

**SOUTH DAKOTA STATEWIDE FISHERIES SURVEY**  
**Campbell, Brookings County**  
**MBS-Lake-234-000**  
**2024**

**Lake Information**

<b>Name:</b>	Campbell	<b>Maximum Depth:</b>	8 Feet
<b>County:</b>	Brookings	<b>Mean Depth:</b>	3 Feet
<b>Legal Description:</b>	T109n-R50W-Sec.28, 29, 32, 33; T108N-R50W-Sec. 5	<b>OHWM Elevation:</b>	1,576
<b>Surface Area:</b>	798 Acres	<b>Outlet Elevation:</b>	1,575

**Surveys and Investigations**

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

Gear	Date	Effort
AFS std gill net	Jul 23, 2024	6 net-nights

## **Common Fish Species Present**

Yellow Perch

Walleye

Channel Catfish

Black Bullhead

Bigmouth Buffalo

Common Carp

Saugeye

Northern Pike

White Sucker

White Bass

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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	134	9.3	4.7	0		0			
	Black Bullhead	88	14.0	3.2	15	6	4			
	Black Crappie	8	1.3	0.9	63		0		107	4
	Channel Catfish	98	14.8	2.5	74	7	7	4	92	2
	Common Carp	25	3.7	1.8	55	17	23	15		
	Northern Pike	12	2.0	0.8	42	24	8		95	4
	Saugeye	21	3.3	1.1	25	16	25	16	93	3
	White Bass	8	1.3	0.6	100		0		92	6
	White Sucker	11	1.7	1.9	100		10			
	Yellow Perch	48	8.0	2.7	27	10	4		108	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.

\* Methods/Species that ignore stock length

Gear	Species	CPUE										Avg
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
AFS std gill net	Bigmouth Buffalo			1.5	1.3	1.2		0.3	0.7		9.3	2.38
	Black Bullhead			10.8	17.8	3.2		2.7	2.7		14.0	8.53
	Black Crappie			0.0	0.2	0.3		0.3	0.0		1.3	0.35
	Channel Catfish			2.3	6.0	4.0		25.0	6.8		14.8	9.82
	Common Carp			4.3	1.2	1.5		0.8	1.8		3.7	2.22
	Northern Pike			0.8	0.3	1.0		0.7	0.5		2.0	0.88
	Saugeye			1.3	3.7	2.3		0.7	2.7		3.3	2.33
	Shorthead Redhorse			0.2	0.2	1.7		0.2	0.0		0.0	0.38
	Walleye			10.8	3.0	0.2		0.0	0.0		0.0	2.33
	White Bass			1.5	1.7	1.2		0.5	0.0		1.3	1.03
	White Sucker			9.5	8.2	13.5		10.2	5.0		1.7	8.02
Yellow Perch			3.3	1.5	3.2		0.7	1.8		8.0	3.08	
std exp gill net	Bigmouth Buffalo	2.0	0.0									1.00
	Black Bullhead	39.7	61.0									50.35
	Channel Catfish	3.0	5.3									4.15
	Common Carp	4.0	1.3									2.65
	Common Shiner	0.0	0.0									0.00
	Northern Pike	2.7	1.3									2.00
	Orangespotted Sunfish	0.0	0.0									0.00
	Shorthead Redhorse	0.0	0.3									0.15
	Walleye	0.3	22.7									11.50
	White Bass	2.7	2.0									2.35
	White Sucker	7.7	9.3									8.50
Yellow Perch	26.3	6.0									16.15	

## 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									
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net	Bigmouth Buffalo	PSD			0	38	71		50	25		0
		PSD-P			0	13	14		0	0		0
	Black Bullhead	PSD			29	95	89		100	94		15
		PSD-P			3	3	5		6	0		4
	Channel Catfish	PSD			50	100	92		74	88		74
		PSD-P			14	17	8		3	5		7
		Wr			98	93	105		92	92		92
	Common Carp	PSD			85	100	89		100	100		55
		PSD-P			58	57	56		0	55		23
	Northern Pike	PSD			80	50	83		75	67		42
		PSD-P			40	50	0		25	0		8
		Wr			85	121	85		72	78		95
	Saugeye	PSD			0	9	50		25	69		25
		PSD-P			0	0	0		0	19		25
		Wr			88	88	90		79	91		93
	Walleye	PSD			20	33	100					
		PSD-P			0	0	100					
		Wr			82	83	91					
	White Bass	PSD			100	90	57		100			100
		PSD-P			100	80	57		33			0
		Wr			92	89	95		94			92
White Sucker	PSD			100	100	100		100	100		100	
	PSD-P			98	100	99		100	97		10	
Yellow Perch	PSD			95	78	79		75	100		27	
	PSD-P			80	44	26		50	82		4	
	Wr			91	100	113		113	99		108	
std exp gill net	Bigmouth Buffalo	PSD	0									
		PSD-P	0									
	Black Bullhead	PSD	45	60								
		PSD-P	2	3								
	Channel Catfish	PSD	100	19								
		PSD-P	11	6								
		Wr	109	99								

Gear	Species	Index	Year															
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024						
std exp gill net	Common Carp	PSD	8	100														
		PSD-P	8	25														
	Northern Pike	PSD	75	100														
		PSD-P	0	25														
		Wr	97	88														
	Walleye	PSD	0	0														
		PSD-P	0	0														
		Wr	113	90														
	White Bass	PSD	13	100														
		PSD-P	13	100														
		Wr	100	102														
	White Sucker	PSD	22	96														
		PSD-P	9	46														
	Yellow Perch	PSD	100	100														
		PSD-P	43	83														
		Wr	103	91														



## Length at Capture

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

Species: Saugeye

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	21	264 (16)		478 (4)			490 (1)				
2022	15	266 (4)		424 (8)	475 (1)	560 (2)					
2021	4		331 (3)	322 (1)							
2019	16	224 (3)	353 (10)	433 (3)							
2018	22	263 (4)	336 (18)								

Species: Walleye

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2019	1				550 (1)						
2018	18	282 (5)	327 (6)	405 (7)							
2017	66	270 (28)	376 (37)					505 (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+
2019	19	143 (4)	218 (9)	256 (6)							
2018	9	166 (2)	235 (2)	243 (1)	273 (1)	295 (3)					

## **Fish Condition**

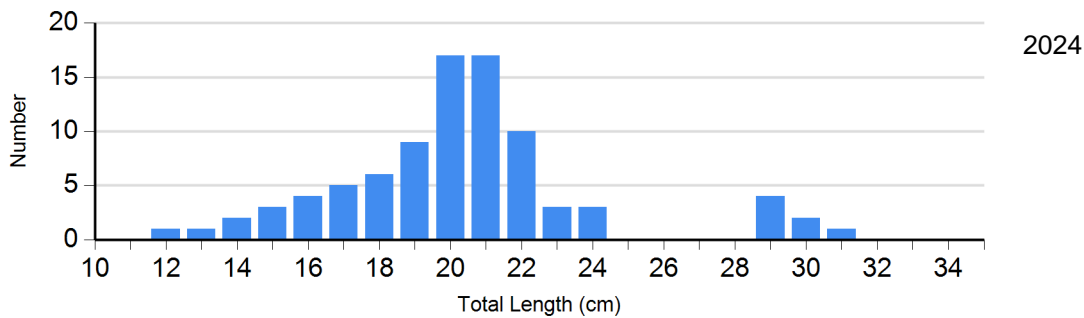
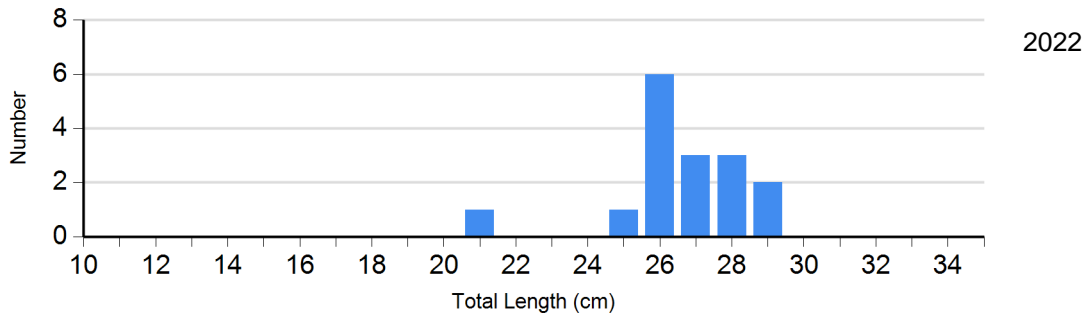
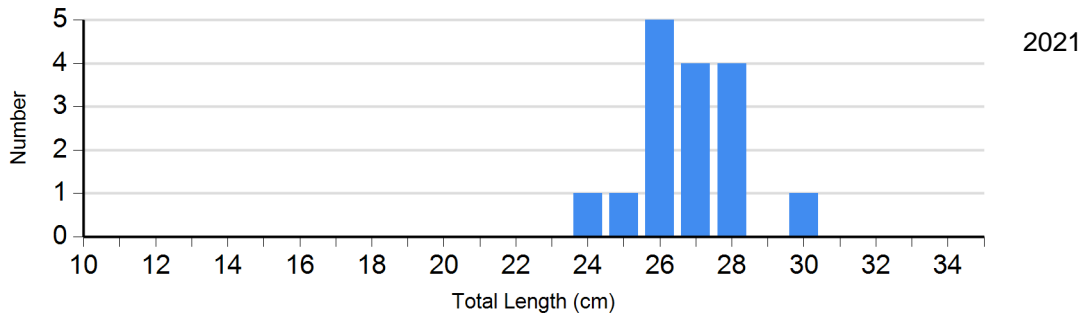
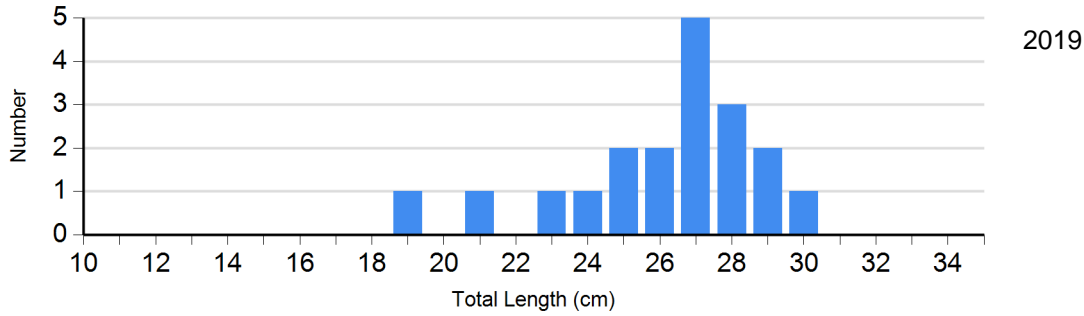
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

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	2021	39	93 (1.2)	107	90 (0.8)	4	99 (1.1)	0	
	2022	5	95 (4.0)	34	91 (1.6)	2	94 (3.8)	0	
	2024	23	89 (3.3)	60	94 (1.6)	5	94 (5.8)	1	
Northern Pike Gill Net	2021	1		2	69 (0.3)	1	79	0	
	2022	1	82	2	76 (6.5)	0		0	
	2024	7	94 (0.8)	4	97 (9.7)	1	99	0	
Saugeye Gill Net	2021	3	78 (2.9)	1	79	0		0	
	2022	5	98 (1.0)	8	88 (1.7)	2	88 (2.6)	1	83
	2024	15	89 (1.4)	0		5	104 (4.8)	0	
White Bass Gill Net	2021	0		2	96 (0.0)	1	89	0	
	2024	0		8	92 (4.3)	0		0	
Yellow Perch Gill Net	2021	1	121	1	113	2	110 (10.8)	0	
	2022	0		2	105 (1.6)	9	97 (4.0)	0	
	2024	35	109 (1.7)	11	106 (2.5)	2	102 (3.4)	0	

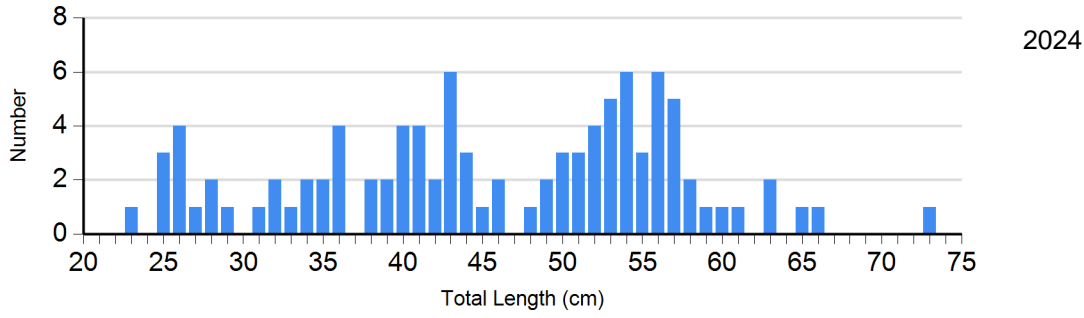
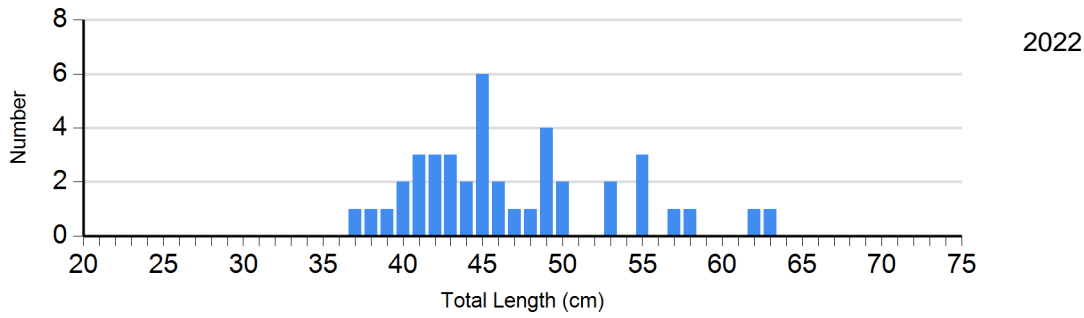
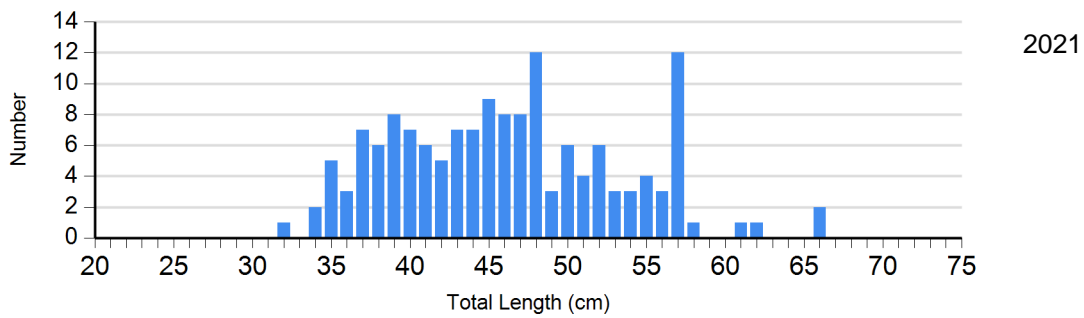
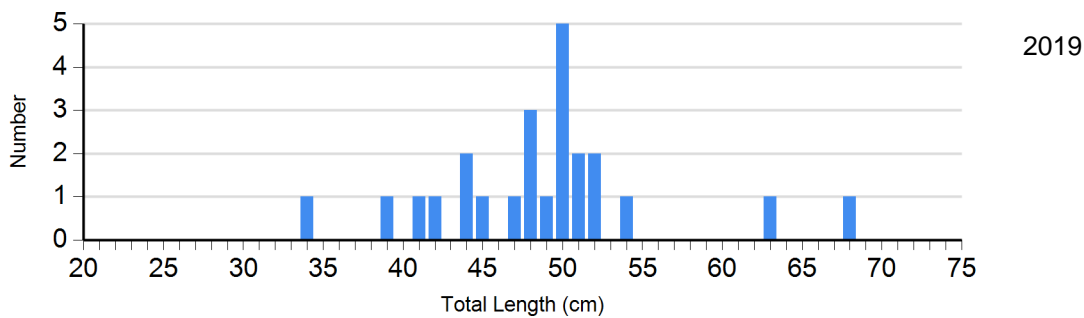
# Length Frequency Distribution

Length frequency histogram of species sampled by year.

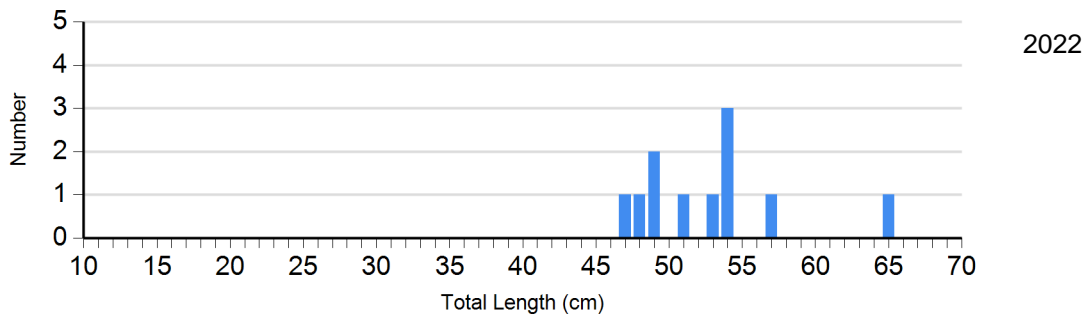
Species: Black Bullhead  
Gear: AFS std gill net

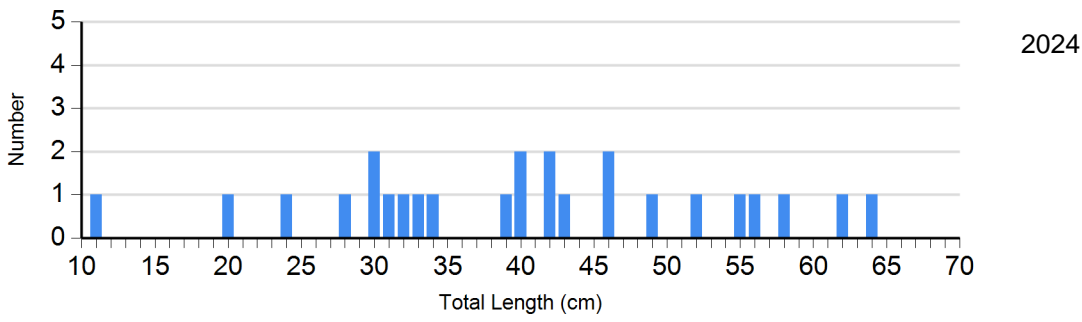


Species: Channel Catfish  
 Gear: AFS std gill net

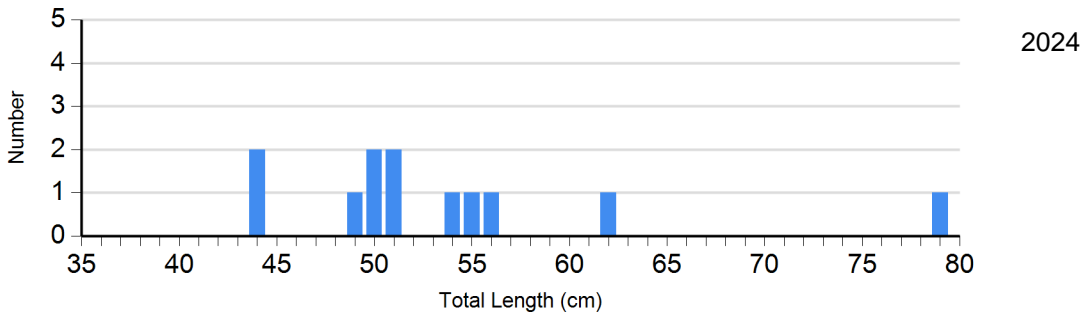


Species: Common Carp  
 Gear: AFS std gill net

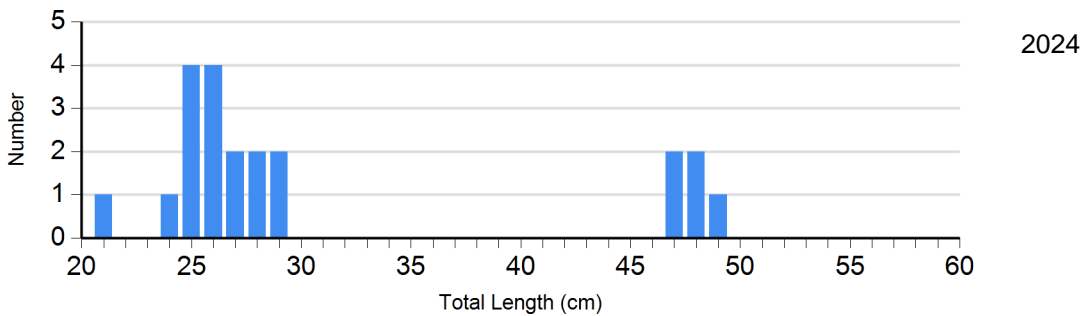
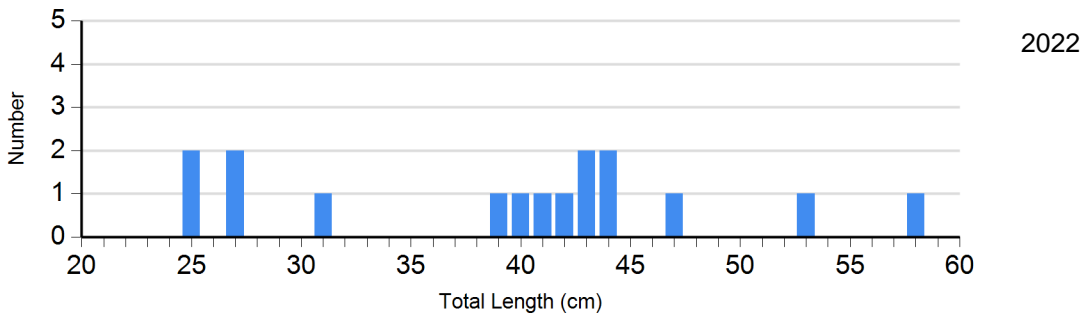
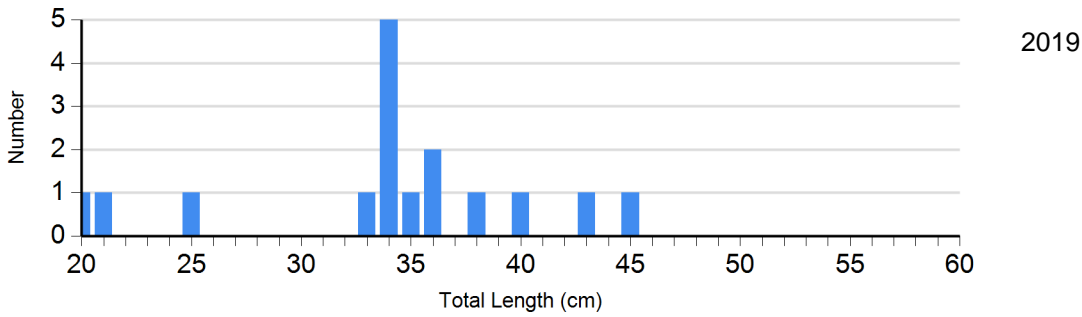




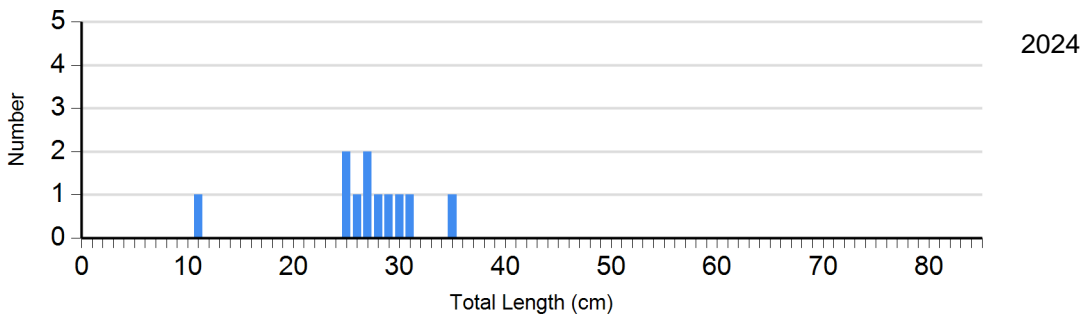
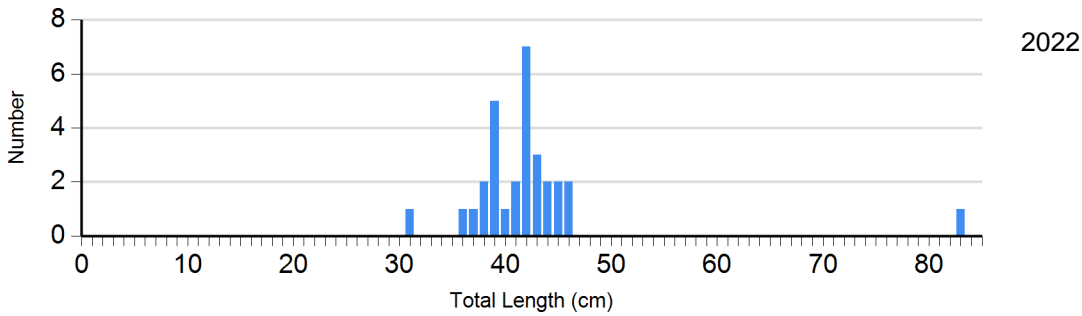
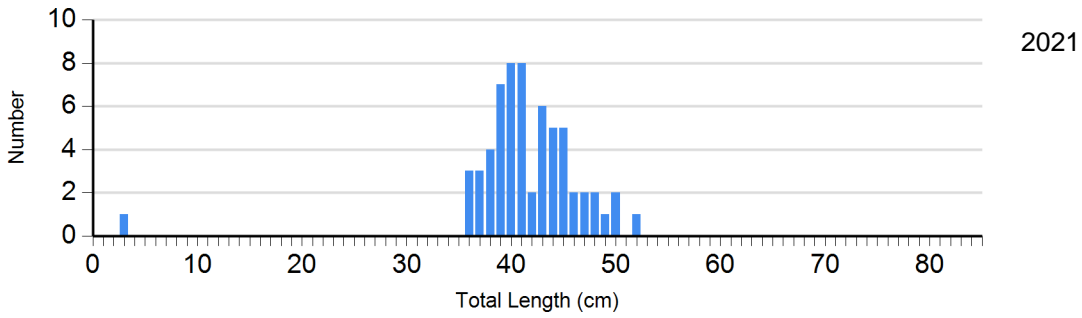
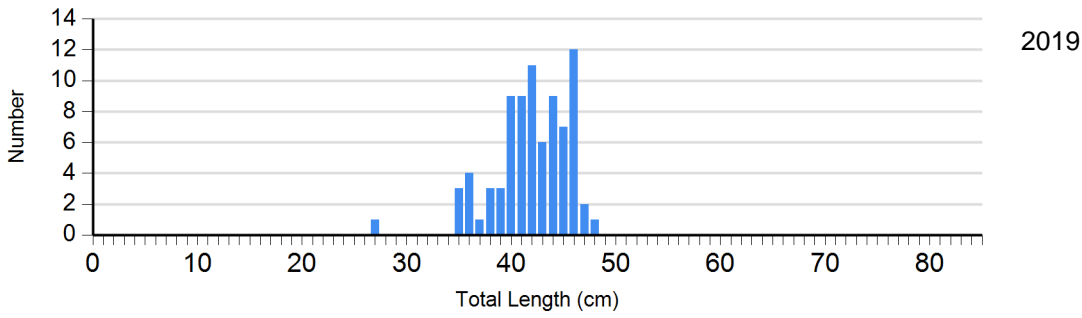
Species: Northern Pike  
Gear: AFS std gill net



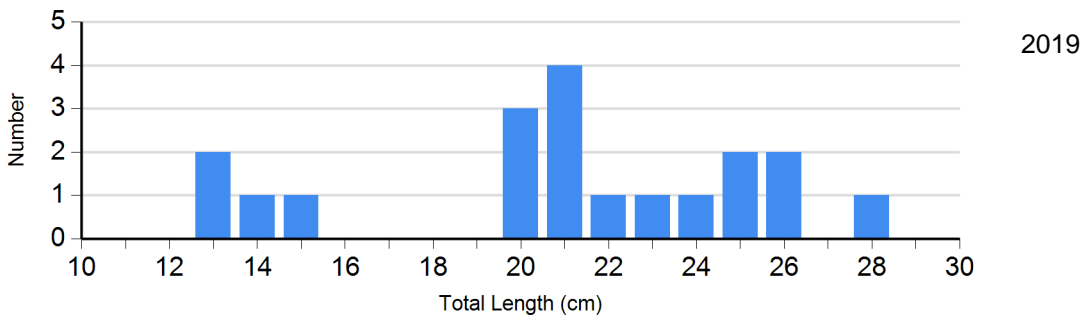
Species: Saugeye  
Gear: AFS std gill net

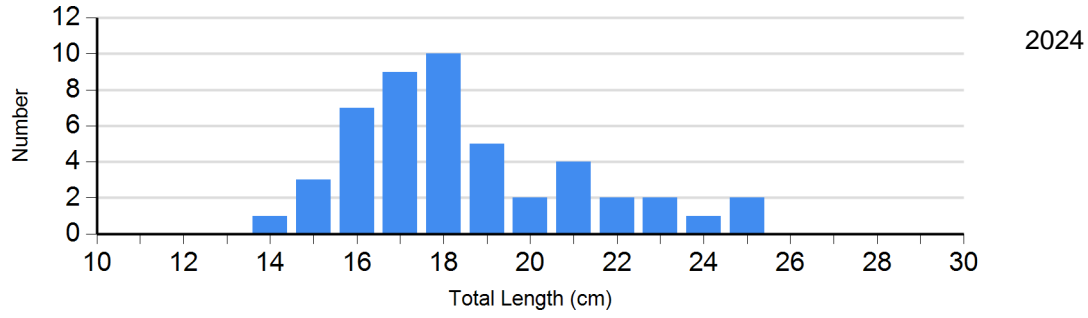
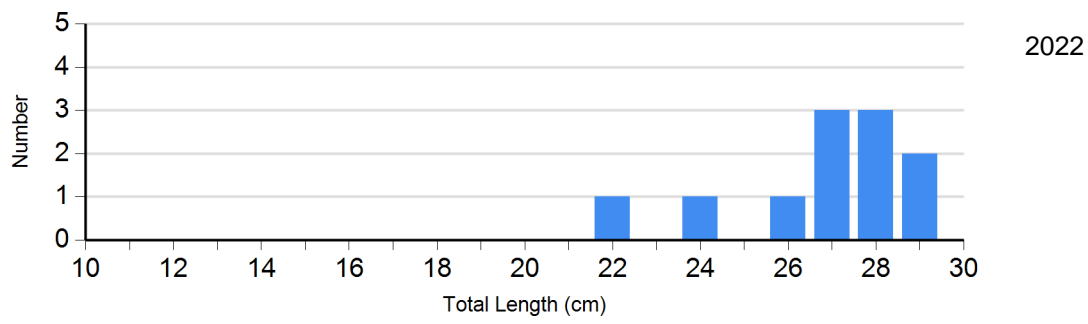


Species: White Sucker  
Gear: AFS std gill net



Species: Yellow Perch  
Gear: AFS std gill net

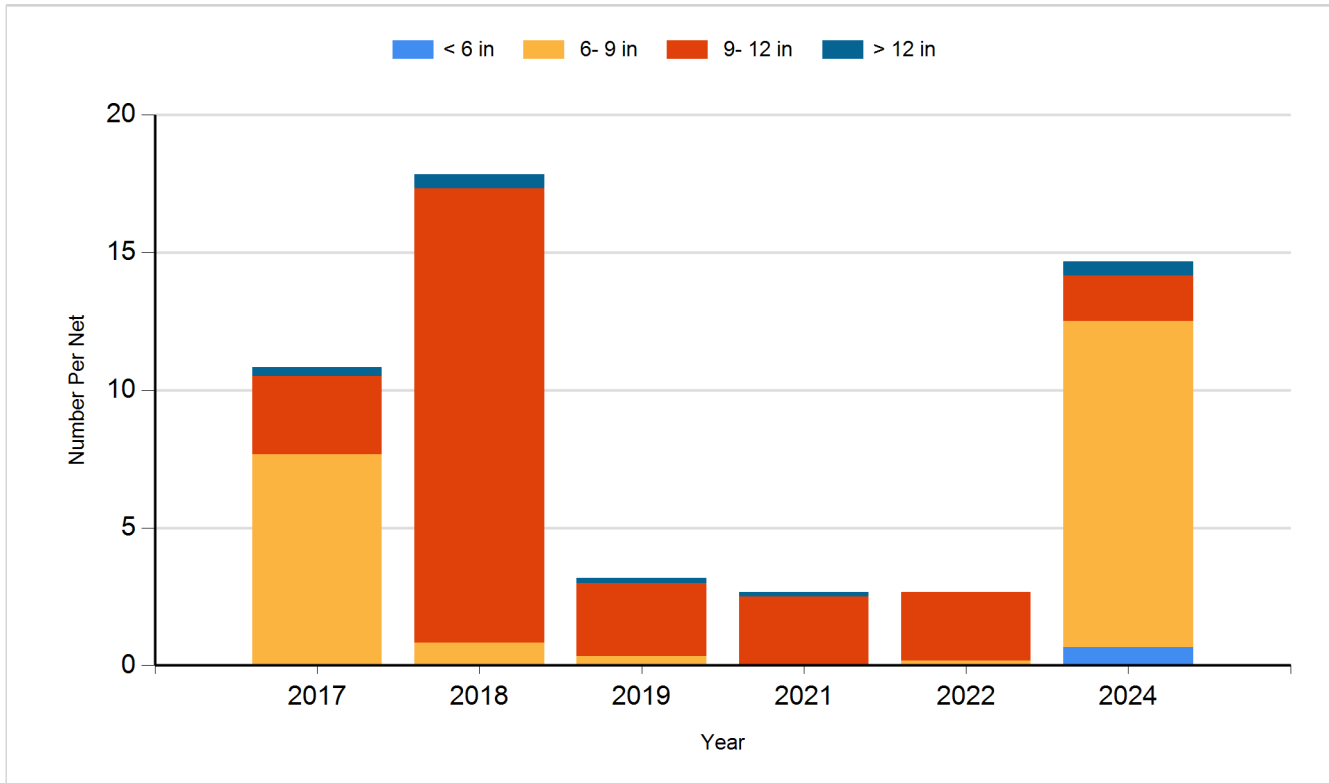




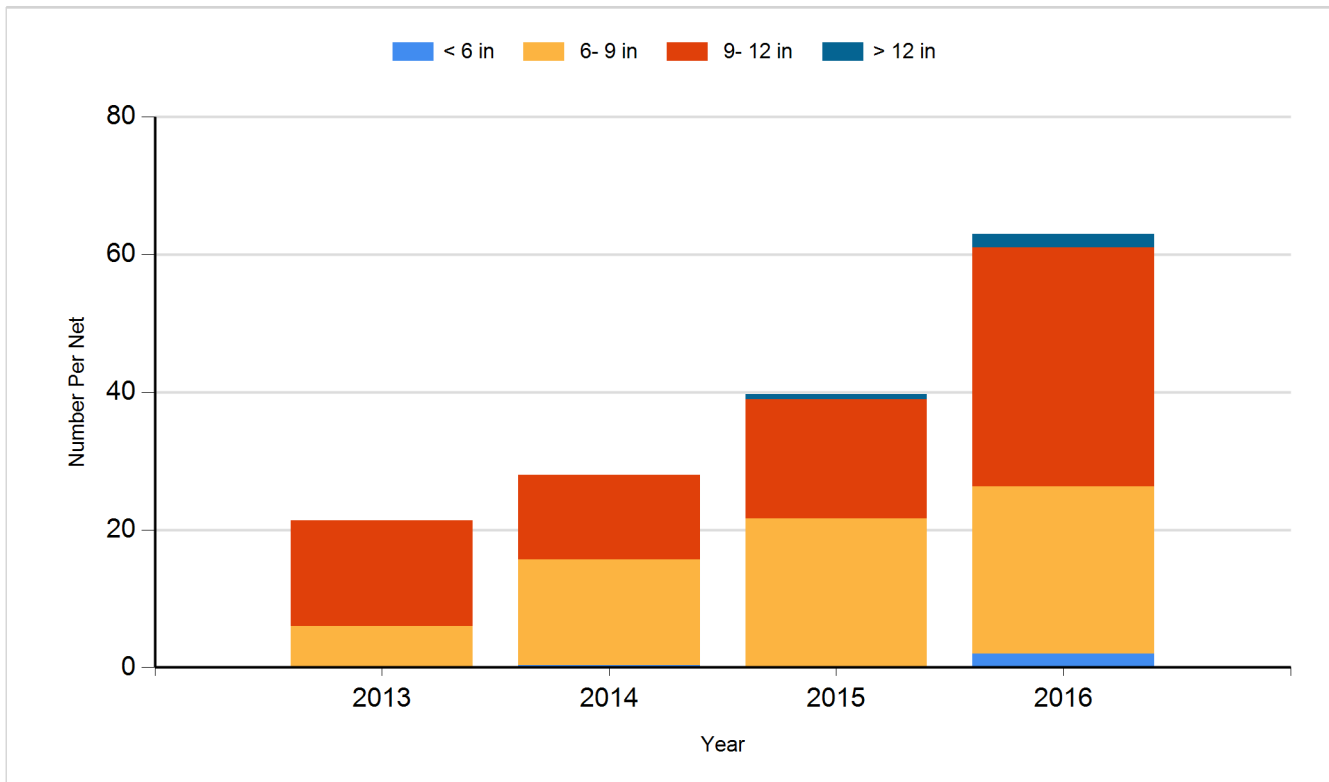
## Historic Fish Sizes and Relative Abundance

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

Species: Black Bullhead  
Gear: AFS std gill net

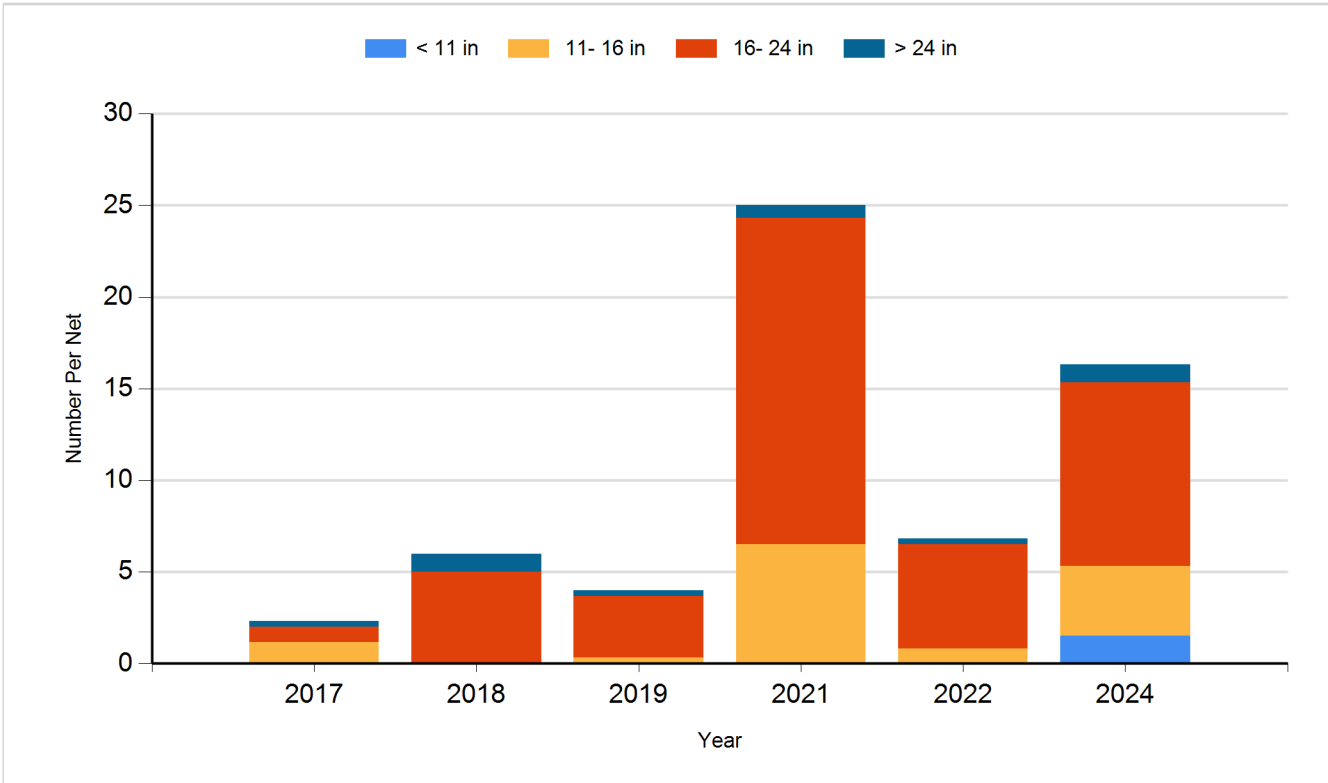


Species: Black Bullhead  
Gear: std exp gill net

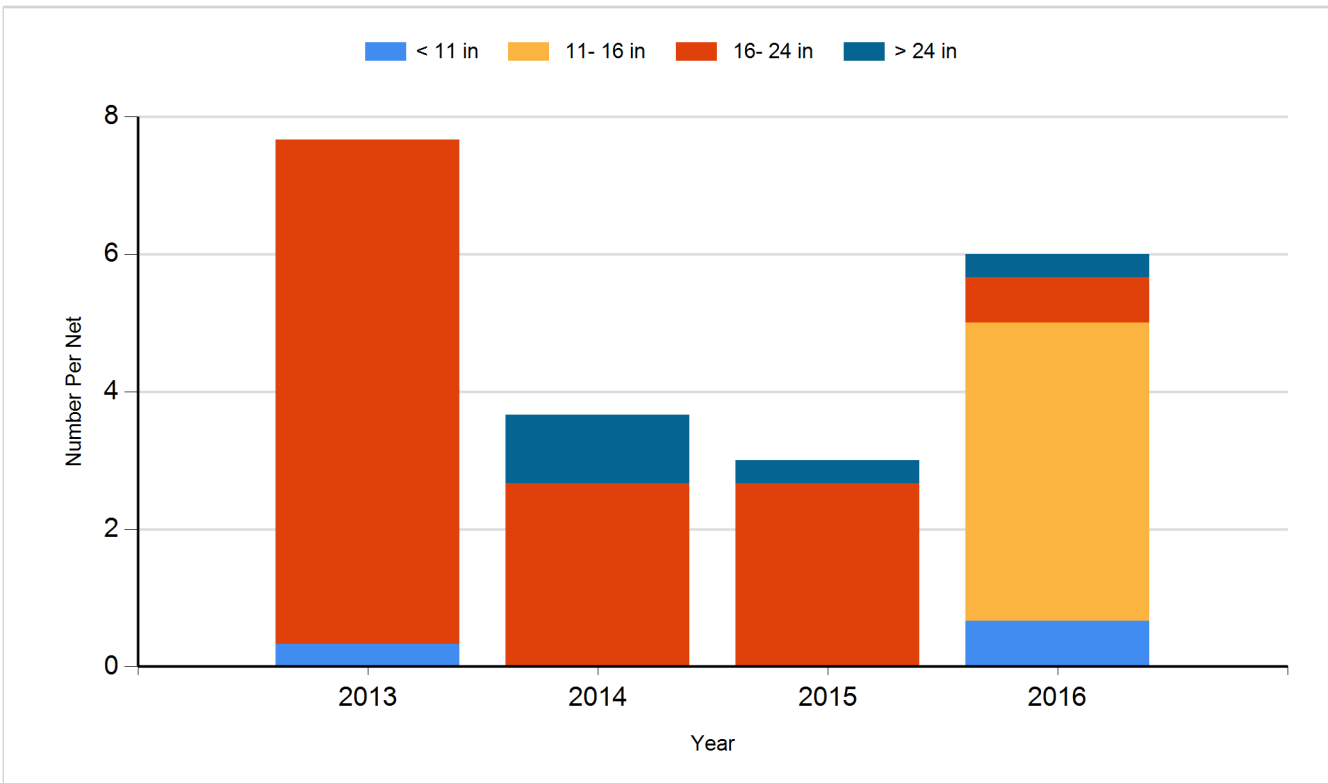




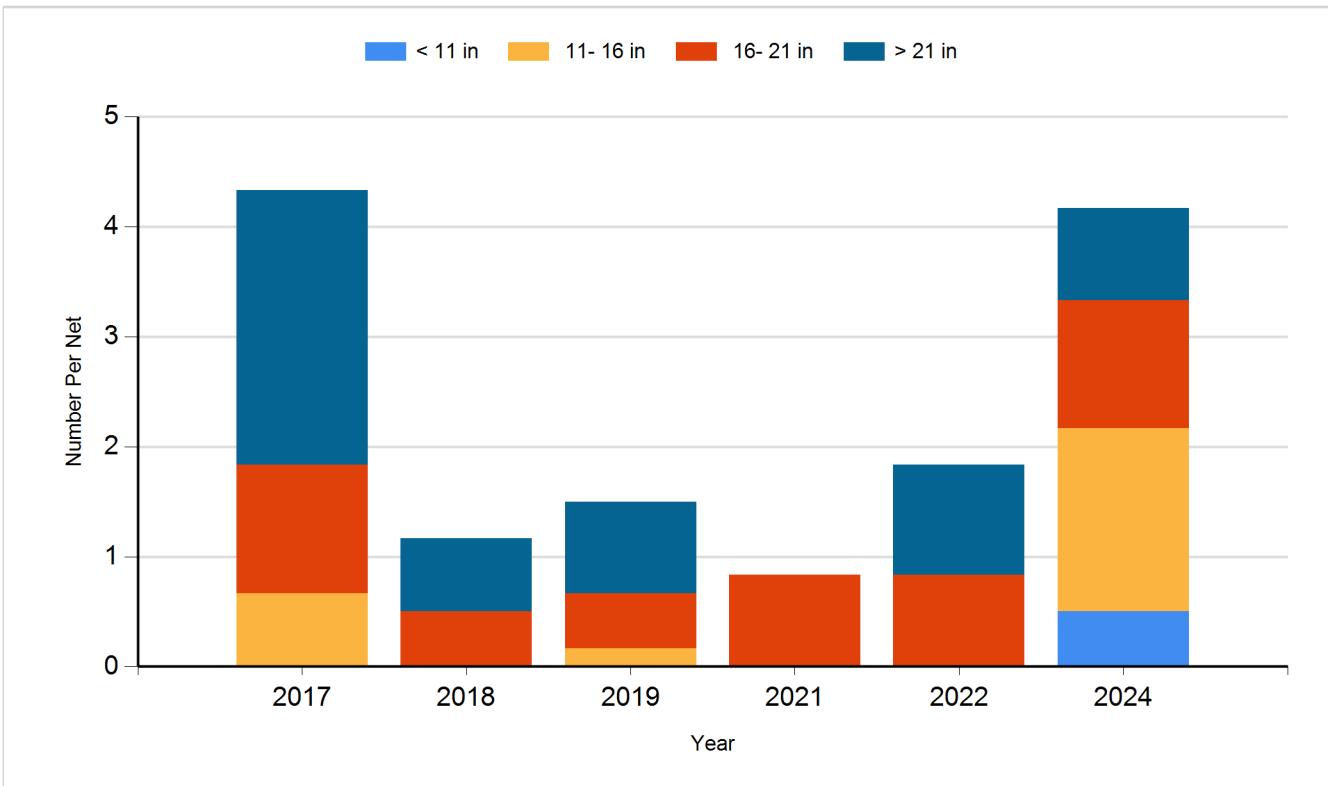
Species: Channel Catfish  
Gear: AFS std gill net



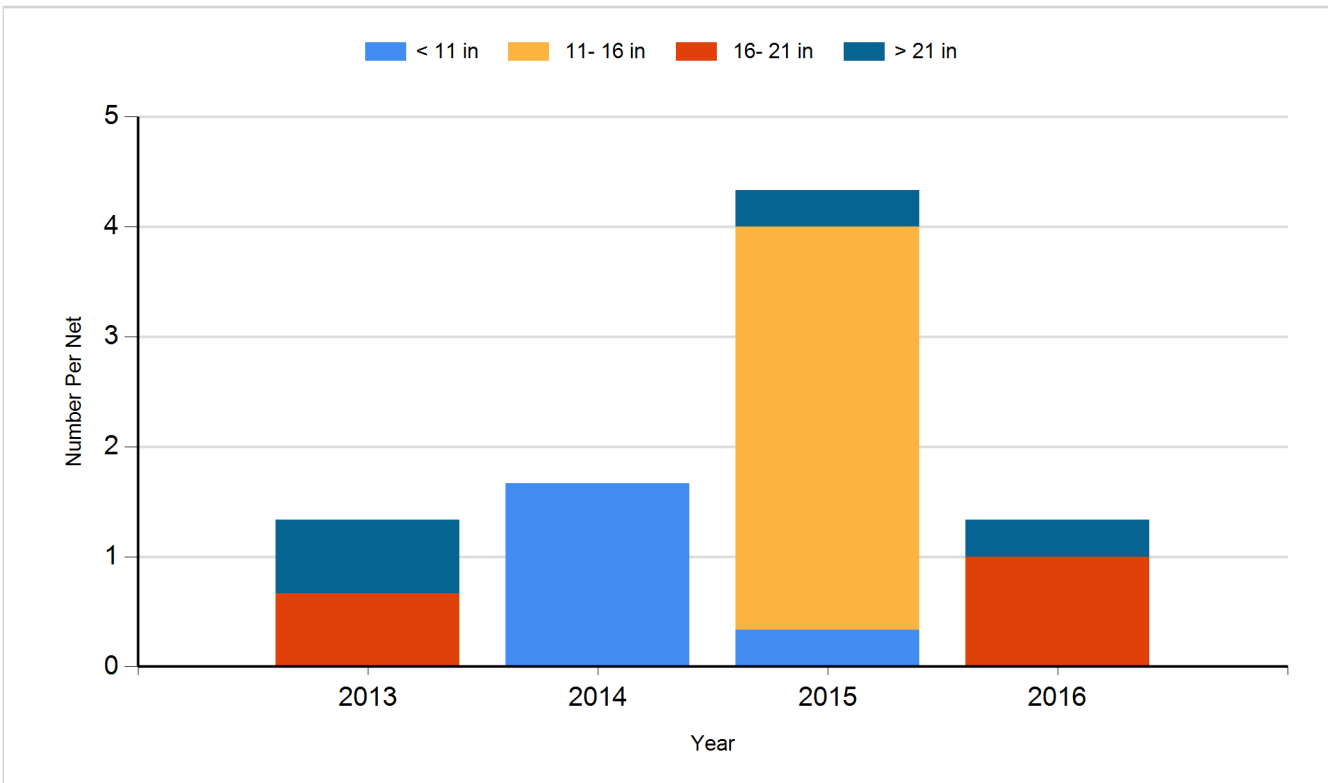
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Gear: std exp gill net



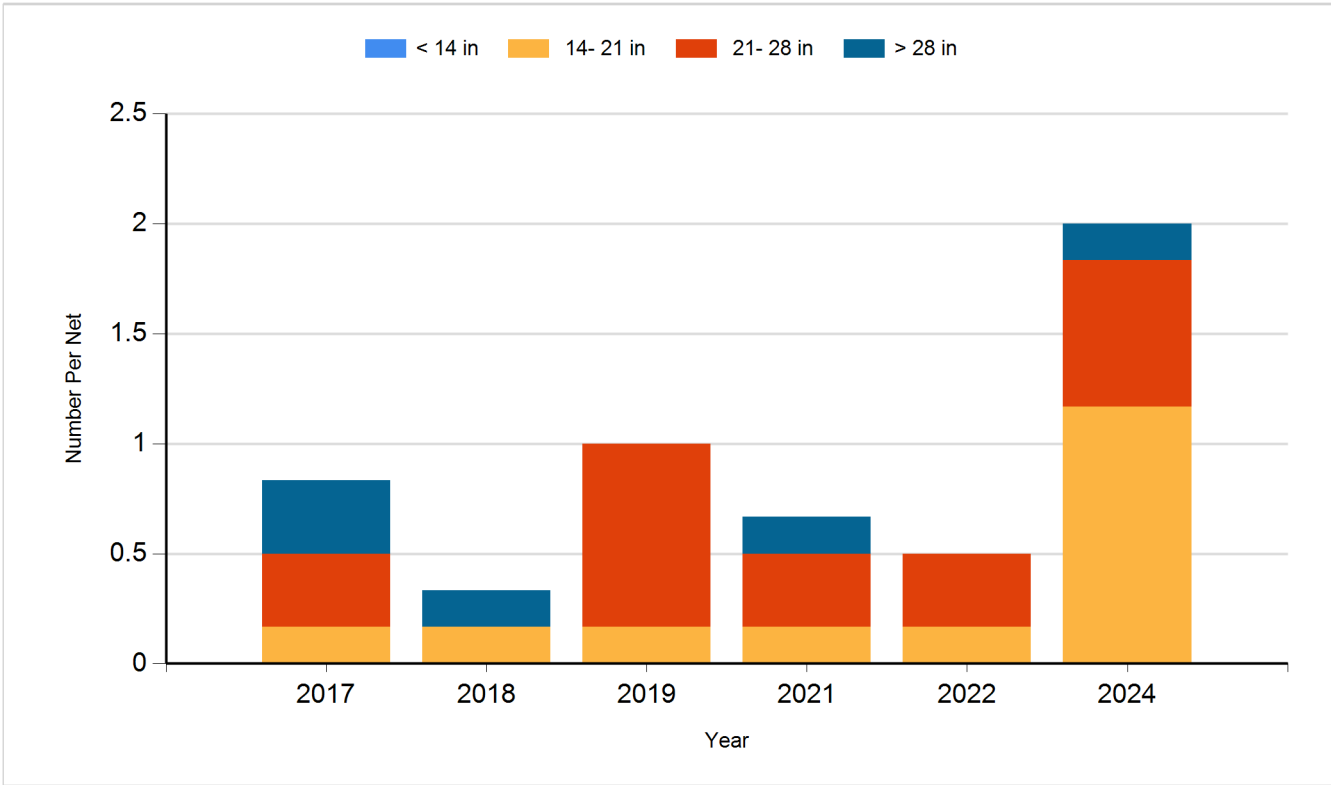
Species: Common Carp  
Gear: AFS std gill net



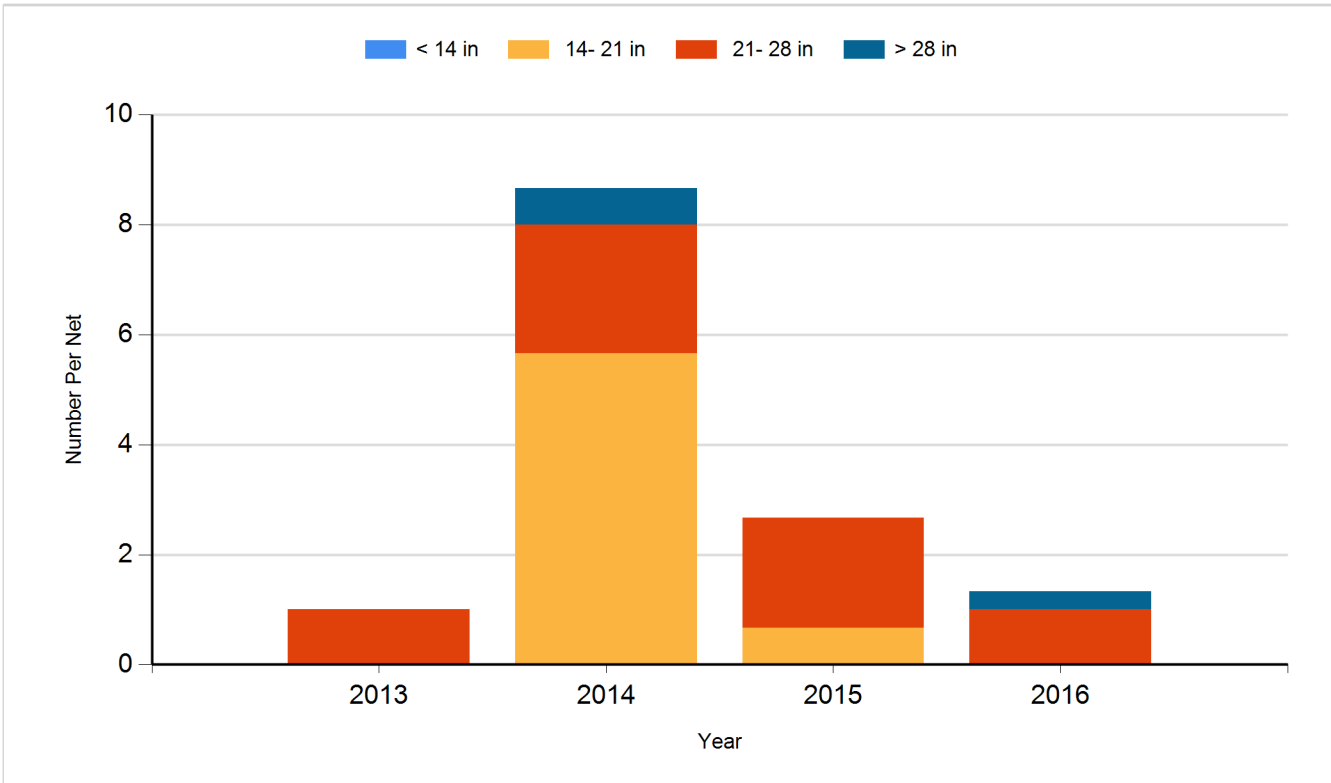
Species: Common Carp  
Gear: std exp gill net



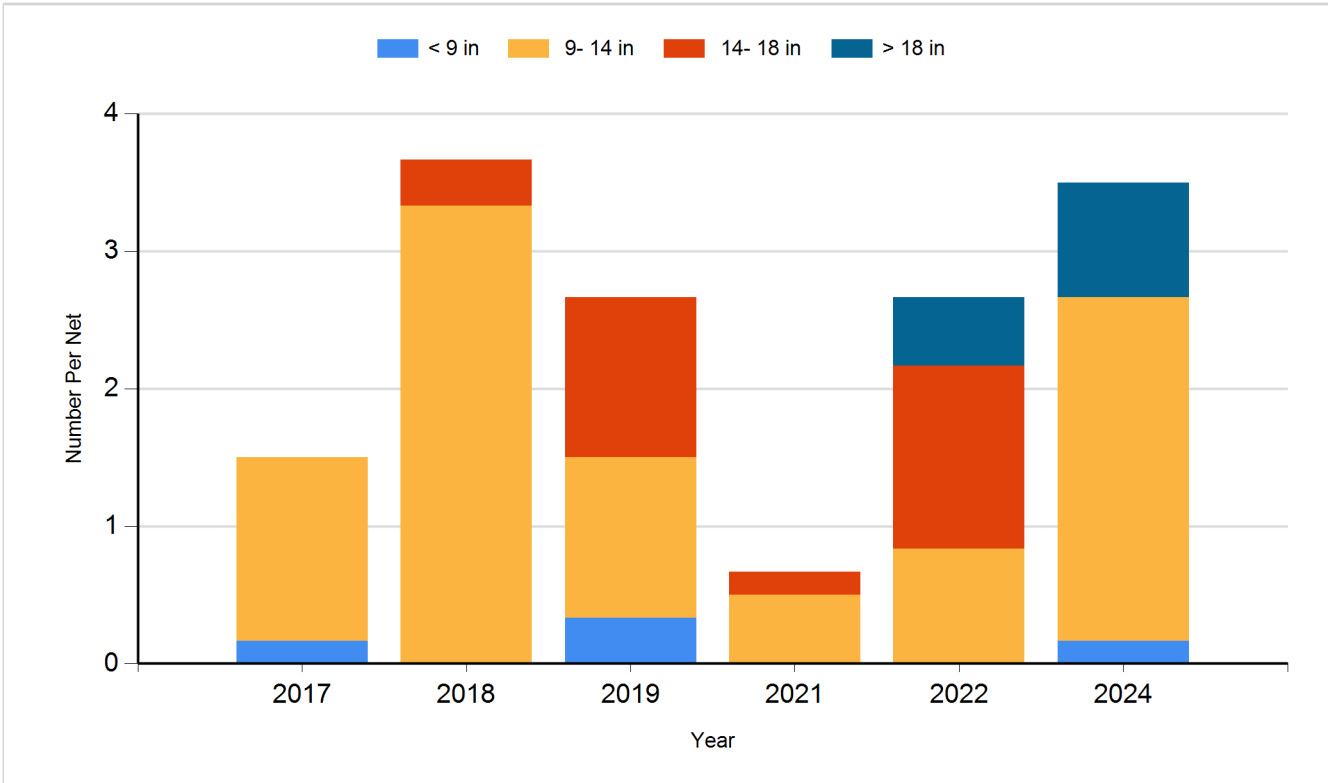
Species: Northern Pike  
Gear: AFS std gill net



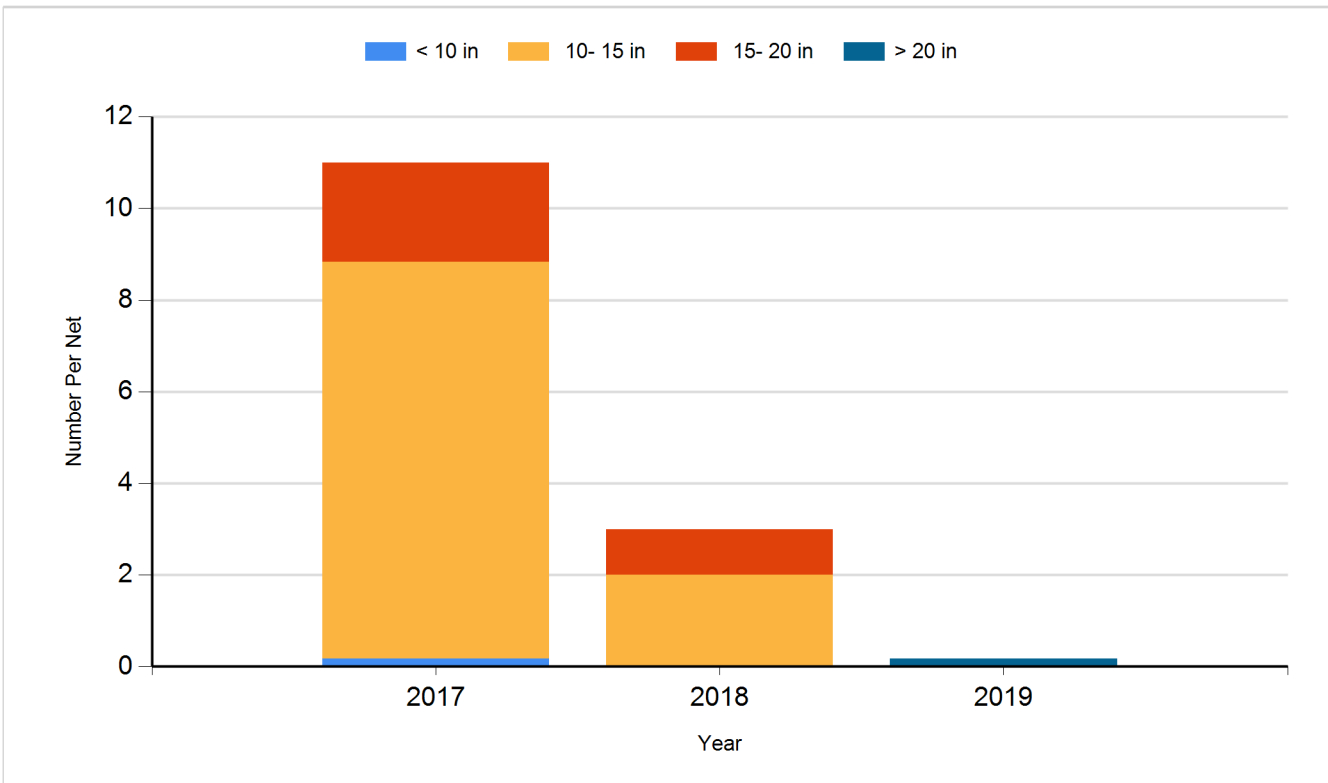
Species: Northern Pike  
Gear: std exp gill net



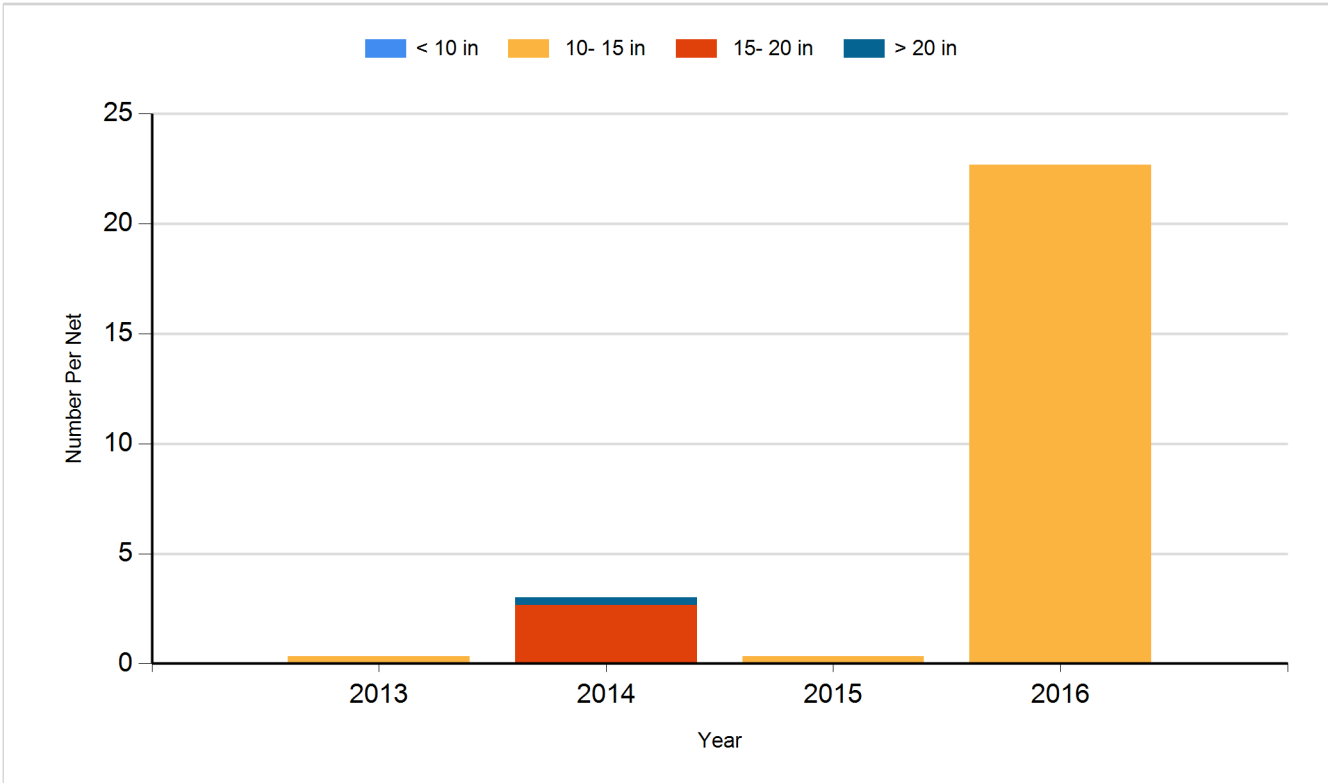
Species: Saugeye  
Gear: AFS std gill net



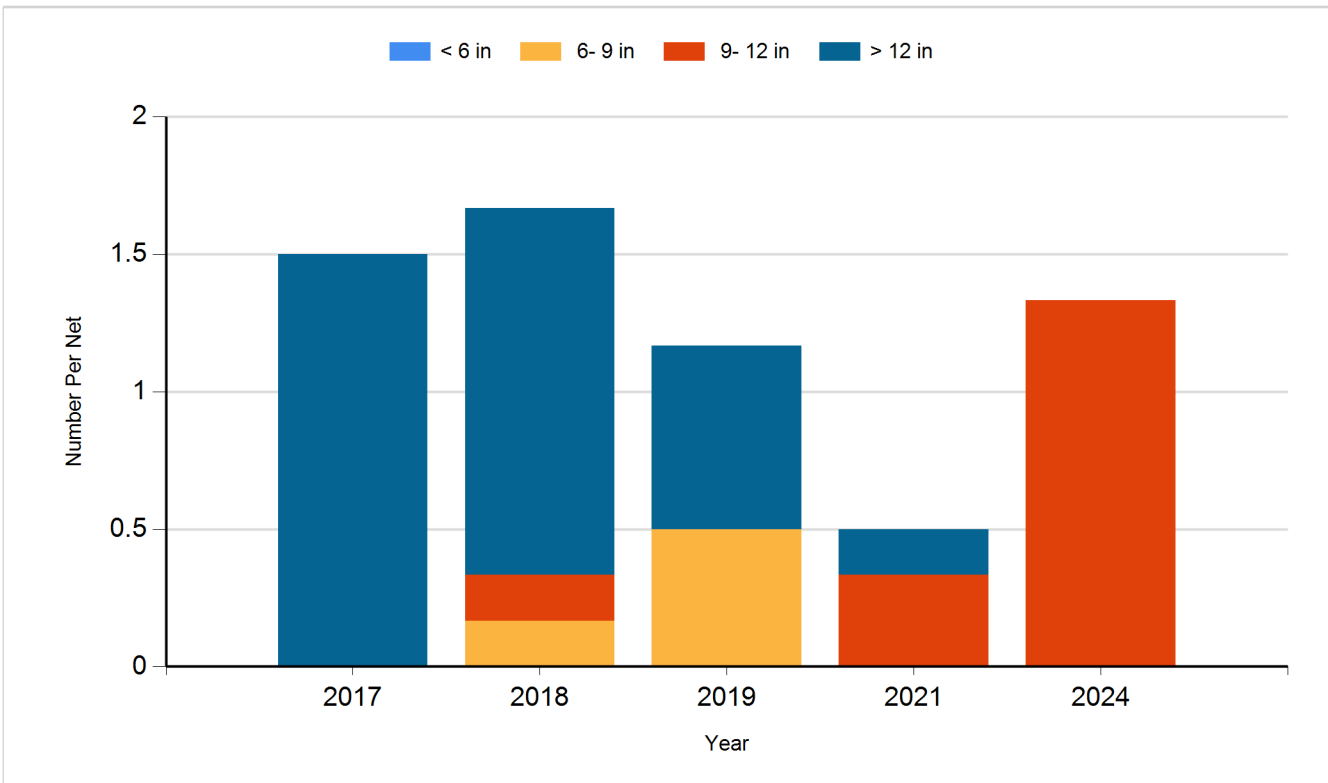
Species: Walleye  
Gear: AFS std gill net



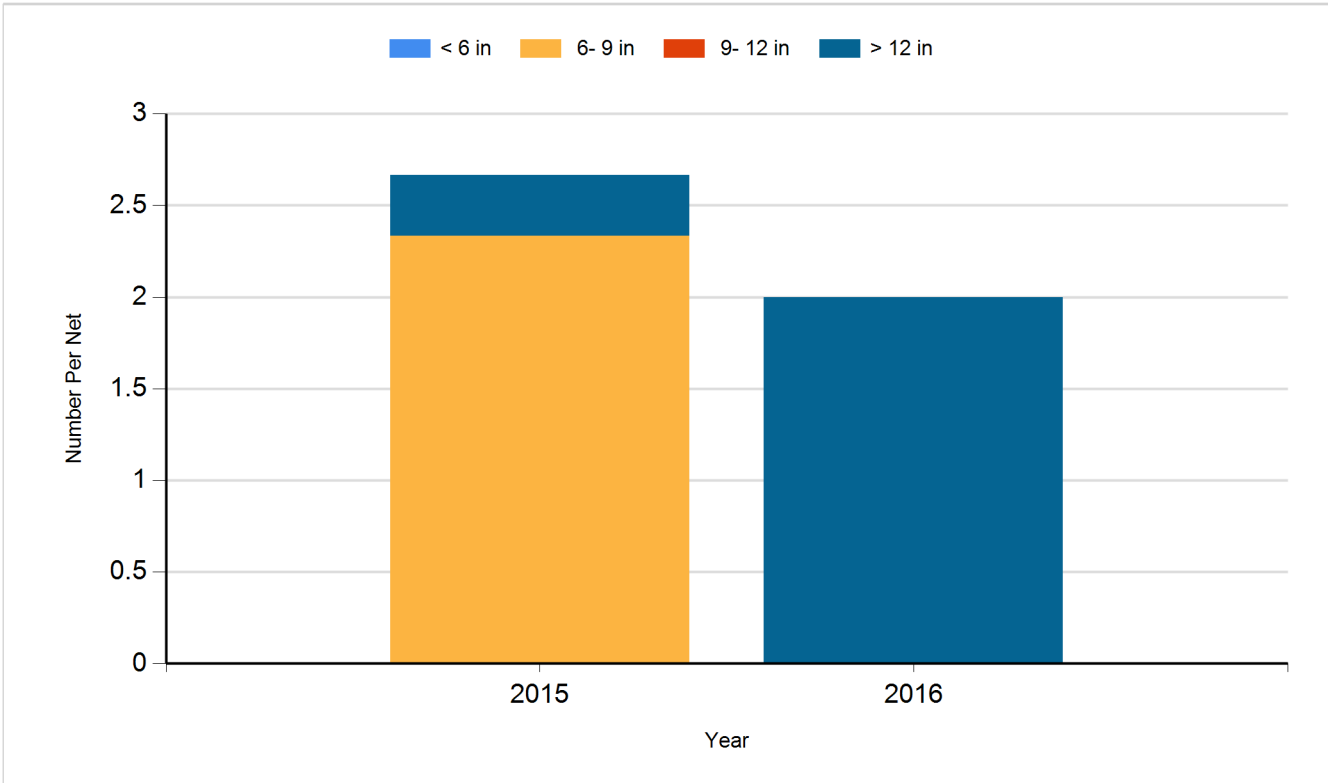
Species: Walleye  
Gear: std exp gill net



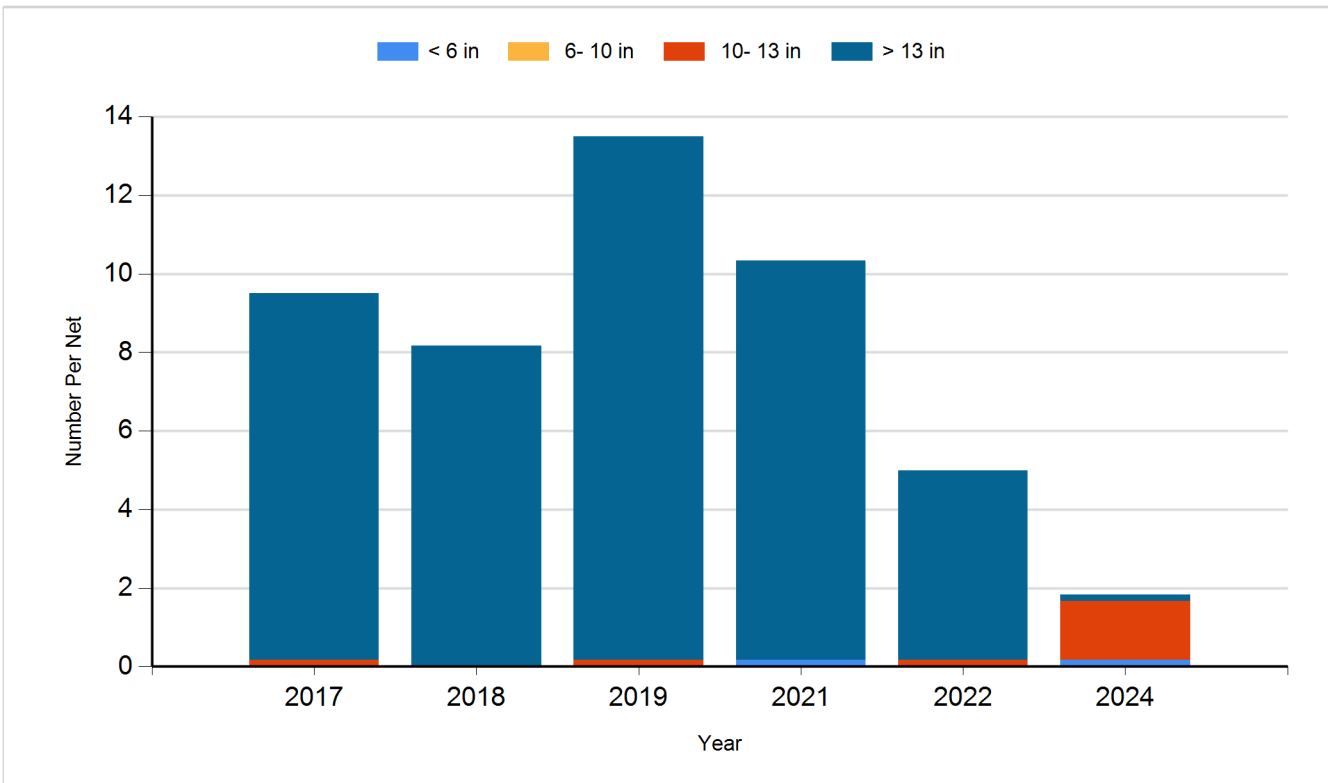
Species: White Bass  
Gear: AFS std gill net



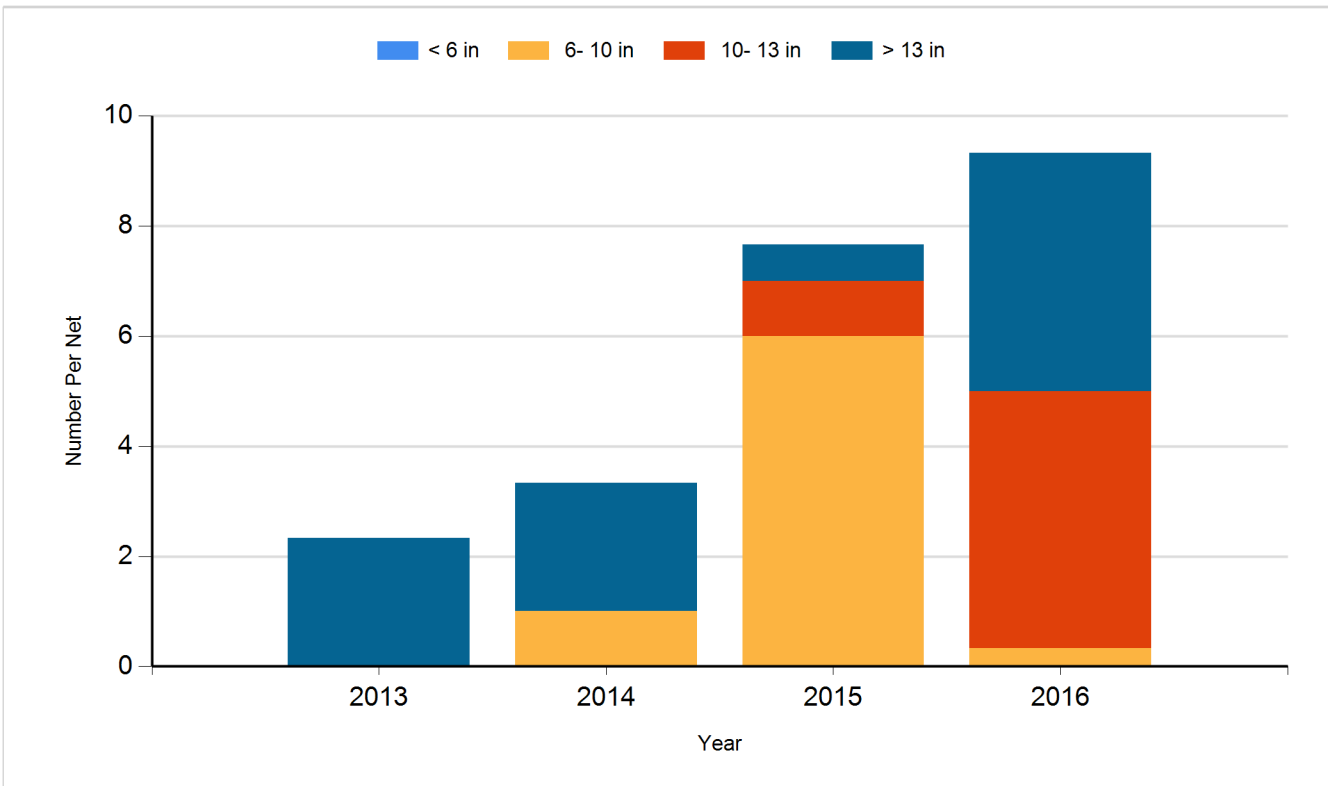
Species: White Bass  
Gear: std exp gill net



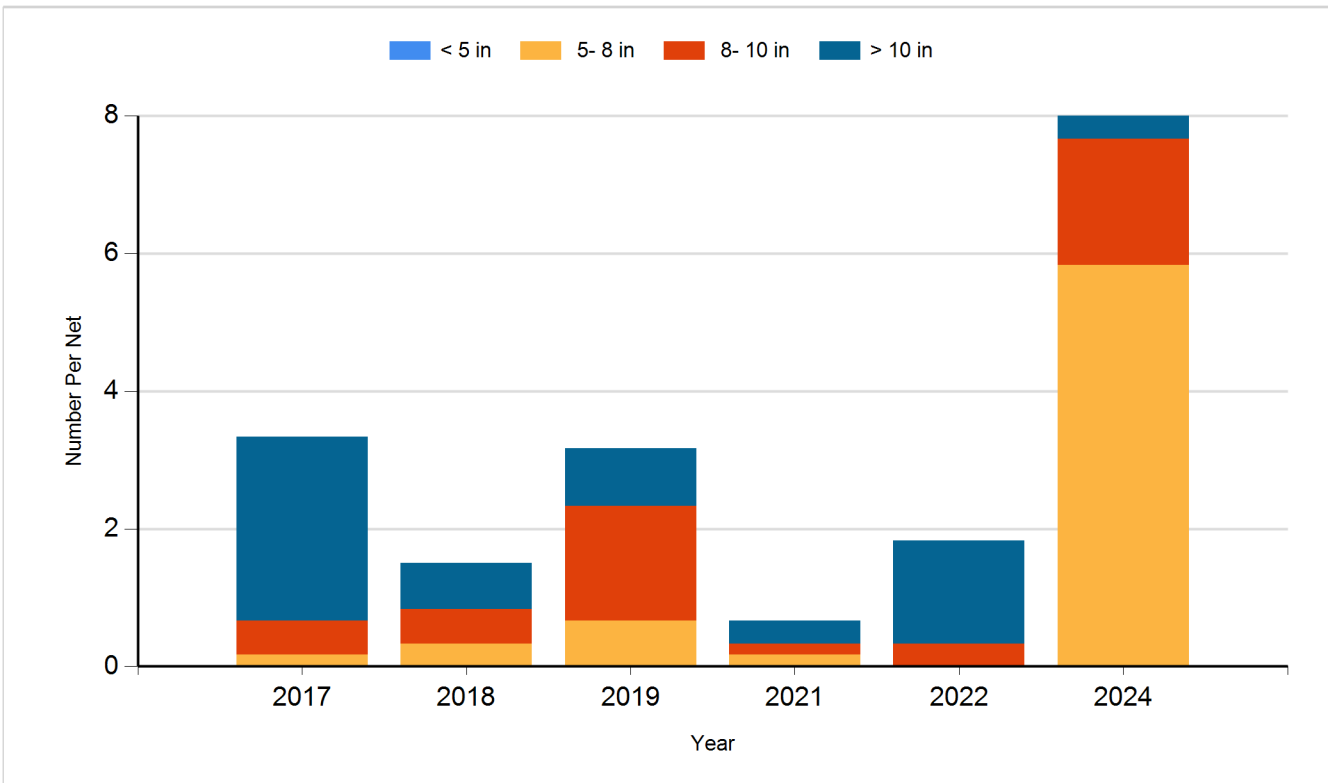
Species: White Sucker  
Gear: AFS std gill net



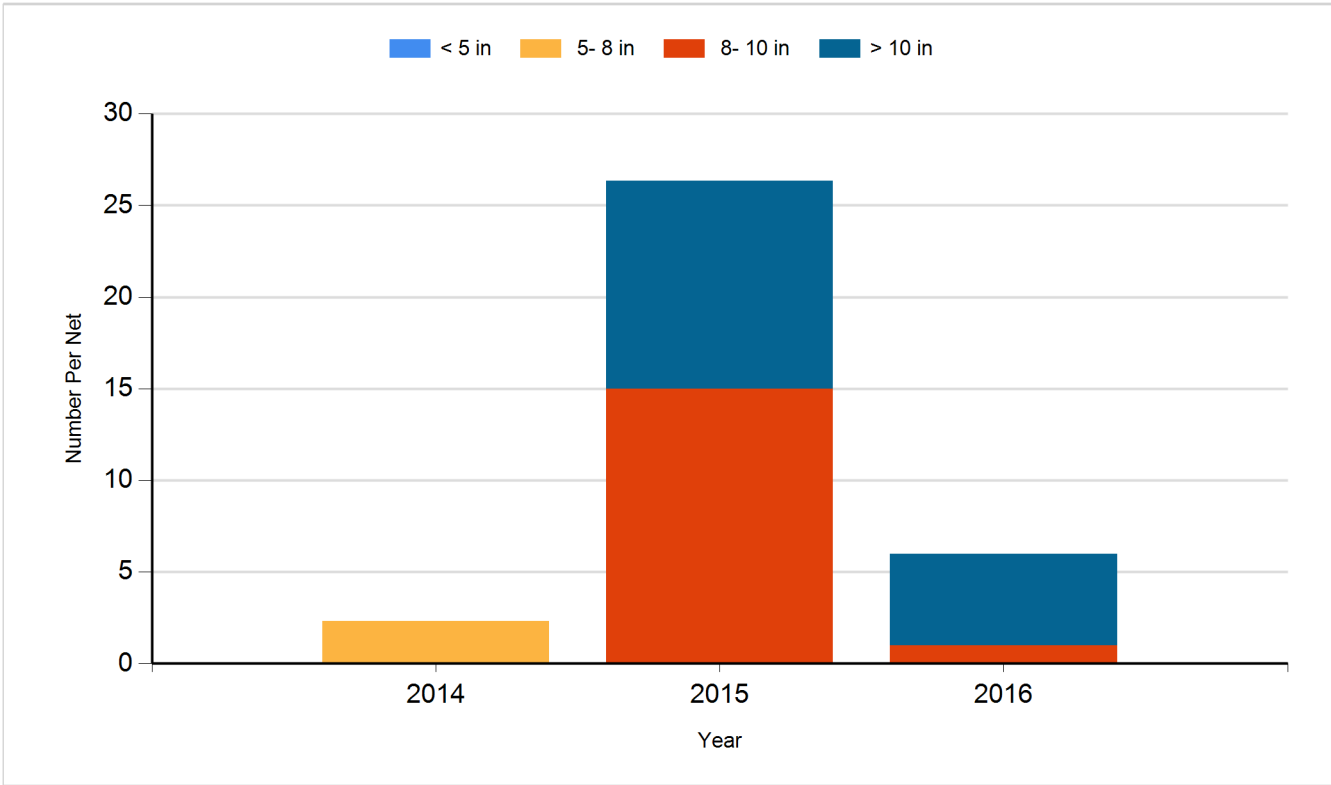
Species: White Sucker  
Gear: std exp gill net



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
2014	Walleye	Fry	553,320
2015	Walleye	Fry	450,000
2016	Saugeye	Small Fingerling	46,310
2017	Saugeye	Small Fingerling	62,500
2017	Yellow Perch	Small Fingerling	510,590
2018	Saugeye	Small Fingerling	64,390
2018	Yellow Perch	Small Fingerling	455,780
2019	Saugeye	Small Fingerling	64,580
2019	Yellow Perch	Small Fingerling	487,470
2021	Saugeye	Juvenile	70,110
2023	Saugeye	Juvenile	65,076