

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Brakke, Lyman County

MED-Lake-667-000

2025

Lake Information

Name:	Brakke	Maximum Depth:	17 Feet
County:	Lyman	Mean Depth:	5 Feet
Legal Description:	T105-R76-S21		
Surface Area:	115 Acres		

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jun 23, 2025	1 net-nights
AFS std gill net	Jun 24, 2025	1 net-nights
boat shocker (night)	Oct 16, 2025	3600 seconds
frame net (std 3/4 in)	Jun 23, 2025	10 net-nights

Common Fish Species Present

Largemouth Bass

Bluegill

Black Crappie

Walleye

Yellow Perch

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.
- **std 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.

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

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.

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

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

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.

$$Wr = \left(\frac{W}{W_s} \right) \times 100$$

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).

Species Name	Stock		Quality		Preferred		Memorable		Trophy	
	(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 Crappie	44	21.5	7.7	0		0		97	4
	Bluegill	11	5.5	7.7	100		9		95	6
	Northern Pike	6	3.0	0.0	100		33		97	2
	Walleye	7	3.5	1.5	100		14		90	2
	Yellow Perch	29	14.5	10.8	0		0		94	4
boat shocker (night)	Largemouth Bass	67	55.0	25.5	24	9	22	8	112	2
frame net (std 3/4 in)	Black Crappie	334	33.4	18.6	28	3	8	2	111	1
	Bluegill	616	61.6	24.1	83	2	21	2	105	1
	Largemouth Bass	3	0.3	0.2	100		100		111	14
	Northern Pike	18	1.8	0.9	89		22		95	1
	Walleye	3	0.3	0.2	67		33		88	8
	Yellow Perch	25	2.5	1.0	44	16	8		95	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.

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

Gear	Species	CPUE										Avg
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
AFS std gill net	Black Crappie				3.5			11.5			21.5	12.17
	Bluegill				0.0			0.0			5.5	1.83
	Northern Pike				2.5			3.5			3.0	3.00
	Walleye				2.0			6.5			3.5	4.00
	Yellow Perch				7.0			7.5			14.5	9.67
boat shocker (night)	Largemouth Bass	20.0			62.0			54.0			55.0	47.75
frame net (std 3/4 in)	Black Bullhead	0.0			0.0			0.2			0.0	0.05
	Black Crappie	43.4			52.5			48.8			33.4	44.53
	Bluegill	10.7			29.3			33.0			61.6	33.65
	Largemouth Bass	0.6			0.0			0.3			0.3	0.30
	Northern Pike	1.0			0.4			1.5			1.8	1.18
	Walleye	0.1			1.8			0.8			0.3	0.75
	Yellow Perch	0.8			3.3			0.9			2.5	1.88
std exp gill net	Black Crappie	227.5										227.5 0
	Bluegill	2.5										2.50
	Northern Pike	1.5										1.50
	Yellow Perch	21.0										21.00

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.

Gear	Species	Index	Year									
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
AFS std gill net	Black Crappie	PSD				29			9			0
		PSD-P				0			4			0
		Wr				93			113			97
	Bluegill	PSD										100
		PSD-P										9
		Wr										95
	Northern Pike	PSD				40			100			100
		PSD-P				20			71			33
		Wr				81			89			97
	Walleye	PSD				25			92			100
		PSD-P				0			23			14
		Wr				87			85			90
	Yellow Perch	PSD				57			33			0
		PSD-P				0			0			0
		Wr				98			101			94
boat shocker (night)	Largemouth Bass	PSD	40			13			72			24
		PSD-P	15			8			24			22
		Wr	110			112			111			112
	Walleye	PSD	20									
		PSD-P	7									
		Wr	92									
frame net (std 3/4 in)	Black Crappie	PSD	35			87			49			28
		PSD-P	1			20			14			8
		Wr	98			87			98			111
	Bluegill	PSD	31			99			73			83
		PSD-P	4			51			30			21
		Wr	140			105			102			105
	Largemouth Bass	PSD	100						100			100
		PSD-P	83						100			100
		Wr	105						90			111
	Northern Pike	PSD	90			75			100			89
		PSD-P	30			25			60			22

Gear	Species	Index	Year									
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
frame net (std 3/4 in)	Northern Pike	Wr	87			83			89			95
	Walleye	PSD	100			72			88			67
		PSD-P	100			33			25			33
		Wr	68			83			89			88
	Yellow Perch	PSD	0			70			33			44
		PSD-P	0			9			0			8
		Wr	100			97			98			95
std exp gill net	Black Crappie	PSD	35									
		PSD-P	2									
	Bluegill	PSD	0									
		PSD-P	0									
		Wr	177									
	Northern Pike	PSD	100									
		PSD-P	33									
		Wr	100									
	Yellow Perch	PSD	2									
		PSD-P	0									
		Wr	100									

Back-Calculated Lengths

Mean species back-calculated total length (mm) at age, standard error (SE), and sample size (N).

Species: Black Crappie

Year Class	Age	Mean back-calculated length (SE) at age										
		N	1	2	3	4	5	6	7	8	9	10
2023	2	21	85 (1.6)	140 (2.8)								
2022	3	3	90 (5.8)	140 (12.9)	165 (8.4)							
2021	4	1	64	129	161	173						
Weighted Mean		25	85	140	164	173						

Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2023	2	21										
2022	3	3										
2021	4	1										
Weighted Mean		25										

Species: Bluegill

Year Class	Age	Mean back-calculated length (SE) at age										
		N	1	2	3	4	5	6	7	8	9	10
2023	2	2	68 (10.1)	109 (2.2)								
2022	3	12	49 (2.2)	99 (3.2)	151 (3.9)							
2021	4	15	50 (1.5)	99 (2.4)	148 (4)	170 (3.4)						
2020	5	3	53 (6.3)	96 (12.8)	147 (10.3)	166 (5.5)	186 (2.9)					
Weighted Mean		32	51	99	149	169	186					
Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2023	2	2										
2022	3	12										
2021	4	15										
2020	5	3										
Weighted Mean		32										

Species: Largemouth Bass

Year Class	Age	Mean back-calculated length (SE) at age										
		N	1	2	3	4	5	6	7	8	9	10
2025	0	1										
2024	1	11	102 (5.5)									
2023	2	5	84 (3.7)	164 (8.8)								
2022	3	17	77 (3)	134 (4.9)	208 (4.4)							
2021	4	3	86 (5.2)	155 (19.5)	233 (24.7)	264 (27.7)						
2020	5	3	104 (7.1)	193 (28.4)	287 (13.7)	342 (7.5)	372 (3.3)					
2019	6	3	105 (2.7)	222 (16.9)	303 (18.2)	358 (15.2)	391 (10.5)	414 (11.4)				
2018	7	2	102 (2.7)	180 (15.6)	259 (30.3)	318 (25.3)	372 (.5)	404 (6.5)	431 (16.7)			
2017	8	2	111 (7.6)	189 (20.6)	271 (4.3)	325 (23.4)	372 (19)	404 (15)	432 (8)	458 (9)		
2016	9	1	88	158	223	305	376	404	426	447	469	
Weighted Mean		48	90	158	235	320	378	408	430	454	469	
Year Class	Age	N	11	12	13	14	15	16	17	18	19	20
2025	0	1										
2024	1	11										
2023	2	5										
2022	3	17										
2021	4	3										
2020	5	3										
2019	6	3										
2018	7	2										
2017	8	2										
2016	9	1										
Weighted Mean		48										

Length at Capture

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

Species: Black Crappie

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2025	240		161 (205)	170 (33)	185 (3)						
2022	421	134 (4)	154 (178)	224 (63)	237 (118)	256 (59)					
2019	533	110 (8)	151 (42)	205 (83)	232 (253)	247 (69)	258 (78)				
2016	437	110 (3)	162 (234)	202 (169)		236 (27)	254 (4)				

Species: Bluegill

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2025	473		133 (37)	174 (159)	181 (238)	199 (40)					
2022	330	106 (8)	137 (109)	179 (124)	211 (87)	223 (4)					
2019	293		163 (43)	191 (120)	206 (11)	226 (47)	230 (73)				
2016	106	86 (62)	128 (12)	176 (30)		226 (1)		257 (1)			

Species: Largemouth Bass

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2025	65	139 (11)	228 (10)	243 (30)	264 (5)	395 (3)	426 (3)	441 (2)	471 (2)	479 (1)	
2022	97	155 (5)	180 (46)	282 (12)	344 (17)	384 (10)	428 (6)	440 (3)	521 (1)		
2019	78	206 (59)	242 (10)	302 (4)	373 (3)	431 (1)	482 (1)				
2016	18	236 (1)	262 (9)	307 (5)		430 (3)					

Species: Walleye

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2025	7			444 (6)				595 (1)			
2022	14	215 (1)		340 (1)		433 (10)					598 (2)

Species: Yellow Perch

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2025	29		149 (25)	168 (3)	195 (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).

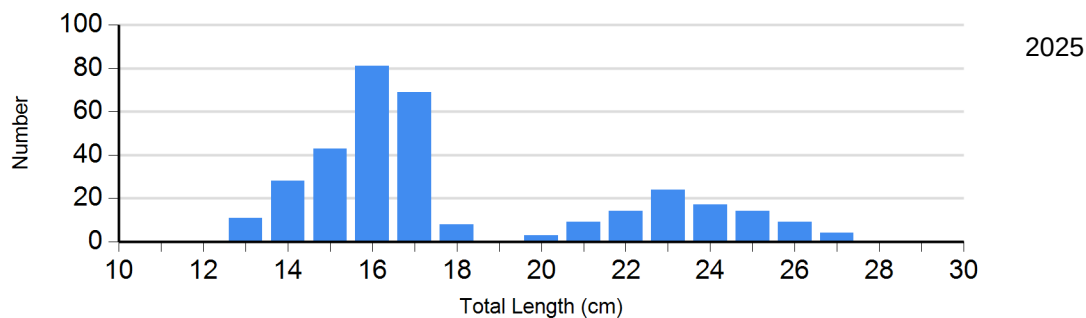
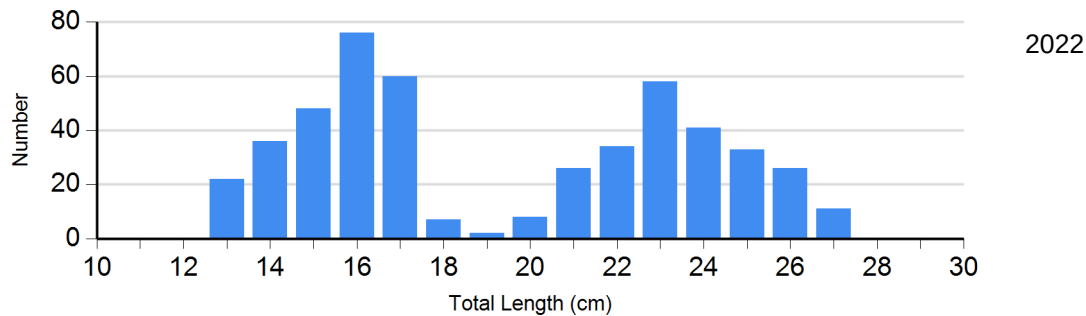
Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2022	251	109 (1.7)	167	96 (0.6)	70	91 (0.9)	0	
	2025	240	111 (1.0)	67		27		0	
Bluegill Frame Net	2022	88	104 (1.5)	144	103 (1.0)	98	99 (0.9)	0	
	2025	104	116 (0.9)	382	105 (0.6)	130	101 (0.7)	0	
Largemouth Bass Electro Fishing	2022	15	107 (1.6)	26	115 (1.3)	12	109 (2.3)	1	106
	2025	42	110 (1.2)	1	115	12	120 (2.8)	0	
Northern Pike Gill Net	2022	0		2	87 (1.4)	3	86 (4.3)	2	95 (1.1)
	2025	0		4	98 (2.2)	1	93	1	98
Walleye Gill Net	2022	1	86	9	86 (1.8)	2	83 (3.7)	1	80
	2025	0		6	91 (1.7)	1	87	0	
Yellow Perch Gill Net	2022	10	102 (2.6)	5	98 (2.6)	0		0	
	2025	29	94 (3.2)	0		0		0	

Length Frequency Distribution

Length frequency histogram of species sampled by year.

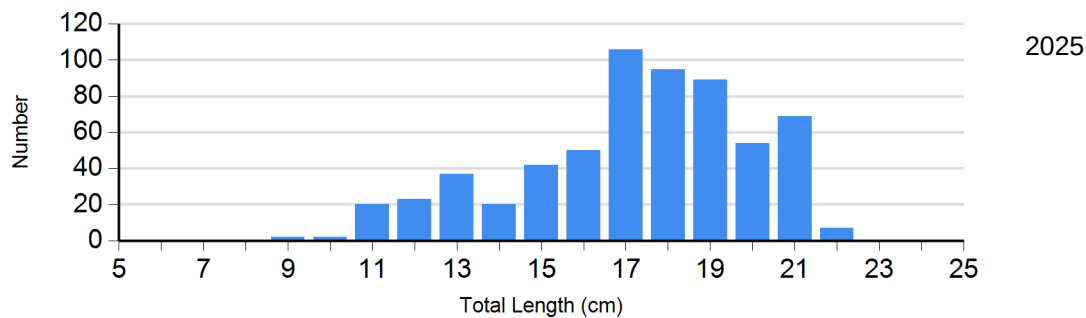
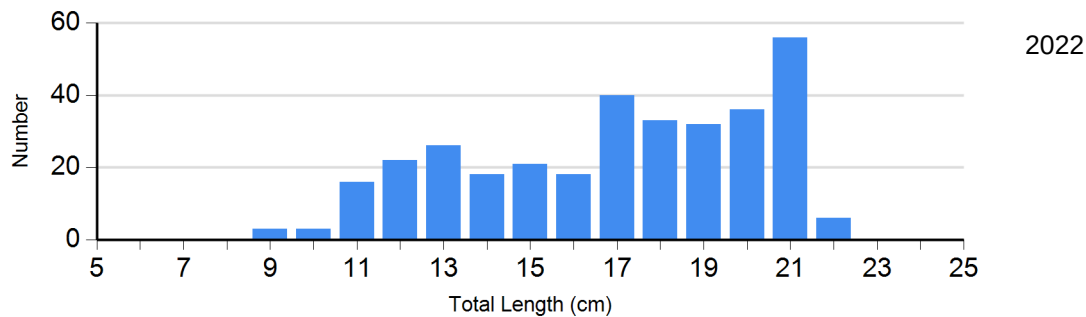
Species: Black Crappie

Gear: frame net (std 3/4 in)

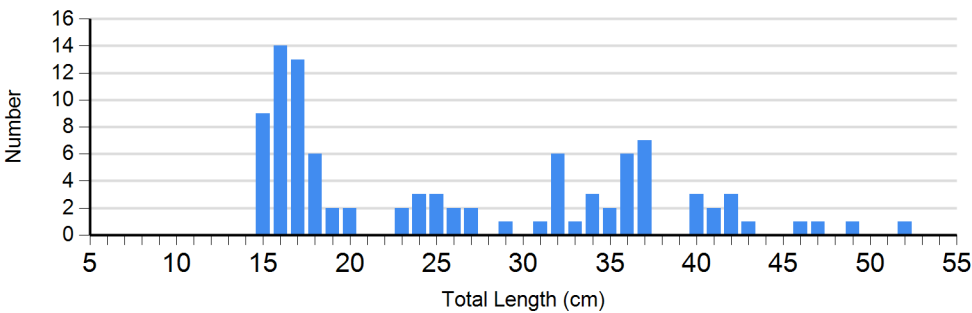


Species: Bluegill

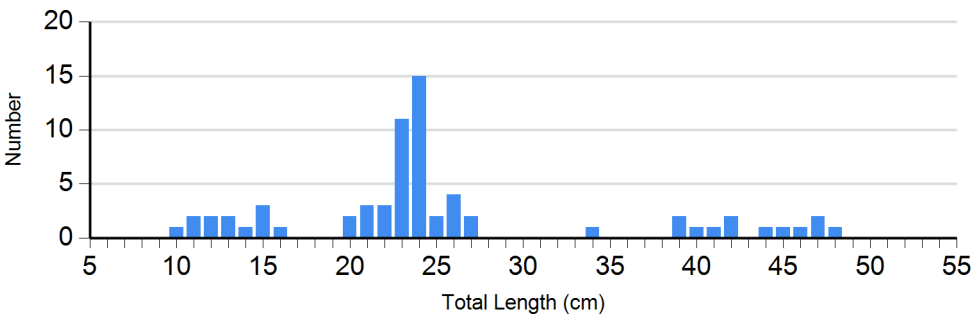
Gear: frame net (std 3/4 in)



Species: Largemouth Bass
Gear: boat shocker (night)

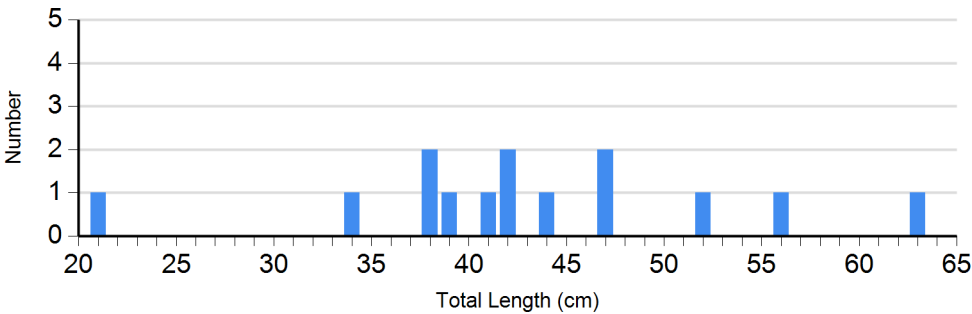


2022



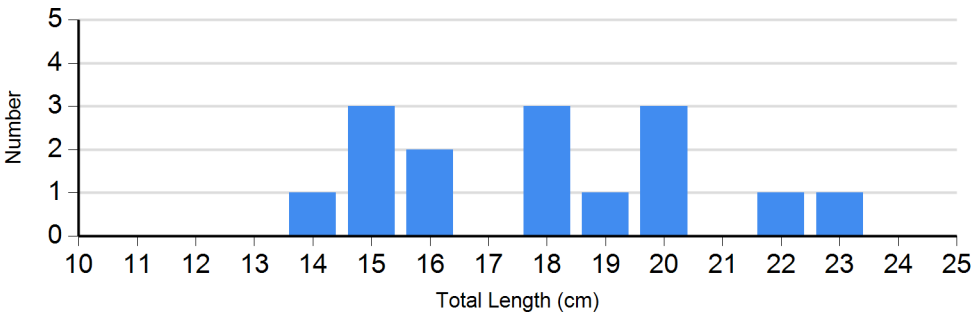
2025

Species: Walleye
Gear: AFS std gill net

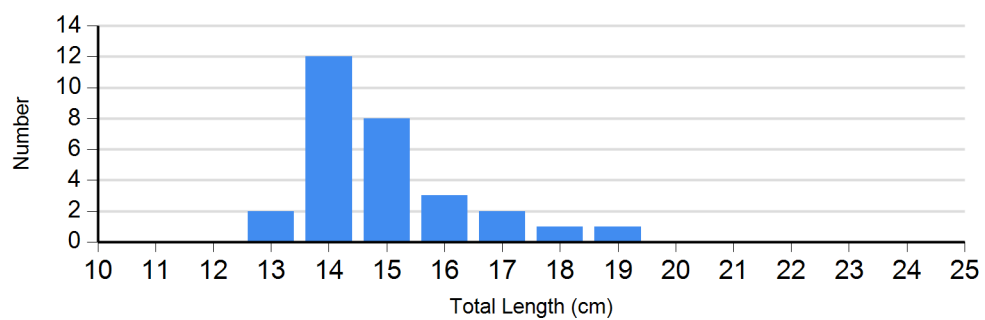


2022

Species: Yellow Perch
Gear: AFS std gill net



2022

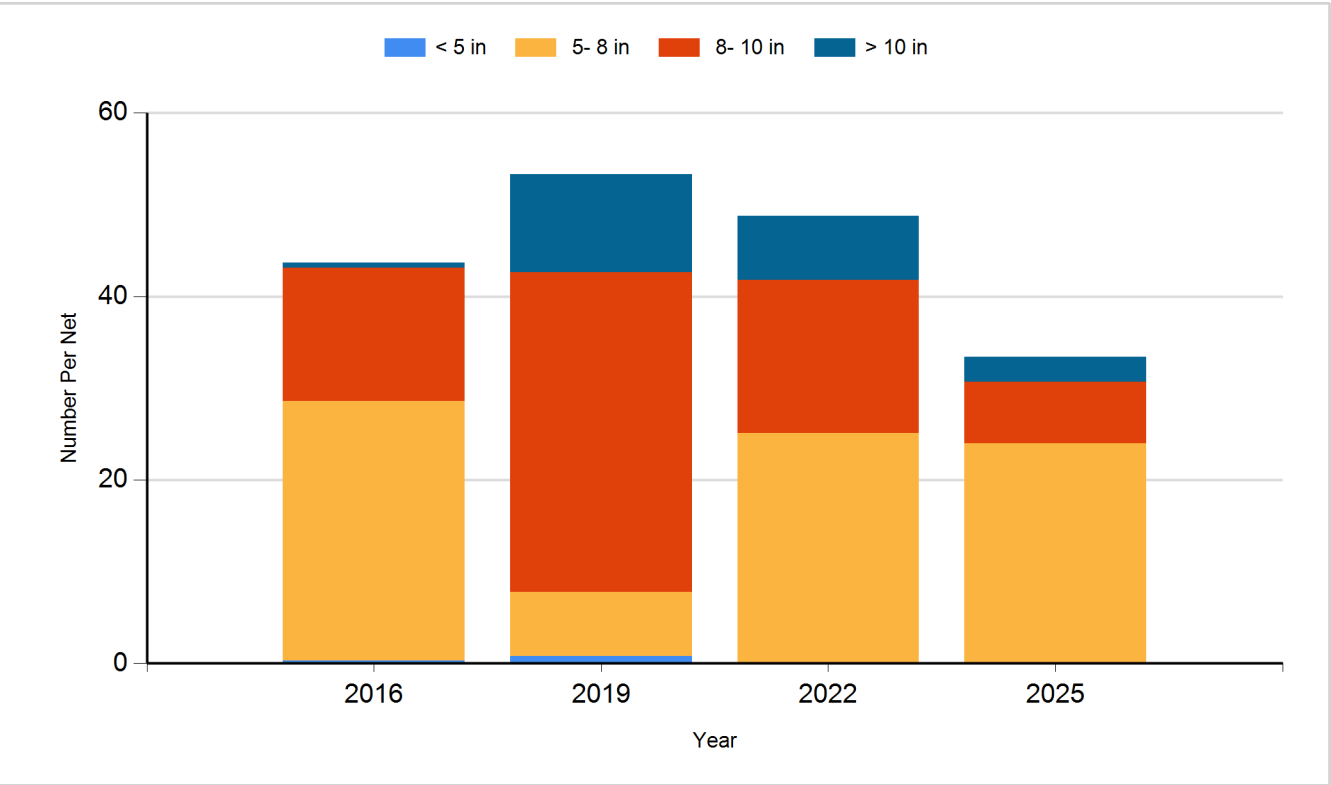


2025

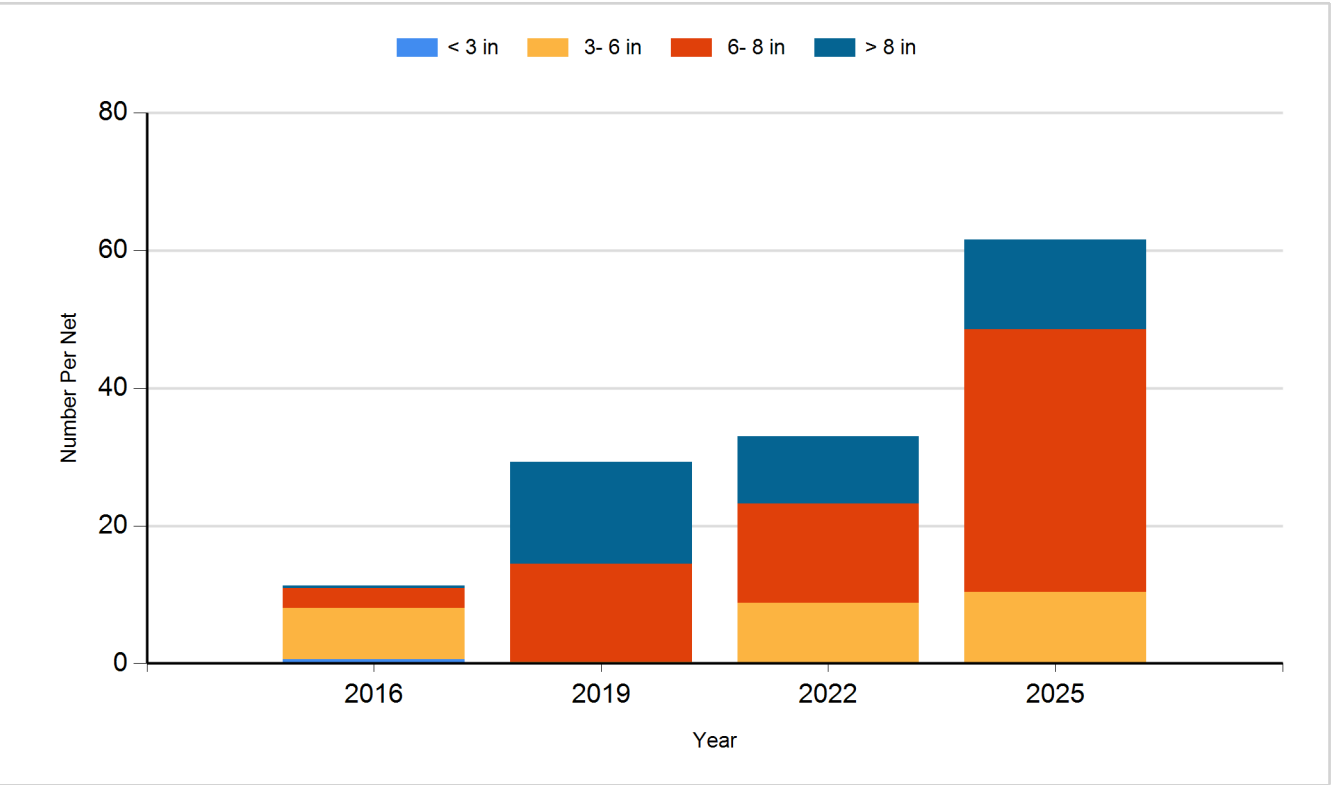
Historic Fish Sizes and Relative Abundance

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

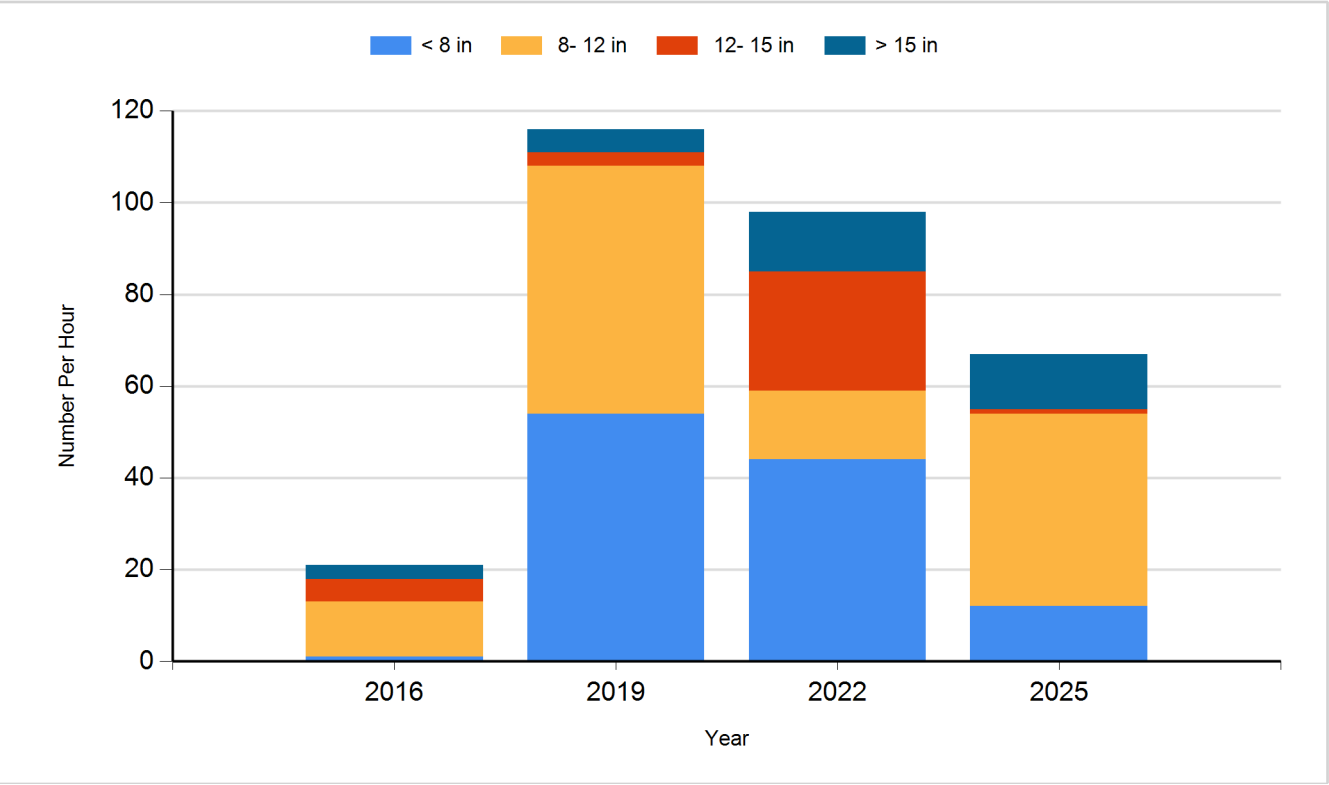
Species: Black Crappie
Gear: frame net (std 3/4 in)



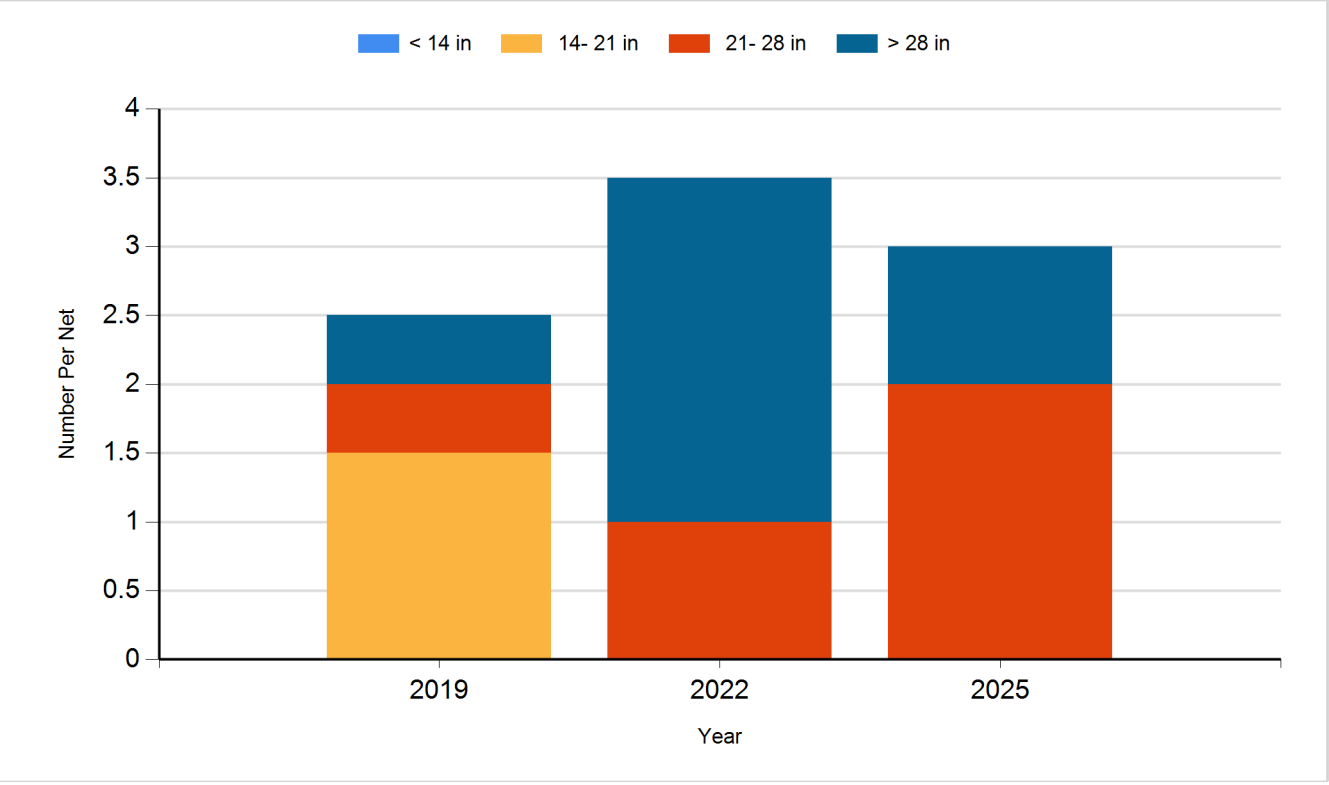
Species: Bluegill
Gear: frame net (std 3/4 in)



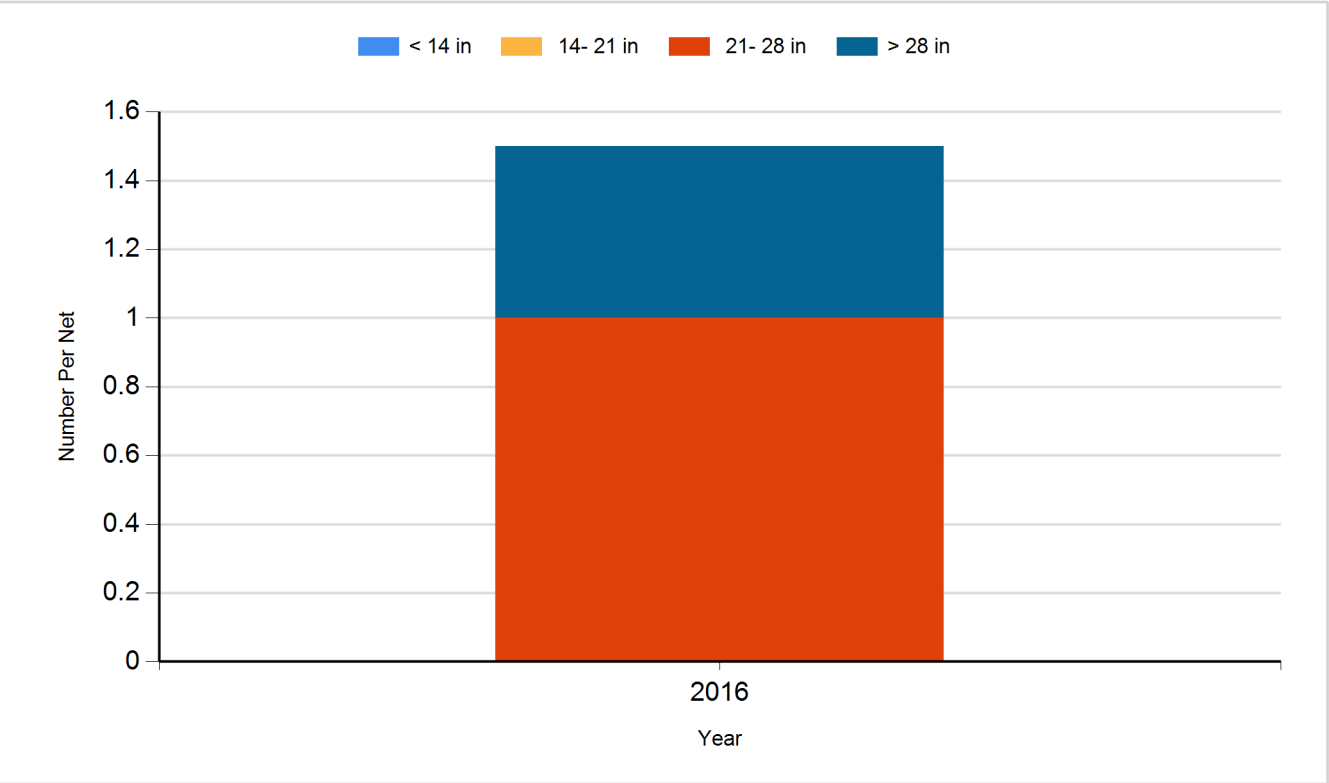
Species: Largemouth Bass
Gear: boat shocker (night)



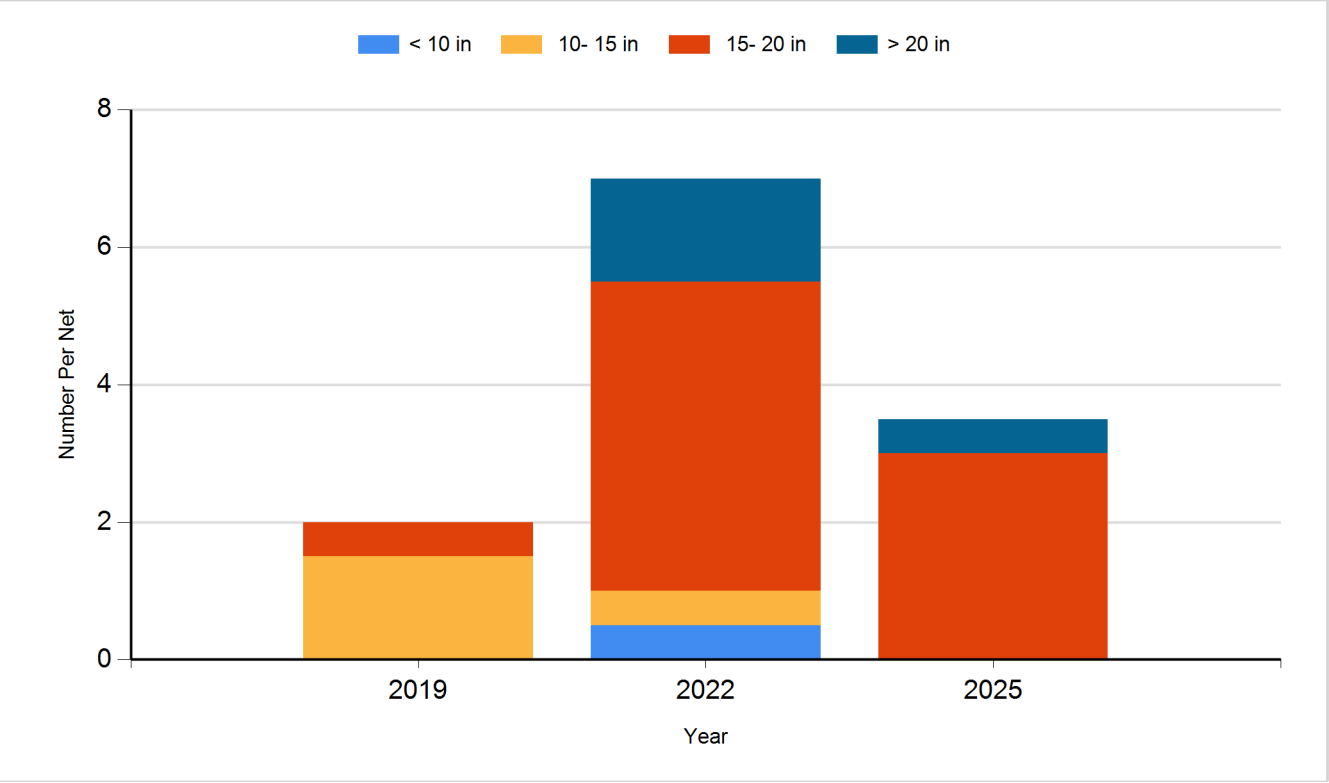
Species: Northern Pike
Gear: AFS std gill net



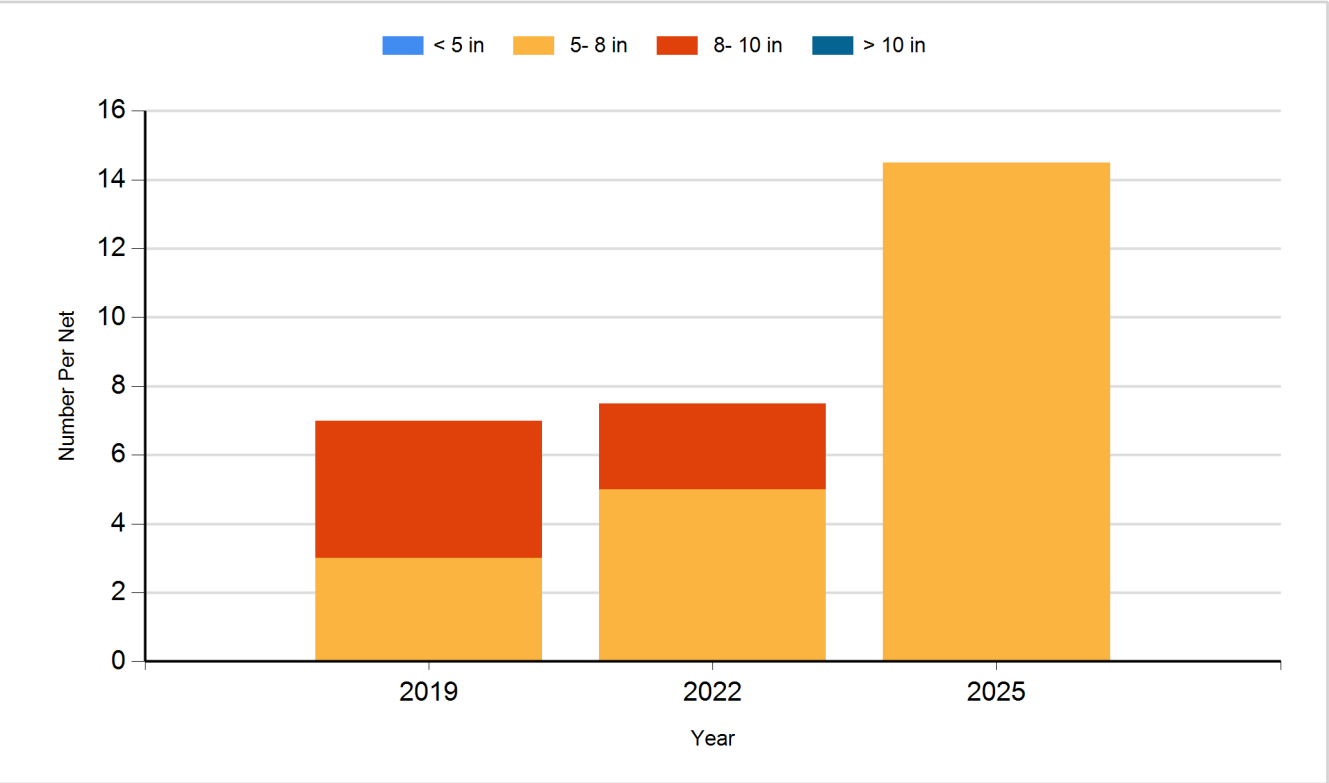
Species: Northern Pike
Gear: std exp gill net



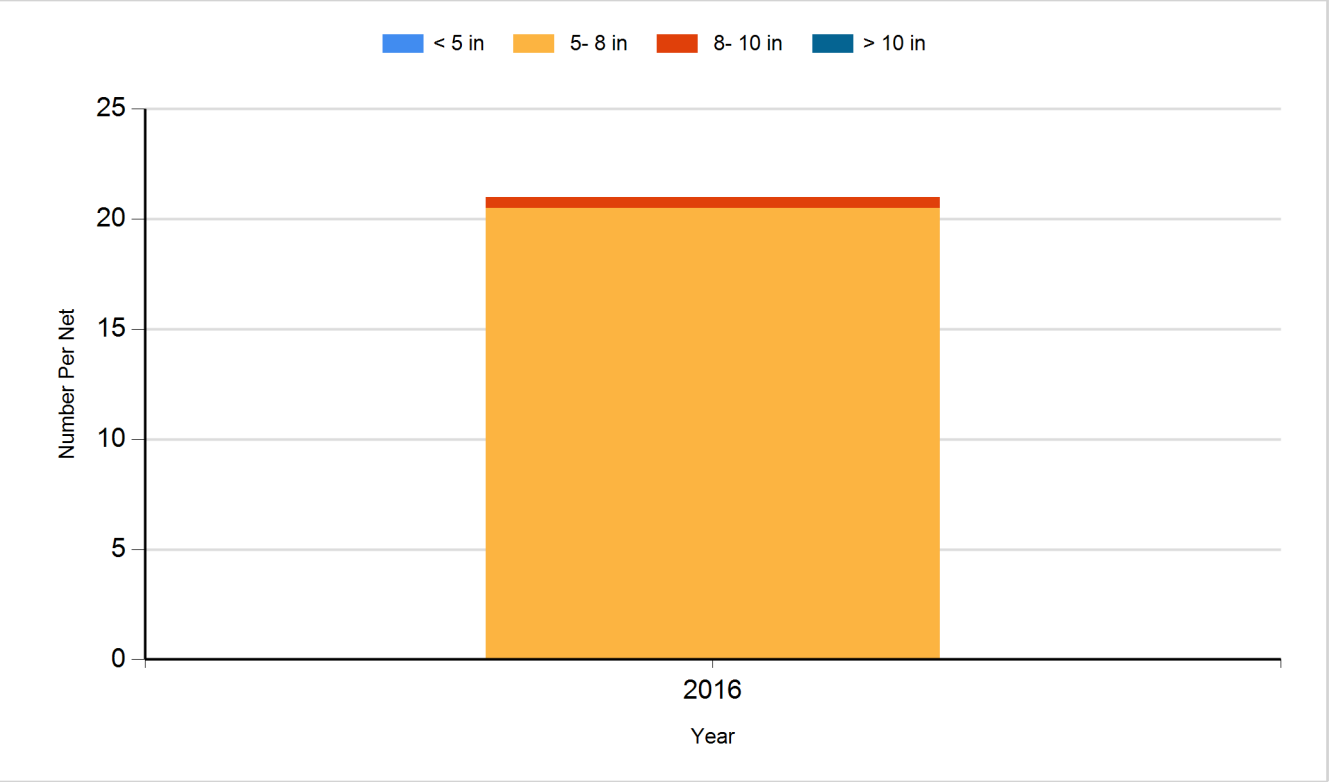
Species: Walleye
Gear: AFS std gill net



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
2015	Walleye	Large Fingerling	864
2017	Walleye	Large Fingerling	2,720
2019	Walleye	Small Fingerling	9,185
2021	Walleye	Juvenile	1,152
2022	Walleye	Juvenile	3,150
2023	Walleye	Juvenile	3,201
2024	Walleye	Juvenile	3,199
2025	Walleye	Juvenile	3,378