SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Oahe Upper, Campbell County
ULO-Lake-933-000
2024

Lake Information

Name: Oahe Upper

County: Campbell

Surface Area: 124,724 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Sep 04, 2024	24 net-nights
AFS std gill net	Sep 05, 2024	24 net-nights
AFS std gill net	Sep 06, 2024	24 net-nights
AFS std gill net	Sep 20, 2024	24 net-nights
AFS std gill net	Sep 24, 2024	24 net-nights

Common Fish Species Present

Channel Catfish

Walleye

Smallmouth Bass

Yellow Perch

Common Carp

Freshwater Drum

Shorthead Redhorse

River Carpsucker

Gizzard Shad

Northern Pike

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	0	0.0	0.0	0		0			
	Black Crappie	2	0.0	0.0	0		0		118	5
	Channel Catfish	568	4.7	0.5	81	2	1	1	81	0
	Common Carp	67	0.6	0.1	100		69	8	88	1
	Flathead Catfish	0	0.0	0.0	0		0			
	Freshwater Drum	70	0.6	0.1	88	6	62	9	91	1
	Gizzard Shad	23	0.1	0.1	88				113	4
	Goldeye	21	0.0	0.0						
	Lake Herring	2	0.0	0.0	100		100		78	2
	Northern Pike	10	0.1	0.0	70		40		89	4
	River Carpsucker	25	0.2	0.1	100		88		104	2
	Sauger	5	0.0	0.0	80		80		70	2
	Shorthead Redhorse	69	0.6	0.1	88	6	71	8	94	4
	Smallmouth Bass	96	0.8	0.2	88	5	74	7	98	1
	Smallmouth Buffalo	3	0.0	0.0	100		33		89	3
	Walleye	382	3.0	0.3	54	4	10	2	83	1
	White Bass	10	0.1	0.0	78		78		101	3
	White Crappie	1	0.0	0.0	100		0		106	
	White Sucker	5	0.0	0.0	100		100		94	4
	Yellow Perch	92	0.8	0.1	46	7	11	5	85	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.

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

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS gill net (1/2 inch)*	Bigmouth Buffalo			0.0	0.0	0.0	0.0	0.0				0.00
	Black Crappie			0.0	0.0	0.0	0.0	0.0				0.00
	Channel Catfish			0.1	0.0	0.0	0.0	0.1				0.04
	Common Carp			0.0	0.0	0.1	0.1	0.1				0.06
	Emerald Shiner			0.0	0.0	0.0	0.0	0.0				0.00
	Freshwater Drum			0.0	0.0	0.0	0.1	0.1				0.04
	Gizzard Shad			1.3	0.0	0.0	0.0	0.0				0.26
	Goldeye			0.0	0.0	0.0	0.0	0.0				0.00
	Northern Pike			0.0	0.0	0.0	0.0	0.0				0.00
	Sauger			0.0	0.0	0.0	0.0	0.0				0.00
	Shorthead Redhorse			0.0	0.0	0.0	0.0	0.0				0.00
	Shortnose Gar			0.0	0.0	0.0	0.0	0.0				0.00
	Smallmouth Bass			0.0	0.0	0.0	0.1	0.0				0.02
	Spottail Shiner			0.1	0.0	0.7	0.2	0.3				0.26
	Walleye			0.5	0.2	0.6	1.0	0.5				0.56
	White Bass			0.3	0.0	0.1	0.1	0.3				0.16
	White Crappie			0.1	0.0	0.0	0.0	0.0				0.02
	Yellow Perch			0.4	0.2	0.9	0.2	0.1				0.36
AFS std gill net	Bigmouth Buffalo			0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.01
	Black Bullhead			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Black Crappie			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Carpsucker			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Channel Catfish			9.9	5.4	5.8	6.8	6.8	7.0	5.1	4.7	6.44
	Common Carp			0.2	0.3	0.6	0.4	0.3	0.3	0.3	0.6	0.38
	Flathead Catfish			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Freshwater Drum			1.1	0.5	0.8	0.9	1.1	0.2	0.6	0.6	0.73
	Gizzard Shad			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.03
	Goldeye			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Lake Herring			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Northern Pike			0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.14
	Redhorse			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	River Carpsucker			0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.25
	Sauger			0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.04
	Shorthead Redhorse			0.2	0.3	0.3	0.5	0.2	0.6	0.4	0.6	0.39

		CPUE										
Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
AFS std gill net	Shortnose Gar			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Smallmouth Bass			0.2	0.7	1.0	1.0	0.7	1.0	0.9	0.8	0.79
	Smallmouth Buffalo			0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.05
	Walleye			2.7	2.2	2.2	1.8	1.8	2.1	4.0	3.0	2.48
	White Bass			0.2	0.0	0.0	0.1	0.4	0.4	0.4	0.1	0.20
	White Crappie			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01
	White Sucker			0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.01
	Yellow Perch			0.7	0.6	1.0	1.2	0.7	0.5	0.5	0.8	0.75
boat shocker (night)	Walleye*			81.5			139.7					110.60
fall night EF-WAE*	Walleye					64.9						64.90
large seine*	Brassy Minnow	0.1	0.0	0.0	0.0	0.7						0.16
	Lake Herring	0.1	0.0	0.0	0.0	1.1						0.24
	Walleye	0.5	0.2	0.1	0.6	0.8						0.44
std exp gill net	Bigmouth Buffalo	0.0	0.0									0.00
	Black Crappie	0.0	0.2									0.10
	Channel Catfish	13.5	20.0									16.75
	Common Carp	0.9	2.0									1.45
	Freshwater Drum	0.8	1.3									1.05
	Goldeye	0.0	0.0									0.00
	Lake Herring	0.0	0.1									0.05
	Northern Pike	0.5	0.9									0.70
	River Carpsucker	0.6	0.3									0.45
	Sauger	0.1	0.1									0.10
	Shorthead Redhorse	0.7	0.3									0.50
	Shortnose Gar	0.0	0.0									0.00
	Smallmouth Bass	0.6	1.1									0.85
	Smallmouth Buffalo	0.2	0.3									0.25
	Walleye	9.3	7.4									8.35
	White Bass	0.8	0.3									0.55
	White Crappie	0.1	0.2									0.15
	White Sucker	0.1	0.2									0.15
	Yellow Perch	2.9	1.8									2.35
suspended gill net*	Channel Catfish				1.0							1.00
	Lake Herring				175.0							175.00
	Rainbow Smelt				9.5							9.50

10-Year Size Structure and Condition Statistics by Gear and Species

Species proportional size distribution (PSD), proportional size distribution of preferred length fish (PSD-P), and relative weight (Wr) collected by different gear types across 10 years.

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFS std gill net	Channel Catfish	PSD			53	65	71	71	86	88	81	81
		PSD-P			4	3	4	1	0	1	2	1
		Wr			81	84	85	86	83	80	83	81
	Common Carp	PSD			100	100	100	100	97	100	100	100
		PSD-P			54	82	80	85	53	73	63	69
		Wr			91	81	79	86	88	89	91	88
	Gizzard Shad	PSD			100					60	0	88
		Wr			99					119	114	113
	Northern Pike	PSD			100	100	100	100	85	100	100	70
		PSD-P			38	80	61	78	38	84	93	40
		Wr			88	88	91	92	96	94	87	89
	River Carpsucker	PSD			100	100	100	100	100	100	100	100
		PSD-P			93	100	90	100	95	100	91	88
		Wr			103	103	95	98	113	108	107	104
	Shorthead Redhorse	PSD			91	93	100	100	88	94	98	88
		PSD-P			36	48	82	84	71	58	63	71
		Wr			94	93	95	93	96	87	94	94
	Smallmouth Bass	PSD			69	94	85	60	59	86	88	88
		PSD-P			23	33	46	28	24	38	64	74
		Wr			94	97	96	103	94	97	105	98
	Walleye	PSD			20	32	30	26	19	19	40	54
		PSD-P			0	8	7	4	8	7	4	10
		Wr			81	82	82	80	78	82	87	83
	Yellow Perch	PSD			64	74	49	40	64	89	44	46
		PSD-P			17	26	8	4	4	18	11	11
		Wr			85	92	102	94	88	87	93	85
boat shocker (night)	Walleye	PSD			0			22				
		PSD-P			0			0				
std exp gill net	Channel Catfish	PSD	60	66								
		PSD-P	10	3								
		Wr	83	81								
	Common Carp	PSD	100	100								

			Year									
Gear	Species	Index	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
std exp gill net	Common Carp	PSD-P	75	81								
		Wr	87	87								
	Northern Pike	PSD	11	76								
		PSD-P	0	6								
		Wr	80	88								
	River Carpsucker	PSD	90	100								
		PSD-P	90	100								
		Wr	98	98								
	Shorthead Redhorse	PSD	92	83								
		PSD-P	83	83								
		Wr	94	92								
	Smallmouth Bass	PSD	30	70								
		PSD-P	30	35								
		Wr	100	89								
	Walleye	PSD	24	16								
		PSD-P	0	2								
		Wr	83	80								
	Yellow Perch	PSD	29	61								
		PSD-P	2	15								
		Wr	93	90								
suspended gill net	Channel Catfish	PSD				100						
		PSD-P				50						

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	381	241 (51)	307 (95)	365 (41)	411 (38)	433 (92)	475 (35)	483 (5)	571 (10)	567 (4)	649 (10)
2023	526	253 (77)	296 (66)	344 (84)	373 (174)	395 (87)	466 (17)	486 (6)	542 (4)	572 (9)	683 (6)
2022	286	232 (15)	261 (37)	301 (132)	335 (57)	381 (11)	468 (11)	515 (2)	464 (11)	571 (3)	682 (6)
2021	315	214 (19)	241 (126)	301 (109)	356 (27)	424 (13)	464 (6)	480 (5)	571 (2)	656 (2)	649 (9)
2020	254	207 (87)	281 (82)	318 (33)	386 (25)	413 (11)	441 (12)	604 (1)	651 (1)		746 (2)
2019	268	216 (68)	271 (58)	329 (57)	371 (35)	390 (29)	472 (3)	476 (2)	432 (1)		602 (17)
2018	231	207 (24)	279 (61)	337 (42)	381 (76)	422 (7)	512 (3)	552 (5)	643 (1)	569 (8)	566 (3)
2017	186	201 (31)	263 (28)	335 (101)	403 (18)	483 (1)	446 (4)	445 (1)	455 (4)		
2016	171	182 (14)	273 (126)	356 (11)	410 (5)	408 (6)	466 (6)	474 (3)			
2015	271	214 (112)	322 (47)	362 (62)	385 (20)	392 (7)	398 (24)				

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).

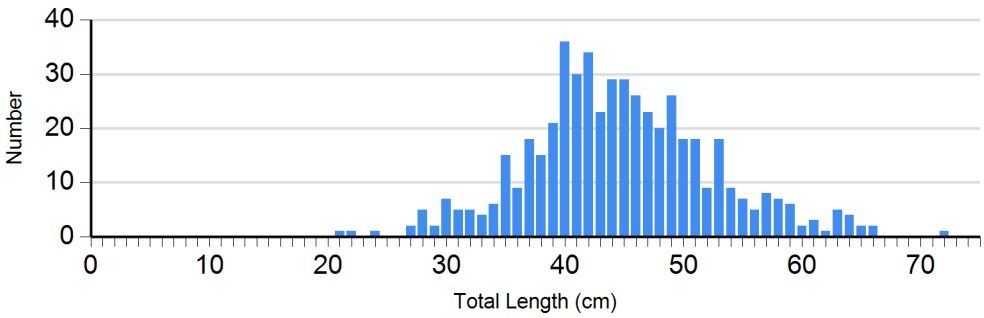
		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Channel Catfish Gill Net	2020	176	87 (0.5)	432	85 (0.5)	5	85 (6.3)	0	
	2021	110	87 (1.2)	687	82 (0.3)	3	87 (10.7)	1	111
	2022	103	83 (1.1)	718	80 (0.3)	7	86 (5.5)	0	
	2023	120	84 (1.4)	485	83 (0.4)	11	81 (3.3)	0	
	2024	107	83 (0.6)	450	81 (0.3)	3	89 (10.4)	0	
Common Carp Gill Net	2020	0		6	88 (1.9)	32	85 (2.7)	1	100
	2021	1	86	17	91 (3.1)	19	88 (4.6)	1	50
	2022	0		11	91 (2.3)	29	88 (1.4)	0	
	2023	0		14	95 (6.1)	23	89 (1.5)	1	84
	2024	0		21	91 (1.2)	45	86 (1.5)	1	79
Northern Pike Gill Net	2020	0		2	86 (1.2)	6	93 (4.8)	1	97
	2021	2	81 (5.4)	6	98 (2.2)	3	101 (7.8)	2	100 (4.6)
	2022	0		3	82 (1.6)	14	96 (3.0)	2	103 (3.6)
	2023	0		1	96	8	90 (1.7)	5	79 (7.2)
	2024	3	80 (3.5)	3	89 (7.2)	2	100 (8.9)	2	89 (3.7)
Walleye Gill Net	2020	122	81 (0.6)	36	77 (0.8)	2	86 (4.4)	4	92 (4.4)
	2021	177	78 (0.5)	23	75 (0.9)	10	81 (2.0)	8	87 (3.0)
	2022	206	82 (0.4)	30	82 (1.4)	10	81 (2.7)	7	88 (3.2)
	2023	296	88 (4.0)	172	85 (0.5)	12	86 (1.6)	10	84 (4.7)
	2024	165	84 (0.5)	155	82 (0.5)	23	82 (1.3)	13	90 (3.2)
Yellow Perch Gill Net	2020	62	97 (1.9)	38	90 (1.1)	4	84 (2.4)	0	
	2021	30	97 (7.7)	50	84 (1.8)	3	78 (4.3)	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	7	86 (1.4)	44	87 (0.8)	11	86 (1.5)	0	
	2023	34	95 (6.5)	20	93 (1.7)	7	87 (4.2)	0	
	2024	50	87 (1.1)	32	84 (1.1)	9	80 (2.0)	1	72

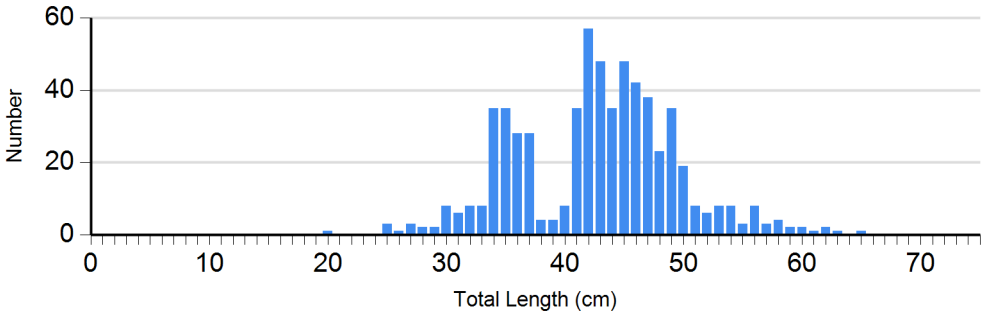
Length Frequency Distribution

Length frequency histogram of species sampled by year.

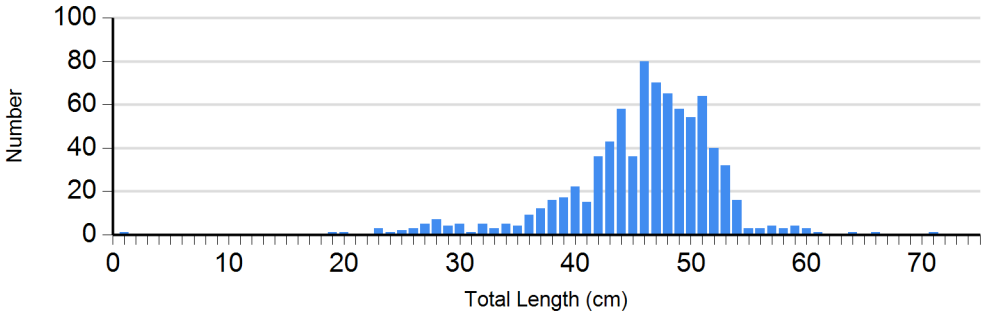
Species: Channel Catfish
Gear: AFS std gill net



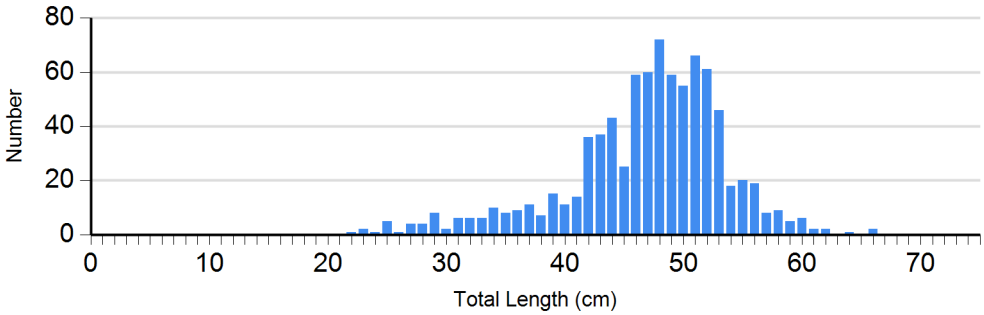
2019



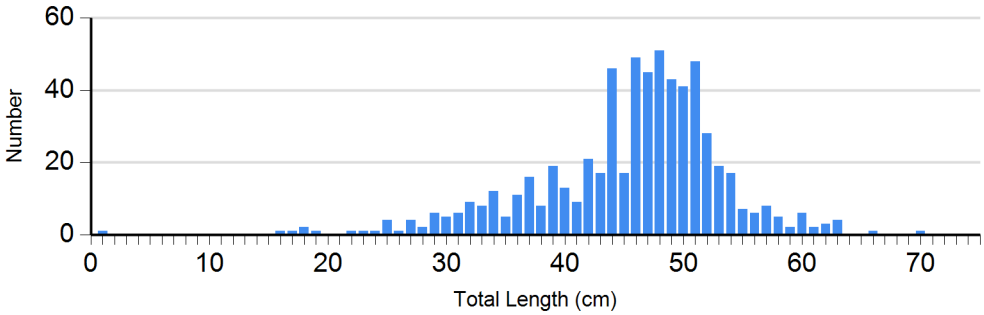
2020



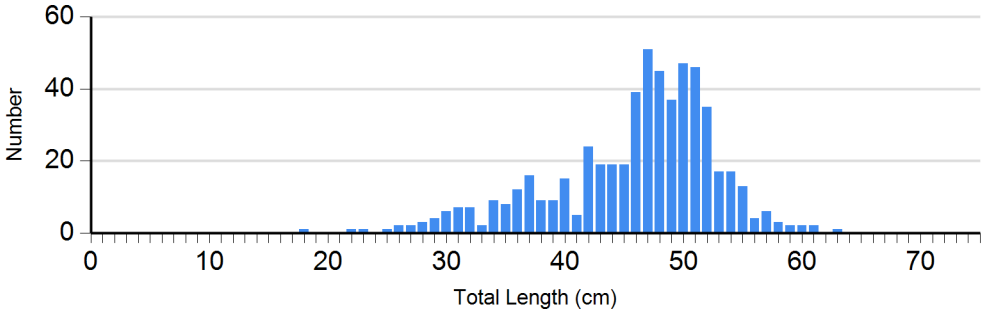
2021



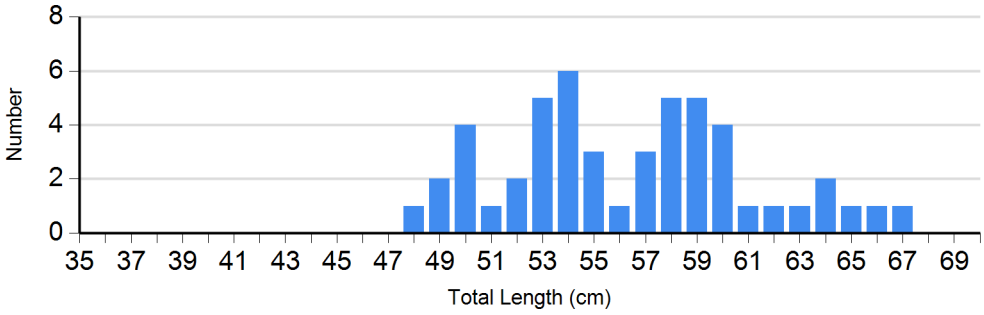
2022

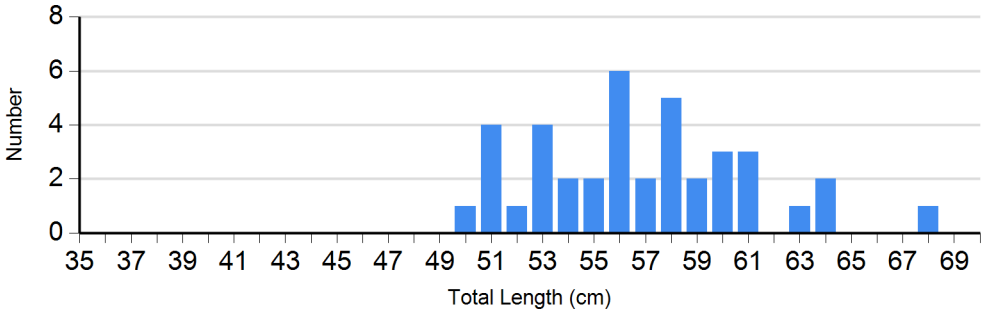


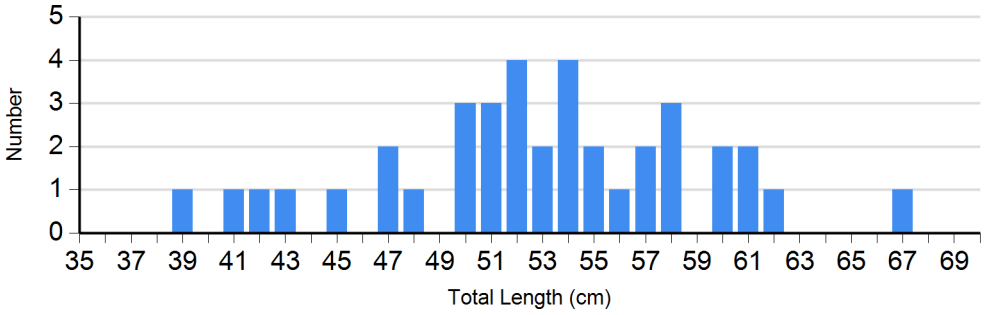
2023

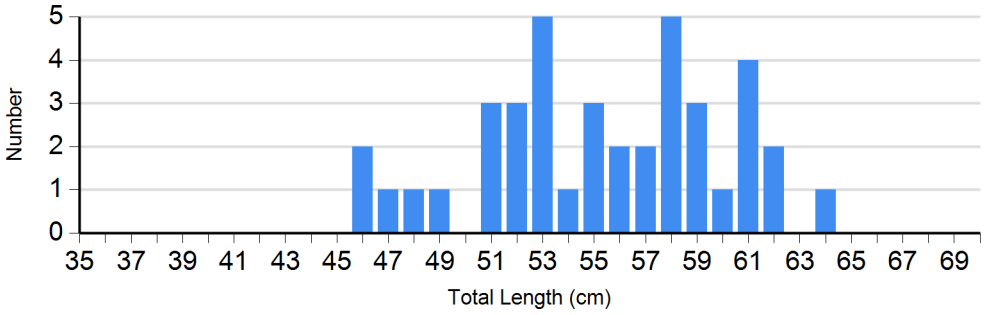


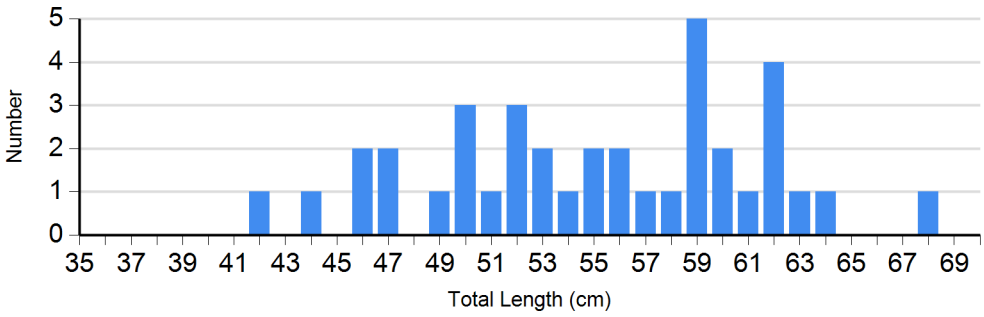
Species: Common Carp
Gear: AFS std gill net











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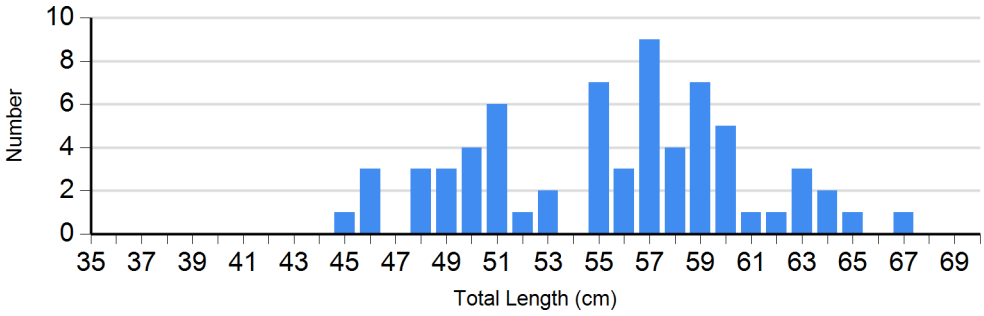
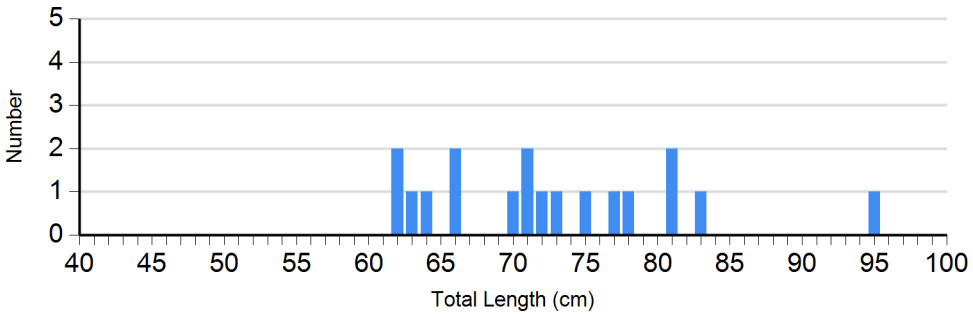


2024

Species: Northern Pike
Gear: AFS std gill net



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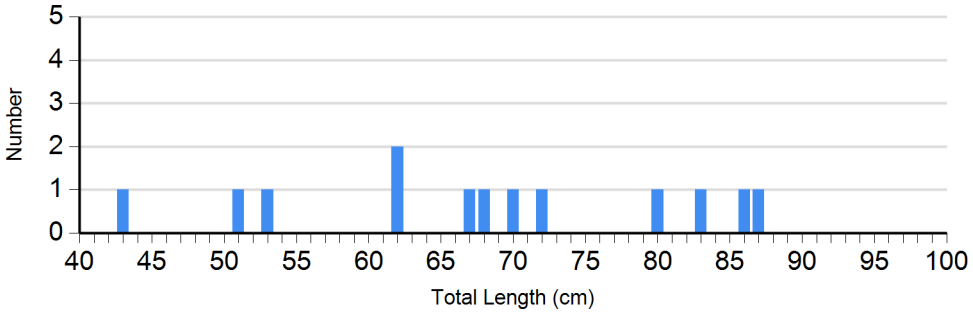

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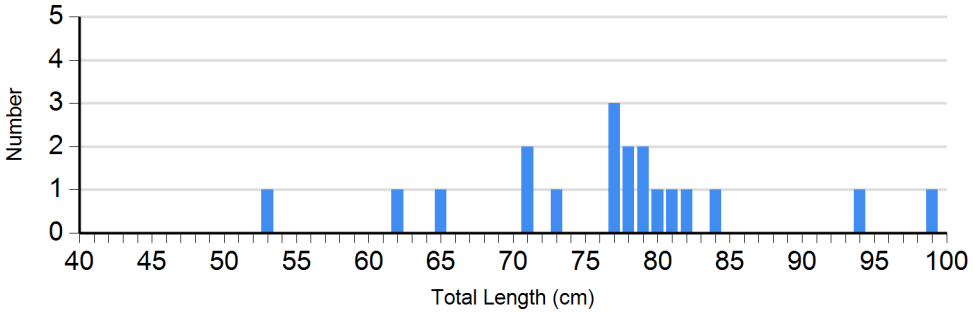

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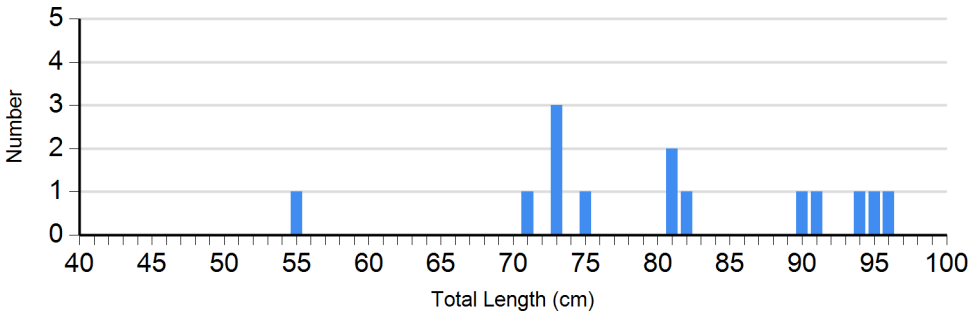

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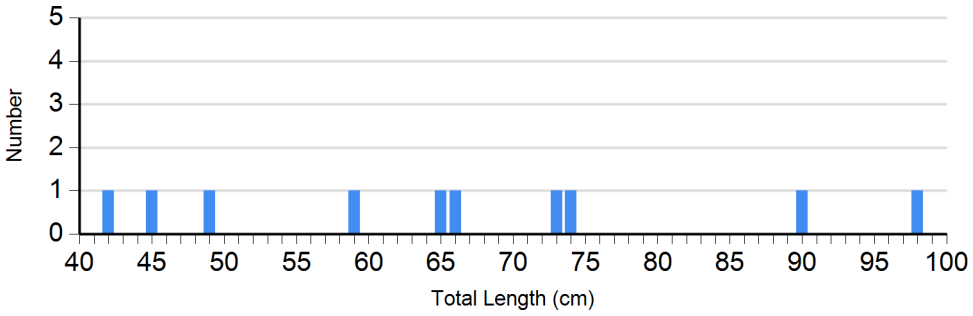
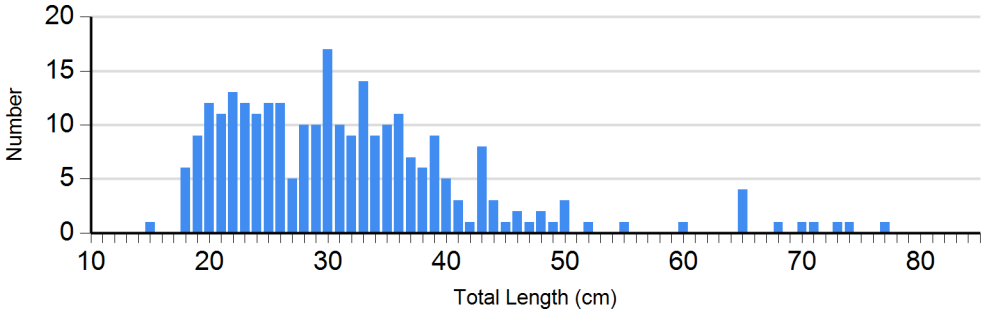


2024

Species: Walleye
Gear: AFS std gill net



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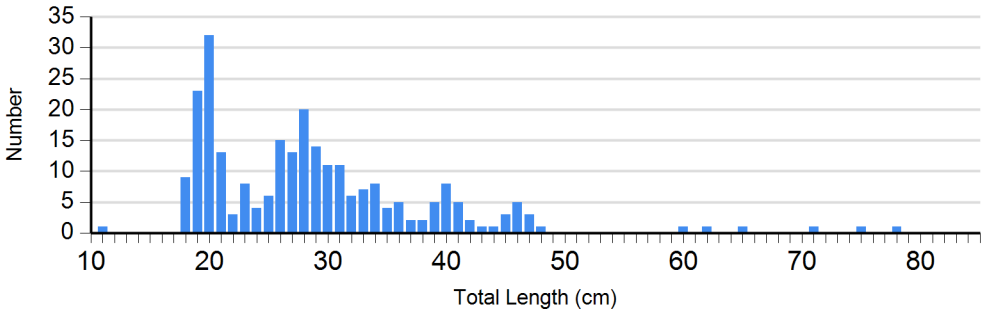
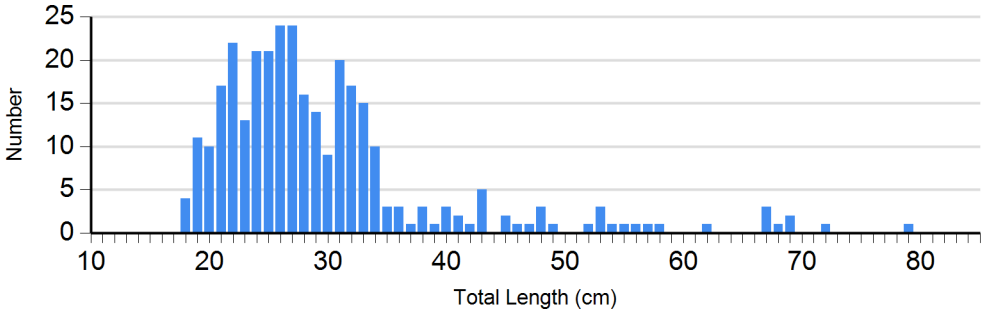


2020



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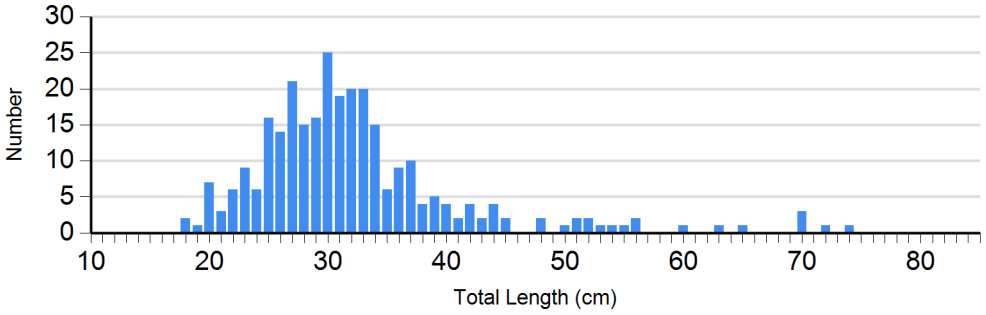

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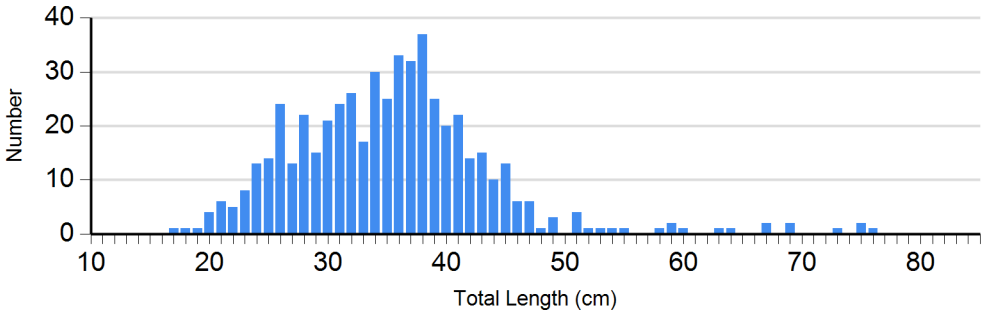

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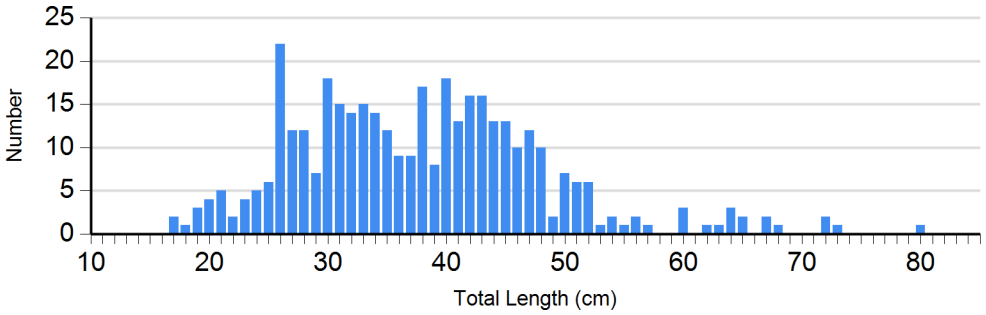
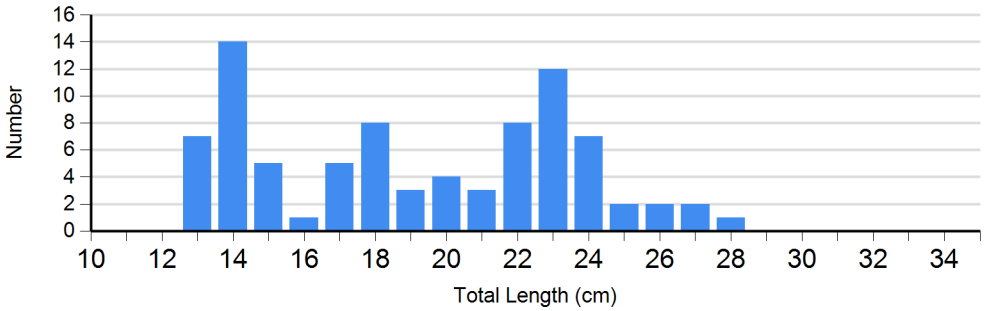
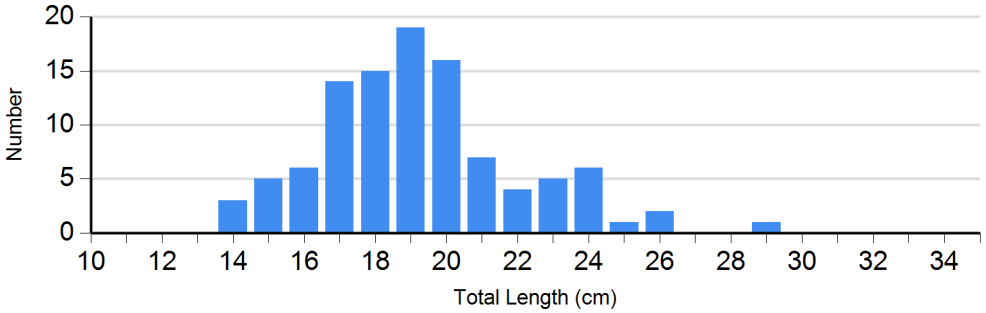


2024

Species: Yellow Perch
Gear: AFS std gill net



2019



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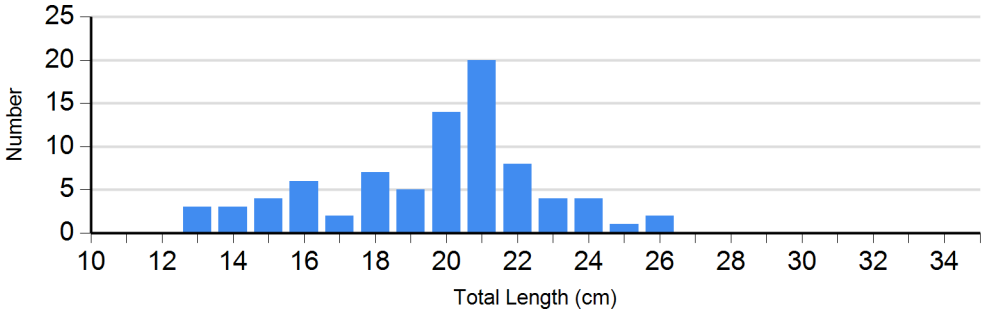

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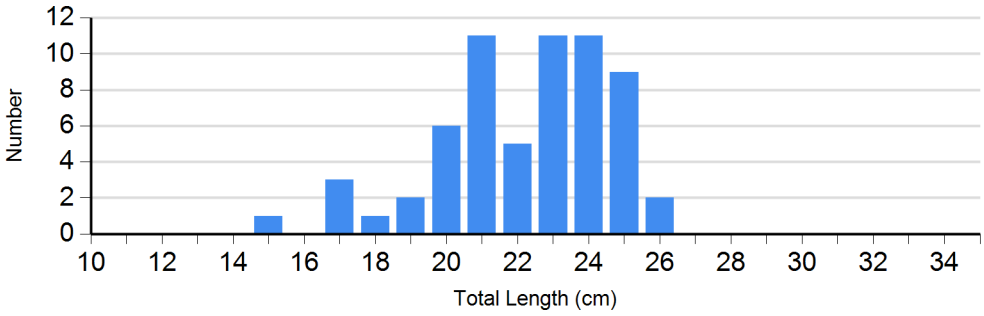

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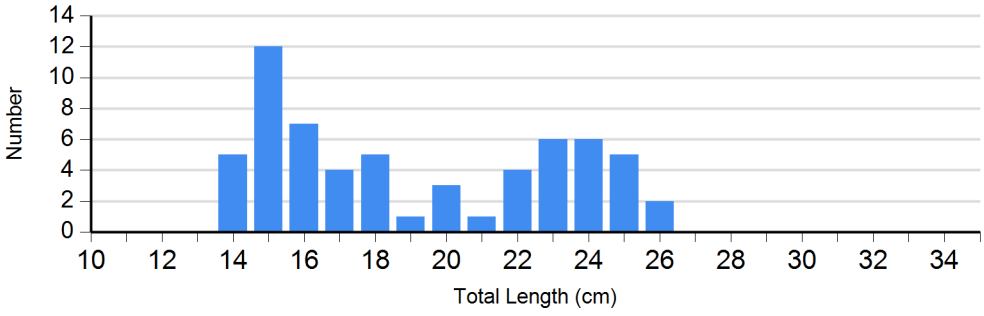

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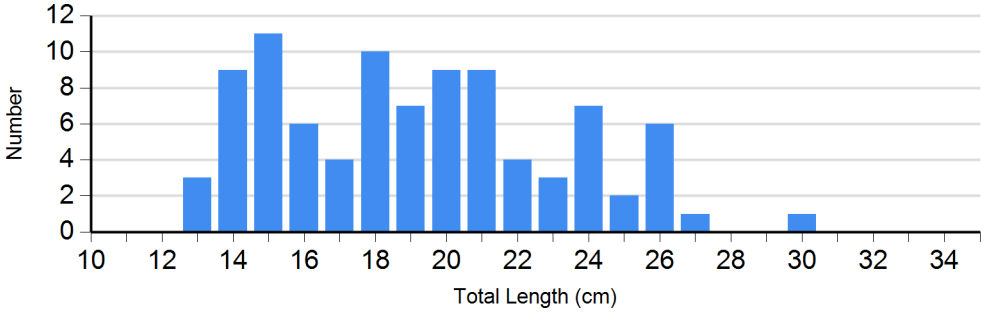
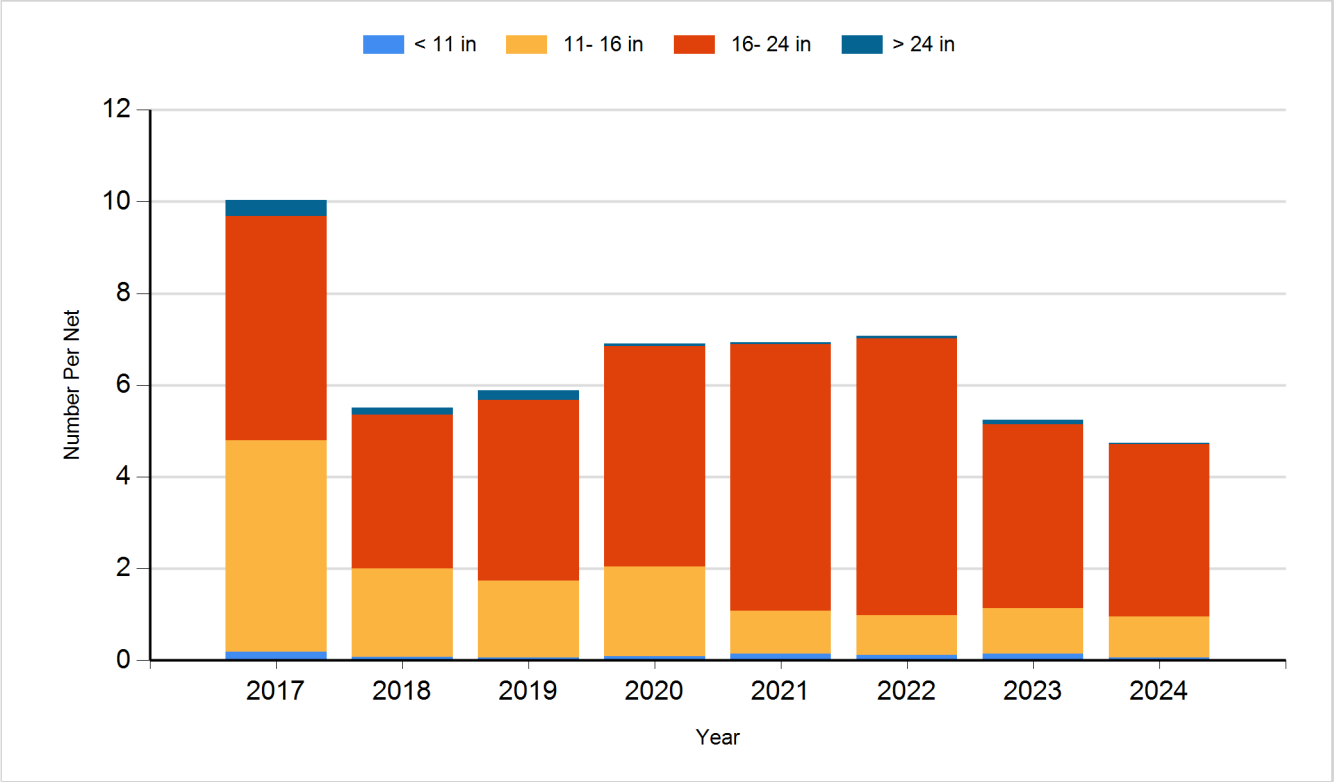


2024

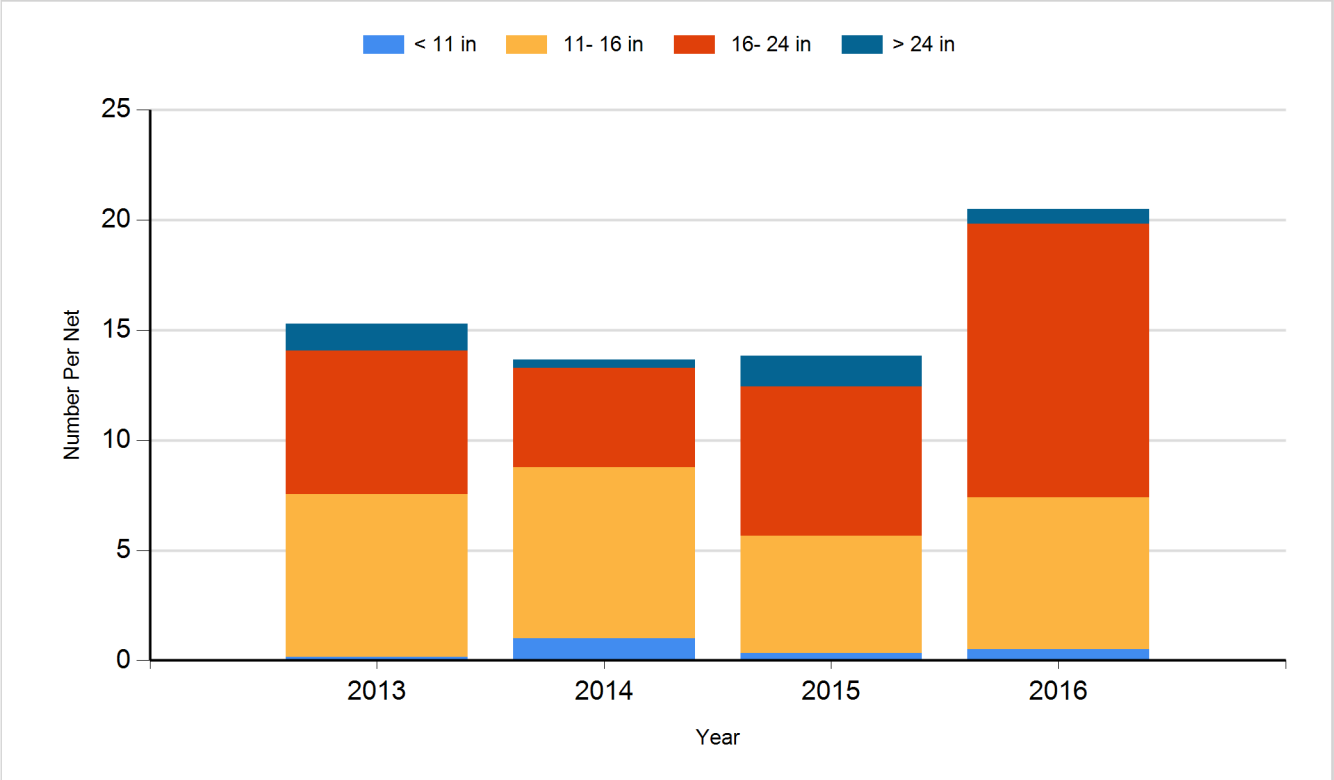
Historic Fish Sizes and Relative Abundance

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

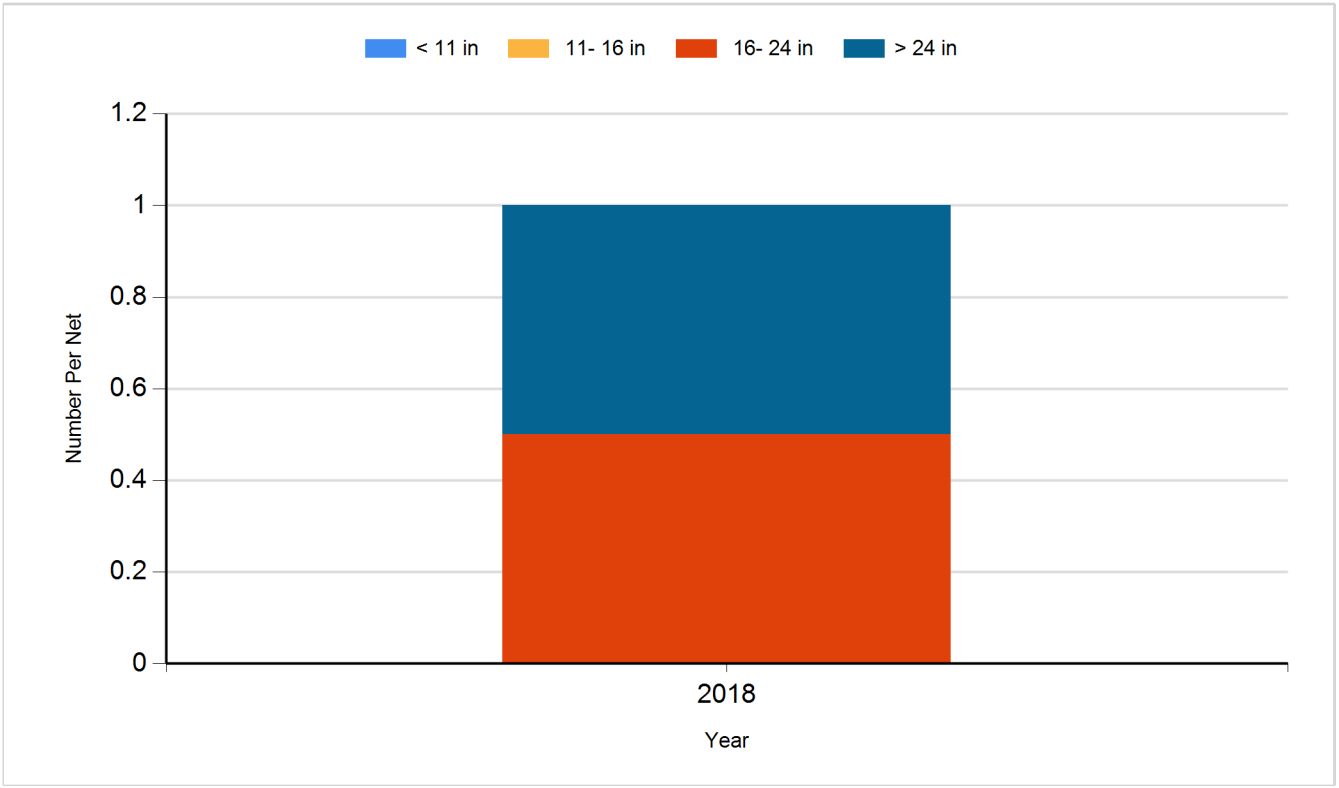
Species: Channel Catfish
Gear: AFS std gill net



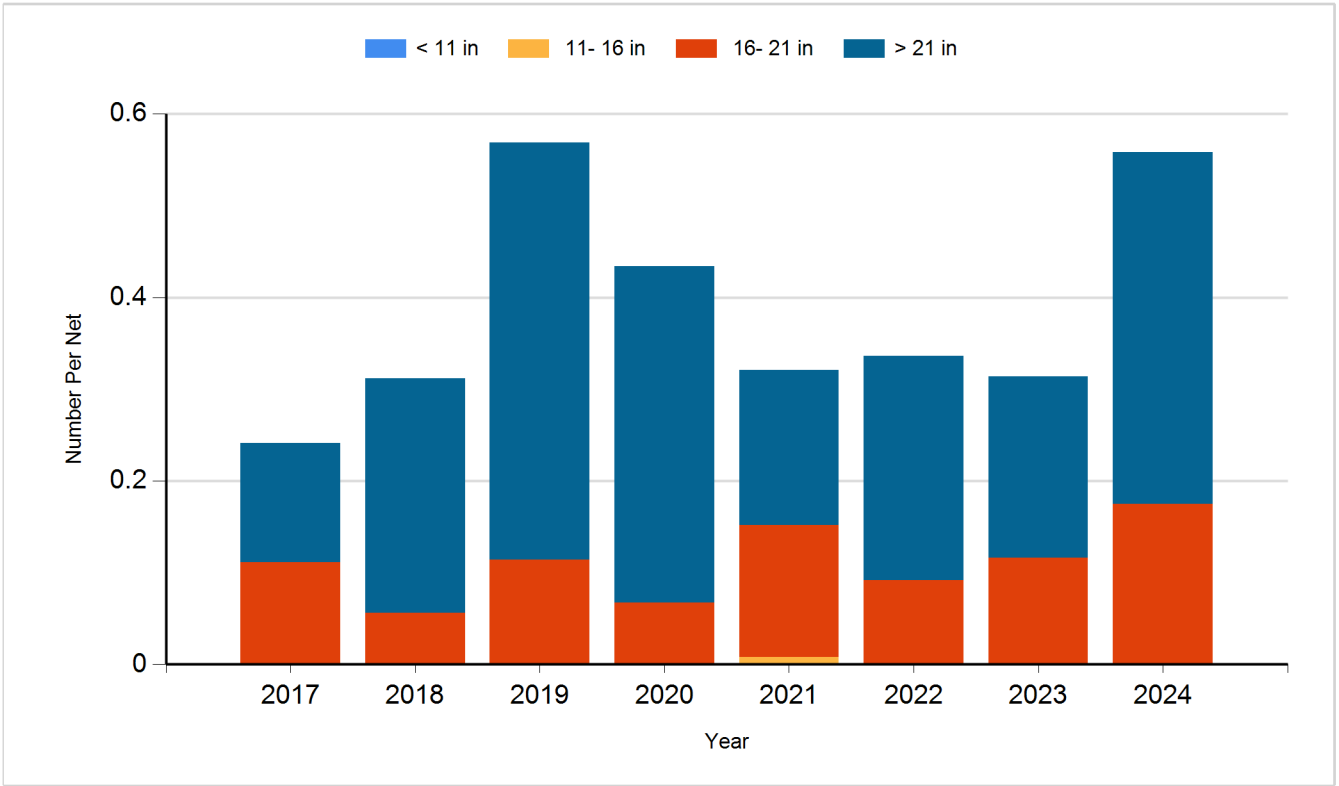
Species: Channel Catfish
Gear: std exp gill net



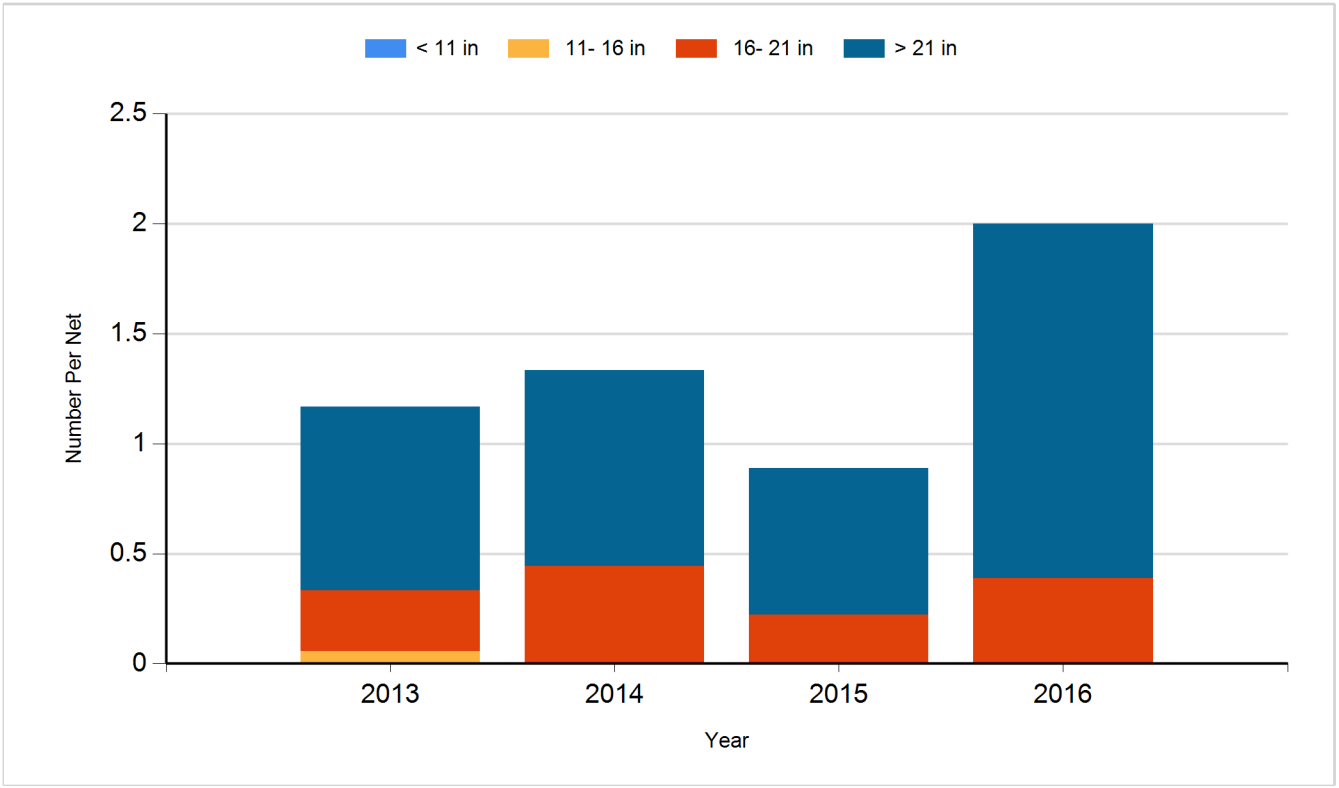
Species: Channel Catfish
Gear: suspended gill net



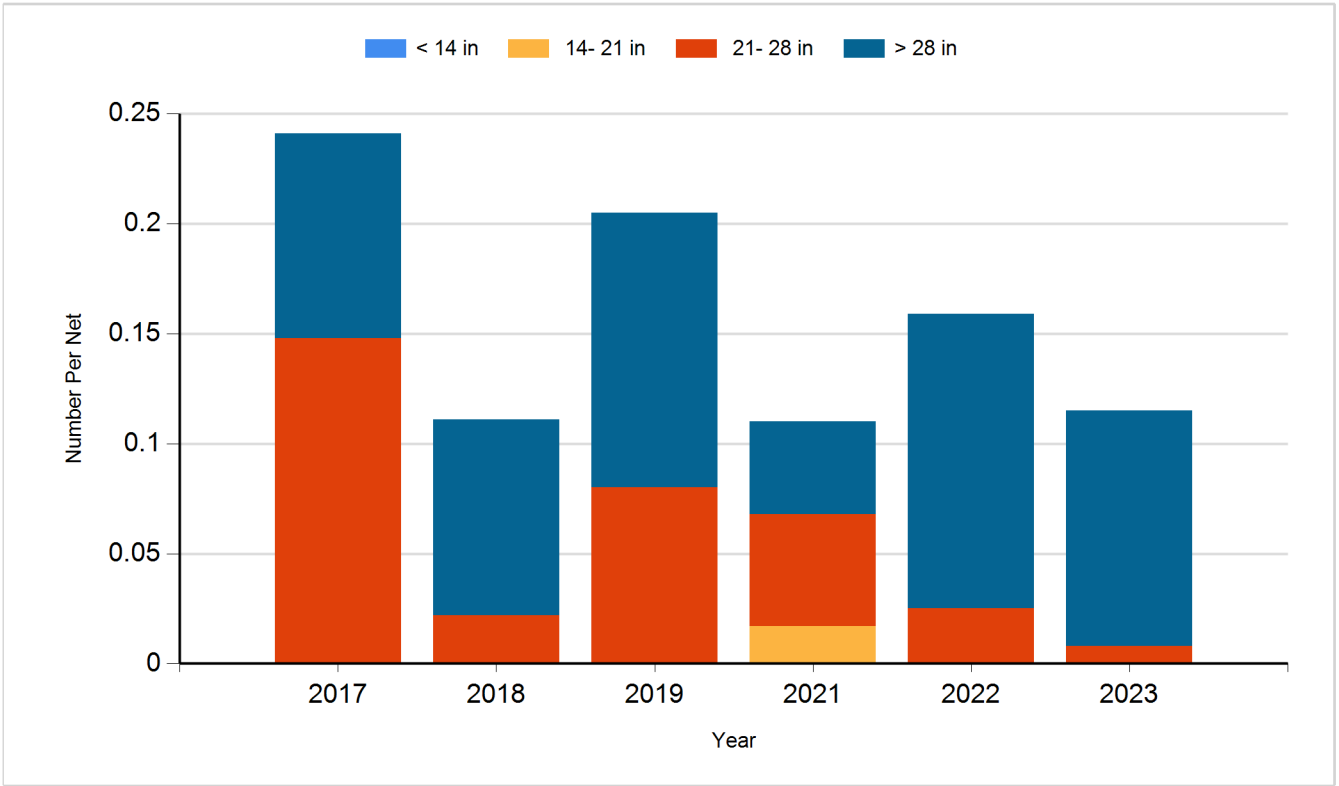
Species: Common Carp
Gear: AFS std gill net



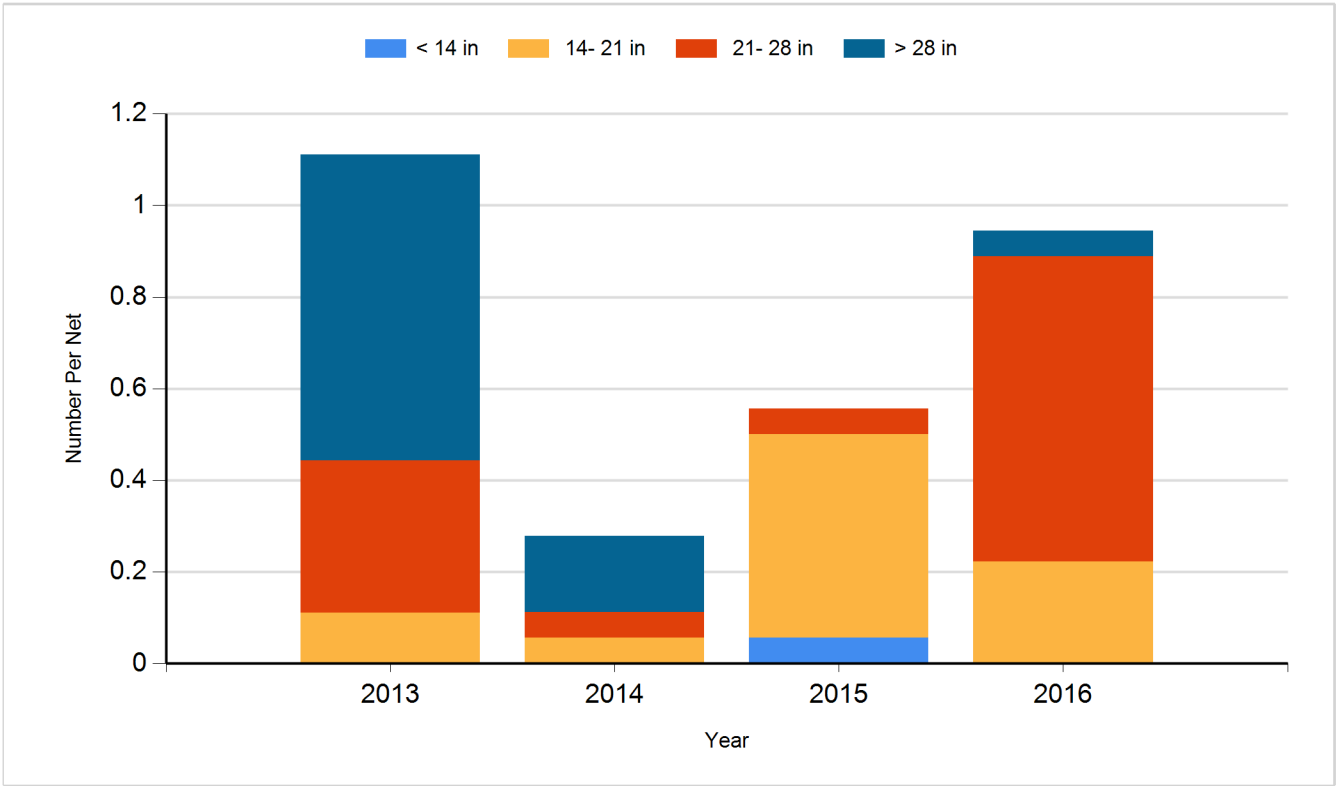
Species: Common Carp
Gear: std exp gill net



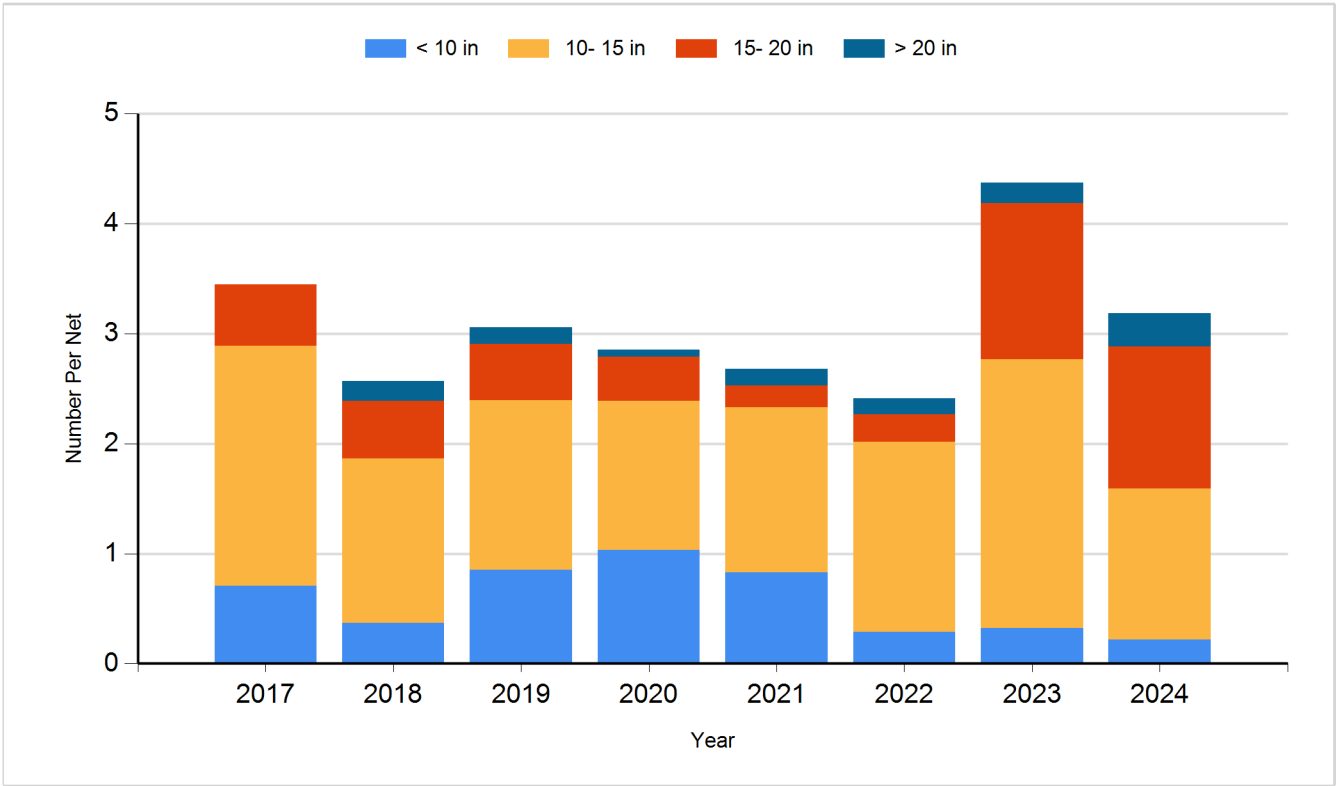
Species: Northern Pike
Gear: AFS std gill net



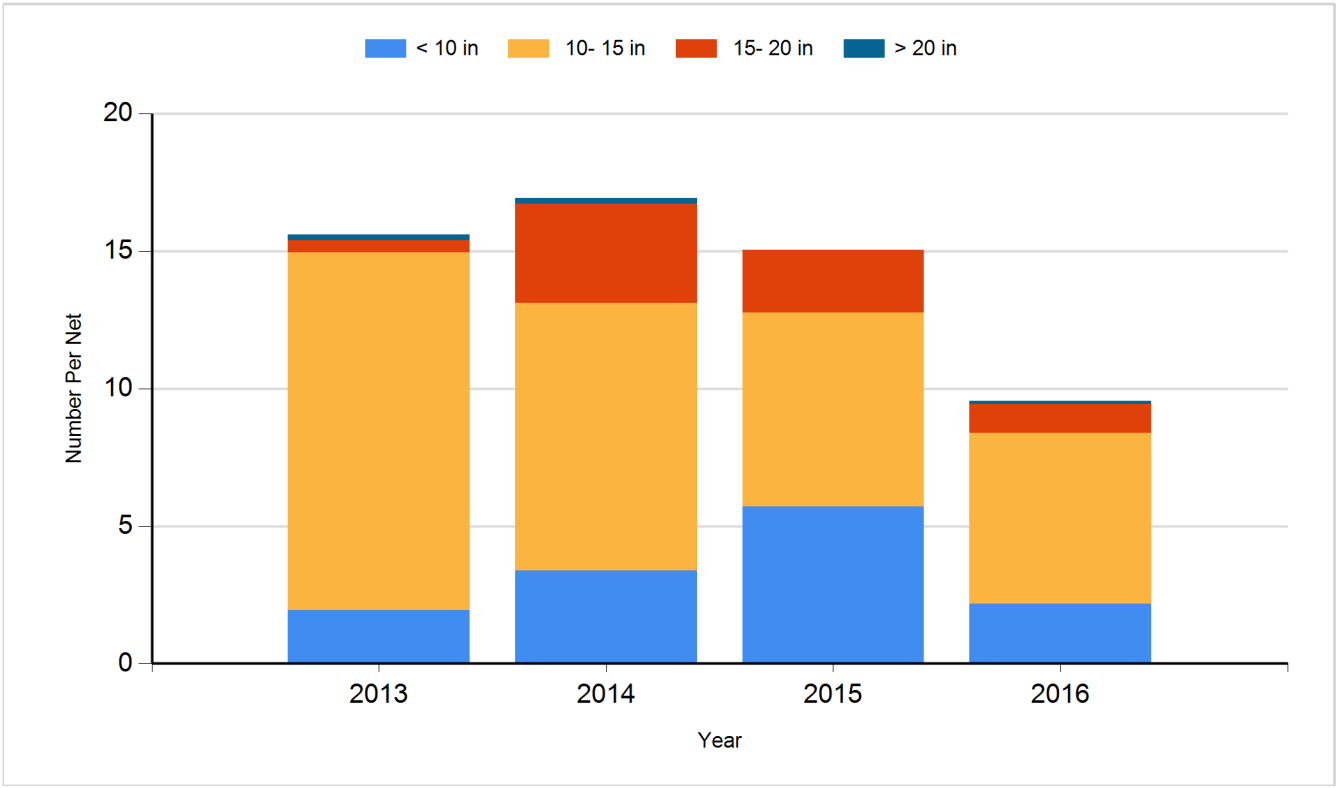
Species: Northern Pike
Gear: std exp gill net



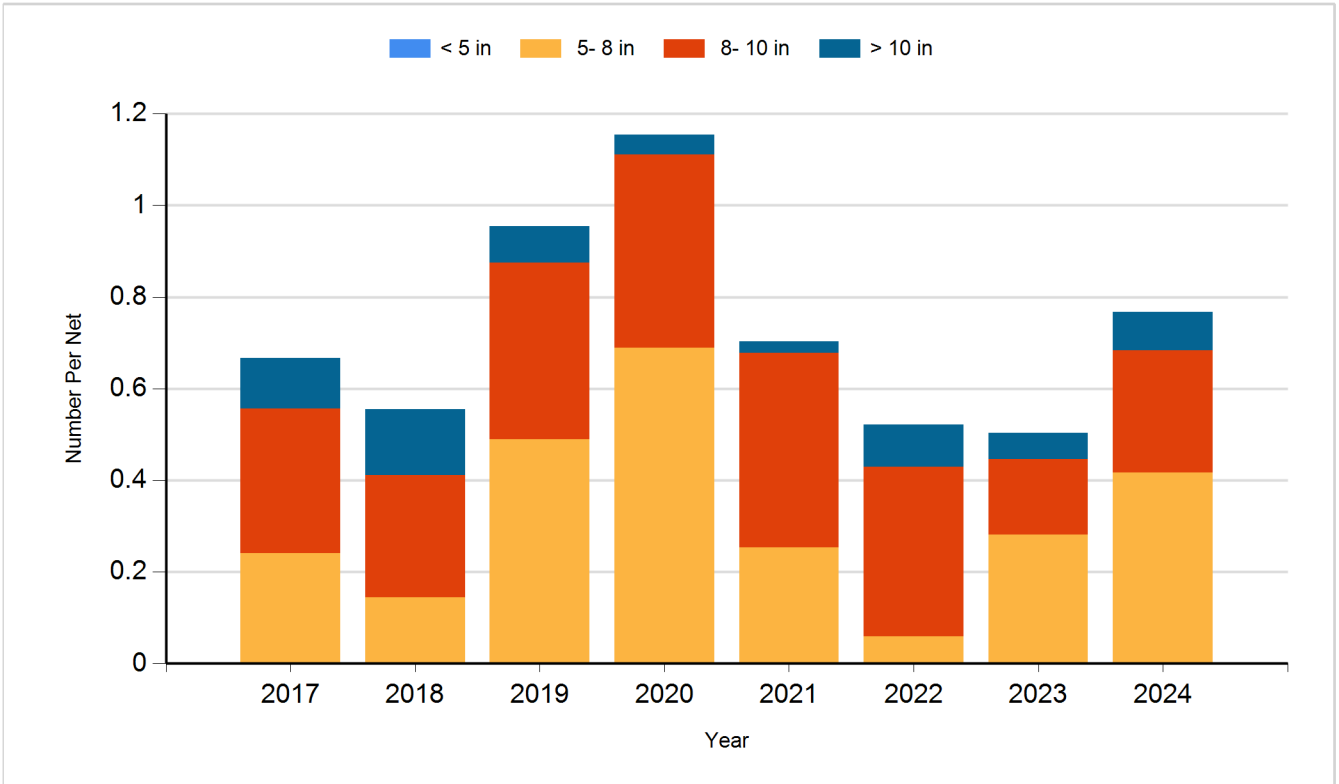
Species: Walleye
Gear: AFS std gill net



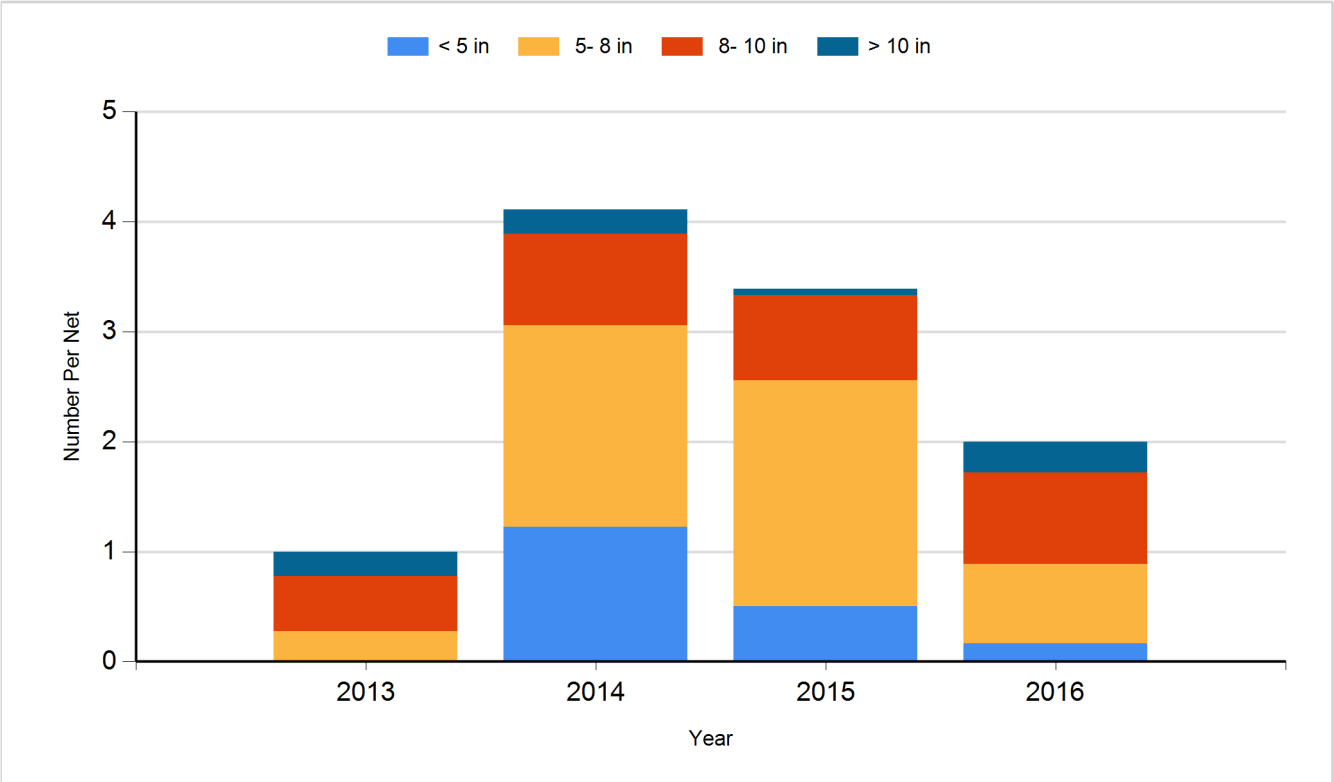
Species: Walleye
Gear: std exp gill net



Species: 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	Gizzard Shad	Adult	530
2018	Atlantic Salmon	Adult	1,863
2018	Atlantic Salmon	Catchable	989
2018	Chinook Salmon (Oahe)	Fingerling	132,736
2018	Walleye	Small Fingerling	104,534
2019	Atlantic Salmon	Adult	3,059
2019	Atlantic Salmon	Catchable 15"	1,368
2019	Atlantic Salmon	Large	2,148
2019	Chinook Salmon (Oahe)	Fingerling	251,187
2019	Chinook Salmon (Oahe)	Juvenile	31,557
2020	Chinook Salmon (Oahe)	Juvenile	135,407
2020	Chinook Salmon (Oahe)	Large Fingerling	33,975
2021	Atlantic Salmon	Juvenile	67,486
2021	Chinook Salmon (Oahe)	Adult	4,343
2021	Chinook Salmon (Oahe)	Juvenile	201,360
2021	Walleye	Juvenile	1,535,670
2022	Chinook Salmon (Oahe)	Juvenile	99,896
2022	Walleye	Fry	2,000,000
2023	Chinook Salmon (Oahe)	Juvenile	664,942
2023	Gizzard Shad	Adult	1,651
2023	Walleye	Juvenile	3,297,113
2024	Chinook Salmon (Oahe)	Juvenile	469,787
2024	Gizzard Shad	Adult	1,300