

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Sheridan, Pennington County
MCS-Lake-11-000
2024

Lake Information

Name: Sheridan
County: Pennington
Surface Area: 370 Acres

Surveys and Investigations

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

Gear	Date	Effort
AFS std gill net	Jul 09, 2024	4 net-nights
AFS std gill net	Jul 10, 2024	4 net-nights
boat shocker (day)	Sep 16, 2024	3600 seconds
frame net (std 3/4 in)	Jul 09, 2024	4 net-nights
frame net (std 3/4 in)	Jul 10, 2024	4 net-nights

Common Fish Species Present

Rainbow Trout

Black Crappie

Largemouth Bass

Yellow Perch

Bluegill

Rudd

White Sucker

Northern Pike

Black Bullhead

Rock Bass

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	Black Crappie	1	0.1	0.2	100		0		92	
	Bluegill	47	5.9	4.1	72	10	30	10	117	5
	Northern Pike	17	2.1	0.6	65	19	18		90	4
	Rainbow Trout	6	0.8	0.6	67		17		98	4
	Rock Bass	1	0.1	0.2	100		0		85	
	Rudd	7	0.9	1.2	43		0			
	Smallmouth Bass	2	0.3	0.2	50		50		101	4
	Walleye	2	0.3	0.2	100		50		94	4
	White Sucker	33	4.1	1.0	100		100		101	5
	Yellow Perch	134	16.8	5.0	58	6	10	4	101	1
boat shocker (day)	Largemouth Bass	63	62.0	15.3	84	7	34	9	105	1
frame net (std 3/4 in)	Black Bullhead	12	1.5	1.1	83		25		106	4
	Black Crappie	5	0.6	0.6	80		40		92	3
	Bluegill	669	83.6	32.4	62	3	35	2	109	2
	Northern Pike	7	0.8	0.4	0		0		97	20
	Rainbow Trout	4	0.5	0.4	75		0		88	2
	Rock Bass	6	0.8	0.4	83		0		85	6
	Rudd	632	79.0	35.3	95	1	54	3		
	Smallmouth Bass	1	0.1	0.2	0		0		105	
	White Sucker	14	1.8	1.3	100		100		93	2
Yellow Perch	33	4.1	2.7	73	12	27	12	93	3	

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
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
AFS std gill net	Black Bullhead				0.4		0.0	0.1	0.0	0.0	0.0	0.08
	Black Crappie				0.1		0.3	0.3	0.0	0.0	0.1	0.13
	Bluegill				1.0		9.4	4.3	0.3	0.3	5.9	3.53
	Golden Shiner				0.0		0.0	0.0	0.0	0.0	0.0	0.00
	Largemouth Bass				0.3		0.5	0.4	0.0	0.0	0.0	0.20
	Northern Pike				2.1		1.3	1.1	1.2	1.5	2.1	1.55
	Rainbow Trout				2.5		3.8	1.0	1.0	0.5	0.8	1.60
	Rock Bass				0.5		0.0	0.1	0.0	0.0	0.1	0.12
	Rudd				0.5		0.0	4.5	0.0	0.0	0.9	0.98
	Smallmouth Bass				0.1		0.3	0.3	0.2	0.0	0.3	0.20
	Walleye				0.0		0.0	0.0	0.0	0.3	0.3	0.10
	White Sucker				1.4		1.9	2.8	3.7	5.3	4.1	3.20
Yellow Perch				18.0		12.3	16.3	1.0	12.8	16.8	12.87	
boat shocker (day)	Largemouth Bass								29.0		62.0	45.50
boat shocker (night)	Largemouth Bass	55.0	62.0		120.0	80.4	30.0	10.0		89.0		63.77
	Smallmouth Bass	3.0	3.0		7.2	0.0	0.0	0.0		2.0		2.17
	Walleye*	0.0	0.0		1.2	1.5	0.0	0.0		4.0		0.96
frame net (std 3/4 in)	Black Bullhead	6.1			2.3			0.1		0.8	1.5	2.16
	Black Crappie	9.8			2.0			1.3		1.0	0.6	2.94
	Bluegill	0.0			24.8			81.3		174.0	83.6	72.74
	Golden Shiner	0.0			0.0			0.0		0.0	0.0	0.00
	Green Sunfish	0.6			0.3			0.6		0.8	0.0	0.46
	Largemouth Bass	0.0			0.7			0.0		0.0	0.0	0.14
	Northern Pike	0.3			0.6			0.6		0.8	0.8	0.62
	Rainbow Trout	1.8			0.1			0.0		0.0	0.5	0.48
	Rock Bass	7.8			11.9			3.8		1.6	0.8	5.18
	Rudd	3.3			30.8			18.9		68.8	79.0	40.16
	Smallmouth Bass	0.3			0.0			0.0		0.0	0.1	0.08
	Walleye	0.0			0.0			0.0		0.9	0.0	0.18
White Sucker	0.1			0.9			0.5		0.6	1.8	0.78	
Yellow Perch	14.6			13.7			10.4		21.0	4.1	12.76	
std exp gill net	Black Crappie	7.5	0.5									4.00
	Golden Shiner	0.0	0.0									0.00

CPUE

Gear	Species	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg
std exp gill net	Largemouth Bass	0.0	0.0									0.00
	Northern Pike	1.5	1.5									1.50
	Rainbow Trout	6.0	1.0									3.50
	Rock Bass	0.0	0.5									0.25
	Smallmouth Bass	0.0	1.5									0.75
	White Sucker	0.0	3.0									1.50
	Yellow Perch	40.0	56.0									48.00

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											
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024		
AFS std gill net	Black Bullhead	PSD				100			100					
		PSD-P				67			100					
		Wr				91			72					
	Black Crappie	PSD				0		100	100					100
		PSD-P				0		0	0					0
		Wr				76		104	101					92
	Bluegill	PSD				0		87	68	50	100			72
		PSD-P				0		9	26	50	100			30
		Wr				95		105	108	106	99			117
	Largemouth Bass	PSD				0		75	33					
		PSD-P				0		50	0					
		Wr				94		99	112					
	Northern Pike	PSD				82		90	78	57	67			65
		PSD-P				29		40	44	43	44			18
		Wr				101		100	94	103	97			90
	Rainbow Trout	PSD				55		17	63	0	0			67
		PSD-P				0		0	0	0	0			17
		Wr				85		86	81	91	90			98
	Rock Bass	PSD				0				100				100
		PSD-P				0				0				0
		Wr				81				84				85
	Rudd	PSD				100				97				43
		PSD-P				100				69				0
	White Sucker	PSD				100		100	100	100	100			100
		PSD-P				100		100	100	100	100			100
		Wr				100		93	96	100	102			101
	Yellow Perch	PSD				70		62	85	33	38			58
PSD-P					31		10	20	0	6			10	
Wr					93		102	94	99	98			101	
boat shocker (day)	Largemouth Bass	PSD								72			84	
		PSD-P								38			34	
		Wr								109			105	

Gear	Species	Index	Year									
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
boat shocker (night)	Largemouth Bass	PSD	51	61		42	50	83	100		57	
		PSD-P	16	23		8	15	27	40		22	
		Wr	107	107		101	111	105	107		102	
frame net (std 3/4 in)	Black Bullhead	PSD	86			95			100		83	83
		PSD-P	35			57			100		83	25
		Wr	114			96			99		96	106
	Black Crappie	PSD	37			56			90		75	80
		PSD-P	4			11			0		38	40
		Wr	104			92			94		91	92
	Bluegill	PSD				93			53		65	62
		PSD-P				8			24		33	35
		Wr				126			102		108	109
	Largemouth Bass	PSD	0			17						
		PSD-P	0			0						
		Wr				99						
	Northern Pike	PSD	50			20			20		17	0
		PSD-P	0			0			0		0	0
		Wr	106			93			91		79	97
	Rainbow Trout	PSD	29			100						75
		PSD-P	0			0						0
		Wr	81			91						88
Rock Bass	PSD	19			30			27		46	83	
	PSD-P	0			1			7		0	0	
	Wr	103			93			84		97	85	
Rudd	PSD	100			67			96		95	95	
	PSD-P	69			54			44		55	54	
White Sucker	PSD	100			88			100		100	100	
	PSD-P	100			88			100		100	100	
	Wr	95			87			91		92	93	
Yellow Perch	PSD	56			86			65		77	73	
	PSD-P	6			27			10		19	27	
	Wr	93			94			85		93	93	
std exp gill net	Black Crappie	PSD	47	100								
		PSD-P	0	0								
		Wr	87	99								
	Northern Pike	PSD	33	67								

Gear	Species	Index	Year											
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024		
std exp gill net	Northern Pike	PSD-P	0	33										
		Wr	90	104										
	Rainbow Trout	PSD	25	0										
		PSD-P	0	0										
		Wr	80	84										
	Rock Bass	PSD		0										
		PSD-P		0										
		Wr		96										
	White Sucker	PSD		100										
		PSD-P		100										
		Wr		102										
	Yellow Perch	PSD	69	82										
		PSD-P	3	9										
		Wr	101	98										

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+
2015	79		119 (1)		191 (67)	207 (8)	249 (3)	300 (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+
2015	80	330 (1)	154 (1)	181 (22)	208 (25)	263 (8)	352 (15)	387 (7)		367 (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+
2018	144	148 (10)	151 (23)	191 (18)	253 (3)	225 (11)	250 (14)	252 (61)		281 (2)	245 (4)
2016	107	165 (1)	185 (3)	195 (19)	224 (32)	233 (32)	230 (7)	223 (2)	234 (3)	234 (6)	
2015	80	144 (2)	188 (9)	203 (43)	227 (22)	265 (2)	243 (2)				

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).

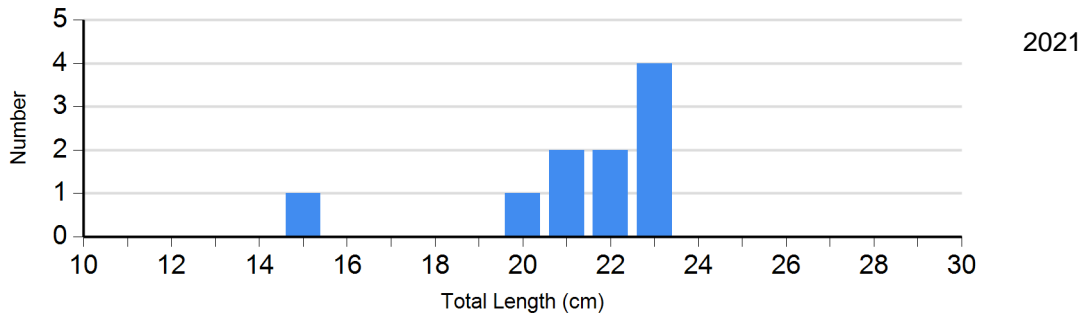
Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Bullhead Gill Net	2021	0		0		1	72	0	
Black Crappie Frame Net	2021	1	110	9	92 (2.1)	0		0	
	2023	2	107 (2.0)	3	95 (7.5)	3	77 (13.8)	0	
	2024	1	99	2	94 (0.2)	2	87 (0.7)	0	
Bluegill Frame Net	2021	305	99 (0.5)	191	105 (0.5)	154	101 (0.7)	0	
	2023	489	118 (1.8)	445	113 (0.9)	458	102 (0.8)	0	
	2024	252	117 (3.8)	184	111 (1.4)	233	104 (0.8)	0	
Largemouth Bass Electro Fishing	2020	5	103 (5.3)	17	103 (2.3)	8	109 (3.0)	0	
	2021	0		3	104 (4.2)	2	110 (8.6)	0	
	2022	8	108 (4.0)	10	107 (2.3)	11	111 (1.8)	0	
	2023	38	101 (0.8)	31	103 (1.4)	20	106 (2.3)	0	
	2024	10	102 (2.0)	31	104 (1.4)	21	107 (1.8)	0	
Northern Pike Gill Net	2020	1	79	5	93 (4.8)	3	108 (10.6)	1	132
	2021	2	87 (0.3)	3	91 (2.9)	1	109	3	105
	2022	3	90 (1.1)	1	97	2	119 (5.8)	1	113
	2023	3	92 (5.6)	2	86 (0.6)	2	115 (0.4)	2	
	2024	6	84 (2.4)	8	90 (2.6)	2	107 (16.3)	1	
Rainbow Trout Gill Net	2020	25	87 (3.3)	5	80 (3.1)	0		0	
	2021	3	90 (2.9)	5	75 (2.5)	0		0	
	2022	6	91 (6.1)	0		0		0	
	2023	3	90 (1.3)	0		0		0	
	2024	2	96 (2.2)	3	101 (6.9)	1	96	0	

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	2020	0		0		1	99	14	93 (2.5)
	2021	0		0		4	100 (2.5)	18	95 (2.3)
	2022	0		0		3	98 (3.5)	19	100 (1.6)
	2023	0		0		5	103 (4.5)	27	102 (2.2)
	2024	0		0		4	103 (3.3)	29	100 (4.2)
Yellow Perch Gill Net	2020	37	117 (15.3)	51	94 (0.8)	10	88 (2.2)	0	
	2021	20	95 (2.4)	84	94 (0.8)	25	93 (5.1)	1	0
	2022	4	97 (7.0)	2	102 (9.9)	0		0	
	2023	48	100 (1.3)	24	97 (1.7)	5	91 (3.3)	0	
	2024	56	103 (2.0)	64	100 (1.1)	14	95 (3.0)	0	

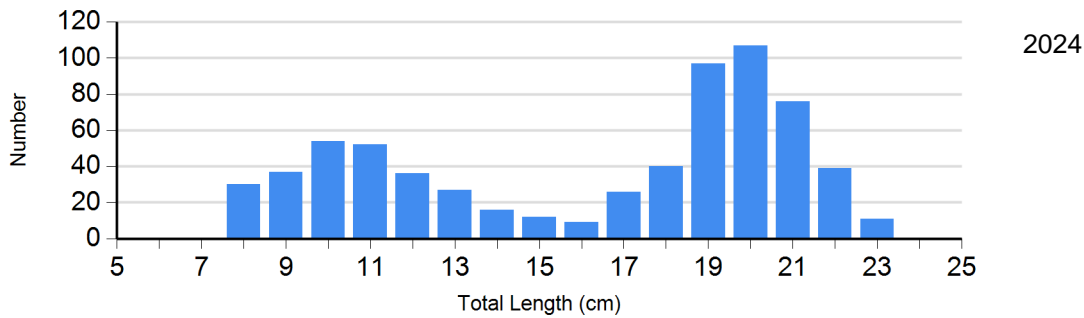
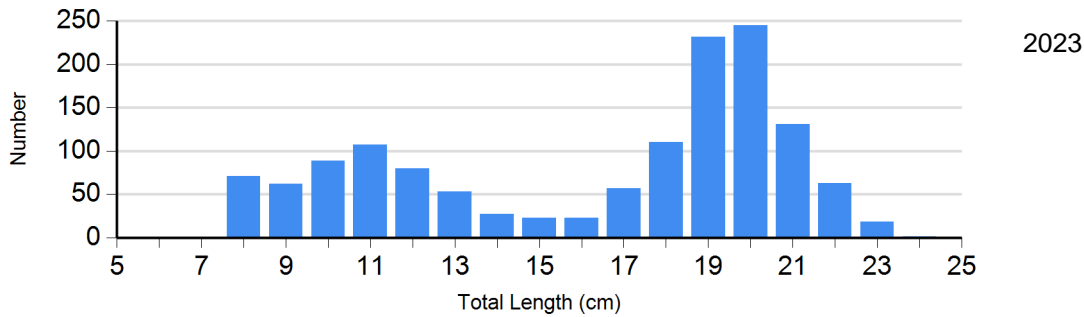
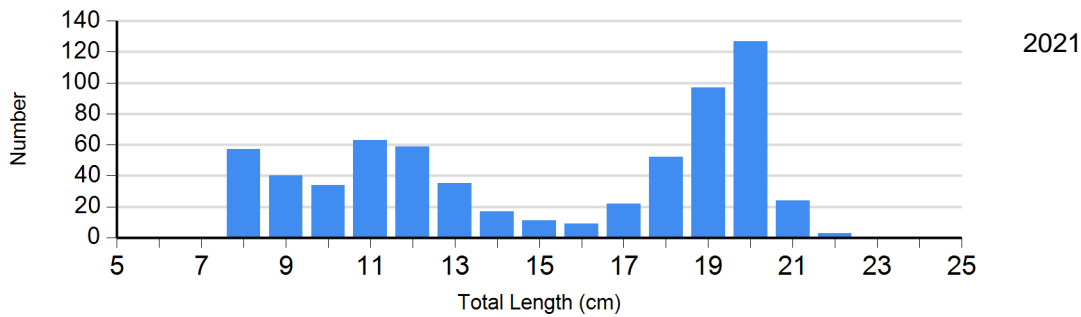
Length Frequency Distribution

Length frequency histogram of species sampled by year.

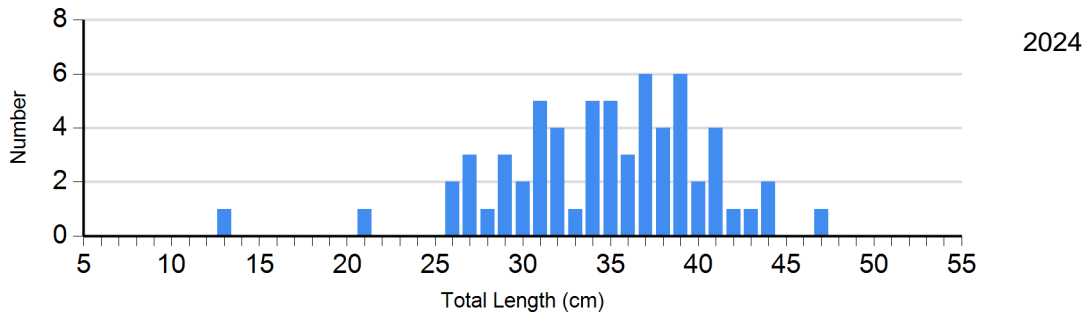
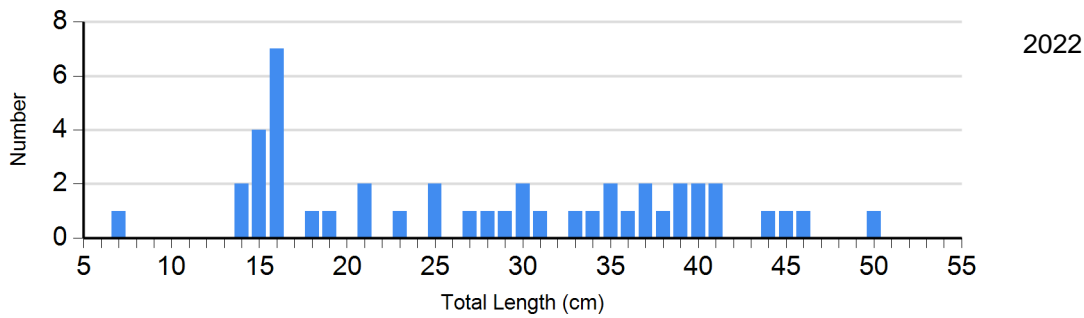
Species: Black Crappie
Gear: frame net (std 3/4 in)



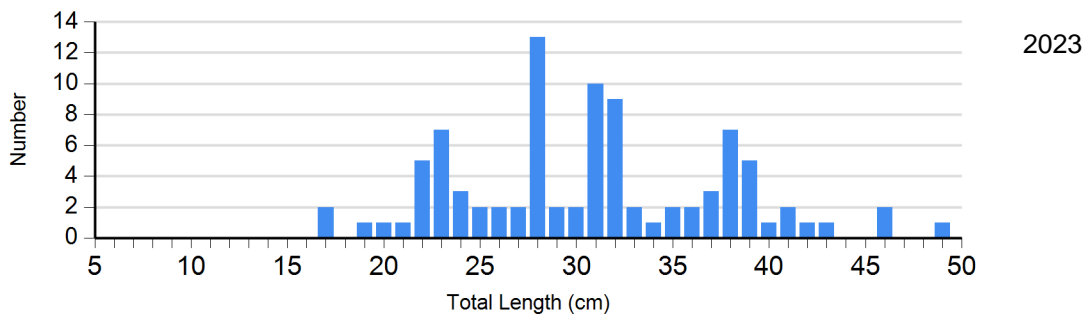
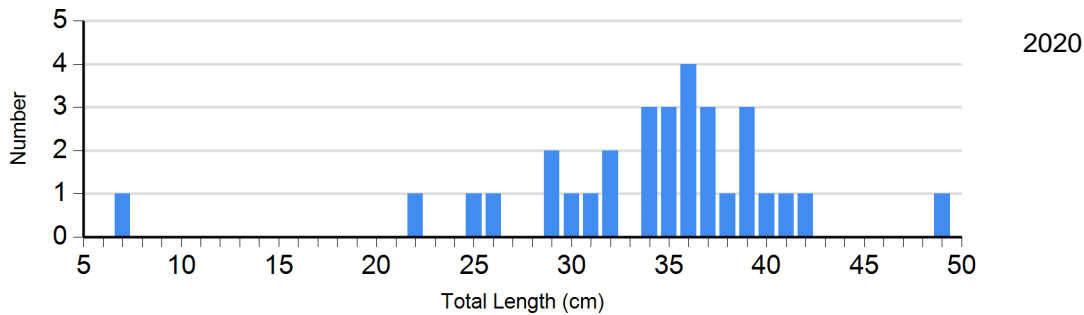
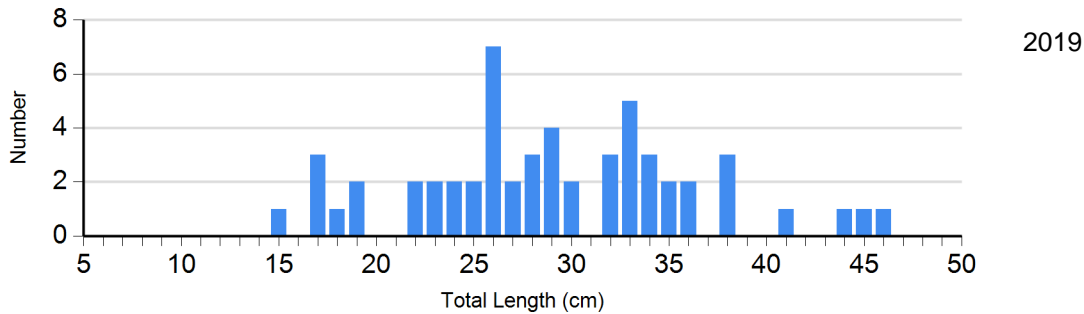
Species: Bluegill
Gear: frame net (std 3/4 in)



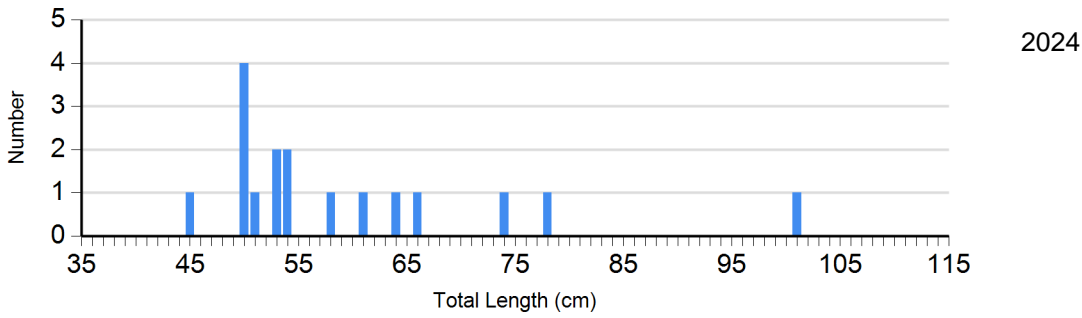
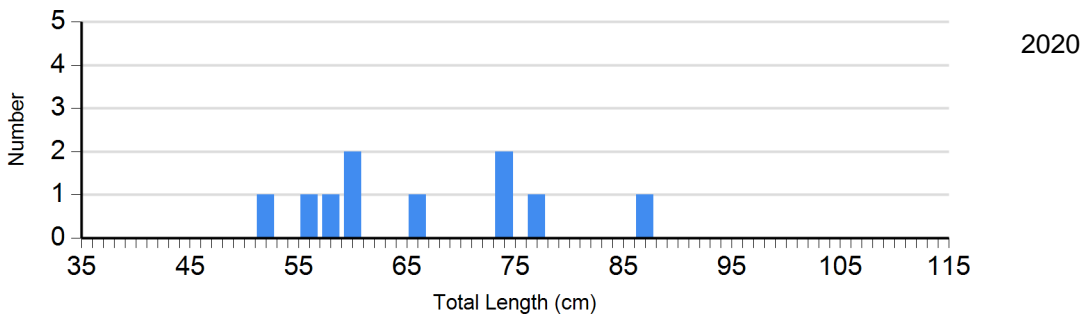
Species: Largemouth Bass
 Gear: boat shocker (day)



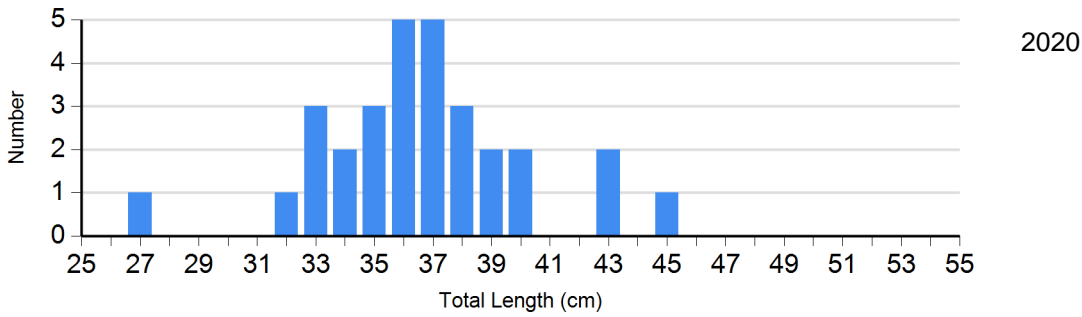
Species: Largemouth Bass
 Gear: boat shocker (night)



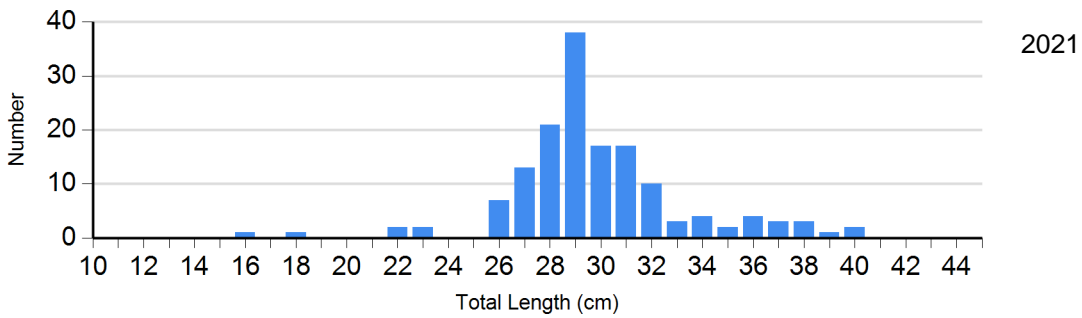
Species: Northern Pike
 Gear: AFS std gill net

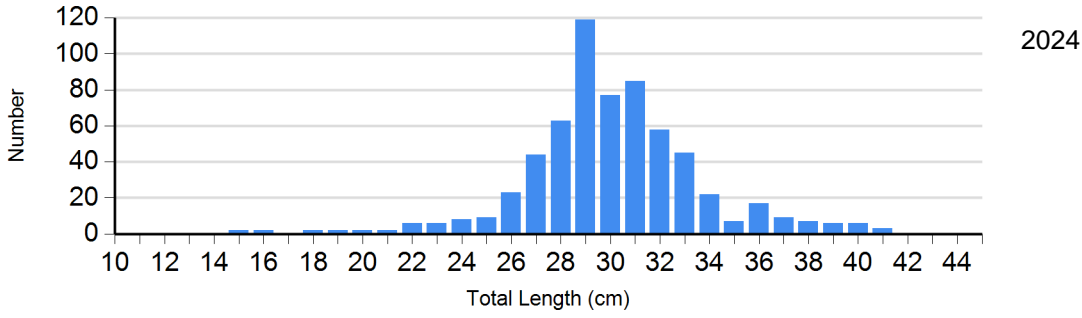
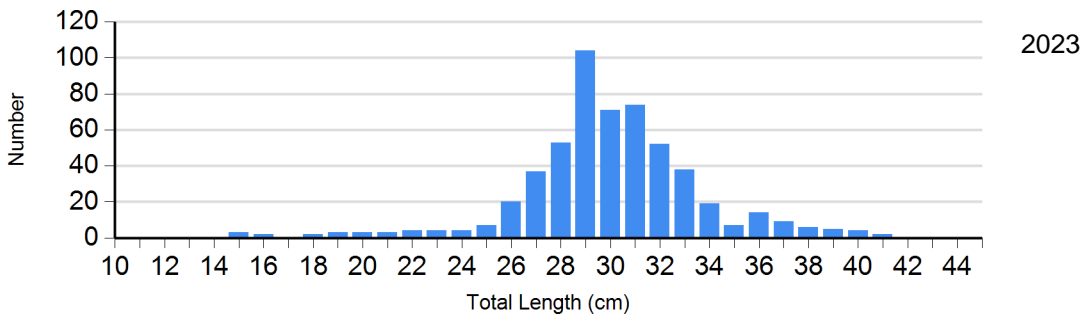


Species: Rainbow Trout
 Gear: AFS std gill net

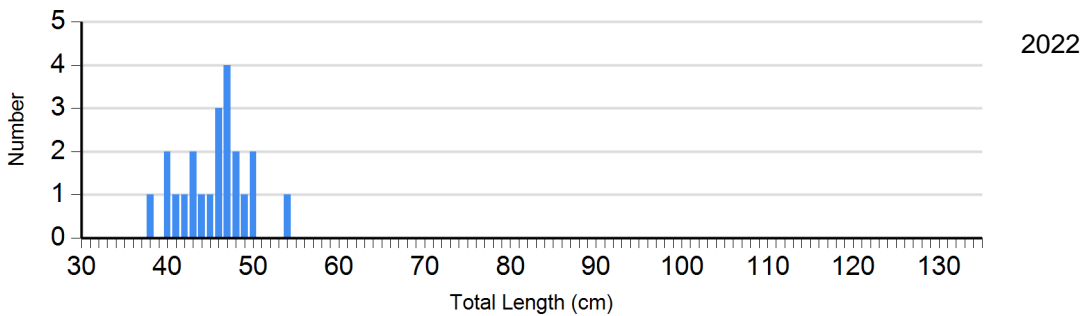
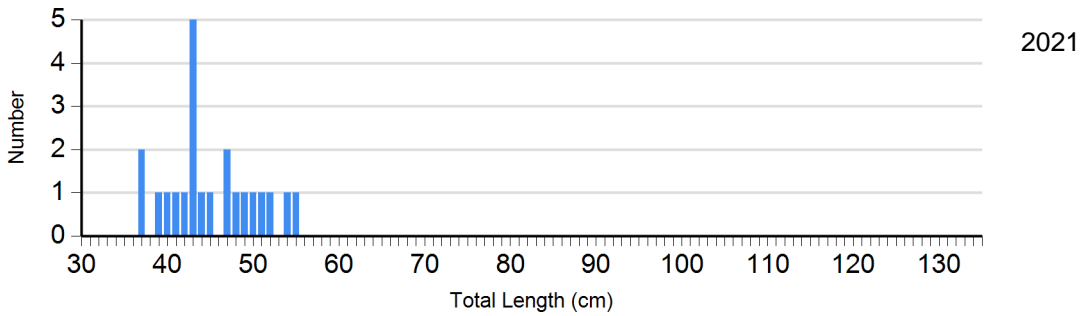
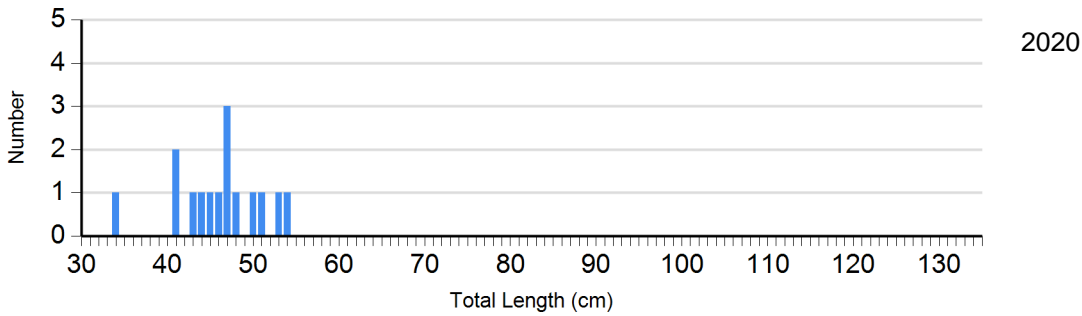


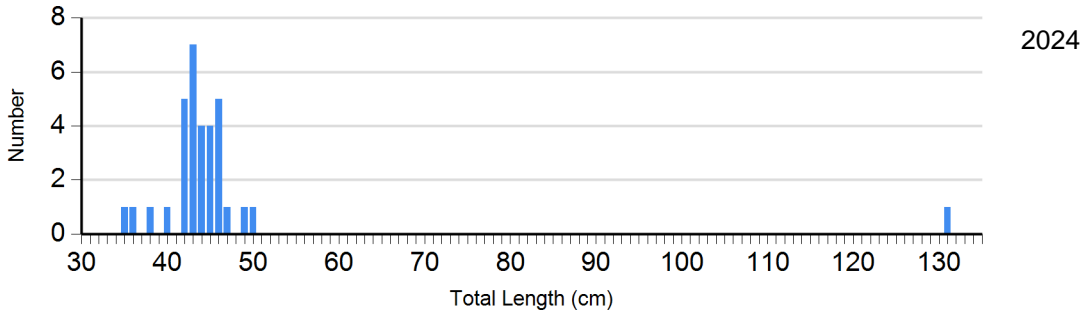
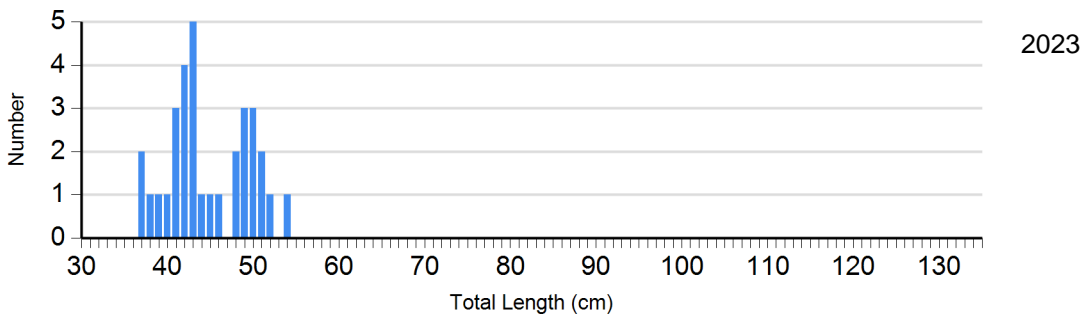
Species: Rudd
 Gear: frame net (std 3/4 in)



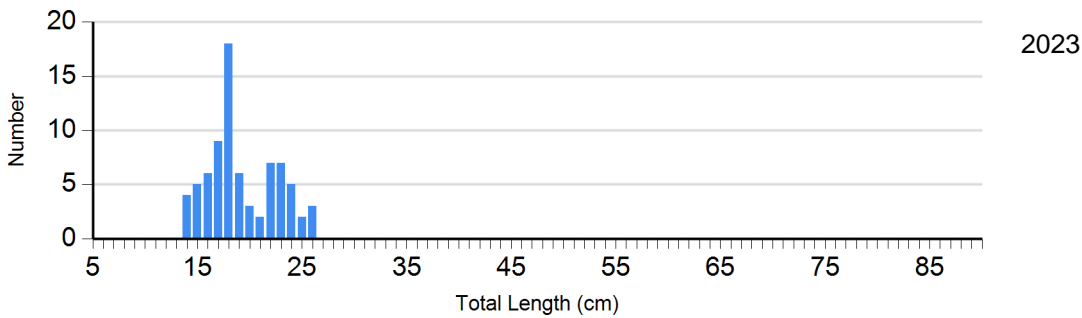
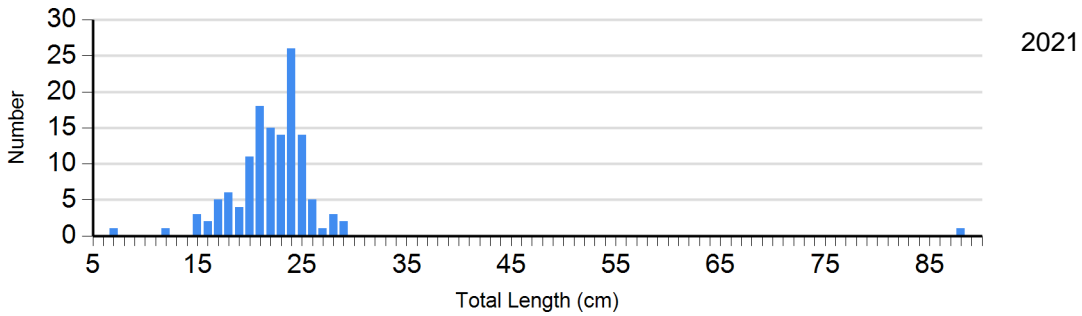
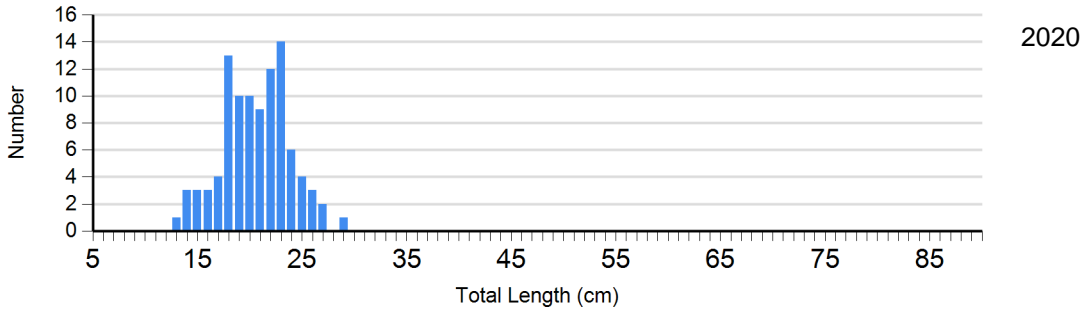


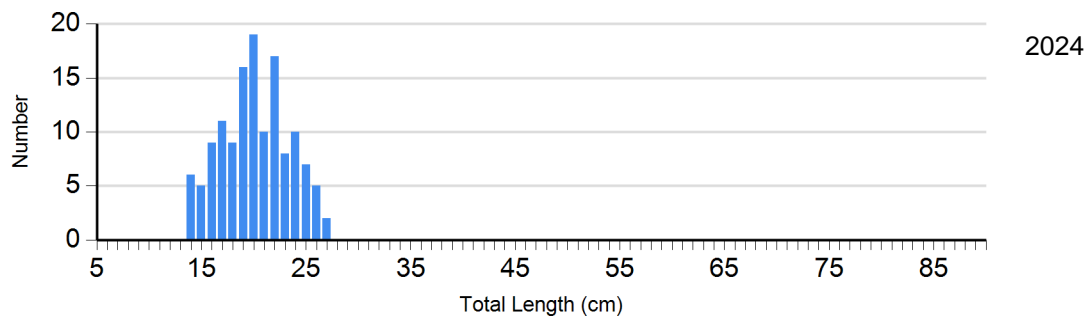
Species: White Sucker
 Gear: AFS std gill net





Species: Yellow Perch
 Gear: AFS std gill net

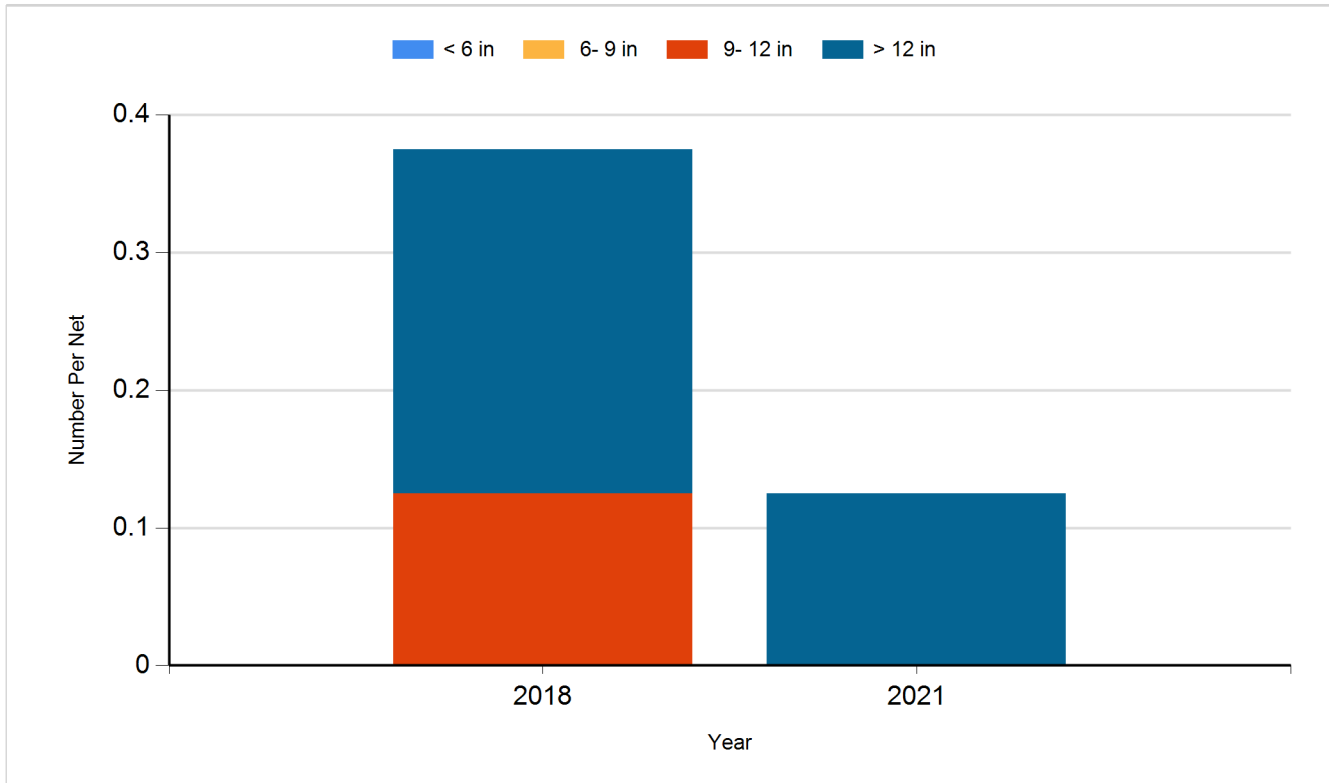




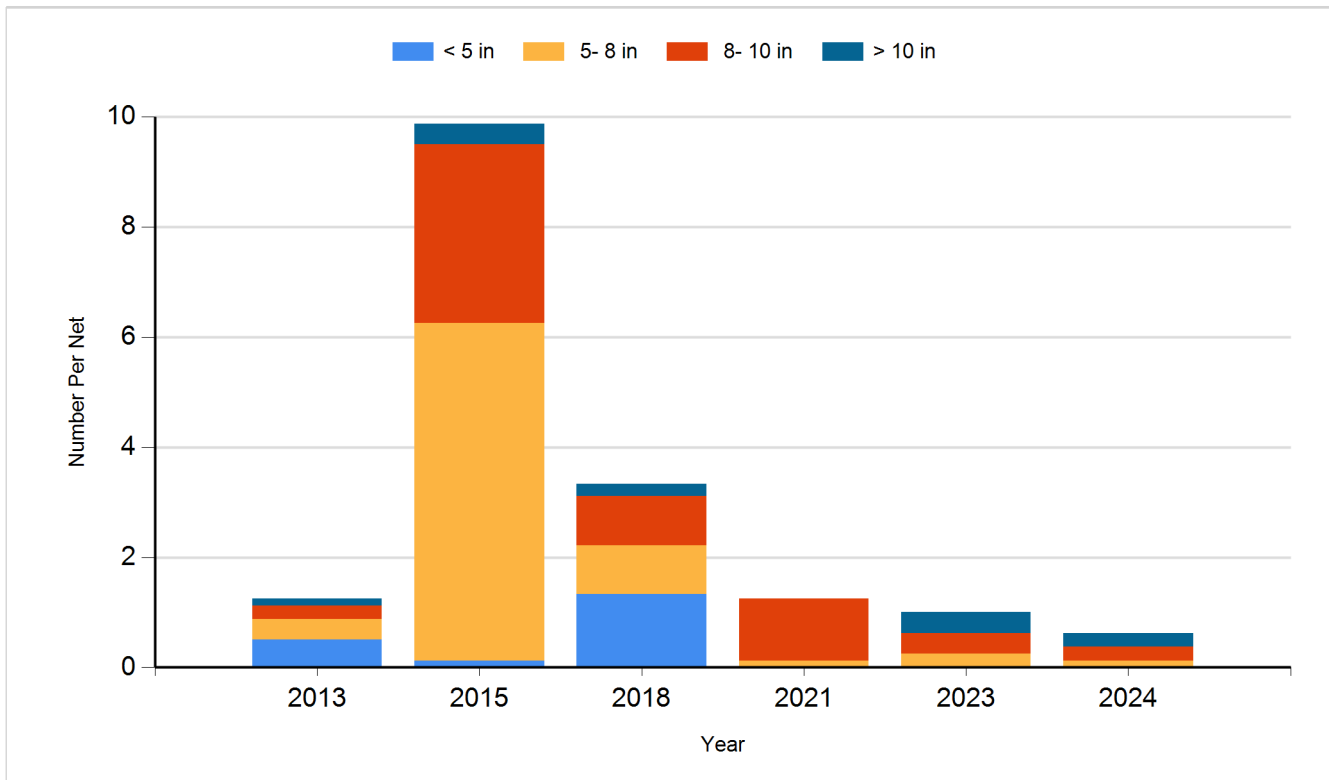
Historic Fish Sizes and Relative Abundance

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

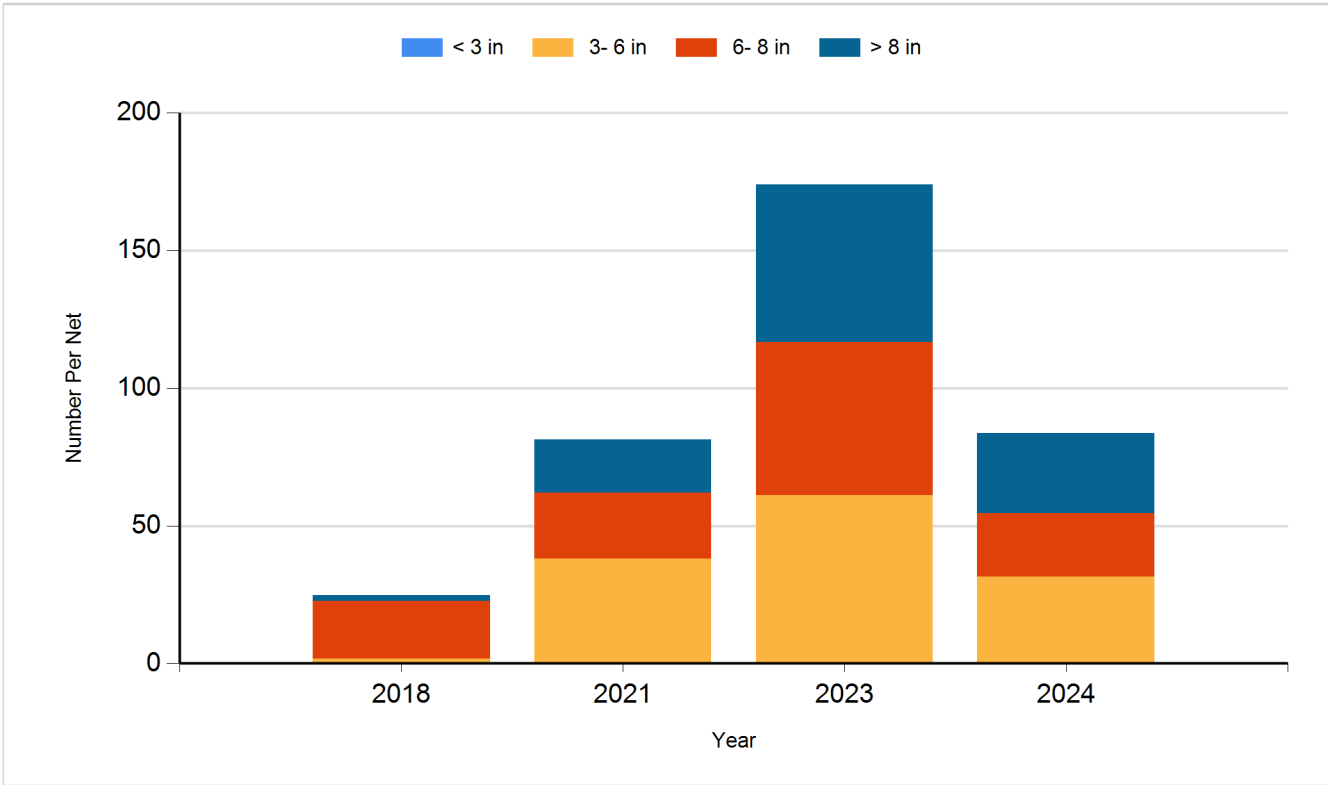
Species: Black Bullhead
Gear: AFS std gill net



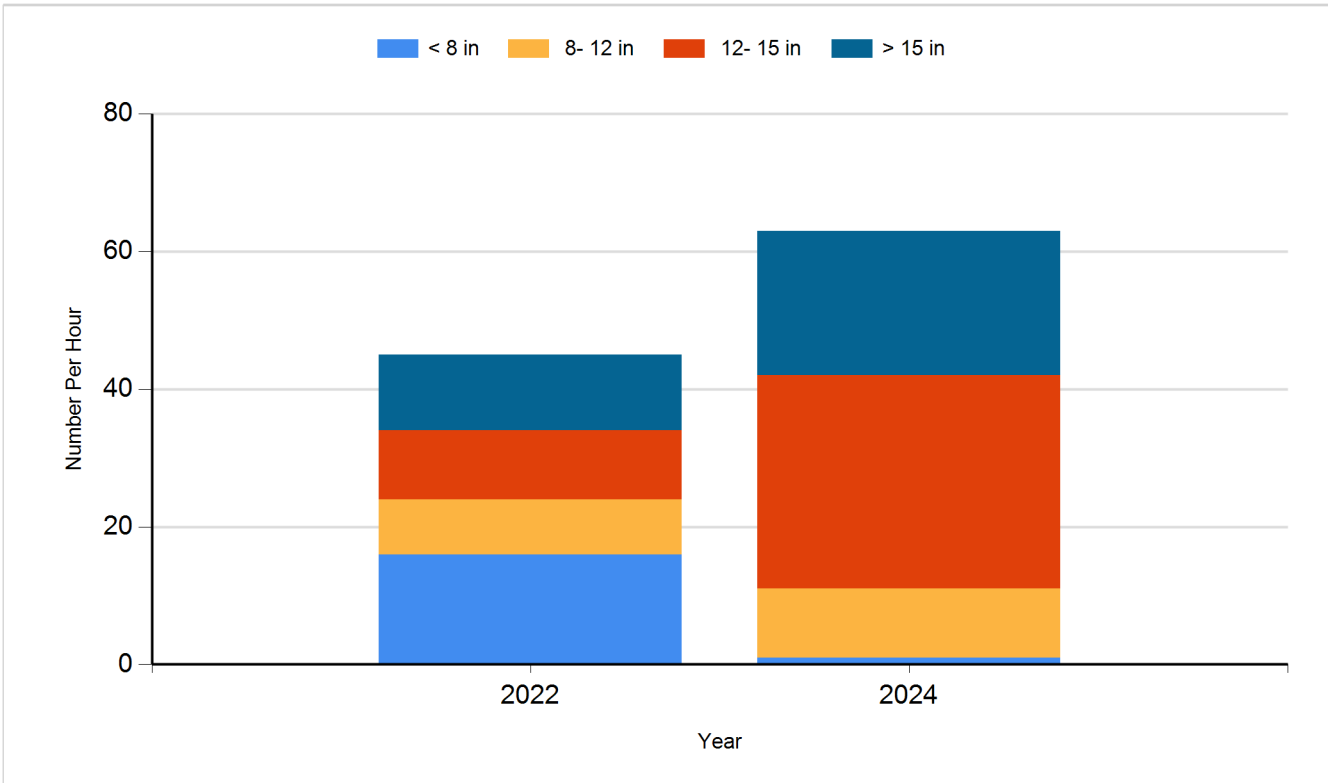
Species: Black Crappie
Gear: frame net (std 3/4 in)



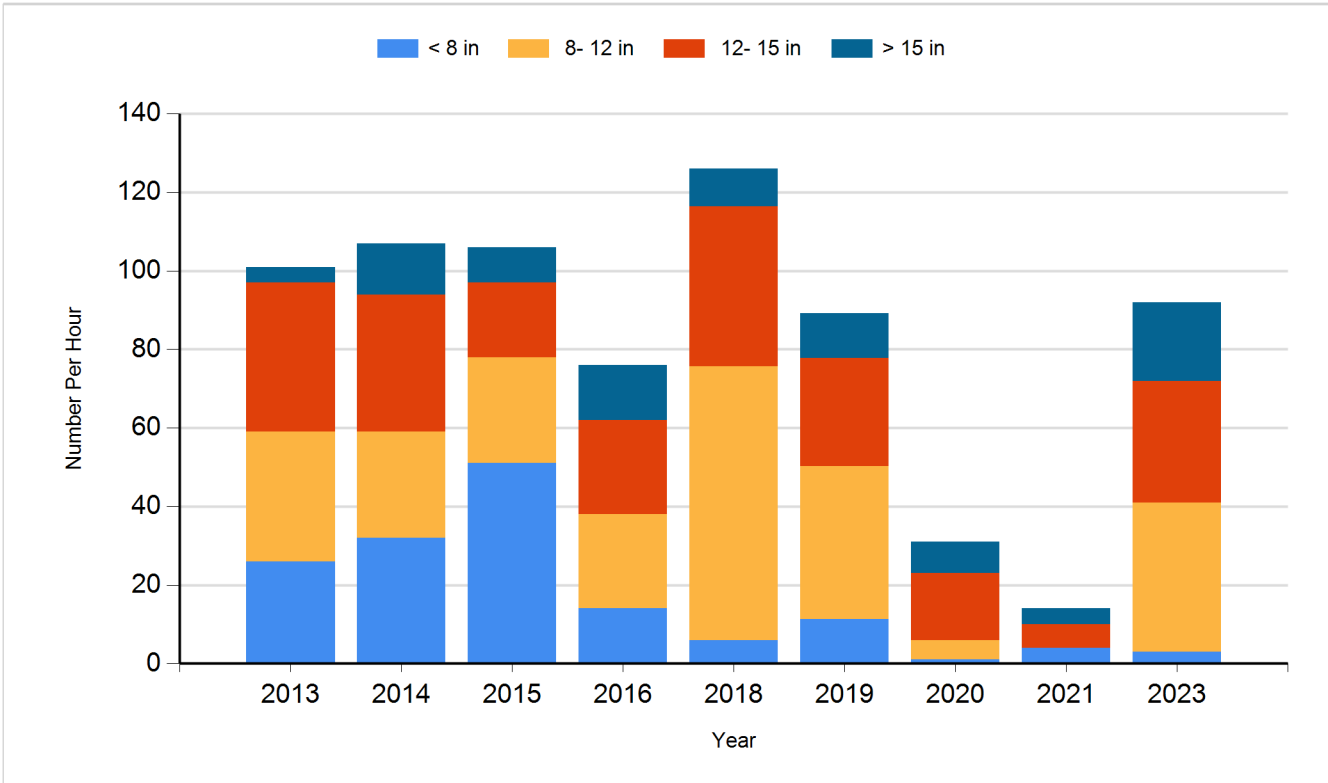
Species: Bluegill
Gear: frame net (std 3/4 in)



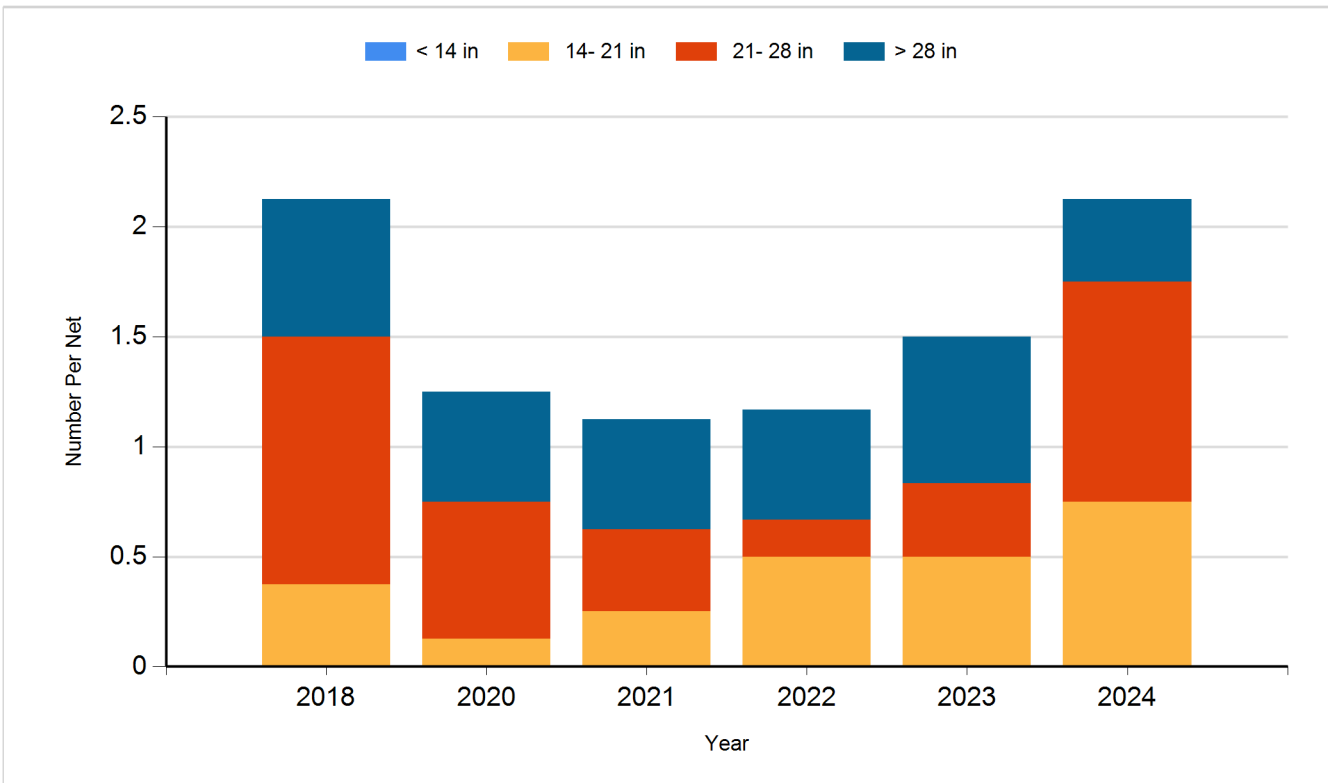
Species: Largemouth Bass
Gear: boat shocker (day)



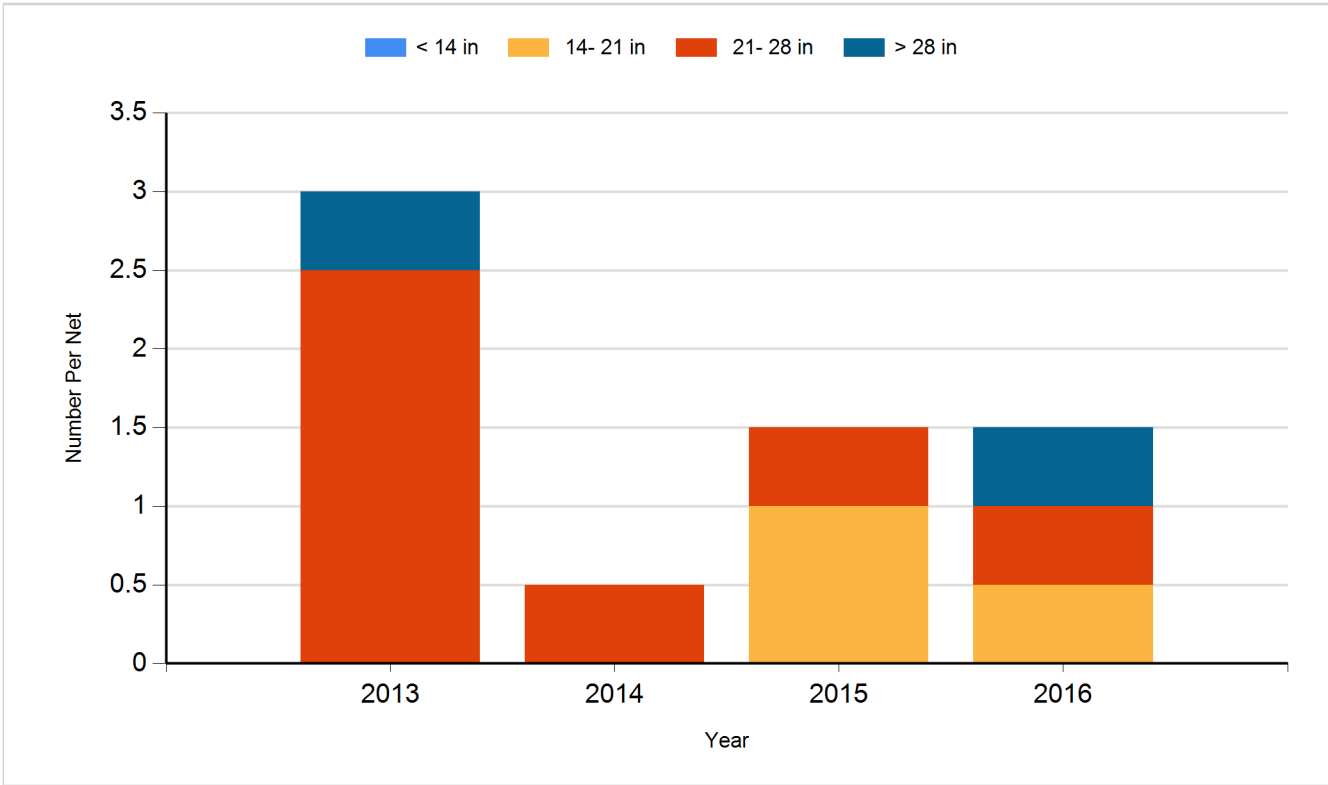
Species: Largemouth Bass
Gear: boat shocker (night)



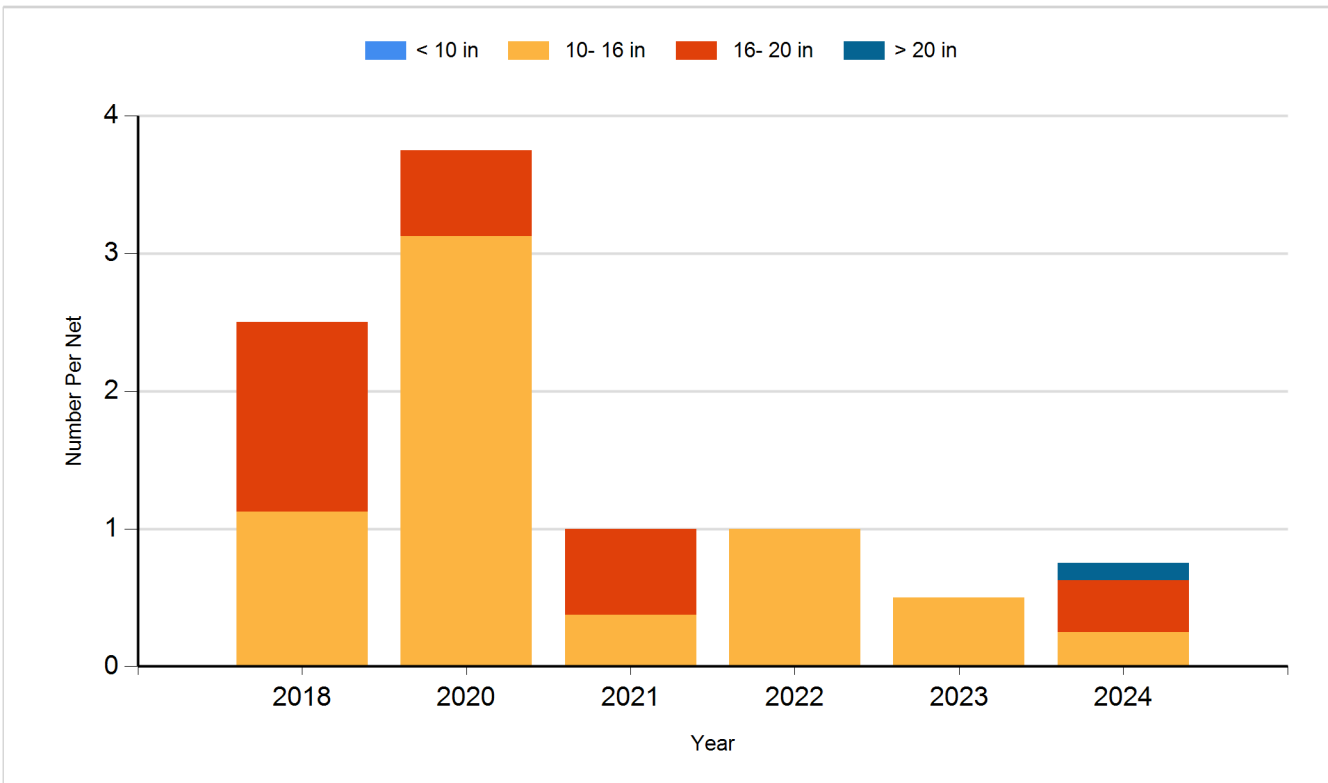
Species: Northern Pike
Gear: AFS std gill net



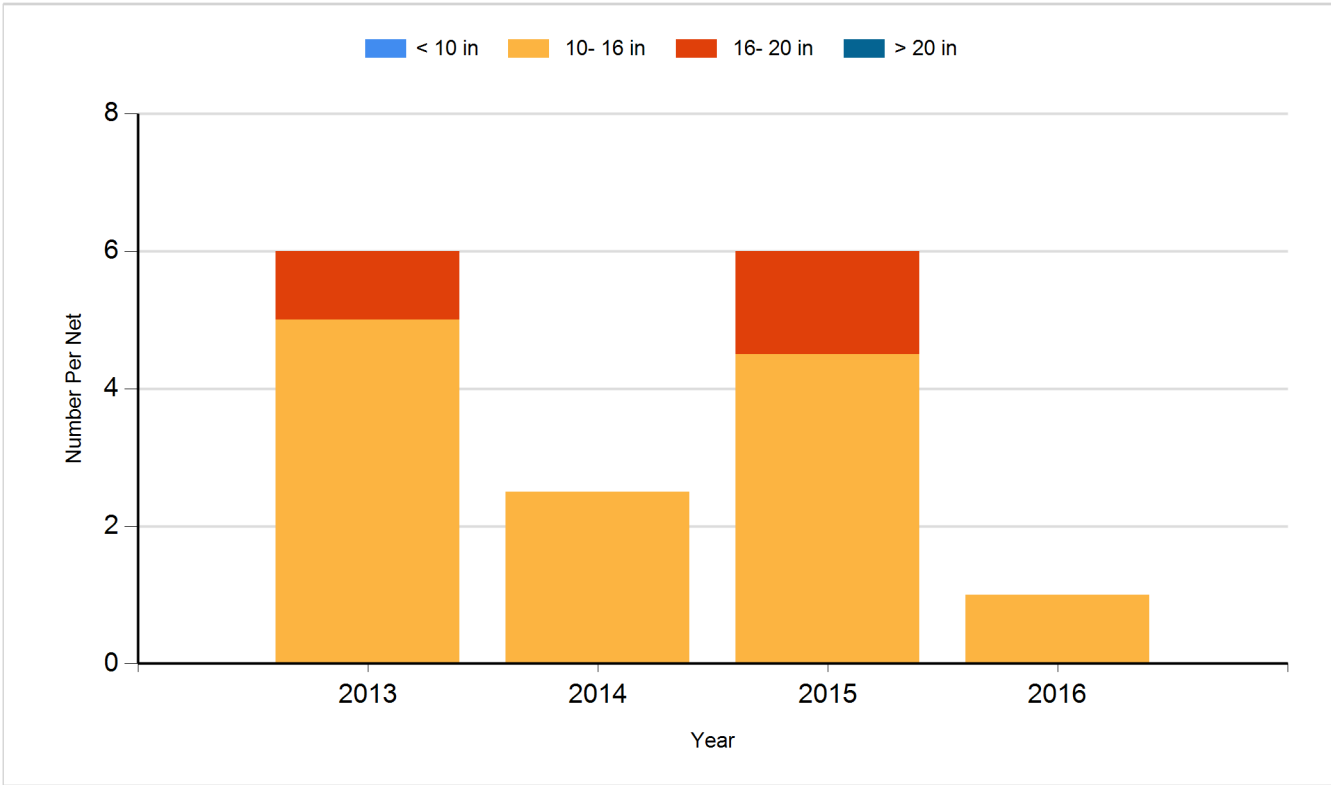
Species: Northern Pike
Gear: std exp gill net



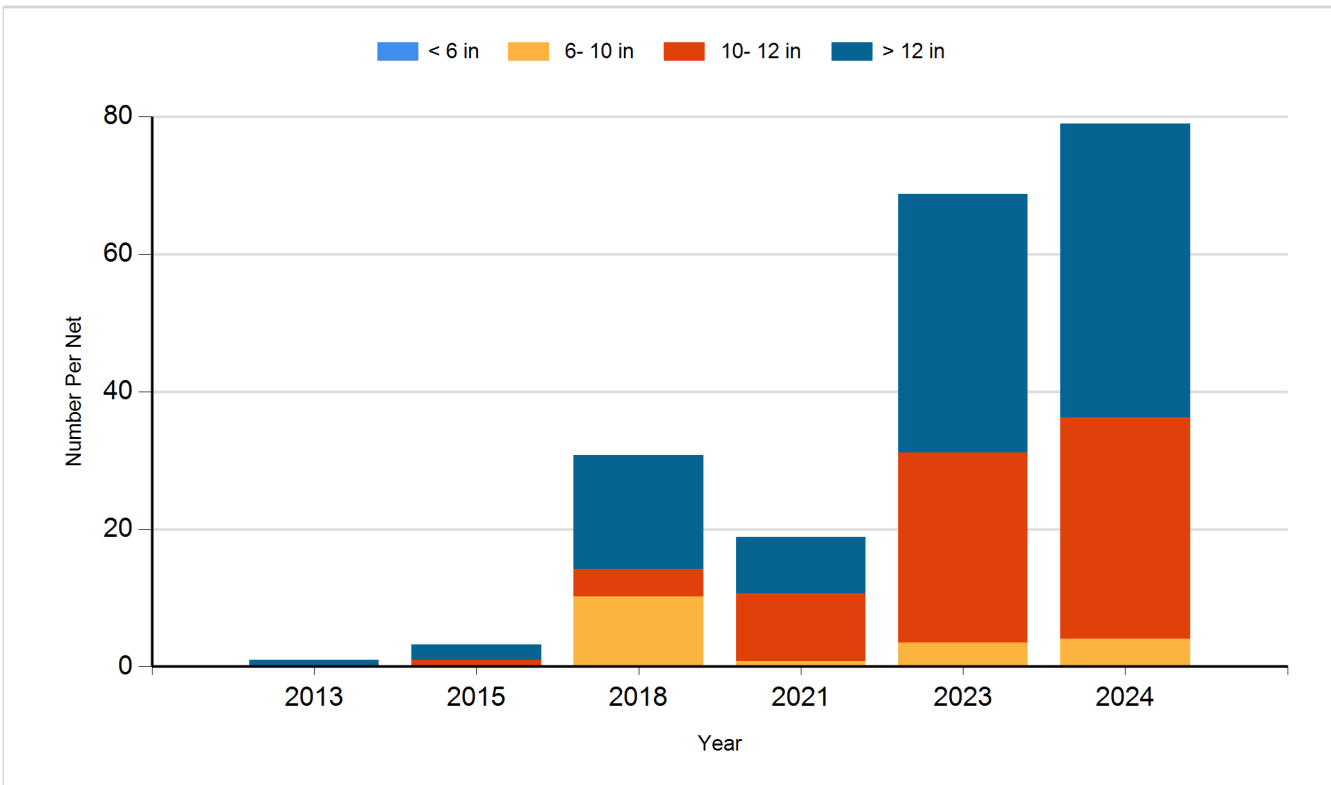
Species: Rainbow Trout
Gear: AFS std gill net



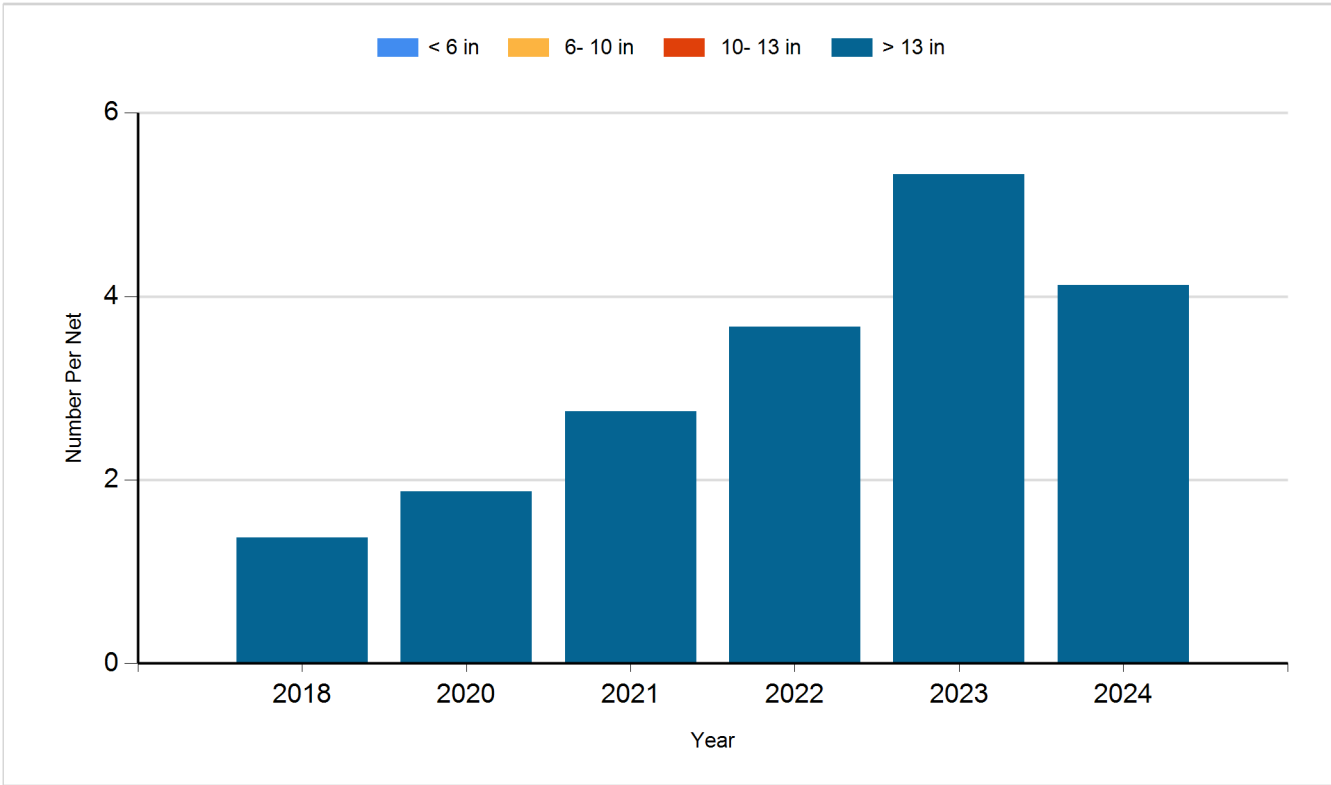
Species: Rainbow Trout
Gear: std exp gill net



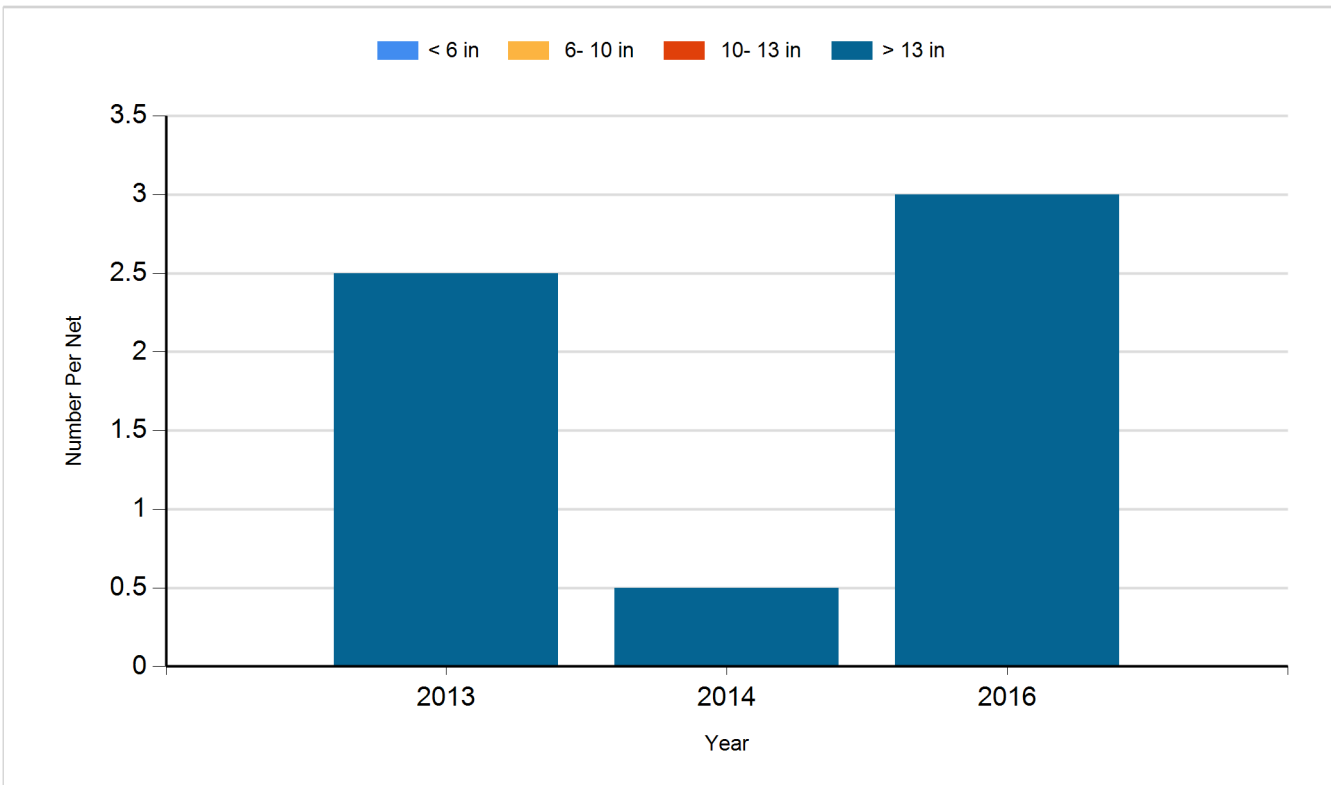
Species: Rudd
Gear: frame net (std 3/4 in)



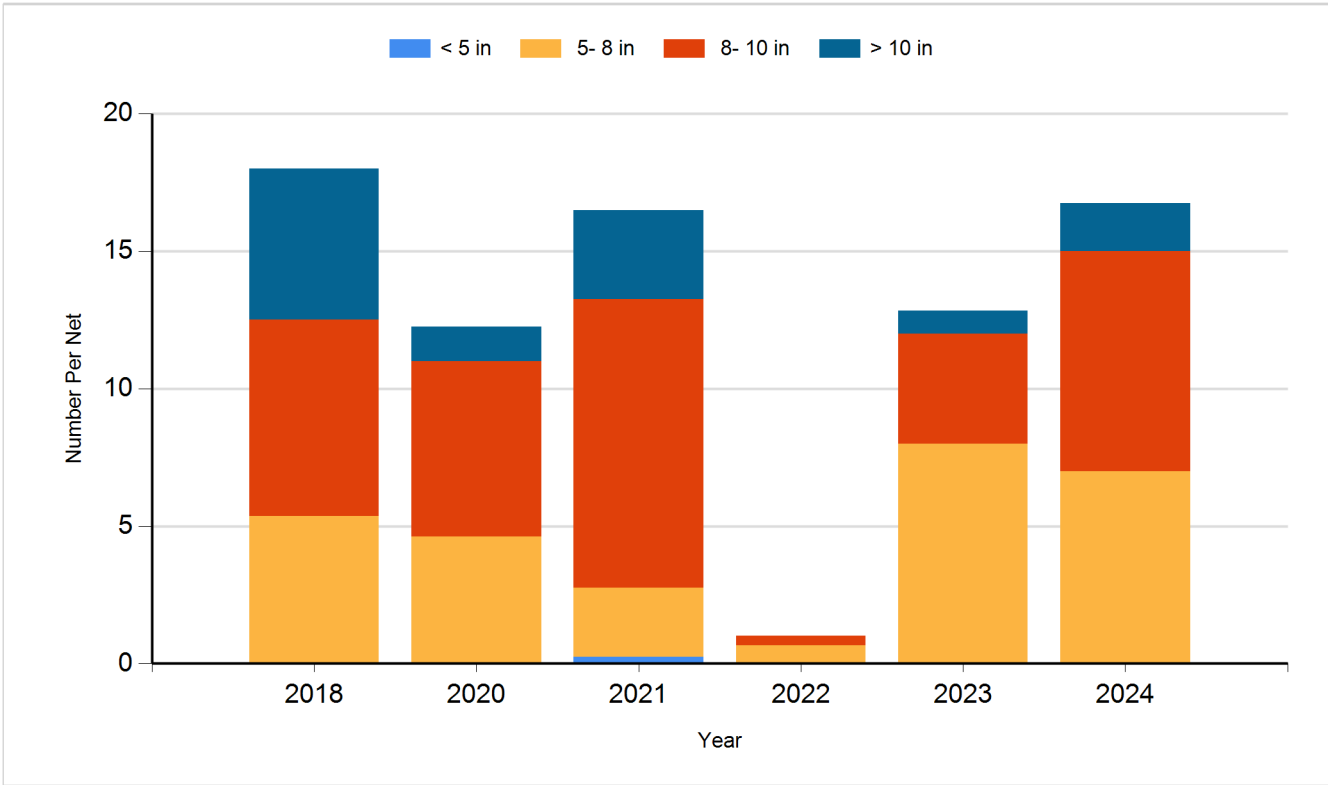
Species: White Sucker
Gear: AFS std gill net



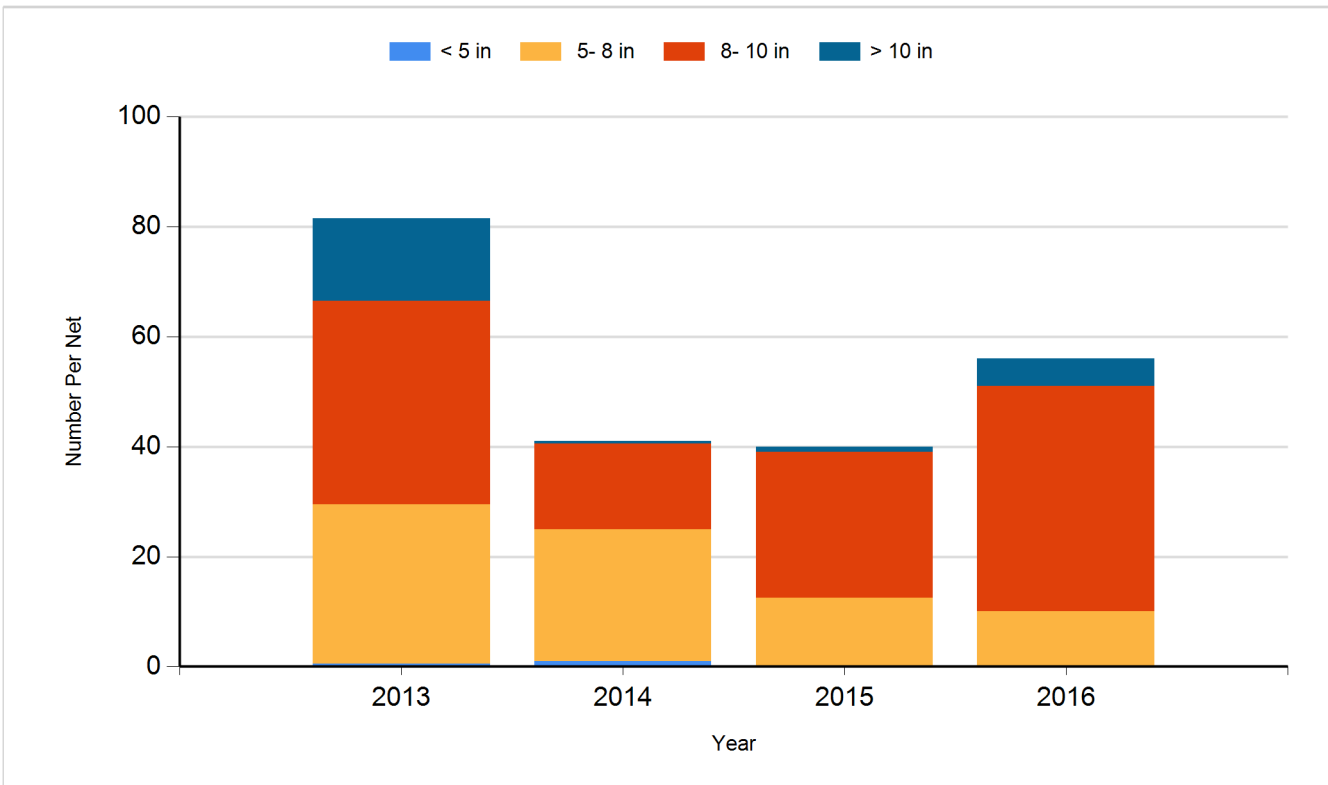
Species: White Sucker
Gear: std exp gill net



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
2013	Rainbow Trout (Erwin x Arlee)	Catchable	9,000
2013	Rainbow Trout (McConaugRainbow Trout)	Catchable 11"	10,000
2013	Smallmouth Bass	Fingerling	6,890
2014	Rainbow Trout (Erwin x Arlee)	Catchable	1,000
2014	Rainbow Trout (Shasta)	Catchable	8,079
2014	Rainbow Trout (Shasta)	Catchable 11"	10,000
2015	Rainbow Trout (Ennis)	Catchable 11"	3,139
2015	Rainbow Trout (Shasta)	Catchable 11"	15,861
2016	Rainbow Trout (Shasta)	Catchable 11"	19,421
2016	Smallmouth Bass	Adult	300
2017	Rainbow Trout (Erwin x Arlee)	Catchable 11"	10,190
2017	Rainbow Trout (Shasta)	Catchable 11"	10,188
2017	Smallmouth Bass	Adult	275
2017	Walleye	Large Fingerling	14,000
2018	Rainbow Trout (Erwin x Arlee)	Catchable	7,296
2018	Rainbow Trout (Erwin x Arlee)	Catchable 11"	2,276
2018	Rainbow Trout (Shasta)	Catchable	9,877
2018	Rainbow Trout (Shasta)	Catchable 11"	524
2018	Rainbow Trout (Shasta)	Juvenile	2,800
2018	Smallmouth Bass	Juvenile	250
2019	Rainbow Trout (Erwin x Arlee)	Catchable	1,420
2019	Rainbow Trout (Erwin x Arlee)	Catchable 11"	7,482
2019	Rainbow Trout (Shasta)	Catchable 11"	10,968
2019	Walleye	Large Fingerling	4,080
2019	Walleye	Small Fingerling	21,420
2020	Rainbow Trout (Arlee)	Catchable 11"	2,980
2020	Rainbow Trout (Gerrard)	Adult	3,066
2020	Rainbow Trout (Shasta)	Adult	5,695
2020	Rainbow Trout (Shasta)	Catchable 11"	6,450
2020	Rainbow Trout (Shasta)	Catchable 15"	666
2021	Rainbow Trout (Arlee)	Adult	10,191
2021	Rainbow Trout (Gerrard)	Adult	5,546
2021	Rainbow Trout (Trout Lodge)	Adult	6,384
2021	Walleye	Juvenile	6,975
2021	Walleye	Small Fingerling	15,000

2022	Rainbow Trout (Arlee)	Adult	2,054
2022	Rainbow Trout (Gerrard)	Adult	8,252
2022	Rainbow Trout (Shasta)	Adult	10,292
2022	Walleye	Fry	85,000
2022	Walleye	Juvenile	21,024
2023	Rainbow Trout	Adult	23,403
2023	Walleye	Adult	1,468
2023	Walleye	Juvenile	66,855
2024	Rainbow Trout	Adult	32,548
2024	Walleye	Fry	224,400
2024	Walleye	Juvenile	70,191
