Mina Lake Survey Summary

Mina Lake, located approximately 11.0 miles west of Aberdeen, is managed as a black crappie, bluegill, and walleye (includes saugeye) fishery; however, other fish species (e.g., channel catfish, northern pike, freshwater drum, etc.) are present and contribute to the fishery.

- **Black crappie.** The 2024 mean frame net CPUE of 17.1 was the highest recorded from 2015 – 2024 and suggested high relative abundance. Sampled black crappies ranged in length from 4.3 to 13.0 inches, of those at least 5.0 inches, 99% were ≥ 8.0 inches and 3% were ≥ 10.0 inches. Individuals from four year classes contributed to the catch. Fish from the 2022 (age-2) cohort, which had a mean length at capture of 8.7 inches, were the most abundant accounting for 95% of black crappies in the sample.

- **Bluegill.** Bluegills were the most abundant fish species in the 2024 frame net catch. At 19.9 per frame net, relative abundance was considered high for Mina Lake. Sampled bluegills ranged in length from 3.5 to 9.8 inches, 97% were ≥ 6.0 inches and 37% were ≥ 8.0 inches. Five year classes contributed to the catch. Individuals from the 2021 (age-3) cohort were the most abundant accounting for 69% of bluegills in the sample, while those from the 2023 (age-1) year class made up an additional 22%. Since 2015, mean length at captures at age 4 have ranged from 7.0 to 8.5 inches. In 2024, age-4 bluegills had a mean length at capture of 8.5 inches.

- **Channel catfish.** The opportunity exists for anglers to catch channel catfish from Mina Lake. In 2024, gill nets captured eight channel catfish (0.7 per gill net) that ranged in length from 22.8 to 26.4 inches.

- **Walleye (includes saugeye).** Relative abundance of walleyes has remained low at Mina Lake. In 2024, the gill net catch included 16 individuals (0.9 per gill net) that ranged in length from 7.5 to 26.0 inches. Six year classes were present, each was represented by seven or fewer individuals.

- **Yellow Perch**. Although yellow perch were the most abundant fish species in the 2024 gill net catch. Relative abundance remained low (4.0 per gill net). Sampled yellow perch ranged in length from 4.7 to 11.0 inches, of those at least 5.0 inches, 92% were ≥ 8.0 inches and 21% were ≥ 10.0 inches. Fish from three year classes were present, those from the 2021 (age-3) cohort were the most abundant accounting for 88% of yellow perch in the sample. Age-3 fish had a mean length at capture of 9.4 inches in 2024.

For more detailed results see the computer generated South Dakota Statewide Fisheries Survey for Mina (Edmunds; below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Mina, Edmunds County
SNK-Lake-23-800
2024

Lake Information

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

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

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.
- s**td 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.

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

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.

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

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

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.

$$Wr = \left(\frac{W}{Ws}\right) \text{x } 100$$

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).

	Stock		Quality		Preferred		Memorable		Trophy	
Species Name	(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**

			Abundance		Stock Density Indices				Condition	
Gear	Species	Sample Size (n)	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
	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**

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
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	23.5	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	0.0	0.1		0.0		0.1	0.03
	Bluegill	0.0	0.3	0.6	0.1	1.0	0.3		0.0		0.2	0.36
	Channel Catfish	2.7	3.3	2.2	1.4	3.3	3.0		0.7		0.7	2.09
	Common Carp	1.2	0.5	0.3	0.0	0.0	0.8		0.0		0.2	0.26
	Freshwater Drum	2.3	6.9	2.6	5.1	4.3	2.3		2.4		1.5	3.59
	Largemouth Bass	0.0	0.1	0.0	0.0	0.0	0.0		0.0		0.0	0.01
	Northern Pike	2.3	0.3	1.0	0.4	0.9	1.3		0.6		1.8	0.90
	Walleye	1.7	1.6	0.4	2.5	1.1	1.4		0.5		0.9	1.20
	White Sucker	0.2	0.7	1.2	0.6	0.8	0.3		0.3		0.3	0.60
	Yellow Perch	32.5	16.7	7.1	15.4	10.9	22.4		0.3		4.0	10.97
fall night EF-WAE*	Walleye	69.0	77.6	133.5	78.0	99.0	17.2	267.0	537.9	102.0	48.0	142.92
frame net (std 3/4 in)	Black Bullhead	41.8		15.3		1.3	5.7		9.1		12.2	14.02
	Black Crappie	0.1		0.3		0.2	0.8		0.1		17.1	3.66
	Bluegill	5.7		14.1		7.6	6.6		1.4		19.9	8.24
	Channel Catfish	0.7		1.2		0.2	2.1		0.2		0.7	0.78
	Common Carp	0.6		0.2		0.1	0.0		0.1		2.6	0.68
	Freshwater Drum	0.9		0.1		0.5	0.7		0.5		0.4	0.60
	Northern Pike	0.4		0.6		0.2	1.1		0.3		0.7	0.54
	Walleye	0.1		0.2		0.4	1.7		0.6		1.1	0.78
	White Sucker	0.3		0.4		0.1	0.1		0.2		0.3	0.20
	Yellow Perch	1.6		1.1		3.4	5.3		0.0		0.5	2.16

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.

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net	Channel Catfish	PSD	100	77	54	100	100	100		100		100
		PSD-P	56	56	15	53	44	56		50		75
		Wr	93	110	109	108	110	101		128		103
	Walleye	PSD	60	74	100	7	46	12		83		55
		PSD-P	20	16	0	0	8	6		17		55
		Wr	96	97	82	90	86	86		91		85
	Yellow Perch	PSD	92	86	91	64	46	72		0		92
		PSD-P	15	36	22	14	18	7		0		21
		Wr	99	102	104	105	106	102		115		111
frame net (std 3/4 in)	Black Crappie	PSD	0		100		25	73		100		99
		PSD-P	0		0		0	27		100		3
		Wr	117		109		108	110		116		118
	Bluegill	PSD	98		85		93	87		65		97
		PSD-P	24		8		48	52		57		37
		Wr	119		125		124	125		134		141

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)			
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

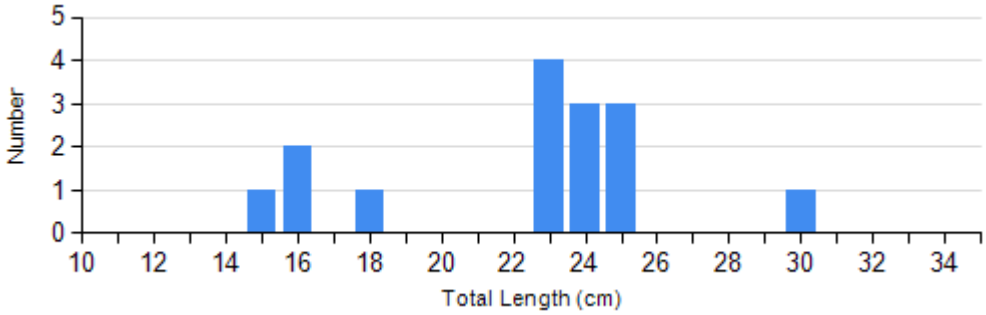
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
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	
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
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	

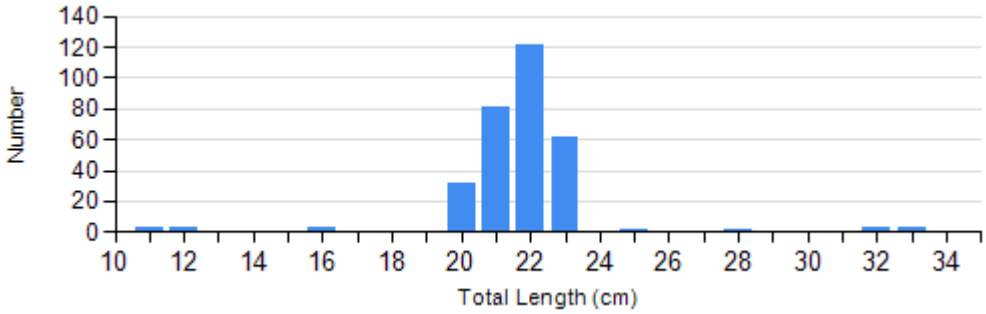
Length Frequency Distribution

Length frequency histogram of species sampled by year.

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

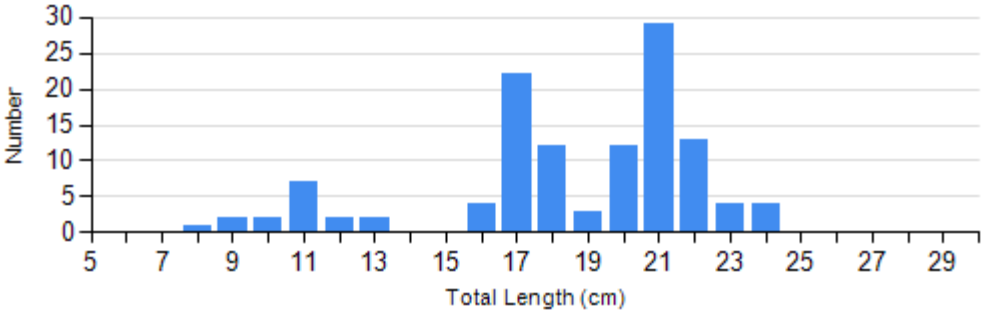


2020



2024

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



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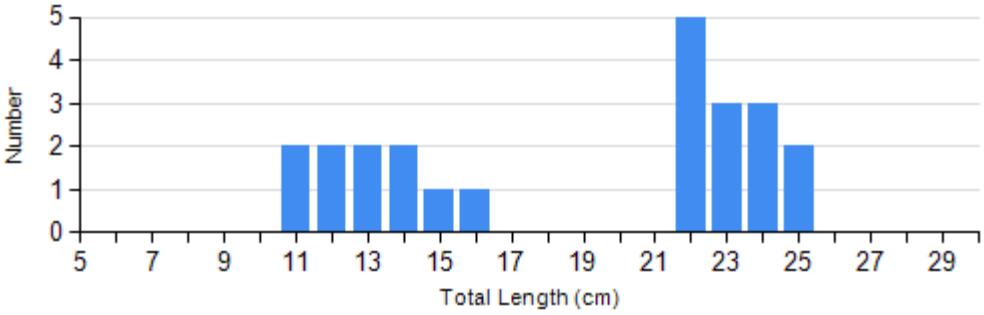
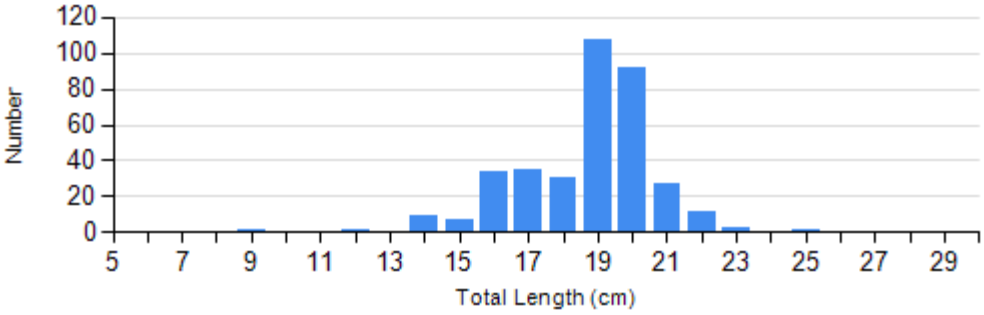
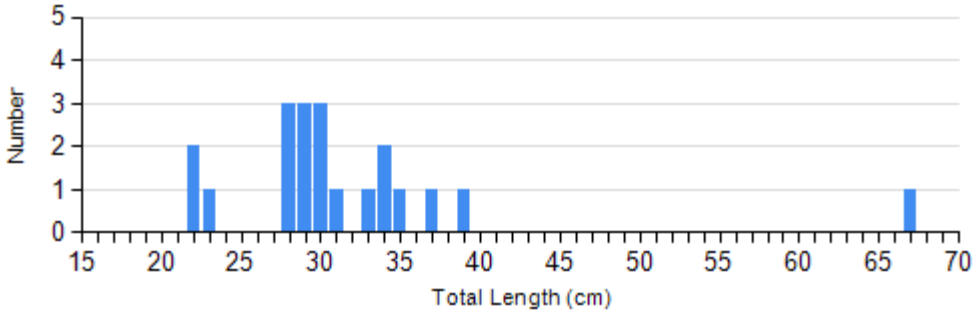


2022



2024

Species: Walleye
Gear: AFS std gill net



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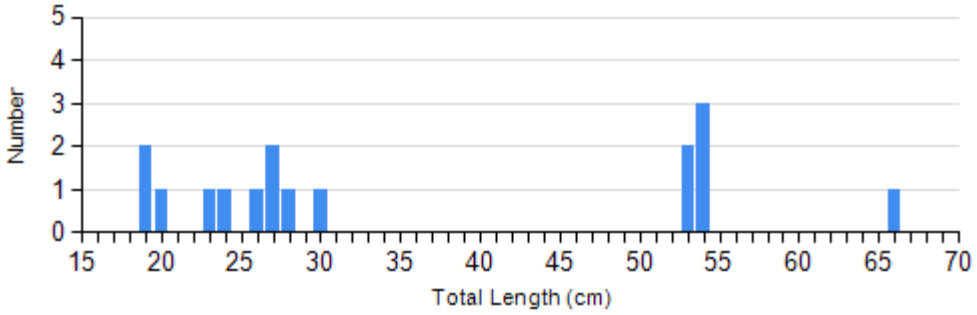
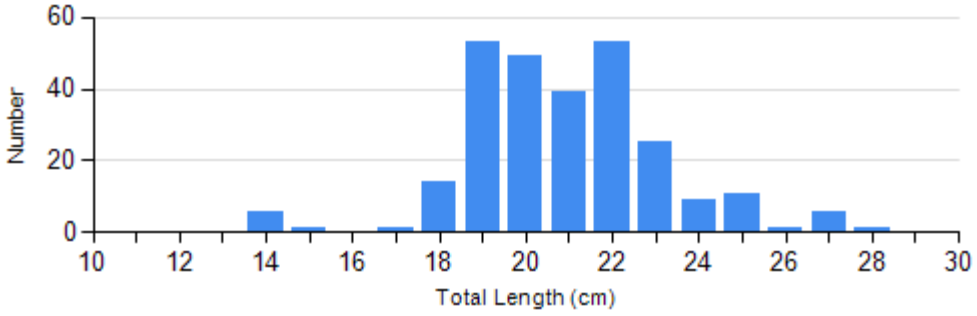
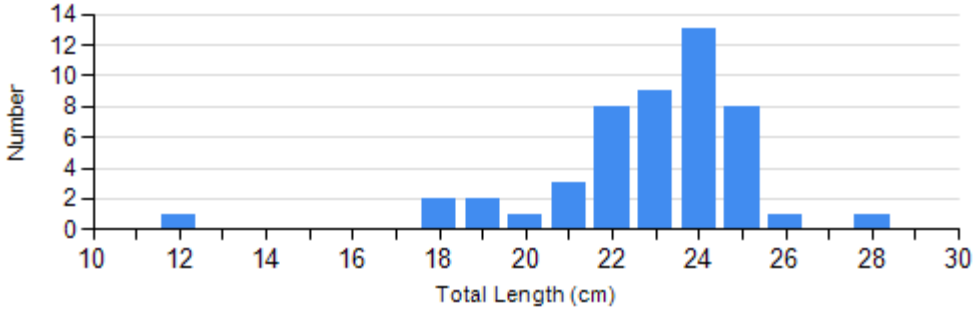


2024

Species: Yellow Perch
Gear: AFS std gill net



2020

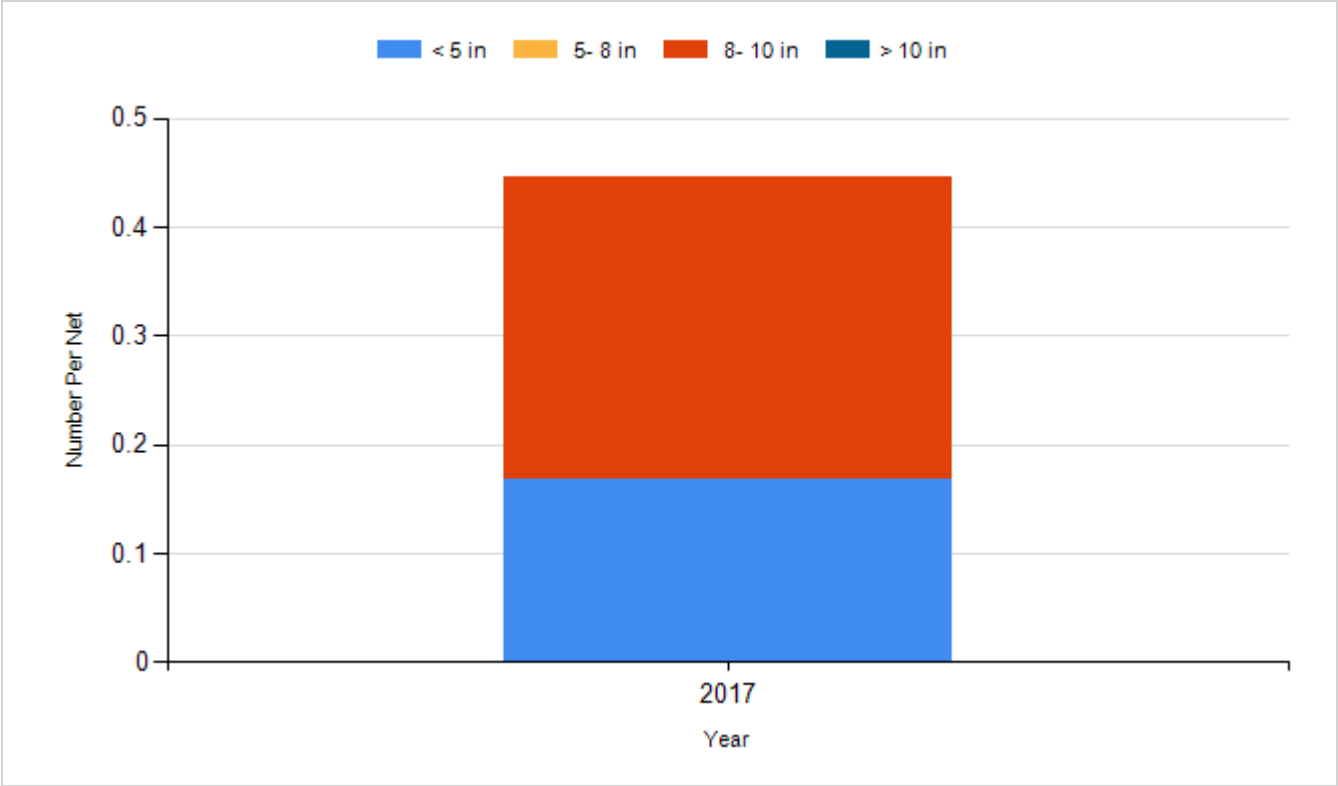


2024

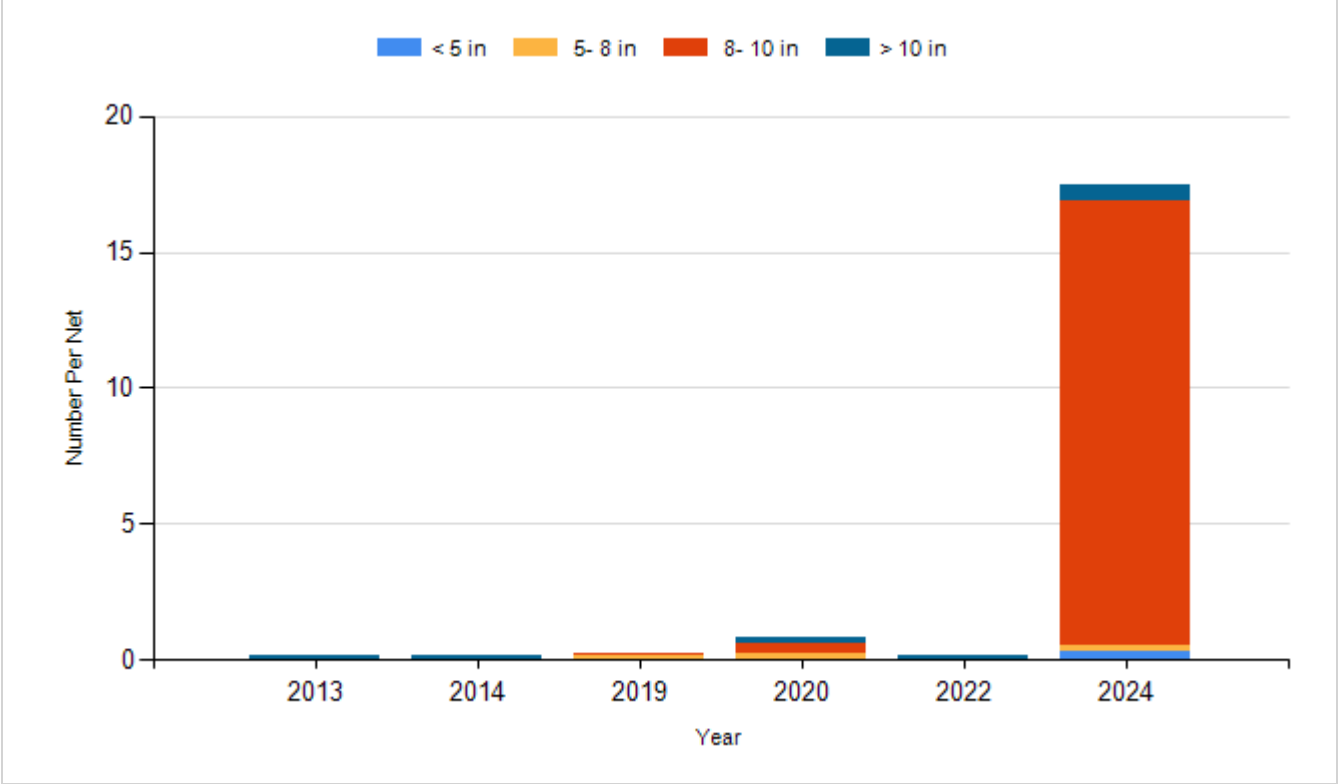
Historic Fish Sizes and Relative Abundance

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

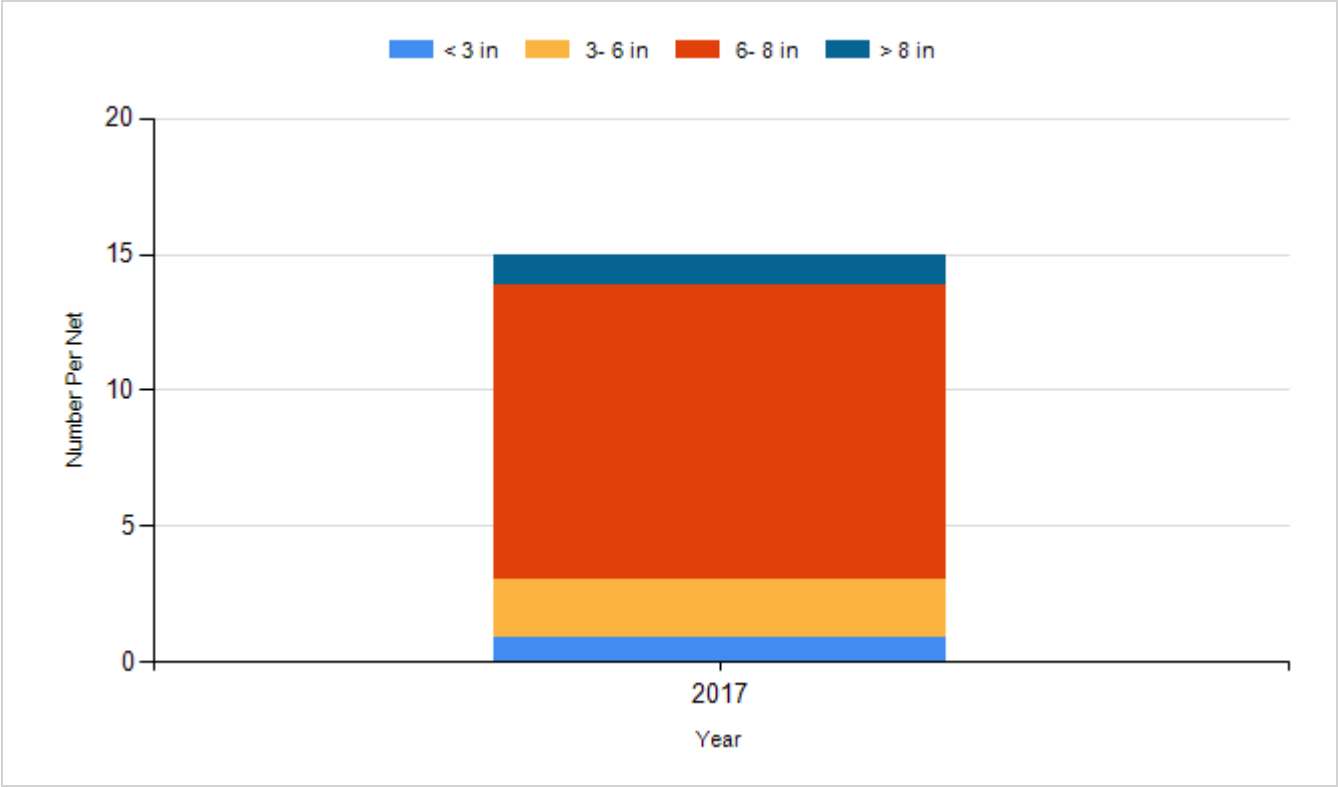
Species: Black Crappie
Gear: AFS std frame net



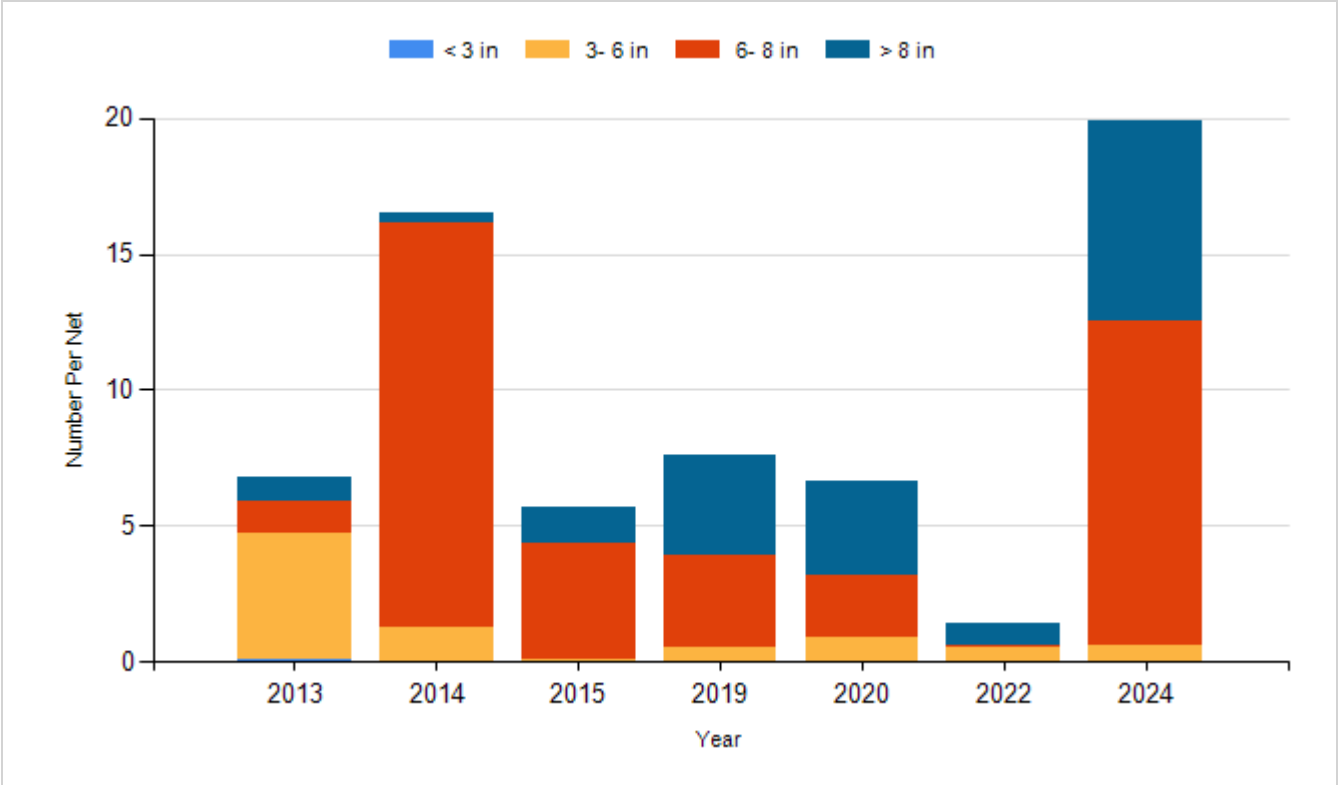
Species: Black Crappie
Gear: frame net (std 3/4 in)



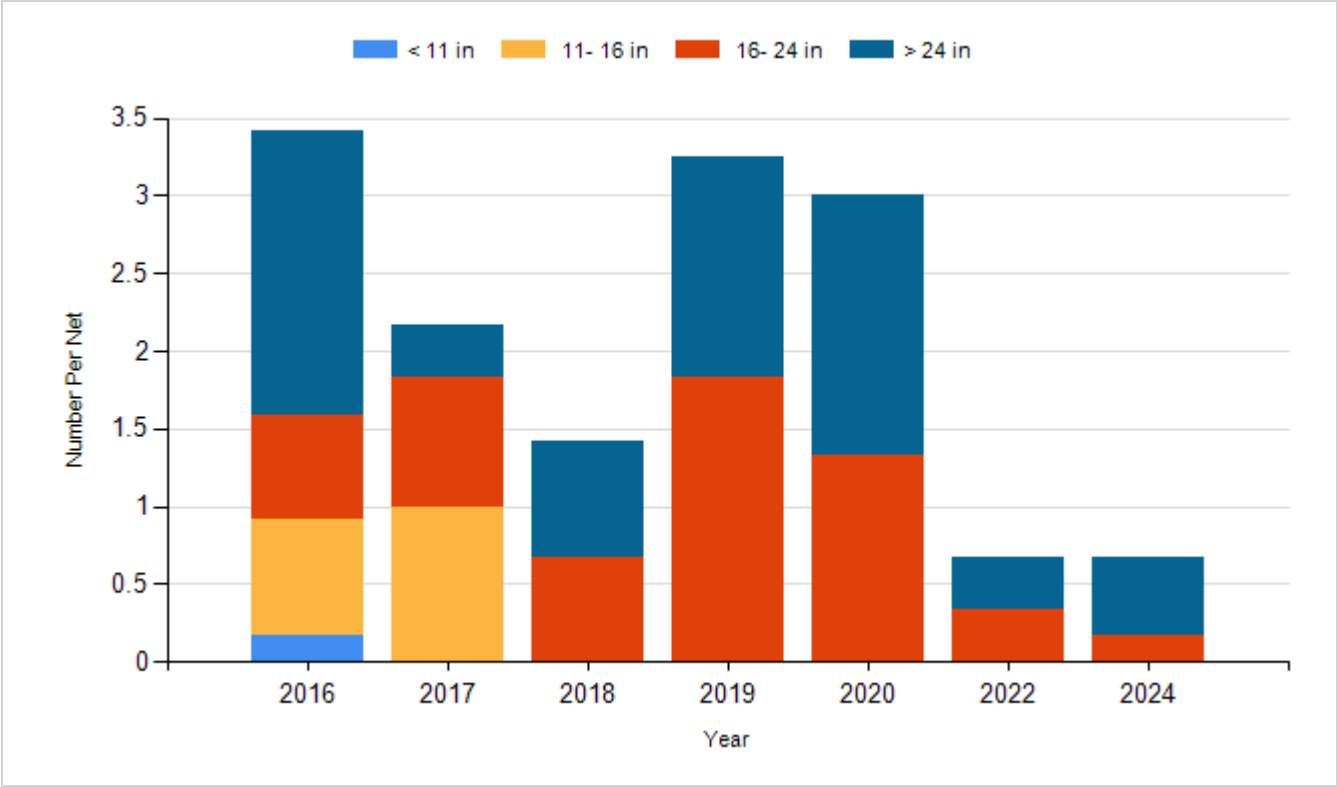
Species: Bluegill
Gear: AFS std frame net



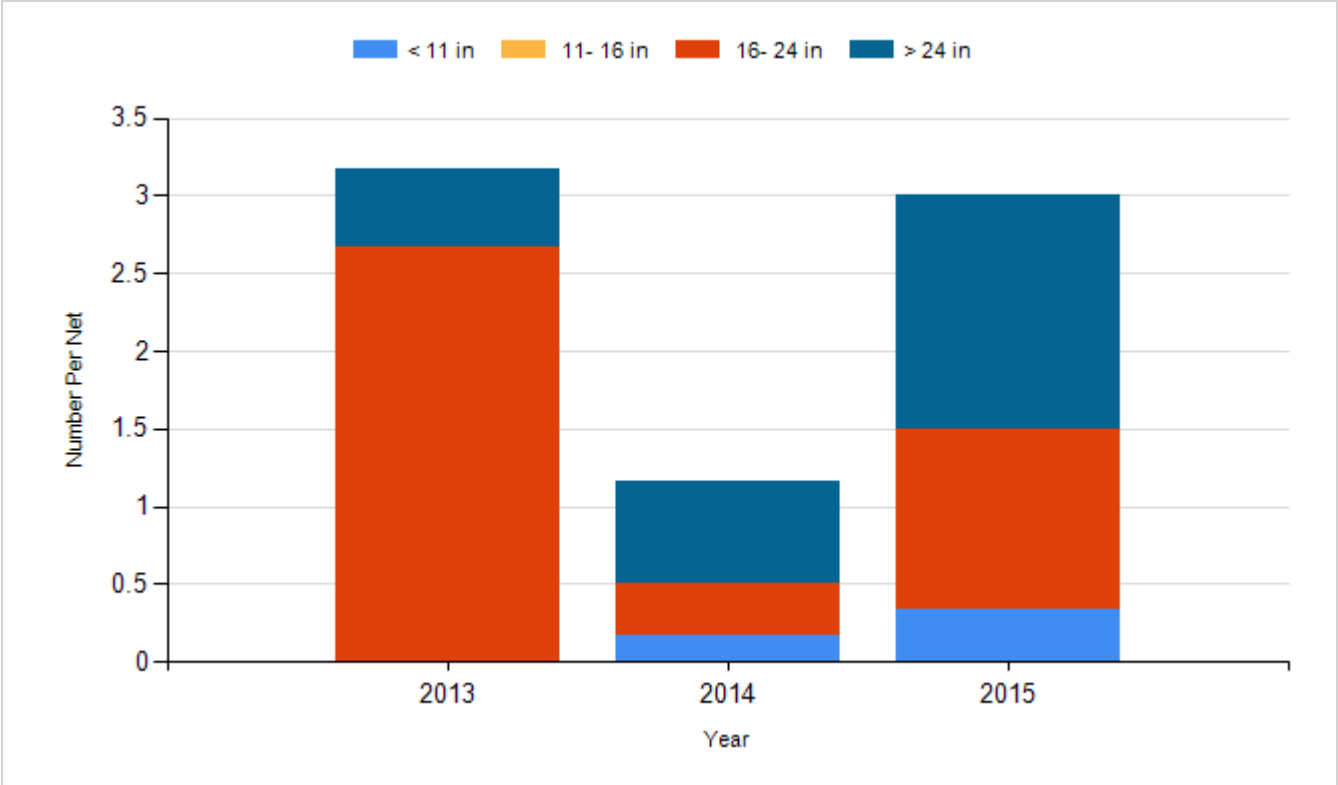
Species: Bluegill
Gear: frame net (std 3/4 in)



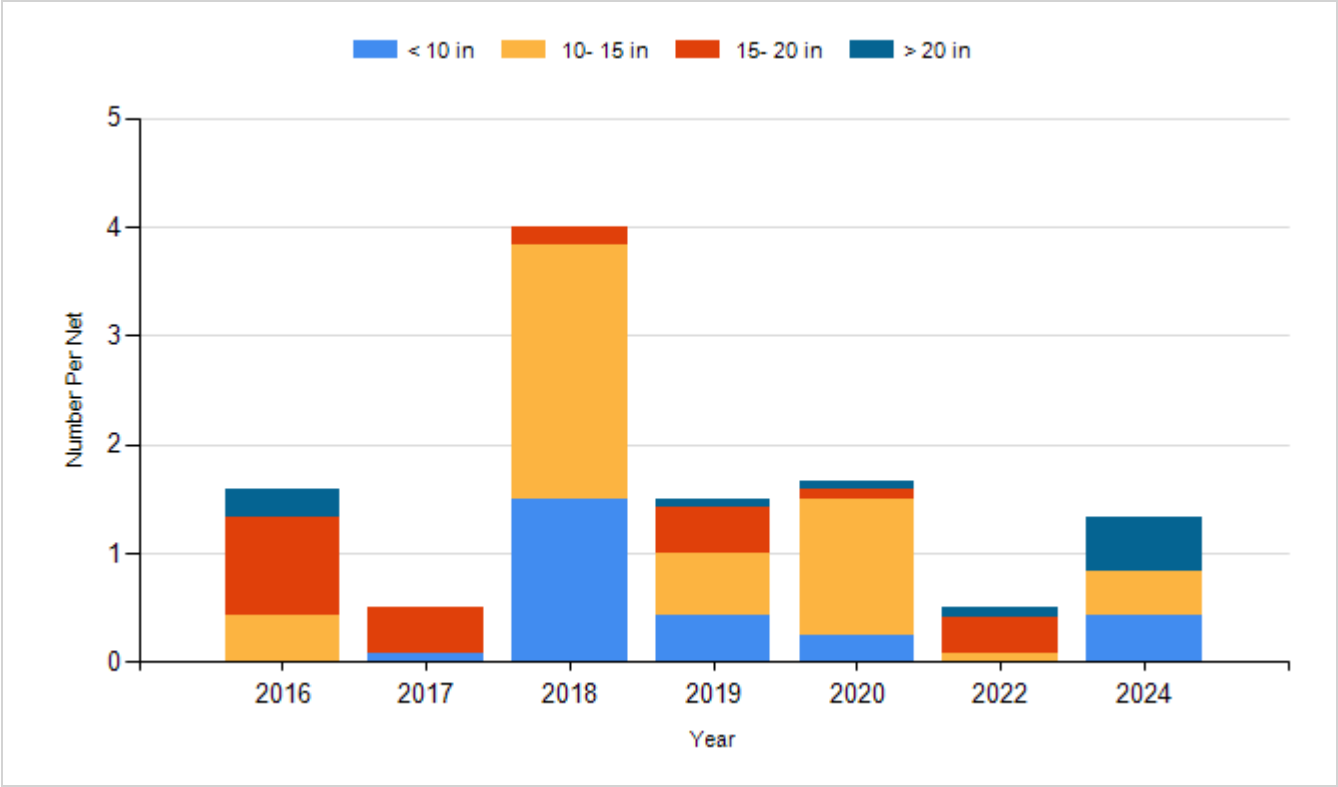
Species: Channel Catfish
Gear: AFS std gill net



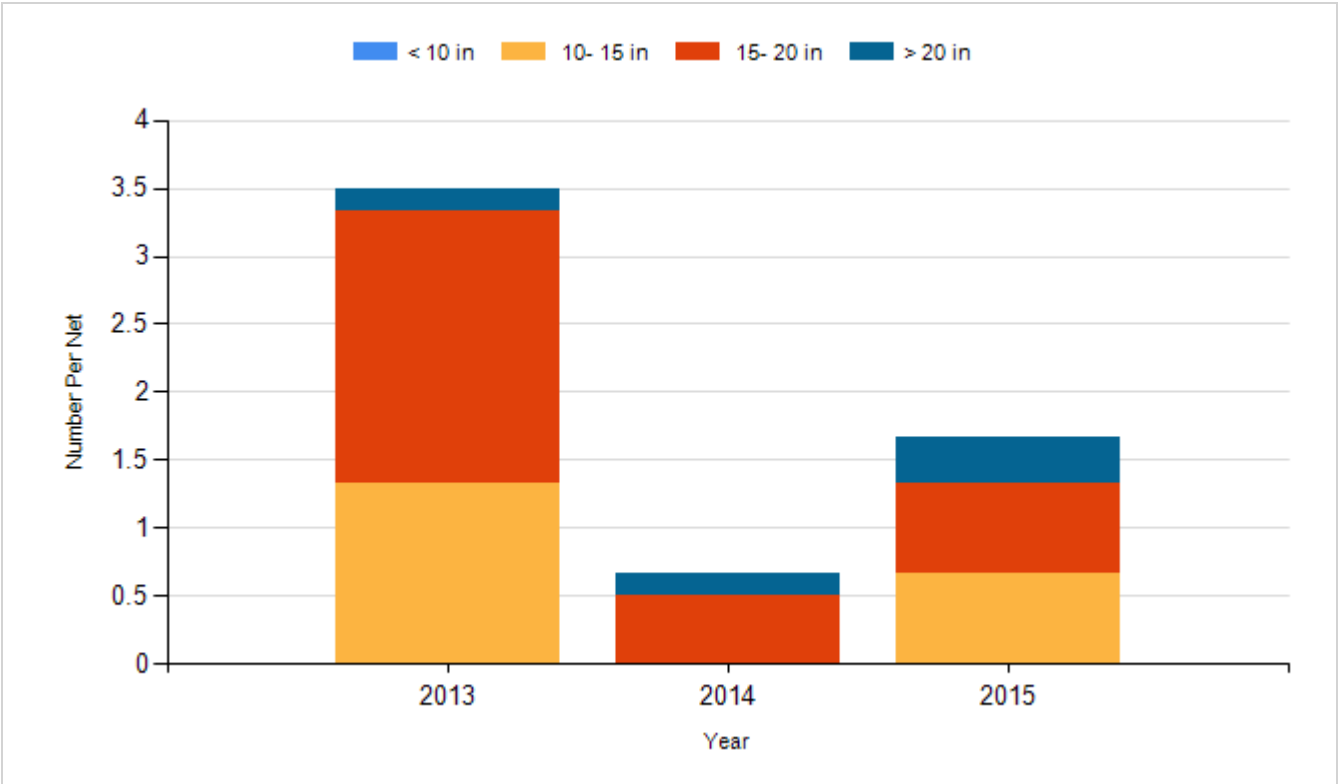
Species: Channel Catfish
Gear: std exp gill net



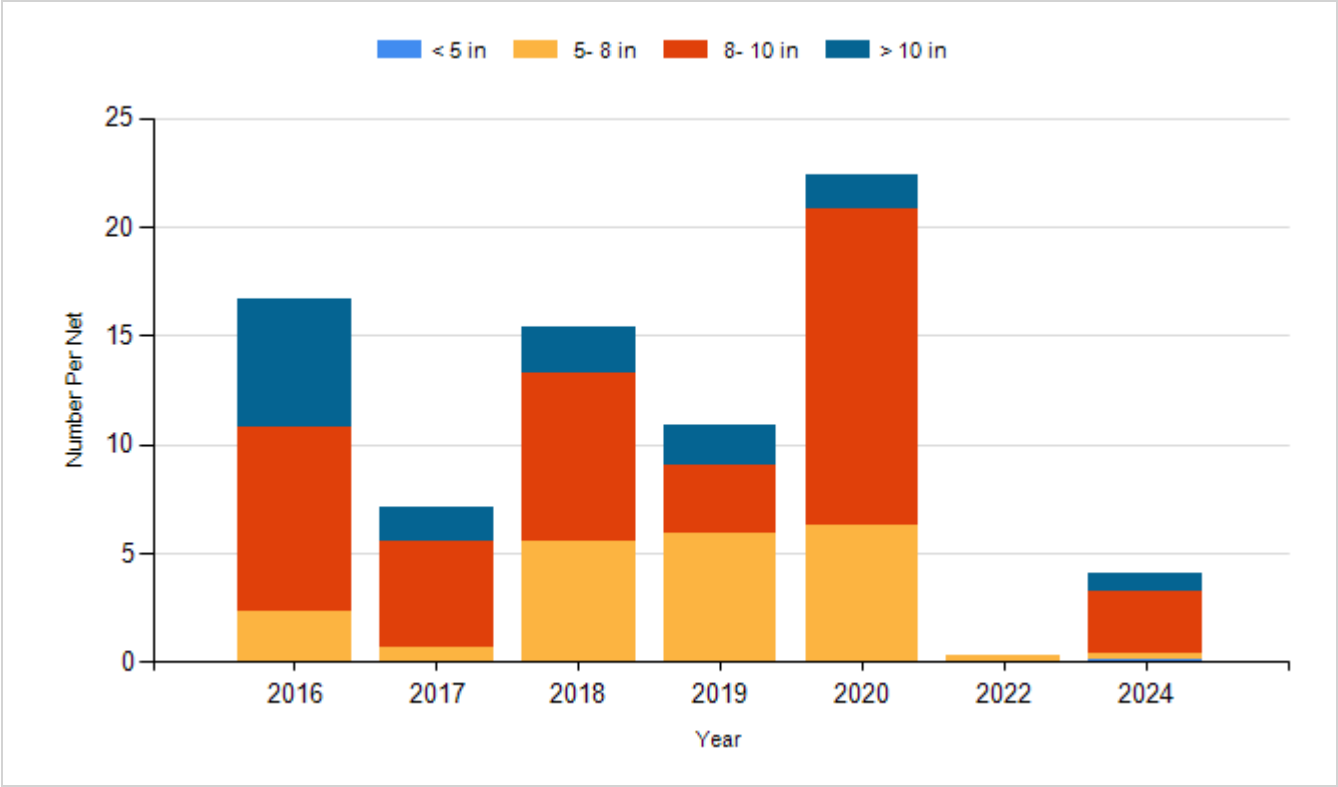
Species: Walleye
Gear: AFS std gill net



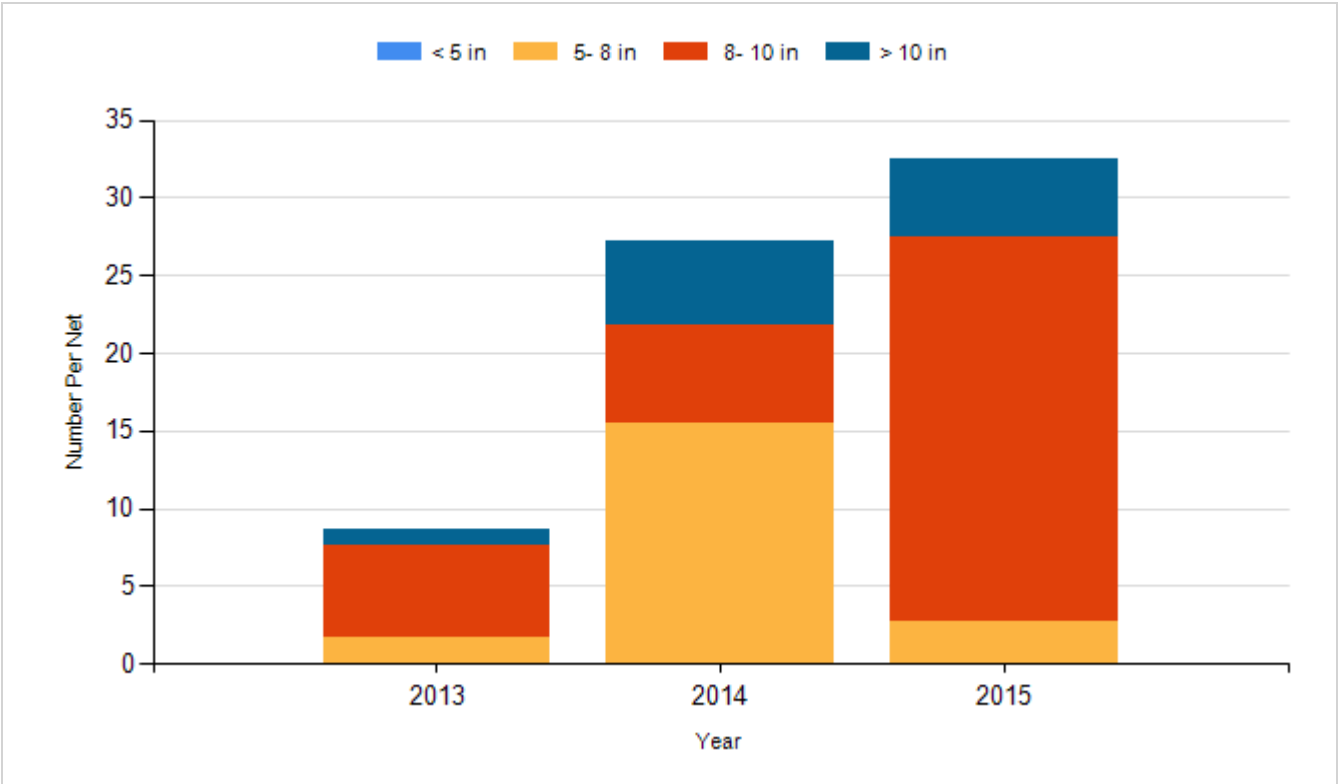
Species: Walleye
Gear: std exp gill net



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