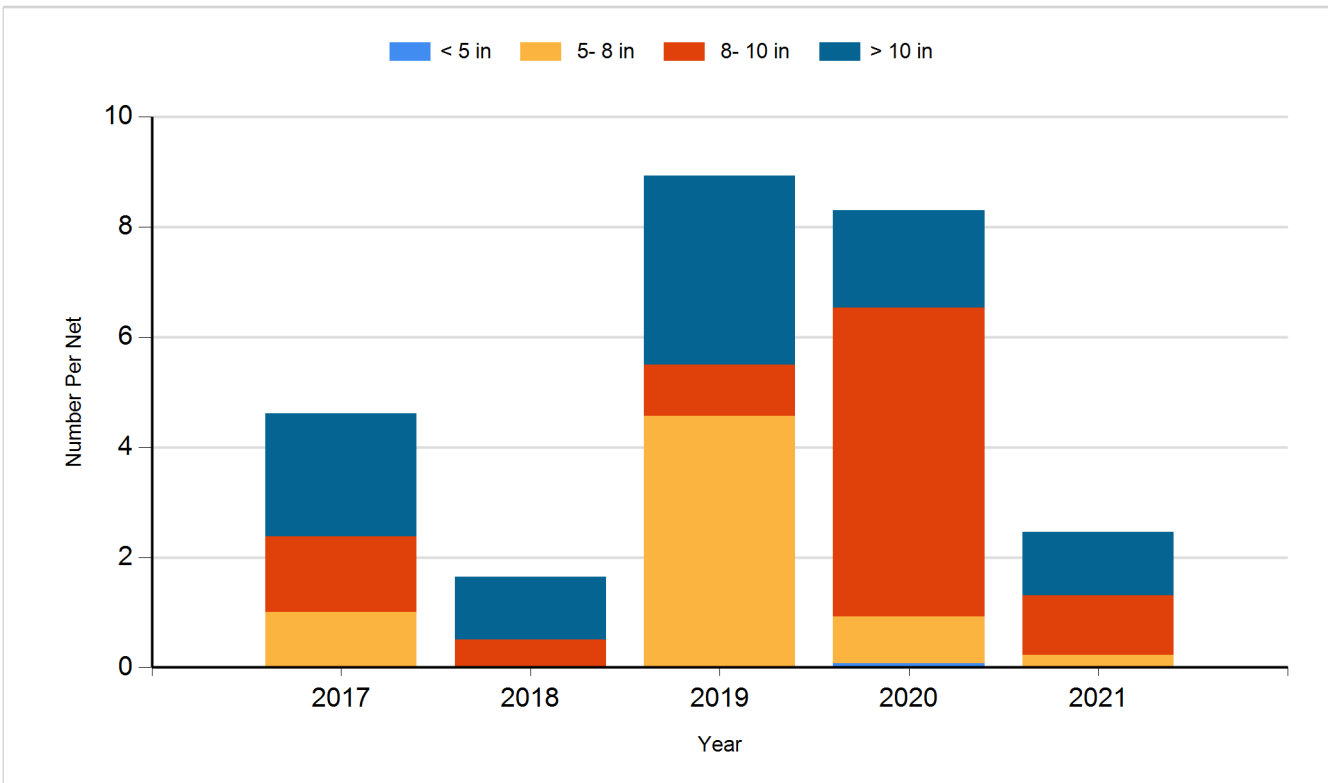
Species: White Bass  
Gear: std exp gill net



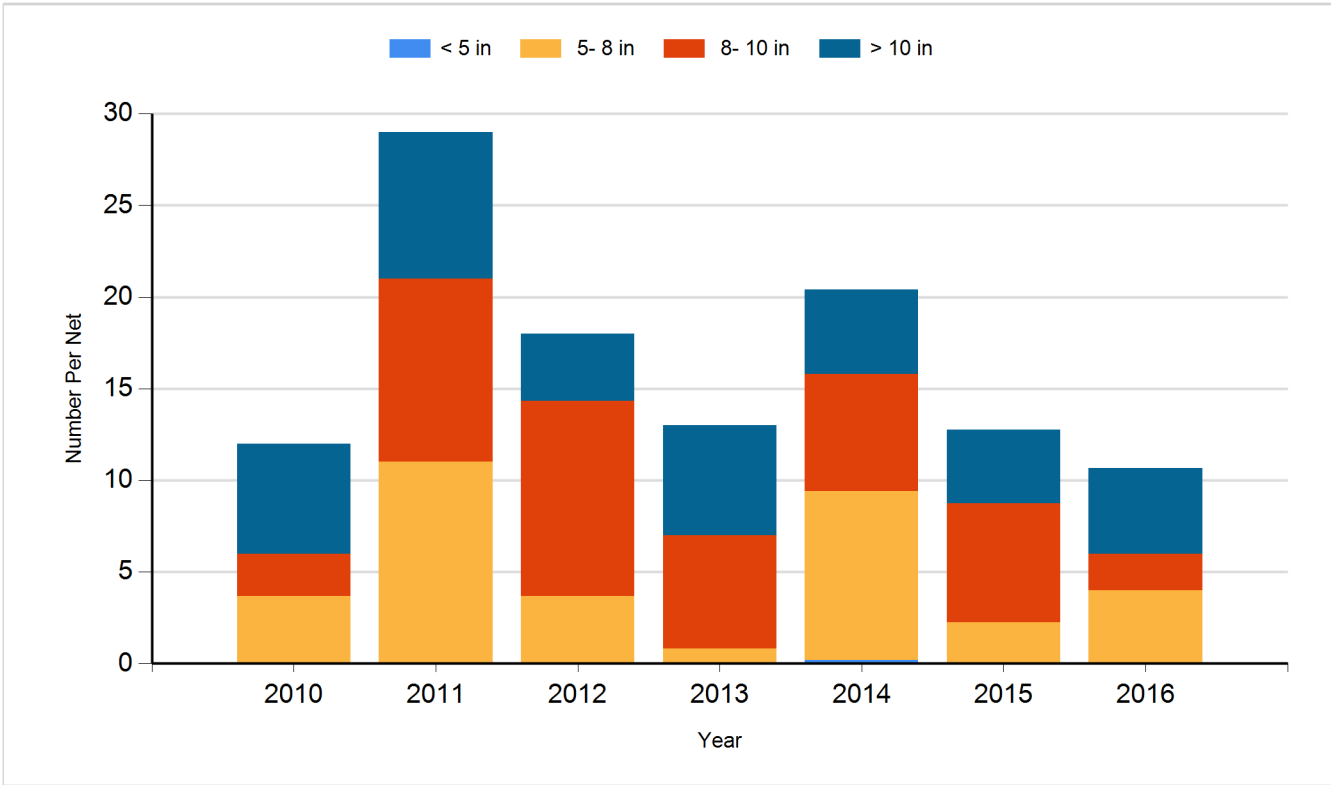
Species: White Sucker  
Gear: std exp gill net



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
2011	Walleye	Fry	8,000,000
2014	Walleye	Fry	6,200,000
2015	Walleye	Fry	6,200,000
2018	Walleye	Fry	6,200,000
2019	Walleye	Fry	6,200,000