Opitz Lake Survey Summary

Opitz Lake, located 5.0 miles west and 1.0 mile south of Eden, is managed as a walleye and yellow perch fishery but other fish species (e.g., northern pike, rock bass) are present and contribute to the fishery.

- Walleye. Fewer walleyes were sampled in 2023 than in 2022. At 0.9 per gill net, relative abundance was considered low. Sampled walleyes ranged in length from 7.9 to 28.7 inches of those that were at least 10.0 inches 55% were ≥15.0 inches and 9% were ≥20.0 inches. Six year classes (2007, 2012, 2016, 2018, 2021, and 2022) contributed to the catch, each was represented by five or fewer individuals. The oldest walleye sampled was from the 2007 (age-16) cohort. Although sample sizes are low, the 2023 sample seems to suggest moderate walleye growth with mean length at captures at age 2 and age 5 of 11.9 and 15.9 inches.
- Yellow perch. Yellow perch numbers were slightly higher in 2023 than in 2022. Despite the increase, yellow perch relative abundance remained low (4.2/gill net) in 2023. Sampled yellow perch ranged in length from 4.7 to 13.8 inches of those that were at least 5.0 inches 28% were 10.0 inches or longer. Individuals from six year classes (2011, 2013, 2016, and 2020 2022) were present, those from the 2022 (age-1) cohort were the most abundant making up nearly 70% of fish in the sample. Growth appears to be good with mean length at capture values ≥9.0 inches at age 3 from 2014 2023. In 2023, the mean length at capture of the single age-3 fish sampled was 10.0 inches.

For more detailed results see the computer-generated South Dakota Statewide Fisheries Survey for Opitz Lake (below).

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY Opitz, Day County UJA-Lake-866-002 2023

Lake Information

Name:	Opitz	Maximum Depth:	23 Feet
County:	Day	Mean Depth:	14 Feet
Surface Area:	1,452 Acres		

Surveys and Investigations

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

Gear	Date	Effort	
AFS std gill net	Jun 13, 2023	4 net-nights	
AFS std gill net	Jun 14, 2023	4 net-nights	
AFS std gill net	Jun 15, 2023	4 net-nights	
fall night EF-WAE	Sep 18, 2023	3600 seconds	

Common Fish Species Present

Yellow Perch

Northern Pike

Walleye

Rock Bass

White Sucker

Common Carp

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.

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

Population size structure is quantified using the indices proportional size distribution of quality-length fish (**PSD**) and proportional size distribution of preferred-length fish (**PSD-P**). These indices indicate the proportion of stock-length fish that are equal to or greater than a given length. Minimum lengths for stock, quality and preferred length fish are given in the length categories table.

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

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

Relative weight (**Wr**) is used to quantify fish plumpness. Relative weight is the ratio of what a fish weighs (W) compared to a length-specific standard weight (Ws) multiplied by 100. Relative weight values of 95-105 are commonly cited as optimum values, but values in the 80s are common during summer sampling in South Dakota.

$$Wr = \left(\frac{W}{Ws}\right) \ge 100$$

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).

	St	ock	Qu	ality	Pref	erred	Mem	orable	Tro	ophy
Species Name	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)
Black Bullhead	6	15	9	23	12	30	15	38	18	46
Black Crappie	5	13	8	20	10	25	12	30	15	38
Bluegill	3	8	6	15	8	20	10	25	12	30
Brown Trout	8	20	12	30	16	40	20	50	18	46
Channel Catfish	11	28	16	41	24	61	28	71	36	91
Freshwater Drum	8	20	12	30	15	38	20	51	25	63
Lake Trout	12	30	20	50	26	65	31	80	39	100
Largemouth Bass	8	20	12	30	15	38	20	51	25	63
Muskellunge	20	51	30	76	38	97	42	107	50	127
Northern Pike	14	35	21	53	28	71	34	86	44	112
Pumpkinseed	3	8	6	15	8	20	10	25	12	30
Rainbow Trout	10	25	16	40	20	50	26	65	31	80
Rudd	6	15	10	25	12	30	15	38	19	48
Sauger	8	20	12	30	15	38	20	51	25	63
Smallmouth Bass	7	18	11	28	14	35	17	43	20	51
Walleye	10	25	15	38	20	51	25	63	30	76
White Bass	6	15	9	23	12	30	15	38	18	46
White Crappie	5	13	8	20	10	25	12	30	15	38
Yellow Bullhead	4	10	7	18	9	23	11	28	14	36
Yellow Perch	5	13	8	20	10	25	12	30	15	38

Catch Summary of Stock Length Fish

Catch per unit effort (CPUE), proportional size distribution (PSD), proportional size distribution of preferred length fish (PSD-P), and relative weight (Wr) for species sampled in survey with 80% confidence interval (CI-80). *** Methods/Species that ignore stock length**

			Abun	dance	St	ock Der	nsity Indic	es	Cor	ndition
Gear	Species	Sample Size (n)	CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
AFS std gill net	Common Carp	1	0.1	0.1	100		100		101	
	Northern Pike	4	0.3	0.2	100		50		93	4
	Rock Bass	11	0.9	0.3	45	17	0		114	3
	Walleye	14	0.9	0.3	55	17	9		86	3
	White Sucker	4	0.3	0.3	75		75		104	5
	Yellow Perch	51	4.2	1.4	28	6	28	6	112	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

							CPUE					
Gear	Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
AFS std gill net	Black Bullhead			0.8	0.4	0.2	0.0		0.3	0.5	0.0	0.31
	Black Crappie			0.0	0.0	0.0	0.0		0.0	0.1	0.0	0.01
	Common Carp			0.1	0.3	0.2	0.3		0.5	0.3	0.1	0.26
	Northern Pike			0.4	0.1	0.1	0.0		0.2	0.0	0.3	0.16
	Rock Bass			1.8	2.8	2.2	2.1		3.4	3.2	0.9	2.34
	Smallmouth Bass			0.2	0.0	0.0	0.0		0.1	0.0	0.0	0.04
	Walleye			5.6	3.3	7.4	5.2		3.5	1.5	0.9	3.91
	White Bass			0.0	0.0	0.0	0.0		0.1	0.0	0.0	0.01
	White Sucker			0.0	0.0	0.2	0.3		0.1	0.5	0.3	0.20
	Yellow Perch			14.3	13.8	11.7	9.4		3.3	3.4	4.2	8.59
fall night EF- WAE*	Walleye	75.0	0.0	360.0	0.0	327.0	3.0	0.0	454.5		105.0	158.83
frame net (std	Black Bullhead	7.0			1.1							7.00
3/4 in)	Black Crappie	0.3			0.0							0.30
	Common Carp	0.1			0.3							0.10
	Northern Pike	0.3			0.1							0.30
	Orangespotted Sunfish*	0.0			0.6							0.30
	Rock Bass	2.6			0.9							2.60
	Walleye	5.9			1.5							5.90
	White Sucker	0.0			0.0							0.00
	Yellow Perch	0.0			0.0							0.00
std exp gill net	Black Bullhead	0.3	0.7									0.50
	Common Carp	0.0	0.5									0.25
	Northern Pike	1.5	0.5									1.00
	Rock Bass	1.3	0.8									1.05
	Walleye	27.7	22.5									25.10
	Yellow Perch	34.2	33.8									34.00

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.

							Ye	ar				
Gear	Species	Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AFS std gill net	Walleye	PSD			27	55	11	6		40	69	55
		PSD-P			1	0	1	2		0	0	9
		Wr			82	80	82	83		85	82	86
	Yellow Perch	PSD			100	91	97	91		97	65	28
		PSD-P			93	84	59	66		90	59	28
		Wr			103	108	111	112		106	108	112
std exp gill net	Walleye	PSD	6	5								
		PSD-P	0	0								
		Wr	82	80								
	Yellow Perch	PSD	99	96								
		PSD-P	62	74								
		Wr	108	108								

Length at Capture

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

Species: Walleye

				Mean Leng	gth (expa	nded sam	ple numbe	er) at capt	ure by age	е	
Year	Ν	1	2	3	4	5	6	7	8	9	10+
2023	14	218 (3)	303 (5)			404 (3)		430 (1)			593 (2)
2022	26	194 (10)			384 (8)		422 (6)			336 (1)	447 (1)
2021	42			365 (29)		408 (12)					403 (1)
2019	63	221 (2)		329 (54)		373 (2)	376 (3)	548 (1)	391 (1)		
2018	89		293 (63)		365 (5)	372 (7)	398 (2)	386 (10)			630 (1)
2017	66	205 (26)	317 (1)	355 (2)	385 (19)	384 (3)	386 (15)		405 (1)		
2016	67		320 (6)	349 (21)	374 (10)	380 (30)		520 (1)			
2015	143	201 (7)	276 (24)	324 (24)	356 (88)	395 (2)					
2014	185	212 (17)	288 (23)	339 (136)		420 (8)			425 (1)		
pecies: Y	ellow Pe	rch									
				Mean Len	gth (expa	nded sam	ple numbe	er) at capt	ure by age	Э	
Year	Ν	1	2	3	4	5	6	7	8	9	10+
2023	51	144 (35)	186 (2)	254 (1)				318 (8)			333 (5)
2022	38	142 (14)	240 (3)		298 (5)		315 (6)	333 (1)	323 (2)	327 (5)	328 (2)
2021	39	149 (1)		258 (9)	264 (2)	295 (13)			325 (10)	320 (2)	344 (2)
2019	114	138		244	273		300	299	307		

					gui (oxpai		P		are by ag		
Year	Ν	1	2	3	4	5	6	7	8	9	10+
2023	51	144 (35)	186 (2)	254 (1)				318 (8)			333 (5)
2022	38	142 (14)	240 (3)		298 (5)		315 (6)	333 (1)	323 (2)	327 (5)	328 (2)
2021	39	149 (1)		258 (9)	264 (2)	295 (13)			325 (10)	320 (2)	344 (2)
2019	114	138 (11)		244 (44)	273 (9)		300 (21)	299 (9)	307 (22)		
2018	140		220 (56)	267 (12)		294 (34)	297 (20)	303 (18)	342 (1)		
2017	166	141 (15)	231 (10)		272 (38)	289 (11)	298 (90)		325 (2)		
2016	171			254 (37)	277 (23)	300 (90)	309 (10)	305 (11)			
2015	203		197 (14)	229 (28)	274 (149)	278 (11)	325 (1)				
2014	205		213 (16)	254 (148)		278 (41)					

Fish Condition

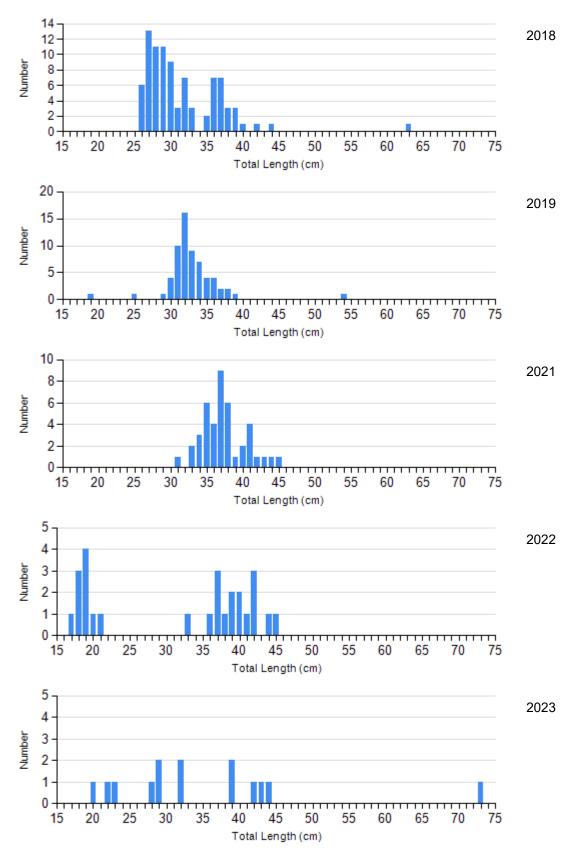
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

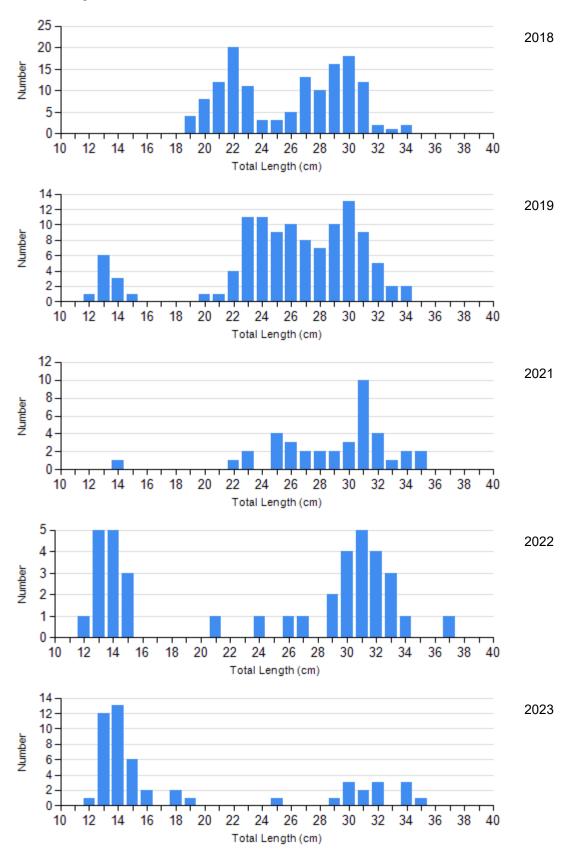
					Length	Group	S		
			S-Q		Q-P		P-M		М
Species	Year	Ν	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)
Walleye Gill Net	2019	58	83 (0.7)	3	82 (4.3)	1	97	0	
	2021	25	85 (0.8)	17	86 (0.9)	0		0	
	2022	5	83 (1.4)	11	82 (1.5)	0		0	
	2023	5	86 (1.3)	5	89 (2.8)	0		1	72
Yellow Perch Gill Net	2019	10	114 (1.5)	28	120 (1.1)	44	112 (1.1)	31	105 (1.3)
	2021	1	117	3	119 (4.7)	13	110 (2.9)	22	102 (1.7)
	2022	13	111 (1.9)	2	114 (9.1)	4	113 (1.6)	18	104 (2.2)
	2023	36	115 (1.4)	0		2	113 (3.6)	12	100 (2.8)

Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Walleye Gear: AFS std gill net



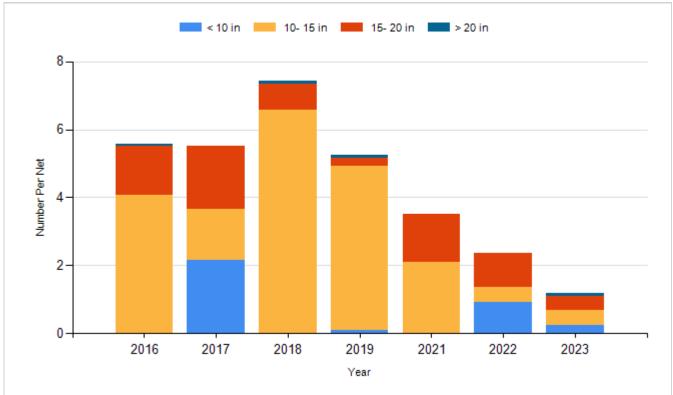


Historic Fish Sizes and Relative Abundance

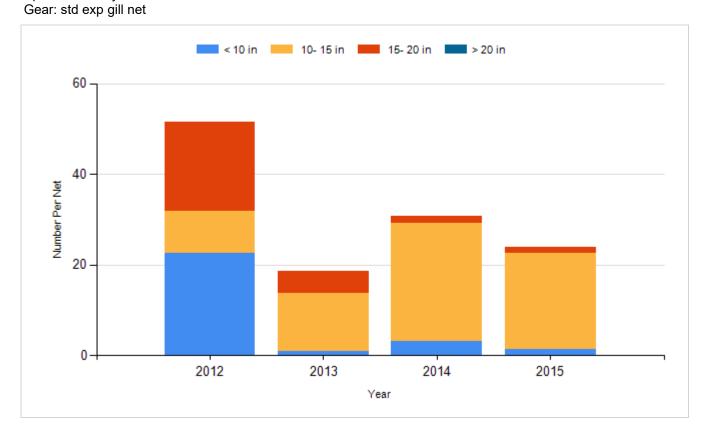
Size distribution per net by color for species sampled by year.

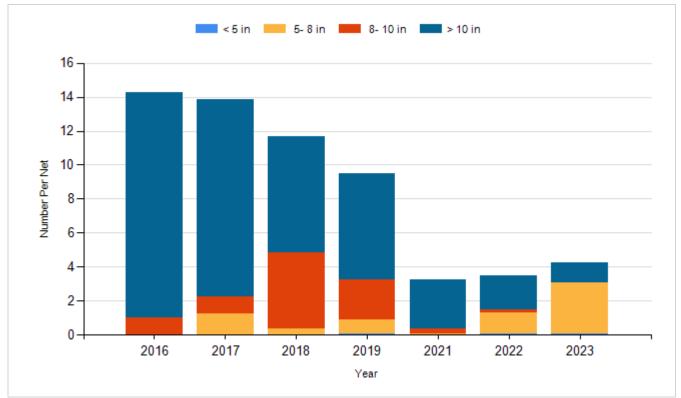
Species: Walleye

Gear: AFS std gill net

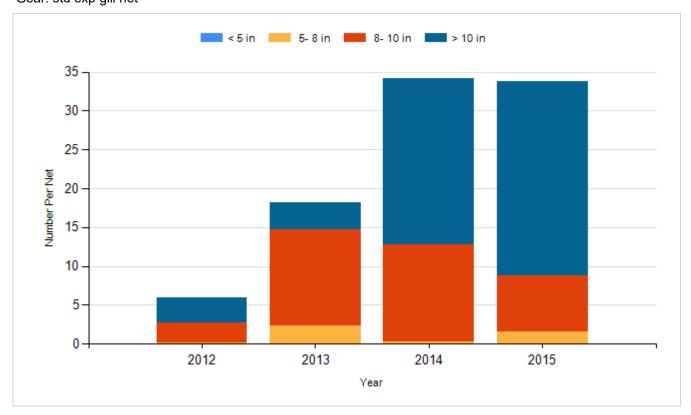


Species: Walleye





Species: Yellow Perch Gear: std exp gill net



Fish Stocking

Number of fish stocked by year, species, and size.

Year	Species	Size	Number
2016	Walleye	Fry	700,000
2018	Walleye	Fry	710,000
2021	Walleye	Fry	800,000
2023	Walleye	Juvenile	106,547

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

Opitz, Day County

UJA-Lake-866-002

2023

Lake Information

Name:	Opitz	Maximum Depth:	23 Feet
County:	Day	Mean Depth:	14 Feet
Surface Area:	1,452 Acres		

Surveys and Investigations

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

Gear	Date	Effort
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AFS std gill net	Jun 14, 2023	4 net-nights
AFS std gill net	Jun 15, 2023	4 net-nights
fall night EF-WAE	Sep 18, 2023	3600 seconds

Common Fish Species Present

Yellow Perch

Northern Pike

Walleye

Rock Bass

White Sucker

Common Carp

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.

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

Population size structure is quantified using the indices proportional size distribution of quality-length fish (**PSD**) and proportional size distribution of preferred-length fish (**PSD-P**). These indices indicate the proportion of stock-length fish that are equal to or greater than a given length. Minimum lengths for stock, quality and preferred length fish are given in the length categories table.

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

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

Relative weight (**Wr**) is used to quantify fish plumpness. Relative weight is the ratio of what a fish weighs (W) compared to a length-specific standard weight (Ws) multiplied by 100. Relative weight values of 95-105 are commonly cited as optimum values, but values in the 80s are common during summer sampling in South Dakota.

$$Wr = \left(\frac{W}{Ws}\right) \ge 100$$

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).

	St	ock	Qu	ality	Pref	erred	Mem	orable	Tro	ophy
Species Name	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)
Black Bullhead	6	15	9	23	12	30	15	38	18	46
Black Crappie	5	13	8	20	10	25	12	30	15	38
Bluegill	3	8	6	15	8	20	10	25	12	30
Brown Trout	8	20	12	30	16	40	20	50	18	46
Channel Catfish	11	28	16	41	24	61	28	71	36	91
Freshwater Drum	8	20	12	30	15	38	20	51	25	63
Lake Trout	12	30	20	50	26	65	31	80	39	100
Largemouth Bass	8	20	12	30	15	38	20	51	25	63
Muskellunge	20	51	30	76	38	97	42	107	50	127
Northern Pike	14	35	21	53	28	71	34	86	44	112
Pumpkinseed	3	8	6	15	8	20	10	25	12	30
Rainbow Trout	10	25	16	40	20	50	26	65	31	80
Rudd	6	15	10	25	12	30	15	38	19	48
Sauger	8	20	12	30	15	38	20	51	25	63
Smallmouth Bass	7	18	11	28	14	35	17	43	20	51
Walleye	10	25	15	38	20	51	25	63	30	76
White Bass	6	15	9	23	12	30	15	38	18	46
White Crappie	5	13	8	20	10	25	12	30	15	38
Yellow Bullhead	4	10	7	18	9	23	11	28	14	36
Yellow Perch	5	13	8	20	10	25	12	30	15	38

Catch Summary of Stock Length Fish

Catch per unit effort (CPUE), proportional size distribution (PSD), proportional size distribution of preferred length fish (PSD-P), and relative weight (Wr) for species sampled in survey with 80% confidence interval (CI-80). * Methods/Species that ignore stock length

			Abun	dance	St	ock Der	nsity Indic	es	Cor	ndition
Gear	Species	Sample Size (n)	CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
AFS std gill net	Common Carp	1	0.1	0.1	100		100		101	
	Northern Pike	4	0.3	0.2	100		50		93	4
	Rock Bass	11	0.9	0.3	45	17	0		114	3
	Walleye	14	0.9	0.3	55	17	9		86	3
	White Sucker	4	0.3	0.3	75		75		104	5
	Yellow Perch	51	4.2	1.4	28	6	28	6	112	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

							CPUE					
Gear	Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Avg
AFS std frame	Black Bullhead				1.1							1.10
net	Common Carp				0.3							0.30
	Northern Pike				0.1							0.10
	Orangespotted Sunfish				0.0							0.00
	Rock Bass				0.9							0.90
	Walleye				1.5							1.50
AFS std gill net	Black Bullhead			0.8	0.4	0.2	0.0		0.3	0.5	0.0	0.31
	Black Crappie			0.0	0.0	0.0	0.0		0.0	0.1	0.0	0.01
	Common Carp			0.1	0.3	0.2	0.3		0.5	0.3	0.1	0.26
	Northern Pike			0.4	0.1	0.1	0.0		0.2	0.0	0.3	0.16
	Rock Bass			1.8	2.8	2.2	2.1		3.4	3.2	0.9	2.34
	Smallmouth Bass			0.2	0.0	0.0	0.0		0.1	0.0	0.0	0.04
	Walleye			5.6	3.3	7.4	5.2		3.5	1.5	0.9	3.91
	White Bass			0.0	0.0	0.0	0.0		0.1	0.0	0.0	0.01
	White Sucker			0.0	0.0	0.2	0.3		0.1	0.5	0.3	0.20
	Yellow Perch			14.3	13.8	11.7	9.4		3.3	3.4	4.2	8.59
boat shocker (night)	Walleye*	75.0		360.0								217.5 0
fall night EF- WAE*	Walleye					327.0	3.0		459.0		105.0	223.5 0
frame net (std 3/4 in)	Black Bullhead	7.0										7.00
5/4 11)	Black Crappie	0.3										0.30
	Common Carp	0.1										0.10
	Northern Pike	0.3										0.30
	Orangespotted Sunfish	0.0										0.00
	Rock Bass	2.6										2.60
	Walleye	5.9										5.90
	White Sucker	0.0										0.00
	Yellow Perch	0.0										0.00
std exp gill net	Black Bullhead	0.3	0.7									0.50
	Common Carp	0.0	0.5									0.25
	Northern Pike	1.5	0.5									1.00
	Rock Bass	1.3	0.8									1.05
	Walleye	27.7	22.5									25.10
	Yellow Perch	34.2	33.8									34.00

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.

							Ye	ar				
Gear	Species	Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AFS std frame	Common Carp	PSD				100						
net		PSD-P				100						
		Wr				69						
	Northern Pike	PSD				100						
		PSD-P				0						
		Wr				81						
	Rock Bass	PSD				27						
		PSD-P				0						
		Wr				109						
	Walleye	PSD				85						
		PSD-P				8						
		Wr				69						
AFS std gill net	Common Carp	PSD			100	100	100	100		100	0	100
		PSD-P			100	100	100	100		100	0	100
		Wr			111	94	97	92		97	110	101
	Northern Pike	PSD			100	100	100			100		100
		PSD-P			80	0	0			0		50
		Wr			93	81	70			90		93
	Rock Bass	PSD			100	91	69	88		83	40	45
		PSD-P			18	6	19	12		17	11	0
		Wr			111	107	110	108		111	115	114
	Walleye	PSD			27	55	11	6		40	69	55
		PSD-P			1	0	1	2		0	0	9
		Wr			82	80	82	83		85	82	86
	White Sucker	PSD					100	100		100	100	75
		PSD-P					100	100		100	100	75
		Wr					94	103		99	99	104
	Yellow Perch	PSD			100	91	97	91		97	65	28
		PSD-P			93	84	59	66		90	59	28
		Wr			103	108	111	112		106	108	112
boat shocker	Walleye	PSD	0		0							
(night)		PSD-P	0		0							

Gear	_											
	Species	Index	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
boat shocker (night)	Walleye	Wr	92		90							
frame net (std 3/4 in)	Common Carp	PSD	100									
5/4 11)		PSD-P	100									
	Northern Pike	PSD	100									
		PSD-P	0									
		Wr	76									
	Rock Bass	PSD	74									
		PSD-P	6									
		Wr	112									
	Walleye	PSD	12									
		PSD-P	1									
		Wr	80									
std exp gill net	Common Carp	PSD		100								
		PSD-P		100								
		Wr		101								
	Northern Pike	PSD	100	100								
		PSD-P	44	67								
		Wr	81	81								
	Rock Bass	PSD	88	100								
		PSD-P	13	0								
		Wr	109	107								
	Walleye	PSD	6	5								
		PSD-P	0	0								
		Wr	82	80								
	Yellow Perch	PSD	99	96								
		PSD-P	62	74								
		Wr	108	108								

Length at Capture

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

Species: Walleye

Year	Ν	1	2	3	4	5	6	7	8	9	10+
2023	14	218 (3)	303 (5)			404 (3)		430 (1)			593 (2)
2022	26	194 (10)			384 (8)		422 (6)			336 (1)	447 (1)
2021	42			365 (29)		408 (12)					403 (1)
2019	63	221 (2)		329 (54)		373 (2)	376 (3)	548 (1)	391 (1)		
2018	89		293 (63)		365 (5)	372 (7)	398 (2)	386 (10)			630 (1)
2017	66	205 (26)	317 (1)	355 (2)	385 (19)	384 (3)	386 (15)		405 (1)		
2016	67		320 (6)	349 (21)	374 (10)	380 (30)		520 (1)			
2015	143	201 (7)	276 (24)	324 (24)	356 (88)	395 (2)					
2014	185	212 (17)	288 (23)	339 (136)		420 (8)			425 (1)		

Species: Yellow Perch

				Mean Len	gth (expai	nded sam	ple numbe	er) at capt	ure by age	Э	
Year	N	1	2	3	4	5	6	7	8	9	10+
2023	51	144 (35)	186 (2)	254 (1)				318 (8)			333 (5)
2022	38	142 (14)	240 (3)		298 (5)		315 (6)	333 (1)	323 (2)	327 (5)	328 (2)
2021	39	149 (1)		258 (9)	264 (2)	295 (13)			325 (10)	320 (2)	344 (2)
2019	114	138 (11)		244 (44)	273 (9)		300 (21)	299 (9)	307 (22)		
2018	140		220 (56)	267 (12)		294 (34)	297 (20)	303 (18)	342 (1)		
2017	166	141 (15)	231 (10)		272 (38)	289 (11)	298 (90)		325 (2)		
2016	171			254 (37)	277 (23)	300 (90)	309 (10)	305 (11)			
2015	203		197 (14)	229 (28)	274 (149)	278 (11)	325 (1)				
2014	205		213 (16)	254 (148)		278 (41)					

Fish Condition

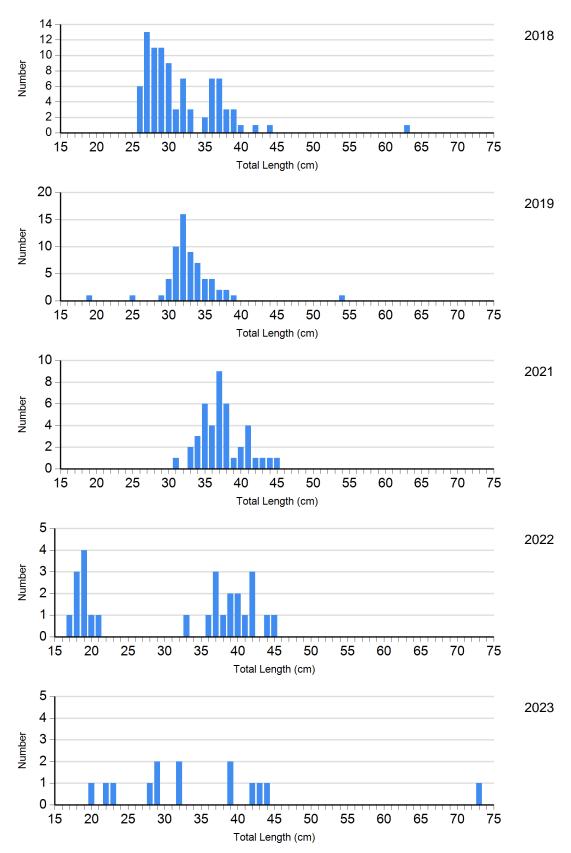
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

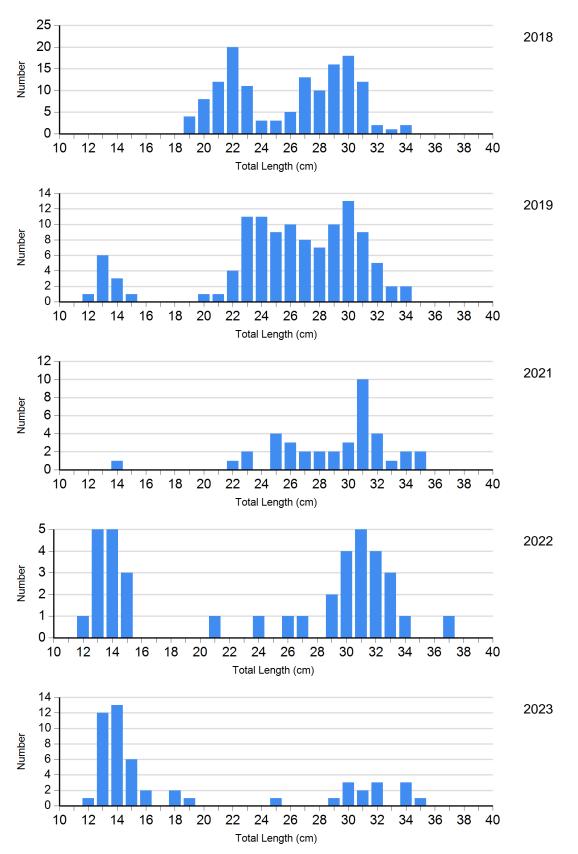
					Length	Group	S		
			S-Q		Q-P		P-M		М
Species	Year	N	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)	Ν	Wr (SE)
Common Carp Gill Net	2019	0		0		0		4	92 (6.1)
	2021	0		0		2	99 (3.7)	4	96 (3.8)
	2022	3	110 (3.6)	0		0		0	
	2023	0		0		0		1	101
Northern Pike Gill Net	2021	0		2	90 (2.5)	0		0	
	2023	0		2	97 (3.1)	2	88 (1.3)	0	
Walleye Gill Net	2019	58	83 (0.7)	3	82 (4.3)	1	97	0	
	2021	25	85 (0.8)	17	86 (0.9)	0		0	
	2022	5	83 (1.4)	11	82 (1.5)	0		0	
	2023	5	86 (1.3)	5	89 (2.8)	0		1	72
White Sucker Gill Net	2019	0		0		0		3	103 (5.7)
	2021	0		0		0		1	99
	2022	0		0		0		6	99 (3.0)
	2023	1	96	0		0		3	107 (2.8)
Yellow Perch Gill Net	2019	10	114 (1.5)	28	120 (1.1)	44	112 (1.1)	31	105 (1.3)
	2021	1	117	3	119 (4.7)	13	110 (2.9)	22	102 (1.7)
	2022	13	111 (1.9)	2	114 (9.1)	4	113 (1.6)	18	104 (2.2)
	2023	36	115 (1.4)	0		2	113 (3.6)	12	100 (2.8)

Length Frequency Distribution

Length frequency histogram of species sampled by year.

Species: Walleye Gear: AFS std gill net

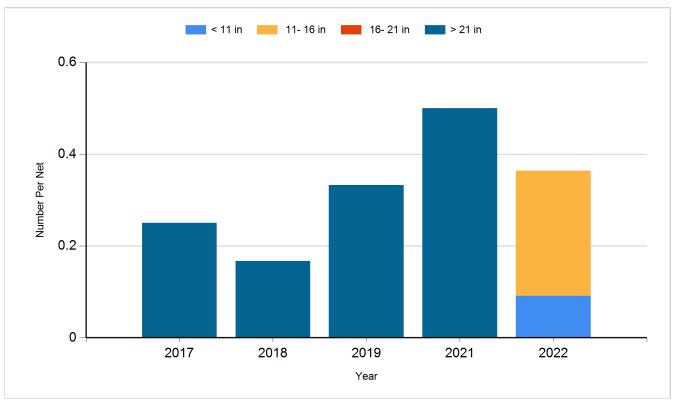




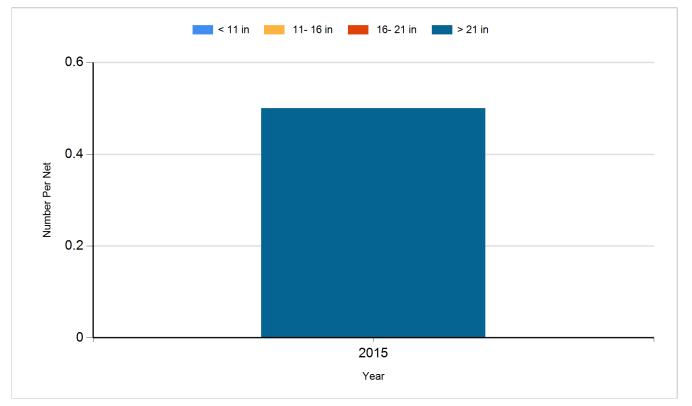
Historic Fish Sizes and Relative Abundance

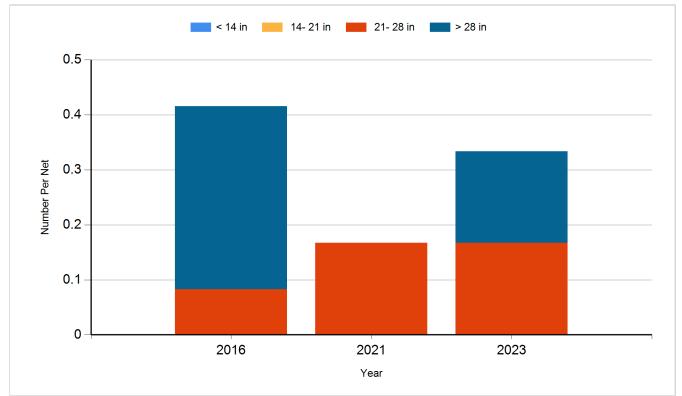
Size distribution per net by color for species sampled by year.

Species: Common Carp Gear: AFS std gill net

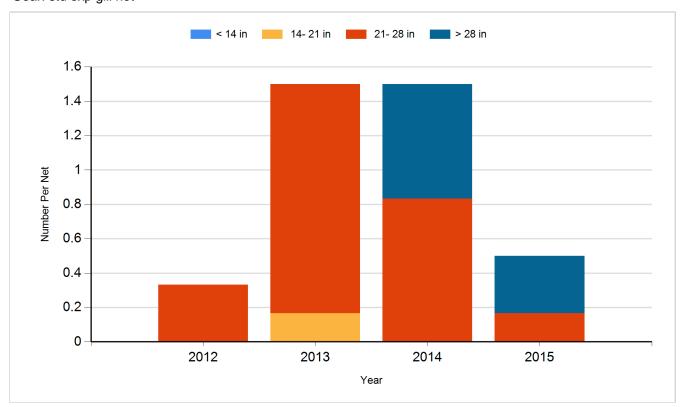


Species: Common Carp Gear: std exp gill net

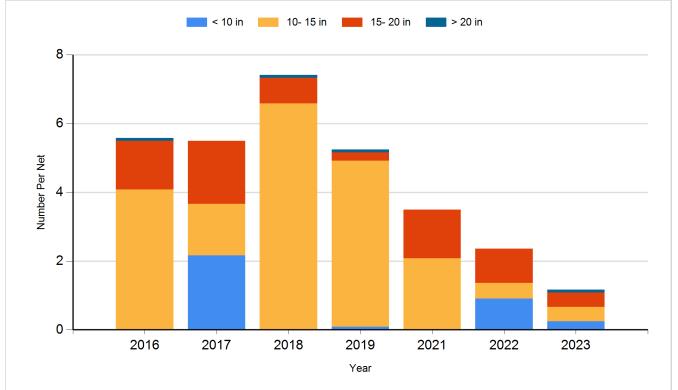




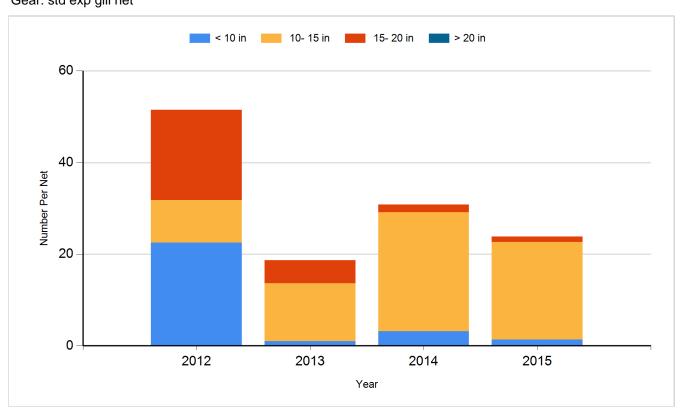
Species: Northern Pike Gear: std exp gill net

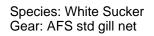


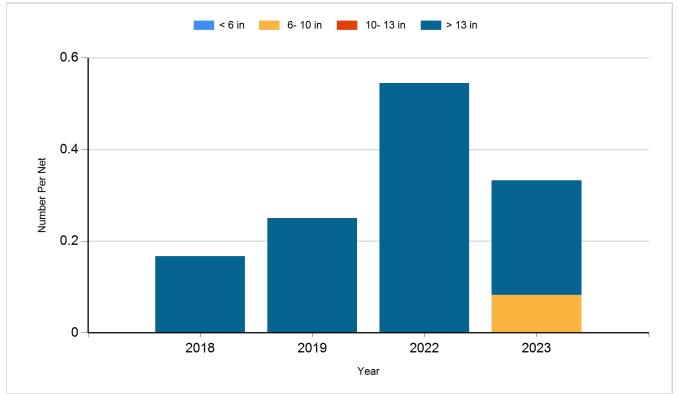
Species: Walleye Gear: AFS std gill net



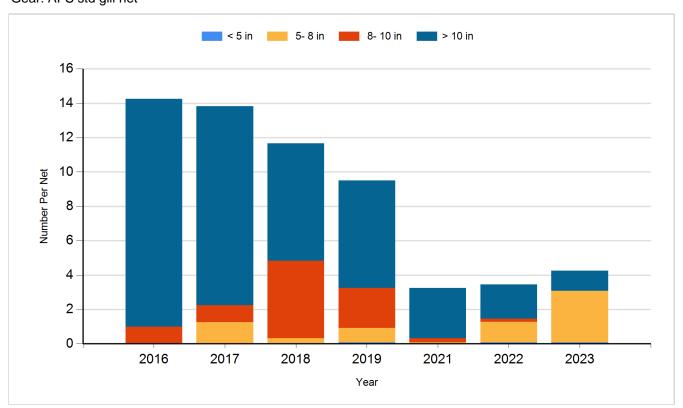
Species: Walleye Gear: std exp gill net

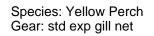


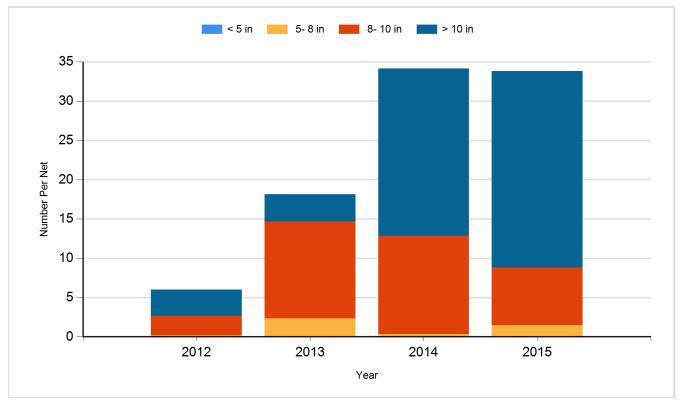




Species: Yellow Perch Gear: AFS std gill net







Fish Stocking

Number of fish stocked by year, species, and size.

Year	Species	Size	Number
2016	Walleye	Fry	700,000
2018	Walleye	Fry	710,000
2021	Walleye	Fry	800,000
2023	Walleye	Juvenile	106,547