Note: Zebra mussels are present in Enemy Swim Lake. 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/

Enemy Swim Lake Survey Summary

Enemy Swim, located 1.5 miles east and 6.5 miles north of Waubay, is managed as a multiple-species fishery including panfish (i.e., black crappie, bluegill, and yellow perch), black bass (largemouth and smallmouth) and walleye.

Spring electrofishing, which is used to monitor black bass populations, was hampered by higher than expected wind conditions at Enemy Swim Lake in 2024. Thus, the following summary focuses on those fish species assessed using frame nets (i.e., black crappie and bluegill) and gill nets (i.e., walleye, and yellow perch).

- **Black crappie.** The 2024 mean frame net CPUE of 7.3 was the highest CPUE observed from 2015 – 2024. Sampled black crappies ranged in length from 5.5 to 12.6 inches, 88% were ≥ 8.0 inches and 2% were ≥ 10.0 inches.

- **Bluegill.** Bluegills were the most abundant fish species in the 2024 frame net catch. At 91.3 per frame net, relative abundance was high. Sampled bluegills ranged in length from 2.8 to 10.2 inches, of those that were at least 3.0 inches, 41% were ≥ 6.0 inches and 14% were ≥ 8.0 inches. Individuals from six consecutive year classes (2016 – 2021) contributed to the catch. The 2020 (age-4) year class was the single most represented cohort accounting for 48% of bluegills in the sample. Meanwhile, fish from the 2019 (age-5) and 2021 (age-3) year classes made up an additional 16% and 19%. Since 2015, mean length at capture values for age-5 bluegills have ranged from 5.4 to 7.8 inches. In 2024, age-5 bluegills had a mean length at capture of 6.3 inches.

  Walleye. Walleye numbers were higher in 2024 than in 2023. At 5.1 per gill net, relative abundance was considered moderate to high for Enemy Swim Lake. Sampled walleyes ranged in length from 9.8 to 24.4 inches, 51% were ≥ 15.0 inches and 26% were ≥ 20.0 inches. Twelve cohorts contributed to the catch, most (11 of 12) were represented by 9 or fewer individuals. Fish from the 2022 (age-2) year class, which coincided with a small fingerling stocking, were the most abundant accounting for 48% of walleyes in the sample. The oldest walleye sampled was from the 2009 (age-15) year class. Surveys conducted from 2018 – 2024 suggest good walleye growth with mean length at captures at age-3 from 14.4 to 16.7 inches. In 2024, the mean length at capture for age-3 fish was 16.4 inches.

- **Yellow perch**. Yellow perch were not abundant (0.3 per gill net). In 2024, gill nets collected four yellow perch from 5.5 to 8.3 inches.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Enemy Swim (Day; below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Enemy Swim, Day County
UBS-Lake-196-000
2024

Lake Information

Name:	Enemy Swim	**Maximum Depth:**	26 Feet
County:	Day	**Mean Depth:**	16 Feet
		OHWM Elevation:	1,854
Surface Area:	2,186 Acres	**Outlet Elevation:**	1,854

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 18, 2024	4 net-nights
AFS std gill net	Jun 19, 2024	4 net-nights
AFS std gill net	Jun 20, 2024	4 net-nights
fall night EF-WAE	Sep 24, 2024	3000 seconds
frame net (std 3/4 in)	Jun 18, 2024	7 net-nights
frame net (std 3/4 in)	Jun 19, 2024	7 net-nights
frame net (std 3/4 in)	Jun 20, 2024	8 net-nights

Common Fish Species Present

Largemouth Bass

Bluegill

Black Crappie

Walleye

Smallmouth Bass

Yellow Perch

Rock Bass

White Bass

Pumpkinseed

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	1	0.1	0.1	100		100			
	Black Crappie	7	0.6	0.4	71		29		104	3
	Bluegill	28	2.3	0.9	79	12	14		115	3
	Common Carp	4	0.3	0.3	100		100		85	1
	Largemouth Bass	1	0.1	0.1	100		100		94	
	Northern Pike	15	1.3	0.6	67		13		88	3
	Rock Bass	22	1.8	0.9	73	15	45	17	108	2
	Smallmouth Bass	46	3.8	1.3	96		87	8	92	1
	Walleye	61	5.1	1.3	51	9	26	8	87	2
	White Bass	29	2.4	0.9	100		97		83	1
	White Sucker	23	1.9	0.6	100		100		105	2
	Yellow Perch	4	0.3	0.3	25		0		95	2
frame net (std 3/4 in)	Black Bullhead	20	0.9	0.4	60	18	50	18	94	4
	Black Crappie	161	7.3	3.6	88	4	2		103	1
	Bluegill	2013	91.3	36.4	41	1	12	1	107	1
	Largemouth Bass	1	0.0	0.0	0		0			
	Northern Pike	12	0.5	0.2	83		17		85	3
	Pumpkinseed	41	1.9	1.0	39	11	0		111	2
	Rock Bass	239	10.8	5.1	35	4	10	3	109	1
	Smallmouth Bass	109	3.4	1.1	25	7	12	6	93	1
	Walleye	12	0.5	0.2	83		75		92	3
	White Bass	18	0.8	0.6	100		56	19	84	2
	White Sucker	2	0.1	0.1	100		100		92	3
	Yellow Perch	5	0.2	0.2	60		0		91	5

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; ***AFS standard frame nets used in 2016 and 2017 (Avg excludes 2016 and 2017)**

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS std gill net*	Black Bullhead	0.0	0.1	0.2	0.1	0.0	0.0	0.3	0.0	0.6	0.1	0.16
	Black Crappie	1.3	0.8	0.3	0.1	0.2	0.3	3.0	0.2	1.2	0.6	0.74
	Bluegill	15.5	3.8	0.9	6.5	3.5	15.9	15.5	0.9	2.2	2.3	5.72
	Common Carp	0.2	0.8	0.3	0.1	0.6	0.7	0.4	0.0	0.3	0.3	0.39
	Largemouth Bass	0.0	0.1	0.3	0.0	0.1	0.0	0.2	0.1	0.3	0.1	0.13
	Northern Pike	0.2	1.2	1.3	0.3	0.3	0.4	1.1	1.5	1.2	1.3	0.96
	Pumpkinseed	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.07
	Rock Bass	0.7	0.2	0.1	0.6	0.5	0.1	0.3	0.4	1.0	1.8	0.56
	Smallmouth Bass	1.5	2.4	0.9	2.8	2.3	3.8	4.4	2.1	3.1	3.8	2.84
	Walleye	8.7	7.2	1.3	3.8	1.5	1.8	3.4	1.2	3.8	5.1	3.23
	White Bass	2.0	7.6	3.0	2.1	3.9	1.4	3.4	1.9	3.0	2.4	3.19
	White Sucker	1.8	2.2	3.5	1.6	1.1	0.6	1.3	1.8	1.2	1.9	1.69
	Yellow Perch	0.0	4.9	0.9	1.0	4.8	13.2	18.9	2.9	4.5	0.3	5.71
boat shocker	Smallmouth Bass		86.0			32.0					8.0	42.00
fall night EF-WAE**	Walleye	20.0	38.5	9.0	11.0	15.0			182.0	59.0	142.8	59.66
frame net (std 3/4 in)***	Black Bullhead	0.2	0.1	0.3	0.3	0.3	0.3	0.2	0.5	0.1	0.9	0.35
	Black Crappie	0.3	2.6	0.2	4.1	0.6	2.2	0.7	0.2	0.3	7.3	1.96
	Bluegill	26.1	62.7	39.2	119.1	62.8	46.0	85.4	43.5	121.3	91.3	74.44
	Channel Catfish	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.01
	Common Carp	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.01
	Northern Pike	0.6	0.5	0.2	0.3	0.1	0.3	0.3	0.3	0.2	0.5	0.33
	Pumpkinseed	1.5	1.1	0.3	0.5	0.4	0.5	1.4	1.9	0.9	1.9	1.13
	Rock Bass	6.4	0.8	2.3	4.5	3.0	5.4	7.1	4.4	11.7	10.8	6.66
	Smallmouth Bass	2.0	0.6	0.5	0.8	2.6	5.2	5.2	3.0	3.9	3.4	3.26
	Walleye	0.8	1.0	0.6	0.1	0.1	0.2	0.1	0.1	0.3	0.5	0.28
	White Bass	0.3	0.3	0.0	0.5	0.4	0.7	0.1	0.0	0.3	0.8	0.39
	White Sucker	0.2	0.1	0.1	0.0	0.1	0.2	0.1	0.1	0.2	0.1	0.13
	Yellow Perch	0.3	1.4	0.1	3.8	0.7	1.0	1.6	0.5	0.1	0.2	1.03
spring night EF-LMB	Largemouth Bass				21.2				51.2			36.20

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; ***AFS standard frame nets used in 2016 and 2017**

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net*	Walleye	PSD	10	52	81	70	83	73	63	79	89	51
		PSD-P	2	1	6	4	11	27	29	36	30	26
		Wr	83	86	83	90	86	85	86	89	87	87
	Yellow Perch	PSD	0	7	18	0	0	0	7	23	41	25
		PSD-P	0	0	0	0	0	0	0	0	0	0
		Wr		95	87	94	97	100	93	93	85	95
frame net (std 3/4 in)**	Black Crappie	PSD	100	37	40	10	15	35	85	100	57	88
		PSD-P	100	34	20	1	8	0	38	80	43	2
		Wr	98	94	101	104	105	107	102	96	93	103
	Bluegill	PSD	42	43	3	20	17	19	49	51	39	41
		PSD-P	21	18	1	5	3	2	15	18	13	12
		Wr	105	104	107	104	103	110	105	103	105	107

Length at Capture

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

Species: Bluegill

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
2024	1985			104 (370)	137 (948)	161 (309)	179 (221)	165 (25)	210 (114)		
2023	2923		84 (35)	105 (1057)	132 (672)	163 (260)	191 (370)	190 (459)	219 (71)		
2022	1042		87 (9)	102 (164)	117 (211)	160 (198)	180 (306)	199 (148)	154 (5)		241 (2)
2021	1708			99 (242)	132 (576)	167 (587)	198 (270)	202 (21)	244 (6)	234 (8)	
2020	1003		91 (22)	117 (339)	126 (505)	158 (135)	201 (4)				
2019	1438		94 (21)	100 (455)	127 (917)	150 (20)	205 (24)				
2018	2513		85 (42)	110 (1952)	146 (208)	186 (252)	223 (16)	237 (16)	241 (19)		250 (11)
2017	2228		75 (1923)	123 (74)	125 (158)	136 (66)	204 (1)	249 (1)		245 (4)	242 (2)
2016	2140	68 (636)	100 (206)	95 (582)	161 (338)	198 (248)	215 (85)	243 (8)	233 (17)	256 (8)	246 (14)
2015	636	77 (6)	77 (3)	93 (327)	163 (122)	187 (61)	205 (22)	224 (81)	226 (10)	224 (5)	242 (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	61		295 (29)	416 (9)	454 (1)	501 (7)	524 (5)	550 (2)	543 (1)	585 (1)	552 (6)
2023	48	198 (2)	332 (4)	407 (3)	460 (13)	486 (10)	515 (3)	458 (1)			580 (12)
2022	15	211 (2)		368 (4)	426 (1)		545 (1)	520 (1)		496 (1)	532 (5)
2021	43	223 (4)	319 (12)	404 (7)	456 (3)	556 (1)	527 (3)		556 (2)		527 (11)
2020	28	214 (6)	322 (6)	420 (1)	447 (2)	477 (5)	485 (1)			528 (2)	575 (5)
2019	21	233 (4)	325 (2)	424 (2)	479 (3)		480 (4)		524 (1)	456 (1)	500 (4)
2018	47	218 (1)	316 (5)	366 (10)	380 (2)	434 (7)		443 (8)	420 (2)	462 (11)	672 (1)
2017	17		281 (2)	151 (1)	410 (4)		392 (3)		438 (7)		
2016	88	248 (2)	281 (4)	331 (11)	366 (1)	381 (28)	398 (7)	386 (36)			625 (1)
2015	54		256 (6)		329 (7)	360 (3)	354 (37)				681 (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	3			146 (3)							
2023	54			157 (5)	172 (14)	201 (28)	218 (5)	203 (1)			
2022	36		114 (1)	152 (9)	188 (21)	212 (5)					
2021	227		139 (14)	167 (146)	175 (67)						
2020	158		148 (118)	170 (40)							
2019	57		147 (57)								
2017	11			161 (4)	192 (2)	189 (3)		197 (1)	206 (1)		
2016	59	136 (1)	147 (40)	171 (13)	199 (2)		222 (1)	205 (1)	240 (1)		
2015	11	100 (10)	97 (1)								

Fish Condition

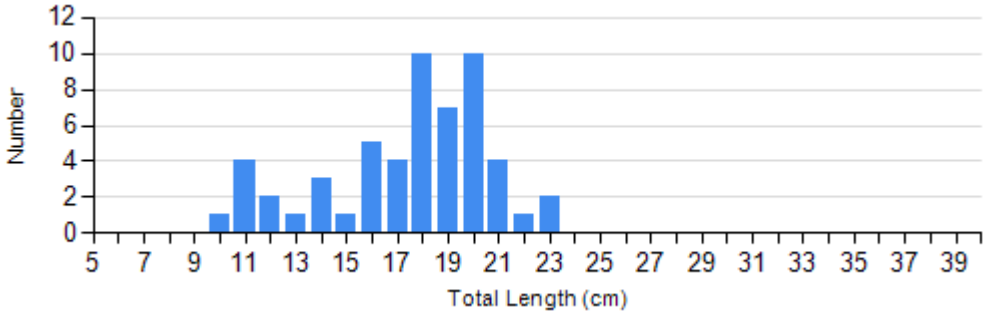
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		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	31	108 (1.3)	17	105 (1.8)	0		0	
	2021	2	105 (1.4)	6	105 (1.3)	5	99 (3.8)	0	
	2022	0		1	112	3	96	1	80
	2023	3	99 (1.6)	1	93	0		3	88 (4.0)
	2024	20	102 (1.6)	138	104 (0.6)	2	92 (1.3)	1	77
Bluegill Frame Net	2020	814	109 (0.6)	180	113 (1.7)	16	108 (1.2)	1	124
	2021	876	100 (0.7)	583	108 (0.4)	249	103 (0.5)	0	
	2022	515	100 (1.0)	336	102 (0.8)	191	108 (1.2)	1	123
	2023	1772	103 (0.4)	772	108 (0.7)	367	109 (0.8)	1	
	2024	1184	106 (0.5)	588	110 (0.9)	236	108 (1.3)	1	
Walleye Gill Net	2020	6	83 (1.3)	10	86 (1.8)	5	86 (3.3)	1	68
	2021	15	89 (2.7)	14	85 (1.3)	12	84 (1.4)	0	
	2022	3	94 (1.4)	6	88 (1.2)	5	88 (4.6)	0	
	2023	5	91 (2.1)	27	87 (1.3)	12	85 (1.9)	2	75 (0.4)
	2024	30	86 (0.9)	15	90 (1.3)	16	87 (6.2)	0	
Yellow Perch Gill Net	2020	158	100 (0.6)	0		0		0	
	2021	211	93 (0.5)	16	93 (1.2)	0		0	
	2022	27	94 (1.1)	8	91 (1.2)	0		0	
	2023	32	86 (1.2)	22	83 (0.9)	0		0	
	2024	3	96 (1.5)	1	91	0		0	

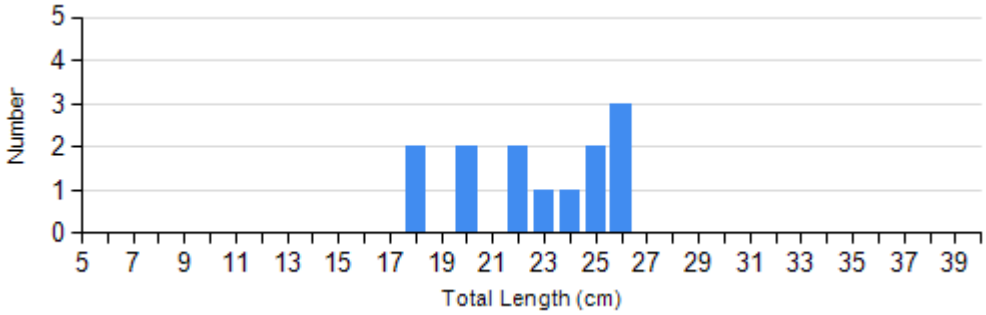
Length Frequency Distribution

Length frequency histogram of species sampled by year.

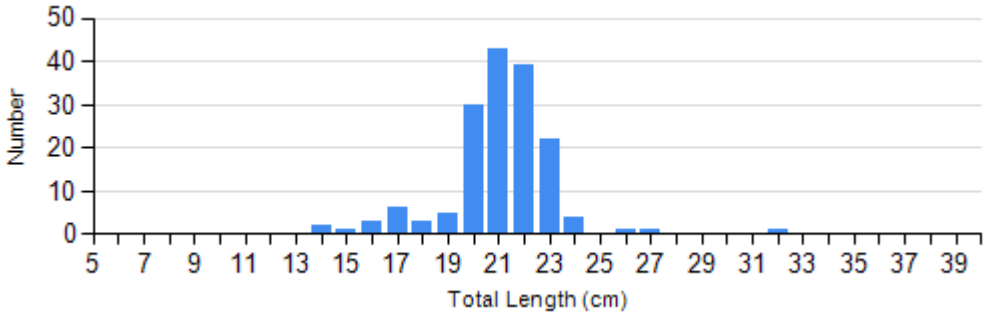
Species: Black Crappie
Gear: frame net (std 3/4 in)



2020

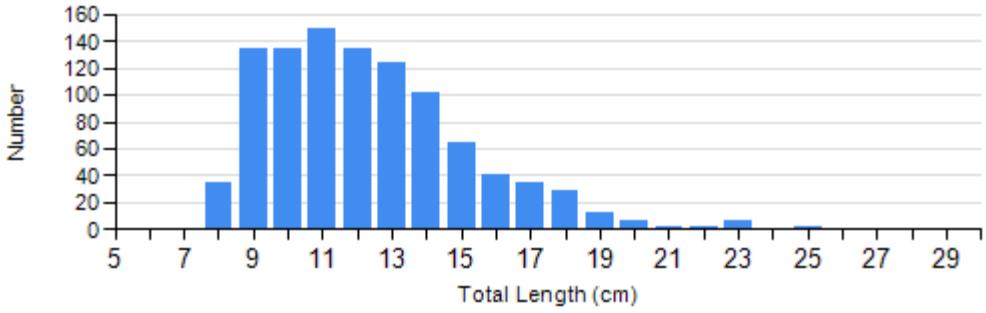


2021

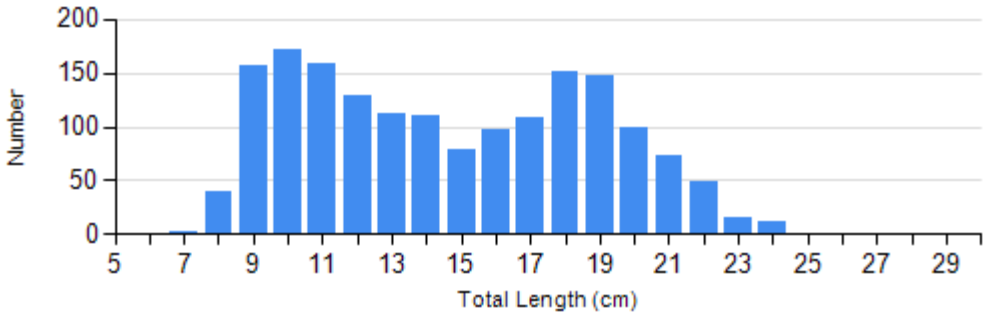


2024

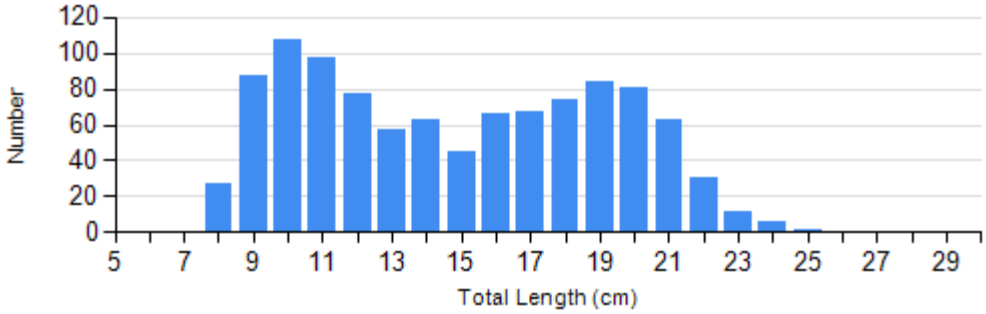
Species: Bluegill
Gear: frame net (std 3/4 in)



2020



2021



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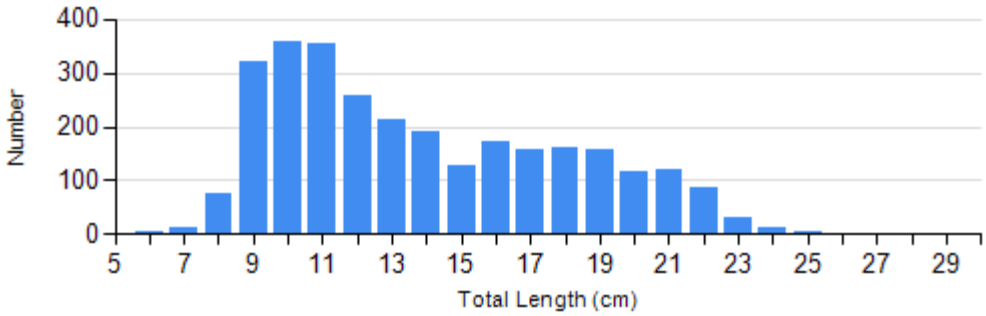

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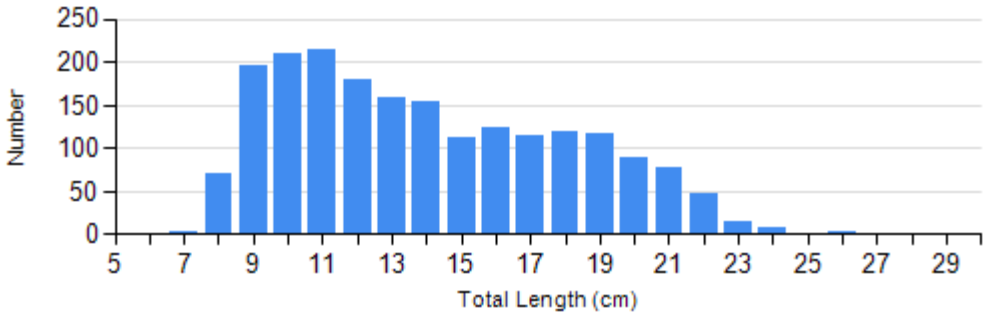
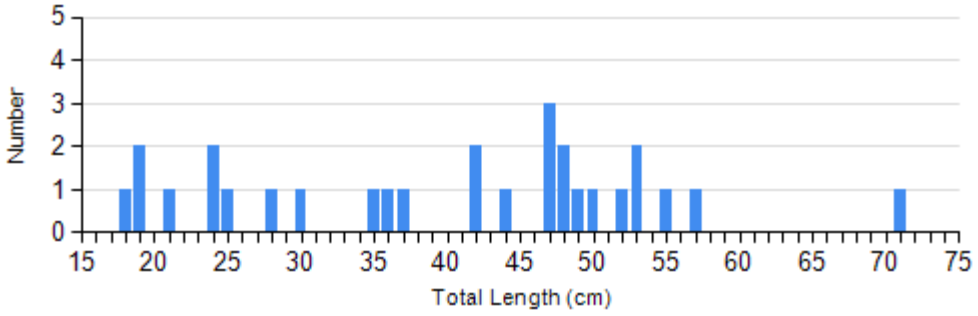


2024

Species: Walleye
Gear: AFS std gill net

2020



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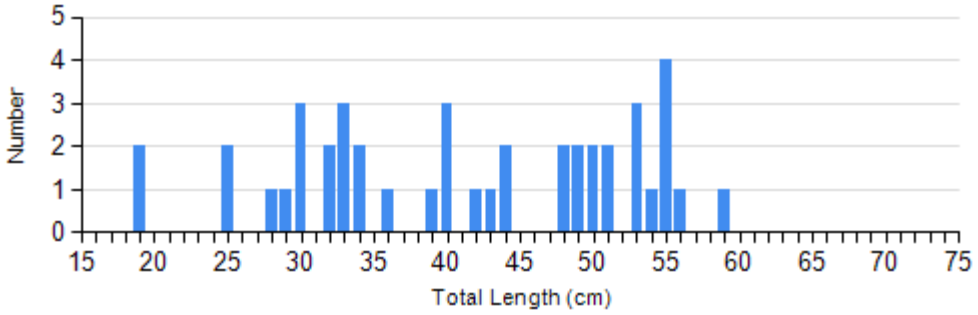

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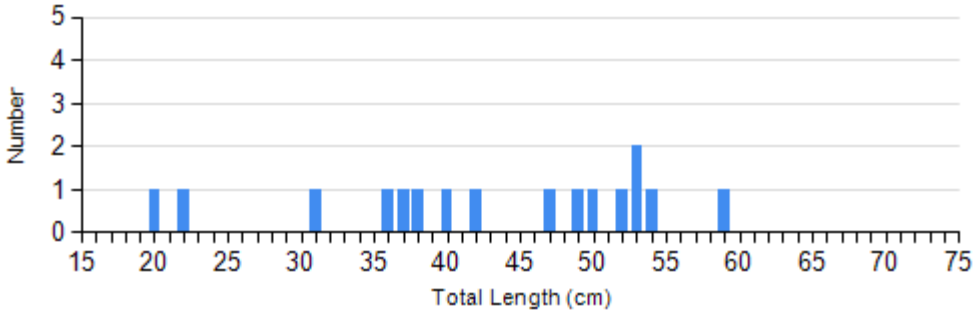

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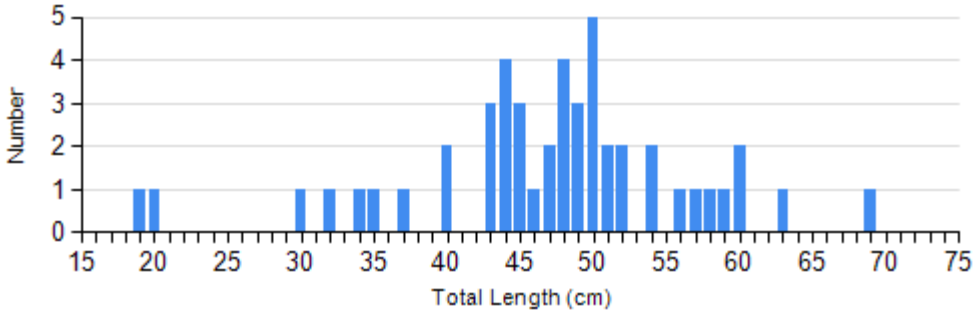

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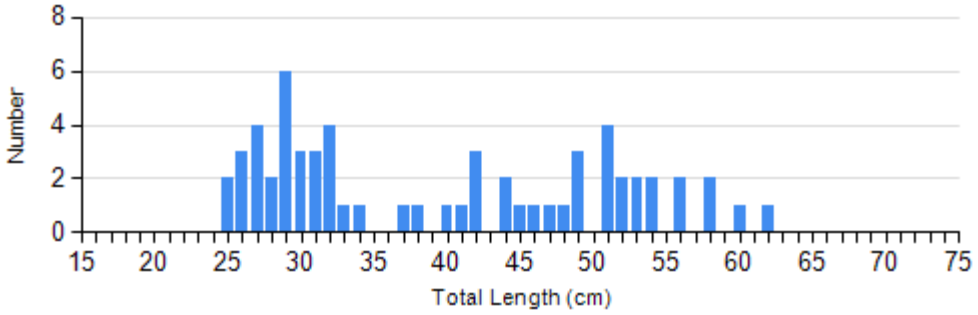
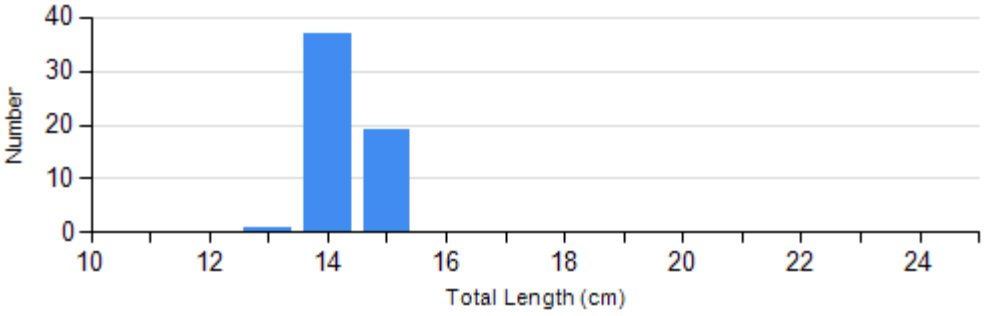
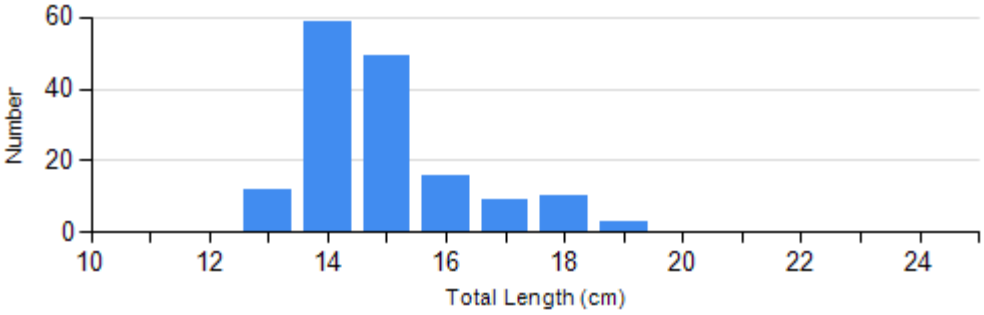


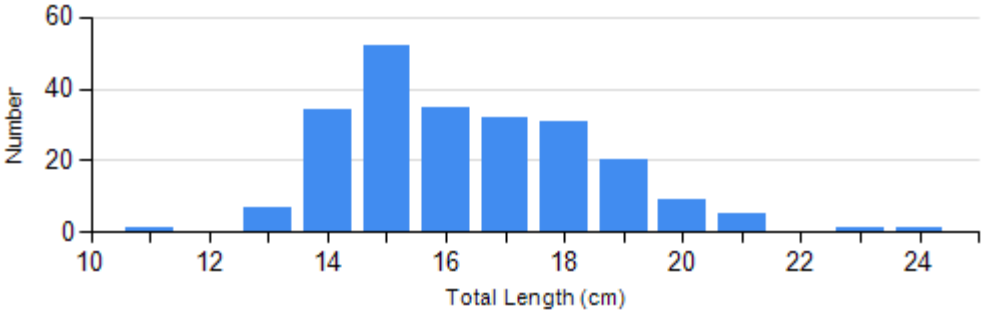
Species: Yellow Perch
Gear: AFS std gill net



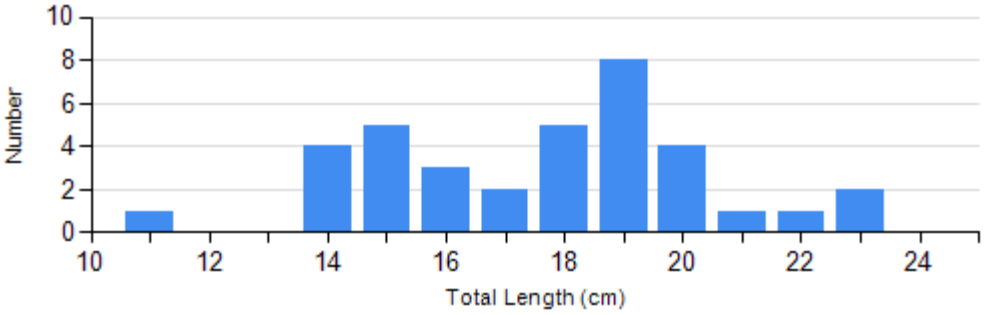
2019



2020



2021



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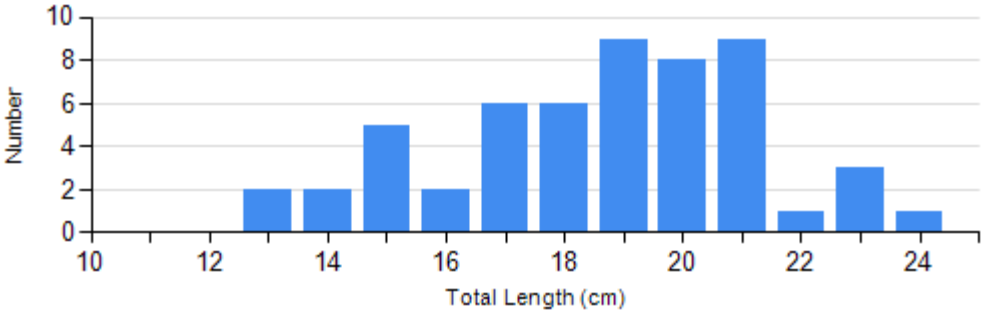
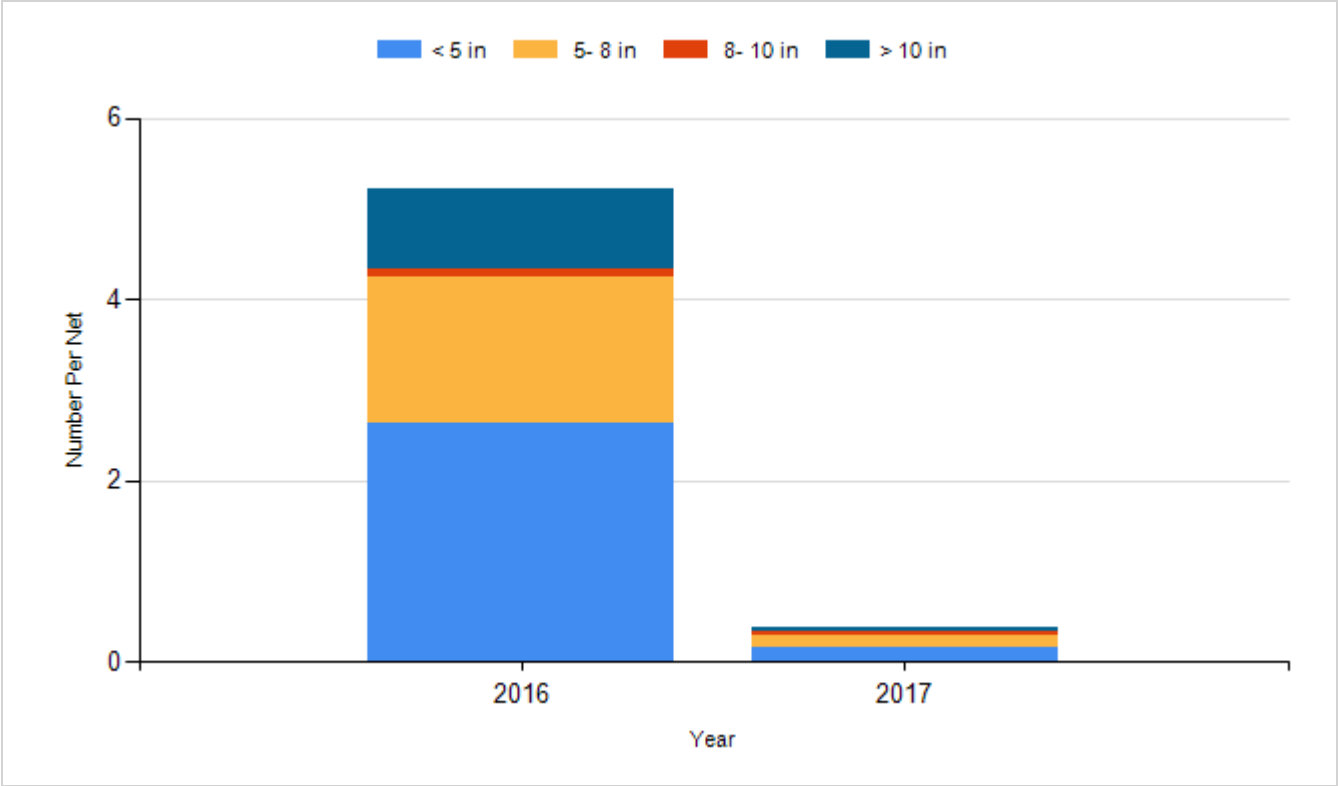


2023

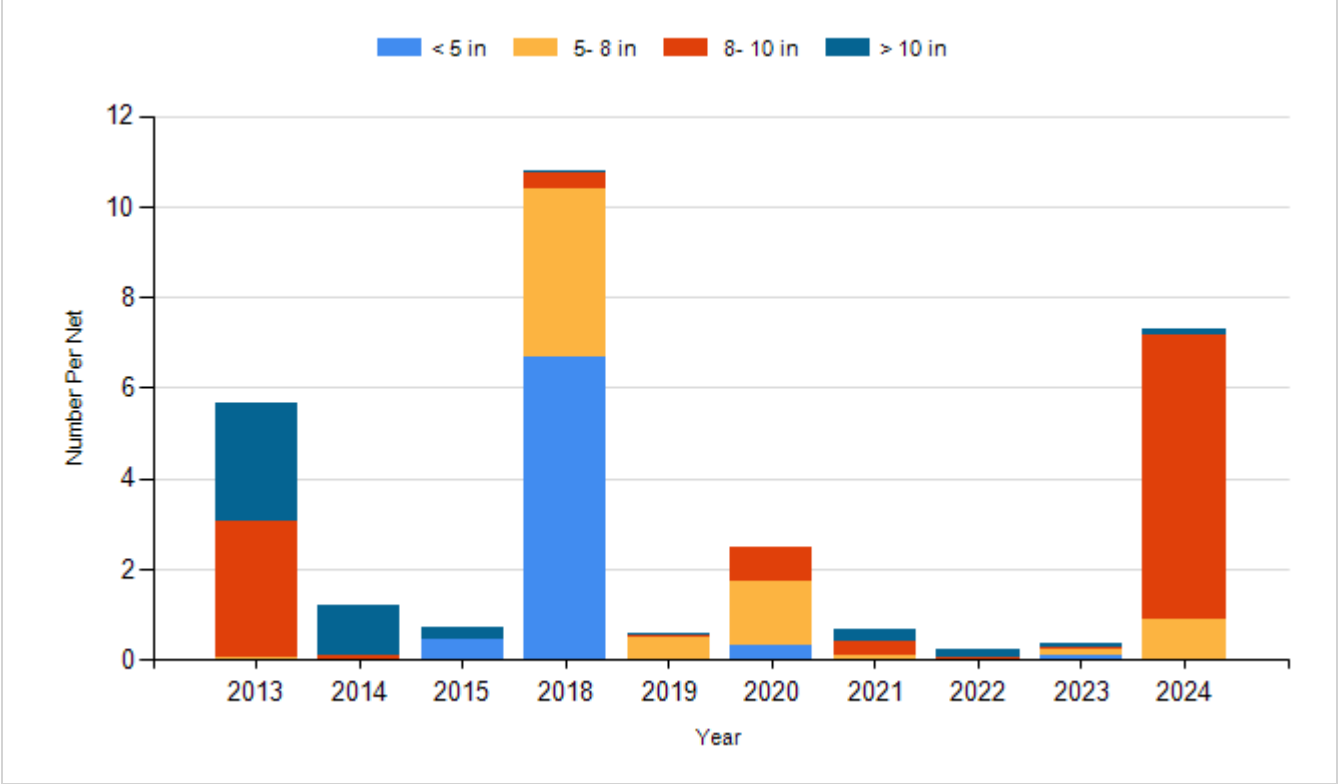
Historic Fish Sizes and Relative Abundance

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

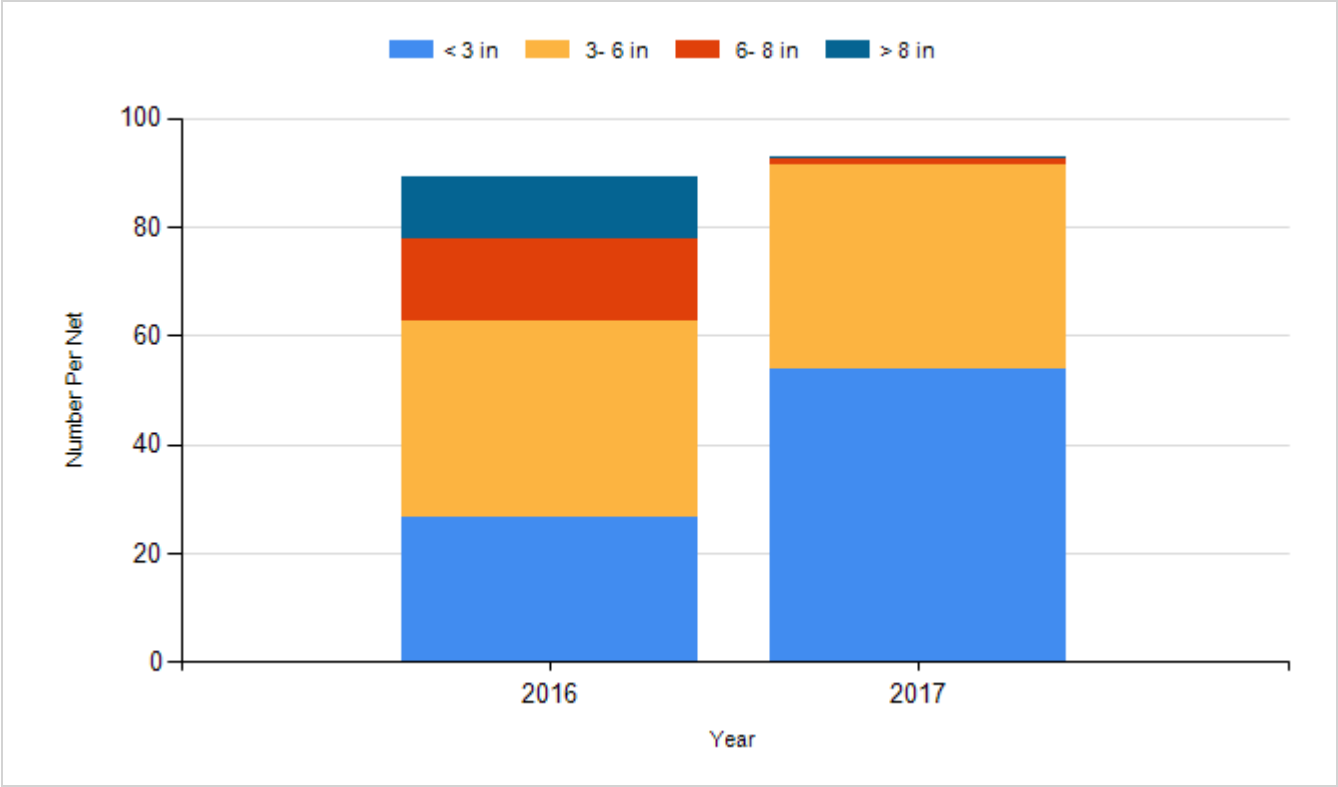
Species: Black Crappie
Gear: AFS std frame net



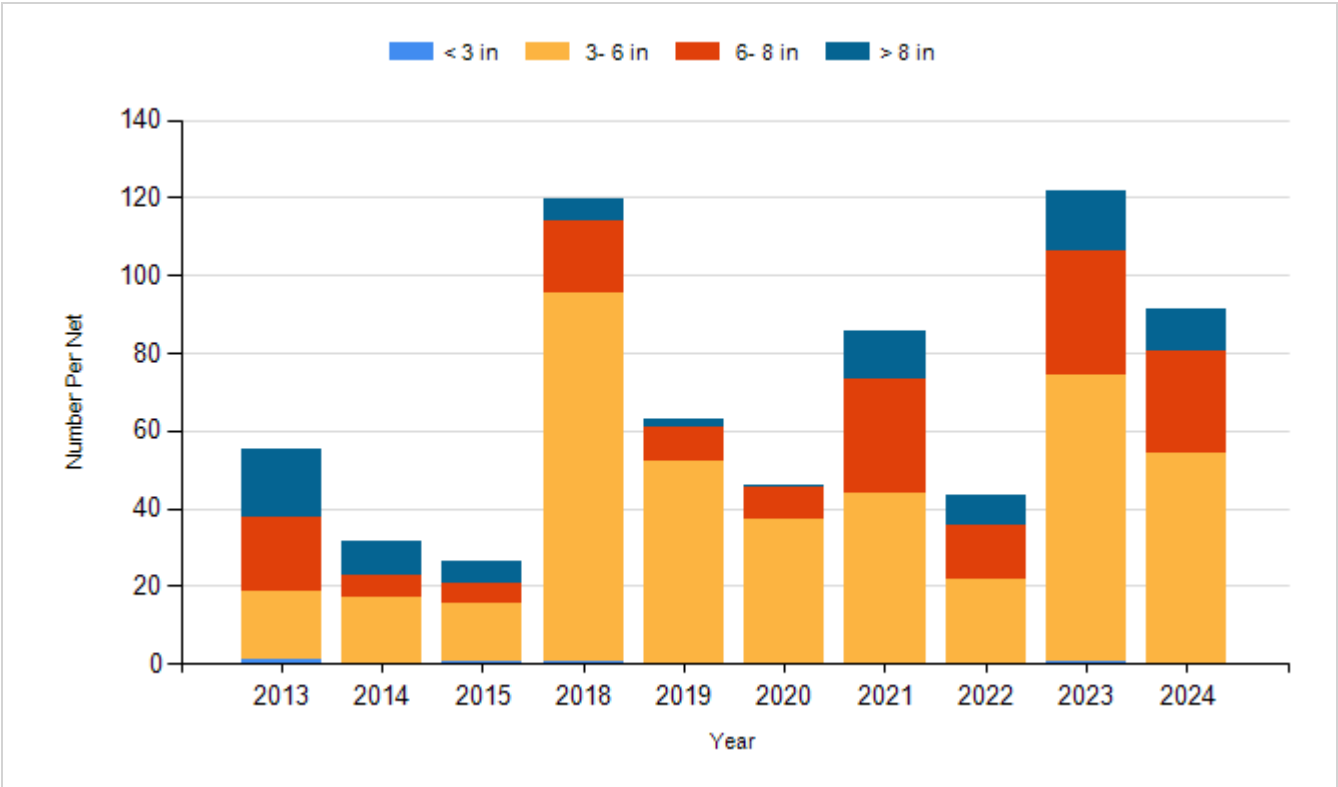
Species: Black Crappie
Gear: frame net (std 3/4 in)



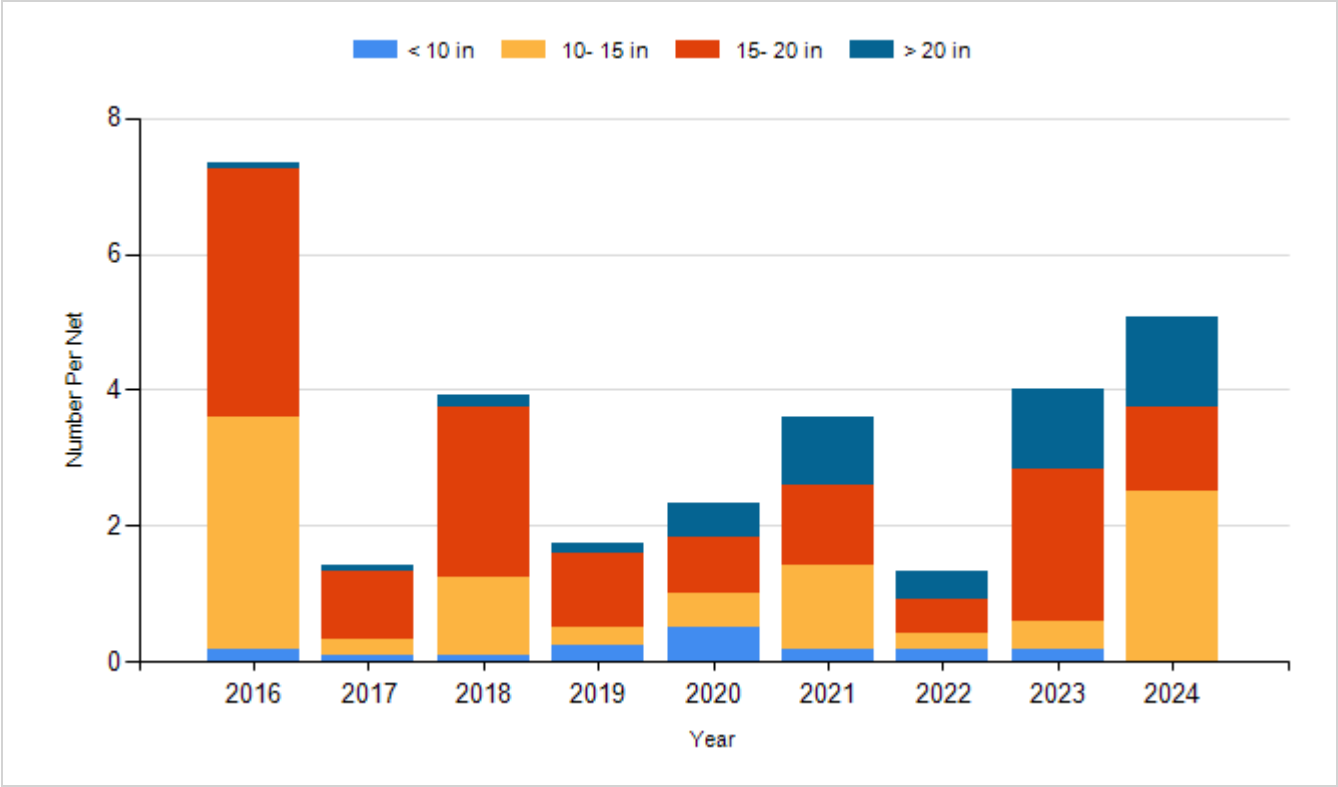
Species: Bluegill
Gear: AFS std frame net



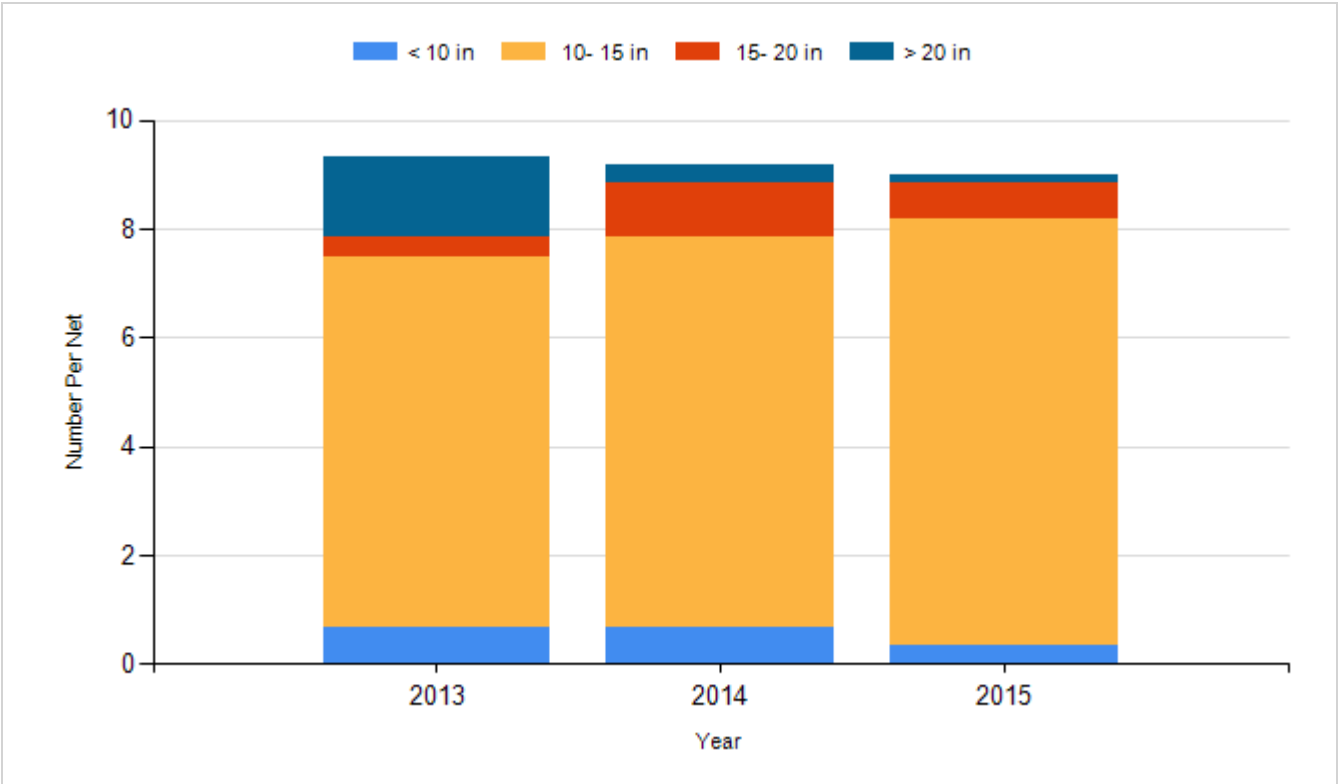
Species: Bluegill
Gear: frame net (std 3/4 in)



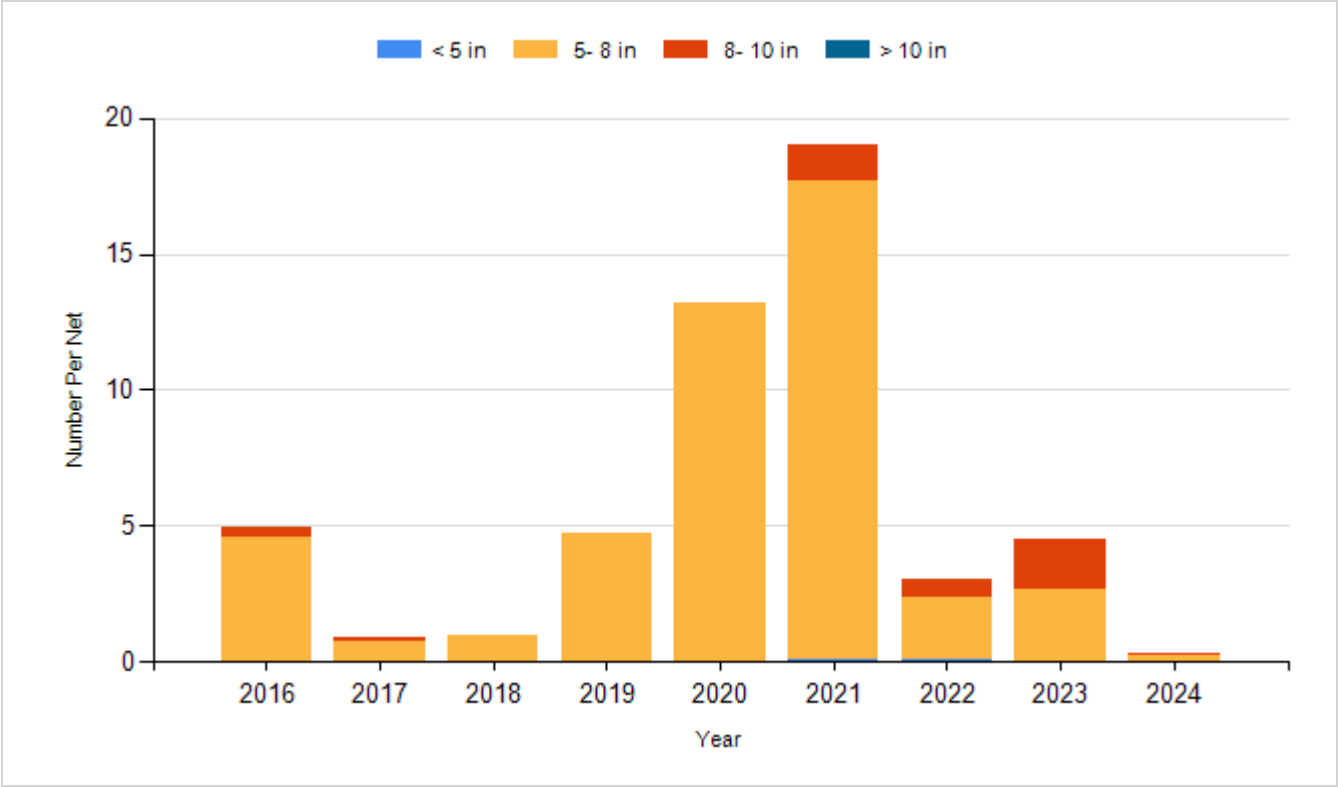
Species: Walleye
Gear: AFS std gill net



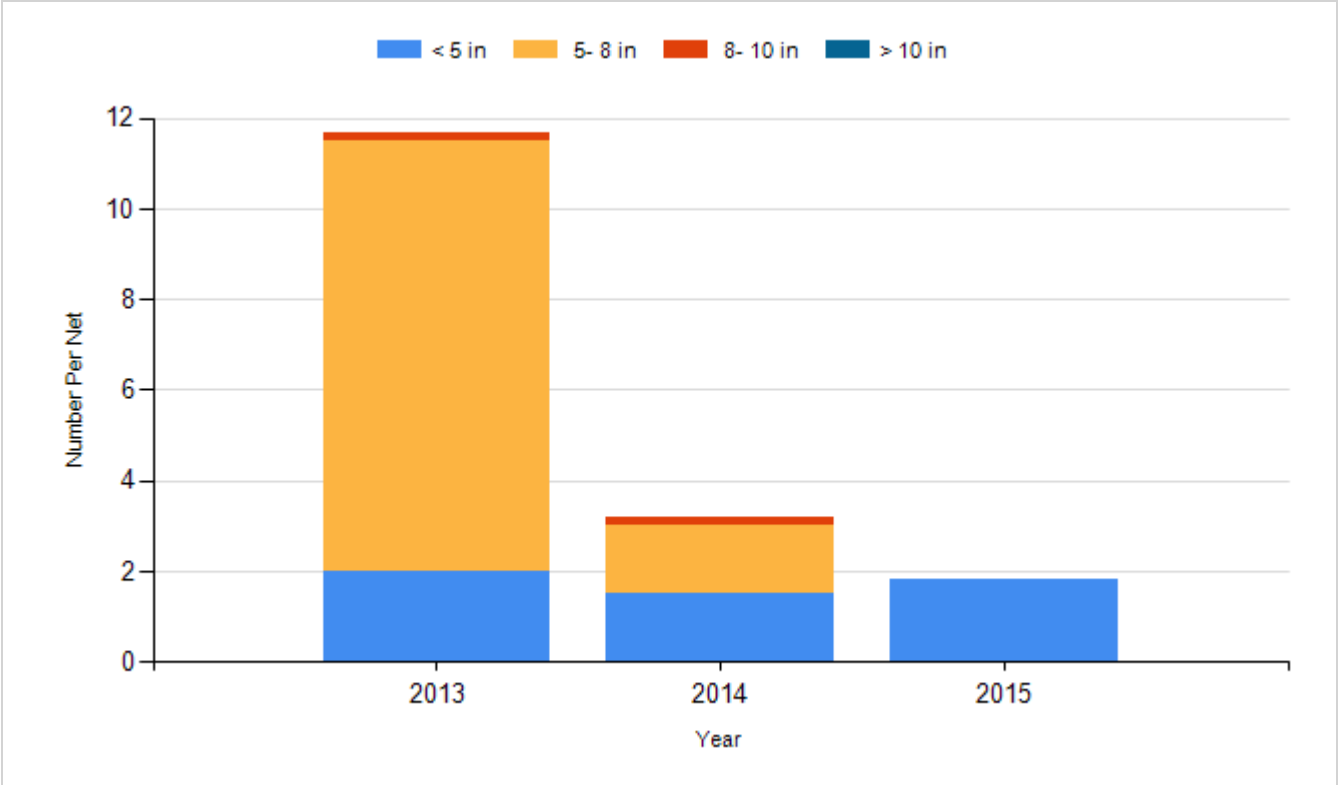
Species: Walleye
Gear: std exp gill net



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	217,450
2015	Walleye	Large Fingerling	13,264
2017	Walleye	Large Fingerling	900
2018	Walleye	Large Fingerling	48,484
2019	Walleye	Large Fingerling	3,800
2020	Walleye	Large Fingerling	4,610
2021	Walleye	Adult	42
2021	Walleye	Juvenile	22,819
2022	Walleye	Juvenile	226,640
2024	Walleye	Fry	1,100,000