

# SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Sharpe, Hughes County

FTR-Lake-6327-001

2021

## Lake Information

**Name:** Sharpe  
**County:** Hughes  
**Surface Area:** 58,660 Acres

## Surveys and Investigations

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

Gear	Date	Effort
AFS gill net (1/2 inch)	Aug 03, 2021	24 net-nights
AFS gill net (1/2 inch)	Aug 04, 2021	26 net-nights
AFS std gill net	Aug 03, 2021	25 net-nights
AFS std gill net	Aug 04, 2021	25 net-nights

## **Common Fish Species Present**

Channel Catfish

Walleye

Smallmouth Bass

Common Carp

Yellow Perch

Freshwater Drum

River Carpsucker

Gizzard Shad

Sauger

White Bass

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## 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	1	0.0	0.0	100		100		80	
	Channel Catfish	247	4.7	0.8	84	3	16	3	88	3
	Common Carp	58	1.2	0.4	100		48	10	90	2
	Flathead Catfish	4	0.1	0.1	75		0		95	10
	Freshwater Drum	27	0.5	0.1	100		100		89	3
	Gizzard Shad	22	0.4	0.1	68	16			104	7
	Goldeye	16	0.0	0.0						
	Lake Herring	1	0.0	0.0	100		100		68	
	River Carpsucker	26	0.5	0.2	92		85		99	3
	Sauger	18	0.4	0.2	50	19	33	18	73	1
	Shorthead Redhorse	14	0.3	0.1	79		50	22	100	3
	Smallmouth Bass	114	2.3	1.1	82	5	40	6	104	1
	Smallmouth Buffalo	3	0.1	0.0	100		33		82	9
	Walleye	278	4.4	0.8	65	4	1		81	1
	White Bass	21	0.4	0.3	81		19		122	25
Yellow Perch	55	1.1	0.3	85	7	44	10	87	2	

## 10-Year Catch Per Unit Effort by Gear and Species

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

\* Methods/Species that ignore stock length

Gear	Species	CPUE										Avg
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
AFS gill net (1/2 inch)*	Black Crappie						0.0	0.0	0.0	0.0	0.0	0.00
	Channel Catfish						0.1	0.0	0.0	0.1	0.1	0.06
	Common Carp						0.0	0.0	0.1	0.1	0.1	0.06
	Freshwater Drum						0.0	0.0	0.0	0.1	0.0	0.02
	Gizzard Shad						0.0	0.1	0.0	2.2	0.0	0.46
	Goldeye						0.0	0.0	0.0	0.0	0.1	0.02
	Lake Herring						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
	Rainbow Smelt						0.0	0.0	0.0	0.0	0.0	0.00
	Sauger						0.0	0.0	0.1	0.0	0.1	0.04
	Shorthead Redhorse						0.0	0.0	0.0	0.0	0.0	0.00
	Smallmouth Bass						0.0	0.0	0.0	0.0	0.0	0.00
	Smallmouth Buffalo						0.0	0.0	0.0	0.0	0.0	0.00
	Spottail Shiner						0.2	0.5	0.6	0.3	0.1	0.34
	Walleye						0.3	0.4	0.2	0.3	0.5	0.34
	White Bass						0.0	0.0	0.0	0.0	0.0	0.00
Yellow Perch						0.2	0.3	0.3	0.3	0.5	0.32	
AFS std gill net	Bigmouth Buffalo			0.0			0.0	0.0	0.0	0.1	0.0	0.02
	Black Bullhead			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	0.00
	Channel Catfish			2.3			4.9	4.2	2.7	4.3	4.7	3.85
	Chinook Salmon			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	Common Carp			0.4			0.9	0.6	0.8	0.8	1.2	0.78
	Flathead Catfish			0.0			0.0	0.1	0.0	0.0	0.1	0.03
	Freshwater Drum			0.4			0.6	0.4	0.5	0.6	0.5	0.50
	Gizzard Shad			0.2			0.3	0.3	0.5	0.3	0.4	0.33
	Goldeye			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	Lake Herring			0.0			0.0	0.0	0.0	0.1	0.0	0.02
	Northern Pike			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	Rainbow Trout			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	River Carpsucker			0.8			0.2	0.0	0.1	0.4	0.5	0.33
	Sauger			1.0			0.4	0.1	0.2	0.1	0.4	0.37
	Shorthead Redhorse			0.6			0.1	0.2	0.3	0.4	0.3	0.32
Shortnose Gar			0.0			0.0	0.0	0.0	0.0	0.0	0.00	

		CPUE										
Gear	Species	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg
AFS std gill net	Shovelnose Sturgeon			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	Smallmouth Bass			1.9			0.8	1.0	0.9	0.7	2.3	1.27
	Smallmouth Buffalo			0.3			0.1	0.0	0.1	0.0	0.1	0.10
	Spottail Shiner			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	Walleye			12.9			5.0	3.4	2.6	7.6	4.4	5.98
	White Bass			0.6			0.8	0.1	0.1	0.1	0.4	0.35
	White Crappie			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	White Sucker			0.0			0.0	0.0	0.0	0.0	0.0	0.00
	Yellow Perch			1.3			0.6	1.1	0.5	1.1	1.1	0.95
frame net (std 3/4 in)	Bigmouth Buffalo	0.0										0.00
	Black Bullhead	1.4										1.40
	Black Crappie	8.1										8.10
	Bluegill	1.6										1.60
	Channel Catfish	3.0										3.00
	Common Carp	2.4										2.40
	Freshwater Drum	0.0										0.00
	Gizzard Shad	1.3										1.30
	Green Sunfish	0.0										0.00
	Largemouth Bass	0.1										0.10
	Northern Pike	0.0										0.00
	Rainbow Trout	0.0										0.00
	River Carpsucker	0.0										0.00
	Sauger	0.0										0.00
	Shorthead Redhorse	0.0										0.00
	Shortnose Gar	0.0										0.00
	Smallmouth Bass	1.2										1.20
	Smallmouth Buffalo	0.0										0.00
	Walleye	1.2										1.20
	White Bass	3.2										3.20
White Crappie	0.1										0.10	
White Sucker	0.0										0.00	
Yellow Perch	0.0										0.00	
large seine*	Bigmouth Buffalo	0.0	0.3	0.0	0.4	0.0	0.0	0.0	0.0			0.08
	Black Crappie	0.0	0.0	0.7	3.9	4.6	0.1	0.1	0.4			1.23
	Bluegill	1.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0			0.13
	Bluntnose Minnow	3.0	1.1	2.3	1.2	0.5	2.4	0.8	0.9			1.52
	Channel Catfish	0.0	0.5	0.1	0.2	0.1	0.0	0.1	0.1			0.13

		CPUE										
Gear	Species	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg
large seine*	Common Carp	0.1	0.1	0.0	0.1	0.8	0.1	0.1	0.1			0.17
	Common Shiner	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0			0.01
	Emerald Shiner	13.2	7.3	14.5	105.6	55.2	65.8	13.1	16.5			36.39
	Fathead Minnow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1			0.02
	Freshwater Drum	5.1	32.3	14.8	5.4	48.3	10.9	2.9	1.6			15.16
	Gizzard Shad	1,350.9	400.9	755.8	1,000.8	224.6	694.6	1,312.3	752.0			811.47
	Goldeye	0.0	0.1	0.0	0.7	0.0	0.0	0.0	0.1			0.11
	Johnny Darter	0.5	4.2	3.5	1.1	3.4	1.7	0.9	3.8			2.38
	Lake Herring	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0			0.02
	Largemouth Bass	0.1	0.2	0.6	0.2	0.6	0.1	0.3	0.2			0.27
	Orangespotted Sunfish	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0			0.02
	Rainbow Smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4			0.05
	Red Shiner	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1			0.39
	River Carpsucker	3.8	0.0	0.8	0.1	1.3	0.3	0.4	2.1			1.09
	Sand Shiner	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.00
	Sauger	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0			0.02
	Shorthead Redhorse	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0			0.02
	Smallmouth Bass	4.3	7.4	11.1	3.3	8.1	4.3	4.8	3.3			5.82
	Smallmouth Buffalo	0.0	2.9	0.3	0.0	0.0	0.1	0.0	0.3			0.45
	Spottail Shiner	5.5	0.7	1.9	3.0	6.5	3.9	3.3	2.2			3.37
Walleye	5.2	12.1	13.0	5.1	5.8	3.1	2.7	1.0			6.00	
White Bass	2.1	11.5	3.7	23.3	6.2	12.4	2.4	9.4			8.86	
White Crappie	3.3	3.1	0.0	0.0	0.0	12.3	0.1	4.1			2.86	
White Sucker	0.1	0.0	0.4	0.1	0.1	0.0	0.3	0.1			0.13	
Yellow Perch	23.4	54.6	41.3	27.6	146.9	26.9	27.2	16.5			45.56	
rod and reel	Smallmouth Bass	11,640.0										11640.00
smb mono gill net	Bigmouth Buffalo	0.0										0.00
	Channel Catfish	0.9										0.90
	Common Carp	0.5										0.50
	Freshwater Drum	0.2										0.20
	Gizzard Shad	0.7										0.70
	Goldeye	0.0										0.00
	Northern Pike	0.0										0.00
	River Carpsucker	0.2										0.20
	Sauger	0.1										0.10
Shorthead Redhorse	0.5										0.50	



## CPUE

Gear	Species	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Avg
smb mono gill net	Smallmouth Bass	1.0										1.00
	Walleye	6.1										6.10
	White Bass	0.1										0.10
	White Sucker	0.1										0.10
	Yellow Perch	0.3										0.30
std exp gill net	Bigmouth Buffalo	0.0	0.0	0.0	0.0	0.2						0.04
	Black Bullhead	0.1	0.0	0.0	0.0	0.0						0.02
	Black Crappie	0.0	0.0	0.0	0.1	0.1						0.04
	Burbot	0.0	0.0	0.0	0.0	0.0						0.00
	Channel Catfish	6.6	4.4	3.0	4.0	4.8						4.56
	Chinook Salmon	0.0	0.0	0.0	0.0	0.0						0.00
	Common Carp	1.8	2.5	1.1	2.0	1.5						1.78
	Freshwater Drum	0.3	0.1	0.1	0.4	0.5						0.28
	Gizzard Shad	0.0	0.0	0.3	0.6	3.6						0.90
	Goldeye	0.0	0.0	0.0	0.0	0.0						0.00
	Lake Herring	0.0	0.0	0.0	0.6	0.0						0.12
	Largemouth Bass	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
	Rainbow Trout	0.0	0.0	0.0	0.0	0.0						0.00
	River Carpsucker	0.3	0.5	2.0	2.7	0.3						1.16
	Sauger	0.9	1.4	1.6	1.9	1.4						1.44
	Shorthead Redhorse	0.8	1.3	0.7	1.5	0.3						0.92
	Shortnose Gar	0.0	0.0	0.0	0.0	0.0						0.00
	Shovelnose Sturgeon	0.0	0.0	0.0	0.0	0.0						0.00
	Smallmouth Bass	0.2	1.1	0.6	0.7	1.6						0.84
	Smallmouth Buffalo	0.0	0.0	0.1	0.0	0.0						0.02
	Spottail Shiner	0.0	0.0	0.0	0.0	0.0						0.00
	Walleye	21.9	12.5	8.0	12.9	21.3						15.32
	White Bass	0.0	0.8	0.2	0.0	0.2						0.24
	White Crappie	0.0	0.0	0.0	0.0	0.8						0.16
	White Sucker	0.0	0.1	0.0	0.0	0.0						0.02
	Yellow Perch	1.8	1.4	0.9	3.0	2.7						1.96

## 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									
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
AFS std gill net	Channel Catfish	PSD			86			68	68	67	78	84
		PSD-P			39			18	21	16	18	16
		Wr						85	90	91	88	88
	Common Carp	PSD			100			97	100	100	98	100
		PSD-P			60			24	34	27	27	48
		Wr						80	85	83	85	90
	Gizzard Shad	PSD			100			100	96	100	100	68
		Wr						97	99	108	103	104
	River Carpsucker	PSD			96			94	100	100	100	92
		PSD-P			96			50	100	100	96	85
		Wr						98	92	100	104	99
	Sauger	PSD			97			93	100	92	100	50
		PSD-P			49			26	38	33	20	33
		Wr						72	70	65	80	73
	Smallmouth Bass	PSD			68			70	90	87	88	82
		PSD-P			26			32	49	61	31	40
		Wr						99	100	93	103	104
	Walleye	PSD			26			35	40	47	57	65
		PSD-P			2			1	1	1	2	1
		Wr						77	80	78	89	81
	White Bass	PSD			96			100	100	100	100	81
PSD-P				74			100	100	100	100	19	
Wr							93	100	92	98	122	
Yellow Perch	PSD			56			57	55	68	68	85	
	PSD-P			22			19	17	14	22	44	
	Wr						87	86	98	93	87	
frame net (std 3/4 in)	Channel Catfish	PSD	93									
		PSD-P	18									
	Common Carp	PSD	94									
		PSD-P	55									
	Gizzard Shad	PSD	100									
	Smallmouth Bass	PSD	70									
PSD-P		13										

Gear	Species	Index	Year									
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
frame net (std 3/4 in)	Smallmouth Bass	Wr	93									
		PSD	39									
		PSD-P	9									
	White Bass	Wr	74									
		PSD	100									
		PSD-P	67									
		Wr	90									
rod and reel	Smallmouth Bass	PSD	100									
		PSD-P	85									
		Wr	105									
smb mono gill net	Channel Catfish	PSD	0									
		PSD-P	0									
	Common Carp	PSD	0									
		PSD-P	0									
	Gizzard Shad	PSD	100									
	River Carpsucker	PSD	100									
		PSD-P	0									
	Sauger	PSD	100									
		PSD-P	0									
	Smallmouth Bass	PSD	68									
		PSD-P	42									
		Wr	107									
	Walleye	PSD	0									
		PSD-P	0									
	White Bass	PSD	100									
		PSD-P	100									
	Yellow Perch	PSD	100									
		PSD-P	100									
std exp gill net	Channel Catfish	PSD	53	53	77	68	44					
		PSD-P	5	4	15	13	9					
		Wr	90	86	86	89	85					
	Common Carp	PSD	95	97	100	100	89					
		PSD-P	27	20	22	31	26					
		Wr	84	86	84	82	87					
	Gizzard Shad	PSD	100	0	100	14	36					
		Wr	91		102	95	94					

Gear	Species	Index	Year										
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
std exp gill net	River Carpsucker	PSD	100	100	98	100	100						
		PSD-P	100	100	92	89	100						
		Wr	107	96	100	93	98						
	Sauger	PSD	95	94	92	98	97						
		PSD-P	48	30	66	60	55						
		Wr	79	76	72	76	74						
	Smallmouth Bass	PSD	40	52	79	71	71						
		PSD-P	20	19	57	35	47						
		Wr	101	107	101	100	101						
	Walleye	PSD	41	60	52	41	41						
		PSD-P	1	0	1	0	1						
		Wr	83	84	85	79	82						
	White Bass	PSD	100	89	100	100	100						
		PSD-P	100	5	100	100	60						
		Wr	102	108	104	93	94						
	Yellow Perch	PSD	58	74	36	56	62						
		PSD-P	9	50	32	15	17						
		Wr	91	97	92	96	84						

## Length at Capture

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

Species: Sauger

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2021	17	234 (7)	294 (2)	383 (7)					511 (1)		
2020	5			331 (1)	388 (2)	366 (1)	371 (1)				
2019	11		284 (1)	341 (3)	346 (1)	377 (5)		415 (1)			
2018	7			356 (4)	359 (2)	384 (1)					
2017	27		321 (8)	361 (15)	432 (2)			468 (2)			
2016	32		330 (12)	382 (5)	396 (5)	404 (1)	404 (1)	474 (7)			
2015	44		317 (9)	391 (19)	408 (2)	417 (7)	459 (3)		413 (1)	445 (2)	451 (1)
2014	67	289 (6)	349 (21)	387 (15)	409 (17)	419 (8)		564 (1)		526 (2)	
2013	33	253 (2)	348 (7)	370 (13)	381 (8)	424 (1)			463 (2)		
2012	26		305 (9)	380 (11)			429 (3)	442 (3)			

Species: Walleye

Mean Length (expanded sample number) at capture by age											
Year	N	1	2	3	4	5	6	7	8	9	10+
2021	277	227 (63)	330 (41)	387 (59)	429 (26)	424 (41)	428 (16)	440 (17)	429 (7)	439 (2)	500 (2)
2020	548	238 (12)	328 (118)	371 (97)	393 (127)	408 (61)	406 (80)	420 (39)	473 (6)		586 (7)
2019	199	222 (16)	319 (15)	359 (48)	384 (26)	380 (53)	404 (29)	451 (7)		500 (2)	462 (1)
2018	264	236 (24)	318 (62)	360 (49)	379 (55)	400 (55)	437 (12)		393 (1)	553 (2)	485 (3)
2017	377	239 (28)	313 (65)	357 (144)	390 (86)	418 (30)	407 (3)	442 (4)	464 (6)	456 (3)	518 (8)
2016	531	232 (22)	322 (184)	374 (206)	409 (67)		455 (10)	447 (19)	455 (7)	455 (4)	494 (9)
2015	341	214 (34)	327 (121)	382 (130)	450 (5)	426 (15)	423 (18)	416 (11)	432 (6)	465 (1)	
2014	681	245 (150)	337 (292)	389 (25)	397 (63)	427 (80)	423 (38)	426 (17)	456 (6)	461 (10)	
2013	315	249 (35)	349 (23)	380 (102)	397 (95)	395 (28)	426 (16)	465 (7)	444 (4)	424 (1)	454 (6)
2012	945	248 (13)	307 (417)	358 (307)	357 (107)	415 (39)	437 (28)	453 (19)		470 (9)	437 (5)

## 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).

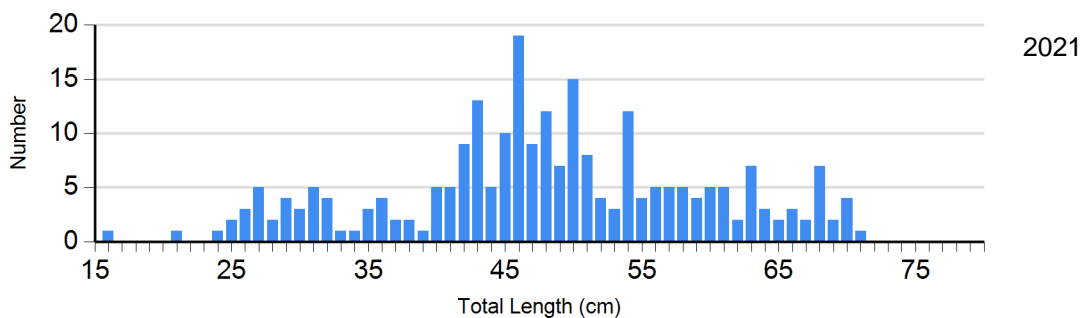
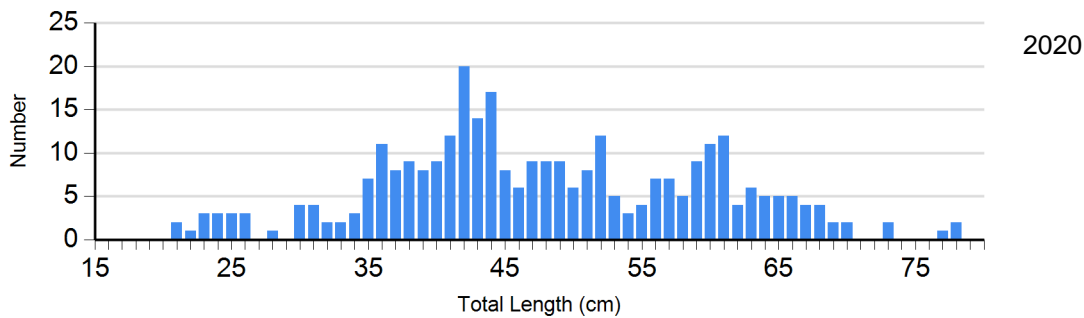
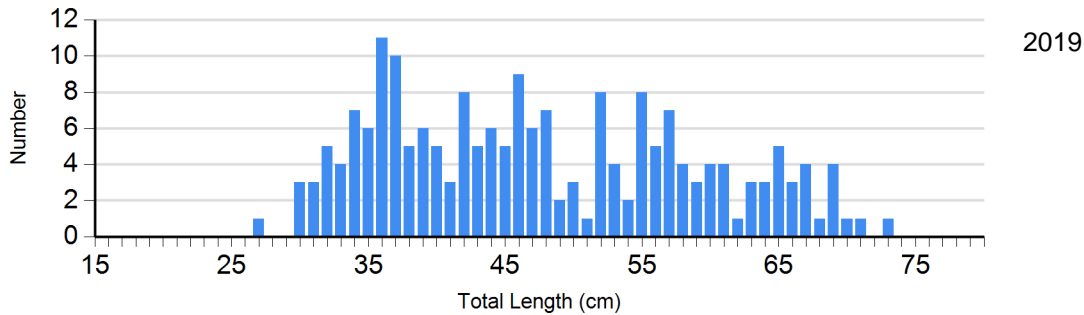
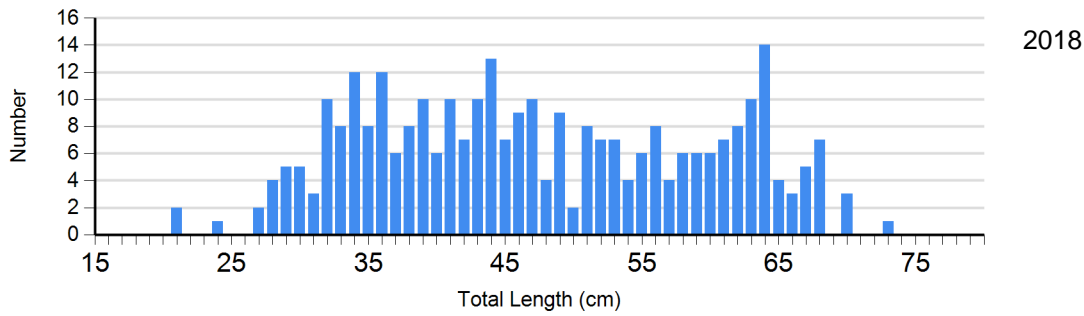
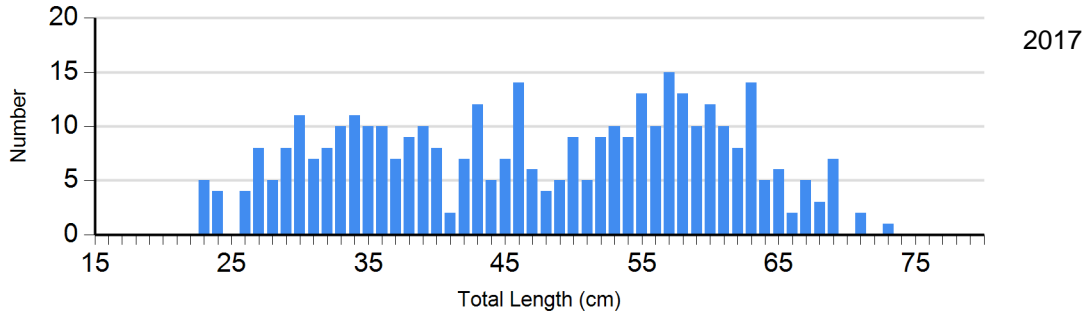
Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Channel Catfish Gill Net	2017	114	89 (1.2)	177	84 (0.9)	60	81 (1.5)	3	93 (5.3)
	2018	97	96 (3.9)	143	87 (0.8)	61	85 (1.7)	1	105
	2019	65	90 (0.7)	100	92 (1.1)	29	94 (1.9)	2	85 (6.4)
	2020	68	90 (0.8)	181	87 (0.7)	49	91 (1.8)	5	86 (6.6)
	2021	37	102 (11.7)	159	85 (0.8)	37	84 (1.9)	1	100
Common Carp Gill Net	2017	2	99 (1.7)	45	81 (1.1)	15	77 (3.3)	0	
	2018	0		29	85 (2.2)	15	86 (2.0)	0	
	2019	0		40	83 (1.2)	15	84 (3.0)	0	
	2020	1	72	43	87 (1.0)	16	81 (1.5)	0	
	2021	0		30	90 (1.8)	28	90 (1.8)	0	
Sauger Gill Net	2017	2	110 (47.6)	18	71 (1.5)	7	65 (4.4)	0	
	2018	0		5	68 (4.3)	3	72 (1.1)	0	
	2019	1	74	7	67 (4.0)	4	59 (2.7)	0	
	2020	0		4	81 (4.4)	1	73	0	
	2021	9	76 (0.9)	3	69 (3.7)	5	71 (1.1)	1	67
Walleye Gill Net	2017	232	80 (0.8)	121	72 (0.7)	2	69 (0.6)	2	73 (3.4)
	2018	146	82 (0.6)	96	77 (0.5)	3	74 (3.1)	0	
	2019	97	81 (0.7)	85	76 (0.8)	2	75 (2.3)	0	
	2020	230	90 (0.5)	299	88 (0.4)	7	87 (4.8)	2	101 (0.5)
	2021	77	83 (0.8)	143	80 (0.4)	2	82 (0.9)	0	
White Bass Gill Net	2017	0		0		26	99 (1.1)	30	87 (2.3)
	2018	0		0		6	103 (1.8)	4	94 (3.4)

Species	Year	Length Groups							
		S-Q		Q-P		P-M		M	
		N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
White Bass Gill Net	2019	0		0		2	102 (2.1)	6	89 (4.2)
	2020	0		0		1	104	6	97 (2.5)
	2021	4	224 (101.3)	13	100 (1.4)	0		4	96 (4.7)
Yellow Perch Gill Net	2017	18	88 (1.9)	16	90 (2.9)	8	79 (2.1)	0	
	2018	34	86 (1.3)	29	86 (1.7)	13	85 (2.4)	0	
	2019	12	110 (4.6)	20	95 (2.2)	5	87 (4.3)	0	
	2020	25	97 (2.2)	35	91 (1.1)	17	92 (1.7)	0	
	2021	8	91 (1.8)	22	86 (1.9)	22	87 (1.9)	2	87 (0.5)

# Length Frequency Distribution

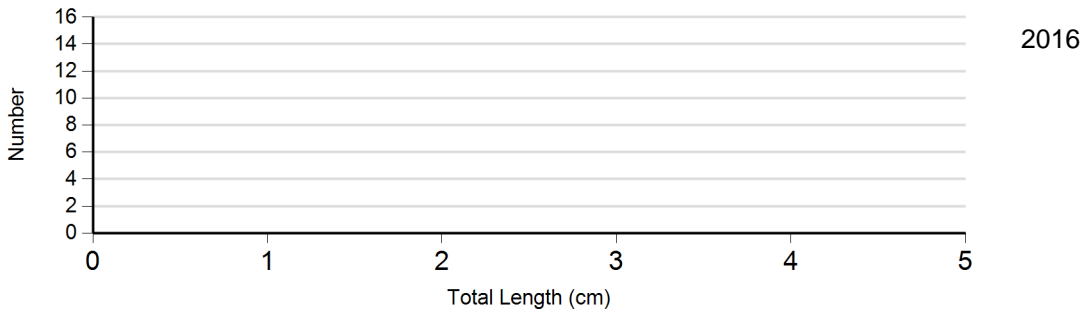
Length frequency histogram of species sampled by year.

Species: Channel Catfish  
Gear: AFS std gill net

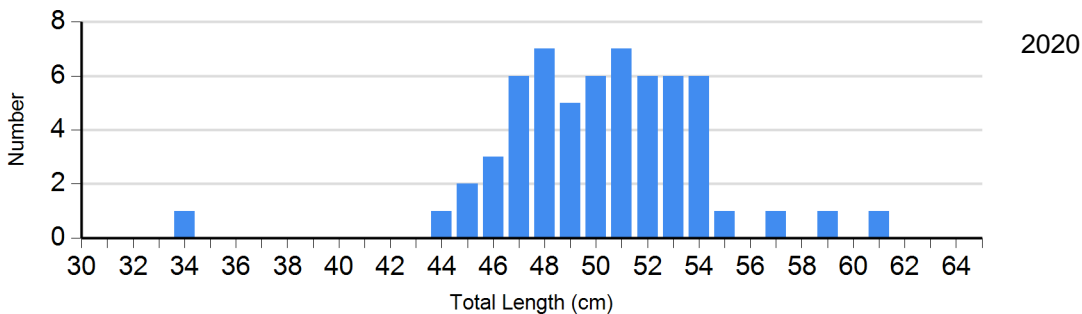
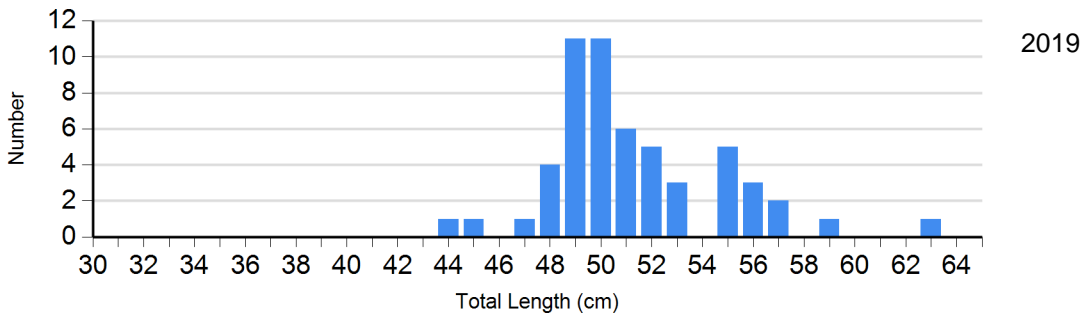
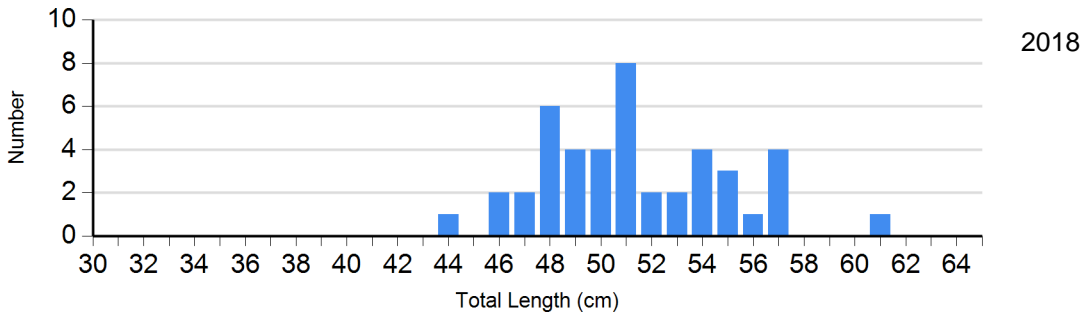
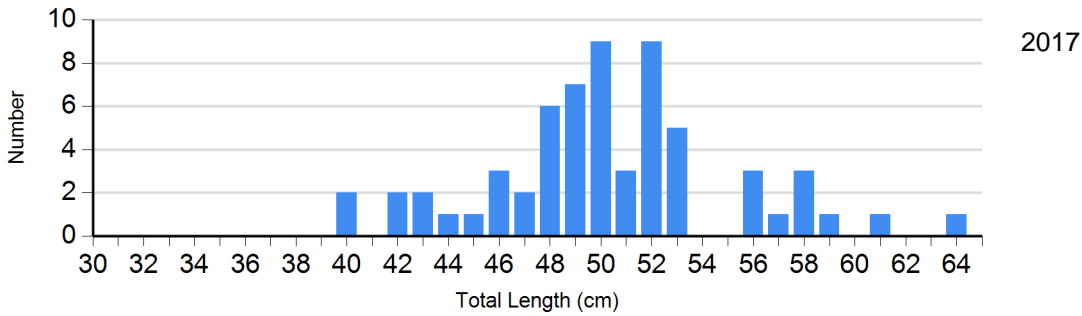


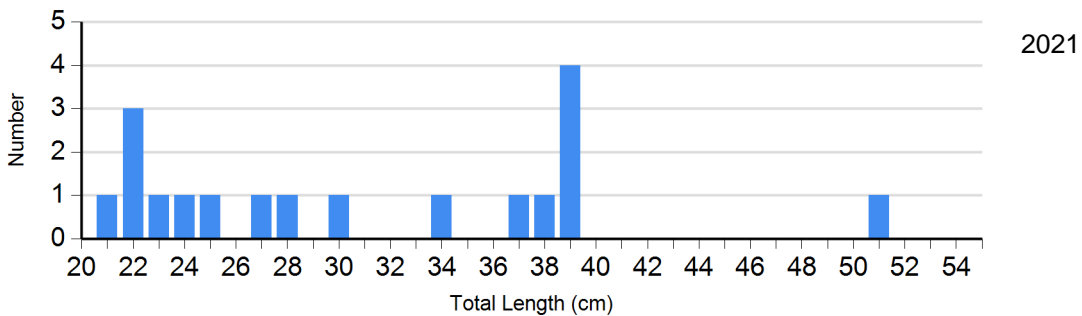
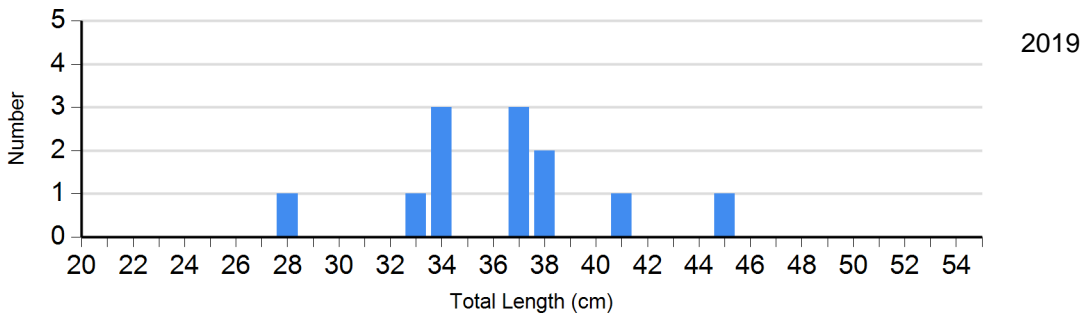
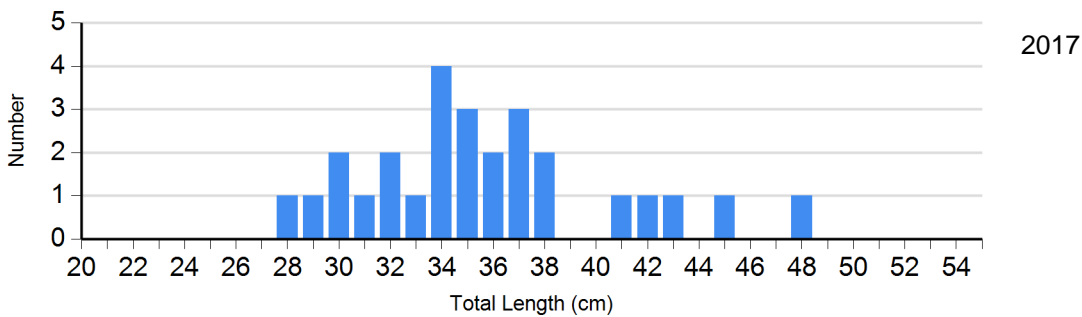
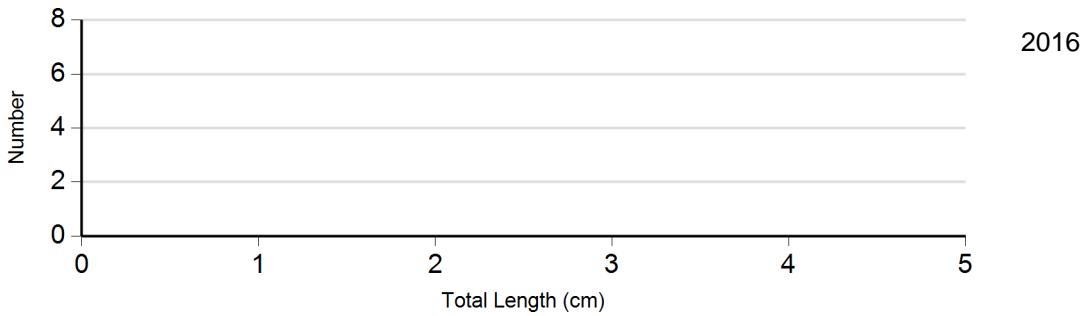
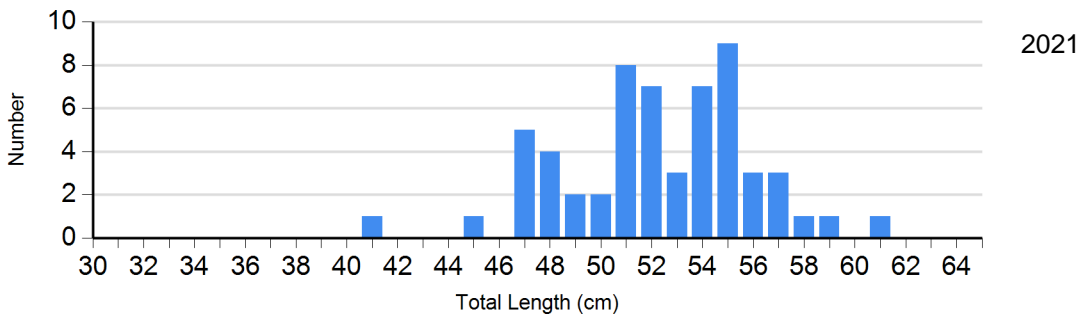


Species: Channel Catfish  
Gear: std exp gill net

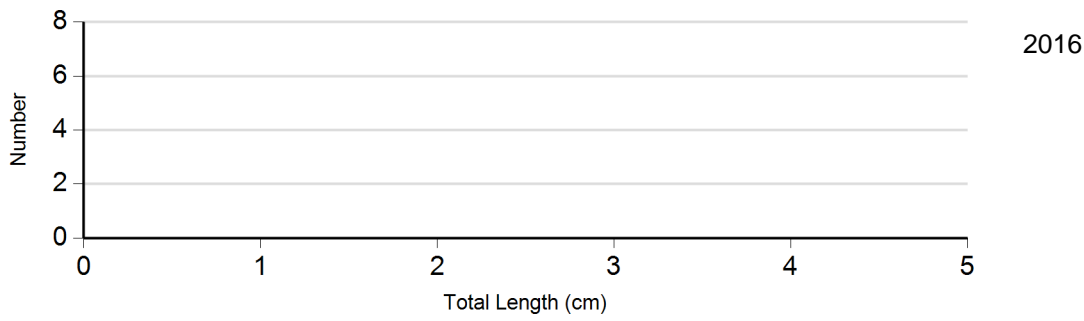


Species: Common Carp  
Gear: AFS std gill net

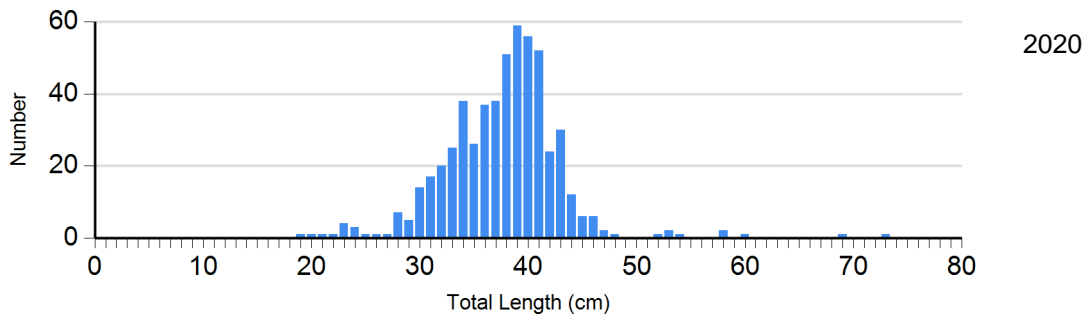
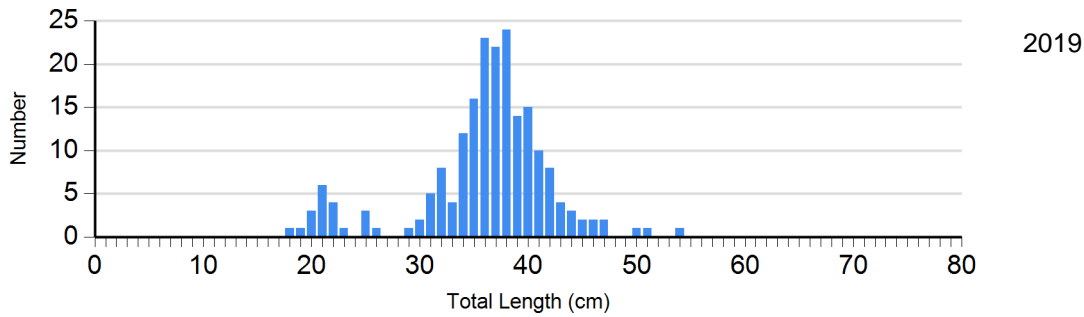
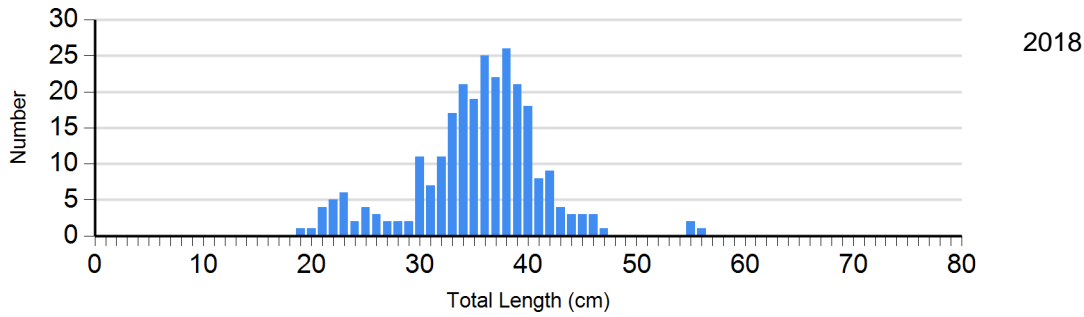
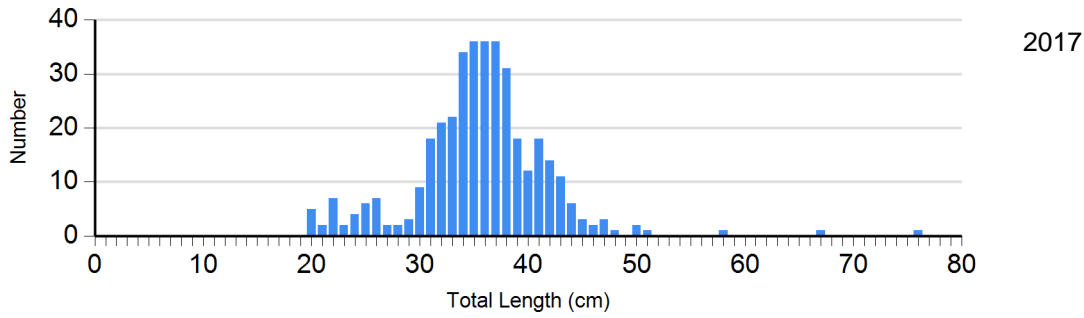


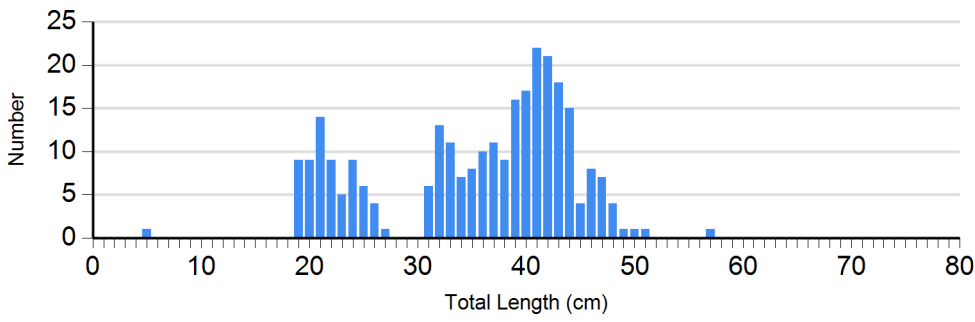


Species: Sauger  
Gear: std exp gill net



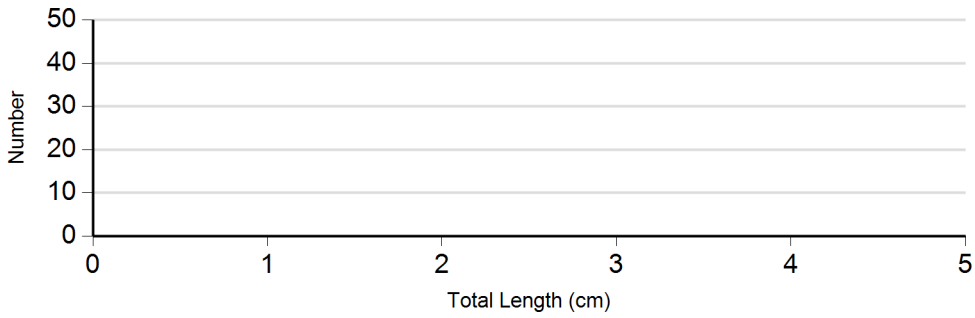
Species: Walleye  
Gear: AFS std gill net





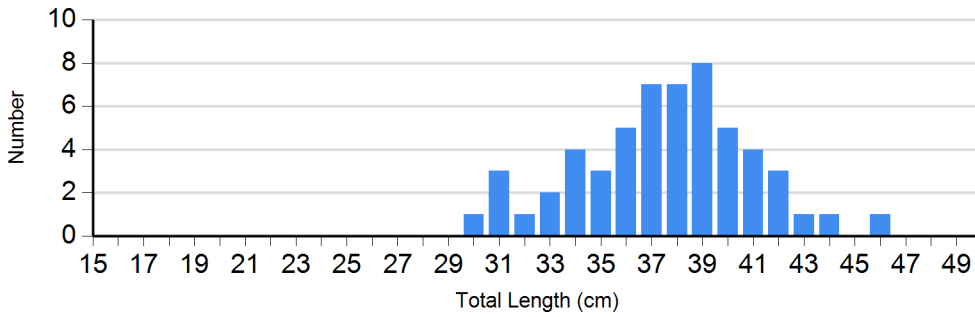
2021

Species: Walleye  
Gear: std exp gill net

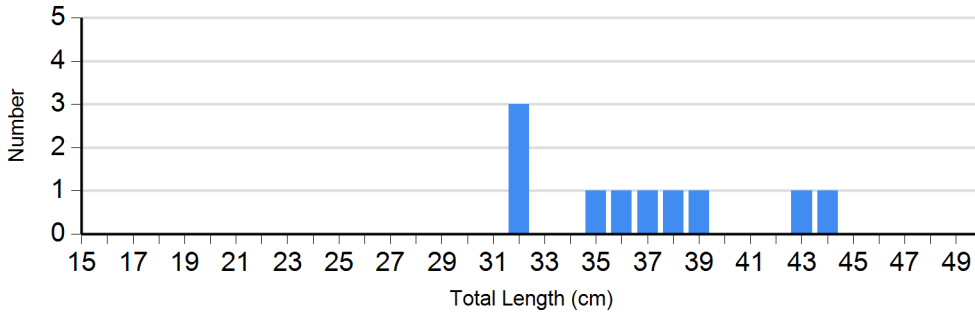


2016

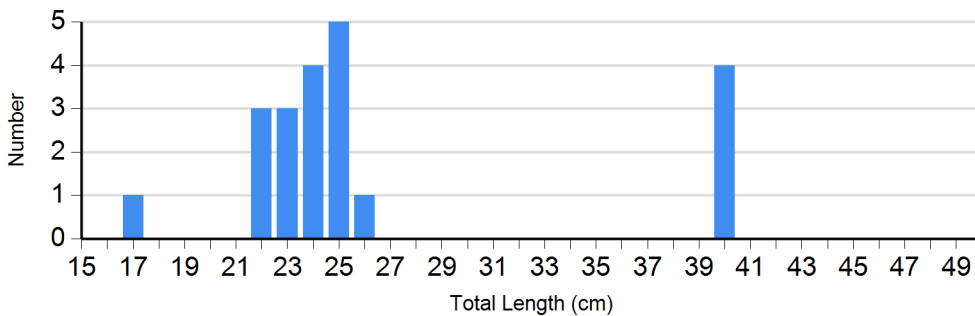
Species: White Bass  
Gear: AFS std gill net



2017

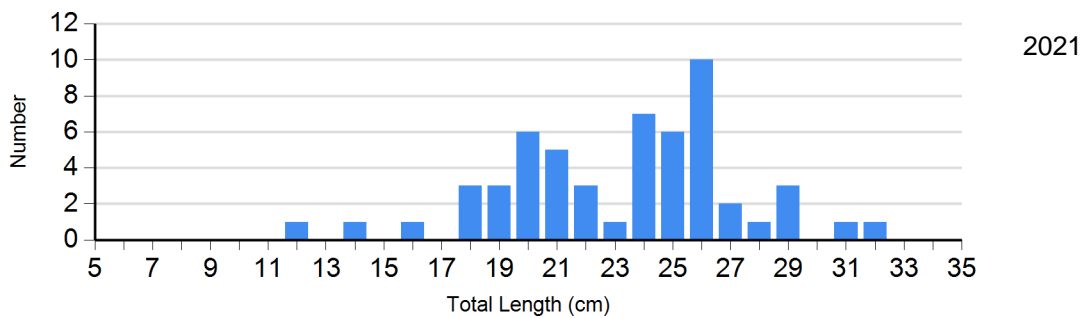
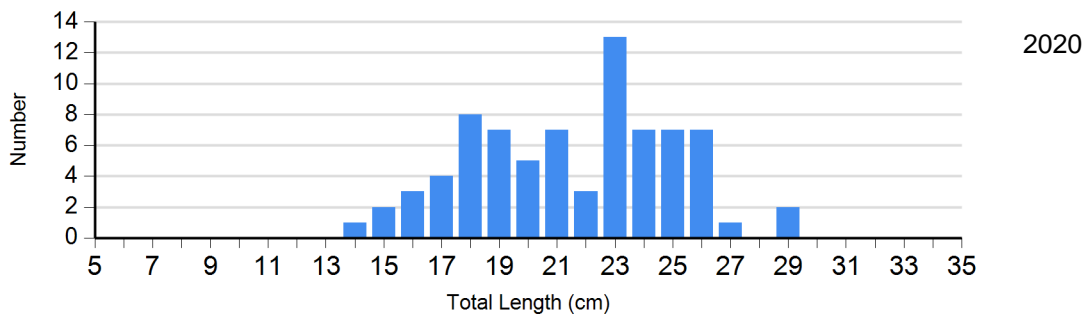
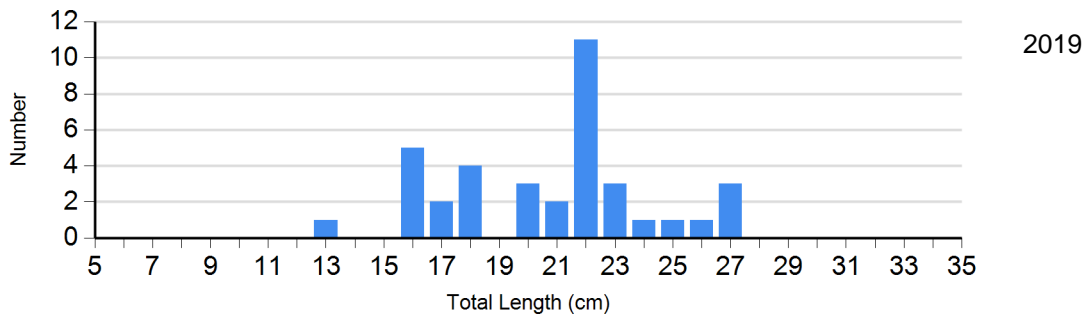
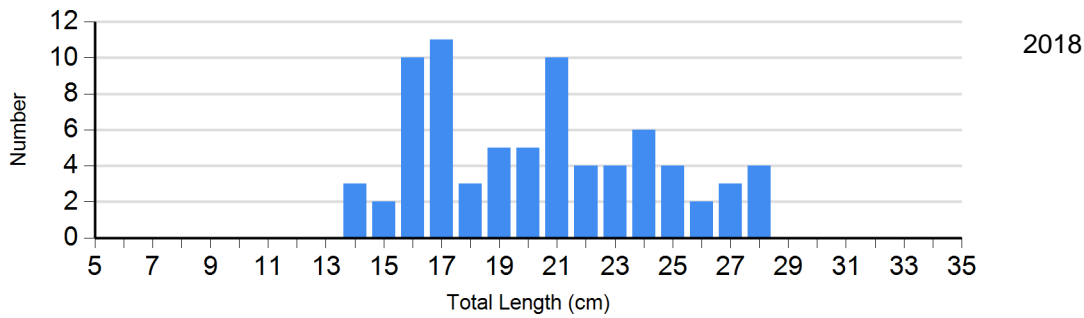
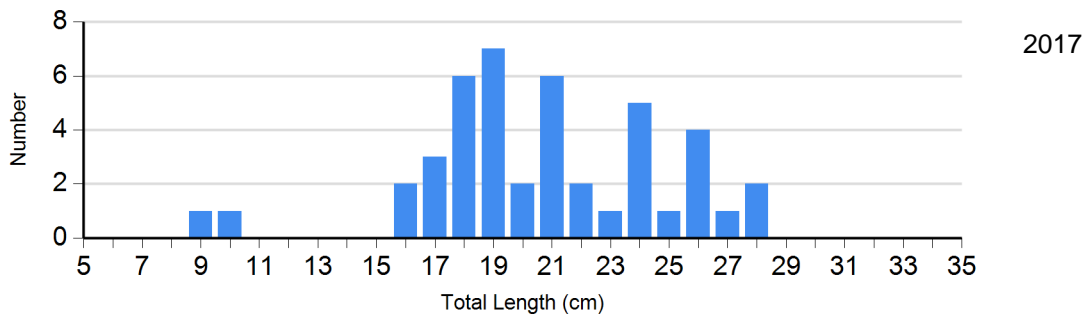


2018

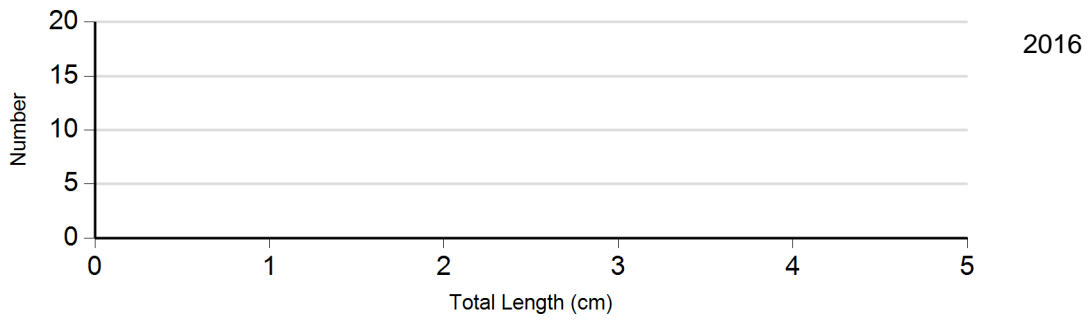


2021

Species: Yellow Perch  
Gear: AFS std gill net



Species: Yellow Perch  
Gear: std exp gill net

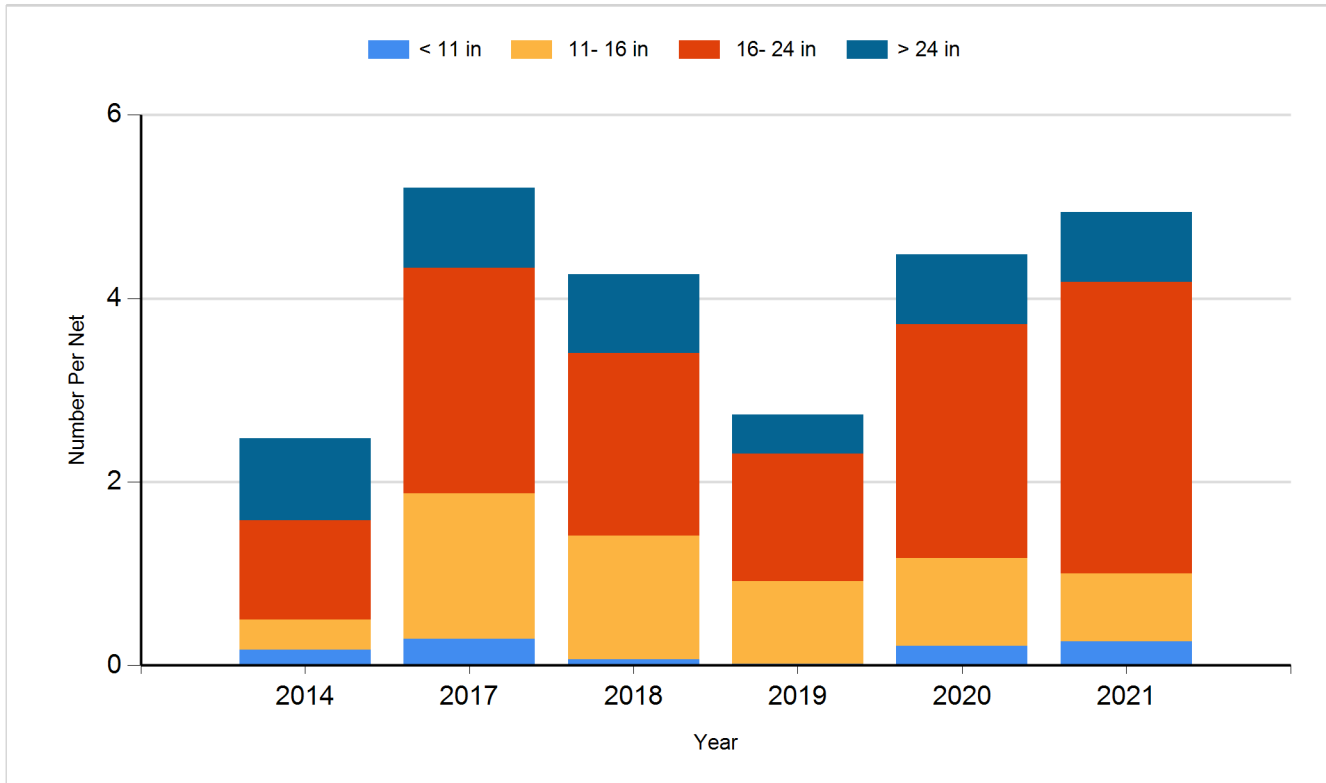


## Historic Fish Sizes and Relative Abundance

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

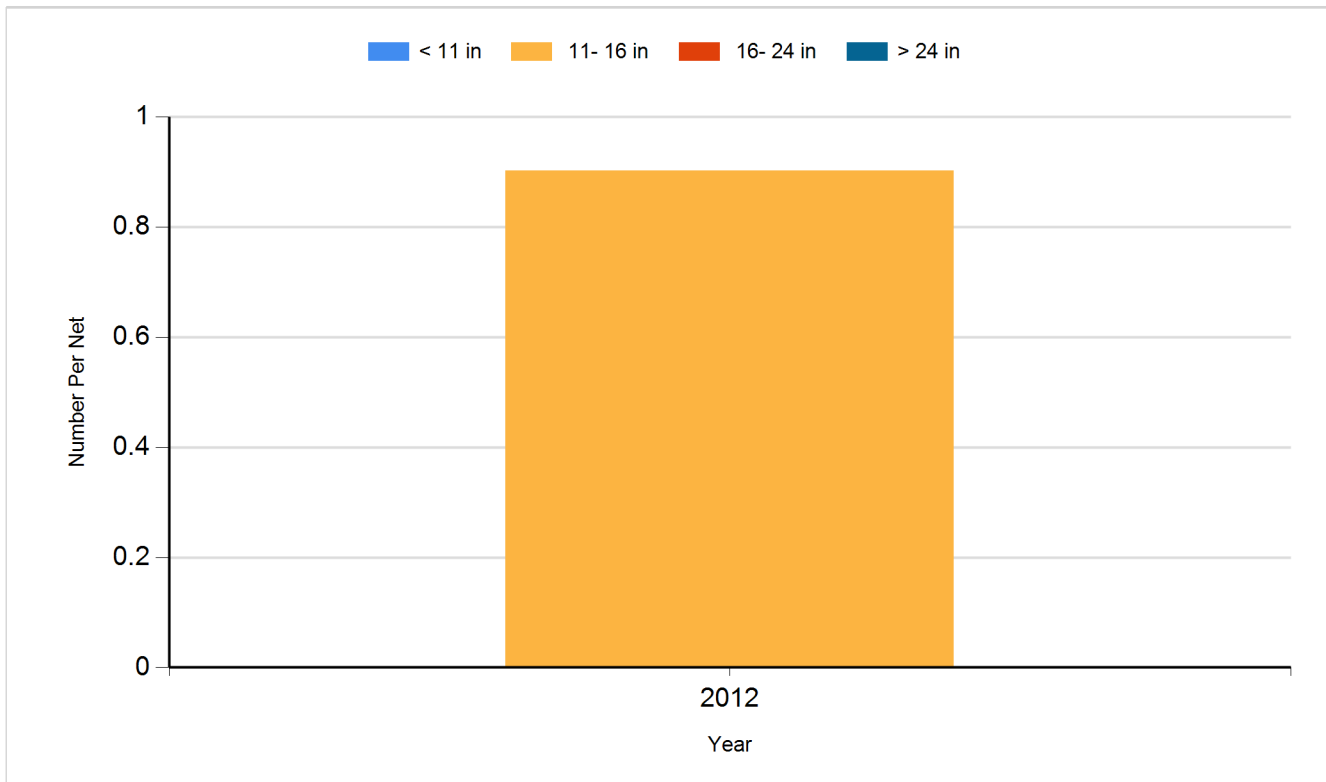
Species: Channel Catfish

Gear: AFS std gill net

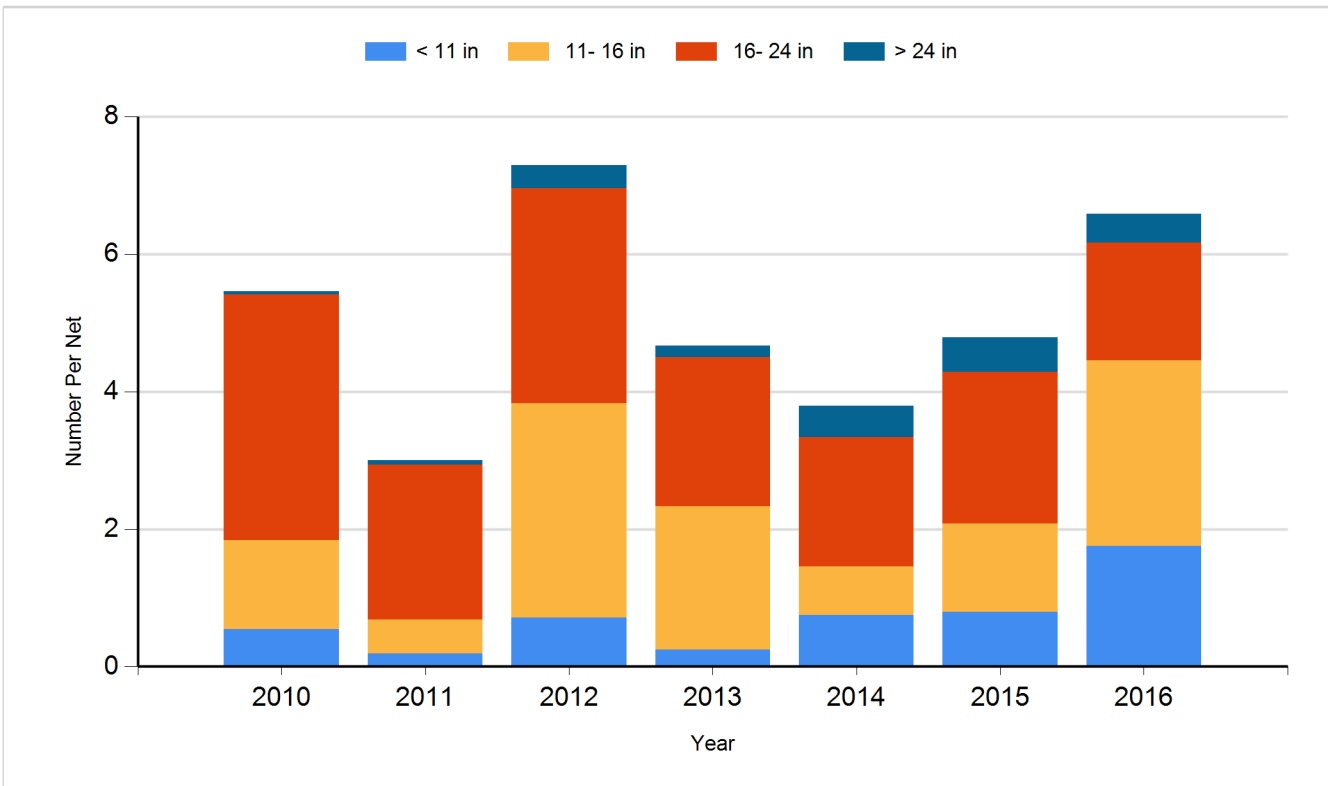


Species: Channel Catfish

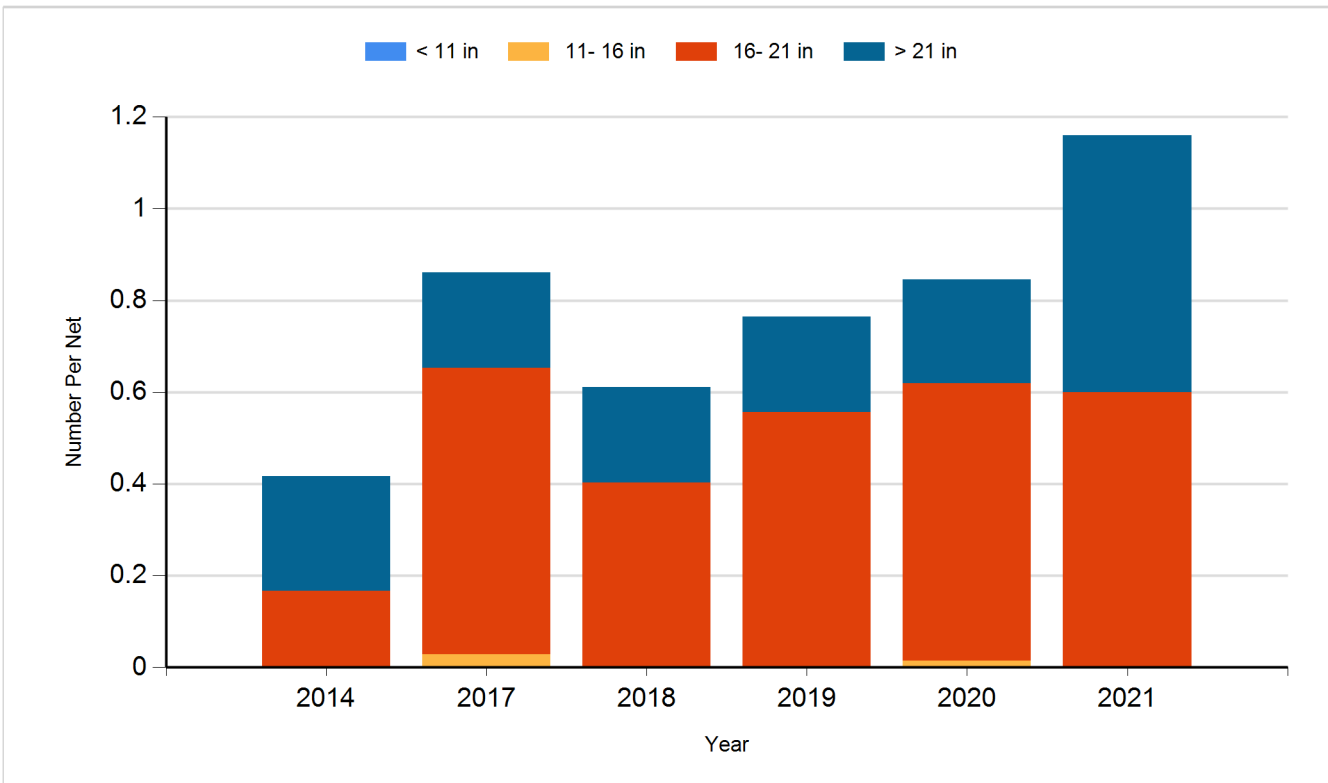
Gear: smb mono gill net



Species: Channel Catfish  
Gear: std exp gill net

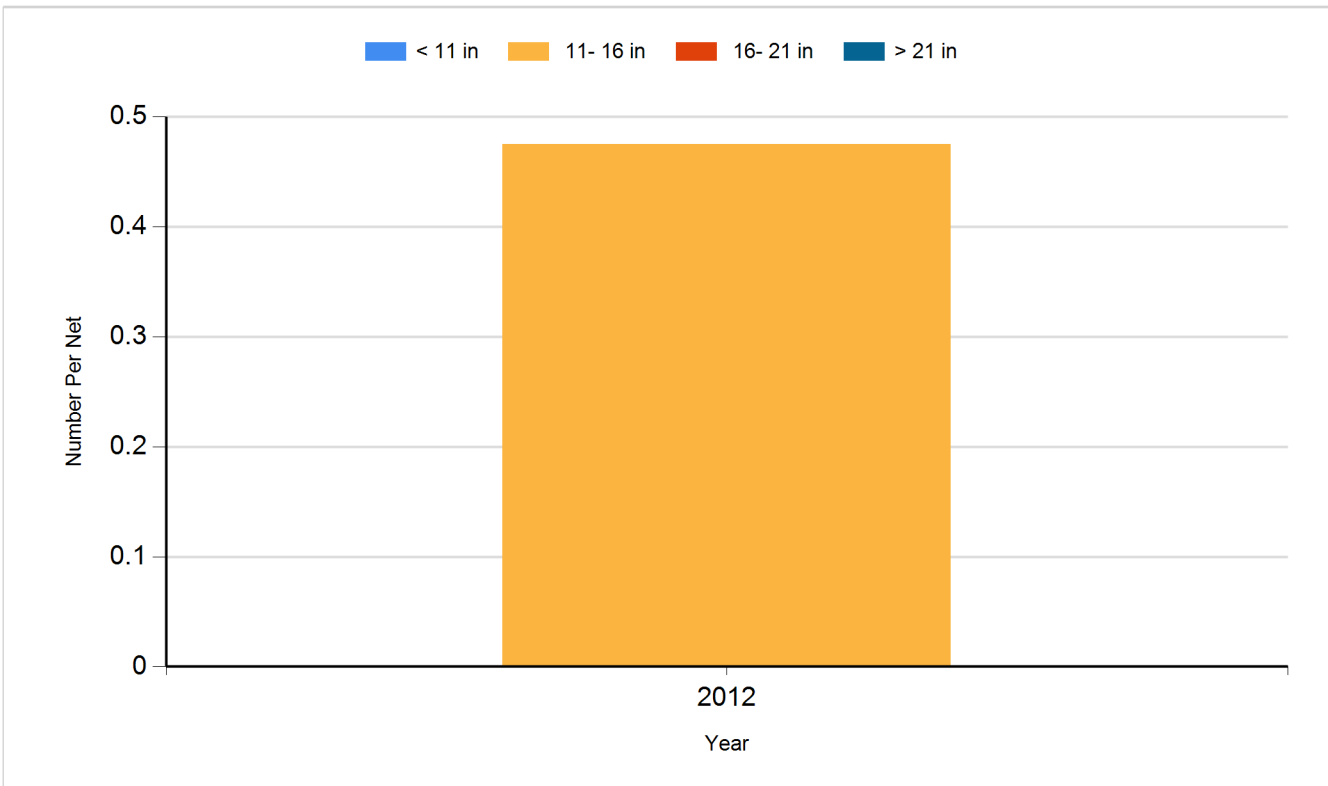


Species: Common Carp  
Gear: AFS std gill net

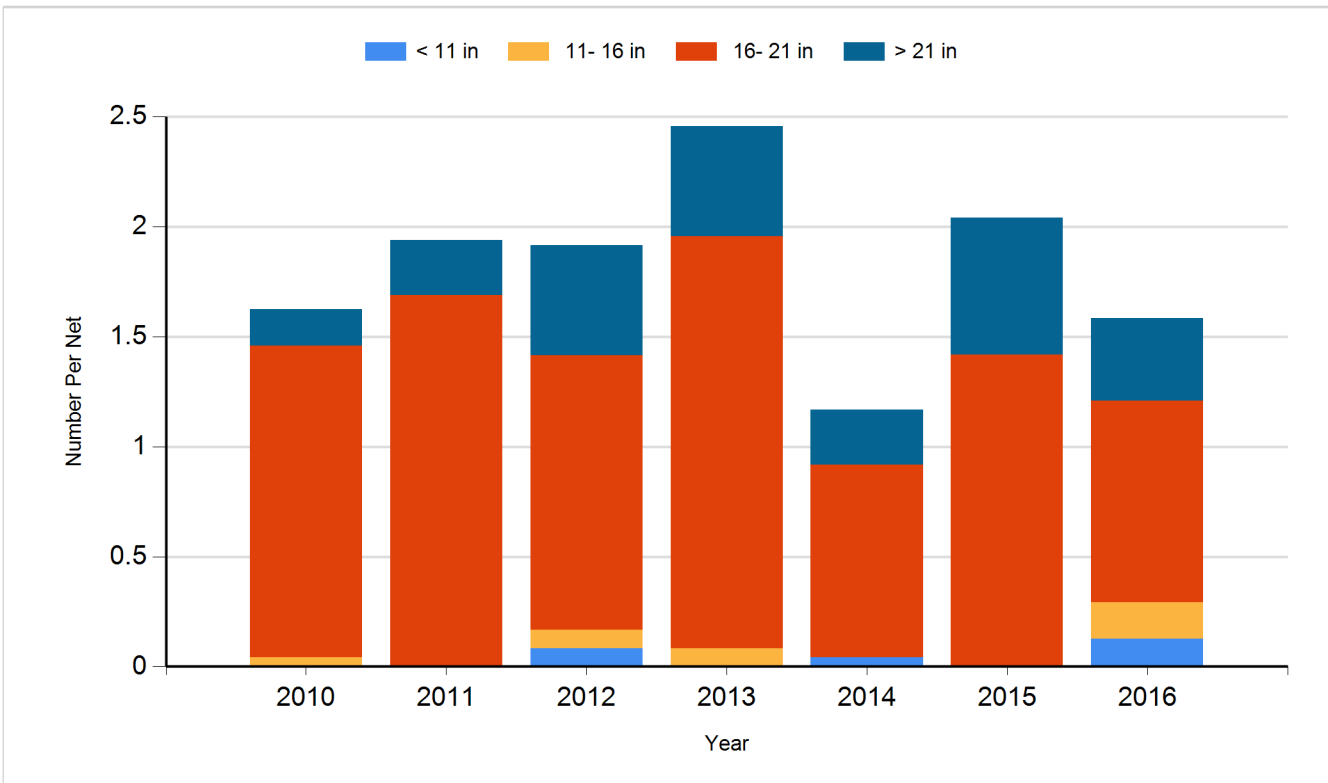




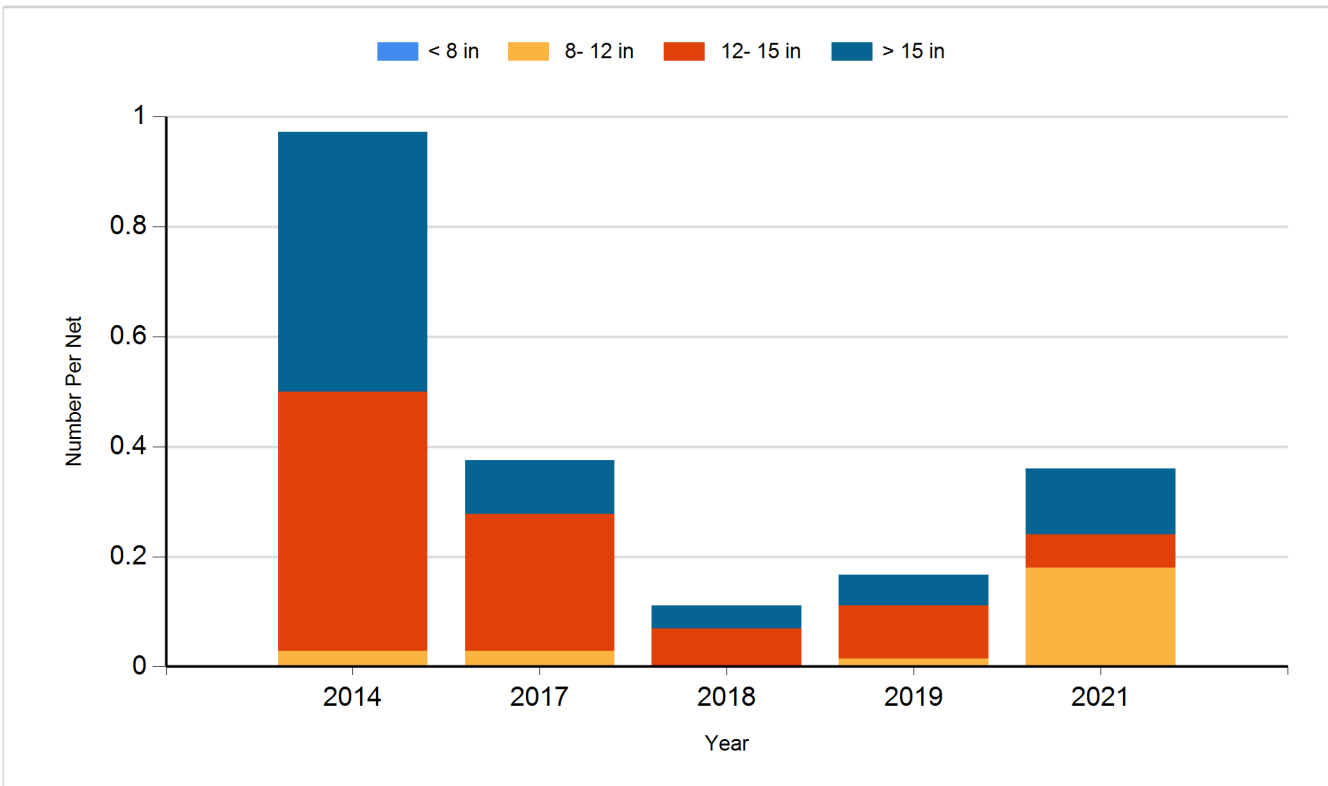
Species: Common Carp  
Gear: smb mono gill net



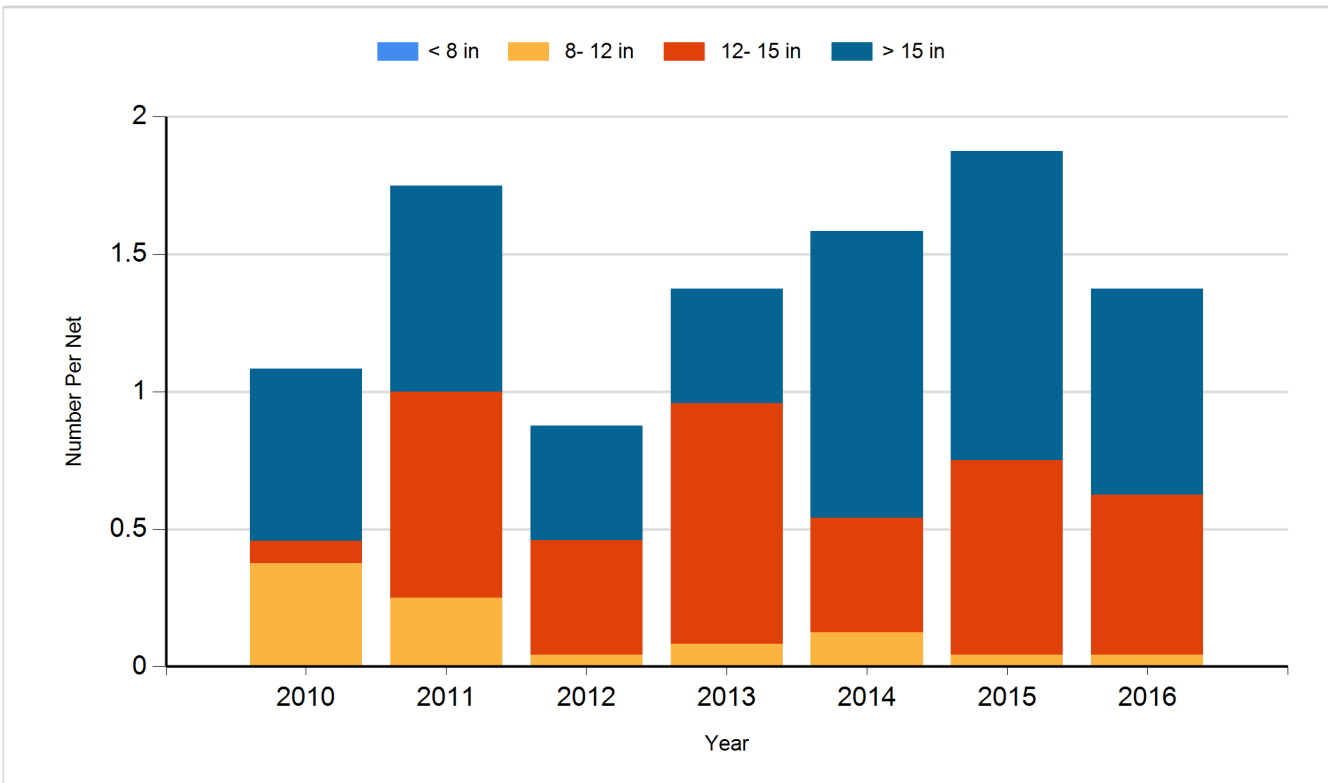
Species: Common Carp  
Gear: std exp gill net



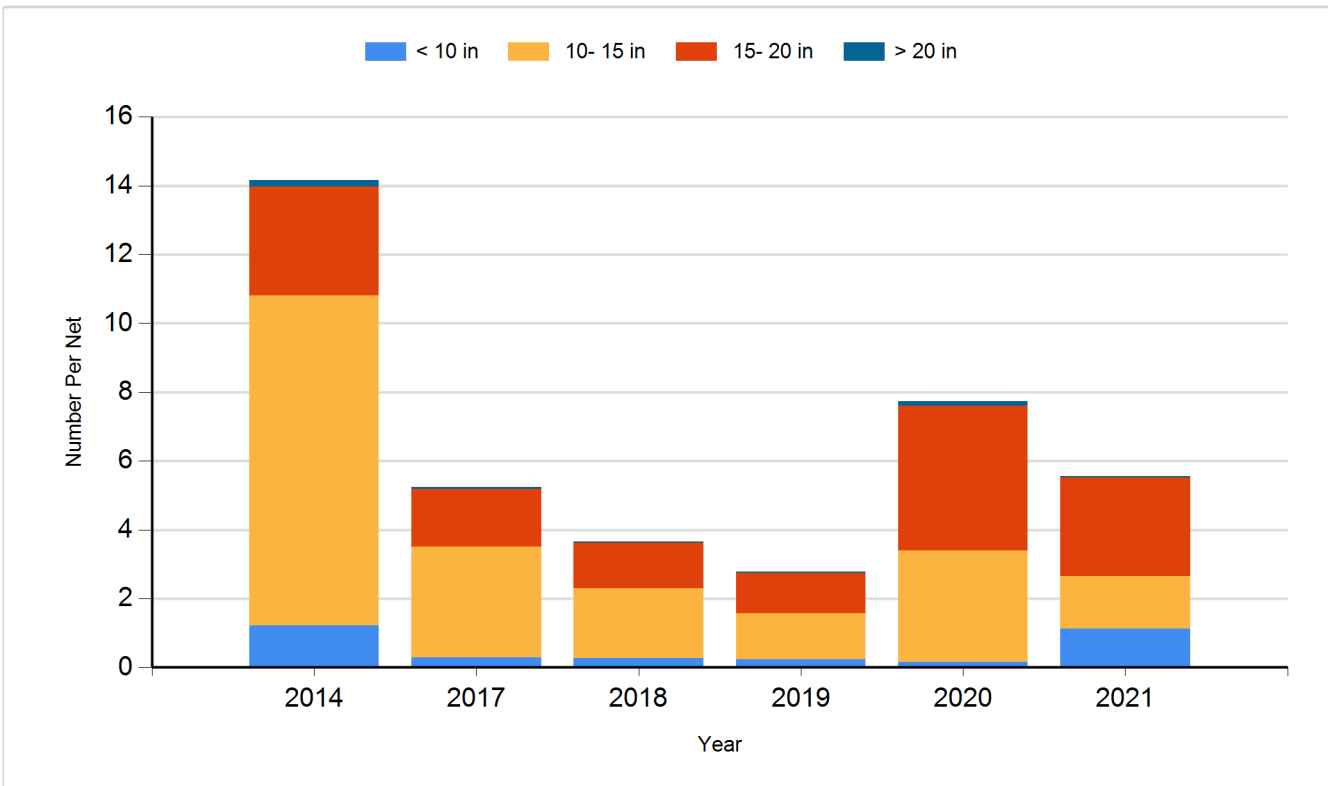
Species: Sauger  
Gear: AFS std gill net



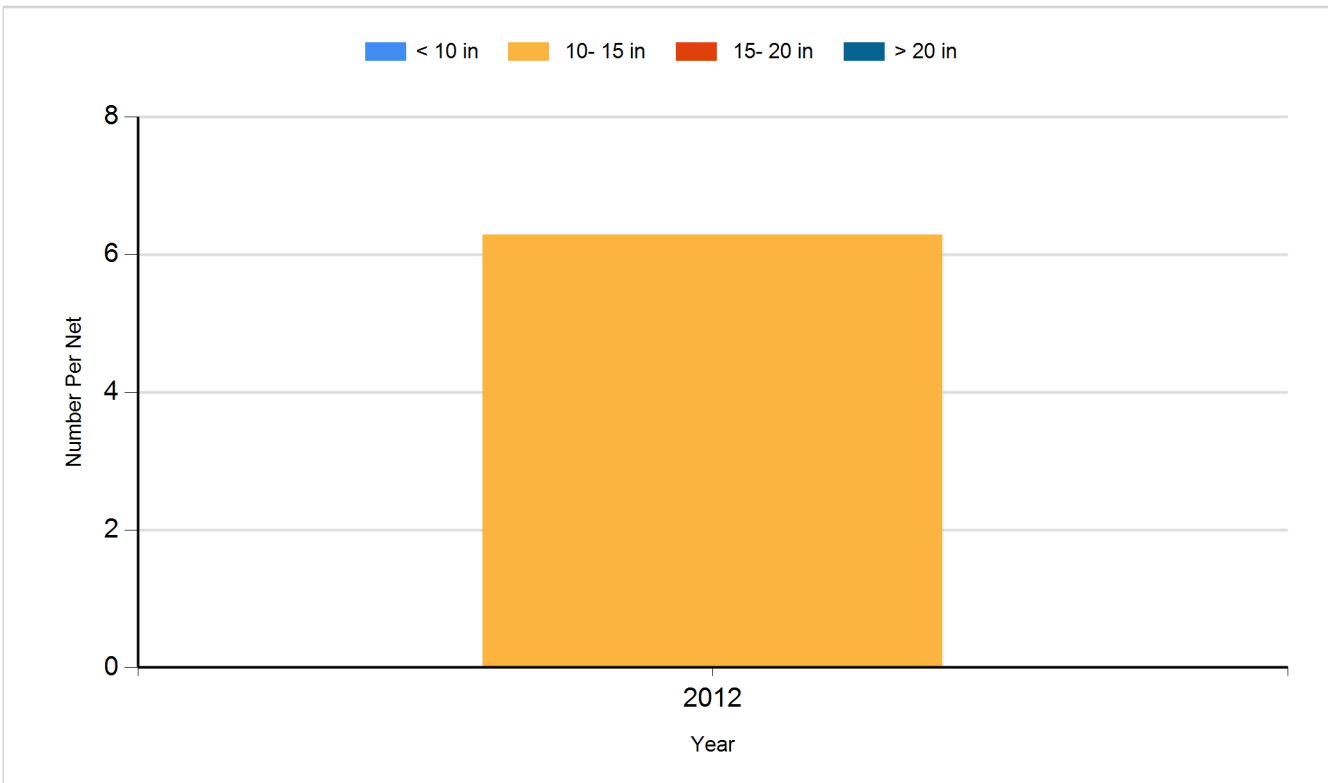
Species: Sauger  
Gear: std exp gill net



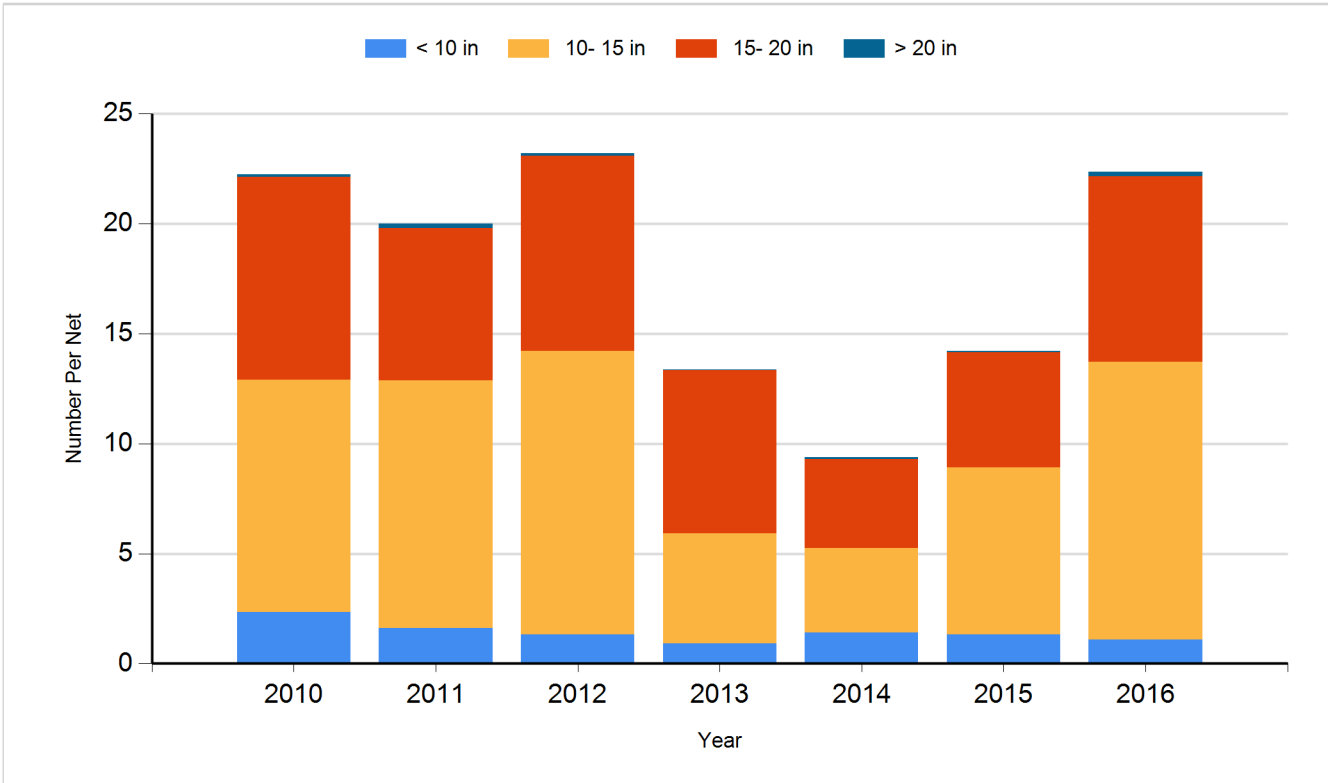
Species: Walleye  
Gear: AFS std gill net



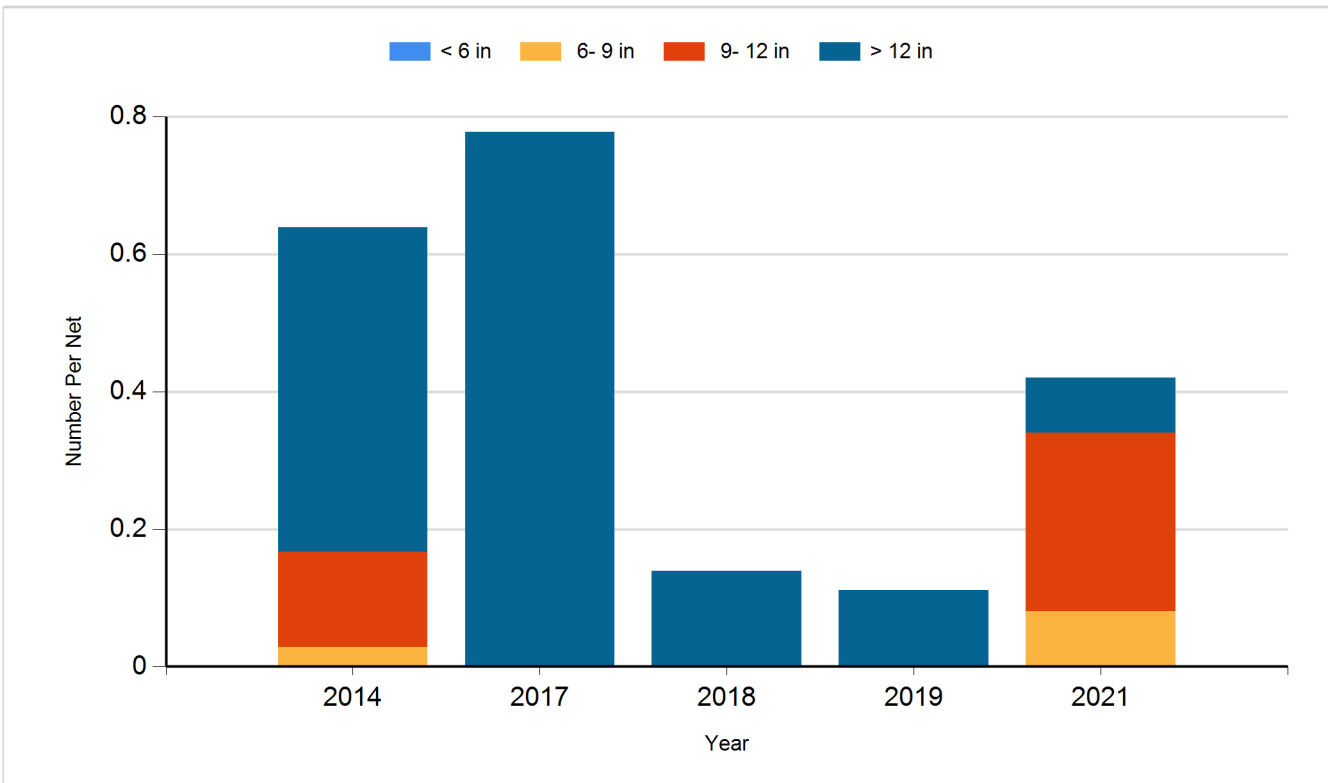
Species: Walleye  
Gear: smb mono gill net



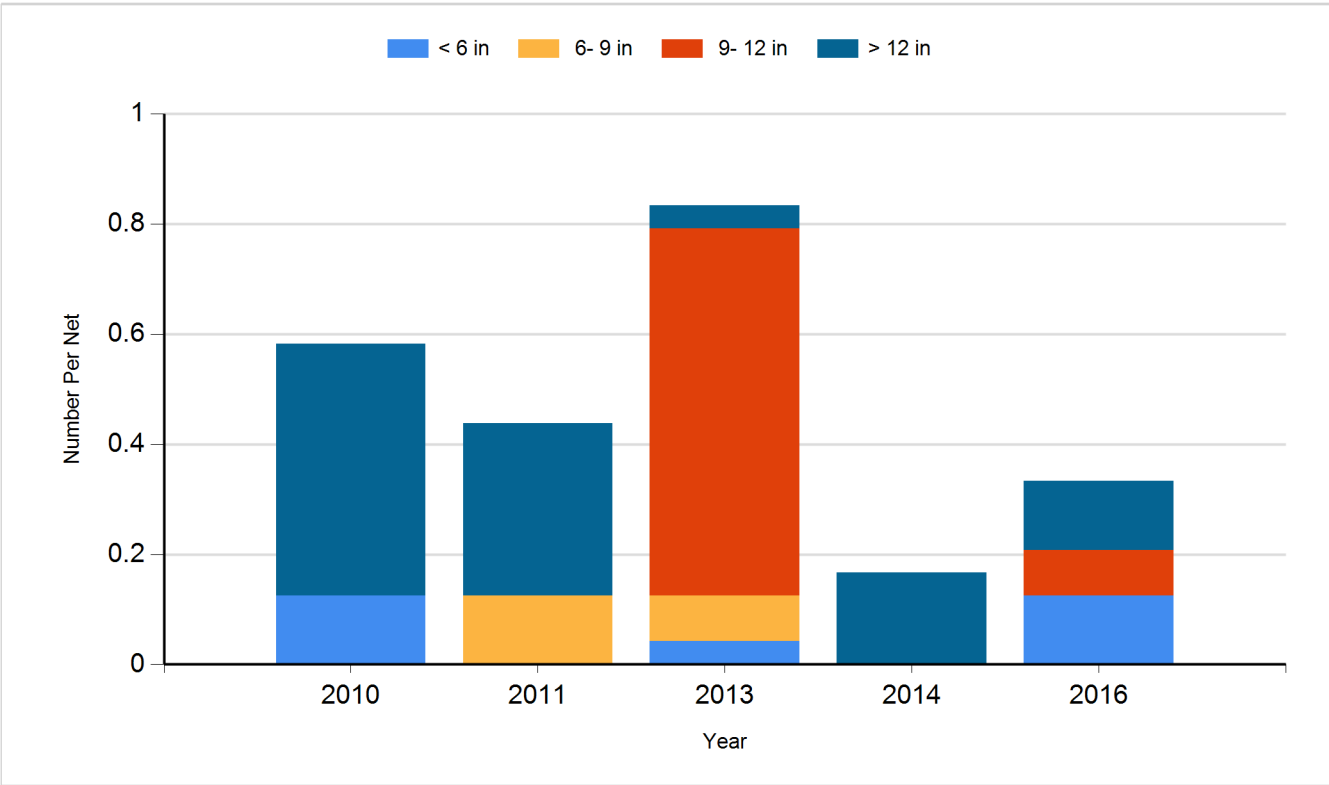
Species: Walleye  
Gear: std exp gill net



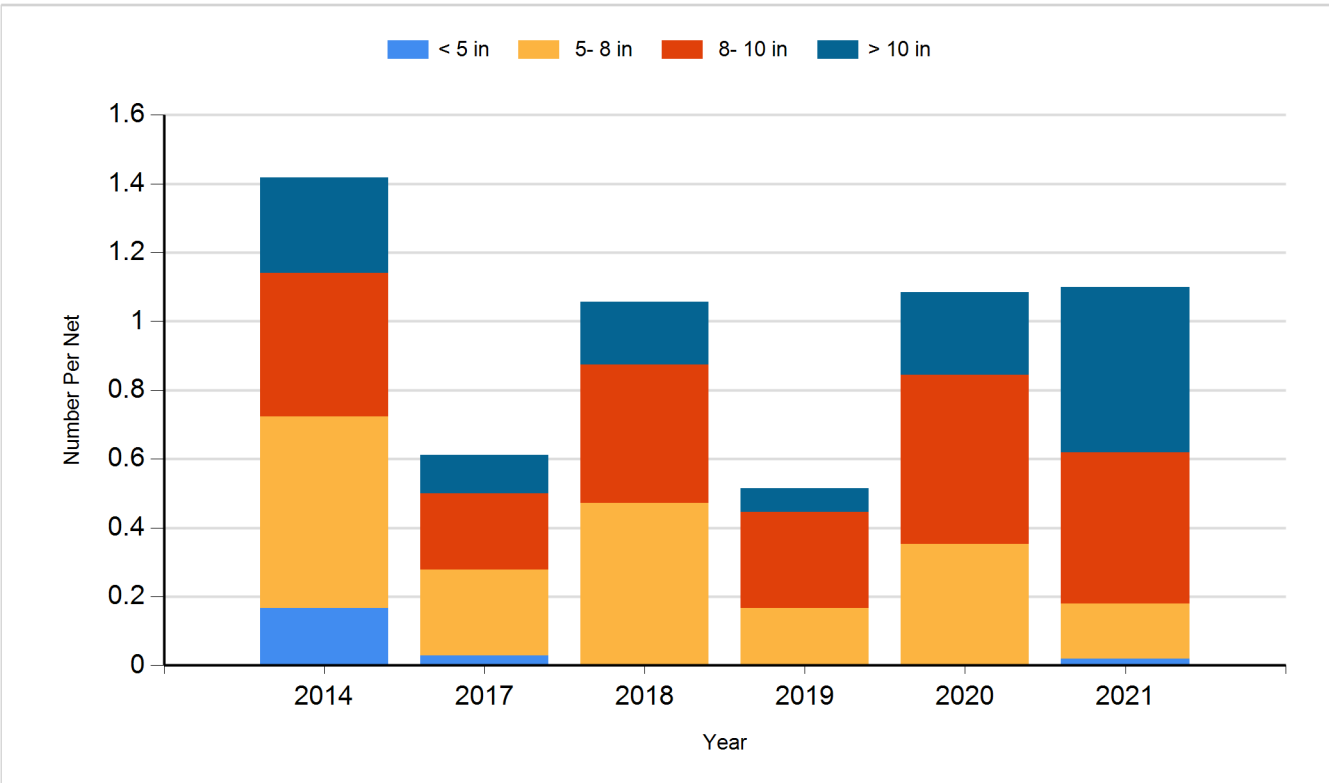
Species: White Bass  
Gear: AFS std gill net



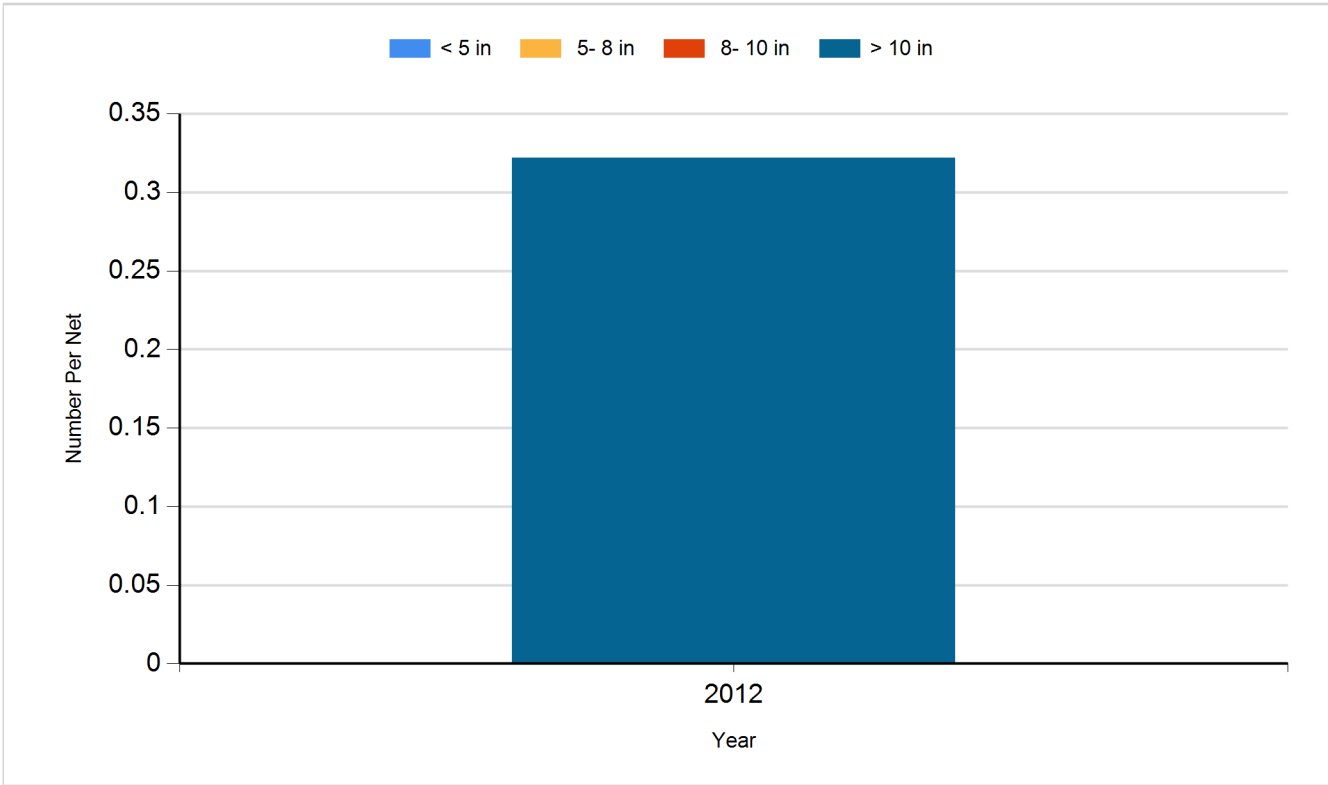
Species: White Bass  
Gear: std exp gill net



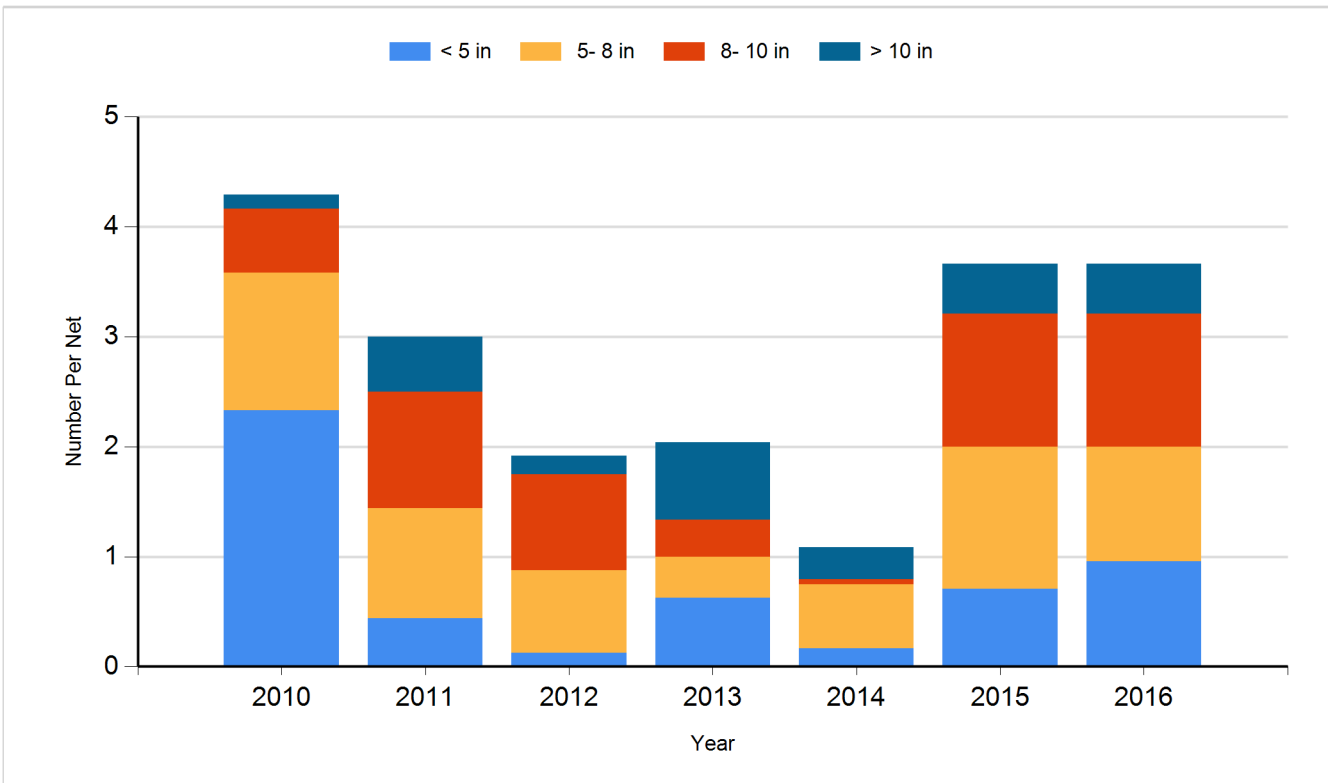
Species: Yellow Perch  
Gear: AFS std gill net



Species: Yellow Perch  
Gear: smb mono 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
2010	Rainbow Trout (Erwin)	Catchable 15"	20
2010	Rainbow Trout (McConaugRainbow Trout)	Catchable	20,000
2010	Rainbow Trout (Shasta)	Catchable	300
2011	Rainbow Trout (Erwin x Arlee)	Catchable	3,750
2011	Rainbow Trout (McConaugRainbow Trout)	Catchable	16,250
2012	Rainbow Trout (McConaugRainbow Trout)	Catchable 11"	10,000
2012	Rainbow Trout (Shasta)	Catchable 11"	10,000
2013	Rainbow Trout (Erwin x Arlee)	Catchable 11"	2,980
2013	Rainbow Trout (Shasta)	Catchable 11"	20,000
2014	Rainbow Trout (Shasta)	Catchable 11"	9,600
2015	Paddlefish	Adult	13
2015	Paddlefish	Large Fingerling	5,619
2015	Paddlefish	Small Fingerling	7,500
2015	Rainbow Trout (Ennis)	Catchable 11"	451
2015	Rainbow Trout (Shasta)	Catchable 11"	9,855
2016	Paddlefish	Adult	10
2016	Paddlefish	Fry	50,372
2016	Rainbow Trout (Shasta)	Catchable 11"	7,496
2017	Paddlefish	Large Fingerling	10,000
2017	Rainbow Trout (Shasta)	Catchable	5,438
2017	Rainbow Trout (Shasta)	Catchable 15"	2,720
2018	Paddlefish	Large Fingerling	5,178
2018	Rainbow Trout (Shasta)	Catchable	1,200
2019	Paddlefish	Large Fingerling	10,066
2020	Paddlefish	Large Fingerling	18,210
2021	Paddlefish	Juvenile	12,954