Note: Zebra mussels are present in Lake Poinsett. Care should be taken by all user groups to prevent their spread. For more information regarding aquatic invasive species please visit https://sdleastwanted.sd.gov/

Lake Poinsett Survey Summary

Lake Poinsett, located 7.0 miles west of Estelline, is primarily managed as a walleye and yellow perch fishery but the lake supports a diverse fish community, and a variety of species contribute to the fishery.

- **Channel catfish.** Channel catfish numbers were similar to those observed in 2023. The 2024 mean gill net CPUE of channel catfish was 1.3. Fish from 7.5 to 28.3 inches contributed to the catch, most (93%) were ≥16.0 inches and 60% were ≥24.0 inches.

- **Walleye.** Walleye numbers were higher in 2024 than in 2023. At 5.0 per gill net, relative abundance of walleyes ≥ 10.0 inches was considered moderate in 2024. Sampled walleyes ranged in length from 7.1 to 28.7 inches, of those that were at least 10 inches, 57% were ≥ 15.0 inches and 30% were ≥ 20.0 inches. Twelve year classes contributed to the catch, none were particularly strong. Individuals from natural produced cohorts in 2023 (age-1), 2022 (age-2), and 2021 (age-3) were the most abundant accounting for 62% of walleyes in the sample. The oldest walleye sampled was from the 2009 (age-15) year class. Growth has been variable, with mean length at captures for age-3 fish from 12.3 to 17.2 inches since 2015. In 2024, the mean length at capture of age-3 fish was 14.8 inches.

- **White bass.** More white bass were sampled in 2024 than in 2023. The 2024 gill net catch included 62 white bass (5.2 per net) that ranged in length from 7.9 to 16.5 inches, most (92%) were ≥ 9.0 inches and 68% were ≥ 12.0 inches.

- **Yellow perch**. Yellow perch were the most abundant fish species in the 2024 gill net catch. At 9.1 per gill net, relative abundance was considered moderate for Lake Poinsett. Sampled yellow perch ranged in length from 4.7 to 13.0 inches, of those at least 5.0 inches, 70% were ≥ 8.0 inches and 28% were ≥ 10.0 inches. Individuals from eight cohorts contributed to the catch. Yellow perch from the 2022 (age-2) year class were the most abundant accounting for 57% of fish in the sample, while those from the 2023 (age-1) cohort made up an additional 33%. Yellow perch growth appears to be moderate to fast with age-3 yellow perch mean length at capture values ≥ 9.5 inches in surveys conducted since 2015.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Poinsett (Hamlin, Brookings; below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Poinsett, Hamlin County
MBS-Lake-405-000
2024

Lake Information

Name:	Poinsett	**Maximum Depth:**	22 Feet
County:	Hamlin	**Mean Depth:**	17 Feet
		OHWM Elevation:	1,652
Surface Area:	7,978 Acres	**Outlet Elevation:**	1,651

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jul 30, 2024	4 net-nights
AFS std gill net	Jul 31, 2024	4 net-nights
AFS std gill net	Aug 01, 2024	4 net-nights
fall night EF-WAE	Sep 25, 2024	3530 seconds

Common Fish Species Present

Yellow Perch

Walleye

Smallmouth Bass

Northern Pike

White Bass

Common Carp

White Sucker

Black Bullhead

Channel Catfish

Black Crappie

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	Bigmouth Buffalo	20	0.3	0.2	100		67		90	3
	Black Bullhead	16	1.3	0.5	94		69		85	4
	Black Crappie	5	0.4	0.3	40		20		122	12
	Channel Catfish	18	1.3	0.5	93		60	21	101	4
	Common Carp	39	3.2	1.2	24	11	24	11	96	2
	Northern Pike	16	1.3	0.8	100		6		84	4
	Smallmouth Bass	10	0.8	0.4	56		44		94	3
	Walleye	75	5.0	1.1	57	9	30	9	86	1
	White Bass	62	5.2	1.6	92		68	9	98	4
	White Sucker	20	1.7	0.6	100		100		106	2
	Yellow Perch	110	9.1	2.1	70	6	28	6	114	1

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.

***SDGFP standard gill nets used in 2015 (Avg excludes 2015); ** 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	0.3	2.8	0.4	0.3	2.4		1.0	1.0	5.5	0.3	1.71
	Black Bullhead	3.2	0.4	0.3	0.4	0.6		0.5	0.3	0.3	1.3	0.51
	Black Crappie	2.0	3.9	0.8	1.3	1.1		1.5	0.3	0.1	0.4	1.18
	Channel Catfish	0.7	1.1	0.8	0.5	1.1		5.3	1.6	1.8	1.3	1.69
	Common Carp	0.5	0.2	0.4	1.7	0.8		1.0	0.8	0.9	3.2	1.13
	Northern Pike	0.0	0.0	0.1	0.2	0.3		0.8	0.4	0.1	1.3	0.40
	Shorthead Redhorse	0.2	0.0	0.0	0.2	0.0		0.0	0.0	0.0	0.0	0.03
	Smallmouth Bass	0.0	0.6	0.6	0.6	0.1		1.2	0.4	0.5	0.8	0.60
	Spottail Shiner	0.7	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.00
	Walleye	15.3	8.9	12.4	8.8	5.3		4.4	6.0	3.3	5.0	6.76
	White Bass	2.2	7.3	6.2	5.8	1.8		6.1	3.8	2.8	5.2	4.88
	White Sucker	3.0	4.5	3.0	2.3	3.1		2.8	5.7	1.2	1.7	3.04
	Yellow Bullhead	0.3	0.2	0.4	0.0	0.0		0.3	0.2	0.2	0.0	0.16
	Yellow Perch	124.2	25.1	14.3	22.1	9.3		8.0	7.3	4.2	9.1	12.43
fall night EF-WAE**	Walleye	1722.0	335.0	49.7	29.8	86.9	526.0	218.0	397.0	70.0	182.4	192.40
spring day EF	Smallmouth Bass		73.5						49.0			61.25

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. ***SDGFP standard gill nets used in 2015**

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net*	Channel Catfish	PSD	75	79	100	100	100		100	100	95	93
		PSD-P	75	57	67	100	38		28	32	64	60
		Wr	110	124	118	101	108		112	107	110	101
	Walleye	PSD	30	18	7	19	22		51	50	38	57
		PSD-P	1	5	1	4	5		8	14	8	30
		Wr	88	82	79	84	91		85	86	87	86
	White Bass	PSD	62	98	99	100	100		100	100	100	92
		PSD-P	23	96	99	99	100		90	100	88	68
		Wr	102	102	100	103	103		95	98	98	98
	Yellow Perch	PSD	92	99	99	96	87		97	51	38	70
		PSD-P	14	84	57	58	69		65	46	14	28
		Wr	110	115	115	110	113		111	114	109	114

Length at Capture

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

Species: Walleye

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	75	210 (16)	312 (21)	377 (10)	456 (5)	470 (2)	543 (4)		496 (1)	592 (6)	617 (10)
2023	46	251 (13)	319 (11)	369 (12)	414 (1)	453 (2)			435 (2)	553 (4)	715 (1)
2022	87	206 (16)	295 (13)	359 (23)	421 (11)			465 (9)	517 (13)		594 (1)
2021	62	225 (9)	310 (20)	382 (13)		396 (2)	435 (12)	481 (5)			724 (1)
2019	70	216 (8)	314 (4)	379 (2)	341 (38)	391 (16)					655 (2)
2018	110	233 (5)	304 (2)	313 (78)	390 (21)			631 (1)		662 (3)	
2017	140	201 (3)	272 (79)	361 (55)					522 (3)		
2016	203	229 (74)	355 (121)	436 (1)	476 (2)	463 (3)		599 (1)			628 (1)
2015	125	255 (97)		408 (12)	451 (8)		462 (7)				540 (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	110	160 (36)	240 (63)	241 (5)	285 (2)	314 (1)		336 (1)	336 (1)		300 (1)
2023	50	158 (29)	225 (15)		310 (1)	309 (2)		329 (2)	341 (1)		
2022	88	145 (44)	223 (3)	268 (16)	274 (5)	300 (8)	300 (9)	351 (2)	334 (1)		
2021	96	168 (3)	229 (30)	260 (15)	279 (13)	297 (13)	298 (14)		310 (9)		
2019	112	158 (3)	203 (23)	262 (47)	300 (10)	291 (5)	292 (22)		335 (1)		
2018	265	132 (1)	223 (105)	271 (101)	288 (32)	309 (27)					
2017	157		229 (65)	279 (10)	280 (79)		317 (3)				
2016	326	143 (3)	234 (24)	272 (282)	284 (16)			337 (1)			
2015	745	153 (16)	224 (570)	252 (146)	295 (13)						

Fish Condition

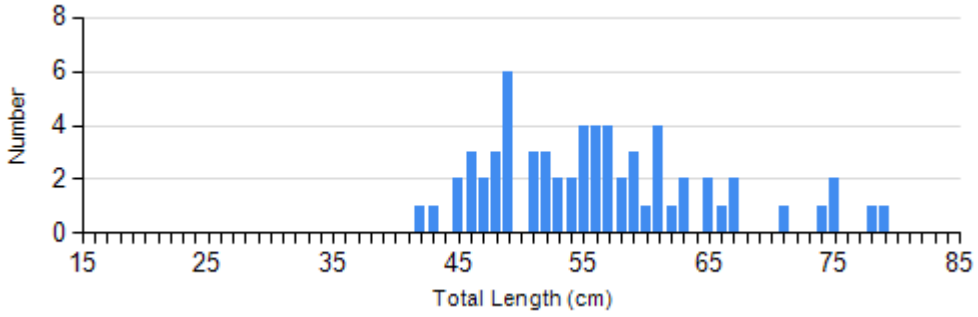
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Channel Catfish Gill Net	2021	0		46	111 (1.6)	12	114 (1.5)	6	115 (5.3)
	2022	0		13	107 (2.7)	4	108 (1.8)	2	104 (6.9)
	2023	1	150	7	107 (2.9)	12	109 (2.6)	2	104 (15.7)
	2024	1	92	5	95 (4.0)	7	102 (5.0)	2	113 (10.4)
Walleye Gill Net	2021	26	85 (1.2)	23	85 (1.1)	3	88 (2.7)	1	82
	2022	36	86 (0.9)	26	85 (1.1)	9	89 (2.4)	1	80
	2023	25	87 (0.9)	12	89 (1.6)	1	87	2	77 (5.8)
	2024	26	81 (0.9)	16	86 (1.8)	9	89 (2.1)	9	95 (2.2)
White Bass Gill Net	2021	0		7	94 (2.4)	47	96 (0.8)	19	95 (1.2)
	2022	0		0		35	100 (1.0)	10	93 (1.2)
	2023	0		4	100 (2.6)	21	100 (1.3)	8	94 (1.4)
	2024	5	99 (3.5)	15	111 (12.5)	19	95 (1.4)	23	93 (1.2)
Yellow Perch Gill Net	2021	3	117 (7.1)	31	115 (1.8)	42	110 (1.7)	20	105 (1.8)
	2022	43	114 (1.3)	4	115 (7.1)	29	116 (1.8)	11	114 (2.4)
	2023	31	109 (1.9)	12	114 (3.6)	2	106 (5.3)	5	97 (3.8)
	2024	33	115 (1.5)	46	117 (1.9)	26	111 (1.4)	4	104 (2.2)

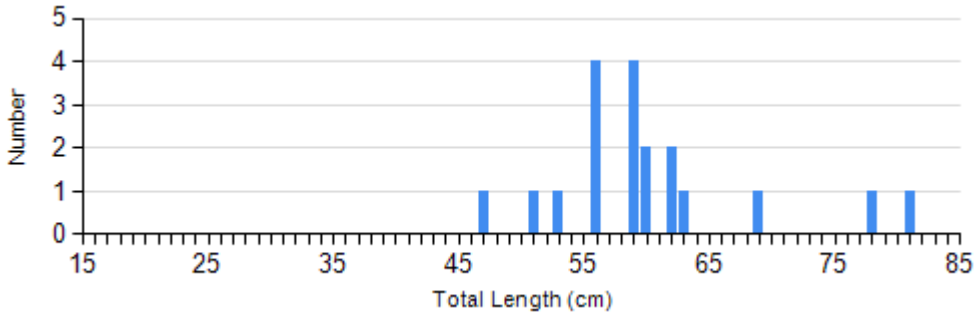
Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Channel Catfish
Gear: AFS std gill net



2021



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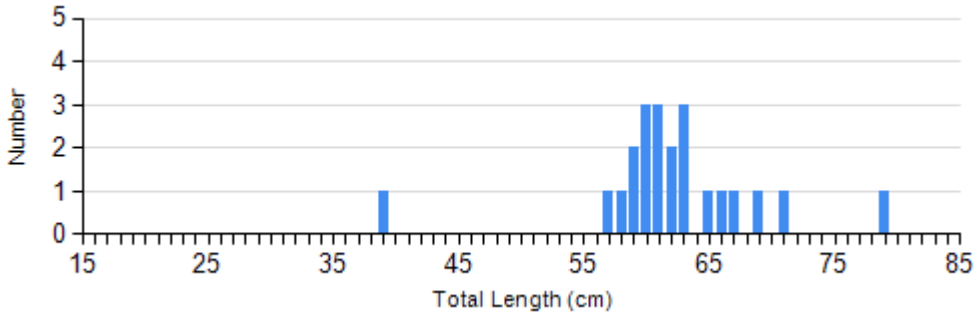

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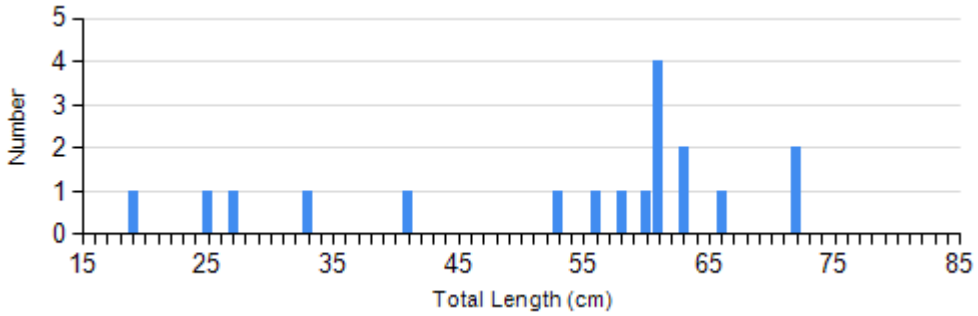
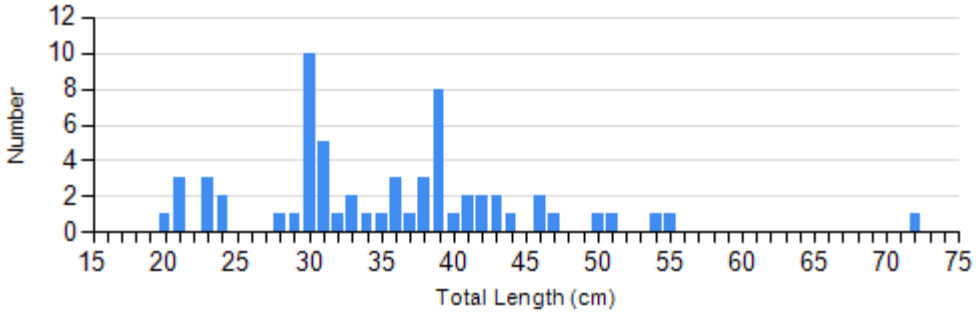


2024

Species: Walleye
Gear: AFS std gill net



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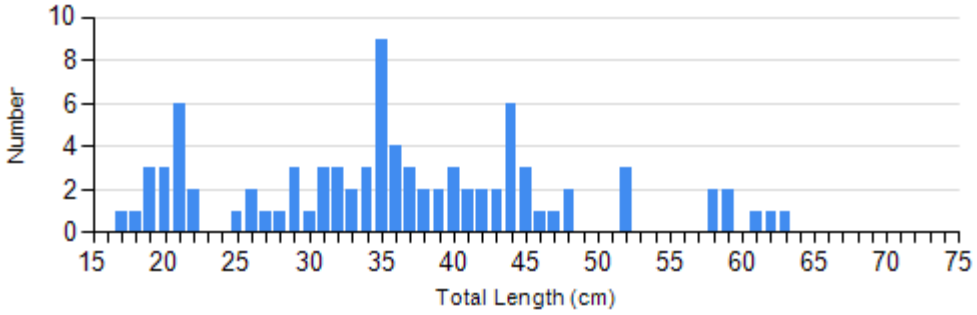

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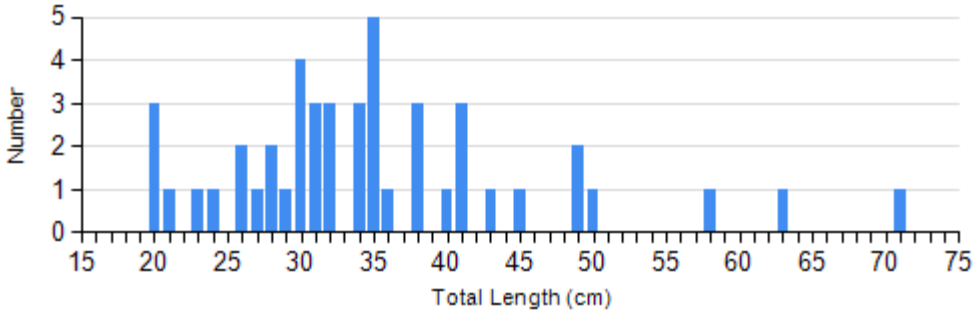

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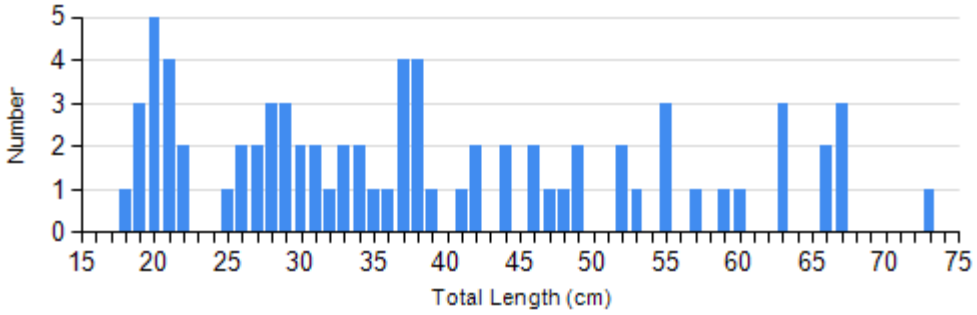
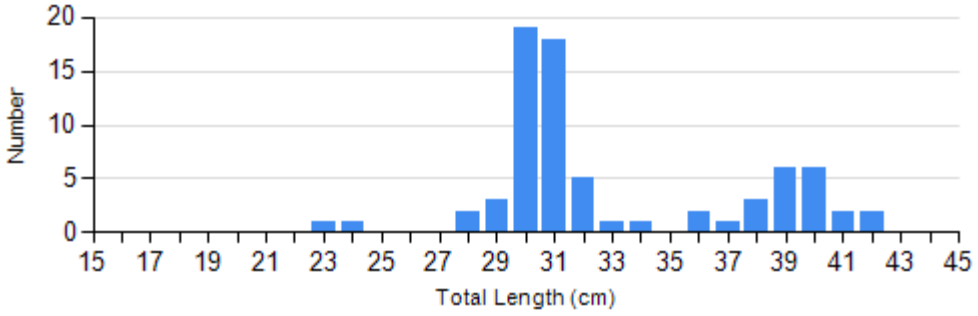
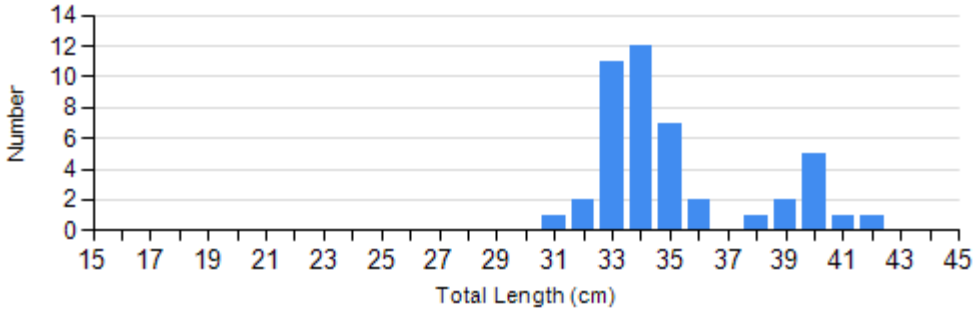


2024

Species: White Bass
Gear: AFS std gill net



2021



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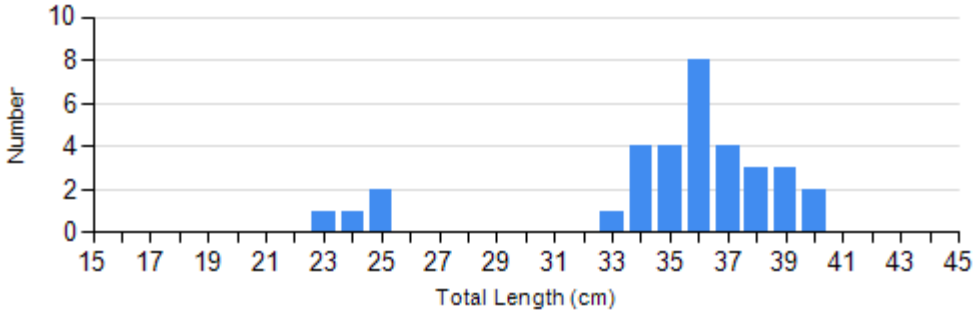
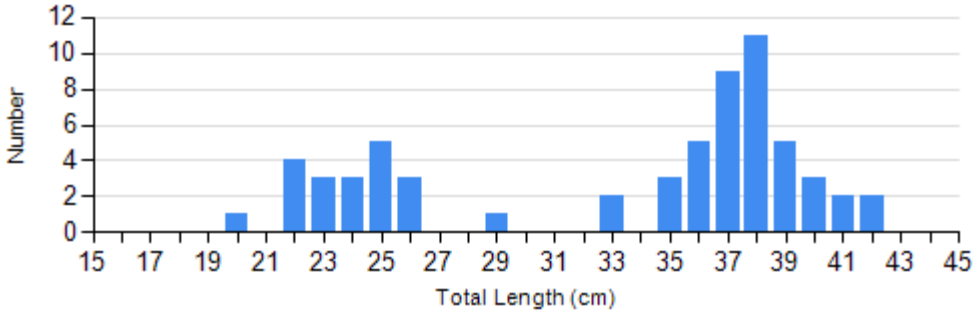
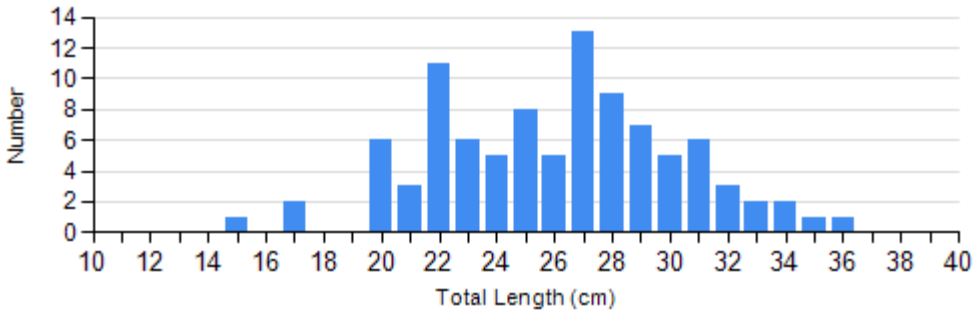


2023



2024

Species: Yellow Perch
Gear: AFS std gill net



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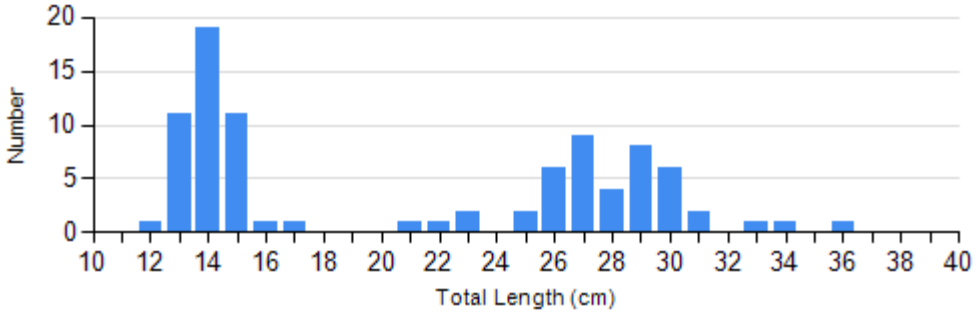

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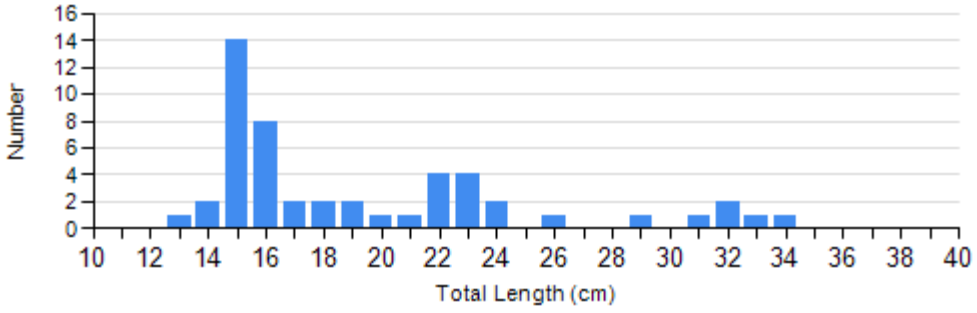

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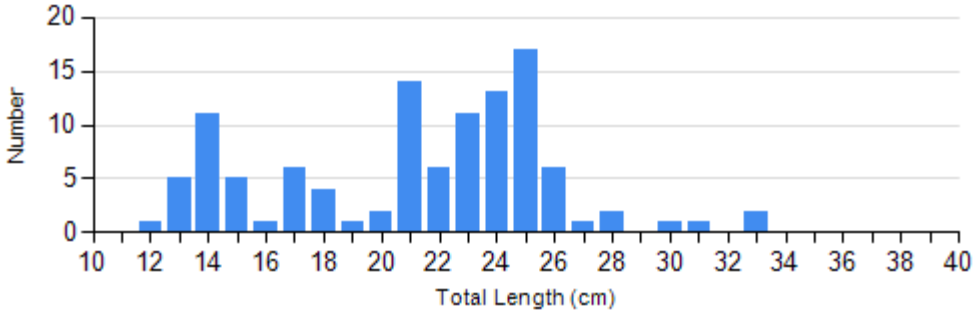
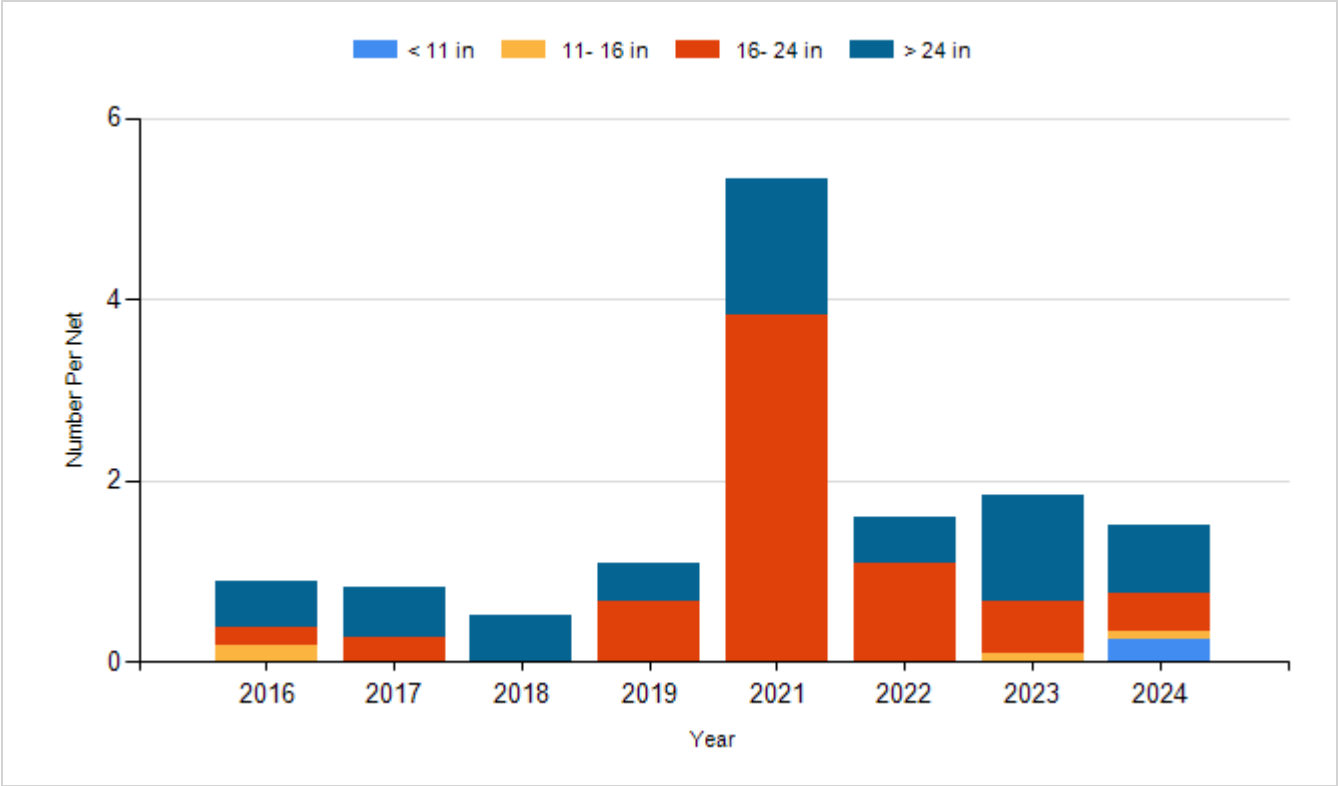


2024

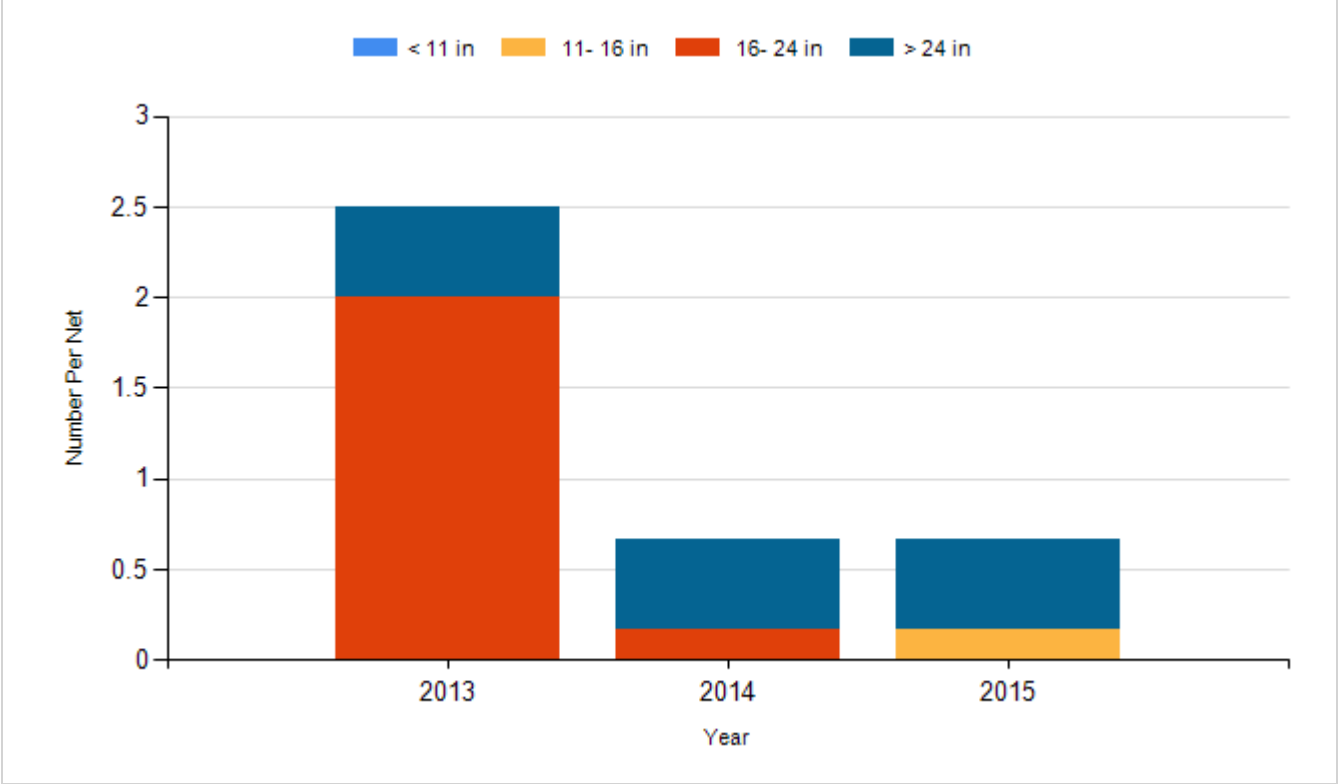
Historic Fish Sizes and Relative Abundance

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

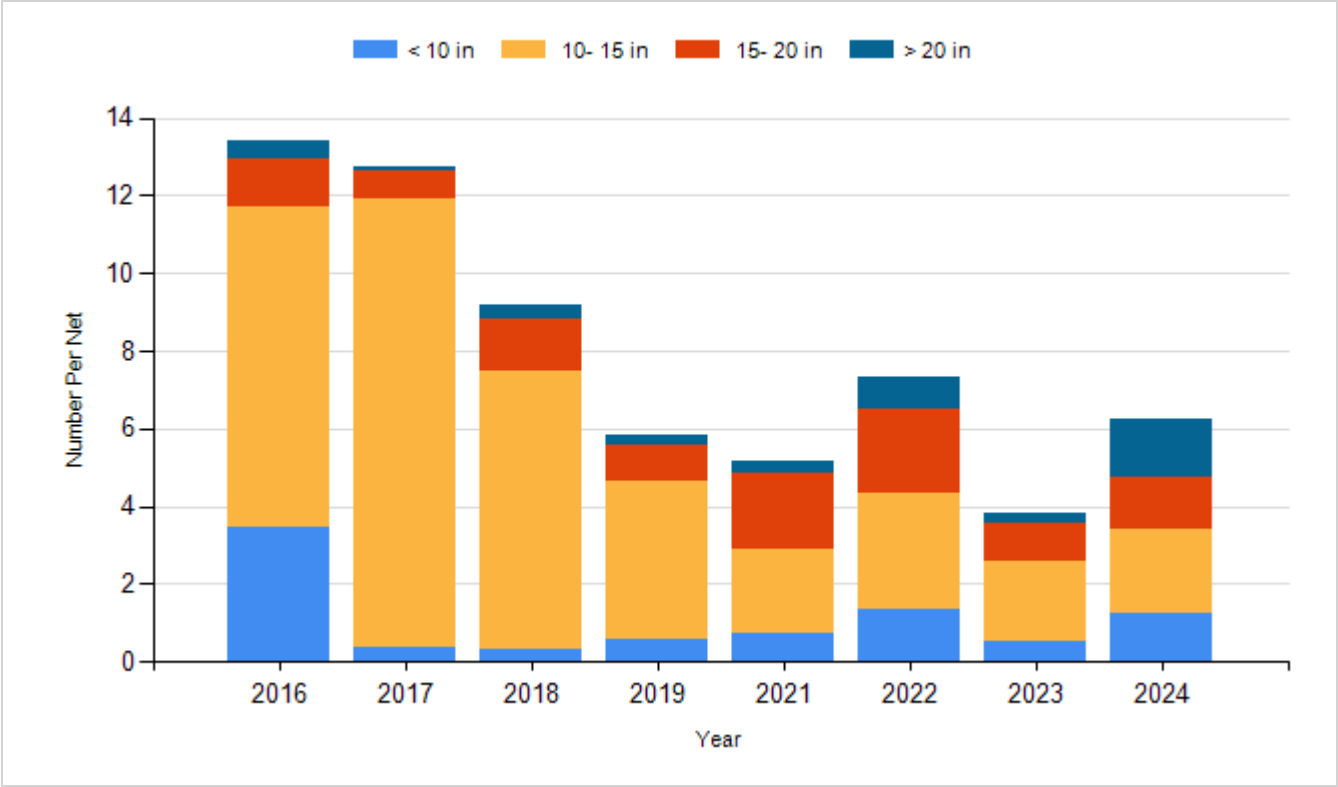
Species: Channel Catfish
Gear: AFS std gill net



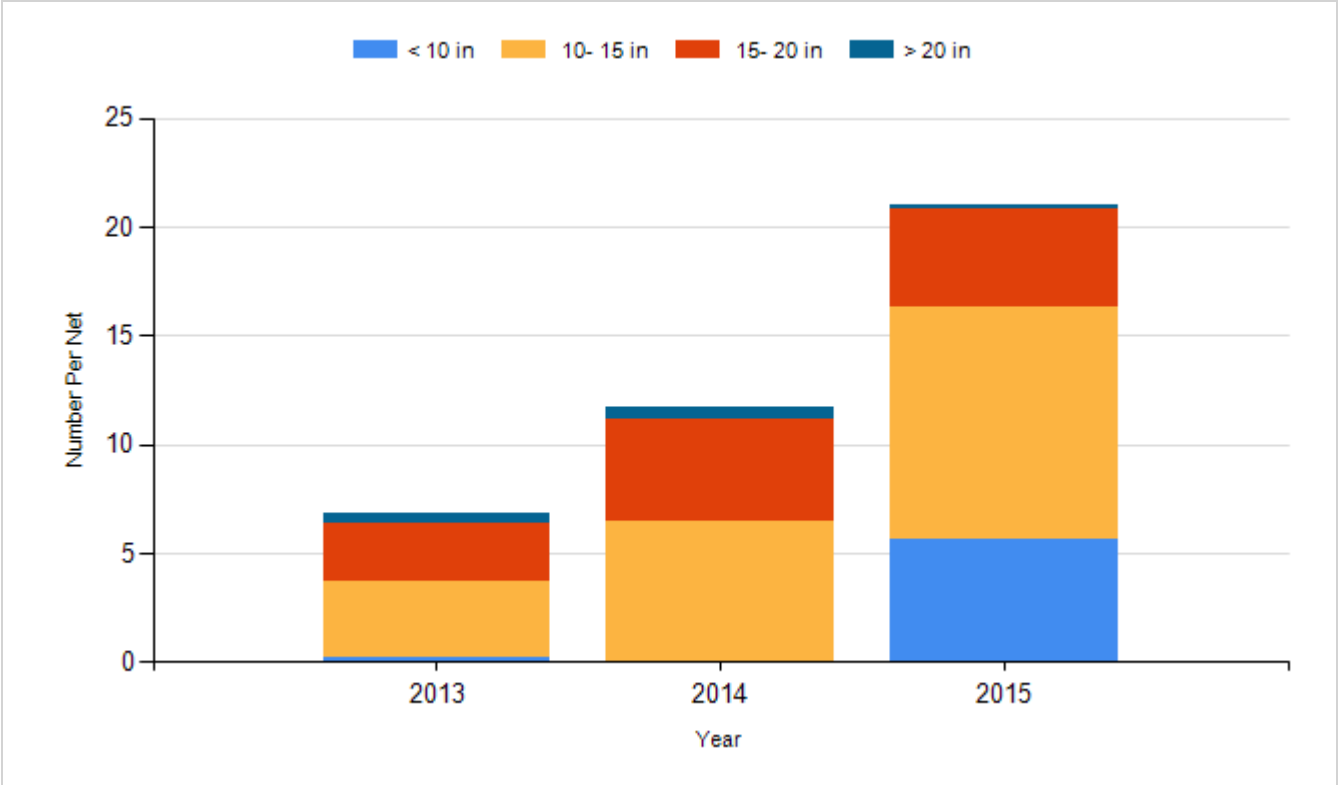
Species: Channel Catfish
Gear: std exp gill net



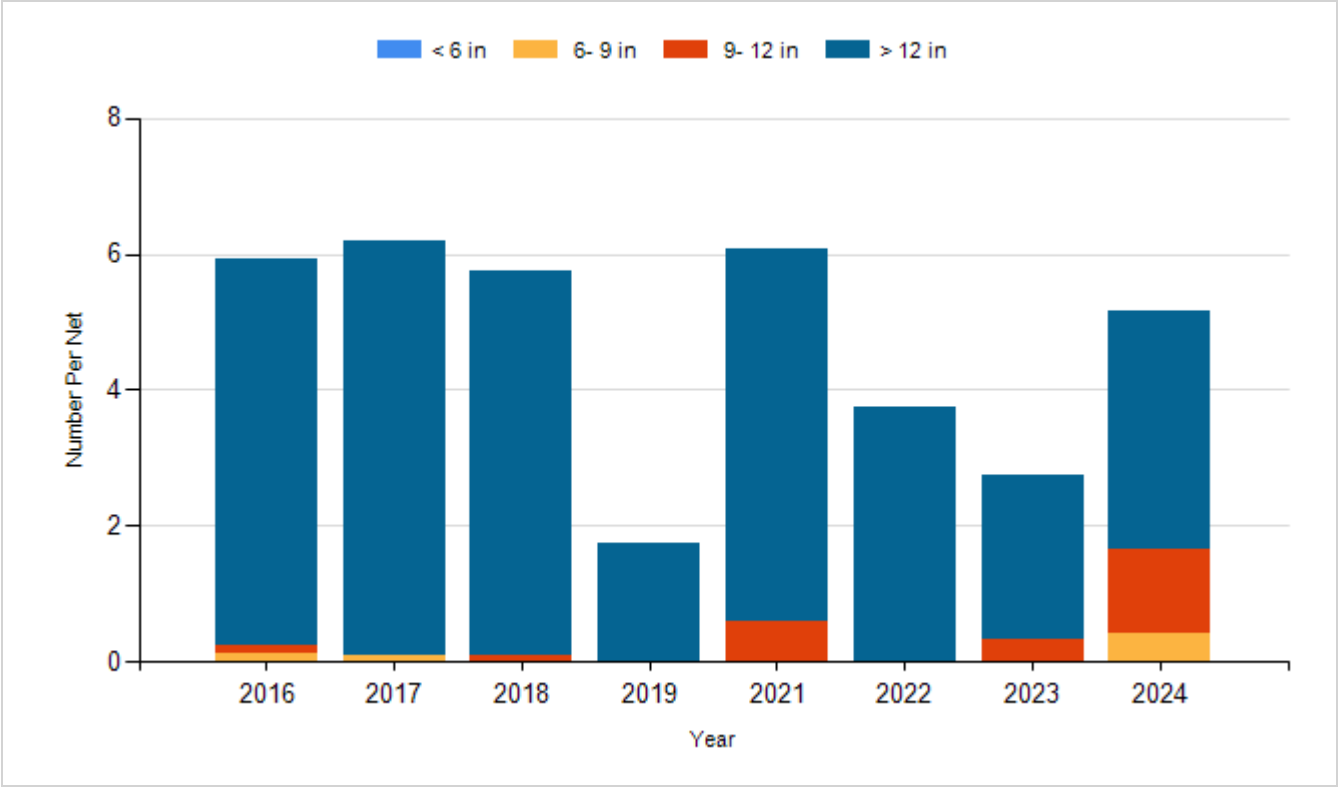
Species: Walleye
Gear: AFS std gill net



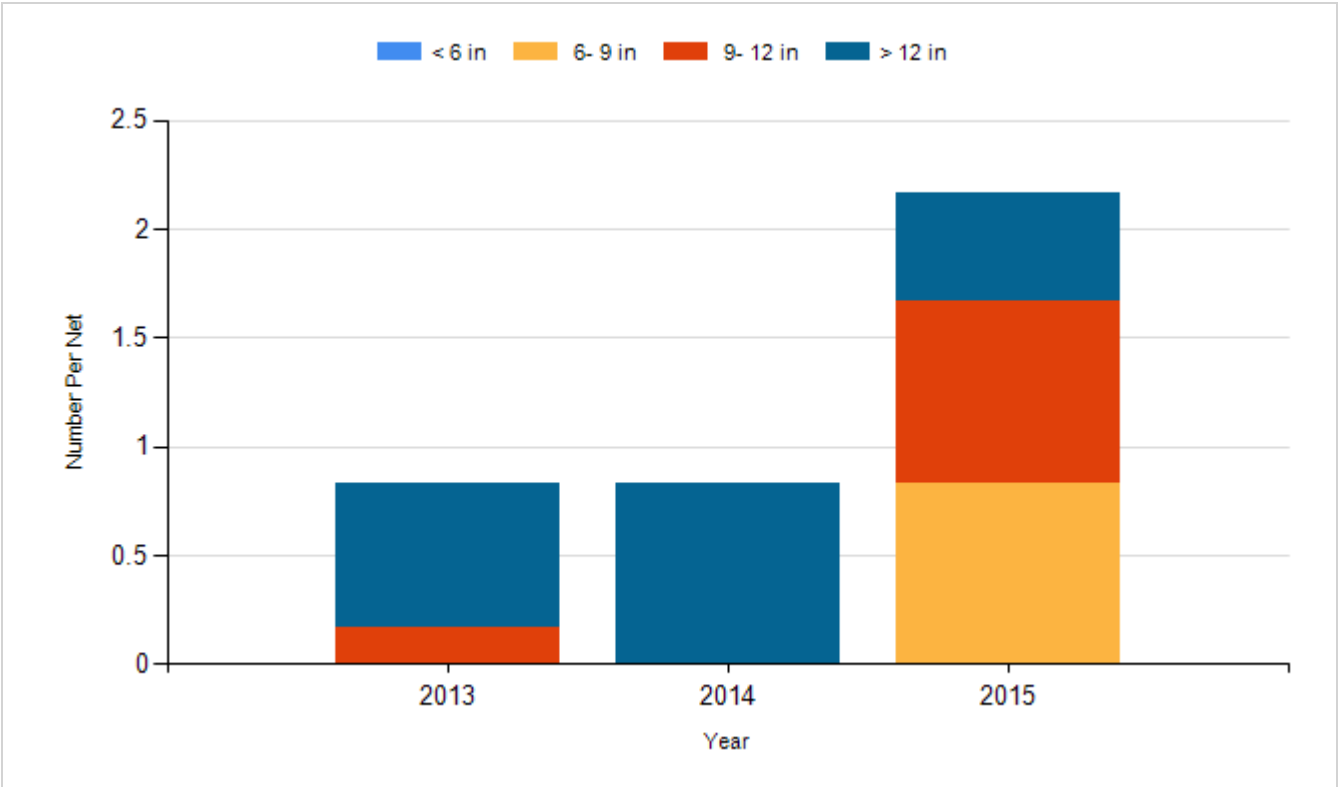
Species: Walleye
Gear: std exp gill net



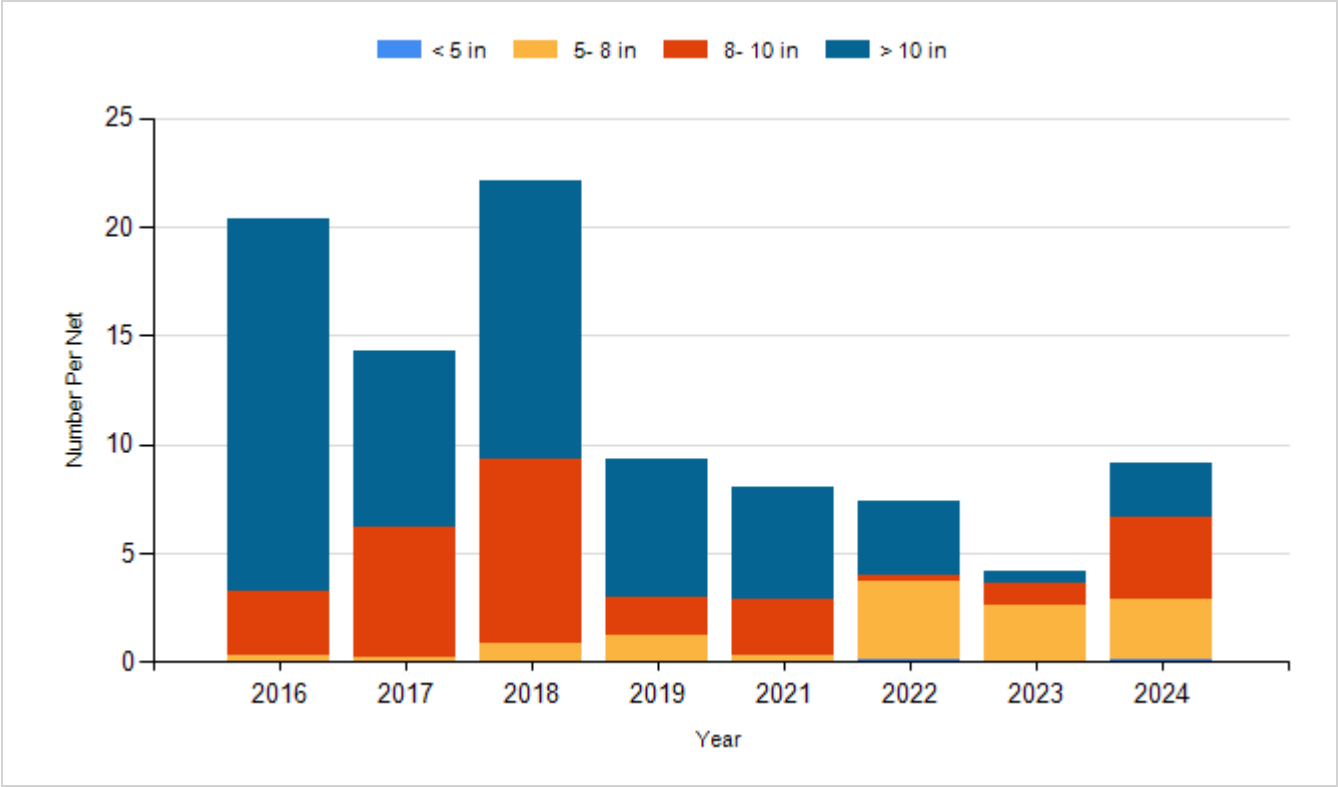
Species: White Bass
Gear: AFS std gill net



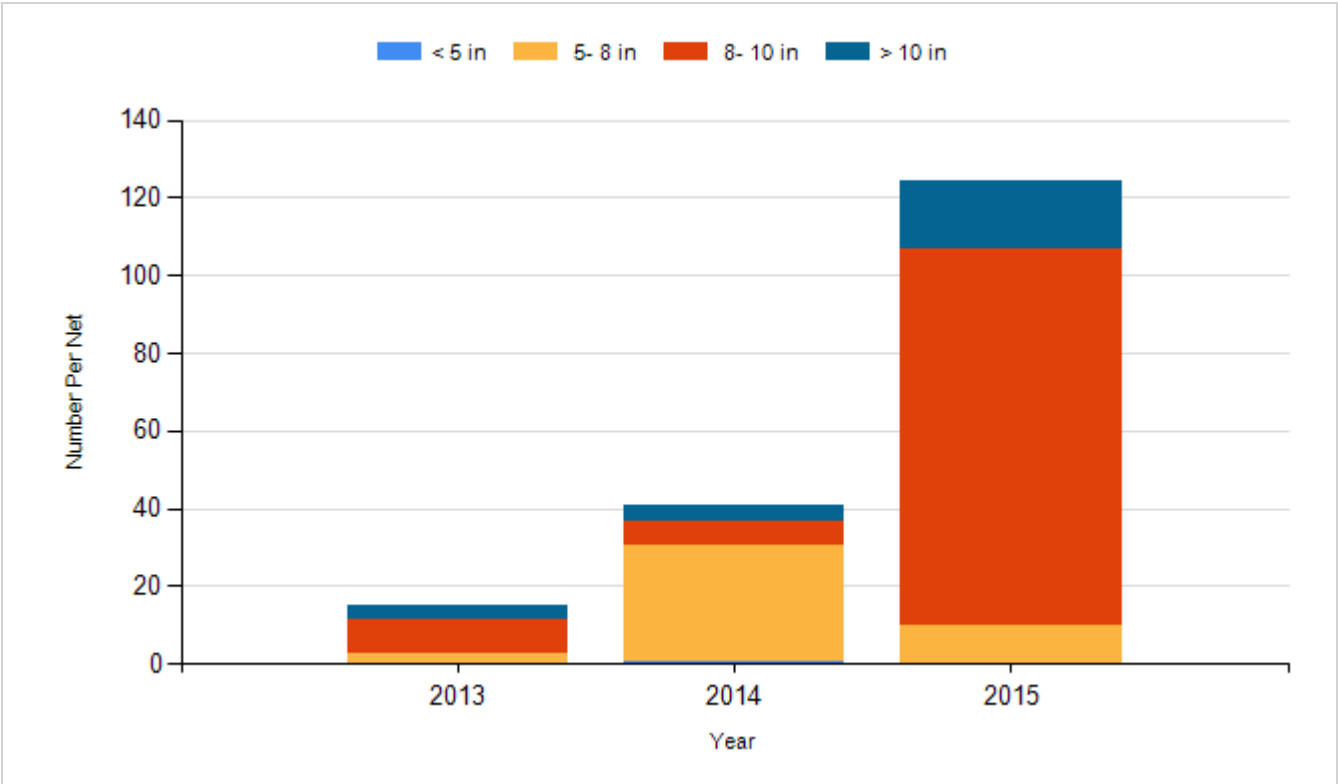
Species: White Bass
Gear: std exp gill net



Species: Yellow Perch
Gear: AFS std gill net



Species: Yellow Perch
Gear: std exp gill net



Fish Stocking

Number of fish stocked by year, species, and size.

Year	Species	Size	Number
2014	Walleye	Fry	4,000,000
2019	Walleye	Fry	2,000,000