SOUTH DAKOTA STATEWIDE FISHERIES SURVEY
Poinsett, Hamlin County
MBS-Lake-405-000
2015

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
boat shocker (night)	September 08, 2015	3600 seconds
std exp gill net	July 21, 2015	3 net-nights
std exp gill net	July 22, 2015	3 net-nights

Common Fish Species Present

Walleye

Smallmouth Bass

Northern Pike

Yellow Perch

Black Bullhead

White Sucker

White Bass

Black Crappie

Channel Catfish

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).

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

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.

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

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

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.

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

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).

	Stock		Quality		Preferred		Memorable		Trophy	
Species Name	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)
Bigmouth Buffalo	11	28	18	46	24	61	30	76	37	94
Black Bullhead	6	15	9	23	12	30	15	38	18	46
Black Crappie	5	13	8	20	10	25	12	30	15	38

	Stock		Quality		Preferred		Memorable		Trophy	
Species Name	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)
Blue Catfish	12	30	20	51	30	76	35	89	45	114
Bluegill	3	8	6	15	8	20	10	25	12	30
Bluegill X Gr. Sunfish Hybrid	3	8	6	15	8	20	10	25	12	30
Brown Bullhead	5	13	8	20	11	28	14	36	17	43
Burbot	8	20	15	38	21	53	26	67	32	82
Channel Catfish	11	28	16	41	24	61	28	71	36	91
Common Carp	11	28	16	41	21	53	26	66	33	84
Flathead Catfish	14	35	20	51	28	71	34	86	40	102
Freshwater Drum	8	20	12	30	15	38	20	51	25	63
Gizzard Shad	7	18	11	28						
Green Sunfish	3	8	6	15	8	20	10	25	12	30
Lake Herring	5	13	8	20	11	28	14	35	17	43
Largemouth Bass	8	20	12	30	15	38	20	51	25	63
Longnose Gar	16	41	27	69	36	91	45	114	55	140
Muskellunge	20	51	30	76	38	97	42	107	50	127
Northern Pike	14	35	21	53	28	71	34	86	44	112
Paddlefish	16	41	26	66	33	84	41	104	51	130
Pumpkinseed	3	8	6	15	8	20	10	25	12	30
Redear Sunfish	4	10	7	18	9	23	11	28	13	33
River Carpsucker	7	18	11	28	14	36	18	46	22	56
Rock Bass	4	10	7	18	9	23	11	28	13	33
Rudd	6	15	10	25	12	30	15	38	19	48
Sauger	8	20	12	30	15	38	20	51	25	63
Saugeye	9	23	14	35	18	46	22	56	27	69
Shorthead Redhorse	6	15	10	25	13	33	16	41	20	51
Smallmouth Bass	7	18	11	28	14	35	17	43	20	51
Smallmouth Buffalo	11	28	18	46	24	61	30	76	37	94
Spotted Bass	7	18	11	28	14	35	17	43	20	51
Striped Bass	12	30	20	51	30	76	35	89	45	114
Striped Bass Hybrid (wiper)	8	20	12	30	15	38	20	51	25	63
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
White Perch	5	13	8	20	10	25	12	30	15	38
White Sucker	6	15	10	25	13	33	16	41	20	51
Yellow Bass	4	10	7	18	9	23	11	28	13	33
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).

		Abundance		Stock Density Indices				Condition	
Gear	Species	CPUE	CI-80	PSD	CI-80	PSD-P	CI-80	Wr	CI-80
boat shocker (night)	Walleye	1,722.0	516.0	0		0		97	1
std exp gill net	Bigmouth Buffalo	0.3	0.3	50		50		100	7
	Black Bullhead	3.2	3.3	95		26		93	3
	Black Crappie	2.0	1.4	58	24	0		113	2
	Channel Catfish	0.7	0.5	75		75		110	6
	Common Carp	0.5	0.7	100		33		104	2
	Shorthead Redhorse	0.2	0.2	100		100		115	
	Spottail Shiner	0.0	0.0						
	Walleye	15.3	5.4	30	7	1		88	1
	White Bass	2.2	1.2	62		23		102	2
	White Sucker	3.0	1.8	94		78		101	4
	Yellow Bullhead	0.3	0.5	100		100		97	1
	Yellow Perch	124.2	21.6	92	1	14	2	110	1

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.

		CPUE										
Gear	Species	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Avg
boat shocker (night)	Smallmouth Bass	0.0	1.0		4.0	9.8		15.3				6.0
	Walleye	117.0	79.8	19.5	257.2		4.0	152.5	2.0	992.2	1,722.0	371.8
frame net (std 3/4 in)	Bigmouth Buffalo				1.8	0.4			4.2	0.5		1.7
	Black Bullhead			0.6	0.3	0.2		79.7	4.4	10.2		15.9
	Black Crappie				0.0	0.1		4.5	0.4	1.5		1.3
	Bluegill							0.1				0.1
	Channel Catfish			0.7	0.1	0.4		0.8	0.2			0.4
	Common Carp			0.2	1.1	0.6		0.3	2.7	0.2		0.9
	Northern Pike			1.3	0.6	0.5		5.9	3.6	1.0		2.2
	Shorthead Redhorse			0.1	0.1			0.2	0.1			0.1
	Smallmouth Bass			4.3	0.3	1.7		2.2	1.2	1.4		1.9
	Walleye			1.4	4.1	0.3		4.0	1.4	2.4		2.3
	White Bass			0.7	0.6	0.1		3.1	0.4	0.8		1.0
	White Sucker			1.4	2.4	0.7		1.1	0.2	0.4		1.0
	Yellow Bullhead							19.3	2.7	6.3		9.4
	Yellow Perch			2.3	0.4	22.4		0.6	0.1	0.1		4.3
std exp gill net	Bigmouth Buffalo	0.2						0.7		0.5	0.3	0.4
	Black Bullhead				0.1			2.5	0.2	0.5	3.2	1.3
	Black Crappie									0.3	2.0	1.2
	Channel Catfish	2.7	1.0	0.3	0.2		0.3	2.2	2.5	0.7	0.7	1.2
	Common Carp	0.8	1.0			0.1	0.1	2.8	1.3	0.8	0.5	0.9
	Northern Pike	0.7	0.8	0.5		0.3	2.4	2.0	1.3	1.2		1.2
	Orangespotted Sunfish					0.0						0.0
	Shorthead Redhorse	0.3	0.3		0.1	0.1					0.2	0.2
	Smallmouth Bass	0.7	1.8	0.2	0.1	0.1	0.1	1.3	1.3	0.7		0.7
	Spottail Shiner			0.0	0.0	0.0			0.0	0.0	0.0	0.0
	Walleye	5.0	6.3	5.7	5.3	3.3	9.2	12.5	6.7	11.7	15.3	8.1
	White Bass	11.7	10.0	3.2	1.2	1.2	0.4	2.2	0.8	0.8	2.2	3.4
	White Sucker	1.5	1.2	0.5	0.1	0.9	0.9	2.3	4.3	3.5	3.0	1.8
	Yellow Bullhead							2.7	0.3		0.3	1.1
	Yellow Perch	5.7	6.2	16.0	4.4	45.8	7.3	22.0	15.0	40.5	124.2	28.7

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.

			Year									
Gear	Species	Index	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
boat shocker (night)	Walleye	PSD	0	0	0	0		0	0	0	0	0
		PSD-P	0	0	0	0		0	0	0	0	0
		Wr	89	90		97		88	85		87	97
frame net (std 3/4 in)	Black Crappie	PSD				0	0		86	100	84	
		PSD-P				0	0		54	100	84	
		Wr					115		106	102	108	
	Northern Pike	PSD			100	100	89		67	76	100	
		PSD-P			33	20	44		19	32	88	
		Wr			83	87	88		77	71	81	
	Walleye	PSD			38	22	17		56	58	32	
		PSD-P			15	11	0		11	13	5	
		Wr			87	89	93		78	84	88	
	Yellow Perch	PSD			0	43	7		18	100	0	
		PSD-P			0	29	3		9	50	0	
		Wr			97	108	100		101	89	112	
std exp gill net	Black Crappie	PSD									0	58
		PSD-P									0	0
		Wr									124	113
	Northern Pike	PSD	100	100	100		83	55	92	100	100	
		PSD-P	50	60	33		0	5	25	25	43	
		Wr	91	83	85		99	92	88	83	87	
	Walleye	PSD	63	42	59	17	32	16	57	48	44	30
		PSD-P	23	18	12	2	2	5	4	8	4	1
		Wr	85	89	88	91	95	85	82	85	91	88
	Yellow Perch	PSD	100	32	17	27	9	93	83	81	26	92
		PSD-P	38	22	16	15	3	5	55	23	11	14
		Wr	105	107	106	107	107	107	107	110	115	110

Length at Capture

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

Species: Walleye

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
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)			
2012	87	205 (12)	307 (1)	394 (68)	476 (2)	508 (2)	577 (1)			706 (1)	
2011	166		346 (145)	441 (7)	499 (8)	547 (3)	444 (2)		535 (1)		
2010	85	249 (51)	369 (21)	436 (8)	480 (3)		517 (2)				
2009	99	265 (47)	358 (44)	468 (2)	478 (3)	497 (1)	514 (1)	580 (1)			
2008	47	233 (21)	372 (14)	450 (4)	505 (3)	521 (4)			565 (1)		
2007	39	265 (9)	362 (19)	433 (1)	506 (6)		554 (1)				714 (3)
2006	59	223 (39)	378 (1)	461 (12)		562 (2)		534 (1)		559 (1)	641 (3)

Species: Yellow Perch

		Mean Length (expanded sample number) at capture by age									
Year	N	1	2	3	4	5	6	7	8	9	10+
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)						
2012	132	157 (23)	227 (11)	259 (98)							
2011	132	156 (6)	228 (126)								
2010	825	167 (762)	240 (47)	280 (14)	328 (2)						
2009	80	147 (59)	246 (19)	313 (1)	325 (1)						

Fish Condition

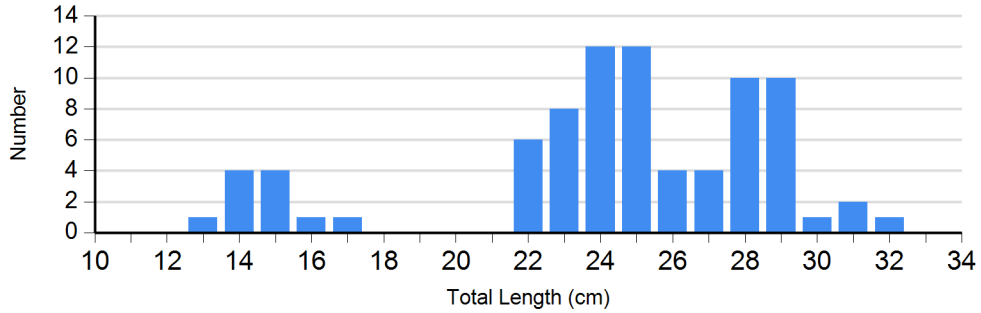
Mean relative weight (Wr) by sample size (N), length category stock to quality (S-Q), quality to preferred (Q-P), preferred to memorable (P-M), and memorable (M) for species collected across survey years with standard error (SE).

		Length Groups							
		S-Q		Q-P		P-M		M	
Species	Year	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)	N	Wr (SE)
Black Crappie Frame Net	2012	11	123 (4.0)	26	108 (1.2)	40	101 (0.9)	4	92 (3.5)
	2013	0		0		5	103 (2.2)	2	98 (2.2)
	2014	4	119 (8.7)	0		4	111 (2.6)	17	104 (1.8)
Northern Pike Gill Net	2011	20	93 (1.1)	22	93 (1.9)	2	82 (0.8)	0	
	2012	1	84	8	88 (2.4)	3	89 (3.0)	0	
	2013	0		6	83 (1.6)	2	82 (6.3)	0	
	2014	0		4	87 (0.9)	3	88 (3.0)	0	
Walleye Gill Net	2011	140	86 (0.4)	18	84 (1.6)	8	85 (2.8)	0	
	2012	32	78 (1.0)	40	85 (1.1)	2	75 (4.6)	1	83
	2013	21	86 (1.6)	16	83 (2.3)	3	88 (3.8)	0	
	2014	39	88 (0.8)	28	94 (1.4)	3	93 (0.7)	0	
	2015	64	87 (0.7)	27	91 (1.4)	1	89	0	
Yellow Perch Gill Net	2011	9	100 (1.6)	117	108 (0.8)	6	110 (3.4)	0	
	2012	23	105 (2.0)	37	108 (1.7)	71	107 (1.0)	1	104
	2013	17	109 (2.7)	52	110 (1.0)	18	111 (1.6)	3	106 (7.1)
	2014	181	114 (0.8)	35	123 (1.6)	21	117 (1.9)	6	115 (2.7)
	2015	59	105 (1.5)	583	111 (0.6)	96	109 (1.3)	7	107 (2.2)

Length Frequency Distribution

Length frequency histogram of species sampled by year.

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



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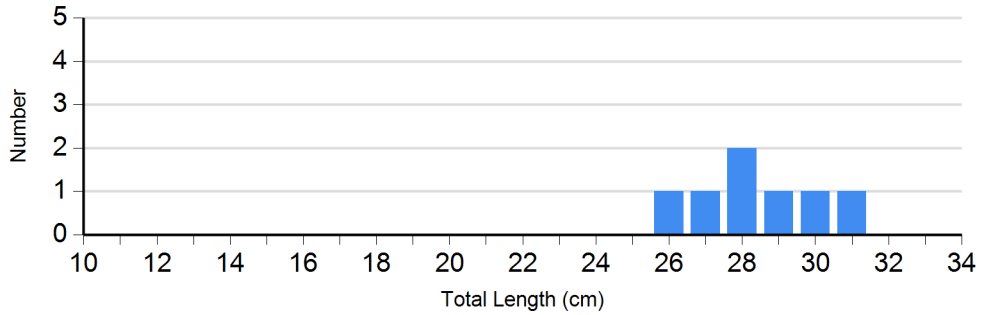

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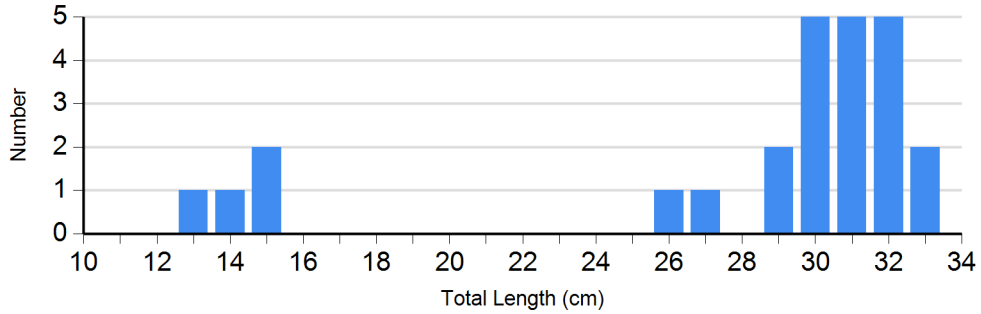

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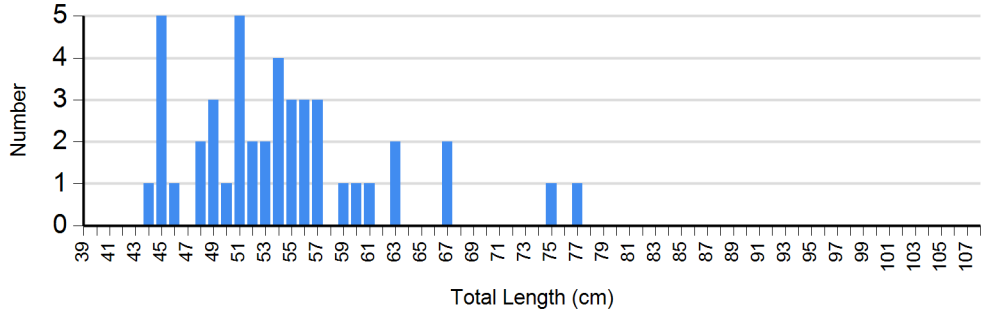
Species: Northern Pike
Gear: std exp gill net



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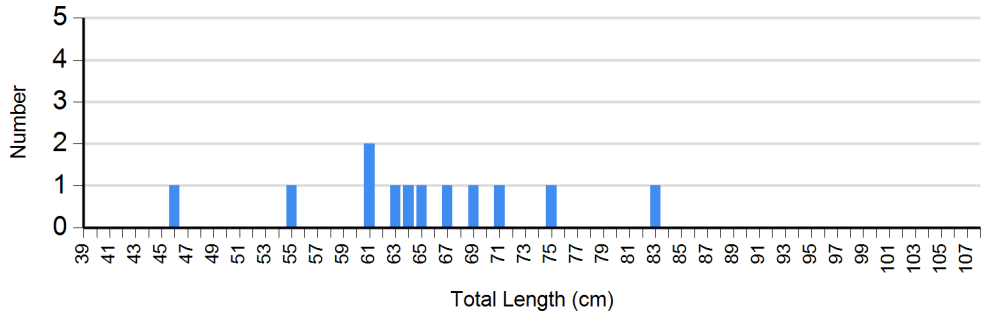

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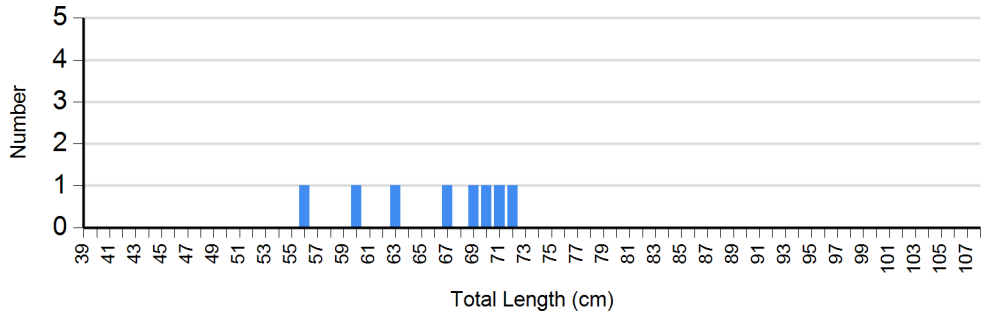

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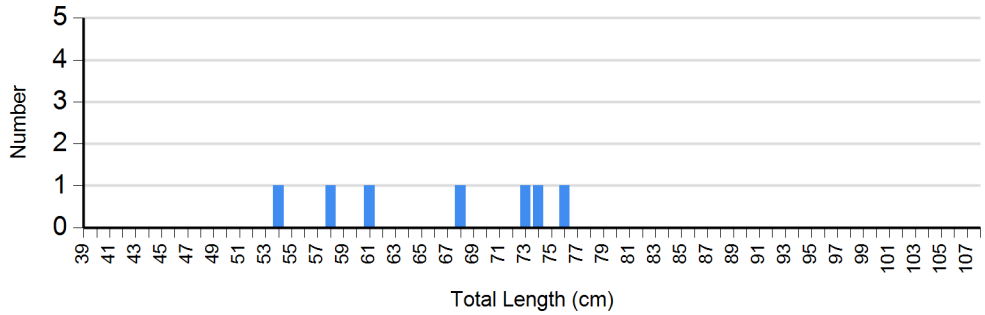
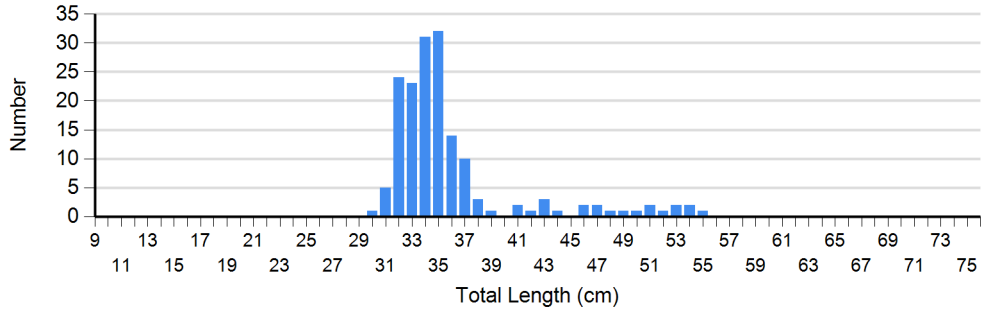


2014

Species: Walleye
Gear: std exp gill net



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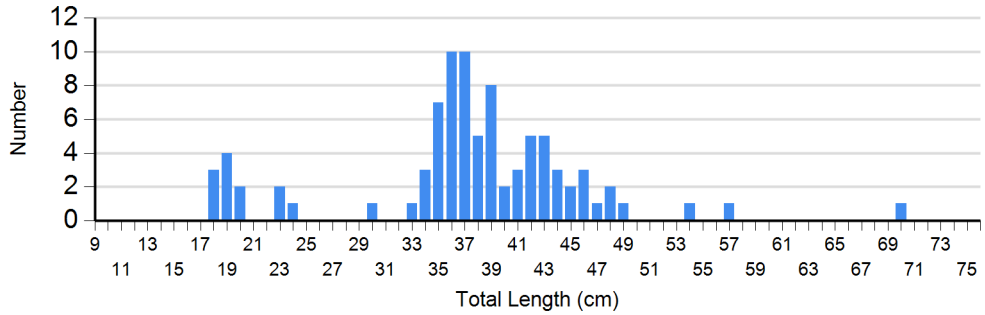

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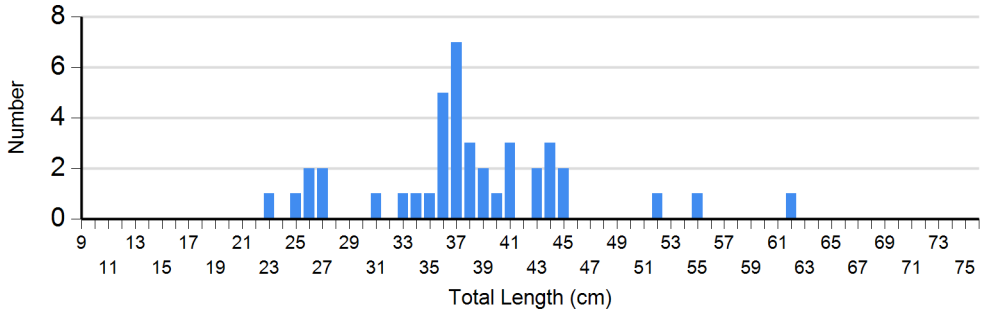

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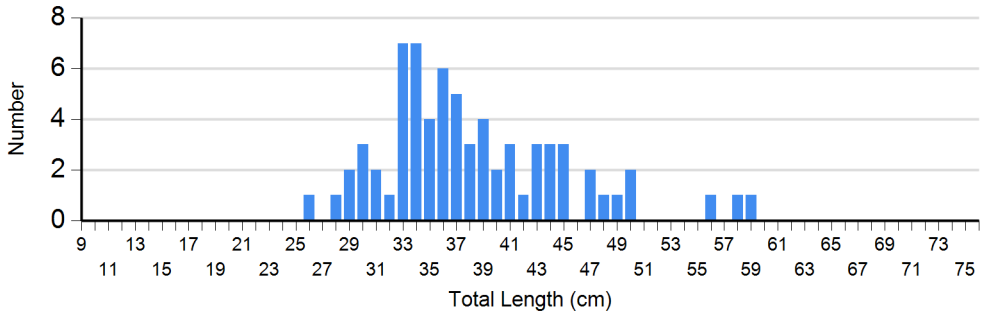
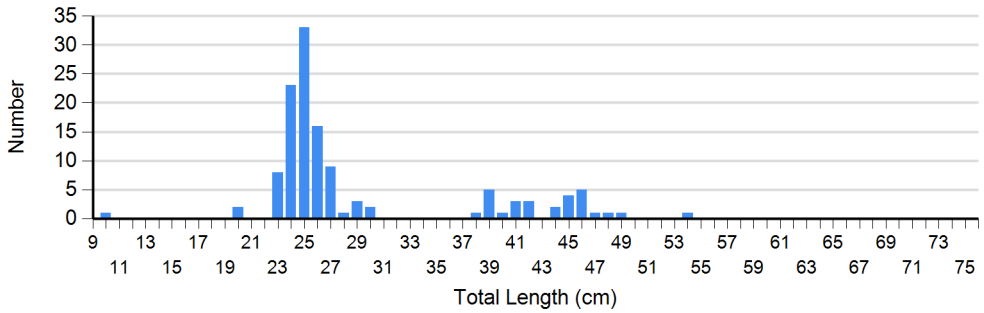
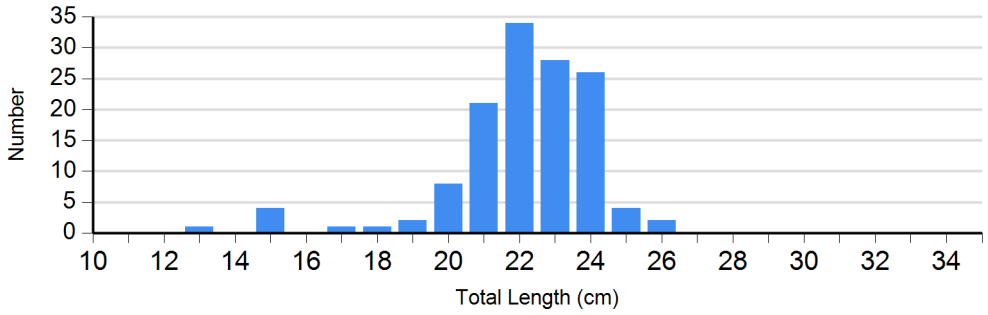


2014



2015

Species: Yellow Perch
Gear: std exp gill net



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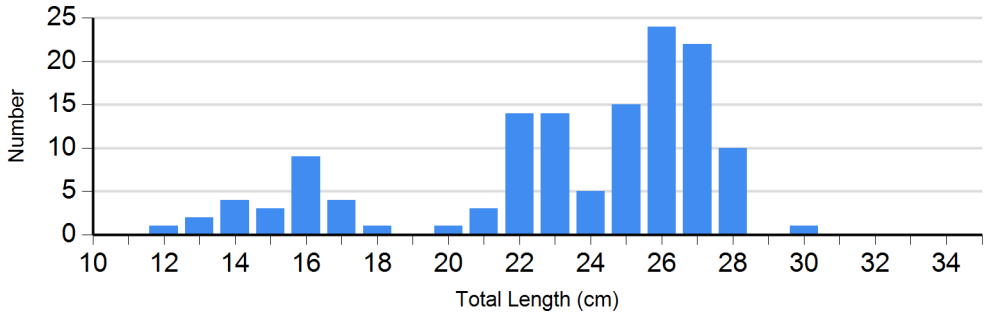

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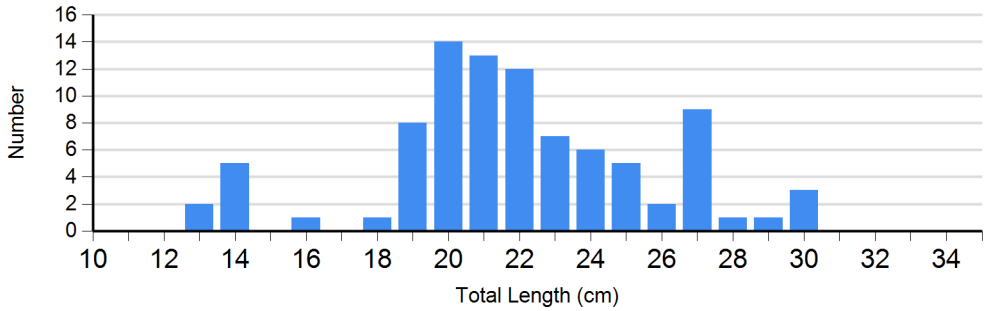
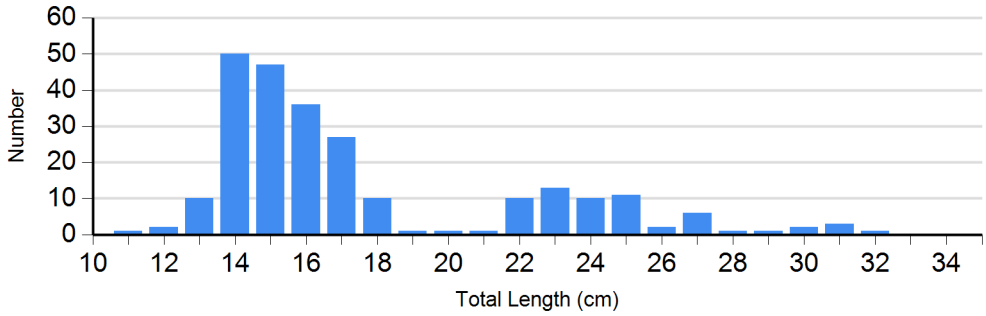


2013



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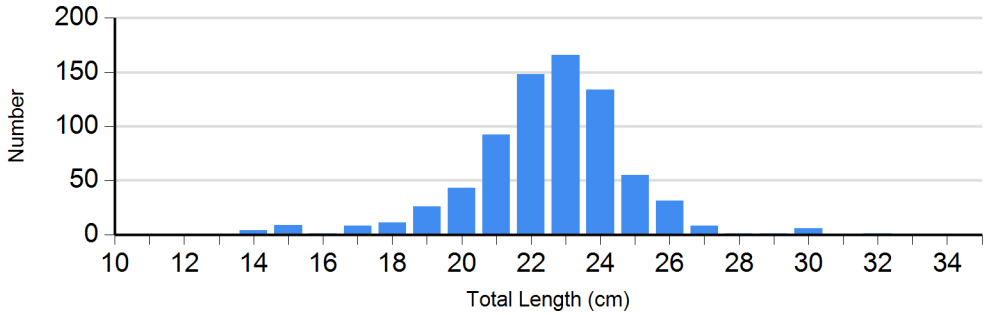
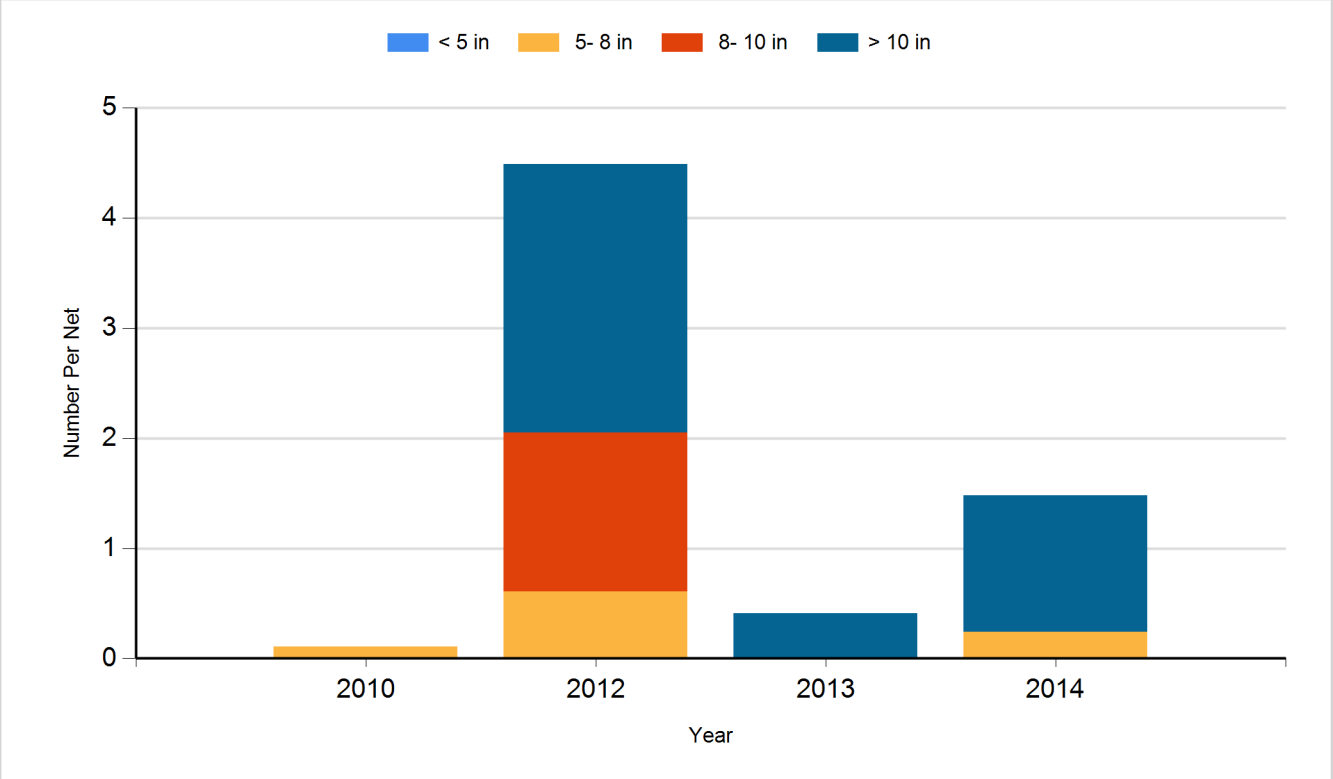


2015

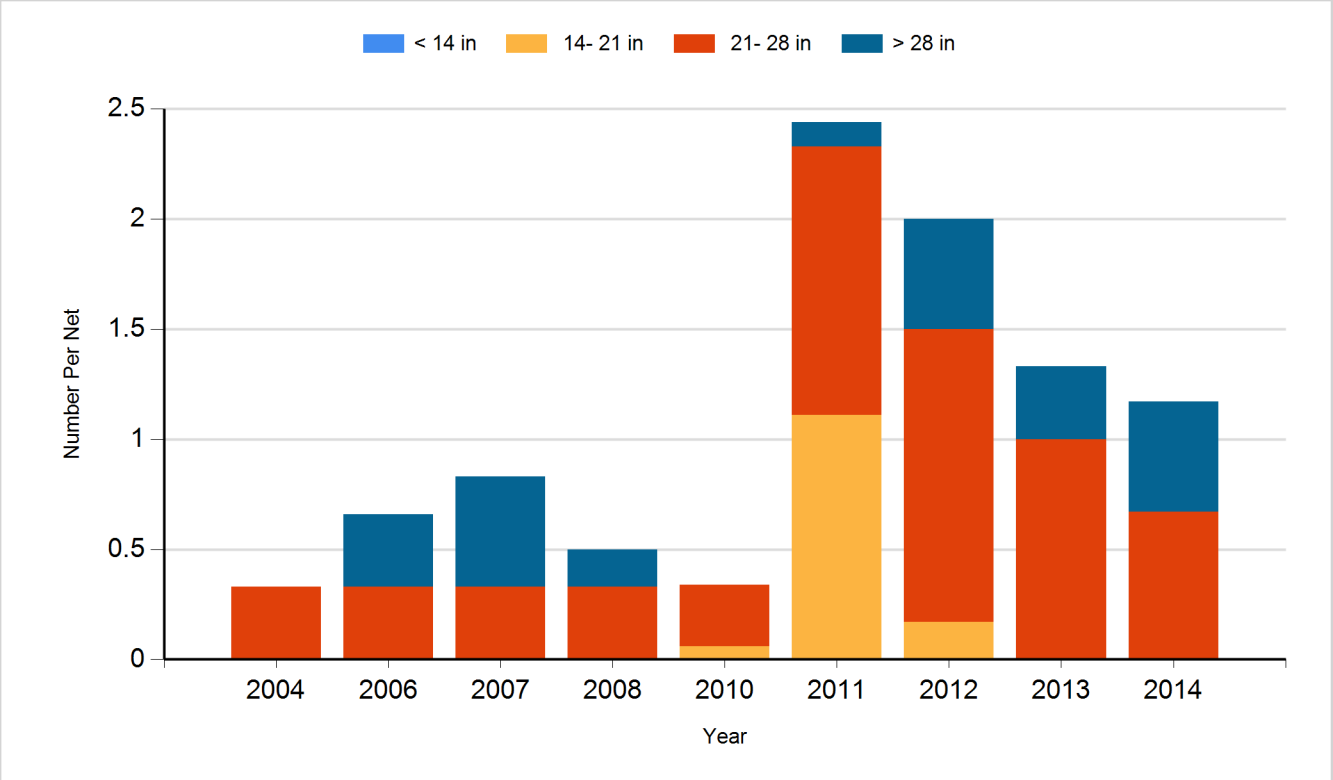
Historic Fish Sizes and Relative Abundance

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

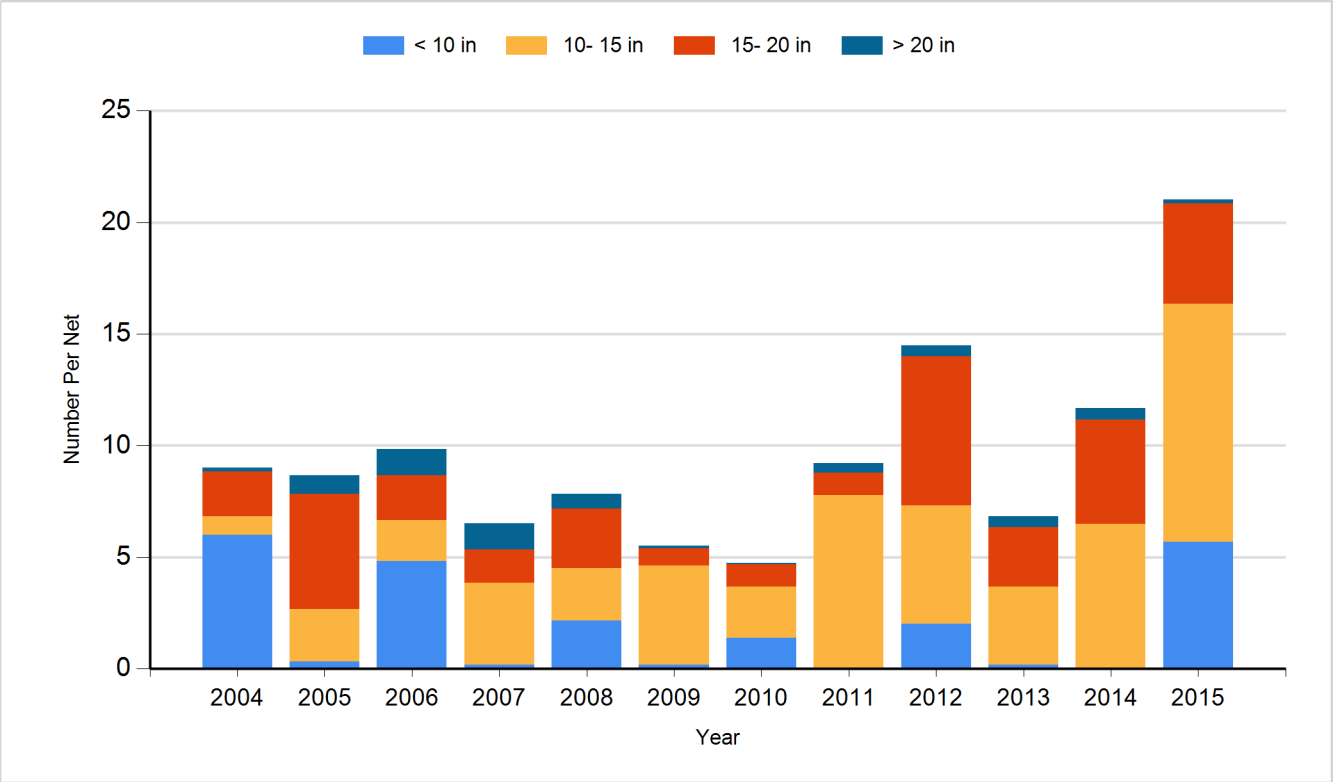
Species: Black Crappie
Gear: Frame Net



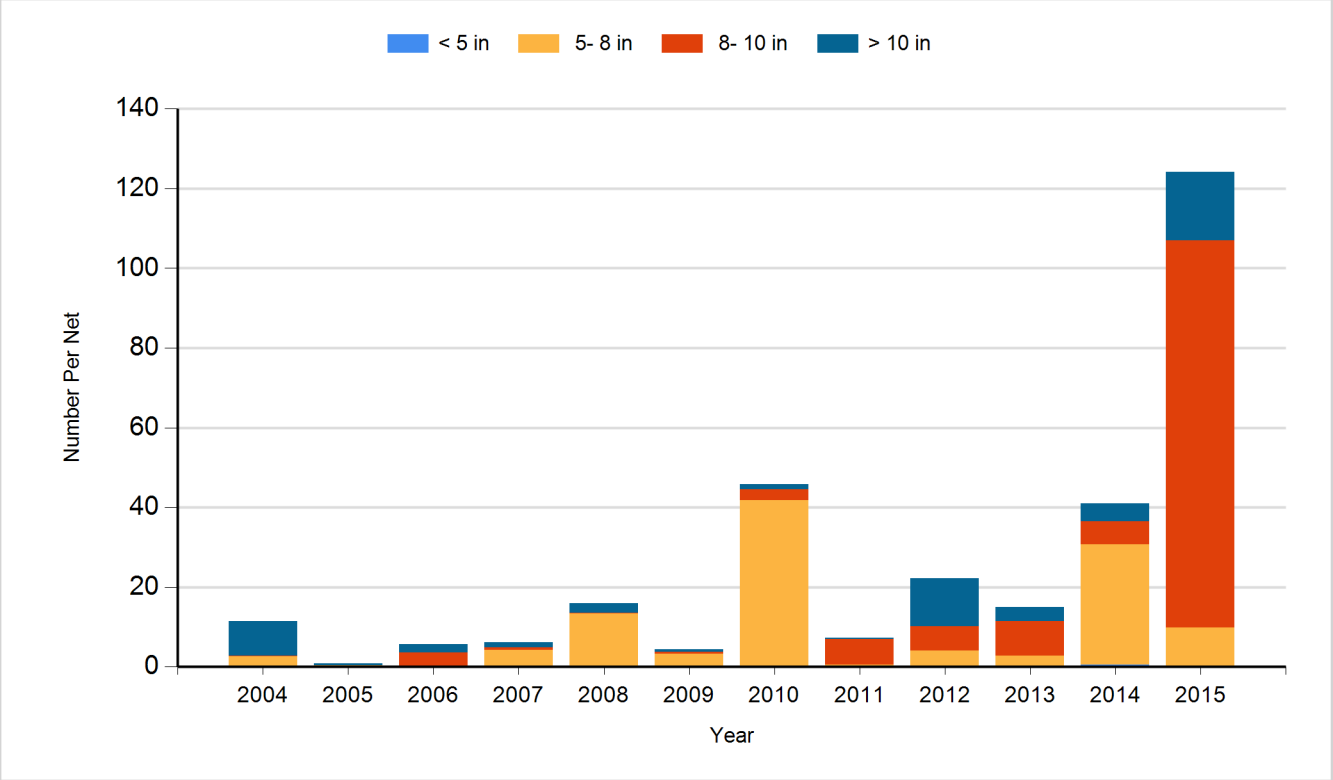
Species: Northern Pike
Gear: Gill Net



Species: Walleye
Gear: Gill Net



Species: Yellow Perch
Gear: Gill Net



Fish Stocking

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

Year	Species	Size	Number
2005	Walleye	Fry	11,700,000
2006	Walleye	Fry	8,050,000
2009	Walleye	Fry	4,000,000
2011	Walleye	Fry	3,000,000
2012	Walleye	Fry	4,000,000
2014	Walleye	Fry	4,000,000