Lake Thompson Survey Summary

Lake Thompson, located 6 miles south and 4 miles east of DeSmet, SD, is managed as a walleye, yellow perch, and black crappie fishery but other fish species (e.g., northern pike, smallmouth bass, and white bass) also provide additional angling opportunities.

- **Walleye**. Walleye abundance as indexed by gill net catch has remained relatively stable at 3 to 4 fish/net in spite of the high angling pressure over the last couple of years. Netted fish measured from 4.3 to 25.9 inches in length with approximately 41% of sampled fish measuring >15 inches and 14% measuring >20 inches. Growth was good with fish achieving a mean length of 17.5 inches by age 4. At least six different year classes of fish were represented in the sample with the age 2 and age 5 cohorts dominating the catch (57% and 23% of catches, respectively). These two year classes (2022 and 2019) happen to coincide with two of the most recent stocking events. Lake Thompson remains an excellent option for any angler targeting walleye.

- **Yellow Perch**. Sampling efforts produced 2.6 yellow perch per gill net in 2024 which is lower than the previous year (5.0 fish per net in 2023) and the long term mean (4.4 fish per net). Measured fish ranged from 6.7 to 13.0 inches in length with a substantial proportion measuring >8 inches (79%). Approximately 40% of the sample also measured >10 inches. A high average relative weight score (Wr = 106) indicates that these fish were quite "plump" and healthy. Lake Thompson is worth a look for any angler targeting large yellow perch.

- **Northern Pike**. Gill netting efforts produced a catch rate of 0.8 northern pike per net in 2024. Catches have been declining steadily from the recent high observed in 2021 (1.9 fish per net). Water levels were considerably higher during that time frame which provided additional spawning habitat resulting in increased production. Sampled fish lengths ranged from 20.9 to 34.3 inches in 2024 with 47% measuring >28 inches. Condition improved in comparison to previous years with a mean relative weight score of 90.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Lake Thompson (below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Thompson, Kingsbury County
LKT-Lake-55-801
2024

Lake Information

Name: Thompson

County: Kingsbury

Legal Description: T110N-R55W-Sec.20-22, 28-33; T109N-R55W-Sec.4-9, 16-17;

Surface Area: 14,526 Acres

Maximum Depth: 26 Feet

Mean Depth: 15 Feet

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Sep 09, 2024	12 net-nights
AFS std gill net	Sep 10, 2024	12 net-nights

Common Fish Species Present

Walleye

Common Carp

Yellow Perch

White Bass

Bigmouth Buffalo

Northern Pike

Smallmouth Bass

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	32	1.3	0.6	3		0			
	Black Crappie	2	0.1	0.1	0		0		115	2
	Common Carp	91	3.8	1.0	42	7	9	5		
	Northern Pike	19	0.8	0.2	100		47	18	90	3
	Smallmouth Bass	2	0.1	0.1	100		100		103	3
	Walleye	100	4.0	1.3	43	7	14	5	79	1
	White Bass	53	1.6	0.5	100		74	11	93	1
	Yellow Perch	62	2.6	0.9	79	8	40	9	106	2

10-Year Catch Per Unit Effort by Gear and Species

Catch per unit effort (CPUE) and average (Avg) of species across 10 years using different gear types.

*** Methods/Species that ignore stock length**

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS std frame net	Black Bullhead			0.3								0.30
	Black Crappie			0.2								0.20
	Common Carp			5.0								5.00
	Northern Pike			0.8								0.80
	Smallmouth Bass			0.7								0.70
	Walleye			2.0								2.00
	White Bass			0.7								0.70
	Yellow Perch			0.2								0.20
AFS std gill net	Bigmouth Buffalo			0.2	0.1	0.3	0.6	0.1	0.1	0.0	1.3	0.34
	Black Bullhead			0.5	0.0	0.0	0.5	1.2	0.6	0.0	0.0	0.35
	Black Crappie			0.6	0.1	0.1	1.5	1.5	1.8	1.0	0.1	0.84
	Common Carp			2.7	2.2	0.9	1.7	1.0	0.9	0.0	3.8	1.65
	Northern Pike			0.5	0.3	0.0	0.8	1.9	1.6	1.2	0.8	0.89
	Smallmouth Bass			0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.04
	Walleye			6.0	3.1	2.1	3.9	4.4	4.7	3.1	4.0	3.91
	White Bass			14.0	5.9	2.6	3.4	2.2	1.8	3.6	1.6	4.39
	White Sucker			0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.03
	Yellow Perch			4.6	1.6	8.9	8.2	2.5	1.8	5.0	2.6	4.40
fall night EF-WAE*	Walleye	35.5										35.50
frame net (std 3/4 in)	Bigmouth Buffalo	0.3	0.4		1.7	1.4	8.4	27.8	0.7	0.6		5.16
	Black Bullhead	0.4	0.4		0.3	3.1	3.5	15.6	0.6	0.0		2.99
	Black Crappie	1.7	0.6		6.4	10.1	10.1	9.4	2.3	4.0		5.58
	Bluegill	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0		0.01
	Common Carp	10.0	6.7		1.5	5.0	5.0	3.4	0.3	1.4		4.16
	Northern Pike	5.8	5.4		1.2	0.0	3.3	11.4	2.7	8.4		4.78
	Smallmouth Bass	0.1	1.0		0.1	0.1	0.7	1.4	1.0	0.9		0.66
	Walleye	1.0	3.1		2.5	1.6	2.8	5.9	1.4	2.6		2.61
	White Bass	0.6	3.6		4.4	0.6	1.8	2.4	0.6	0.9		1.86
	White Sucker	0.0	0.4		0.1	0.1	0.1	0.1	0.0	0.0		0.10
	Yellow Perch	0.0	0.0		0.0	0.4	0.3	0.0	0.0	0.0		0.09
std exp gill net	Black Bullhead	0.0	0.3									0.15
	Black Crappie	2.3	2.3									2.30
	Common Carp	1.0	1.0									1.00

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
std exp gill net	Lamprey Family	0.0	0.0									0.00
	Northern Pike	1.5	0.7									1.10
	Spottail Shiner	0.0	0.0									0.00
	Walleye	20.5	22.3									21.40
	White Bass	6.8	5.3									6.05
	White Sucker	0.0	0.0									0.00
	Yellow Perch	12.8	10.7									11.75

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 frame net	Black Crappie	PSD			0							
		PSD-P			0							
		Wr			113							
	Common Carp	PSD			97							
		PSD-P			87							
	Northern Pike	PSD			100							
		PSD-P			60							
		Wr			83							
	Smallmouth Bass	PSD			25							
		PSD-P			0							
		Wr			91							
	Walleye	PSD			25							
		PSD-P			17							
		Wr			82							
	White Bass	PSD			25							
		PSD-P			0							
		Wr			90							
	Yellow Perch	PSD			100							
		PSD-P			100							
		Wr			105							
AFS std gill net	Bigmouth Buffalo	PSD			0	50	0	13	100	0		3
		PSD-P			0	0	0	13	0	0		0
	Black Crappie	PSD			100	100	0	100	95	100	100	0
		PSD-P			100	100	0	5	70	100	96	0
		Wr			98	99	110	117	111	105	117	115
	Common Carp	PSD			97	100	58	86	92	100	100	42
		PSD-P			46	81	50	50	46	100	100	9
		Wr									88	
	Northern Pike	PSD			100	100		50	88	81	82	100
		PSD-P			43	75		0	4	10	21	47
		Wr			80	89		87	78	76	74	90
	Smallmouth Bass	PSD				0			100			100
		PSD-P				0			100			100

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net	Smallmouth Bass	Wr				97			100			103
	Walleye	PSD			15	42	17	22	28	59	69	43
		PSD-P			1	7	3	4	11	16	23	14
		Wr			83	79	86	85	86	83	85	79
	White Bass	PSD			99	100	100	93	100	100	99	100
		PSD-P			51	90	100	91	100	100	99	74
		Wr			92	86	97	101	94	94	93	93
	Yellow Perch	PSD			78	100	49	90	91	96	60	79
		PSD-P			48	70	38	21	47	67	55	40
		Wr			114	106	112	118	114	107	119	106
frame net (std 3/4 in)	Bigmouth Buffalo	PSD	67	75		88	9	6	96	100	100	
		PSD-P	33	50		76	9	1	4	33	17	
	Black Crappie	PSD	100	100		98	27	95	95	100	100	
		PSD-P	88	100		95	16	48	53	100	100	
		Wr	106	115		97	110	113	115	105	109	
	Common Carp	PSD	95	98		87	98	92	93	100	100	
		PSD-P	57	83		80	83	44	74	100	93	
		Wr									92	
	Northern Pike	PSD	95	100		100	0	67	70	92	92	
		PSD-P	31	65		67	0	24	11	21	7	
		Wr	79	91		71		87	77	81	74	
	Smallmouth Bass	PSD	0	22		100	100	0	45	33	56	
		PSD-P	0	11		100	100	0	18	11	33	
		Wr	98	134		74	98	107	138	104	98	
	Walleye	PSD	60	50		36	46	39	17	77	77	
		PSD-P	10	21		20	23	18	11	8	58	
		Wr	86	89		77	87	84	88	83	80	
	White Bass	PSD	50	44		100	100	94	100	100	100	
		PSD-P	17	41		100	100	94	84	100	100	
		Wr	89	103		83	97	100	95	88	93	
	Yellow Perch	PSD					0	100				
		PSD-P					0	67				
		Wr					104	112				
std exp gill net	Black Crappie	PSD	100	100								
		PSD-P	100	86								
		Wr	101	104								

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
std exp gill net	Common Carp	PSD	100	100								
		PSD-P	75	100								
	Northern Pike	PSD	100	100								
		PSD-P	33	0								
		Wr	80	80								
	Walleye	PSD	20	12								
		PSD-P	5	0								
		Wr	86	83								
	White Bass	PSD	100	69								
		PSD-P	96	69								
		Wr	93	91								
	Yellow Perch	PSD	82	63								
		PSD-P	31	44								
		Wr	110	100								

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	84	244 (3)	304 (48)		447 (11)	482 (19)	484 (2)	541 (1)			
2023	95	196 (20)	283 (5)	373 (7)	396 (34)	452 (11)	492 (3)	614 (1)	533 (8)	516 (3)	608 (4)
2022	62	212 (1)	300 (3)	350 (21)	420 (20)	458 (3)		525 (8)	555 (5)		605 (1)
2021	59	251 (2)	306 (28)	369 (18)	431 (1)	443 (1)	491 (4)	574 (1)	459 (2)		637 (2)
2020	52	251 (2)	307 (36)	378 (3)		427 (4)	444 (3)	486 (2)			628 (2)
2019	70	209 (42)	275 (1)	317 (2)	348 (15)	380 (8)	382 (1)				647 (1)
2018	49	250 (7)	259 (5)	338 (17)	387 (10)	412 (4)		509 (3)	515 (2)		703 (1)
2017	81	219 (3)	291 (40)	352 (23)	391 (11)		343 (1)				507 (2)
2016	88	218 (21)	294 (41)	346 (19)	412 (3)	471 (4)					
2015	129	214 (49)	280 (45)	363 (7)	374 (17)	412 (8)	434 (1)	544 (1)	525 (1)	555 (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+
2023	122	152 (49)	233 (6)	274 (12)	288 (28)	287 (28)		321 (1)			
2022	24		227 (6)	269 (13)	279 (5)						
2021	32	140 (1)	230 (13)	256 (18)							
2019	125	163 (63)	230 (15)	263 (11)	278 (13)	305 (1)	290 (18)	310 (2)		322 (1)	
2018	23		230 (5)	268 (12)	270 (3)	292 (2)			337 (1)		
2015	51	153 (4)	210 (27)	255 (4)	264 (11)	286 (4)	245 (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).

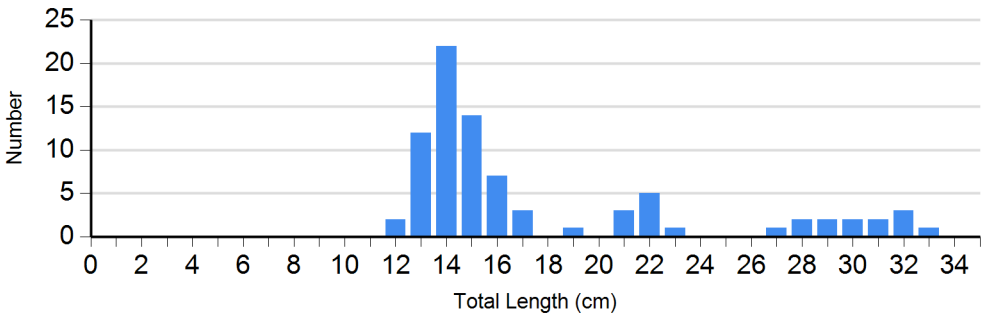
		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2020	5	139 (6.4)	48	118 (1.5)	12	111 (1.5)	36	107 (1.1)
	2021	4	114	31	119 (1.3)	36	112 (1.0)	4	106 (5.2)
	2022	0		0		16	107 (1.4)	5	102 (2.6)
	2023	0		0		22	111 (1.7)	18	106 (1.6)
Common Carp Gill Net	2023	0		0		0		1	88
Northern Pike Gill Net	2020	5	82 (3.9)	5	92 (3.7)	0		0	
	2021	3	79 (7.7)	21	78 (1.4)	0		1	83
	2022	4	72 (0.8)	15	76 (1.6)	2	81 (13.4)	0	
	2023	5	70 (2.1)	17	71 (2.5)	4	88 (4.7)	2	85 (6.7)
	2024	0		10	86 (1.9)	8	93 (3.2)	1	115
Walleye Gill Net	2020	40	85 (1.1)	9	85 (1.0)	1	89	1	89
	2021	41	86 (1.0)	10	90 (2.1)	5	84 (2.5)	1	90
	2022	25	80 (1.1)	26	83 (1.2)	10	91 (2.2)	0	
	2023	23	86 (1.0)	35	84 (1.2)	16	87 (2.1)	1	80
	2024	54	77 (0.7)	28	80 (1.0)	11	83 (3.3)	2	92 (3.8)
White Bass Gill Net	2020	3	103 (2.2)	1	105	18	101 (1.2)	22	100 (1.0)
	2021	0		0		12	95 (1.3)	17	93 (1.0)
	2022	0		0		10	95 (1.4)	14	93 (1.6)
	2023	1		0		30	97 (1.2)	55	90 (0.8)
	2024	0		10	97 (1.6)	6	96 (2.5)	23	90 (0.9)
Yellow Perch Gill Net	2020	11	114 (3.8)	73	118 (1.0)	17	119 (2.8)	6	123 (3.3)
	2021	3	105 (1.2)	14	113 (2.8)	15	117 (2.6)	0	

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Yellow Perch Gill Net	2022	1	105	7	107 (4.1)	16	107 (2.4)	0	
	2023	48	134 (4.7)	7	114 (3.0)	51	112 (1.3)	15	107 (2.1)
	2024	13	104 (1.9)	24	107 (2.0)	21	107 (2.0)	4	103 (4.4)

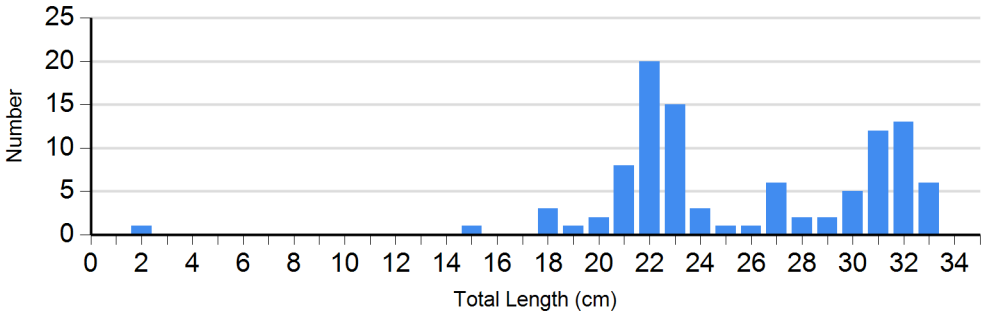
Length Frequency Distribution

Length frequency histogram of species sampled by year.

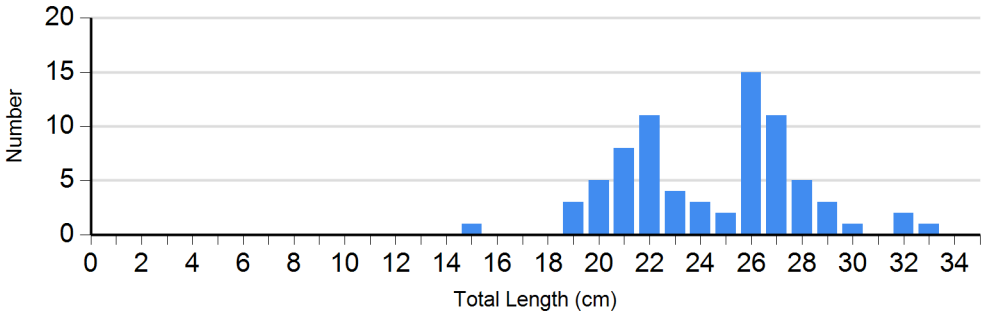
Species: Black Crappie
Gear: frame net (std 3/4 in)



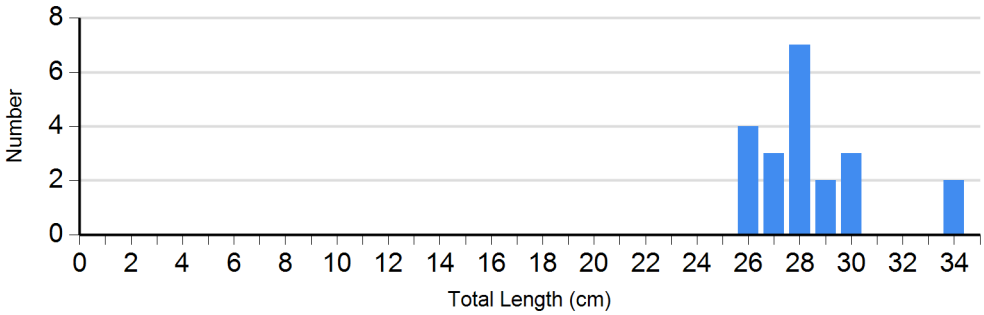
2019



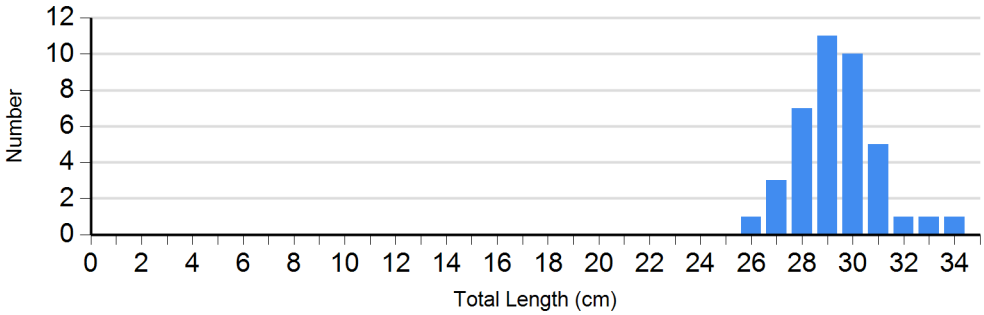
2020



2021

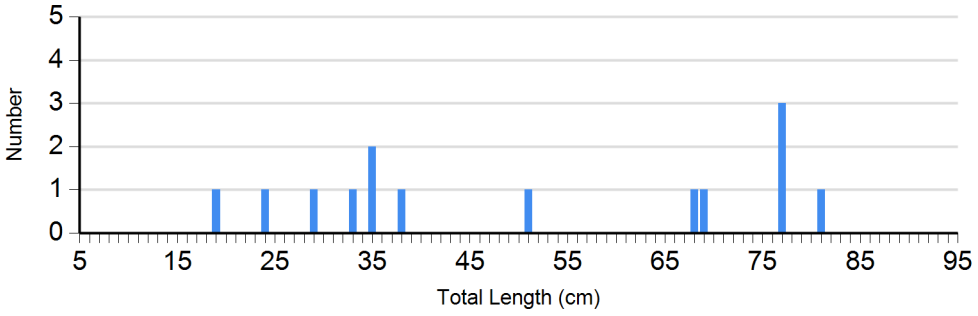


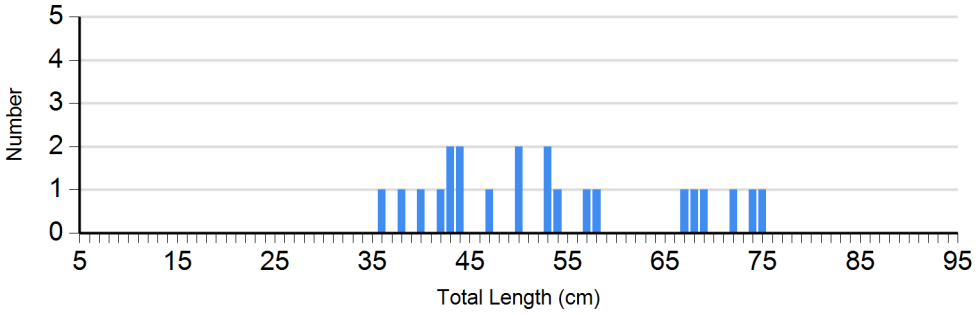
2022

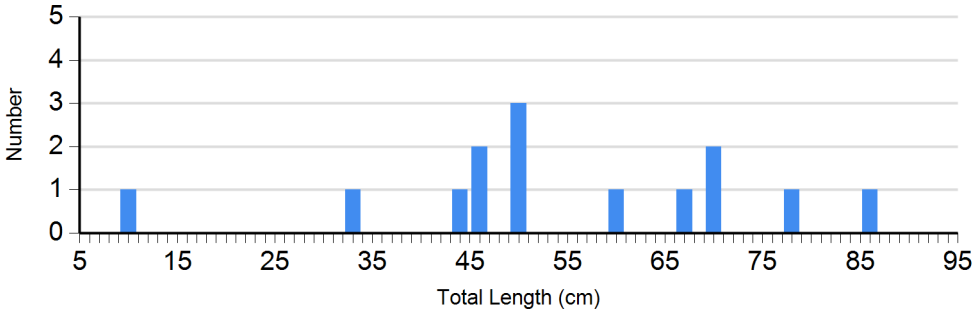


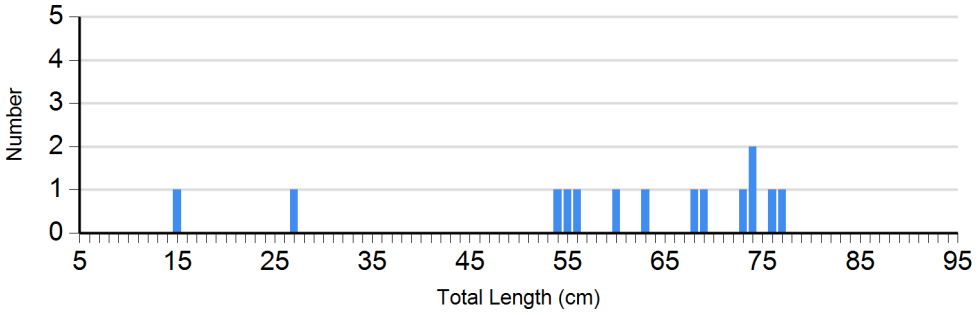
2023

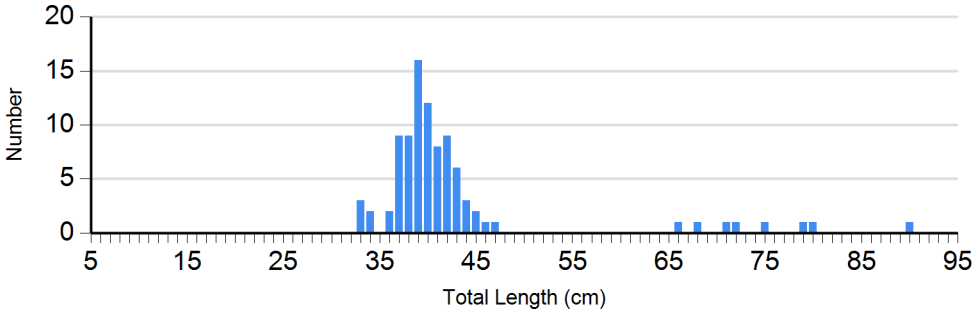
Species: Common Carp
Gear: AFS std gill net



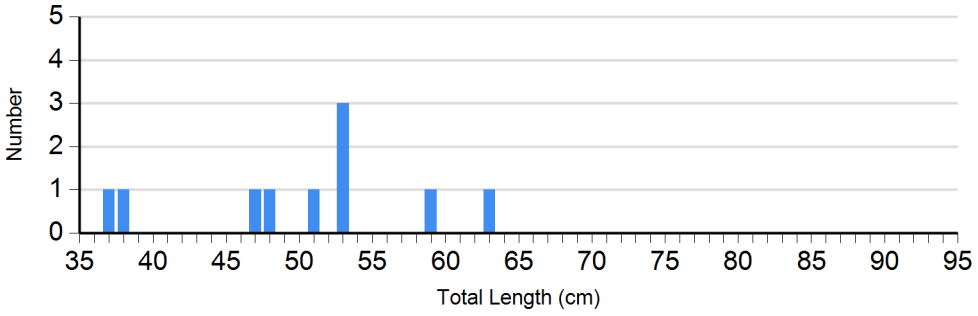


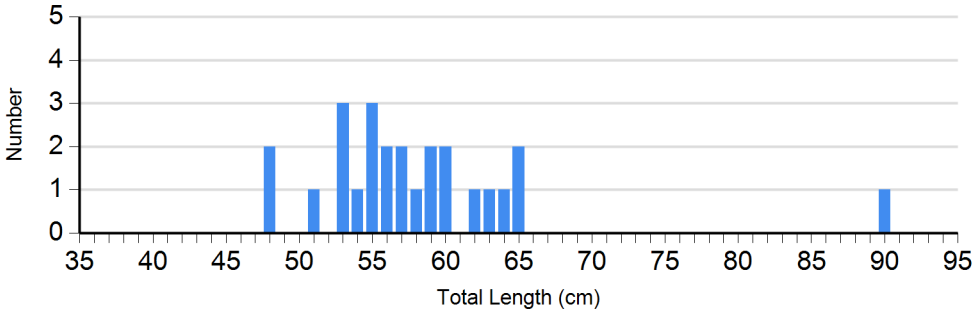


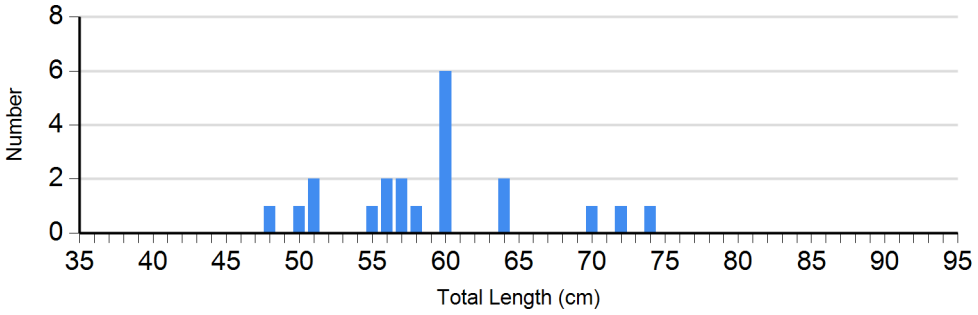


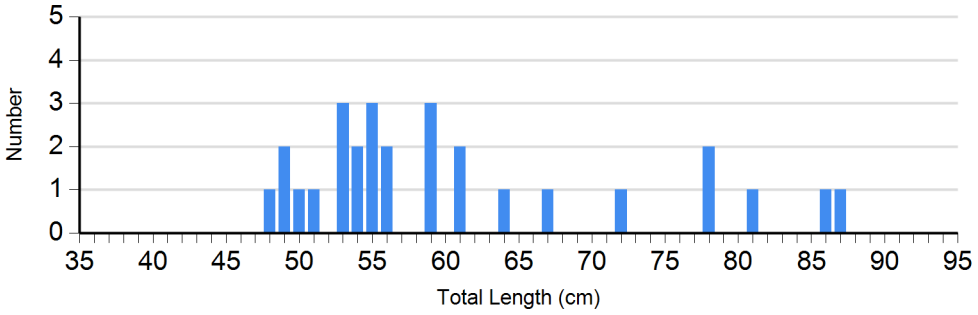


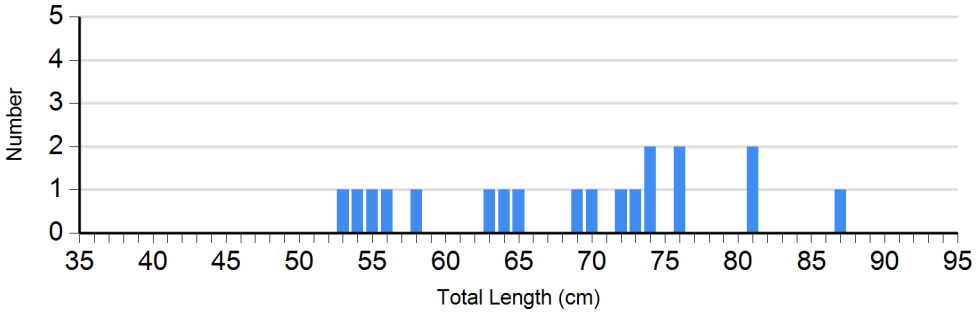
Species: Northern Pike
Gear: AFS std gill net



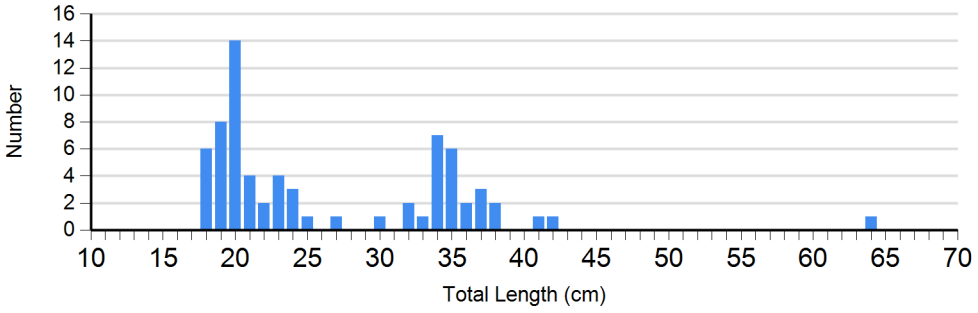




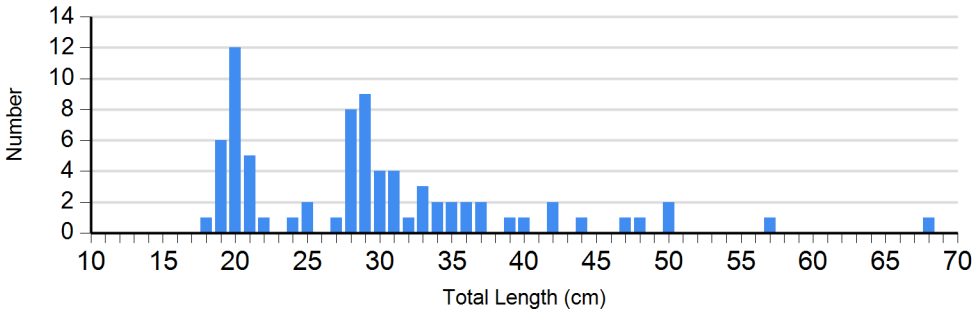




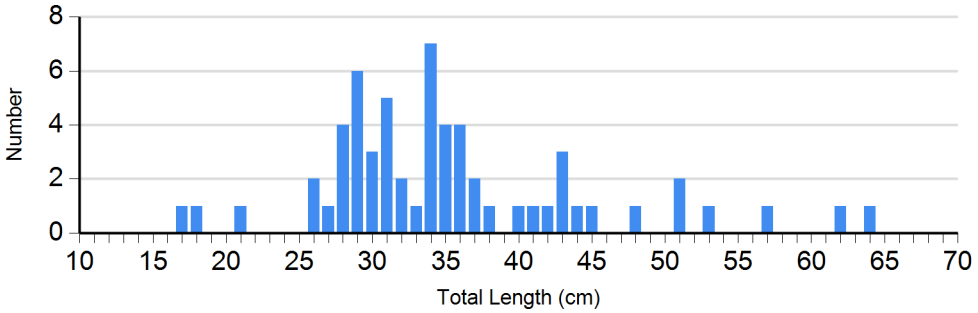
Species: Walleye
Gear: AFS std gill net



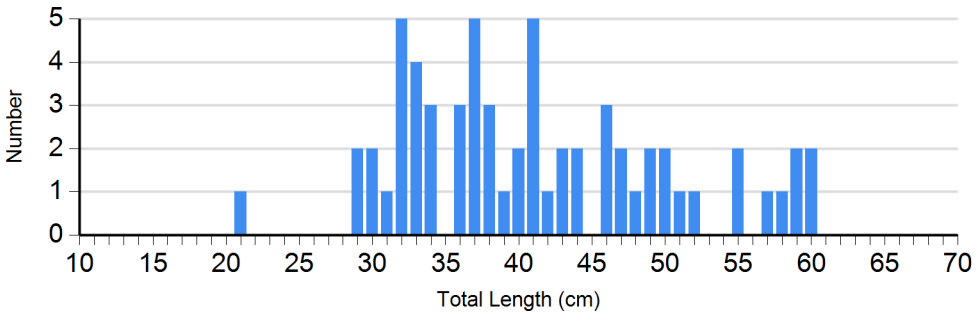
2019



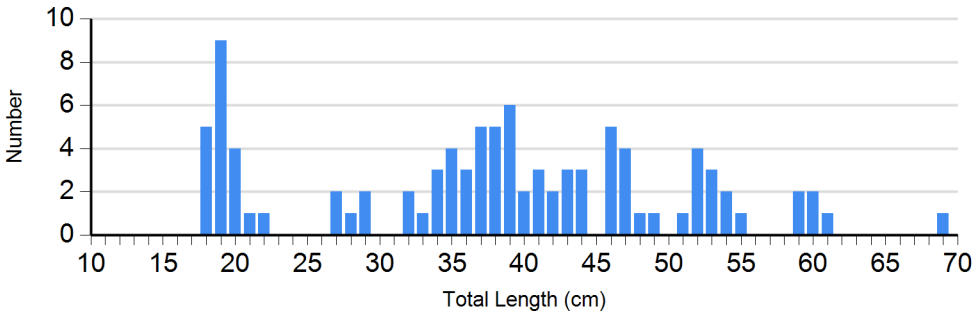
2020



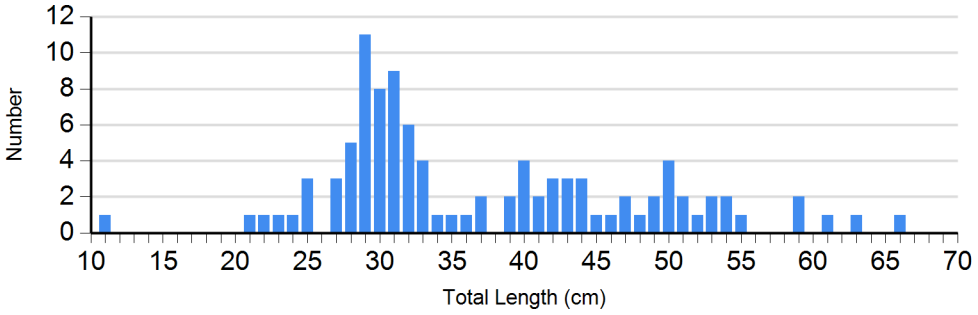
2021



2022

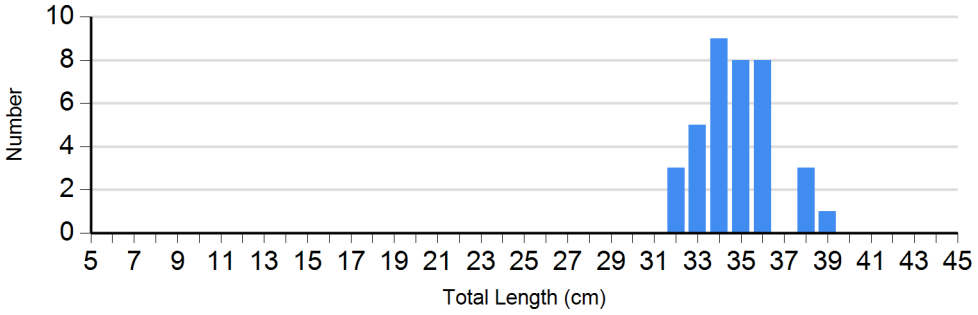


2023

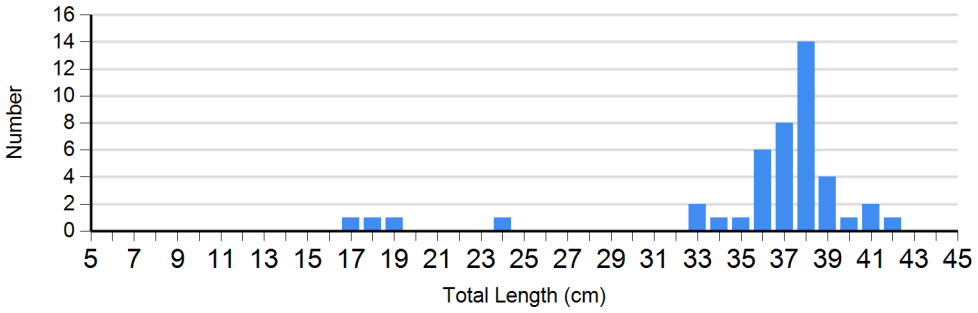


2024

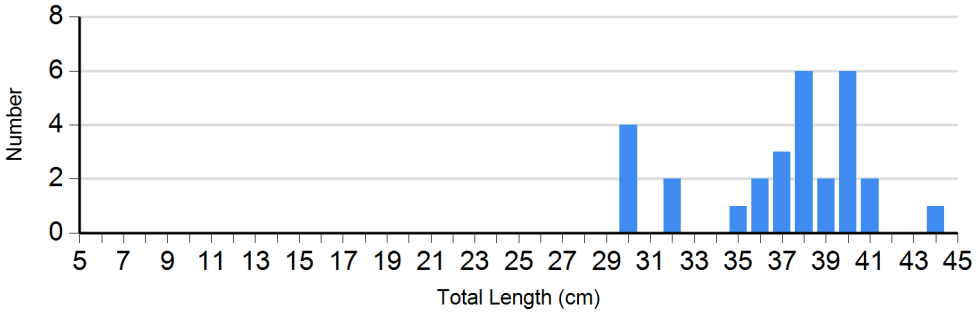
Species: White Bass
Gear: AFS std gill net



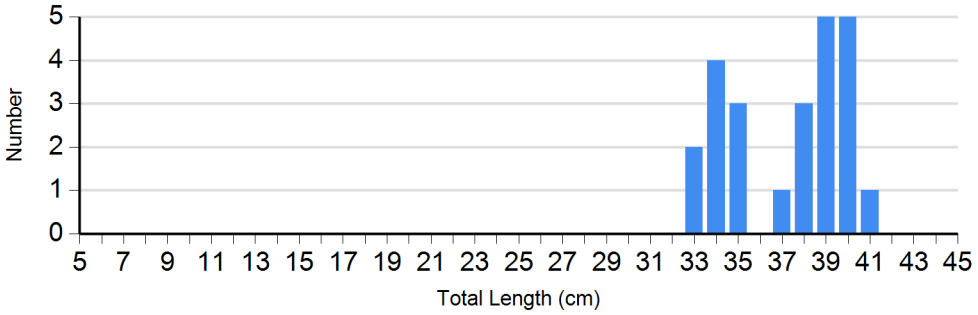
2019



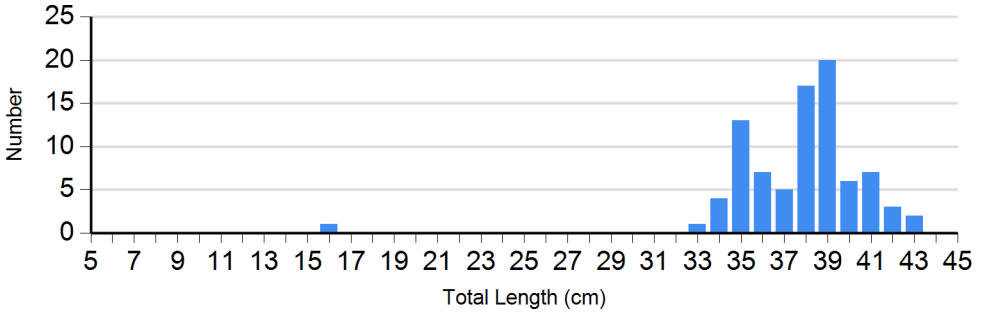
2020



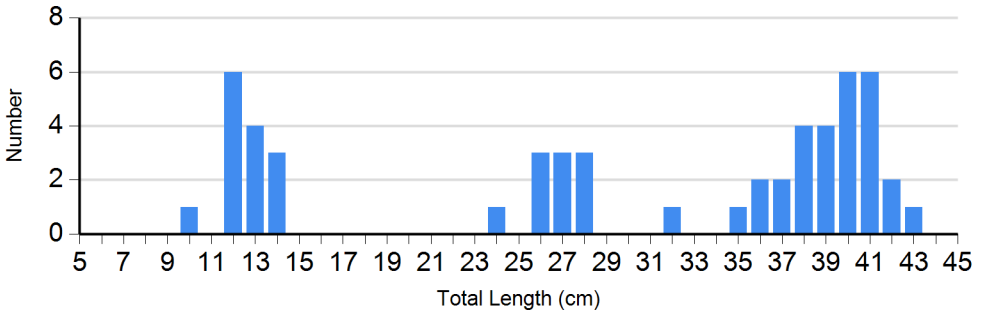
2021



2022

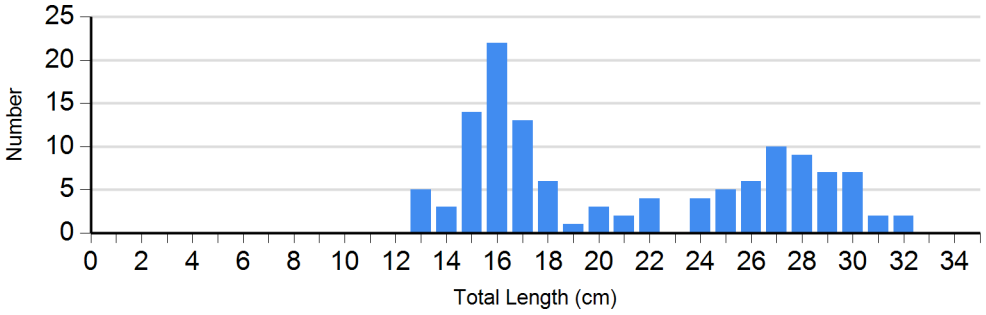


2023

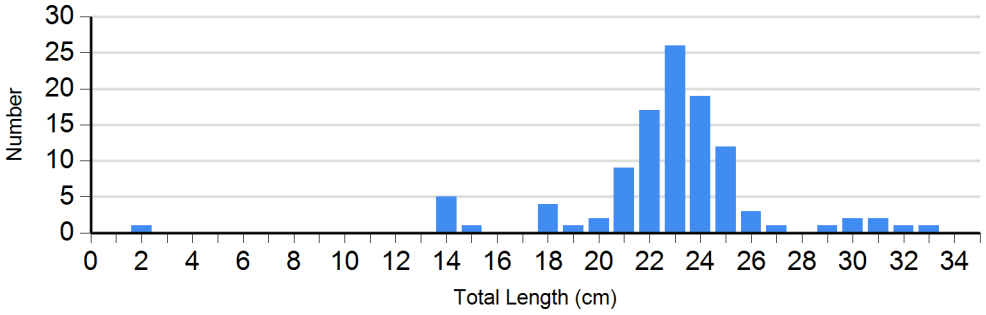


2024

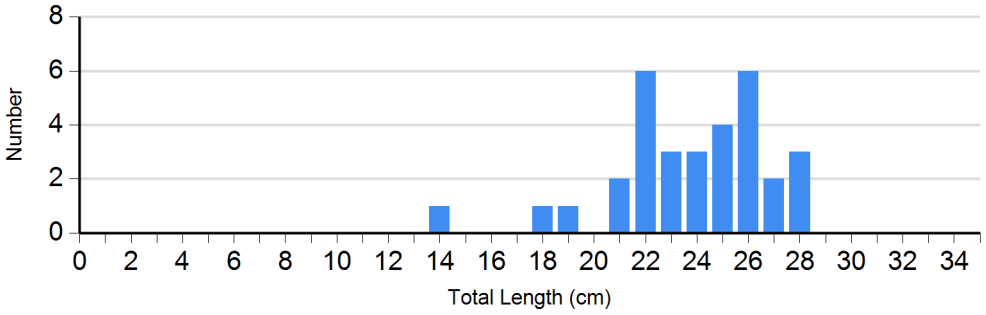
Species: Yellow Perch
Gear: AFS std gill net



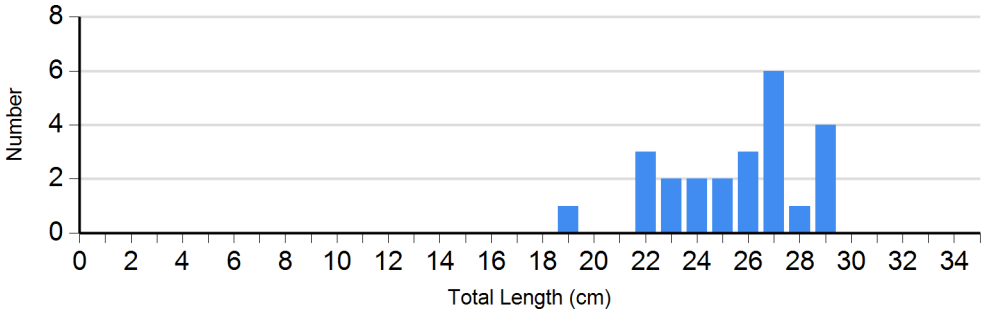
2019



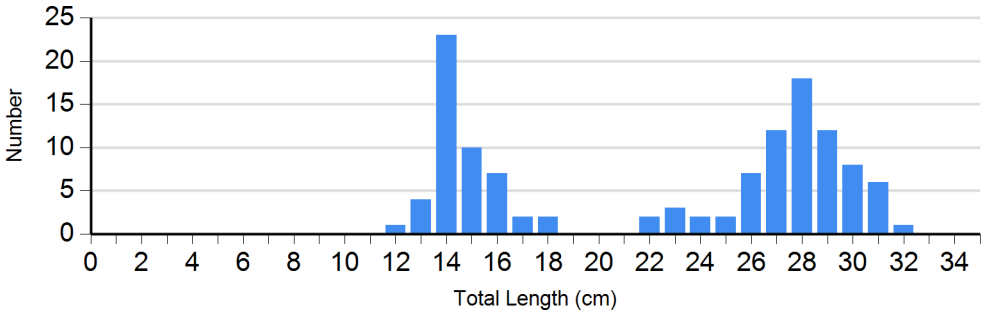
2020



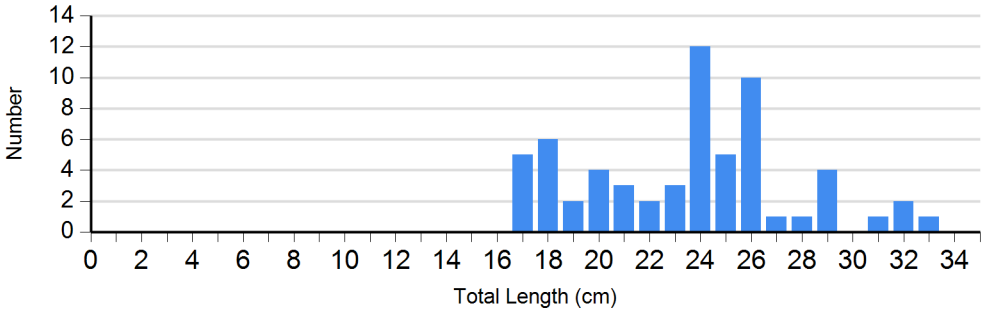
2021



2022



2023

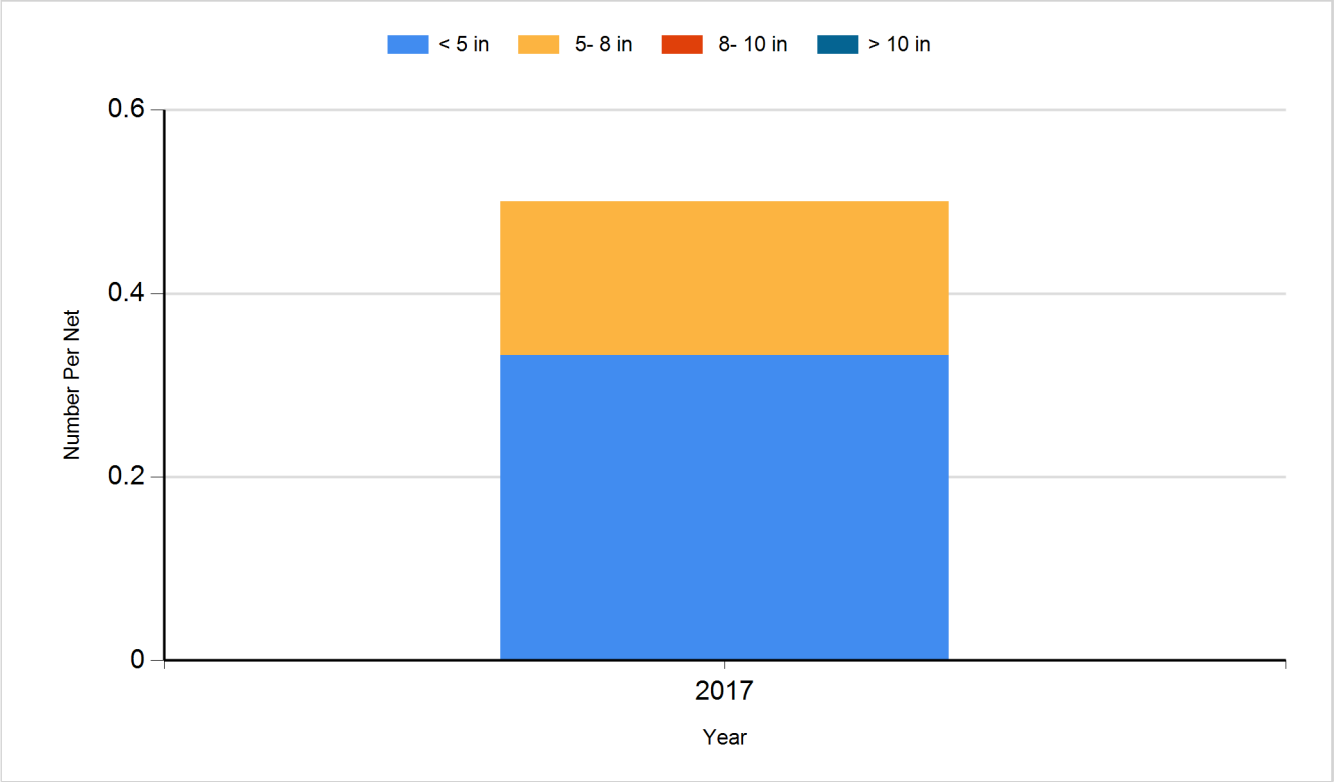


2024

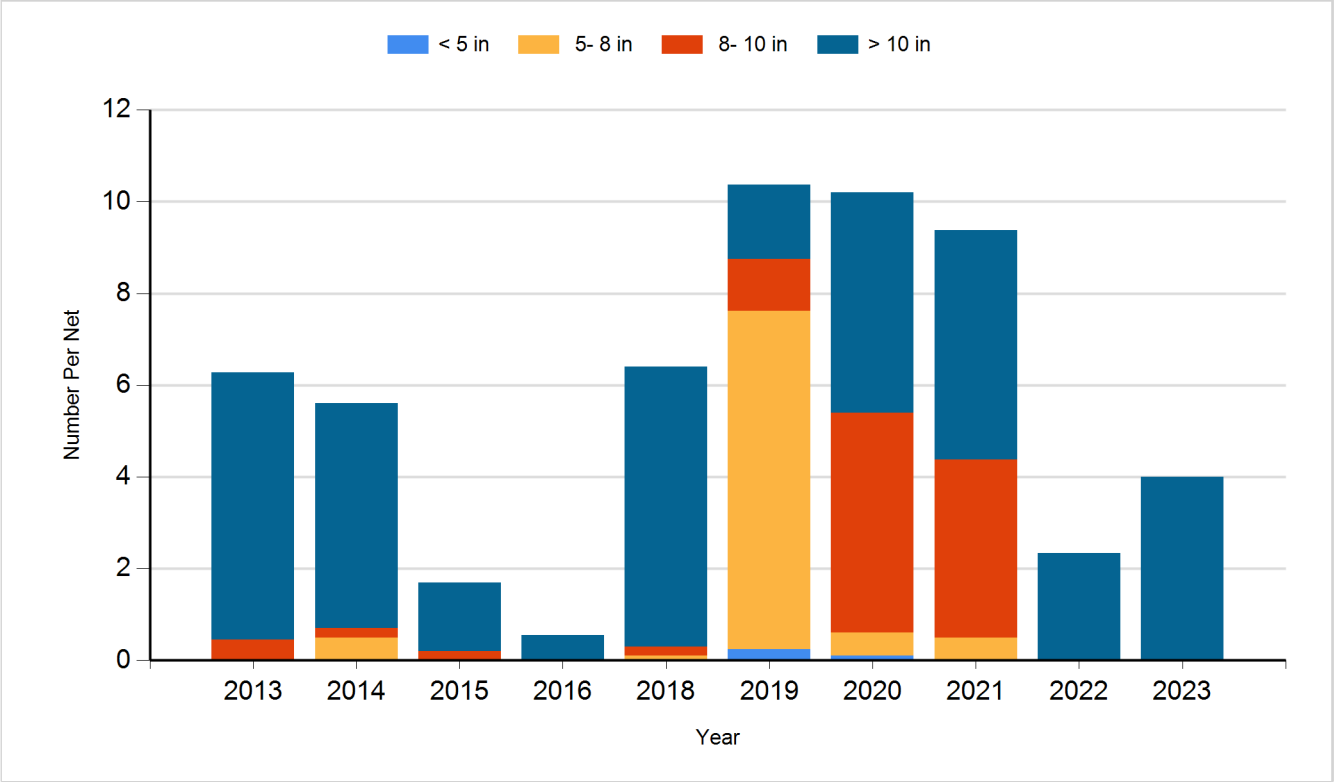
Historic Fish Sizes and Relative Abundance

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

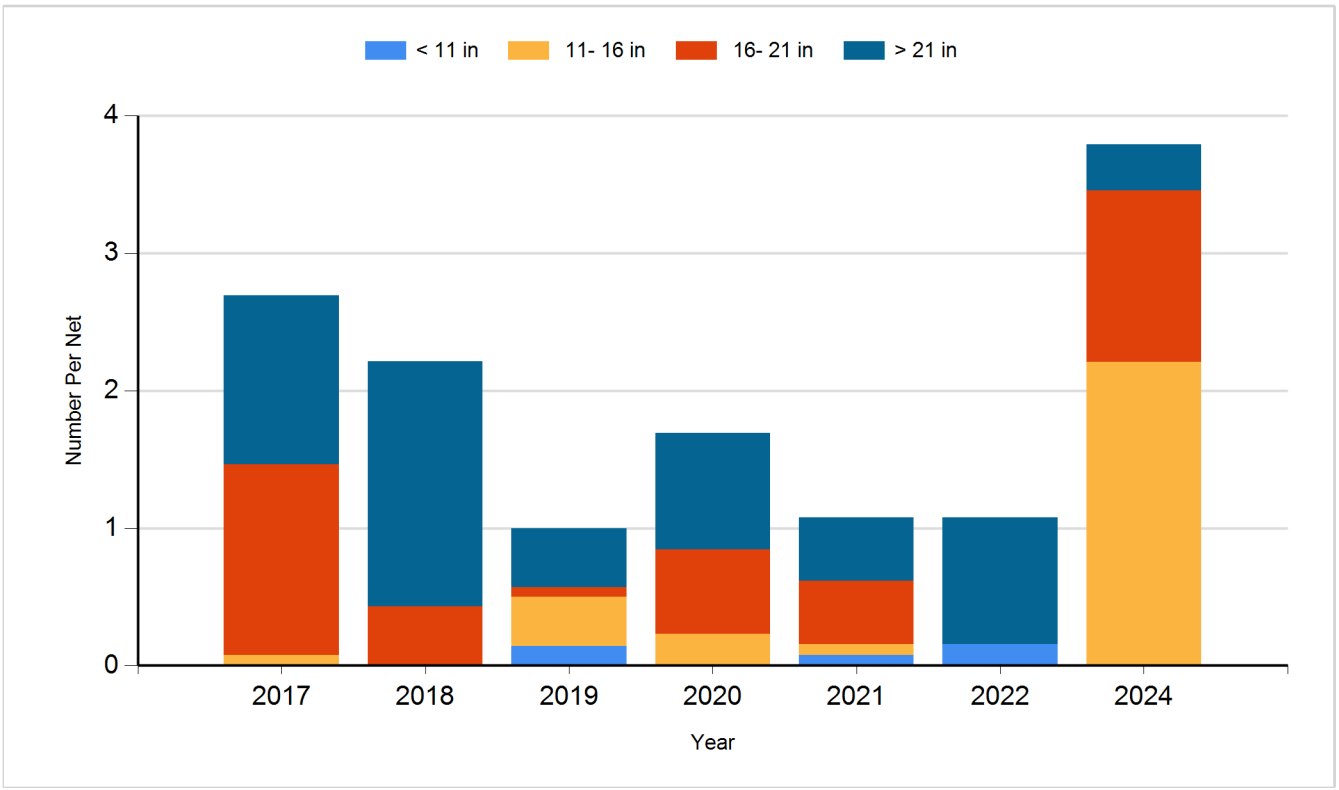
Species: Black Crappie
Gear: AFS std frame net



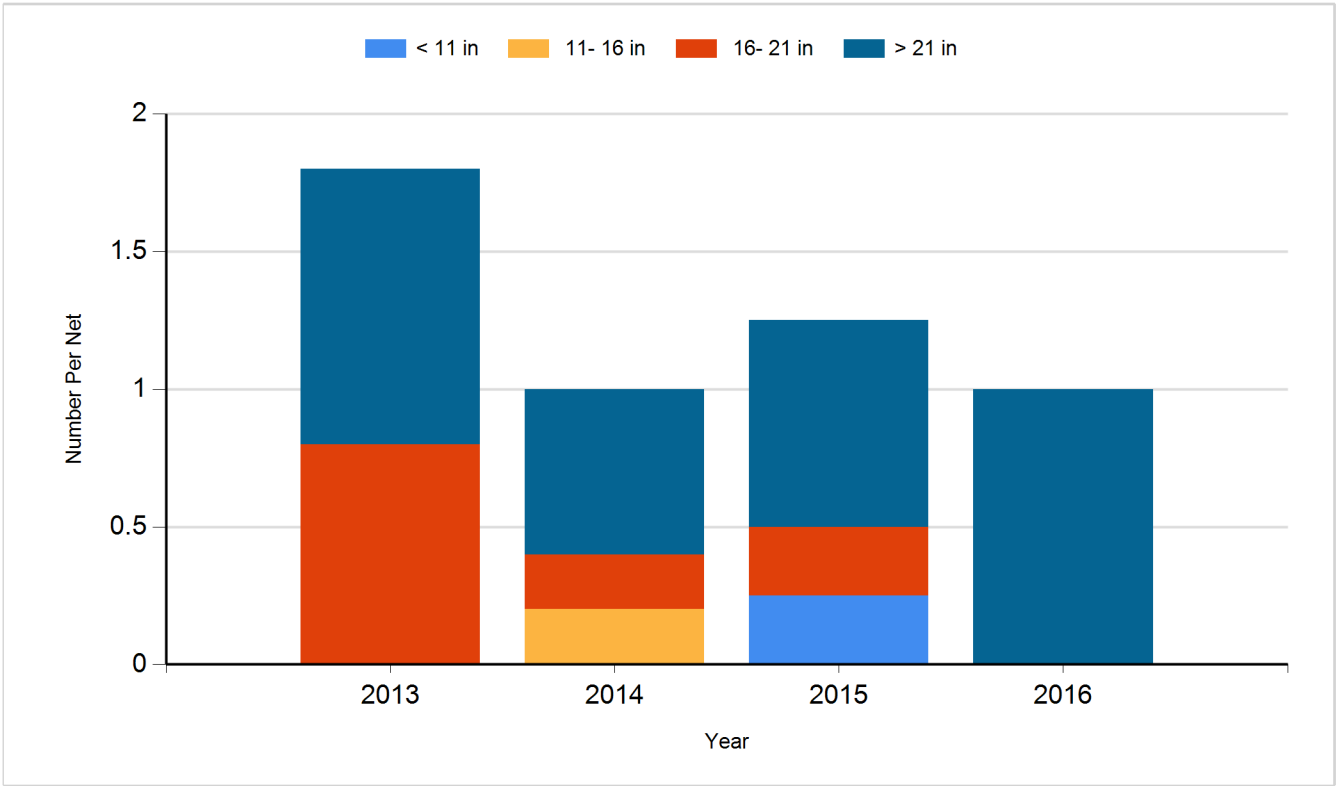
Species: Black Crappie
Gear: frame net (std 3/4 in)



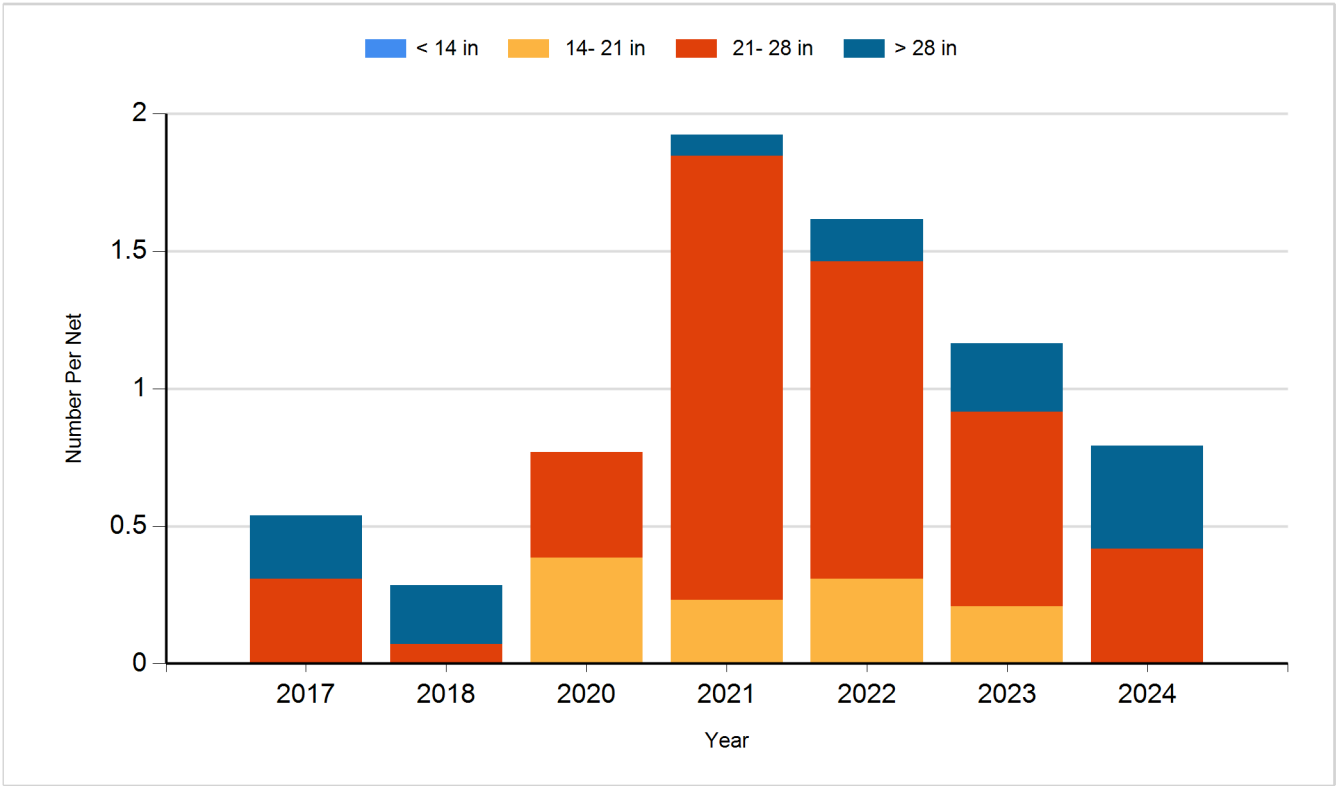
Species: Common Carp
Gear: AFS std gill net



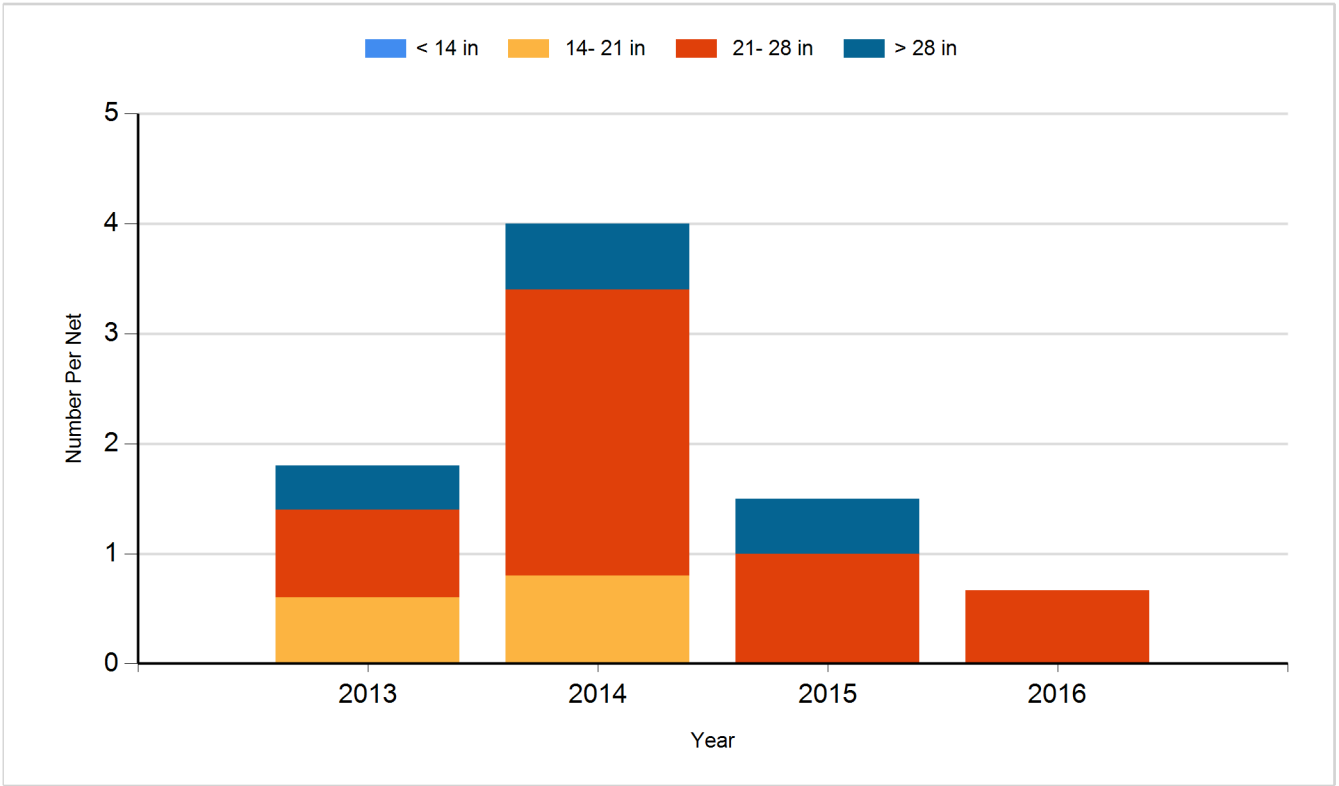
Species: Common Carp
Gear: std exp gill net



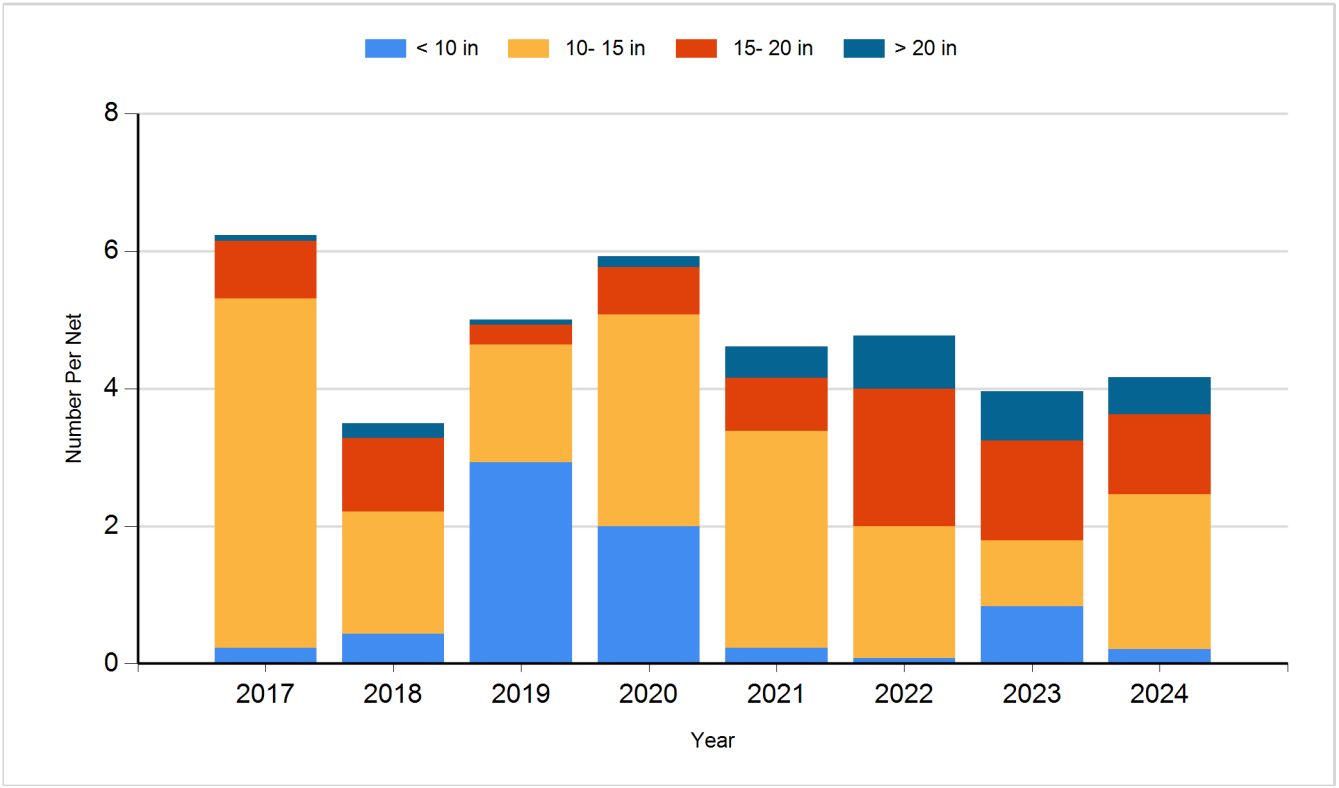
Species: Northern Pike
Gear: AFS std gill net



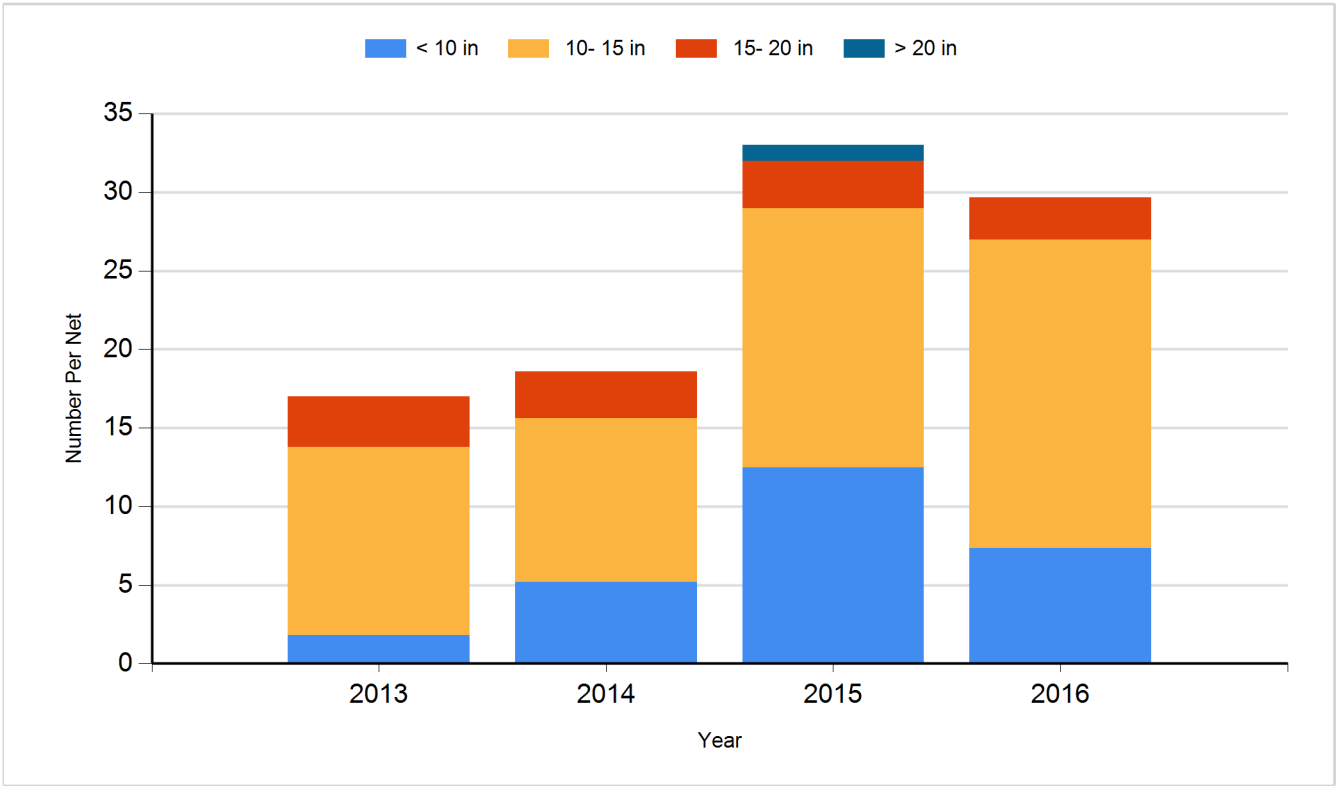
Species: Northern Pike
Gear: std exp gill net



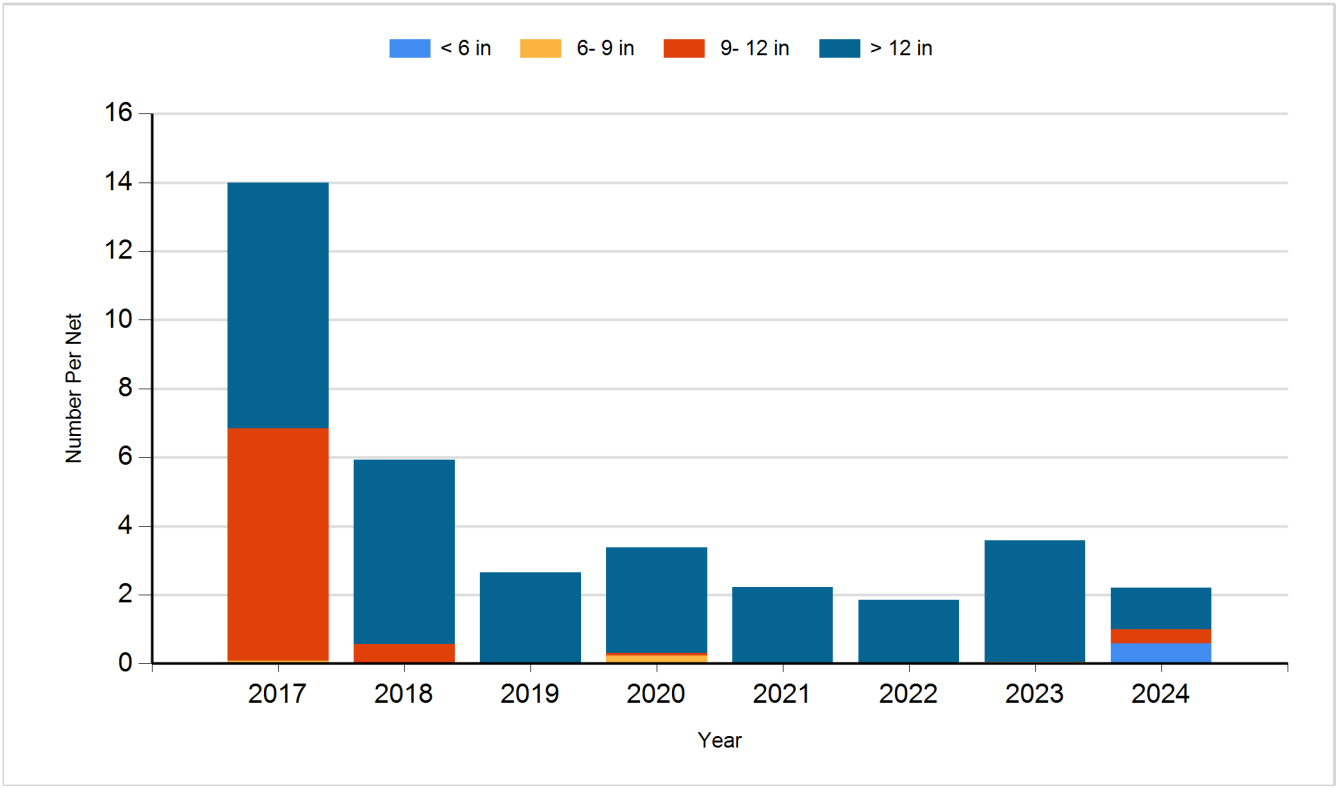
Species: Walleye
Gear: AFS std gill net



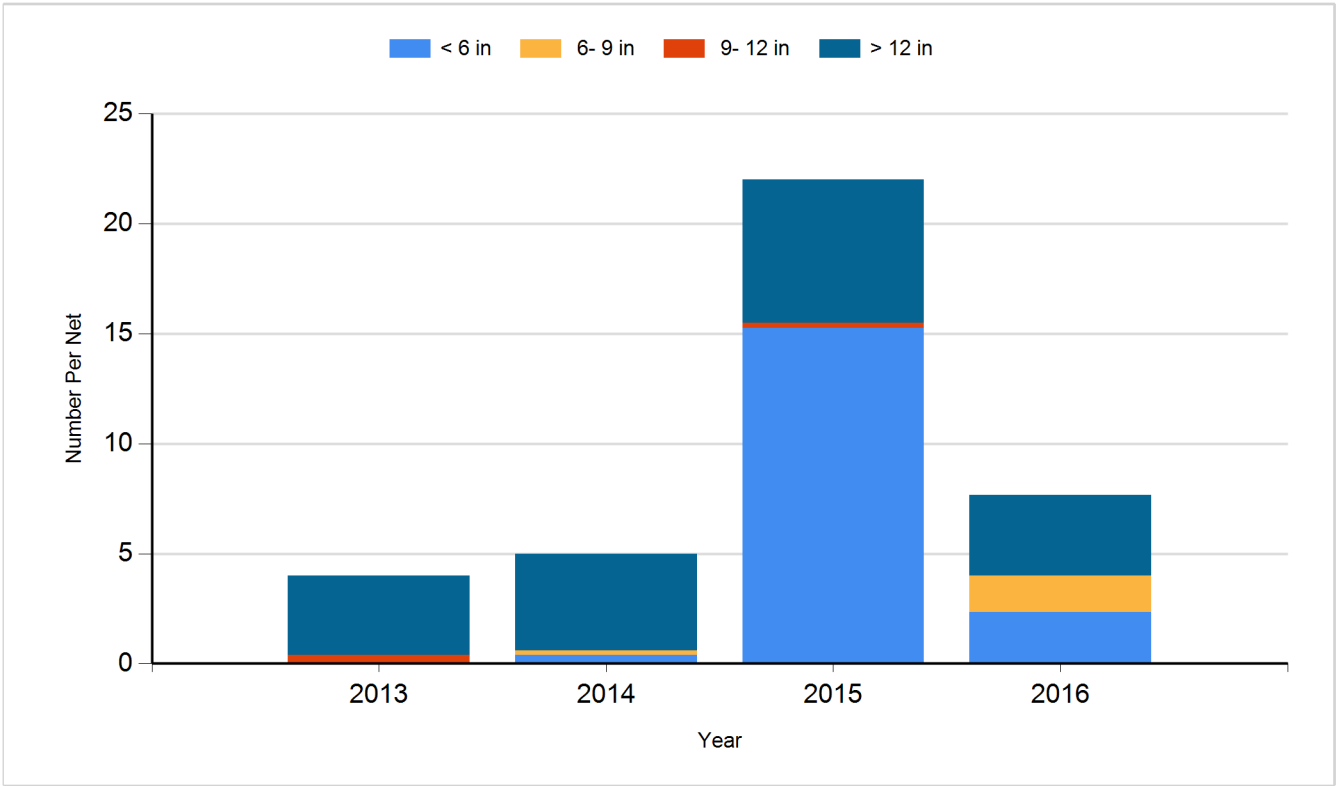
Species: Walleye
Gear: std exp gill net



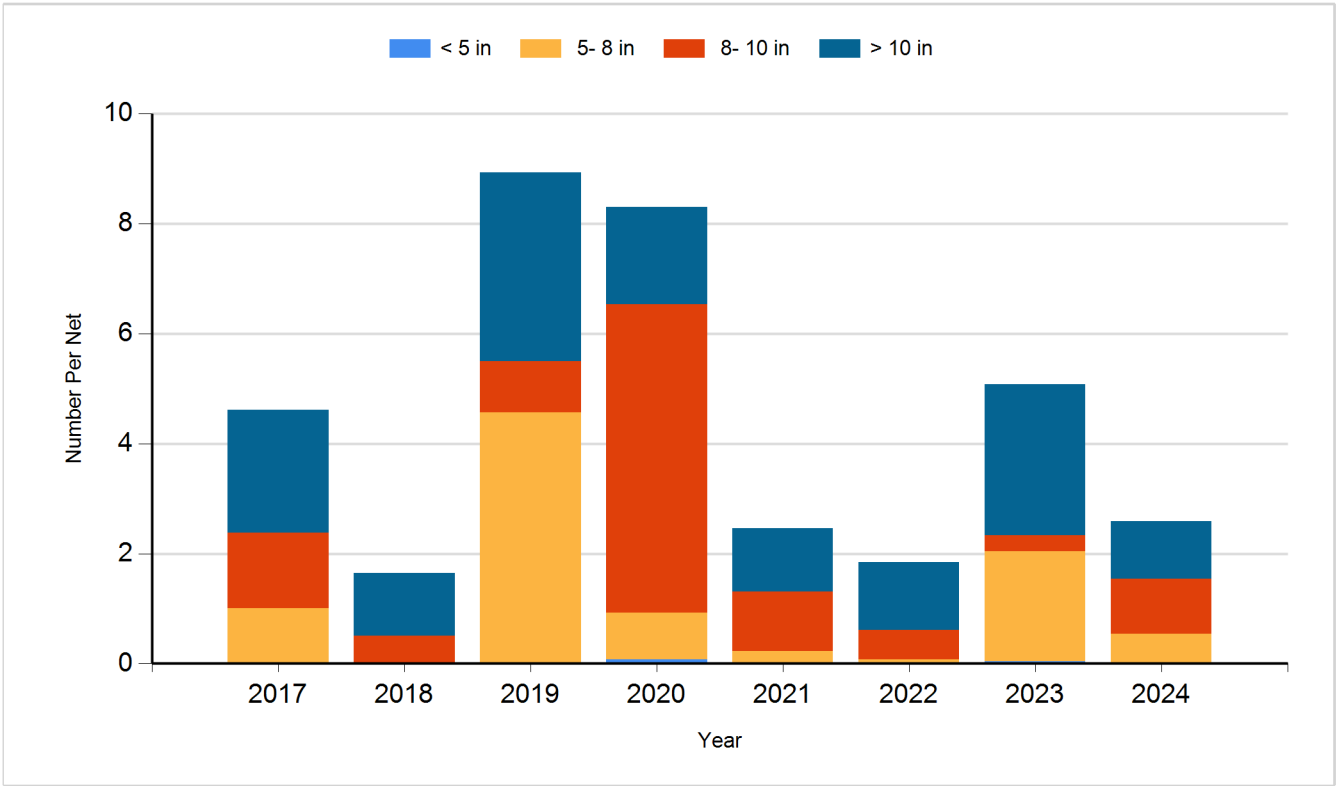
Species: White Bass
Gear: AFS std gill net



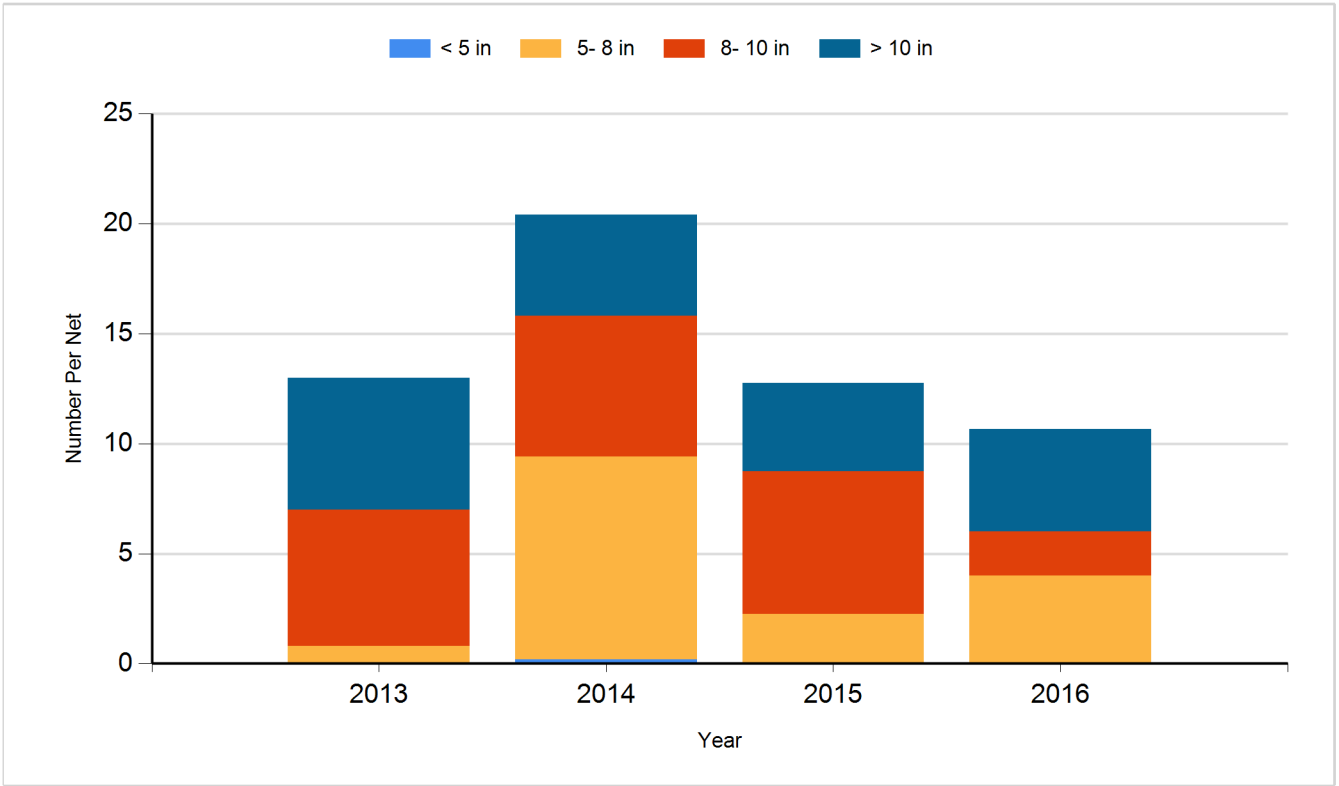
Species: White Bass
Gear: std exp gill net



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	6,200,000
2015	Walleye	Fry	6,200,000
2018	Walleye	Fry	6,200,000
2019	Walleye	Fry	6,200,000
2022	Walleye	Fry	11,800,000
2024	Walleye	Fry	9,000,000