

# SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Mina, Edmunds County

SNK-Lake-23-800

2024

## Lake Information

**Name:** Mina **Maximum Depth:** 27 Feet  
**County:** Edmunds **Mean Depth:** 9 Feet  
**Surface Area:** 741 Acres

## Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 04, 2024	4 net-nights
AFS std gill net	Jun 05, 2024	4 net-nights
AFS std gill net	Jun 06, 2024	4 net-nights
fall night EF-WAE	Oct 02, 2024	3000 seconds
frame net (std 3/4 in)	Jun 04, 2024	6 net-nights
frame net (std 3/4 in)	Jun 05, 2024	6 net-nights
frame net (std 3/4 in)	Jun 06, 2024	6 net-nights

## **Common Fish Species Present**

Walleye

Channel Catfish

Bluegill

Black Crappie

Black Bullhead

Yellow Perch

Common Carp

Northern Pike

Freshwater Drum

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	Black Bullhead	8	0.7	0.6	88		25		110	5
	Black Crappie	1	0.1	0.1	100		0		119	
	Bluegill	2	0.2	0.2	100		50		136	2
	Channel Catfish	8	0.7	0.4	100		75		103	5
	Common Carp	2	0.2	0.2	100		50		113	7
	Freshwater Drum	18	1.5	0.5	100		94		103	2
	Northern Pike	22	1.8	0.6	77	15	14		85	2
	Walleye	16	0.9	0.5	55		55		85	4
	White Sucker	3	0.3	0.2	100		100		108	5
	Yellow Perch	49	4.0	1.5	92		21	9	111	2
frame net (std 3/4 in)	Black Bullhead	221	12.2	3.1	94	2	29	4	99	1
	Black Crappie	314	17.1	10.8	99		3	1	118	1
	Bluegill	358	19.9	3.5	97	1	37	3	141	1
	Channel Catfish	12	0.7	0.5	100		42	24	104	5
	Common Carp	47	2.6	0.9	89	7	51	11	107	3
	Freshwater Drum	7	0.4	0.2	100		100		98	4
	Northern Pike	15	0.7	0.2	83		50	25	81	4
	Sunfish Hybrid	2	0.1	0.1	100		0			
	Walleye	21	1.1	0.4	20		15		78	3
	White Sucker	5	0.3	0.2	100		100		102	5
Yellow Perch	9	0.5	0.3	100		56		102	3	

## 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 frame net	Black Bullhead			15.3									15.30
	Black Crappie			0.3									0.30
	Bluegill			14.1									14.10
	Channel Catfish			1.2									1.20
	Common Carp			0.2									0.20
	Freshwater Drum			0.1									0.10
	Largemouth Bass			0.0									0.00
	Northern Pike			0.6									0.60
	Walleye			0.2									0.20
	White Sucker			0.4									0.40
Yellow Perch			1.1									1.10	
AFS std gill net	Bigmouth Buffalo		0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.00
	Black Bullhead		16.8	9.3	6.8	2.3	7.5		1.5		0.7	6.41	
	Black Crappie		0.0	0.0	0.0	0.0	0.1		0.0		0.1	0.03	
	Bluegill		0.3	0.6	0.1	1.0	0.3		0.0		0.2	0.36	
	Channel Catfish		3.3	2.2	1.4	3.3	3.0		0.7		0.7	2.09	
	Common Carp		0.5	0.3	0.0	0.0	0.8		0.0		0.2	0.26	
	Freshwater Drum		6.9	2.6	5.1	4.3	2.3		2.4		1.5	3.59	
	Largemouth Bass		0.1	0.0	0.0	0.0	0.0		0.0		0.0	0.01	
	Northern Pike		0.3	1.0	0.4	0.9	1.3		0.6		1.8	0.90	
	Walleye		1.6	0.4	2.5	1.1	1.4		0.5		0.9	1.20	
White Sucker		0.7	1.2	0.6	0.8	0.3		0.3		0.3	0.60		
Yellow Perch		16.7	7.1	15.4	10.9	22.4		0.3		4.0	10.97		
boat shocker (night)	Walleye*	69.0	77.6	133.5								93.37	
fall night EF-WAE*	Walleye				78.0	99.0	17.2	267.0	537.9	102.0	48.0	164.16	
frame net (std 3/4 in)	Black Bullhead	41.8				1.3	5.7		9.1		12.2	14.02	
	Black Crappie	0.1				0.2	0.8		0.1		17.1	3.66	
	Bluegill	5.7				7.6	6.6		1.4		19.9	8.24	
	Bluegill X Gr. Sunfish Hybrid	0.1				0.0	0.0		0.0		0.0	0.02	
	Channel Catfish	0.7				0.2	2.1		0.2		0.7	0.78	
	Common Carp	0.6				0.1	0.0		0.1		2.6	0.68	
	Freshwater Drum	0.9				0.5	0.7		0.5		0.4	0.60	

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
frame net (std 3/4 in)	Northern Pike	0.4				0.2	1.1		0.3		0.7	0.54
	O. Spotted X Gr. Sunfish Hybrid	0.0				0.0	0.0		0.0		0.0	0.00
	Sunfish Hybrid	0.0				0.0	0.1		0.0		0.1	0.04
	Walleye	0.1				0.4	1.7		0.6		1.1	0.78
	White Sucker	0.3				0.1	0.1		0.2		0.3	0.20
	Yellow Perch	1.6				3.4	5.3		0.0		0.5	2.16
std exp gill net	Black Bullhead	23.5										23.50
	Black Crappie	0.0										0.00
	Bluegill	0.0										0.00
	Channel Catfish	2.7										2.70
	Common Carp	1.2										1.20
	Freshwater Drum	2.3										2.30
	Northern Pike	2.3										2.30
	Orangespotted Sunfish	0.0										0.00
	Walleye	1.7										1.70
	White Sucker	0.2										0.20
	Yellow Perch	32.5										32.50

## 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 frame net	Black Bullhead	PSD			100										
		PSD-P			24										
		Wr			95										
	Black Crappie	PSD			100										
		PSD-P			0										
		Wr			109										
	Bluegill	PSD			85										
		PSD-P			8										
		Wr			125										
	Channel Catfish	PSD			59										
		PSD-P			18										
		Wr			99										
	Common Carp	PSD			100										
		PSD-P			33										
		Wr			91										
	Northern Pike	PSD			18										
		PSD-P			0										
		Wr			74										
	Walleye	PSD			100										
		PSD-P			50										
		Wr			79										
White Sucker	PSD			100											
	PSD-P			100											
	Wr			84											
Yellow Perch	PSD			95											
	PSD-P			55											
	Wr			96											
AFS std gill net	Black Bullhead	PSD		99	100	100	93	58		100				88	
		PSD-P		7	35	83	71	11		0				25	
		Wr		99	103	97	91	93		115				110	
	Black Crappie	PSD							0						100
		PSD-P							0						0
		Wr							126						119



Gear	Species	Index	Year										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
AFS std gill net	Bluegill	PSD		50	57	100	100	100					100
		PSD-P		50	14	0	92	100					50
		Wr		109	124	121	119	122					136
	Channel Catfish	PSD		77	54	100	100	100		100			100
		PSD-P		56	15	53	44	56		50			75
		Wr		110	109	108	110	101		128			103
	Common Carp	PSD		100	100		0	22					100
		PSD-P		33	100		0	22					50
		Wr		94	91			108					113
	Northern Pike	PSD		25	50	100	45	56		100			77
		PSD-P		0	8	20	0	0		0			14
		Wr		83	81	80	78	94		96			85
	Walleye	PSD		74	100	7	46	12		83			55
		PSD-P		16	0	0	8	6		17			55
		Wr		97	82	90	86	86		91			85
	White Sucker	PSD		100	100	100	100	100		100			100
		PSD-P		100	100	100	100	100		100			100
		Wr		106	95	101	94	99		101			108
Yellow Perch	PSD		86	91	64	46	72		0			92	
	PSD-P		36	22	14	18	7		0			21	
	Wr		102	104	105	106	102		115			111	
boat shocker (night)	Walleye	PSD	0	0	0								
		PSD-P	0	0	0								
		Wr	92	98	89								
frame net (std 3/4 in)	Black Bullhead	PSD	72				100	19		93		94	
		PSD-P	30				79	11		6		29	
		Wr	85				92	84		102		99	
	Black Crappie	PSD	0				25	73		100		99	
		PSD-P	0				0	27		100		3	
		Wr	117				108	110		116		118	
	Bluegill	PSD	98				93	87		65		97	
		PSD-P	24				48	52		57		37	
		Wr	119				124	125		134		141	
	Channel Catfish	PSD	69				100	97		100		100	
		PSD-P	8				0	21		33		42	
		Wr	86				103	94		100		104	

Gear	Species	Index	Year										
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
frame net (std 3/4 in)	Common Carp	PSD	82					100	0		100		89
		PSD-P	0					100	0		50		51
		Wr	95					88			92		107
	Northern Pike	PSD	75					25	32		80		83
		PSD-P	50					0	0		60		50
		Wr	70					82	79		83		81
	Walleye	PSD	0					43	16		56		20
		PSD-P	0					0	3		0		15
		Wr						84	82		87		78
	White Sucker	PSD	100					100	100		100		100
		PSD-P	83					100	100		100		100
		Wr	89					93	86		100		102
	Yellow Perch	PSD	97					25	81		0		100
		PSD-P	0					18	7		0		56
		Wr	93					103	97				102
std exp gill net	Black Bullhead	PSD	56										
		PSD-P	8										
		Wr	93										
	Black Crappie	PSD	0										
		PSD-P	0										
	Channel Catfish	PSD	100										
		PSD-P	56										
		Wr	93										
	Common Carp	PSD	14										
		PSD-P	0										
		Wr	99										
	Northern Pike	PSD	57										
		PSD-P	7										
		Wr	84										
	Walleye	PSD	60										
		PSD-P	20										
		Wr	96										
	White Sucker	PSD	100										
PSD-P		100											
Wr		97											
Yellow Perch	PSD	92											
	PSD-P	15											

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			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
std exp gill net	Yellow Perch	Wr	99									

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## 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+
2024	310	137 (9)	222 (295)			321 (3)				339 (3)	
2017	8	54 (3)	200 (1)	227 (4)							

Species: Bluegill

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	357		164 (78)	197 (247)	215 (25)	224 (6)				233 (2)	
2019	137	93 (10)	173 (56)	198 (11)	215 (60)						
2017	268	75 (18)	111 (36)	160 (22)	177 (187)	229 (5)					
2015	102	137 (6)	176 (56)	201 (27)	208 (12)			240 (1)			

Species: Walleye

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	16	197 (3)	270 (7)				539 (2)	547 (2)	531 (1)		666 (1)
2022	6			474 (1)		421 (4)			660 (1)		
2020	20	226 (3)	296 (10)	357 (6)							675 (1)
2019	16	213 (5)	312 (7)	413 (2)		461 (1)					621 (1)
2018	48	248 (31)	324 (15)	390 (2)							
2017	6	201 (1)		418 (2)	436 (2)				492 (1)		
2016	19	267 (2)	393 (11)				551 (1)	533 (3)			404 (2)
2015	10	290 (4)	386 (2)		470 (2)		562 (1)	599 (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+
2024	48		203 (5)	238 (42)		280 (1)					
2020	269	146 (7)	209 (231)	244 (16)	256 (3)	276 (5)	275 (2)	256 (6)			

Mean Length (expanded sample number) at capture by age

Year	N	1	2	3	4	5	6	7	8	9	10+
2019	130	159 (61)	209 (39)	253 (7)	265 (8)	275 (6)	262 (10)				
2018	185	160 (59)	219 (45)	236 (61)	268 (9)	256 (8)	225 (4)				
2017	85	162 (7)	213 (33)	242 (12)	249 (30)	287 (3)					
2016	200	159 (24)	223 (23)	244 (152)	282 (1)						
2015	195	159 (2)	221 (154)	249 (19)	270 (19)	302 (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).

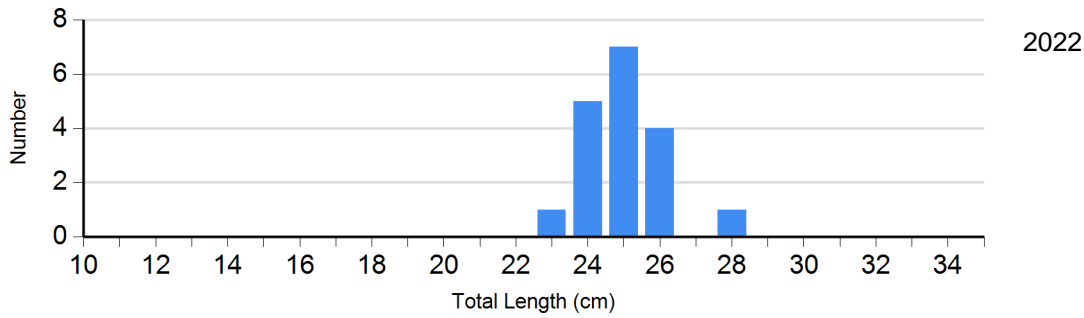
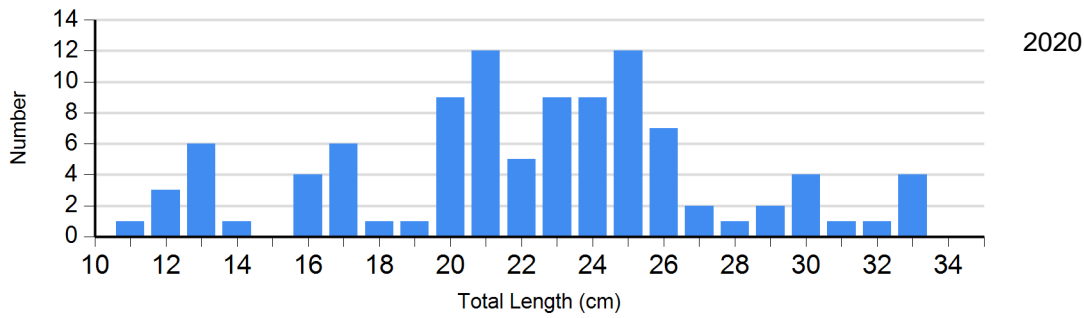
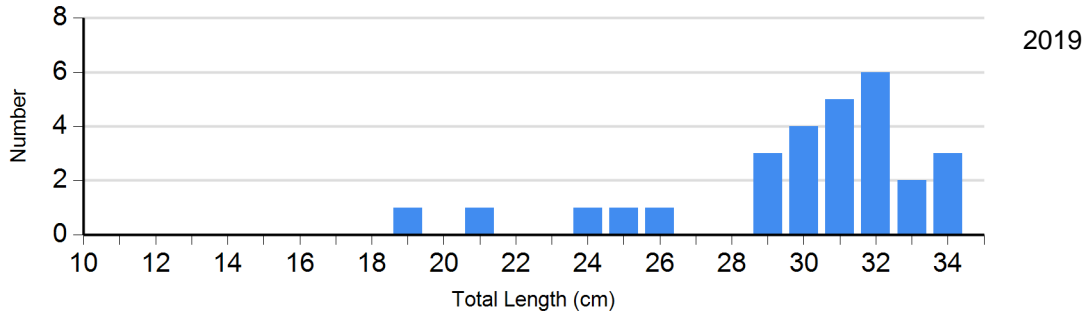
Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Bullhead Gill Net	2020	38	92 (1.7)	42	95 (1.0)	10	91 (4.6)	0	
	2022	0		18	115 (2.7)	0		0	
	2024	1	107	5	111 (6.7)	2	108 (0.0)	0	
Black Crappie Frame Net	2020	4	118 (1.7)	7	108 (2.5)	3	108 (0.9)	1	99
	2022	0		0		2	116 (9.0)	0	
	2024	3	131	295	118 (0.7)	4		6	94 (4.1)
Bluegill Frame Net	2020	16	130 (3.1)	41	130 (1.3)	62	120 (1.3)	0	
	2022	8	133 (5.5)	2	126 (15.6)	11	137 (3.0)	2	133 (0.5)
	2024	11	140 (5.0)	214	140 (1.5)	132	142 (1.0)	1	134
Channel Catfish Gill Net	2020	0		16	102 (2.5)	17	99 (2.7)	3	98
	2022	0		4	130 (6.9)	4	123	0	
	2024	0		2	114 (2.7)	6	100 (3.7)	0	
Common Carp Gill Net	2020	7	112 (3.2)	0		1	93	1	95
	2024	0		1	118	1	108	0	
Northern Pike Gill Net	2020	7	108 (30.9)	9	83 (2.7)	0		0	
	2022	0		7	96 (1.3)	0		0	
	2024	5	85 (2.1)	14	84 (2.4)	2	89 (0.2)	1	94
Walleye Gill Net	2020	15	85 (1.2)	1	85	0		1	93
	2022	1	100	4	91 (3.7)	0		1	81
	2024	5	75 (1.7)	0		5	93 (3.0)	1	91
White Sucker Gill Net	2020	0		0		1	103	3	98 (2.5)
	2022	0		0		0		3	101 (5.9)

Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
White Sucker Gill Net	2024	0		0		0		3	108 (3.8)
Yellow Perch Gill Net	2020	75	106 (1.0)	175	101 (0.6)	19	95 (1.8)	0	
	2022	3	115 (6.7)	0		0		0	
	2024	4	124 (6.8)	34	110 (1.5)	10	108 (1.9)	0	

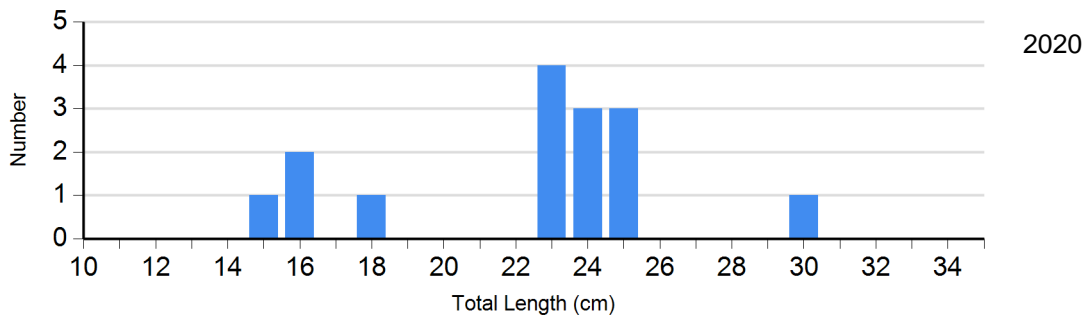
## Length Frequency Distribution

Length frequency histogram of species sampled by year.

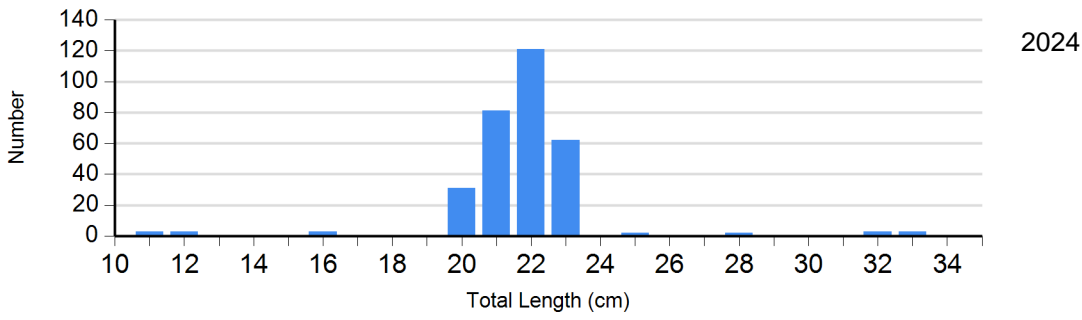
Species: Black Bullhead  
Gear: AFS std gill net



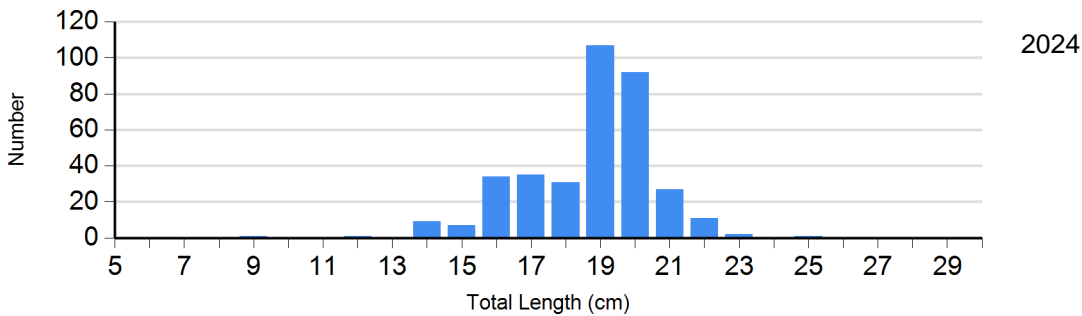
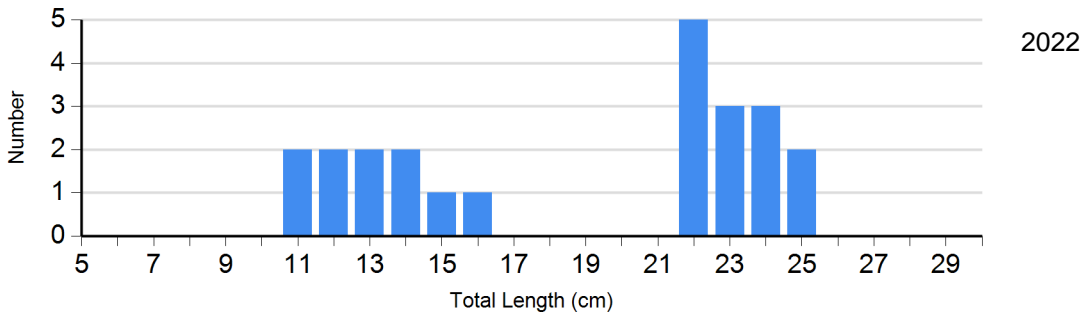
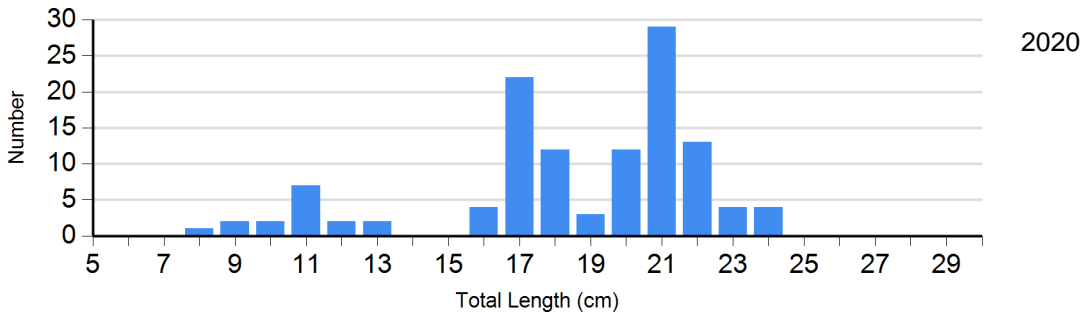
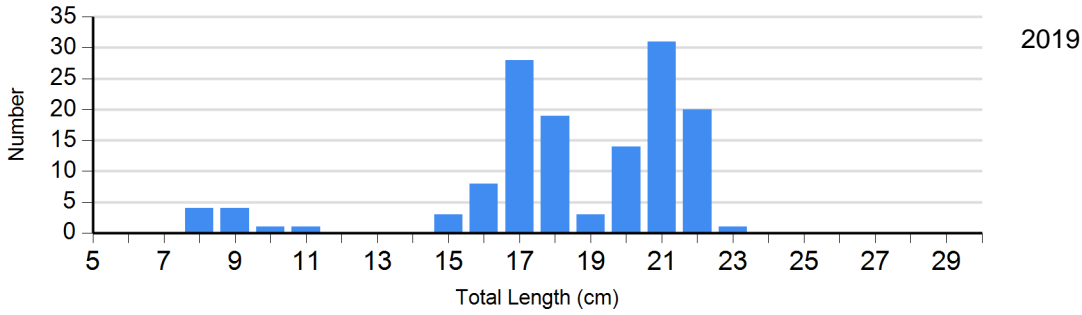
Species: Black Crappie  
Gear: frame net (std 3/4 in)



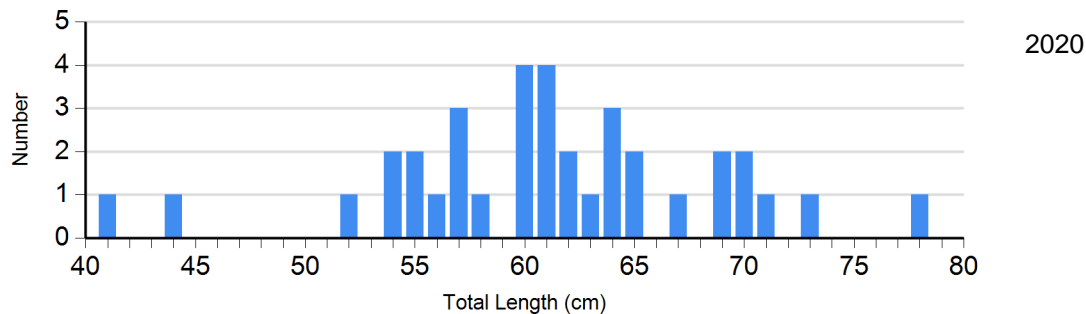
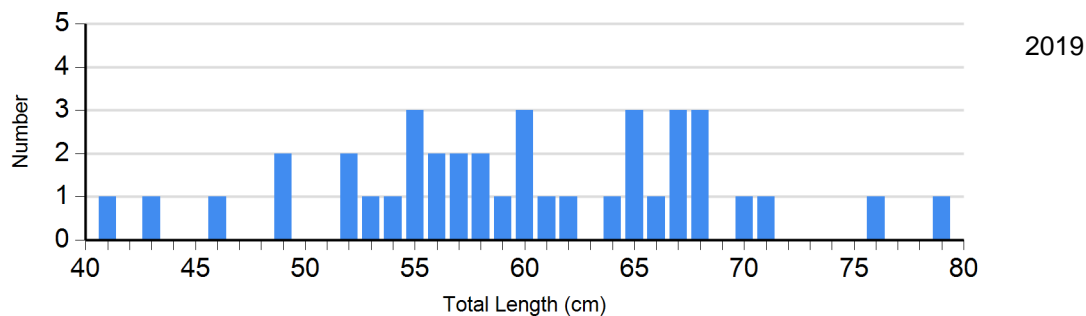




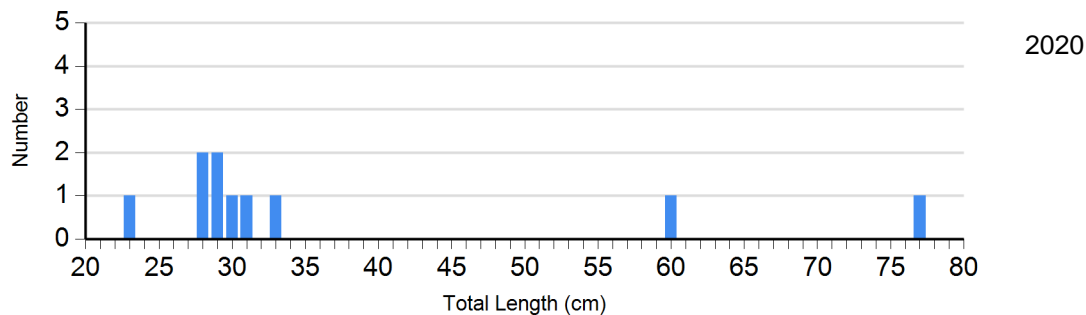
Species: Bluegill  
 Gear: frame net (std 3/4 in)



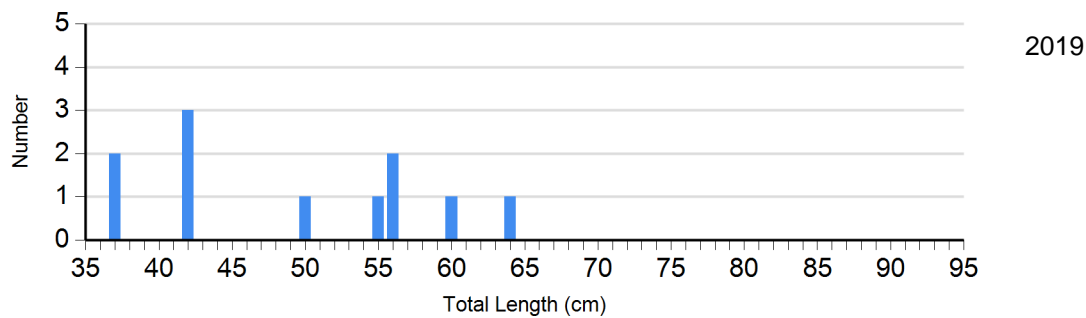
Species: Channel Catfish  
Gear: AFS std gill net

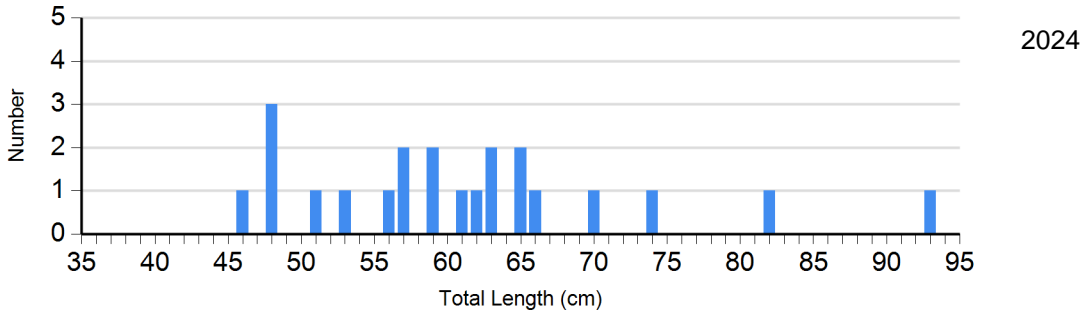
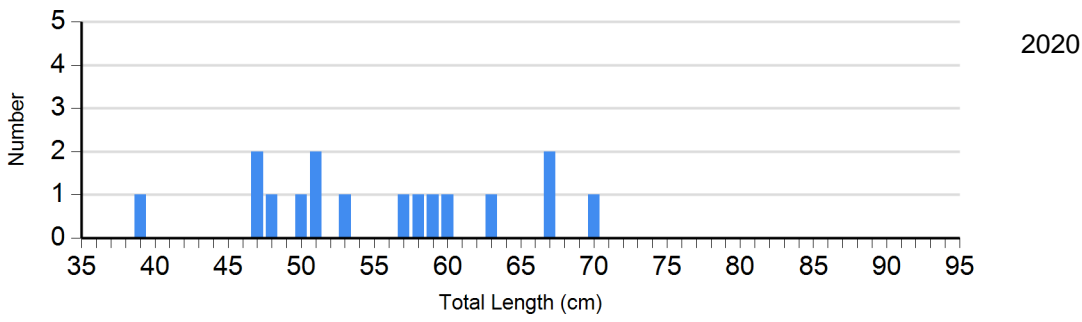


Species: Common Carp  
Gear: AFS std gill net

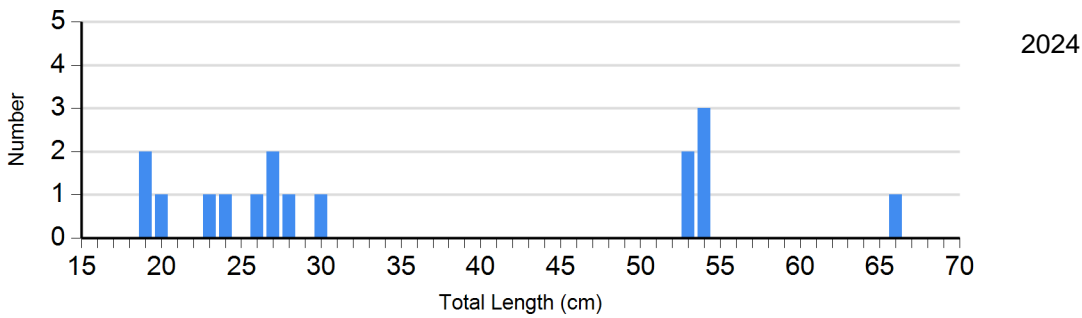
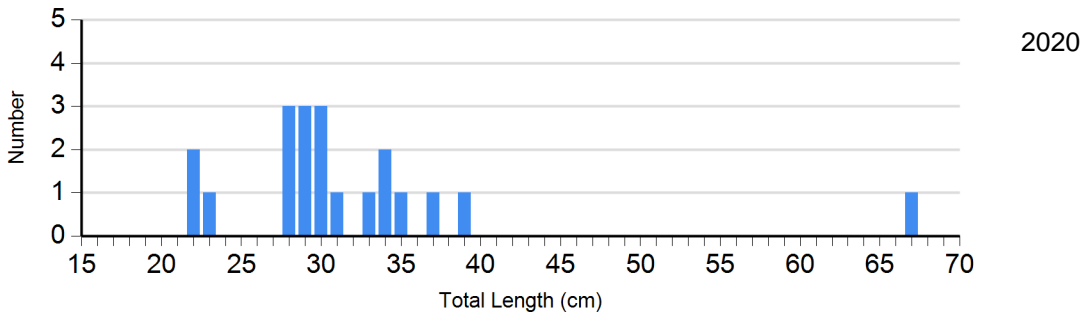
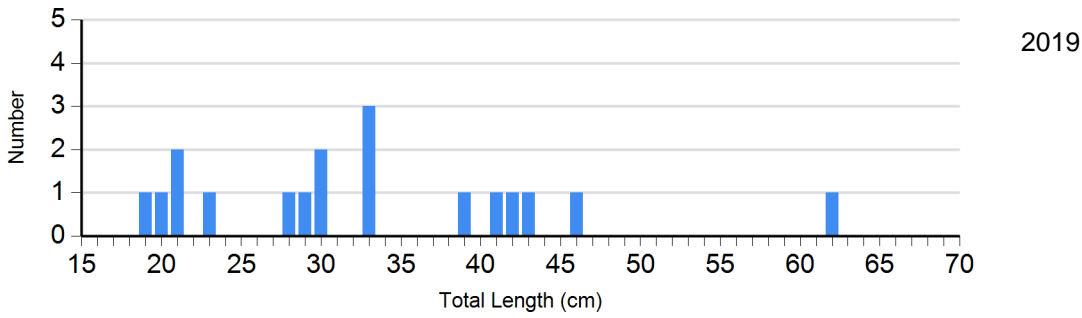


Species: Northern Pike  
Gear: AFS std gill net

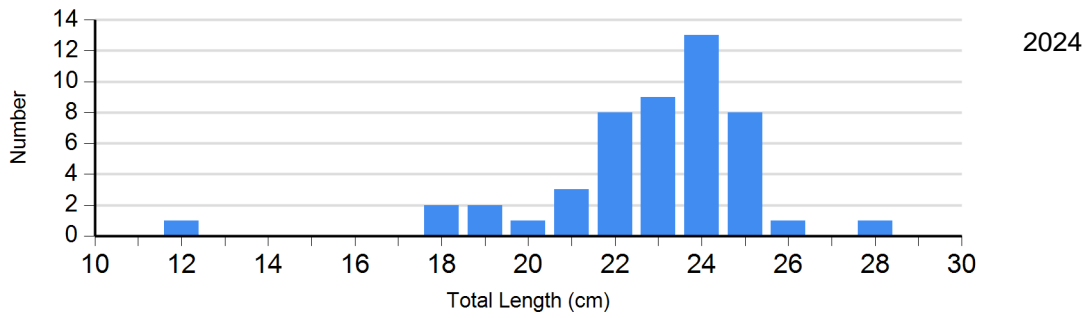
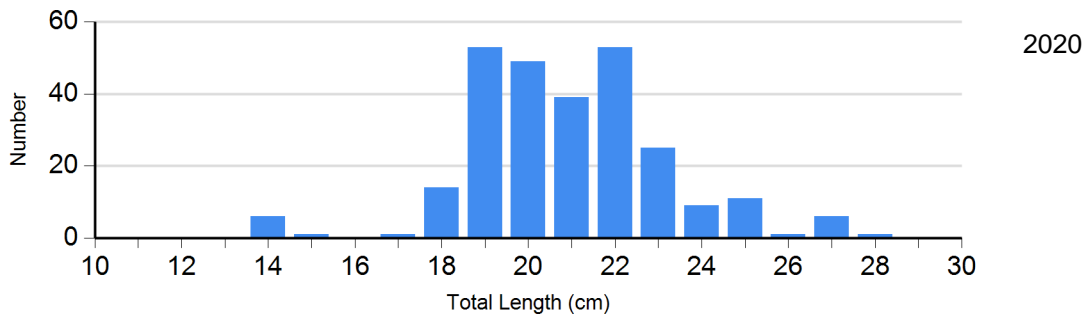
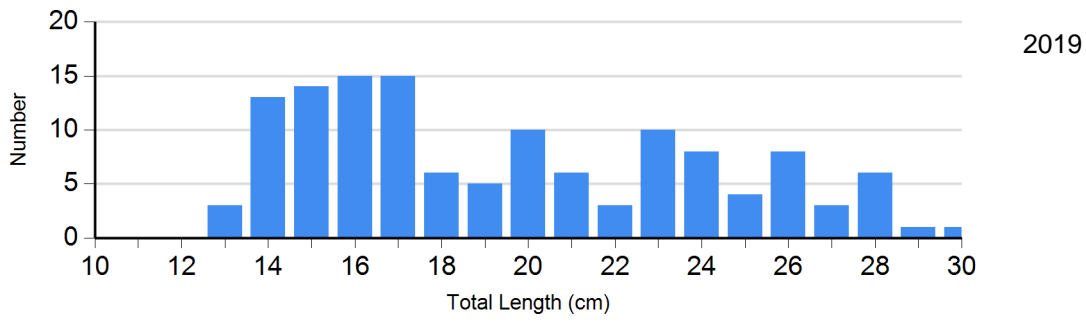




Species: Walleye  
Gear: AFS std gill net



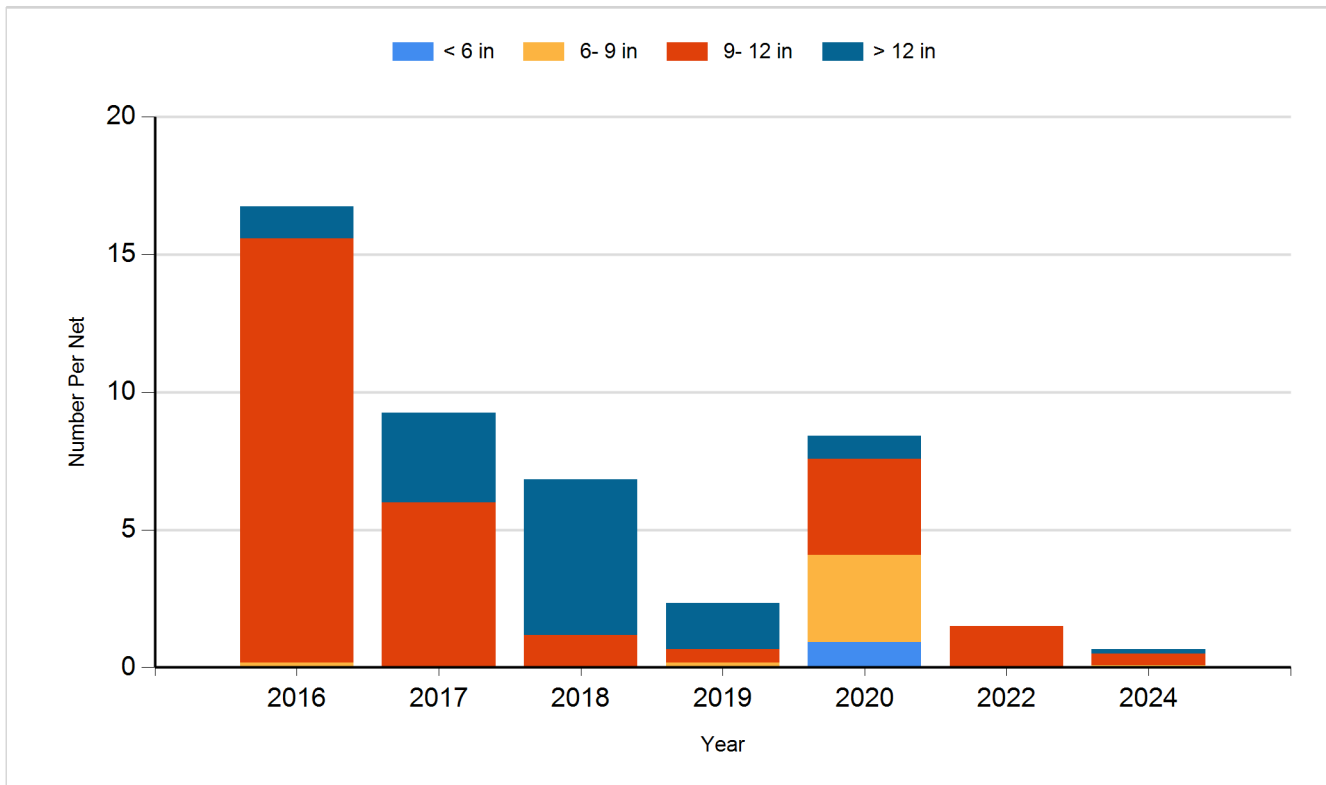
Species: Yellow Perch  
Gear: AFS std gill net



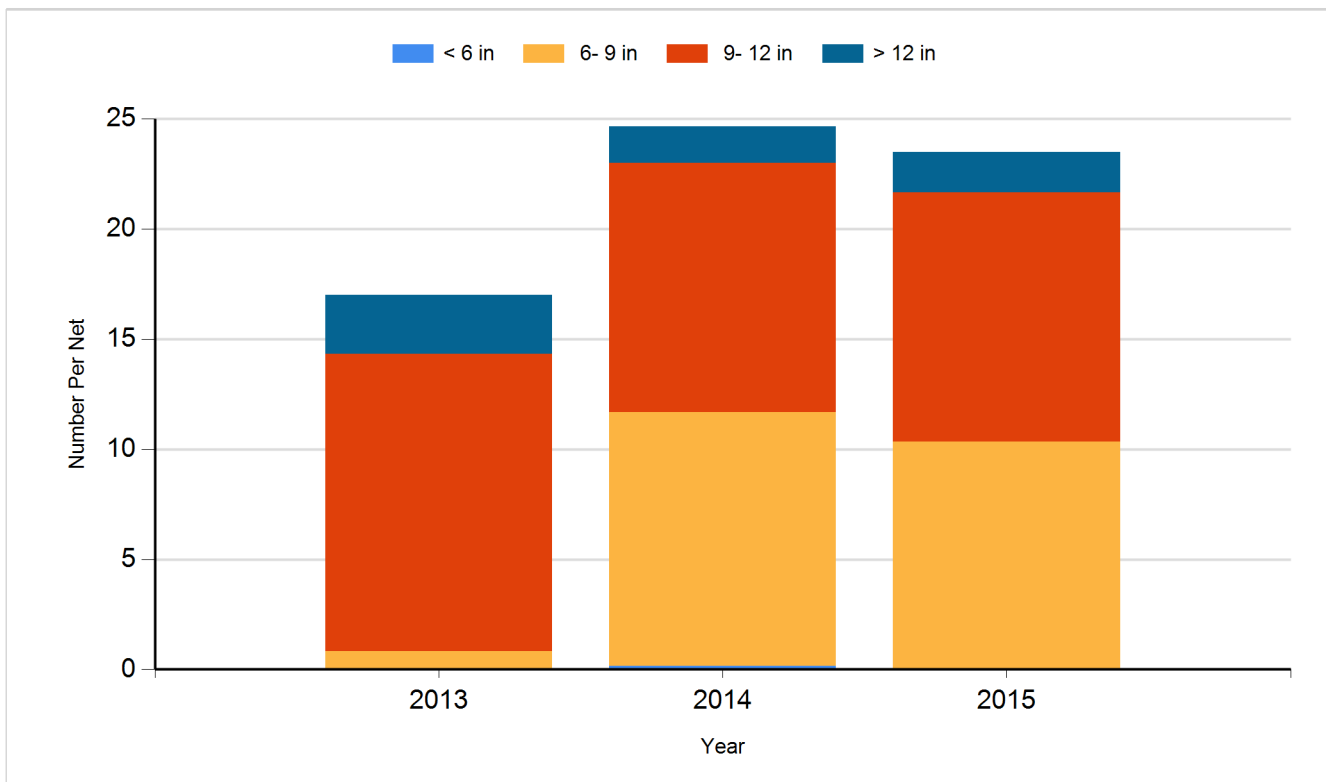
## Historic Fish Sizes and Relative Abundance

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

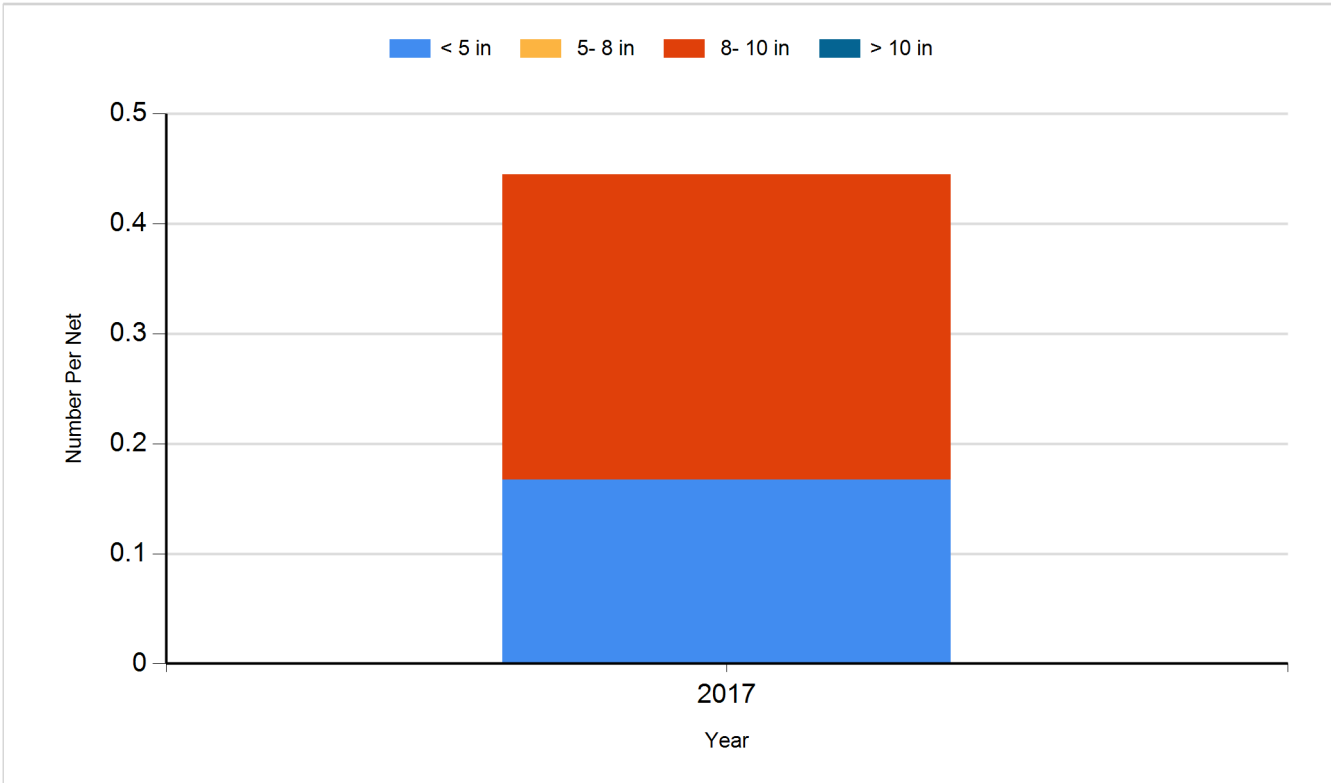
Species: Black Bullhead  
Gear: AFS std gill net



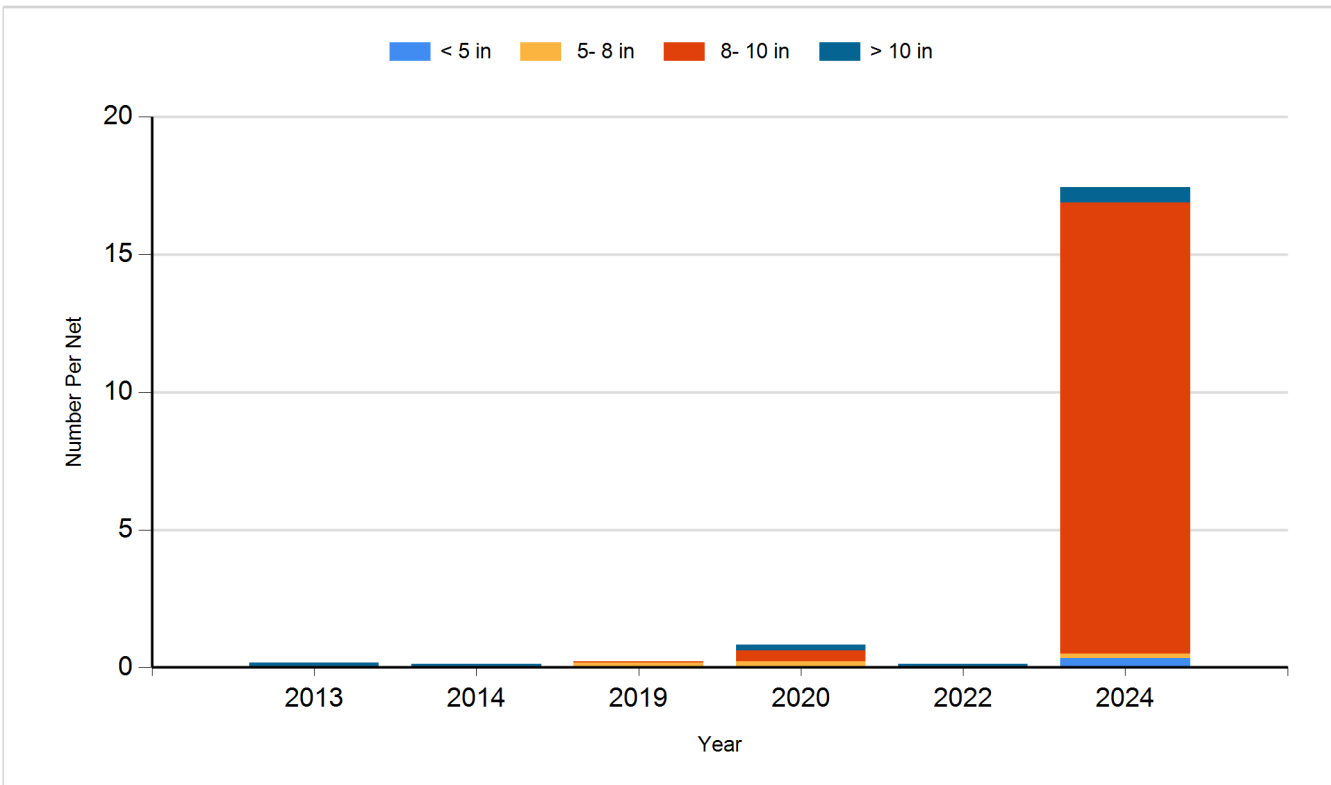
Species: Black Bullhead  
Gear: std exp gill net



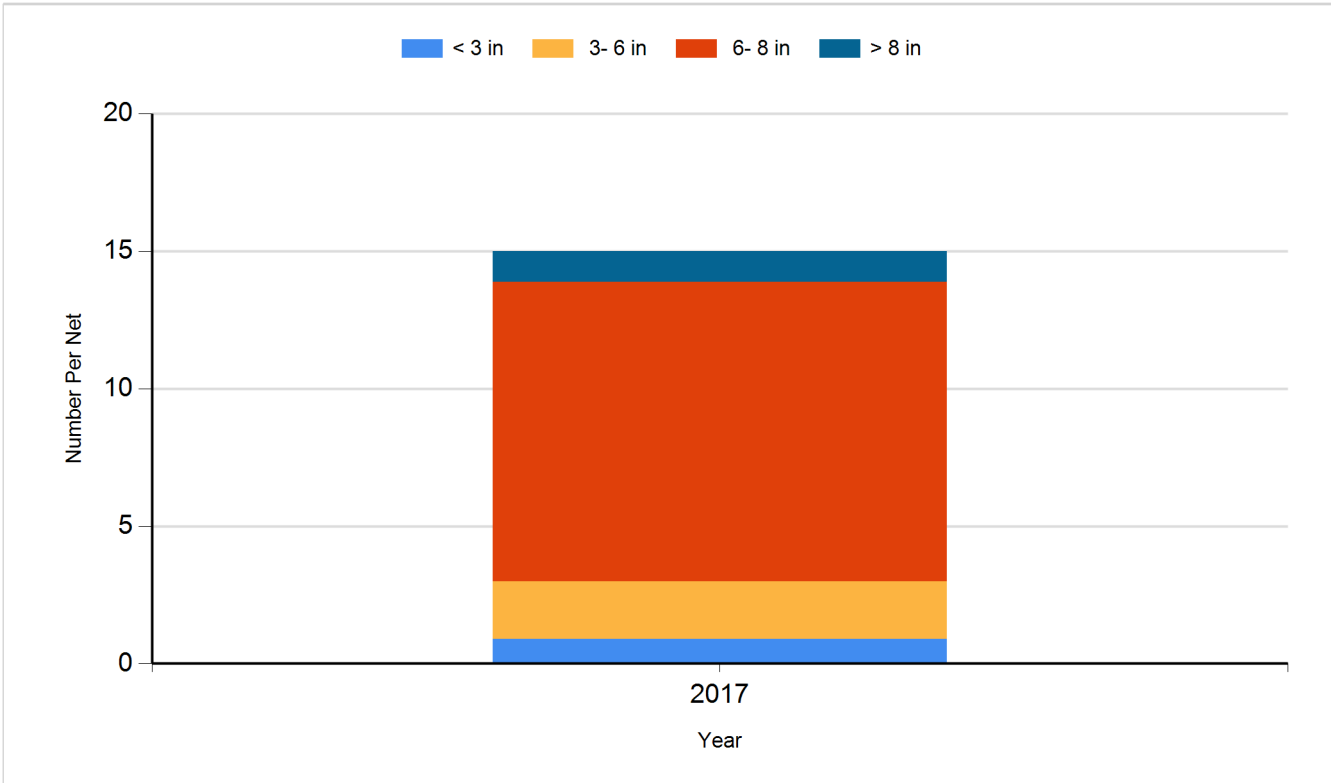
Species: Black Crappie  
Gear: AFS std frame net



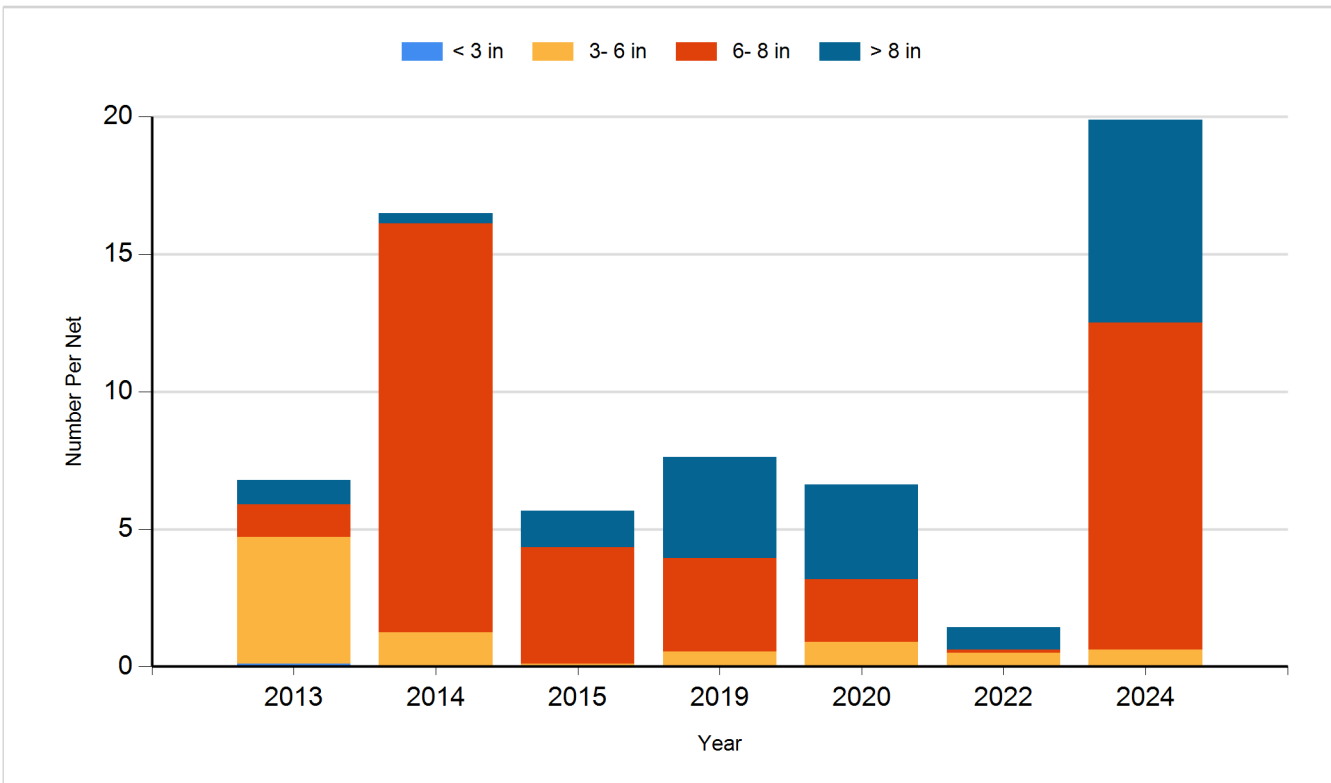
Species: Black Crappie  
Gear: frame net (std 3/4 in)



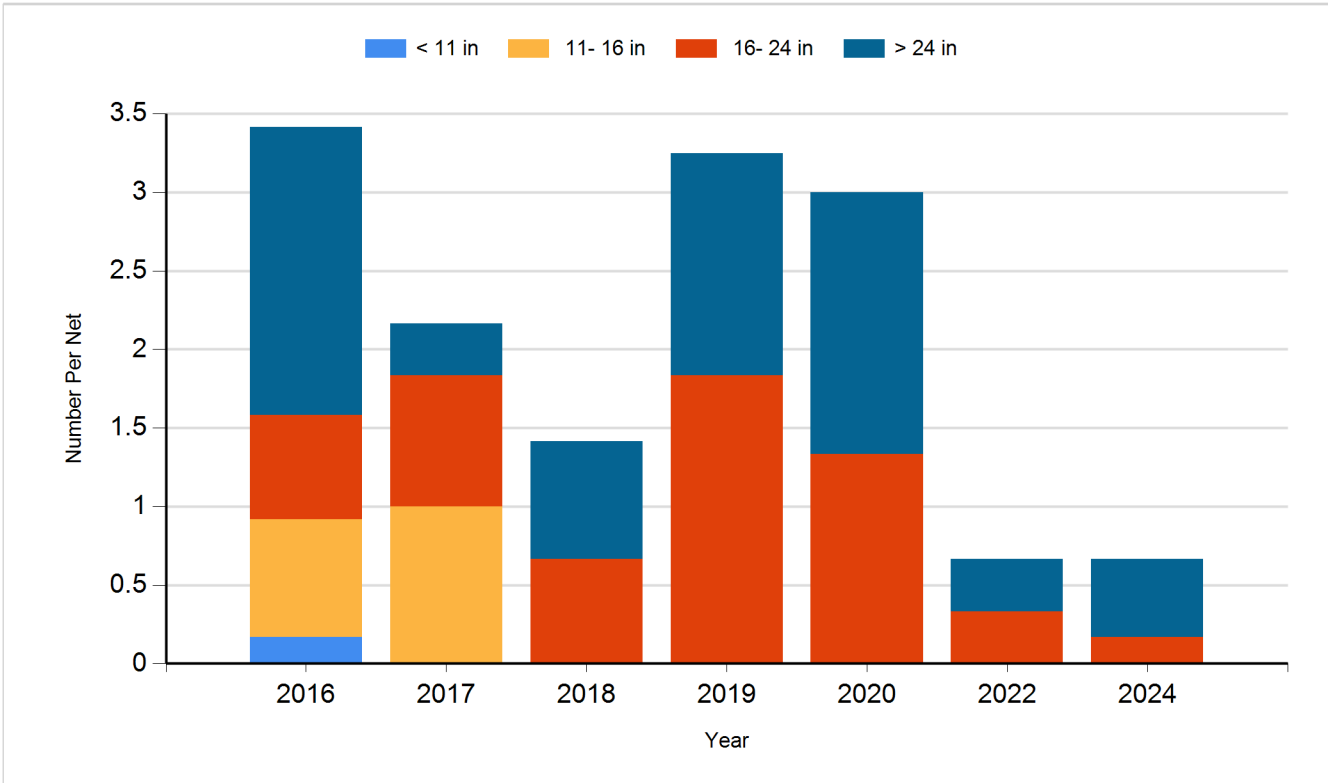
Species: Bluegill  
Gear: AFS std frame net



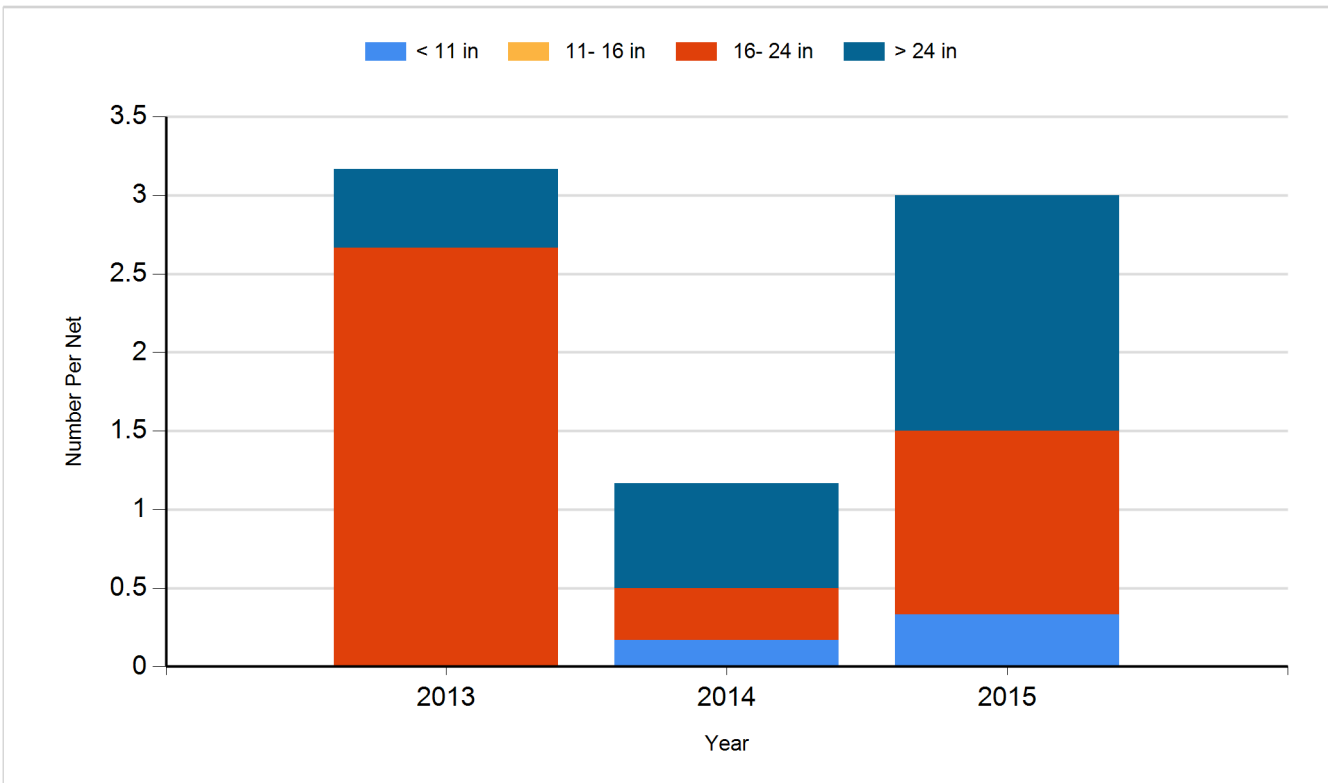
Species: Bluegill  
Gear: frame net (std 3/4 in)



Species: Channel Catfish  
Gear: AFS std gill net

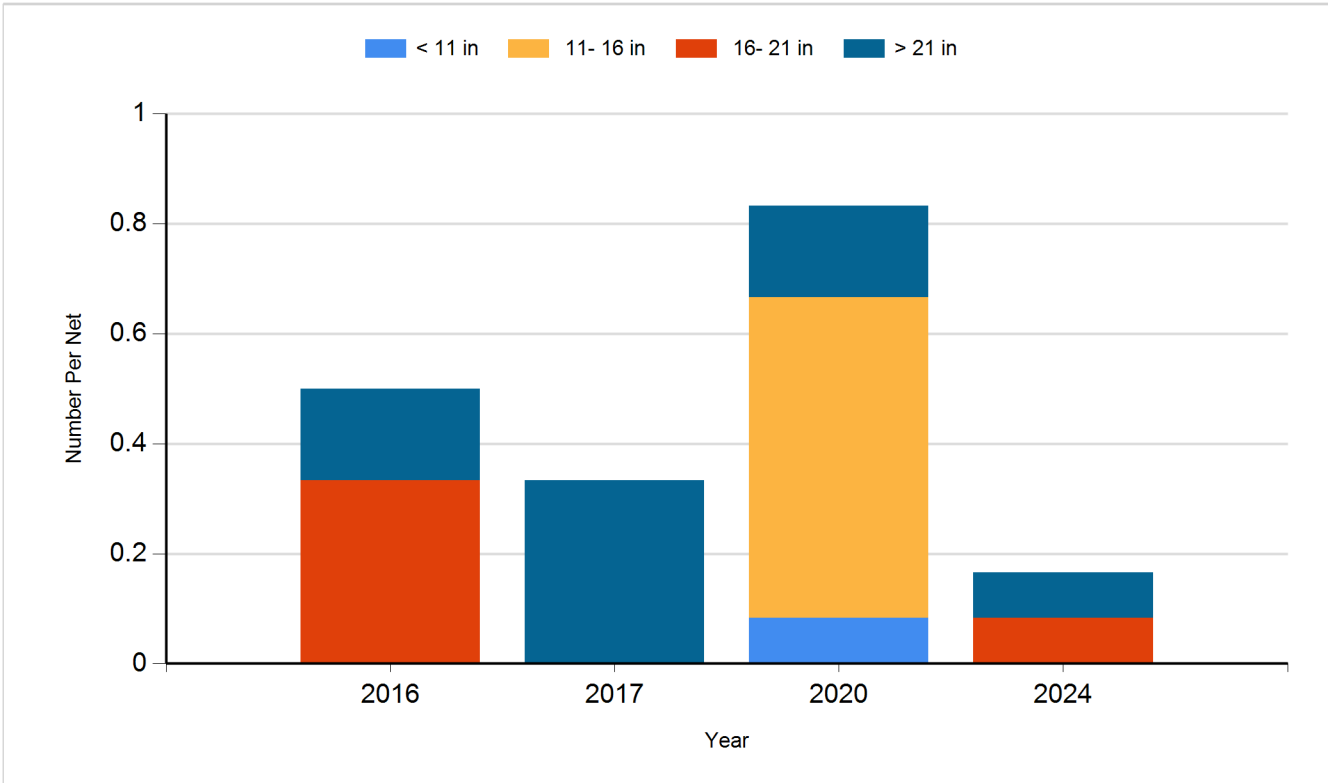


Species: Channel Catfish  
Gear: std exp gill net

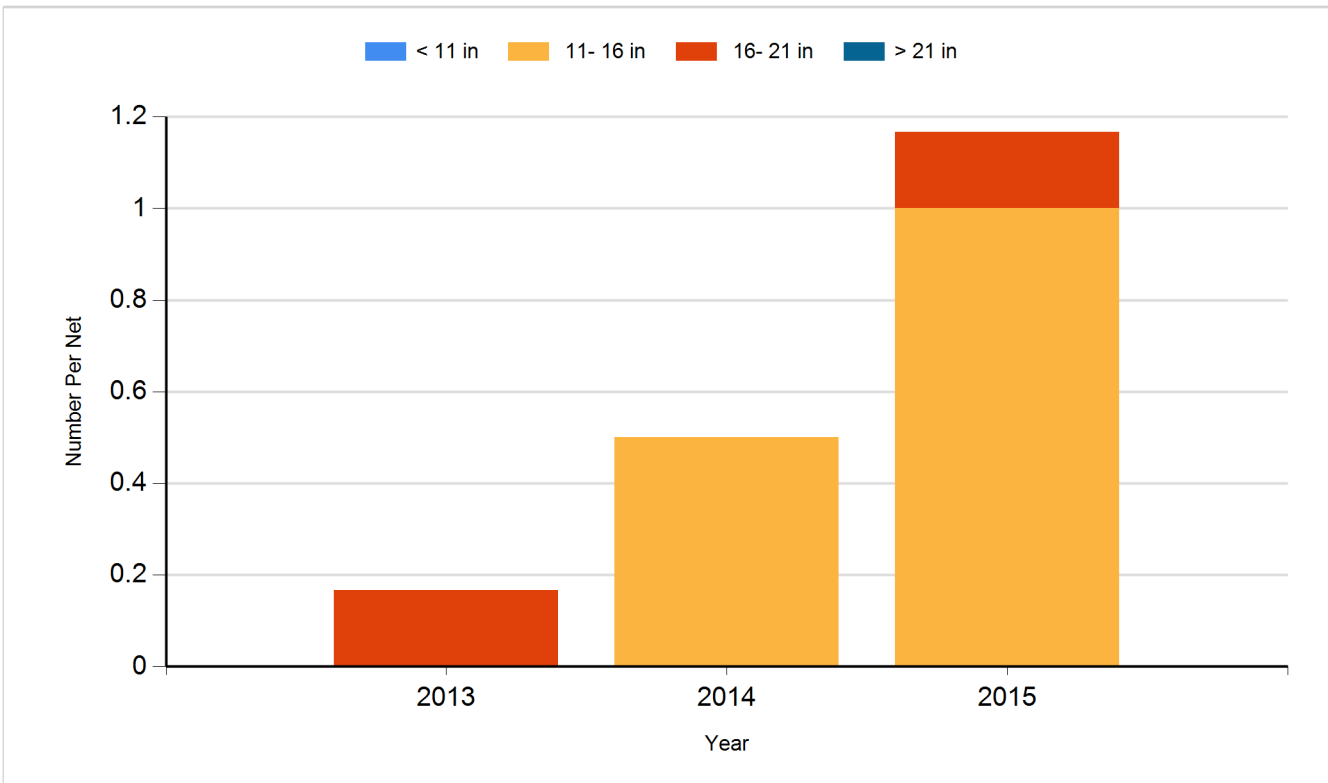




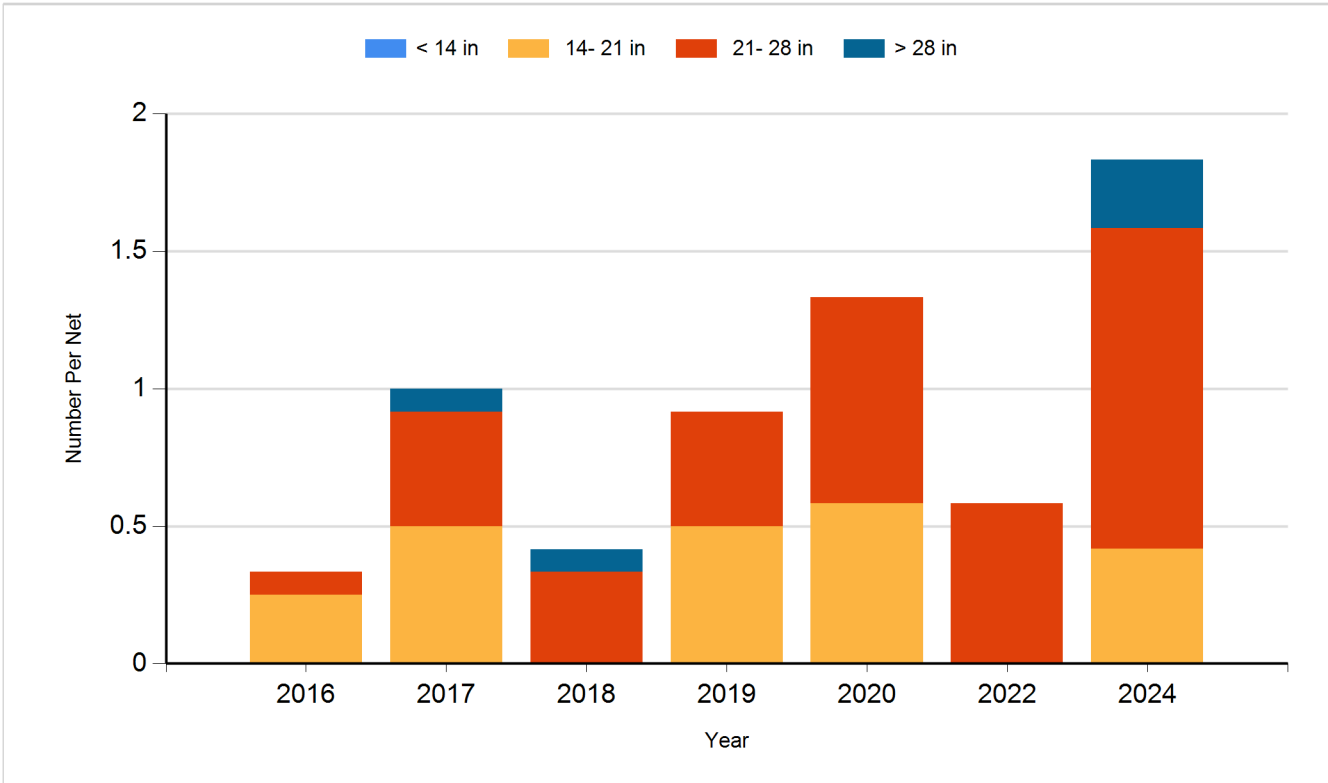
Species: Common Carp  
Gear: AFS std gill net



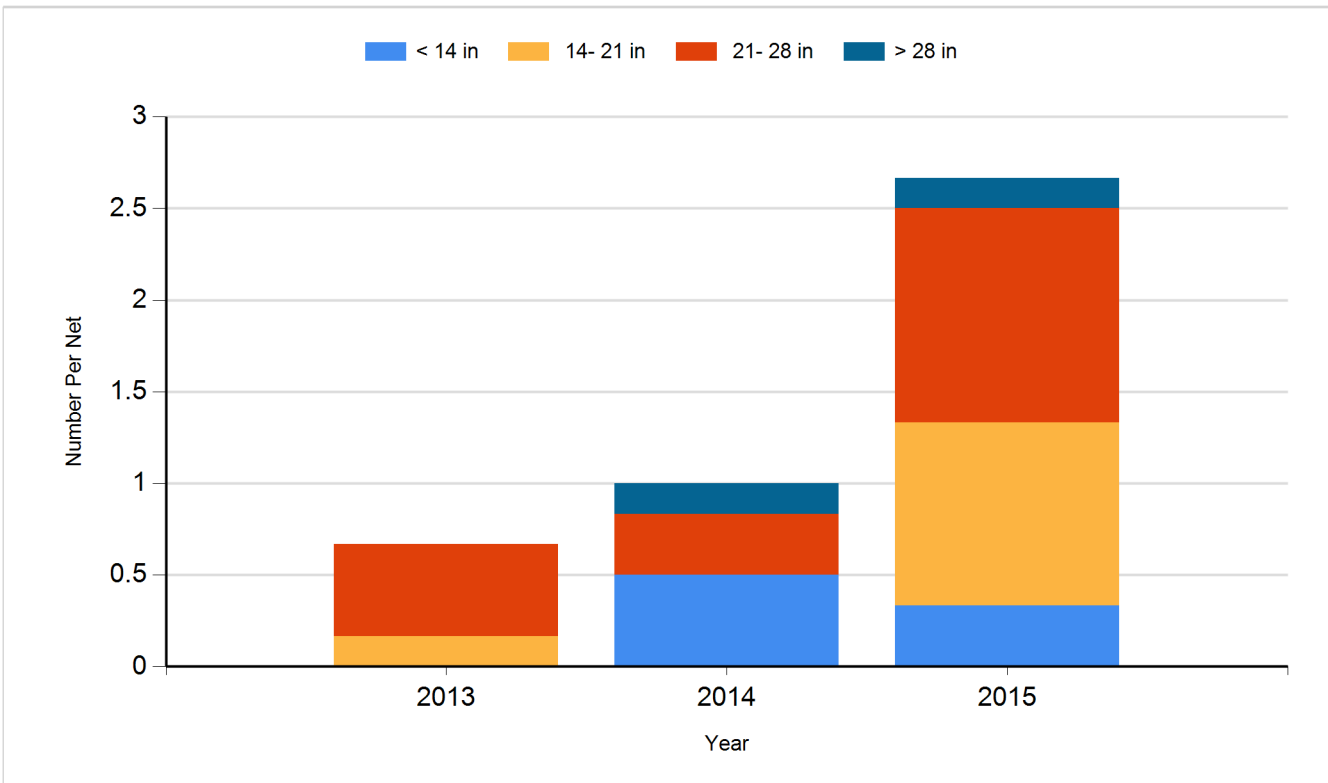
Species: Common Carp  
Gear: std exp gill net



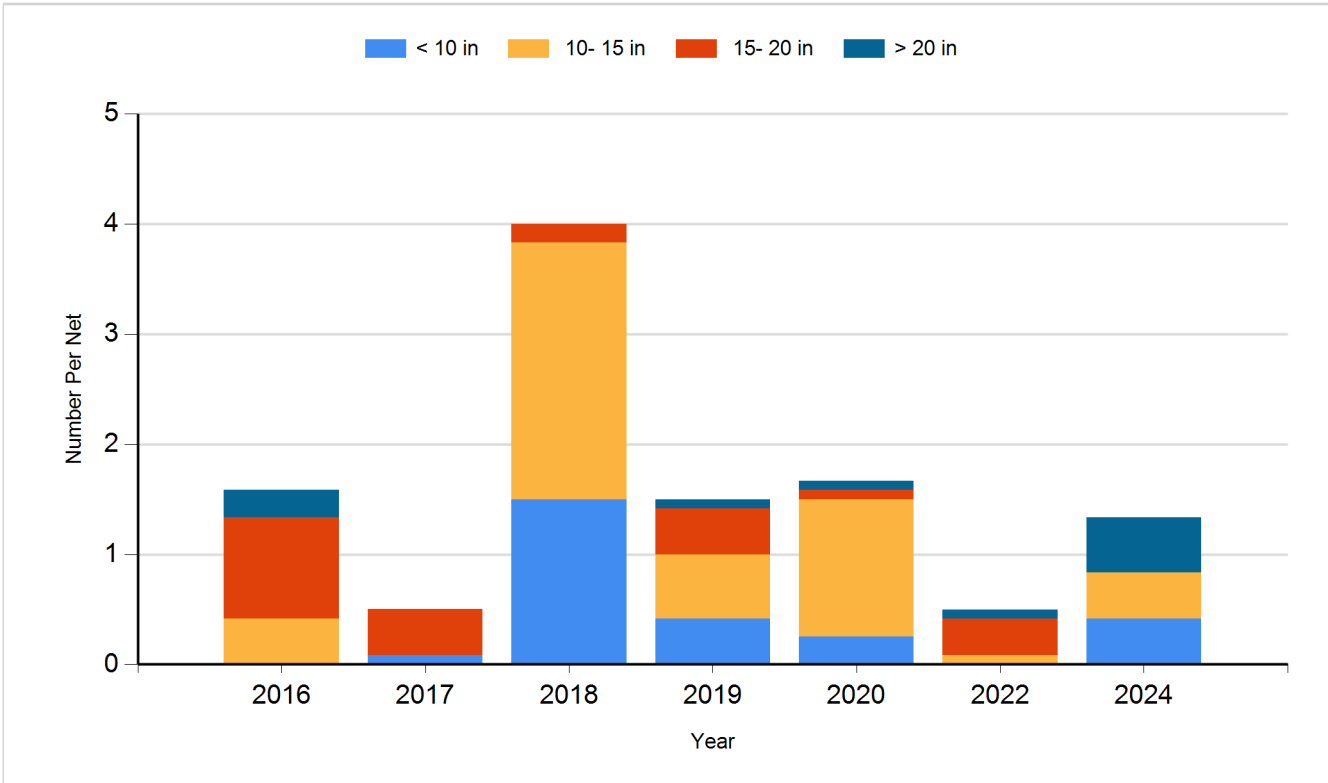
Species: Northern Pike  
Gear: AFS std gill net



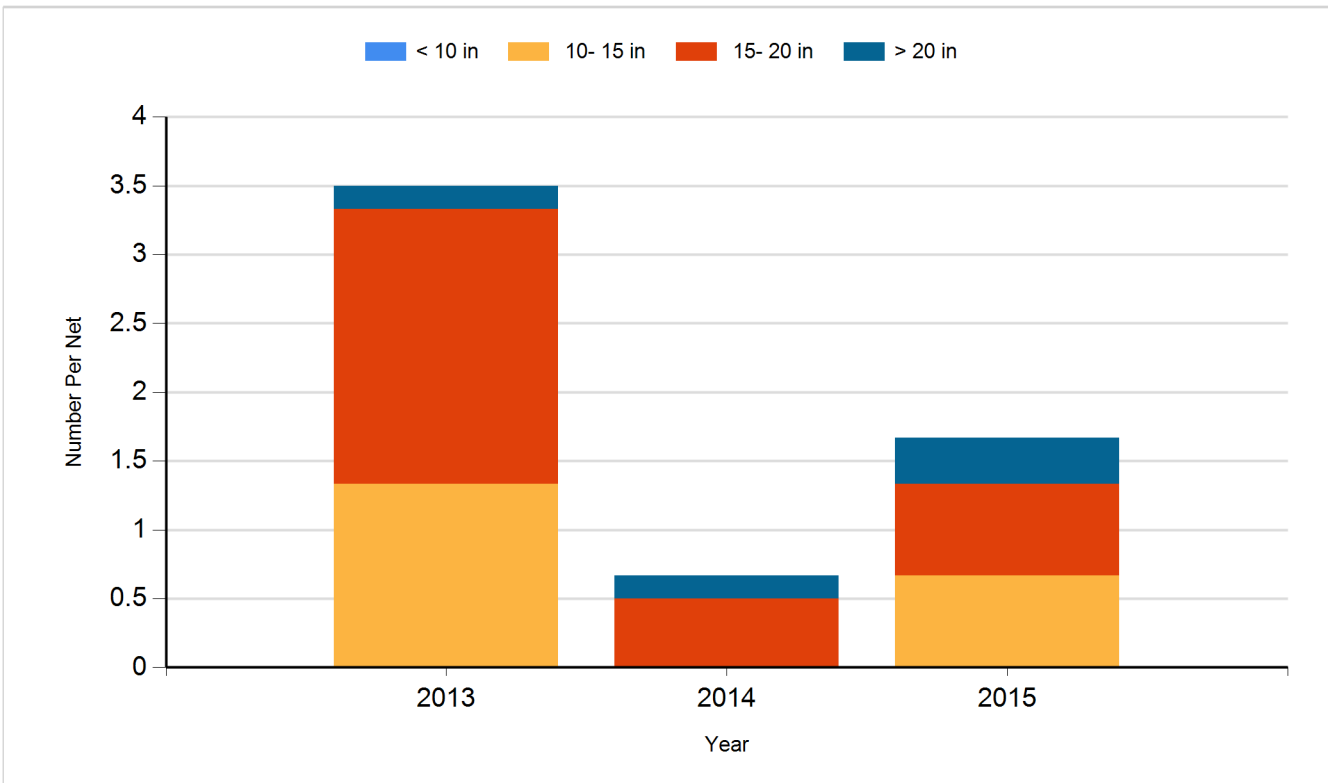
Species: Northern Pike  
Gear: std exp gill net



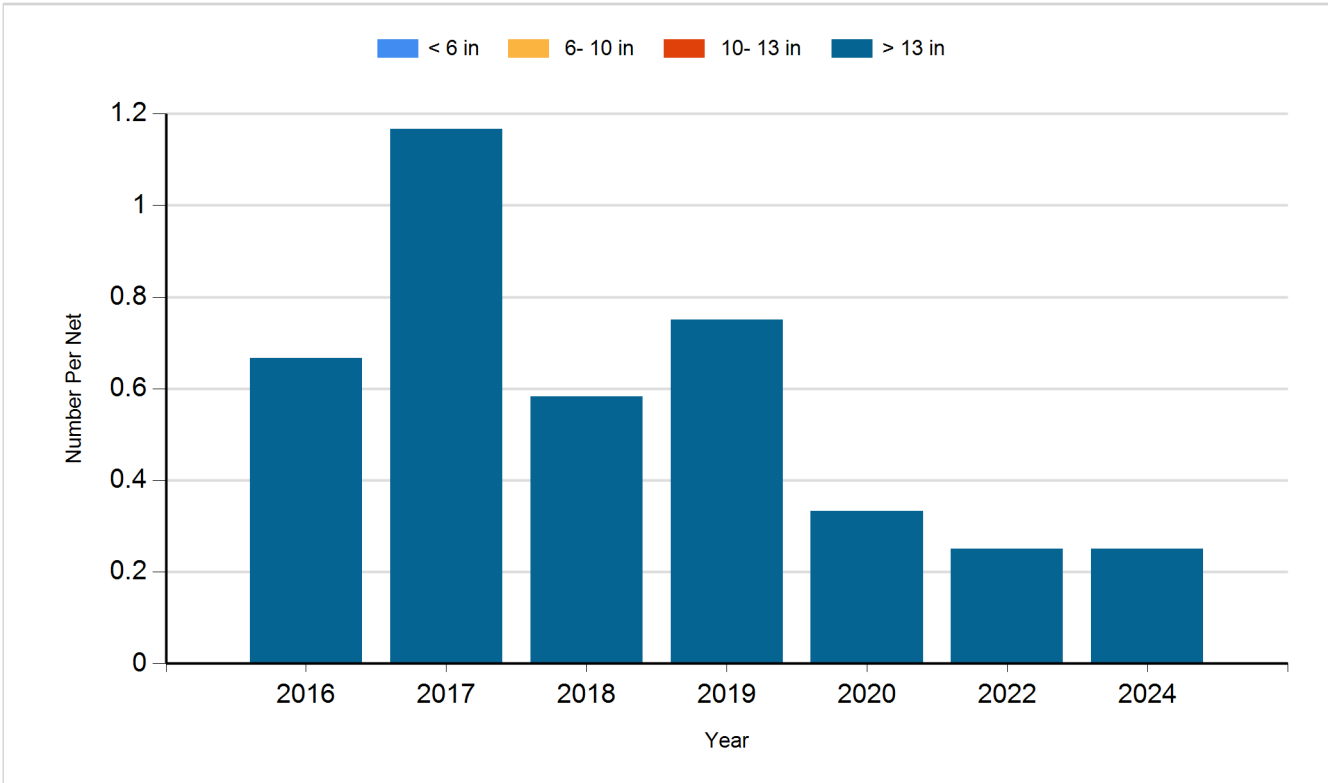
Species: Walleye  
Gear: AFS std gill net



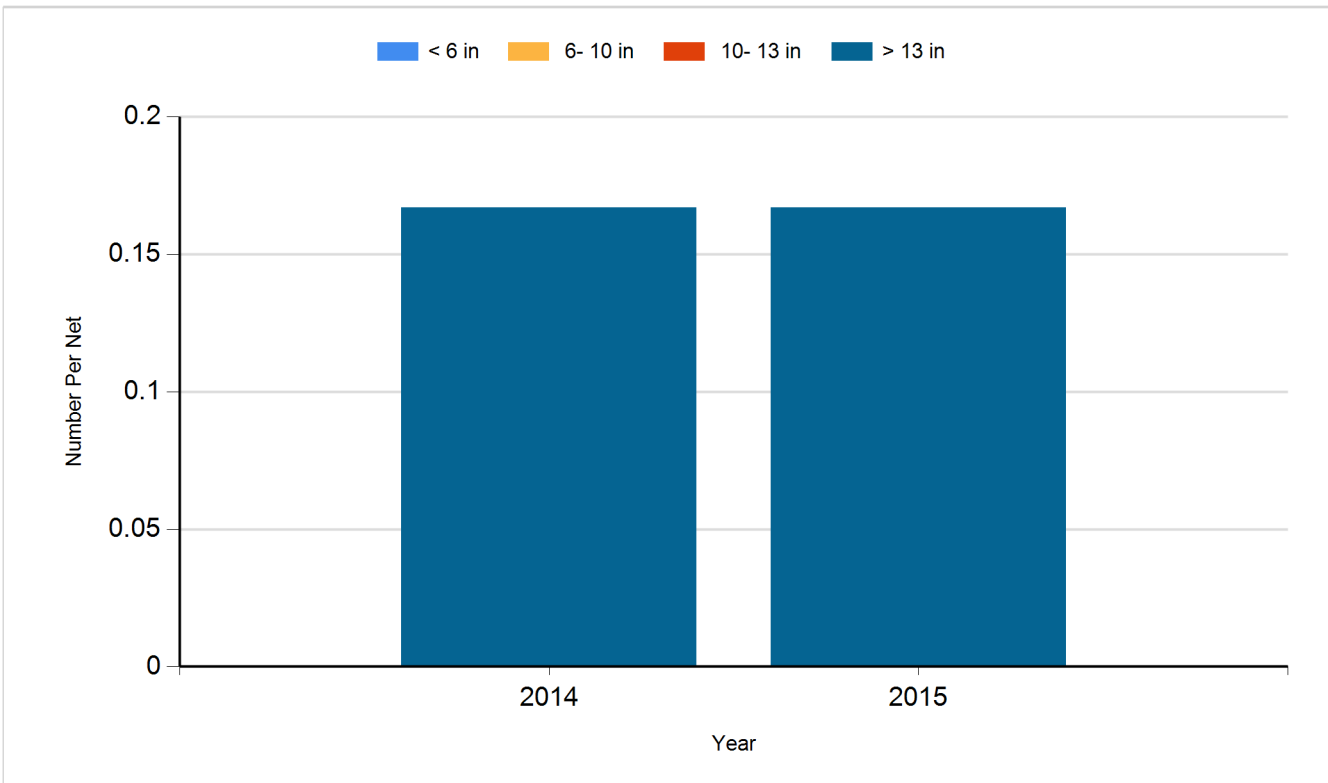
Species: Walleye  
Gear: std exp gill net



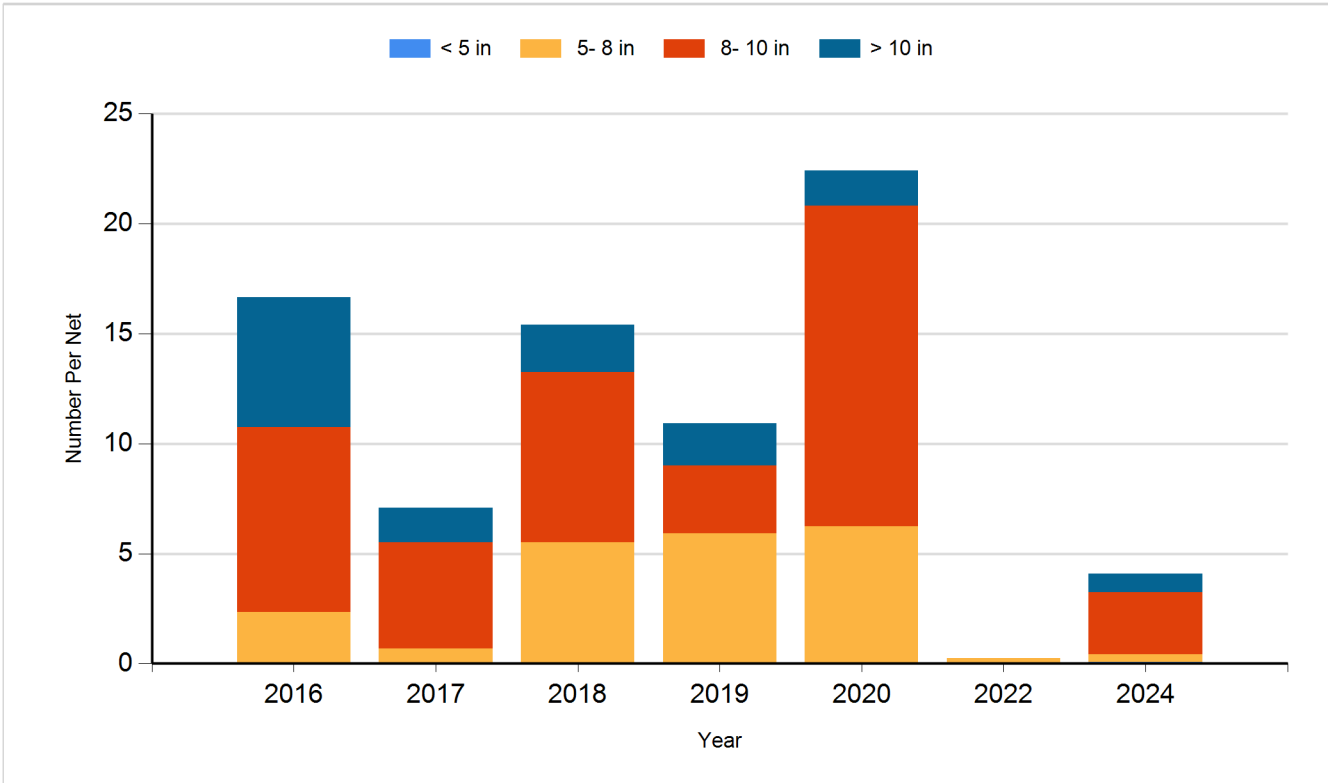
Species: White Sucker  
Gear: AFS std gill net



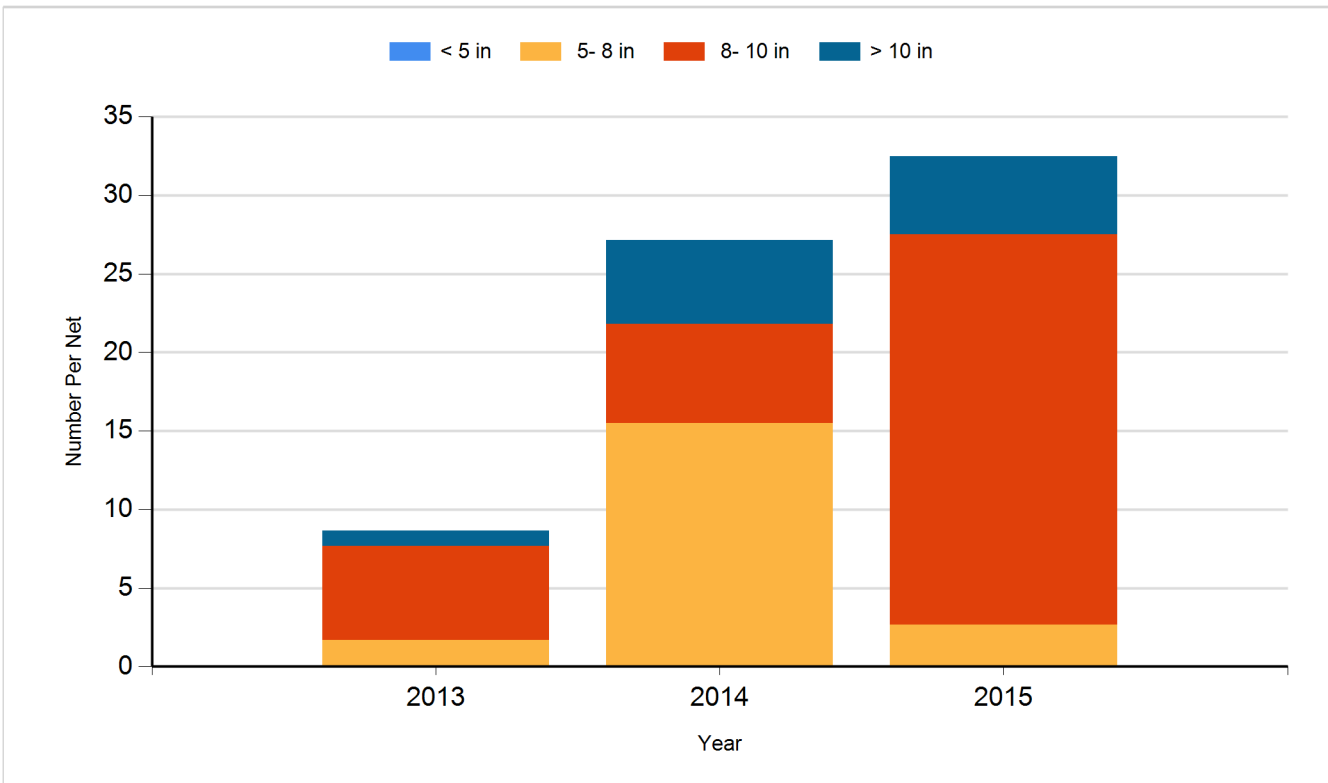
Species: White Sucker  
Gear: std exp gill net



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
2013	Walleye	Small Fingerling	48,900
2014	Walleye	Small Fingerling	79,906
2015	Walleye	Small Fingerling	80,060
2016	Saugeye	Small Fingerling	115,890
2017	Saugeye	Small Fingerling	65,420
2018	Saugeye	Small Fingerling	60,180
2019	Saugeye	Small Fingerling	60,900
2021	Saugeye	Juvenile	61,100
2022	Saugeye	Juvenile	61,420
2024	Saugeye	Fry	400,000