

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Poinsett, Hamlin County

MBS-Lake-405-000

2022

Lake Information

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

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jul 19, 2022	4 net-nights
AFS std gill net	Jul 21, 2022	4 net-nights
AFS std gill net	Jul 22, 2022	4 net-nights
fall night EF-WAE	Sep 12, 2022	3600 seconds
spring day EF	May 17, 2022	3600 seconds

Common Fish Species Present

Walleye

Smallmouth Bass

Northern Pike

Yellow Perch

White Sucker

White Bass

Channel Catfish

Bigmouth Buffalo

Common Carp

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.
- **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**

Gear	Species	Sample Size (n)	Abundance		Stock Density Indices			Condition		
			CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
AFS std gill net	Bigmouth Buffalo	12	1.0	0.8	100		25		92	2
	Black Bullhead	4	0.3	0.3	100		100		95	2
	Black Crappie	3	0.3	0.2	100		100		108	5
	Channel Catfish	19	1.6	0.9	100		32	17	107	3
	Common Carp	9	0.8	0.5	44		22		102	3
	Northern Pike	5	0.4	0.3	100		20		74	4
	Smallmouth Bass	5	0.4	0.3	40		0		96	6
	Walleye	88	6.0	1.2	50	8	14	6	86	1
	White Bass	45	3.8	0.9	100		100		98	1
	White Sucker	68	5.7	1.8	100		100		107	2
	Yellow Bullhead	2	0.2	0.2	100		100		98	13
Yellow Perch	88	7.3	1.9	51	8	46	8	114	1	
spring day EF*	Smallmouth Bass	49	49.0	17.3	65	10	4			

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
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
AFS std gill net	Bigmouth Buffalo				2.8	0.4	0.3	2.4		1.0	1.0	1.32
	Black Bullhead				0.4	0.3	0.4	0.6		0.5	0.3	0.42
	Black Crappie				3.9	0.8	1.3	1.1		1.5	0.3	1.48
	Channel Catfish				1.1	0.8	0.5	1.1		5.3	1.6	1.73
	Common Carp				0.2	0.4	1.7	0.8		1.0	0.8	0.82
	Northern Pike				0.0	0.1	0.2	0.3		0.8	0.4	0.30
	Shorthead Redhorse				0.0	0.0	0.2	0.0		0.0	0.0	0.03
	Smallmouth Bass				0.6	0.6	0.6	0.1		1.2	0.4	0.58
	Walleye				8.9	12.4	8.8	5.3		4.4	6.0	7.63
	White Bass				7.3	6.2	5.8	1.8		6.1	3.8	5.17
	White Sucker				4.5	3.0	2.3	3.1		2.8	5.7	3.57
	Yellow Bullhead				0.2	0.4	0.0	0.0		0.3	0.2	0.18
Yellow Perch				25.1	14.3	22.1	9.3		8.0	7.3	14.35	
boat shocker (night)	Walleye*	2.0	992.2	1,722.0	335.0	49.7						620.18
boat shocker (night, DC)	Smallmouth Bass				73.5							73.50
fall night EF-WAE*	Walleye						29.8	86.9	526.0	217.0	400.0	251.94
frame net (std 3/4 in)	Bigmouth Buffalo	4.2	0.5									2.35
	Black Bullhead	4.4	10.2									7.30
	Black Crappie	0.4	1.5									0.95
	Bluegill	0.0	0.0									0.00
	Channel Catfish	0.2	0.0									0.10
	Common Carp	2.7	0.2									1.45
	Northern Pike	3.6	1.0									2.30
	Shorthead Redhorse	0.1	0.0									0.05
	Smallmouth Bass	1.2	1.4									1.30
	Walleye	1.4	2.4									1.90
	White Bass	0.4	0.8									0.60
	White Sucker	0.2	0.4									0.30
Yellow Bullhead	2.7	6.3									4.50	
Yellow Perch	0.1	0.1									0.10	
spring day EF*	Smallmouth Bass										49.0	49.00
std exp gill net	Bigmouth Buffalo	0.0	0.5	0.3								0.27

CPUE

Gear	Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Avg
std exp gill net	Black Bullhead	0.2	0.5	3.2								1.30
	Black Crappie	0.0	0.3	2.0								0.77
	Channel Catfish	2.5	0.7	0.7								1.30
	Common Carp	1.3	0.8	0.5								0.87
	Northern Pike	1.3	1.2	0.0								0.83
	Shorthead Redhorse	0.0	0.0	0.2								0.07
	Smallmouth Bass	1.3	0.7	0.0								0.67
	Spottail Shiner	0.0	0.0	0.0								0.00
	Walleye	6.7	11.7	15.3								11.23
	White Bass	0.8	0.8	2.2								1.27
	White Sucker	4.3	3.5	3.0								3.60
	Yellow Bullhead	0.3	0.0	0.3								0.20
	Yellow Perch	15.0	40.5	124.2								59.90

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									
			2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
AFS std gill net	Bigmouth Buffalo	PSD				3	50	100	14		83	100
		PSD-P				0	0	0	3		8	25
		Wr				98	99	92	103		98	92
	Black Crappie	PSD				100	100	13	69		100	100
		PSD-P				39	67	7	31		78	100
		Wr				112	102	123	121		110	108
	Channel Catfish	PSD				79	100	100	100		100	100
		PSD-P				57	67	100	38		28	32
		Wr				124	118	101	108		112	107
	Common Carp	PSD				100	100	35	100		100	44
		PSD-P				33	100	35	20		50	22
		Wr				95	98	105	107		96	102
	Northern Pike	PSD					100	100	100		100	100
		PSD-P					100	100	100		22	20
		Wr					80	83	87		78	74
	Smallmouth Bass	PSD				38	43	86	100		43	40
		PSD-P				25	43	43	0		14	0
		Wr				101	101	89	103		99	96
	Walleye	PSD				18	7	19	22		51	50
		PSD-P				5	1	4	5		8	14
		Wr				82	79	84	91		85	86
	White Bass	PSD				98	99	100	100		100	100
		PSD-P				96	99	99	100		90	100
		Wr				102	100	103	103		95	98
	White Sucker	PSD				100	100	100	100		97	100
		PSD-P				100	100	100	97		97	100
		Wr				108	111	104	107		106	107
Yellow Perch	PSD				99	99	96	87		97	51	
	PSD-P				84	57	58	69		65	46	
	Wr				115	115	110	113		111	114	
boat shocker (night)	Walleye	PSD	0	0	0	0	0					
		PSD-P	0	0	0	0	0					

Gear	Species	Index	Year										
			2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
boat shocker (night)	Walleye	Wr		87	97	96	93						
boat shocker (night, DC)	Smallmouth Bass	PSD				18							
		PSD-P				13							
		Wr				112							
frame net (std 3/4 in)	Bigmouth Buffalo	PSD	97	100									
		PSD-P	64	44									
		Wr	91	83									
	Black Crappie	PSD	100	84									
		PSD-P	100	84									
		Wr	102	108									
	Channel Catfish	PSD	100										
		PSD-P	0										
		Wr	95										
	Common Carp	PSD	100	100									
		PSD-P	91	100									
		Wr	95	87									
	Northern Pike	PSD	76	100									
		PSD-P	32	88									
		Wr	71	81									
	Smallmouth Bass	PSD	65	83									
		PSD-P	30	39									
		Wr	96	107									
	Walleye	PSD	58	32									
		PSD-P	13	5									
		Wr	84	88									
	White Bass	PSD	100	100									
		PSD-P	100	100									
		Wr	84	103									
	White Sucker	PSD	100	100									
		PSD-P	100	100									
		Wr	93	97									
Yellow Perch	PSD	100	0										
	PSD-P	50	0										
	Wr	89	112										
spring day EF	Smallmouth Bass	PSD											

Gear	Species	Index	Year												
			2013	2014	2015	2016	2017	2018	2019	2020	2021	2022			
spring day EF	Smallmouth Bass	PSD-P													4
std exp gill net	Bigmouth Buffalo	PSD		67	50										
		PSD-P		67	50										
		Wr		101	100										
	Black Crappie	PSD		0	58										
		PSD-P		0	0										
		Wr		124	113										
	Channel Catfish	PSD	100	100	75										
		PSD-P	20	75	75										
		Wr	111	117	110										
	Common Carp	PSD	100	100	100										
		PSD-P	88	100	33										
		Wr	101	103	104										
	Northern Pike	PSD	100	100											
		PSD-P	25	43											
		Wr	83	87											
	Smallmouth Bass	PSD	25	100											
		PSD-P	0	75											
		Wr	105	100											
	Walleye	PSD	48	44	30										
		PSD-P	8	4	1										
		Wr	85	91	88										
	White Bass	PSD	100	100	62										
		PSD-P	80	100	23										
		Wr	96	104	102										
	White Sucker	PSD	100	95	94										
		PSD-P	96	71	78										
		Wr	103	104	101										
	Yellow Perch	PSD	81	26	92										
		PSD-P	23	11	14										
		Wr	110	115	110										

Length at Capture

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

Species: Smallmouth Bass

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2016	70		239 (59)	338 (5)	375 (1)		433 (1)	440 (4)			

Species: Walleye

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2022	87	206 (16)	295 (13)	359 (23)	421 (11)			465 (9)	517 (13)		594 (1)
2021	62	225 (9)	310 (20)	382 (13)		396 (2)	435 (12)	481 (5)			724 (1)
2019	70	216 (8)	314 (4)	379 (2)	341 (38)	391 (16)					655 (2)
2018	110	233 (5)	304 (2)	313 (78)	390 (21)			631 (1)		662 (3)	
2017	140	201 (3)	272 (79)	361 (55)					522 (3)		
2016	203	229 (74)	355 (121)	436 (1)	476 (2)	463 (3)		599 (1)			628 (1)
2015	125	255 (97)		408 (12)	451 (8)		462 (7)				540 (1)
2014	70	264 (1)	317 (12)	361 (32)	422 (2)	458 (22)	581 (1)				
2013	41		280 (8)	371 (12)	409 (18)	528 (1)	556 (1)	623 (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+
2022	88	145 (44)	223 (3)	268 (16)	274 (5)	300 (8)	300 (9)	351 (2)	334 (1)		
2021	96	168 (3)	229 (30)	260 (15)	279 (13)	297 (13)	298 (14)		310 (9)		
2019	112	158 (3)	203 (23)	262 (47)	300 (10)	291 (5)	292 (22)		335 (1)		
2018	265	132 (1)	223 (105)	271 (101)	288 (32)	309 (27)					
2017	157		229 (65)	279 (10)	280 (79)		317 (3)				
2016	326	143 (3)	234 (24)	272 (282)	284 (16)			337 (1)			
2015	745	153 (16)	224 (570)	252 (146)	295 (13)						
2014	246	154 (140)	180 (56)	244 (41)	234 (2)	306 (8)					
2013	90	147 (8)	213 (56)	246 (7)	277 (19)						

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).

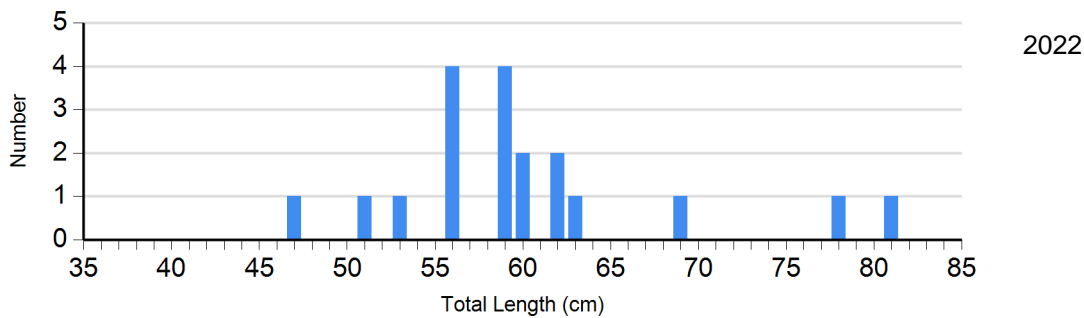
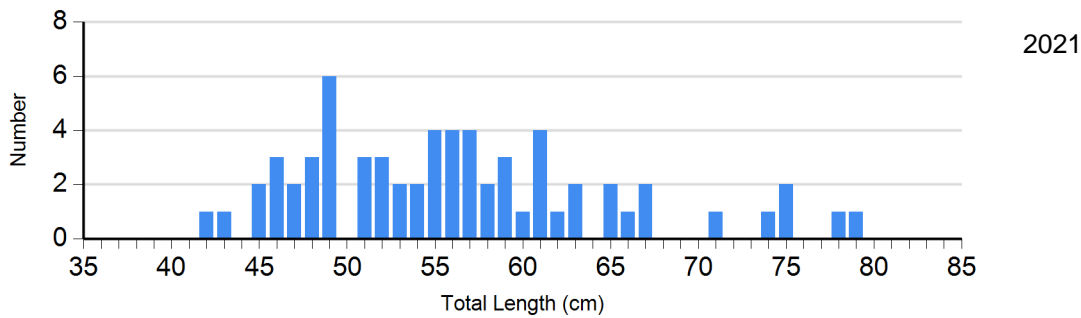
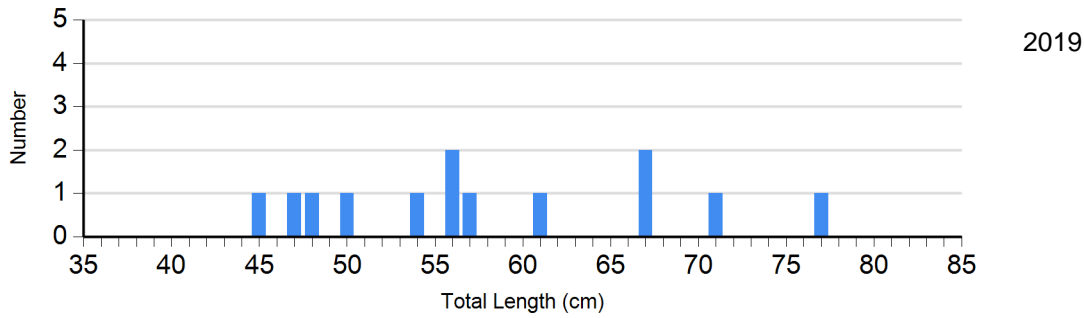
Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Channel Catfish Gill Net	2018	0		0		0		6	101 (6.6)
	2019	0		8	103 (2.6)	3	108 (7.5)	2	126 (6.1)
	2021	0		46	111 (1.6)	12	114 (1.5)	6	115 (5.3)
	2022	0		13	107 (2.7)	4	108 (1.8)	2	104 (6.9)
Common Carp Gill Net	2018	13	108 (1.7)	0		5	98 (4.7)	2	107 (9.0)
	2019	0		8	110 (2.8)	1	95	1	97
	2021	0		6	95 (1.2)	5	99 (2.4)	1	92
	2022	5	105 (1.6)	2	106 (3.8)	1	95	1	92
Northern Pike Gill Net	2018	0		0		1	91	1	74
	2019	0		0		2	87 (13.3)	1	
	2021	0		7	77 (1.5)	2	83 (3.8)	0	
	2022	0		4	73 (3.3)	1	77	0	
Walleye Gill Net	2018	86	84 (0.6)	16	84 (2.1)	0		4	91 (1.4)
	2019	49	91 (0.8)	11	92 (2.3)	1	97	2	90 (0.4)
	2021	26	85 (1.2)	23	85 (1.1)	3	88 (2.7)	1	82
	2022	36	86 (0.9)	26	85 (1.1)	9	89 (2.4)	1	80
White Bass Gill Net	2018	0		1	112	46	104 (0.8)	22	102 (1.1)
	2019	0		0		17	103 (1.1)	4	104 (1.4)
	2021	0		7	94 (2.4)	47	96 (0.8)	19	95 (1.2)
	2022	0		0		35	100 (1.0)	10	93 (1.2)
White Sucker Gill Net	2018	0		0		1	104	27	104 (1.3)
	2019	0		1	104	9	106 (3.3)	27	107 (1.8)

Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
White Sucker Gill Net	2021	1		0		8	106 (3.4)	25	106 (1.8)
	2022	0		0		5	112 (3.4)	63	107 (1.4)
Yellow Perch Gill Net	2018	10	117 (4.5)	102	108 (1.2)	114	113 (1.2)	39	109 (1.7)
	2019	15	119 (3.5)	20	111 (2.1)	58	114 (1.1)	19	109 (1.5)
	2021	3	117 (7.1)	31	115 (1.8)	42	110 (1.7)	20	105 (1.8)
	2022	43	114 (1.3)	4	115 (7.1)	29	116 (1.8)	11	114 (2.4)

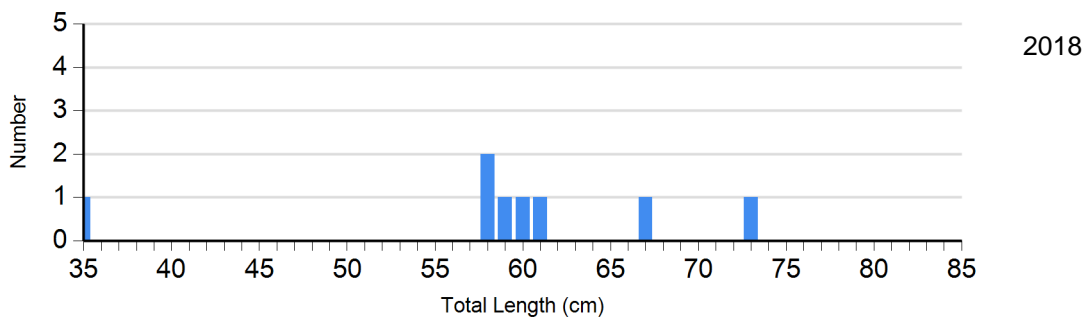
Length Frequency Distribution

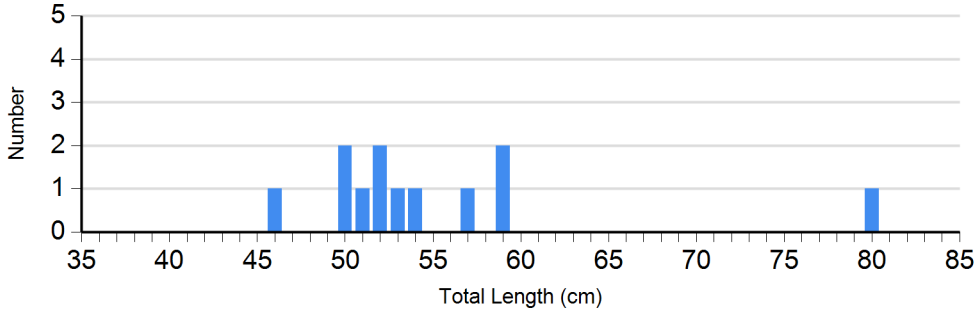
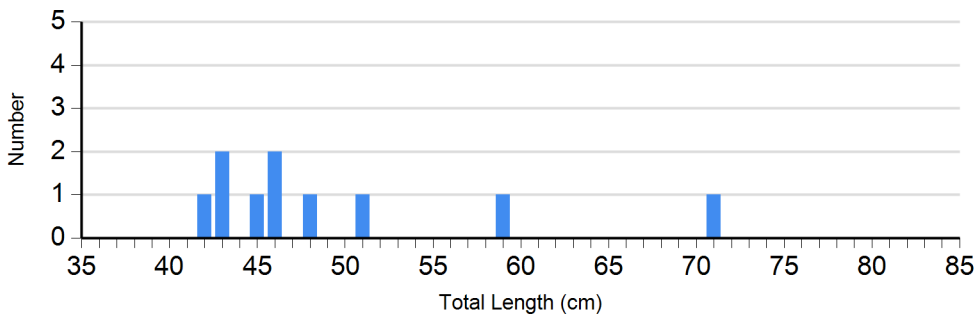
Length frequency histogram of species sampled by year.

Species: Channel Catfish
Gear: AFS std gill net

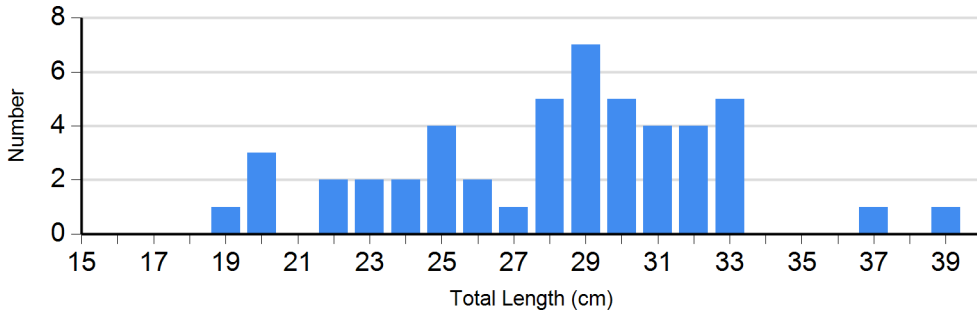


Species: Common Carp
Gear: AFS std gill net

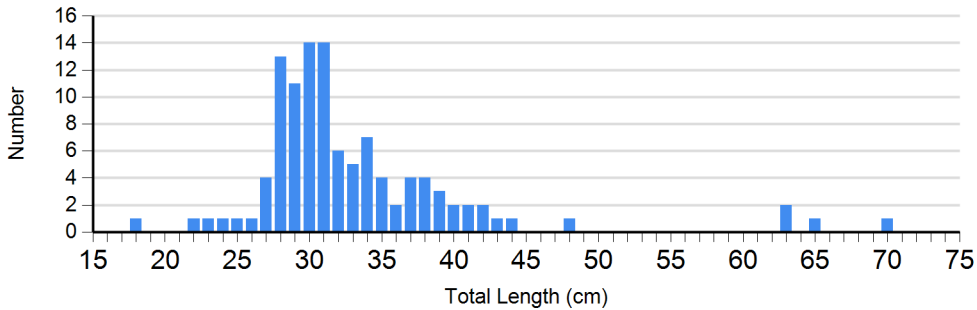
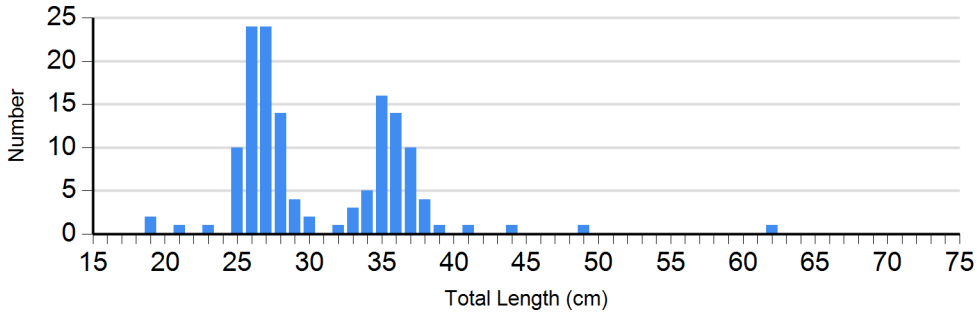


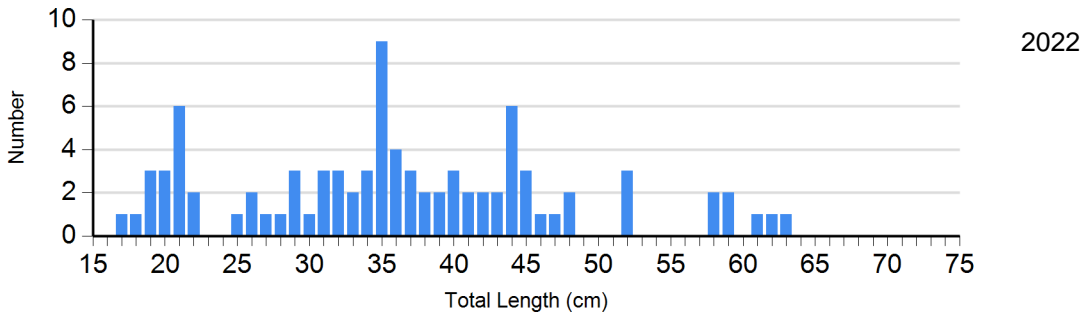
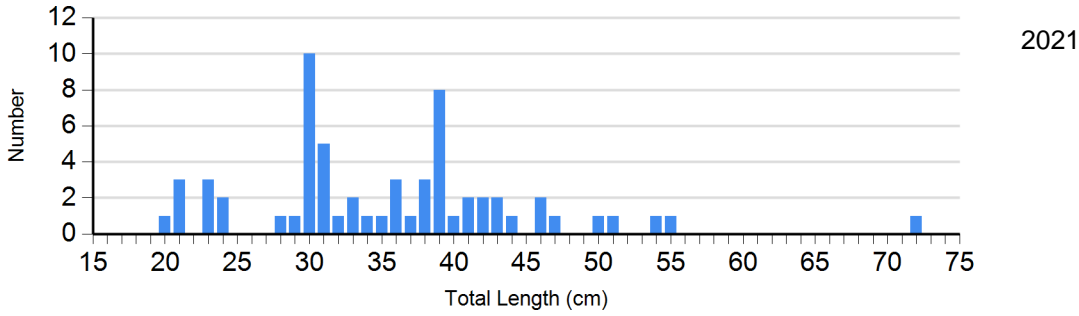
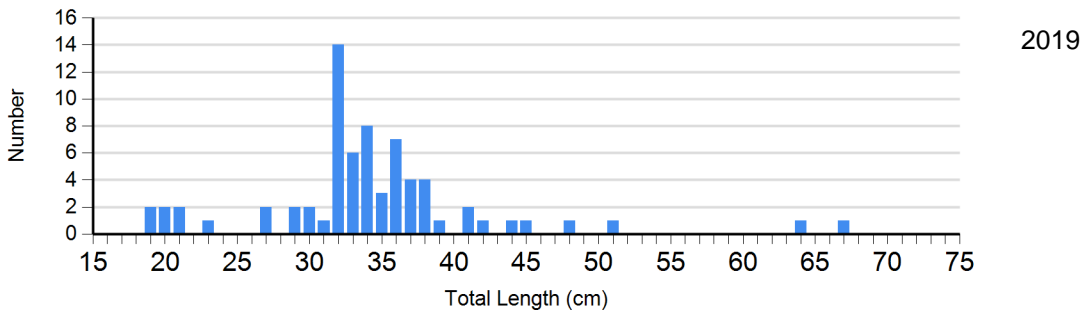


Species: Smallmouth Bass
 Gear: spring day EF

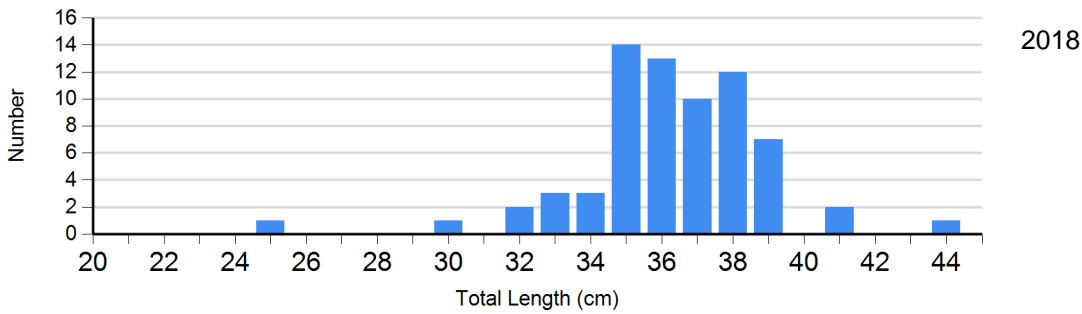
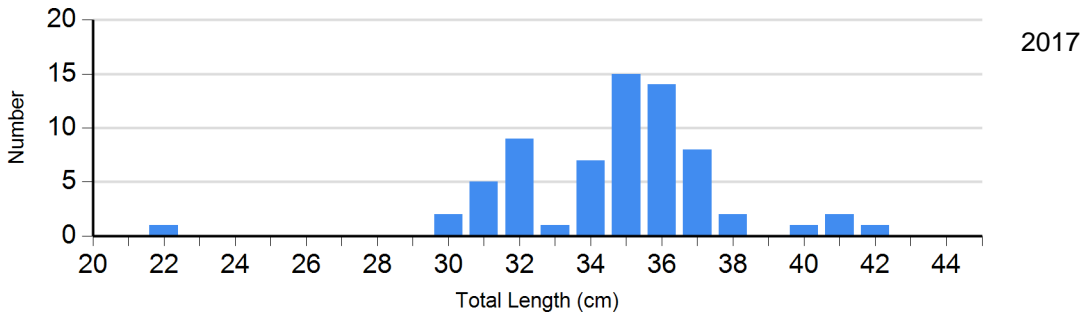


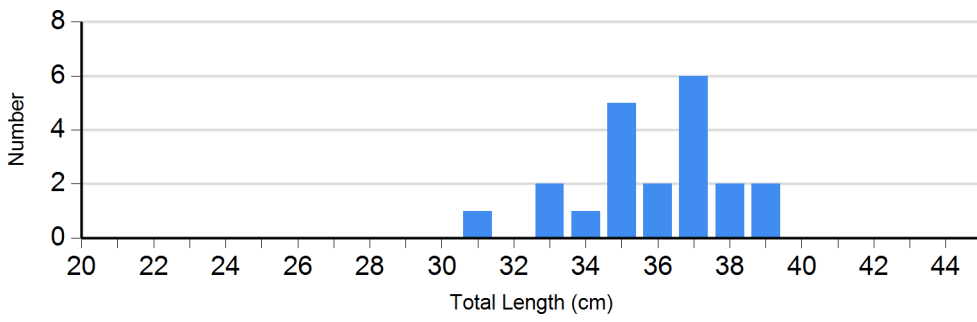
Species: Walleye
 Gear: AFS std gill net



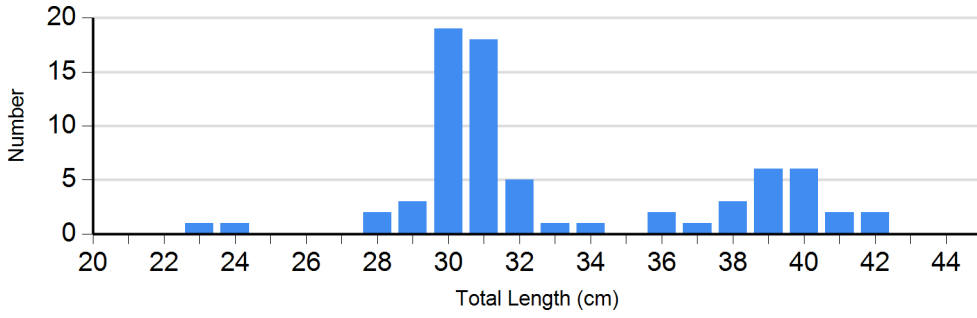


Species: White Bass
Gear: AFS std gill net

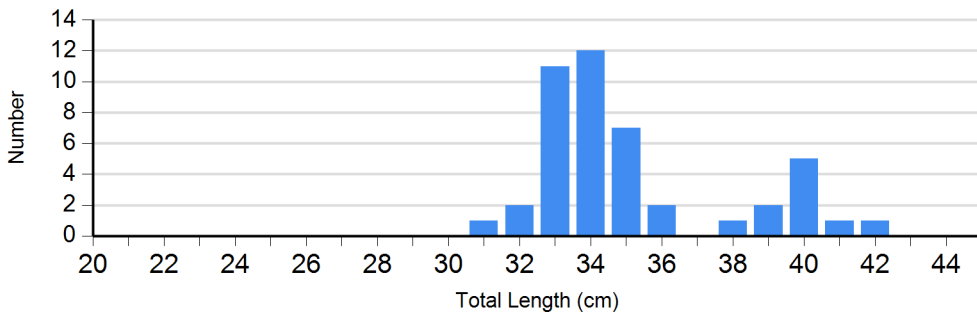




2019

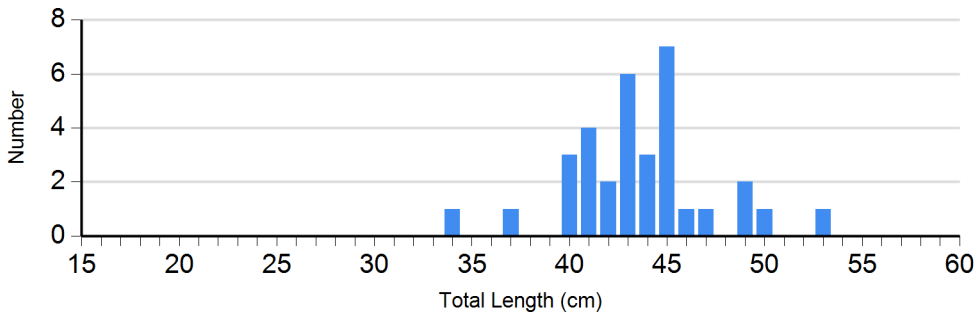


2021

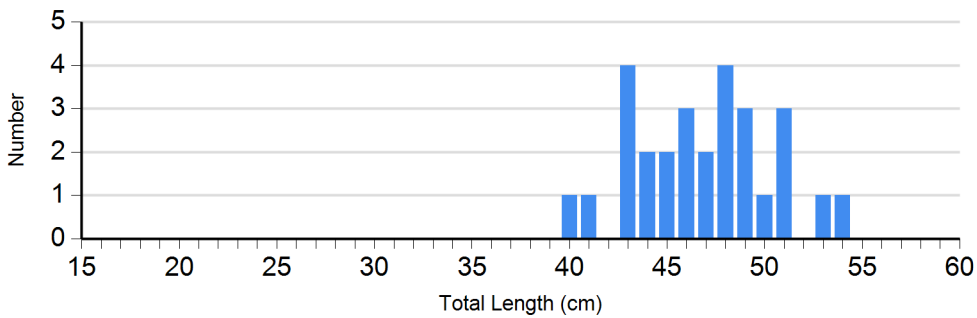


2022

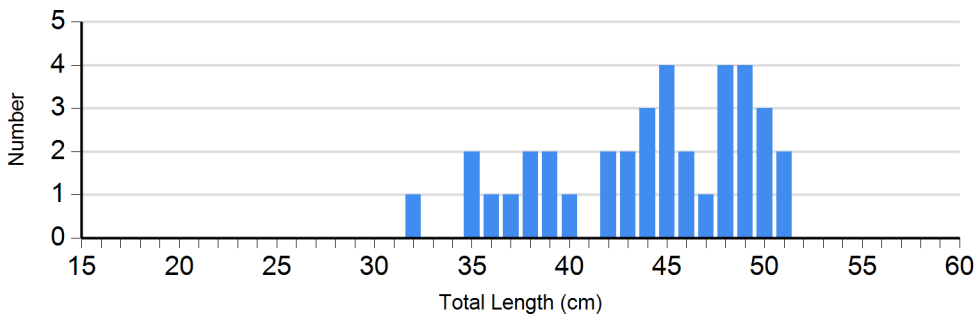
Species: White Sucker
Gear: AFS std gill net



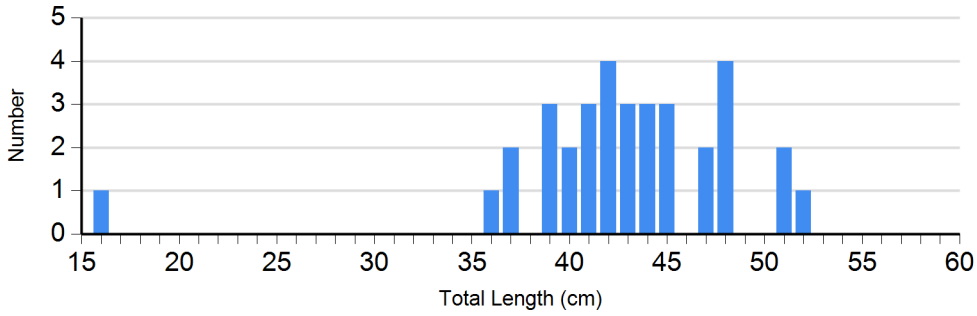
2017



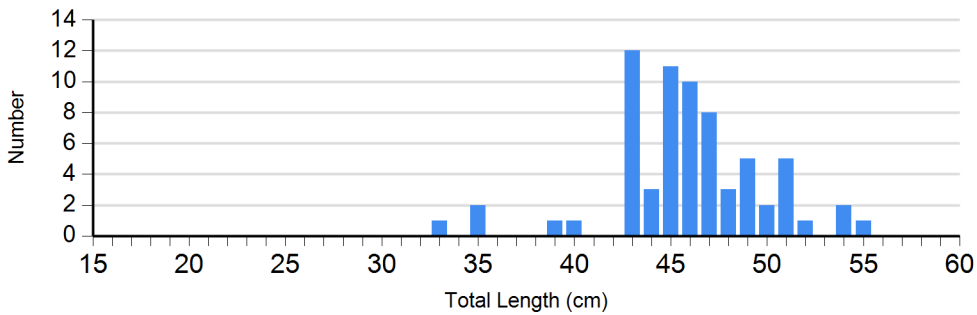
2018



2019

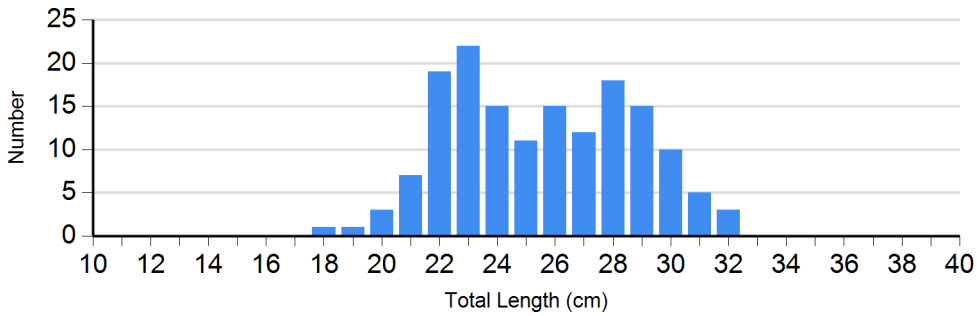


2021

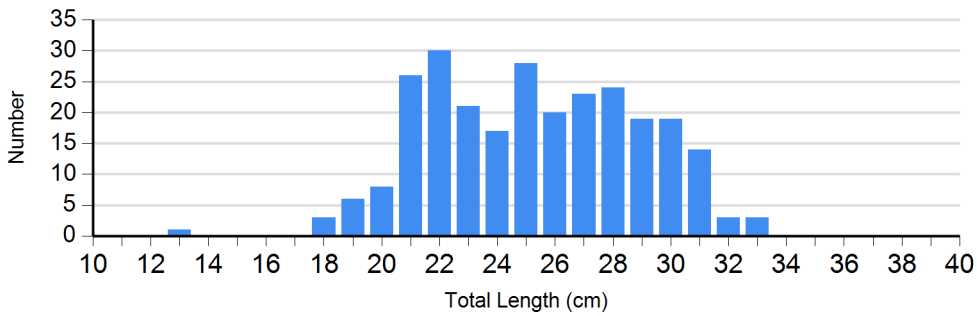


2022

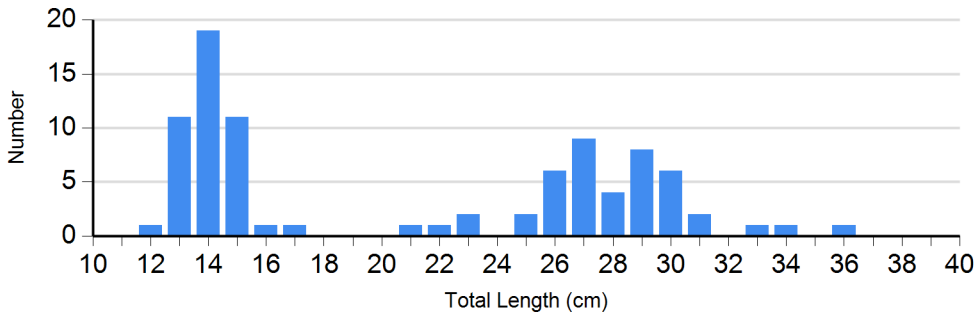
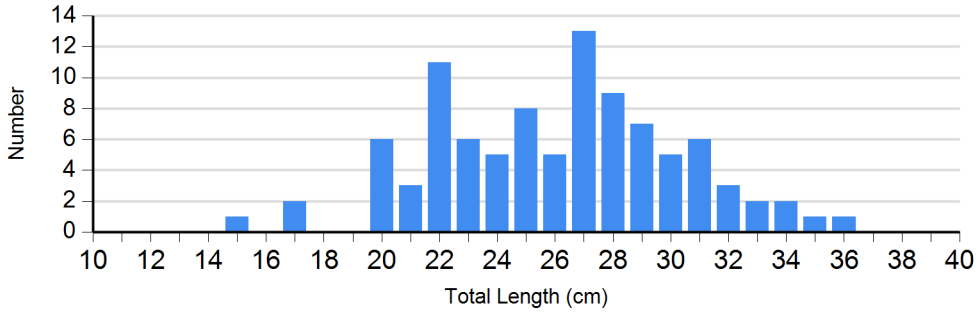
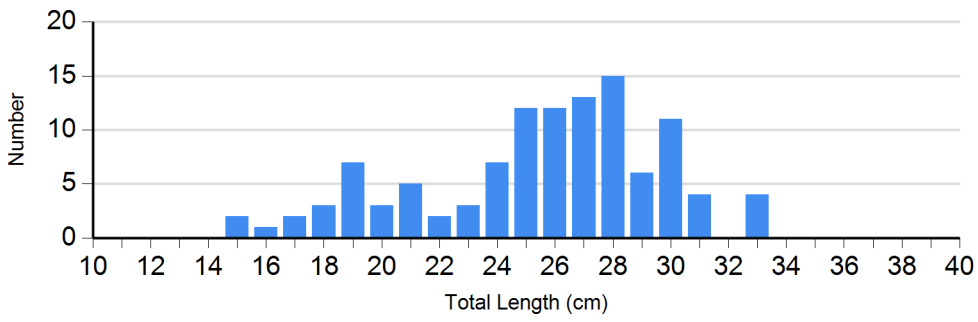
Species: Yellow Perch
Gear: AFS std gill net



2017



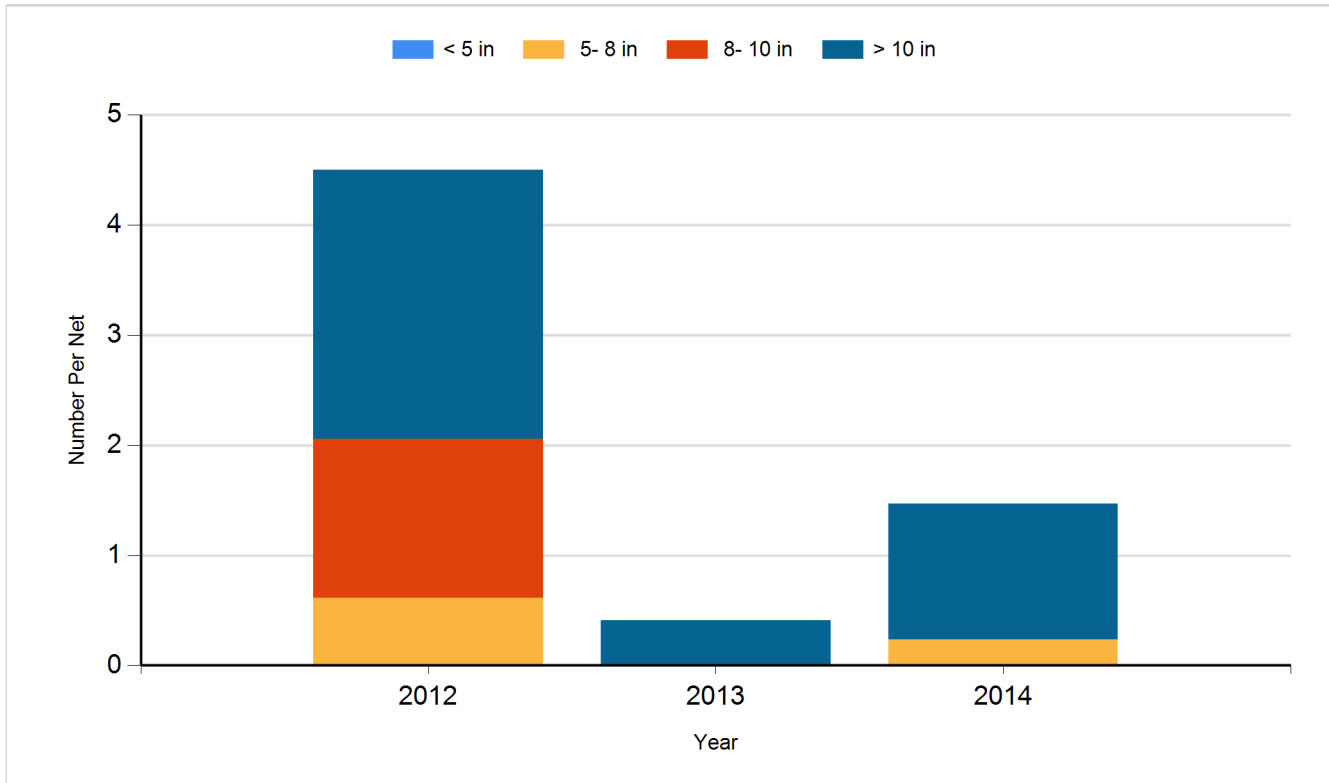
2018



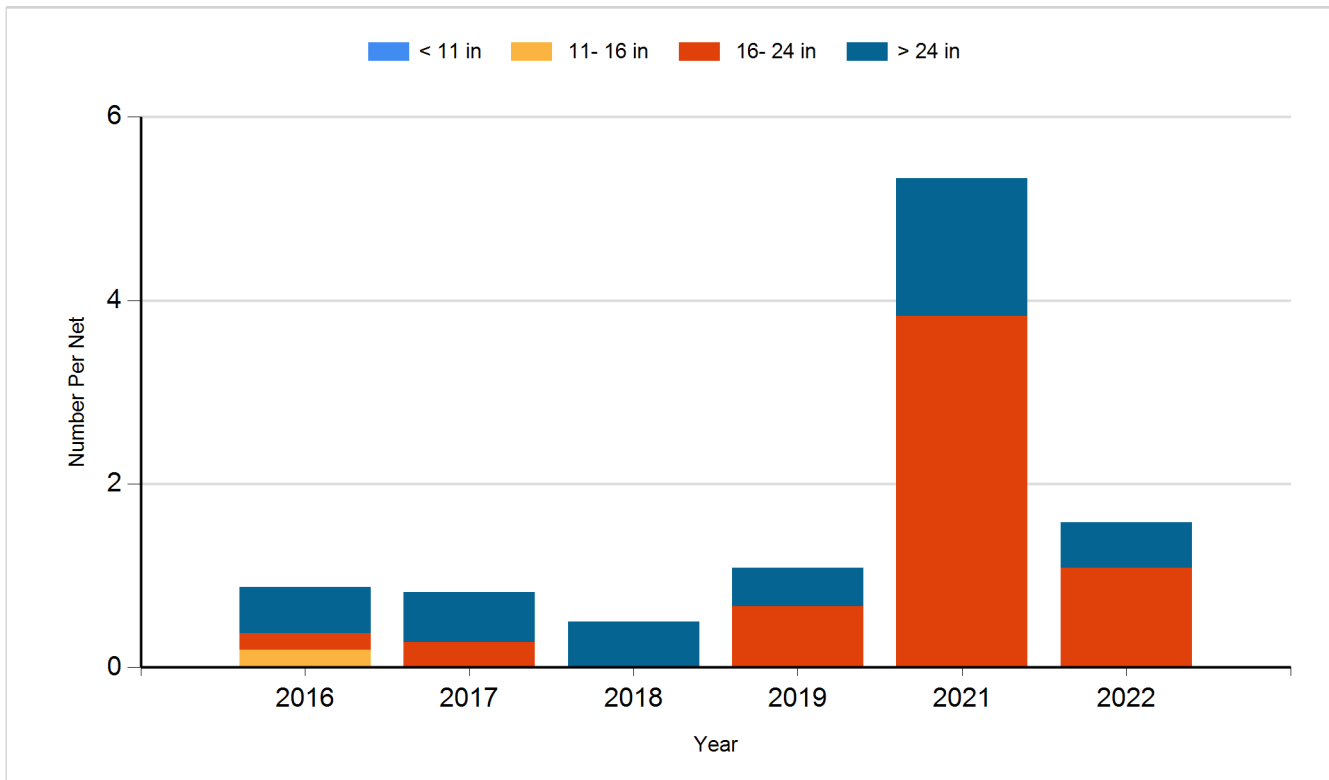
Historic Fish Sizes and Relative Abundance

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

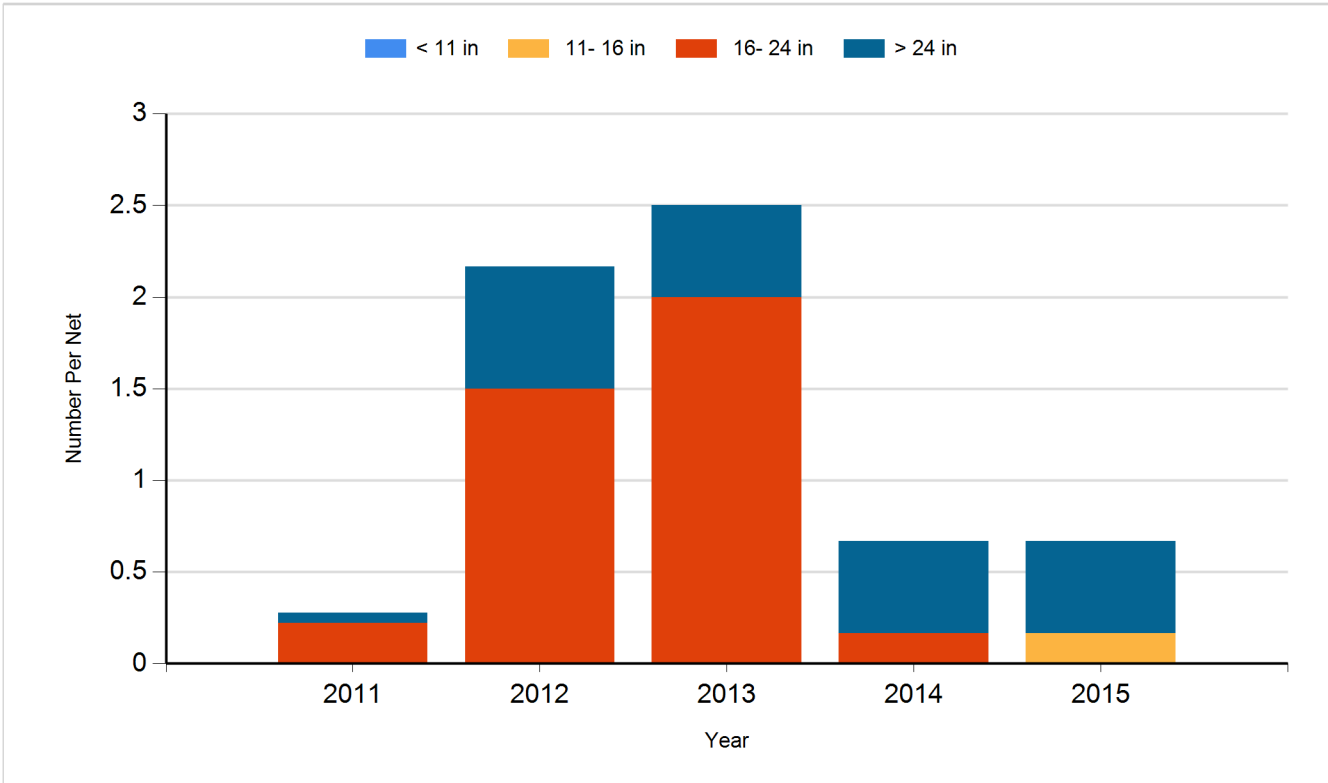
Species: Black Crappie
Gear: frame net (std 3/4 in)



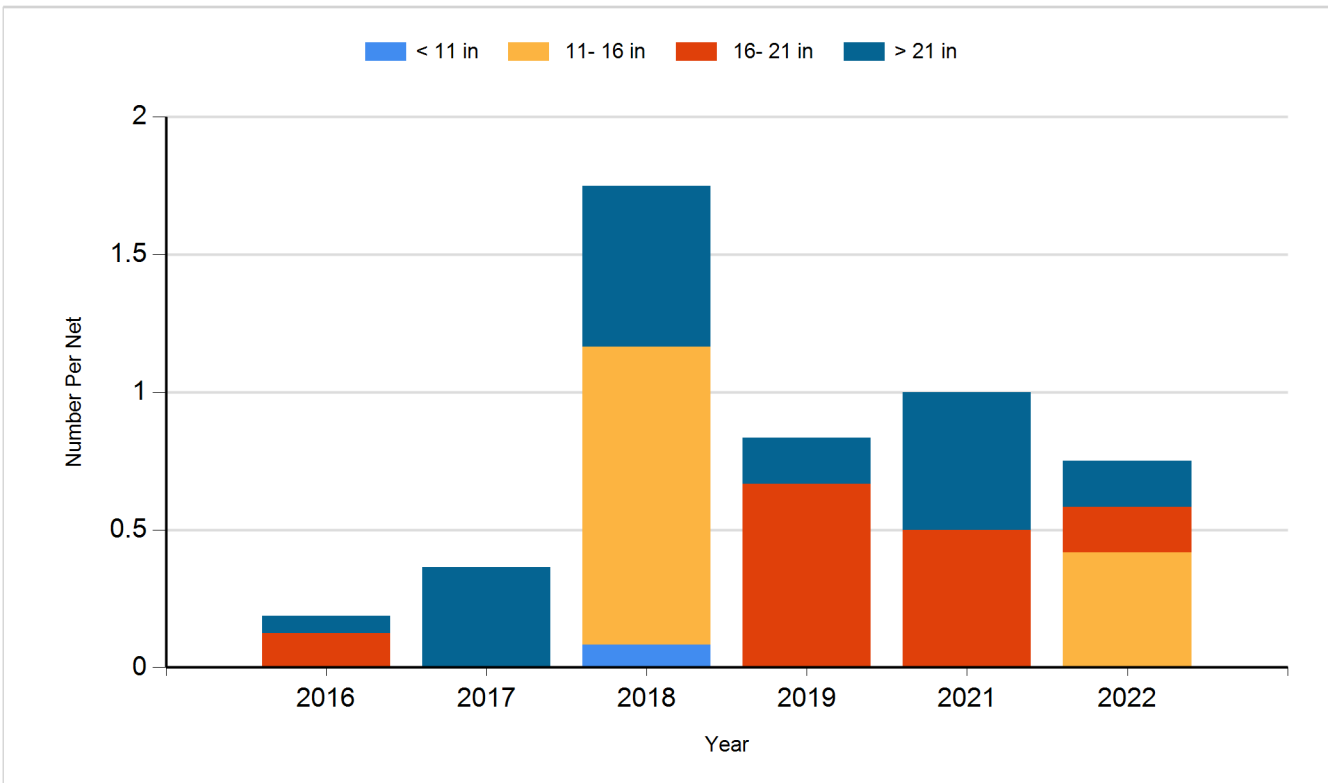
Species: Channel Catfish
Gear: AFS std gill net



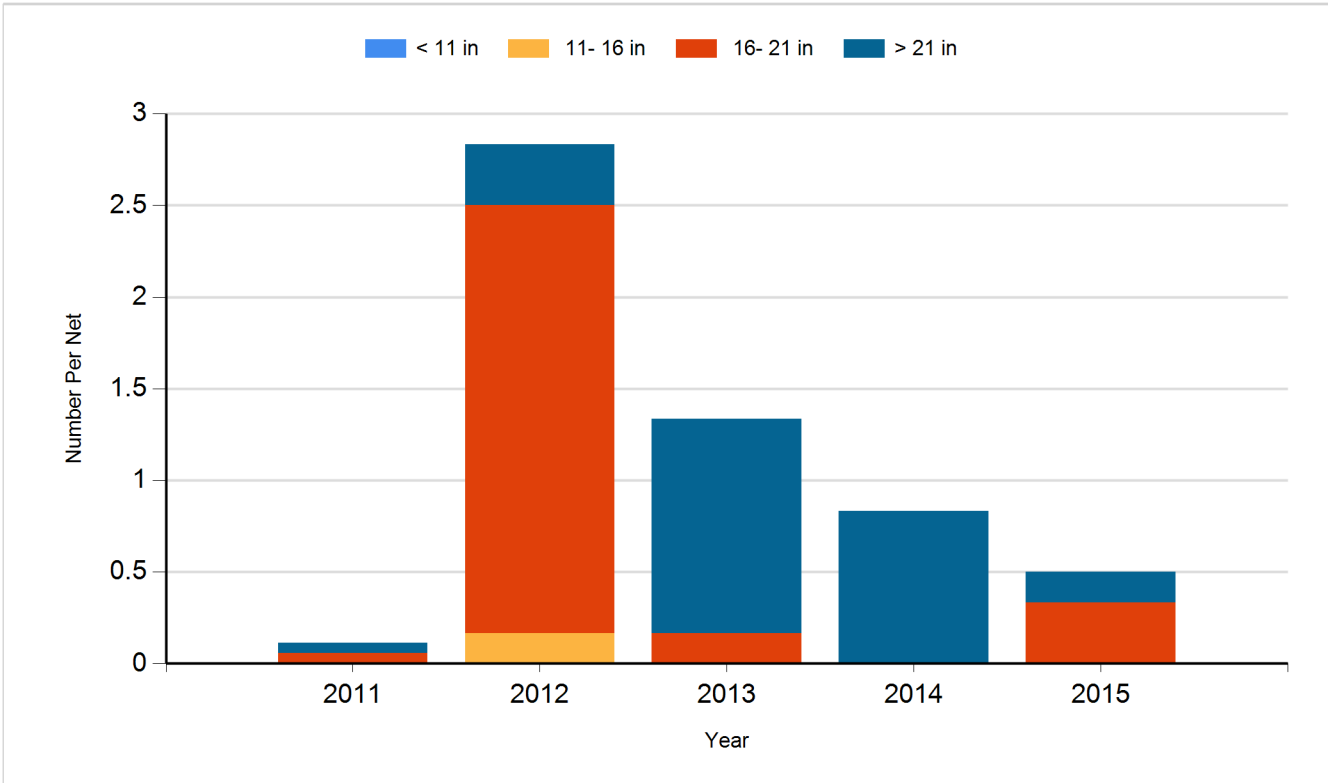
Species: Channel Catfish
Gear: std exp gill net



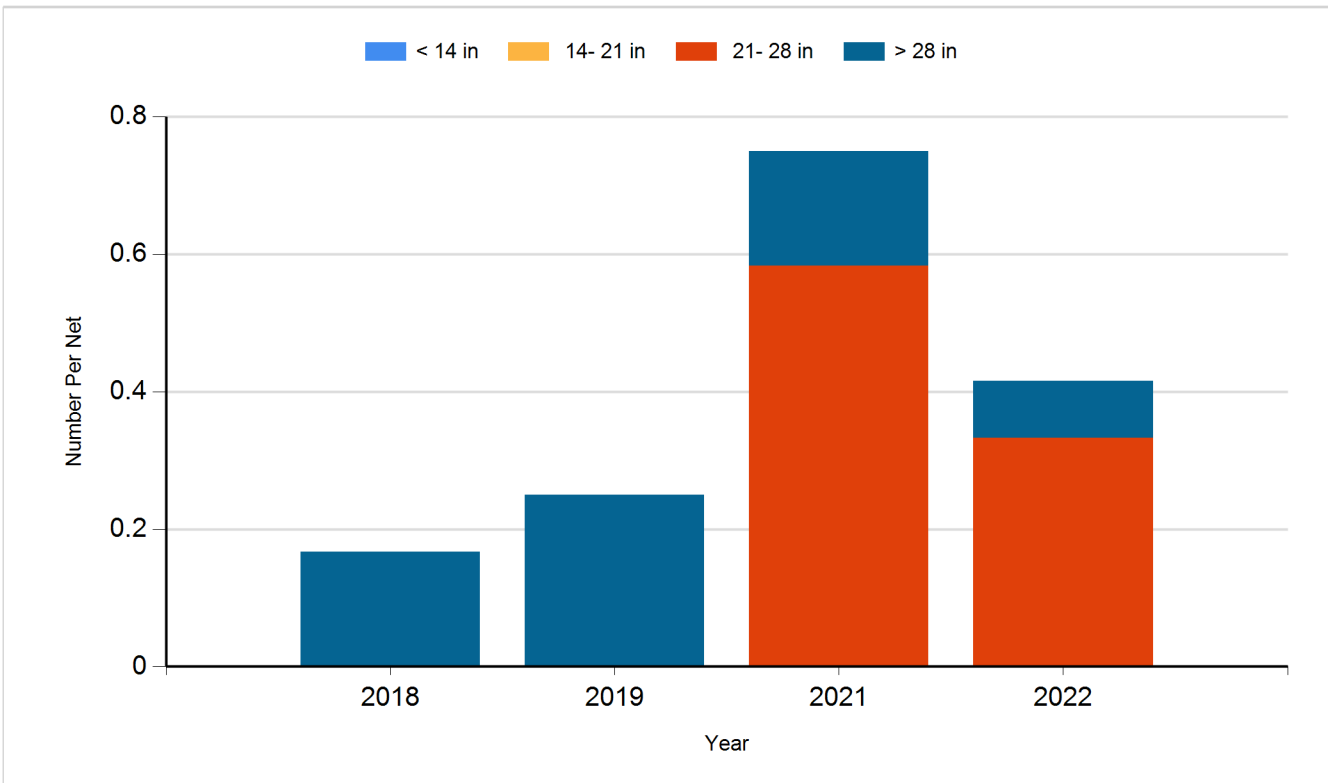
Species: Common Carp
Gear: AFS std gill net



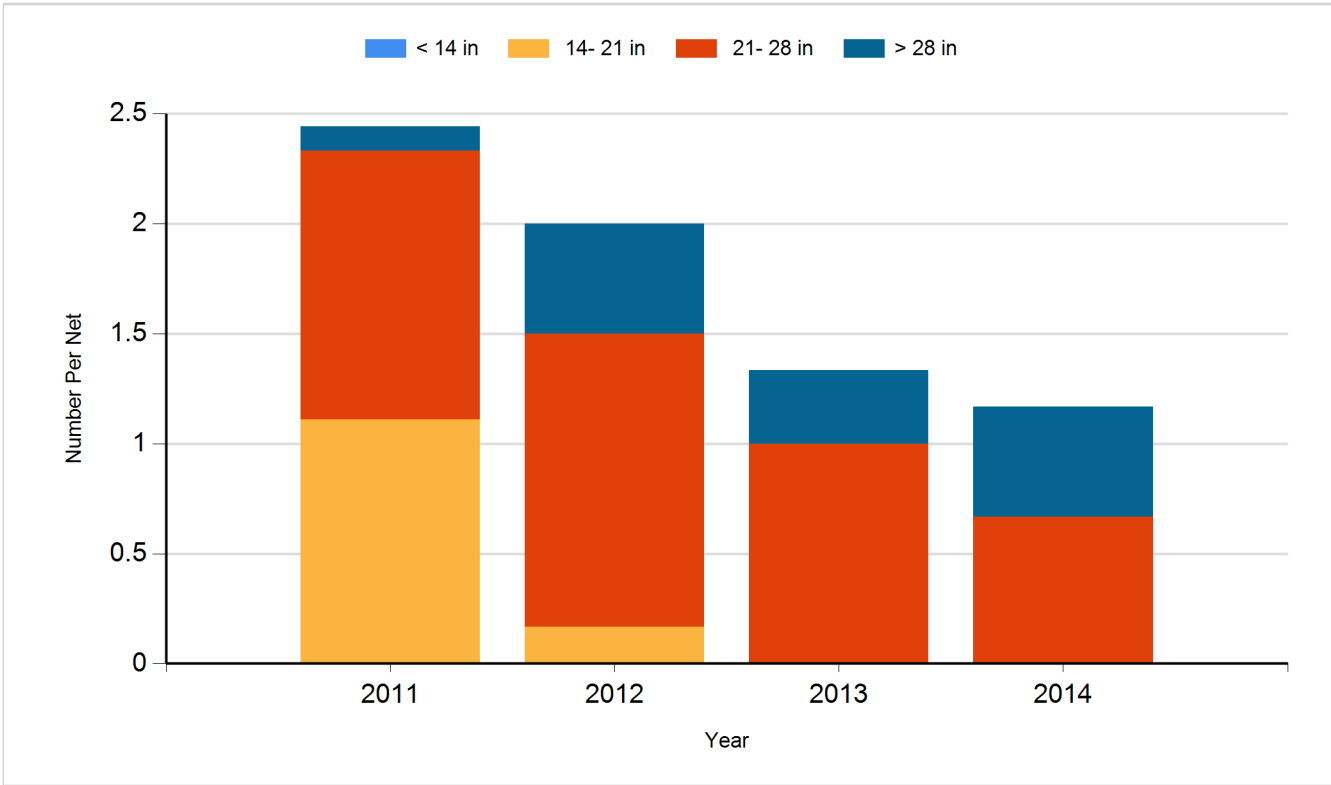
Species: Common Carp
Gear: std exp gill net



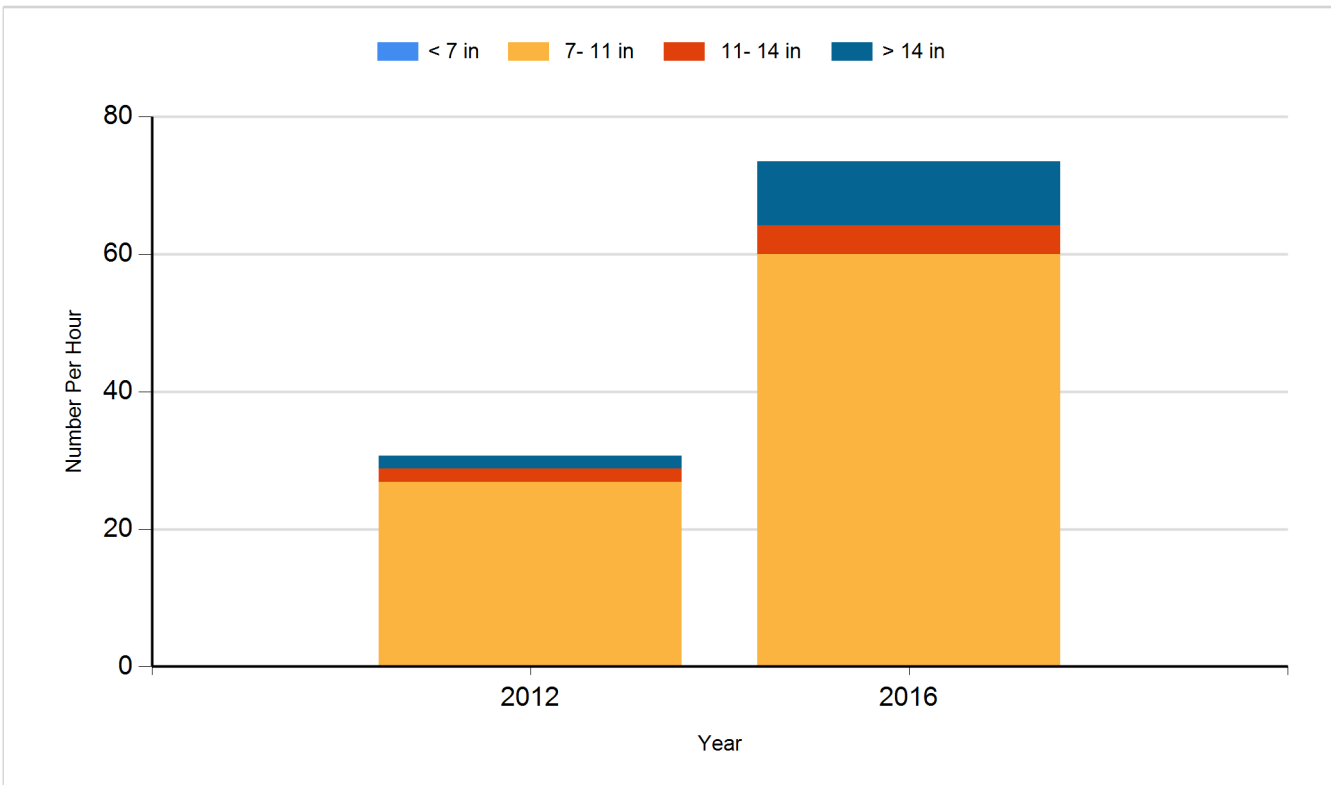
Species: Northern Pike
Gear: AFS std gill net



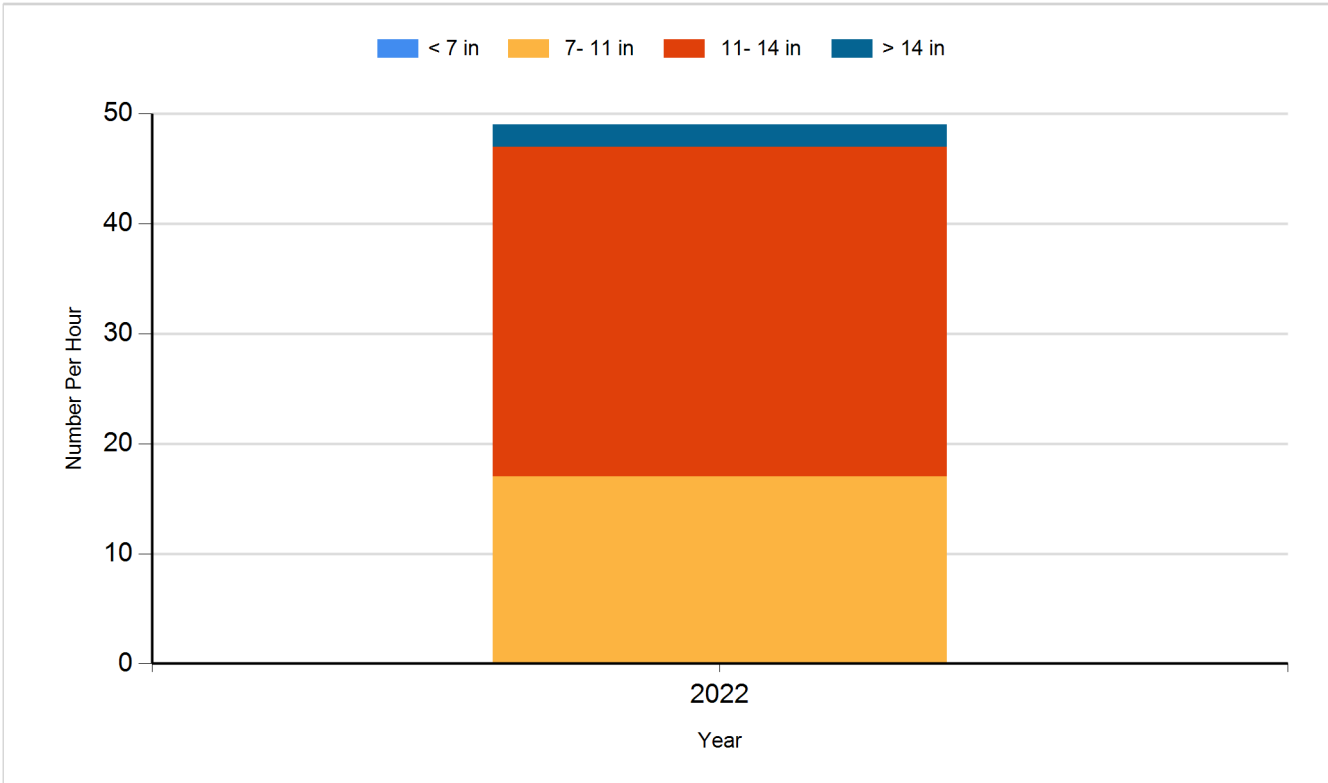
Species: Northern Pike
Gear: std exp gill net



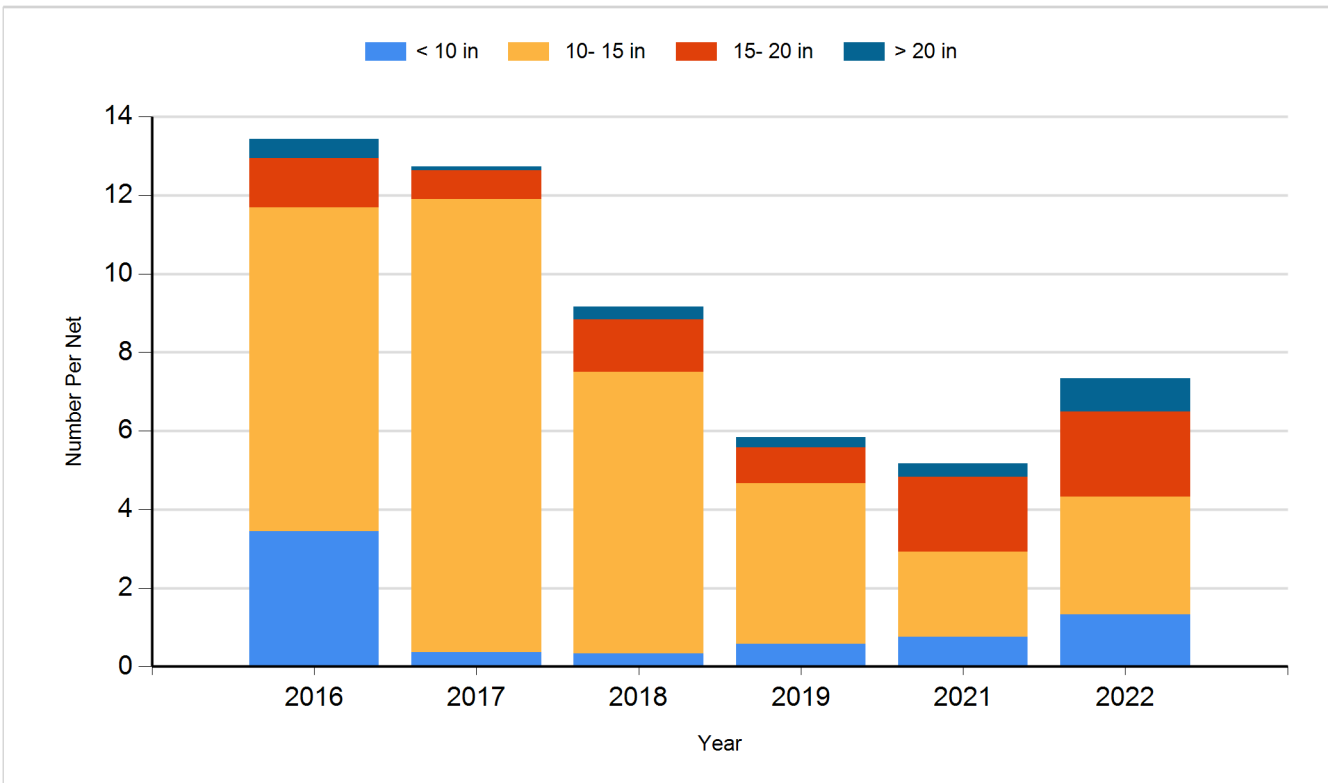
Species: Smallmouth Bass
Gear: boat shocker (night, DC)



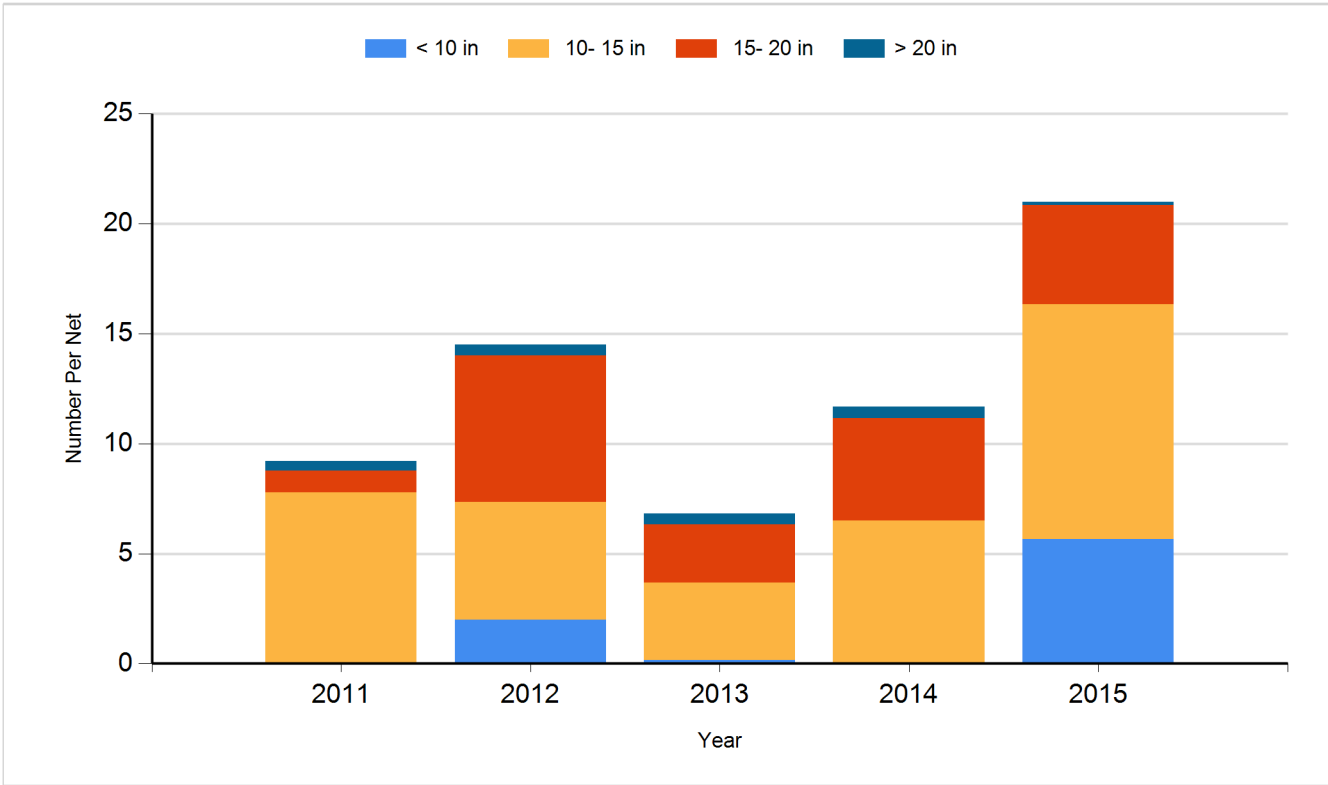
Species: Smallmouth Bass
Gear: spring day EF



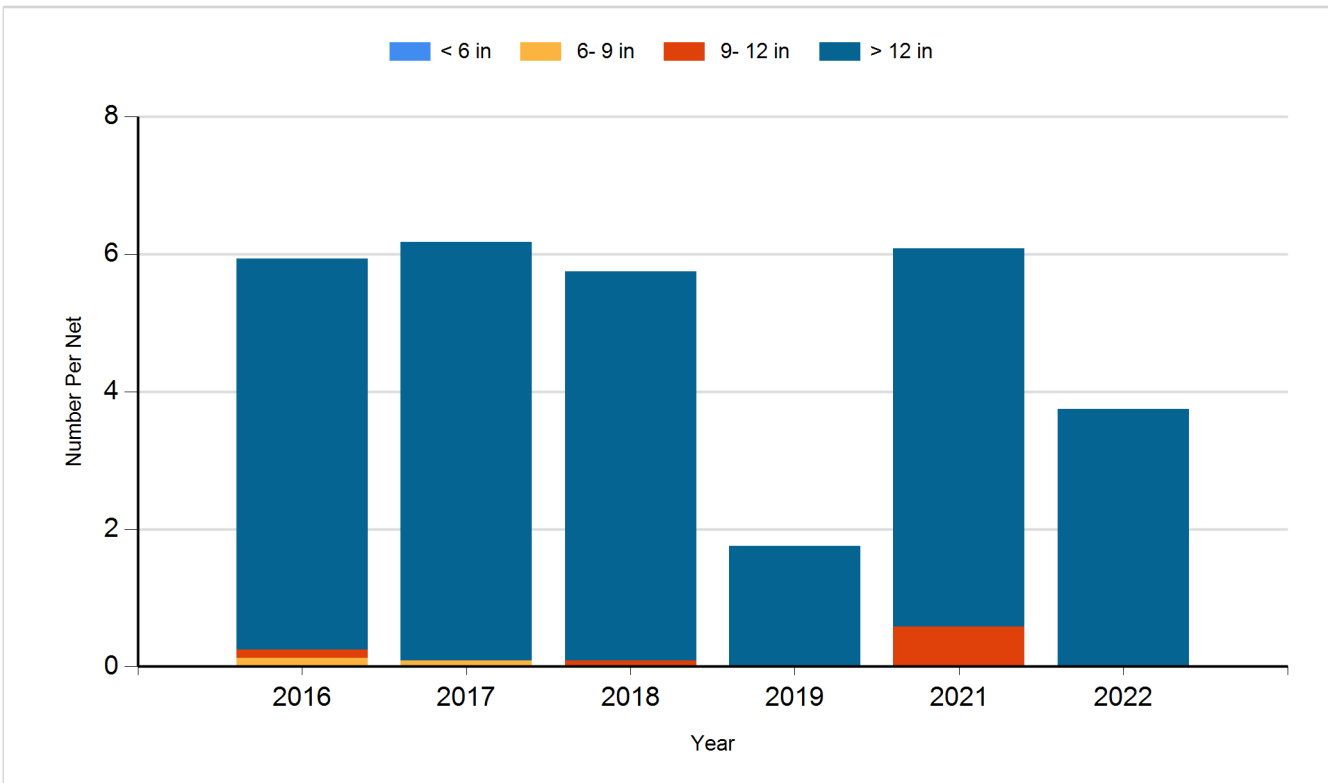
Species: Walleye
Gear: AFS std gill net



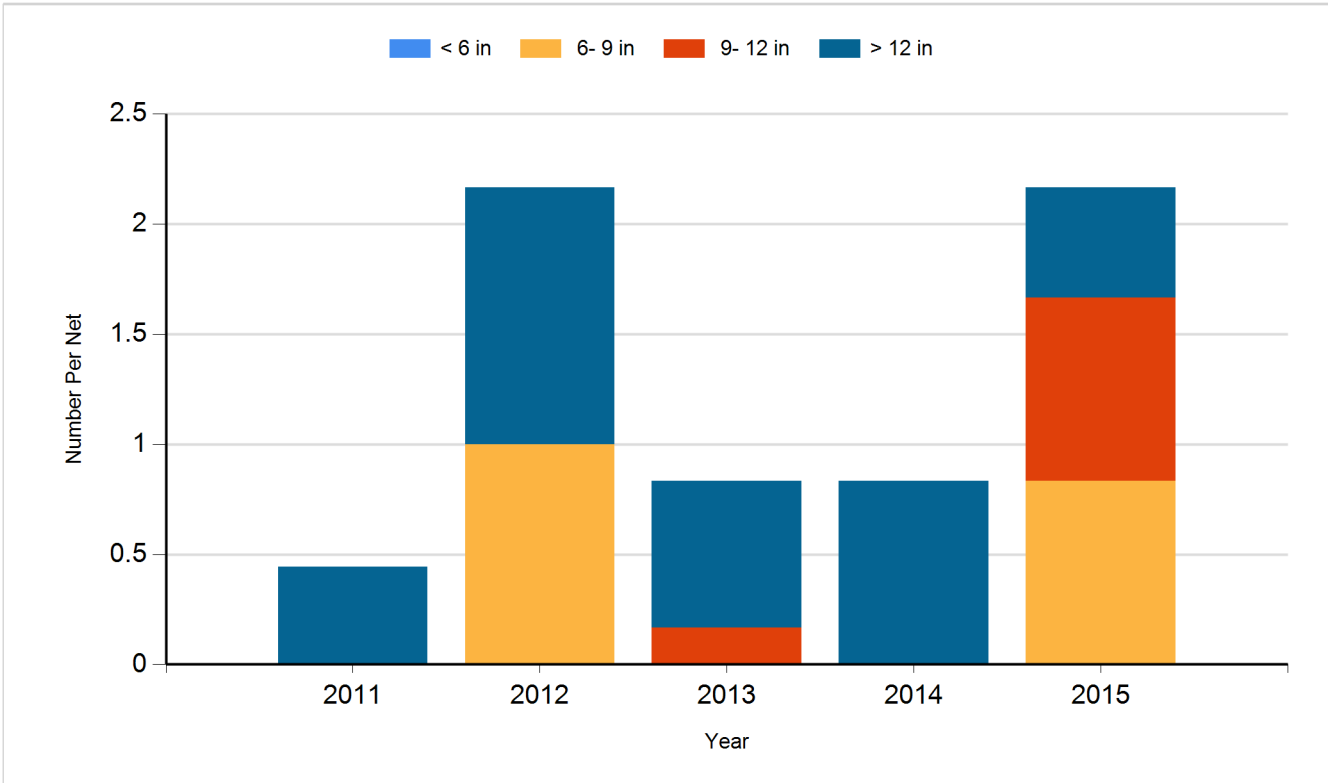
Species: Walleye
Gear: std exp gill net



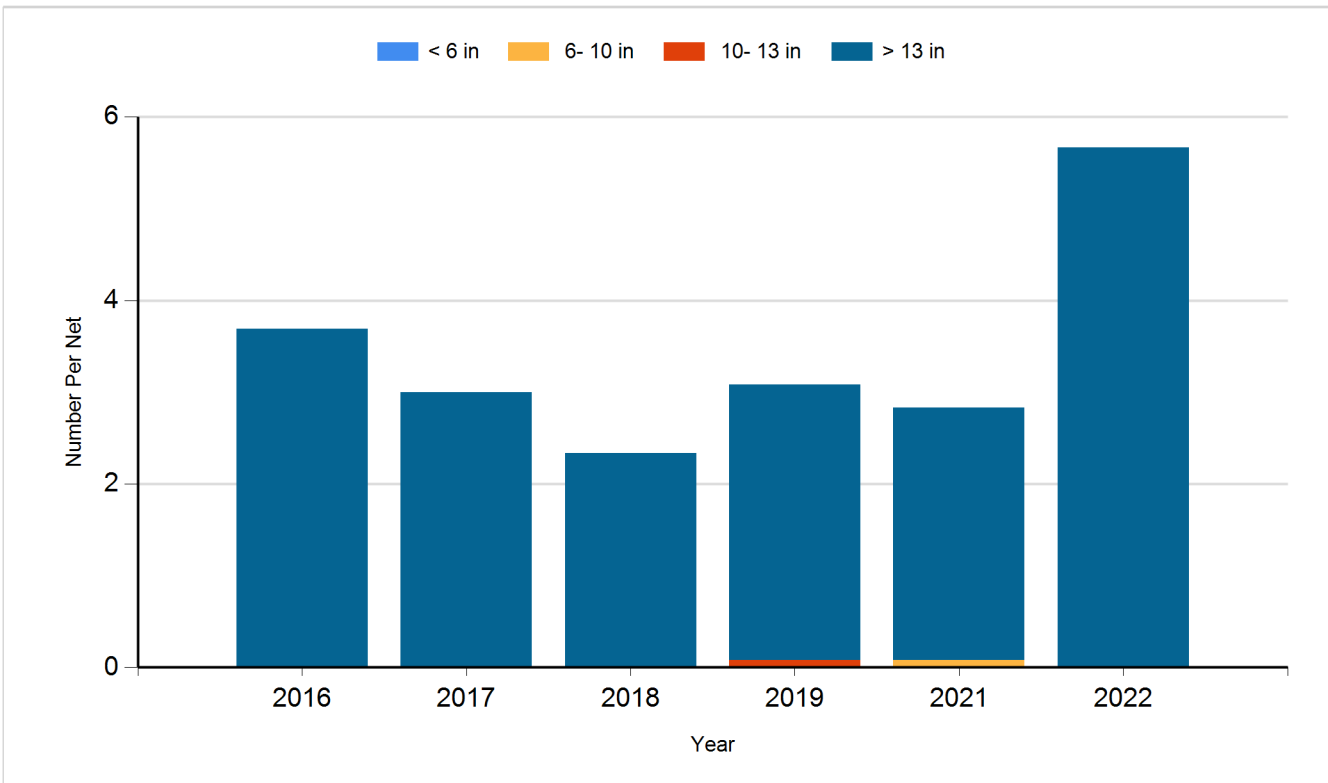
Species: White Bass
Gear: AFS std gill net



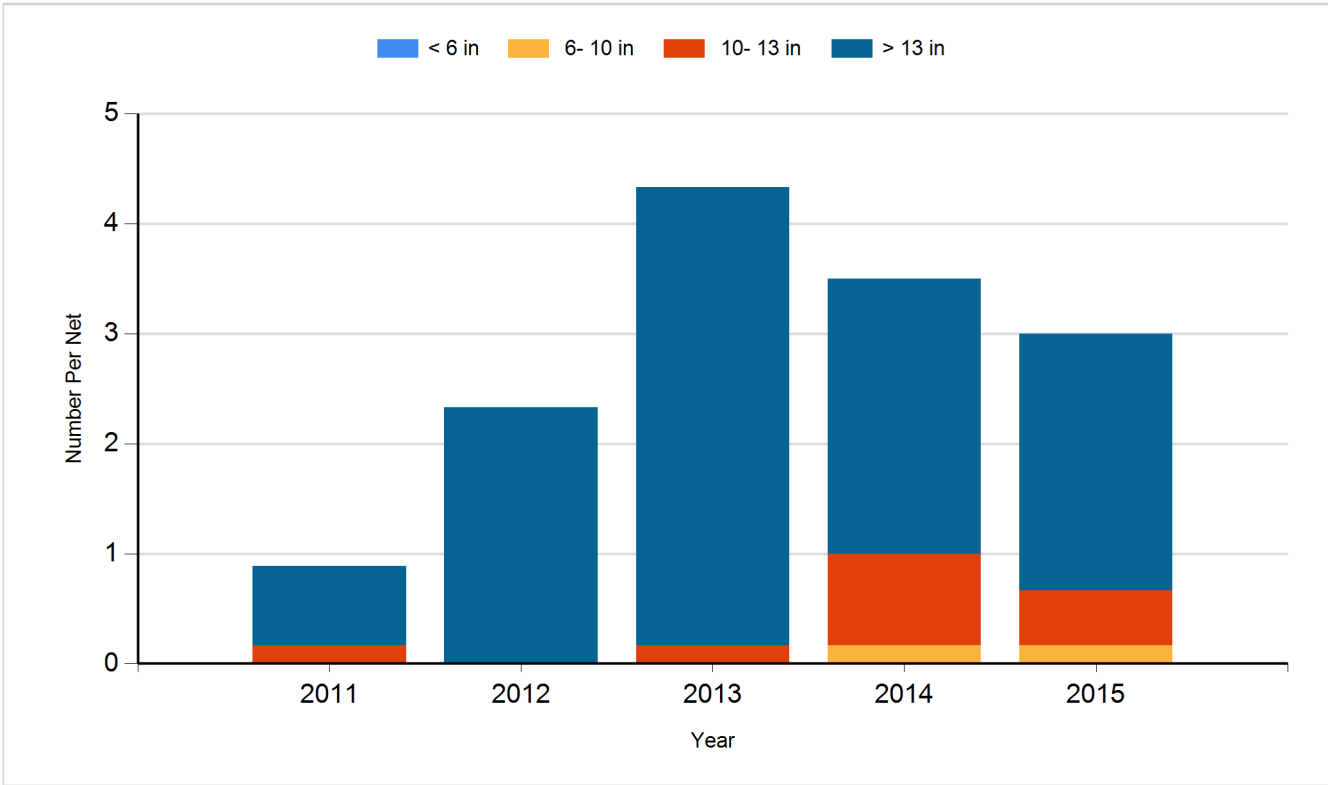
Species: White Bass
Gear: std exp gill net



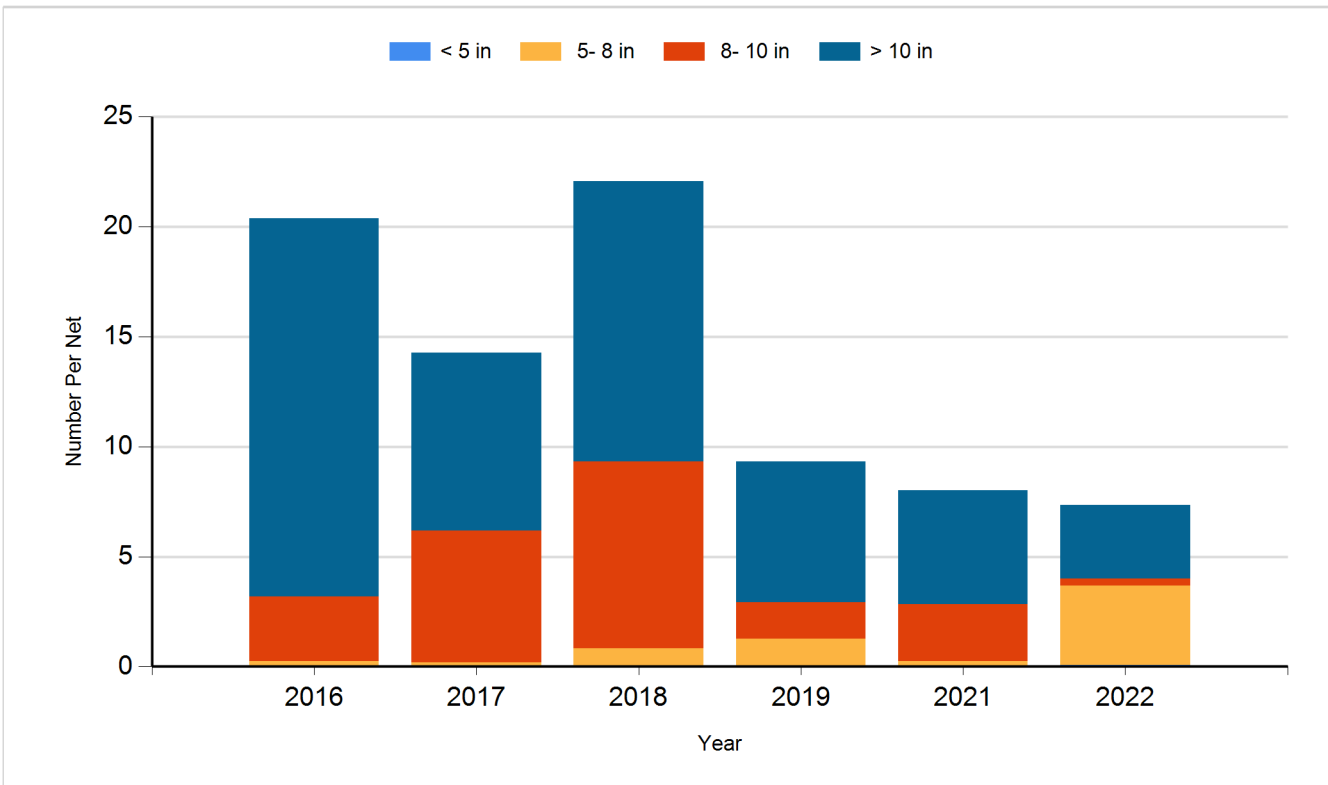
Species: White Sucker
Gear: AFS std gill net



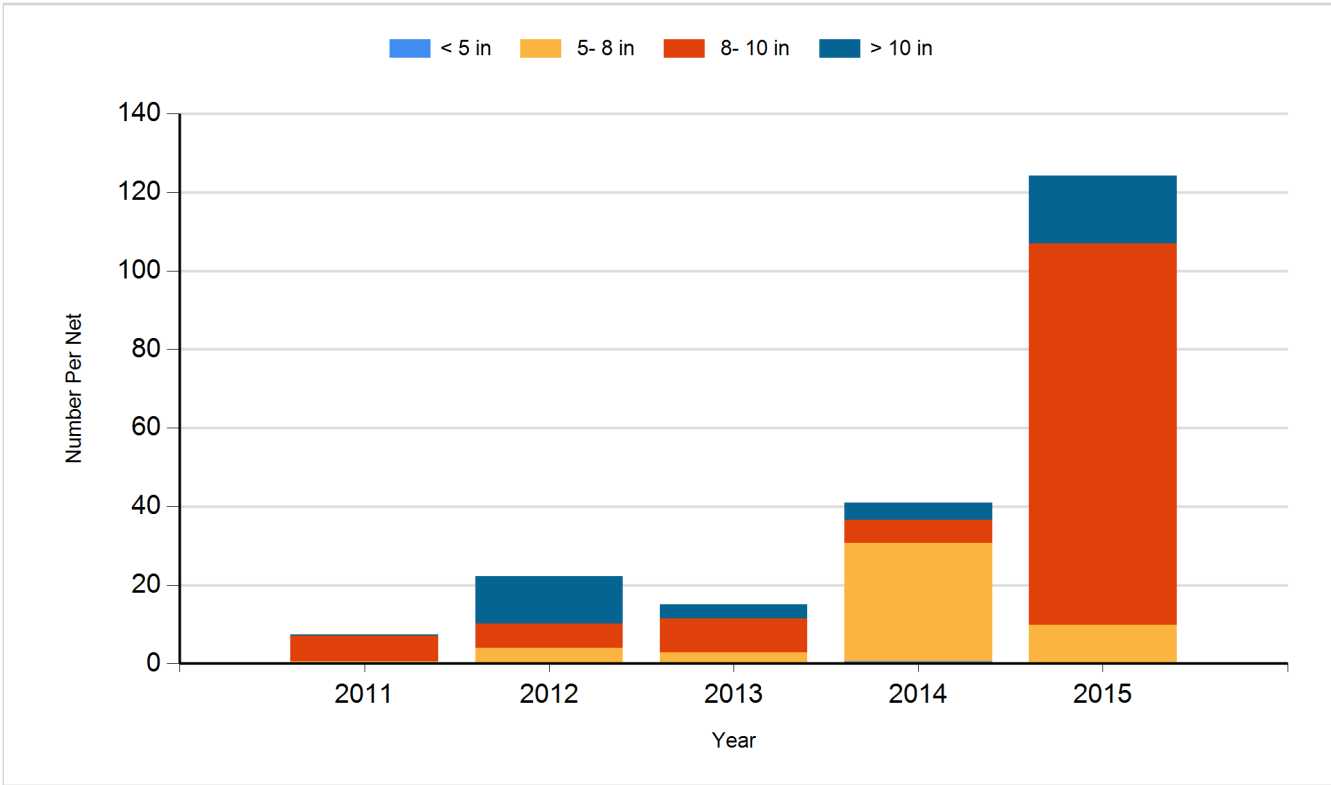
Species: White Sucker
Gear: std exp gill net



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
2011	Walleye	Fry	3,000,000
2012	Walleye	Fry	4,000,000
2014	Walleye	Fry	4,000,000
2019	Walleye	Fry	2,000,000