

Green Bay Walleye Tagging Survey 2018

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WDNR-Green Bay

Large annual spring spawning migrations of Walleye have been documented by WDNR on major Green Bay tributaries for many years (Kapusinski et al. 2010). These rivers, along with several other spawning locations scattered around Green Bay likely sustain the large Walleye population that is found in southern Green Bay. Some Walleye spawning populations have been studied intensively in the past such as those found in the Fox River, while Walleye that utilize the Menominee, Oconto or Peshtigo Rivers have had less evaluation.

To gain a more complete understanding of Walleye use of tributary streams and Walleye movement throughout Green Bay, daytime electroshocking surveys have been conducted annually since 2012 to assess spring spawning runs in major Green Bay tributary streams. These surveys have been conducted just below dams in Marinette (Menominee River), Peshtigo (Peshtigo River), Stiles (Oconto River) and DePere (Fox River) to capture Walleye during the spring spawning run (Figure 1).

Methods

Each spring, the survey goal for each river was to capture as many Walleye as possible over the course of 2 or 3 work days, to collect biological data on all captured Walleye and to tag 500 Walleye (250-male and 250 female) with individually numbered anchor tags.

To capture Walleye in the rivers, a standard electroshocking boat with two netters was utilized at each location. During each shocking event, captured Walleye were sexed and measured. In 2018, a dorsal spine was collected from each walleye tagged from the Fox River for age determination but not from walleye caught in the Peshtigo and Menominee rivers. Each spine was cross sectioned and mounted on glass slide and read with a compound microscope. To gain more insight on Walleye movement throughout the bay, fish were tagged with an anchor tag that had an individual tag number and a return address or a DNR telephone number so anglers could report the capture location of a tagged fish. One fish per ten tagged was double tagged to estimate tag loss.

Recapture information was obtained either through voluntary tag returns by anglers or from DNR fisheries surveys. The data was compiled by year and the location tagged as well as recapture location to evaluate Walleye movement.

Results

Starting on March 28 and continuing through April 24 electroshocking runs were made below the dams on the Fox, Menominee and Peshtigo Rivers to capture, tag and collect biological information on Walleye. Shocking was not done on the Oconto River in 2018 because of crew shortages and high flows on the Oconto River.

Fox River

Electroshocking runs were conducted on the Fox River on March 28, April 2 and April 11 to capture Walleye. During this period weather conditions varied greatly with warm weather followed by cold temperatures, heavy snow and high flows. Water temperatures fell from 42 F on March 28 to 39F

on April 11. During these sampling events, 581 Walleye were captured with a total shocking effort of 4.2 hours resulting in a CPE of 138.6 Walleye per hour shocked. Captured Walleye ranged in length from 388 mm to 780 mm (15.3" to 30.7") and had an average length of 582 mm (22.9") (Table 1).

46.3% of the captured Walleye were male (Table 1). The 269 male Walleye ranged in length from 388 mm to 688 mm (15.3" to 27.1") and had an average length of 481 mm (18.9") (Table 2). Most of the captured male Walleye were less than 600 mm (24") in length with few fish greater than 600 mm (24") (Figure 2).

In the aged sample, male Walleye ranged in age from age 3 to age 9 and age 12 (Table 3). Age 5 Walleye (2013 year class) were the most abundant age class followed by the age 4 and age 6 year classes. Other age male Walleye were less abundant.

Female Walleye represented 53.3% of the catch on the Fox River. The 310 female Walleye ranged in length from 454 mm to 780 mm (17.9" to 30.7") and had an average length of 618 mm (24.3") (Table 2). The distribution of female Walleye length was bimodal with peaks near 530 mm (20.9") and 610 mm (24") (Figure 2). Most of the captured female Walleye were greater than 600 mm (24") in length.

Female Walleye ranged in age from age 4 through age 15 in our sample (Table 4). Age 9 (2009 year class) were the most common age female Walleye, followed by age 8 and age 5 females. Other age females were less abundant.

Two unknown sex Walleye were captured during electroshocking (Table 1). These two Walleye averaged 644 mm (25.4") in length (Table 2) and likely were female Walleye that were spent.

Peshtigo River

The Peshtigo River was electroshocked on April 23 and April 24 to capture and tag Walleye. The water temperature of the river during shocking averaged 45F. During the 2.3 hours of shocking, 595 Walleye were captured with a CPE of 258.7 per hour shocked (Table 1). The 595 captured Walleye ranged in length from 370 mm to 735 mm (14.6" to 28.9") and had an average length of 505 mm (19.9") (Table 1).

Male Walleye represented 88.2% of the Walleye catch. The 525 male Walleye ranged in length from 370 mm to 680 mm (14.6" to 26.8") and had an average length of 493 mm (19.4") (Table 5). Most of the captured male Walleye were less than 600 mm (24") in length (Figure 3).

Female Walleye accounted for 11.4% of the catch (Table 1). The 68 female Walleye ranged in length from 465 mm to 735 mm (18.3 to 28.9") with an average length of 598 mm (23.5") (Table 5). Near equal number of female Walleye were smaller or large than 600 mm (24") (Figure 3).

Two unknown sex Walleye, 0.3% of the catch, were captured during shocking (Table 1). The unknown sex Walleye averaged 443 mm (17.4") in length (Table 5).

Menominee River

On April 12, the Menominee River was shocked using two shock boats to capture Walleye. During shocking the water temperature was 41F. A total of 504 Walleye were captured during the 5.8 hours of shocking for a CPE of 87.6 fish per hour shocked (Table 1). The 504 Walleye ranged in length from 353 mm to 771 mm (13.9" to 30.4") and had an average length of 525 mm (20.7") (Table 6).

Males comprised 65.5% of the Walleye captured on the Menominee River (Table 1). The 330 male Walleye ranged in length from 353 mm to 739 mm (13.9" to 29.1") and had an average length of 495 mm (19.5"). Like the other rivers, most male Walleye were less than 600 mm (24") in length with few fish greater in length (Figure 4).

The 151 female Walleye, 30.0% of the catch, ranged in length from 438 mm to 771 mm (17.2" to 30.4") and had an average length of 582 mm (22.9") (Table 1). Most female Walleye greater in length than 500 mm (20") with more fish greater in length than 700 mm (28") than under 500 mm (20") (Table 6 and Figure 4).

Twenty-three unknown sex Walleye (4.6%) were captured during the survey. These Walleye ranged in length from 415 mm to 710 mm (16.3" to 28") and were likely spent female or immature fish (Table 1). Their average length was 588 mm (23.1") (Table 6).

Tag Returns

Angler Returns

During calendar year 2018, anglers returned tags from 289 Walleye (Table 7). The number of returns varied by river, with anglers returning the most tags from Walleye tagged in the Peshtigo River and the fewest from the Oconto River. It is likely the low number of returns from the Oconto River is due to the lack of Walleye tagged in 2017 and 2018. Returns from the other rivers were intermediate in number. Returns were received for fish tagged during all years of this project, 2012 through 2018 with 35.6% of the 2018 return from Walleye tagged in 2018 and 25.3% from fish tagged in 2017. Returns from other years were less abundant. Overall, tagged Walleye averaged 597 days at large from the time of tagging to the time of recapture. Walleye tagged in the Fox River had the shortest time at large at 449 days and the Oconto River had the longest period at large at 1134 days.

Anglers returned tags from 284 known locations around Green Bay in 2018 (Table 8). For each tagging river, most of the returns were from that river. However, 84 returns were from anglers fishing between Geano Beach and the Oconto River along the west shore of Green Bay. Although lower in number, anglers also returned 33 tags from Walleye captured along the east shore of Green Bay from Bayshore Park north into Door County. Other locations had fewer returns, with one return from the Michigan waters of Green Bay.

In 2018, anglers returned 99 tags from Walleye tagged in 2018 (Table 9). The total number of returns ranged from 40 (6.7%) tagged from the Peshtigo River, 38 (7.5%) tagged in the Menominee River and 21(3.6%) tagged in the Fox River. Most of the returns were from anglers fishing in the rivers in which the Walleye were tagged. Returns from anglers fishing near Geano Beach were also common. One tag was returned from an angler fishing in Michigan waters of Green Bay.

Tag loss in the first year after tagging was low in 2018. All double tagged fish from the Fox River were recaptured with both tags in place. One fish of the 56 double tagged Walleye from the Peshtigo

had only one tag when returned (1.8% tag loss) and four of 45 double tagged fish had a missing tag that were tagged on the Menominee River (8.9% tag loss). All Walleye that were double tagged from 2012 through 2017 had both tags present when returned by anglers.

DNR Surveys

During spring and fall Walleye surveys on the four rivers, crews recaptured 37 tagged Walleye that were marked from 2012 through 2018 (Table 10). Equal numbers were recaptured from the Peshtigo and Menominee Rivers with fewer recaptured from the Fox River. All recaptured fish tagged in the Menominee River and the Fox River were tagged in that respective river. Most of the recaptures from the Peshtigo River were from the Peshtigo River but several were tagged from the Menominee River. All recaptured Walleye from the Oconto River were tagged in the Peshtigo River. No double tagged Walleye were captured during these surveys.

Discussion

Crews captured and tagged 1,682 Walleye in 2018, although tagging only occurred in three of the target rivers (Table 1). Male Walleye dominated the overall catch with 1,119 (66.5%) handled. Female Walleye were less abundant than males with 536 (31.9%) captured. Twenty-seven (1.6%) of the catch had unknown sex. Male Walleye dominated the catch in the Menominee and Peshtigo Rivers while on the Fox River, female Walleye were more abundant. In general, this catch distribution with more male than female Walleye being captured except on the Fox River has been observed since 2013. It is likely this skewed sex ratio for the northern rivers is caused by survey timing rather than an actual lack of female Walleye. It is unclear why there are more females than males on the Fox River. The cause may be related to contaminant load with anglers harvesting smaller male Walleye which are lower in contaminants differentially over large, female Walleye which have higher body burdens of PCB's.

As has been the case since 2012, biologically the Walleye returning to these rivers are similar in size. In 2018, Walleye ranged in length from 350 mm to nearly 780 mm (14" to 31") in all three rivers. This size range is similar to those seen in previous years (Hogler et al. 2015, 2017 and 2018). The largest Walleye were captured in the Fox River with the smallest Walleye captured in the Menominee River (Tables 2, 5 and 6). It is likely the differences in size was caused by the large number of female Walleye captured in the Fox River compared to the other rivers. Age 5 Walleye which were from the large 2013 year class were common in our aged sample (Table 3 and 4). Other age Walleye from year classes from the past 9 years were also common. Survival from recent year classes appears to be strong based on length age distributions (Tables 2, 3 and 4).

Tag return information has been gathered from anglers during this project. In 2018, anglers returned information from 289 tagged Walleye. This total was largest experienced during the seven years of tagging associated with this project (Dembkowski et al. 2018, Hogler et al. 2018). Despite good participation by anglers and good tag retention, the low overall number of tag returns each year has hampered our ability to track fine scale movements around Green Bay. In general, during the first year of tagging most Walleye remain in or near the river in which they were tagged (Table 9). In succeeding years additional returns are received throughout southern Green Bay (Table 8). Few Walleye are recaptured from northern Green Bay. Based on angler tag returns, Walleye move throughout lower Green Bay away from the spawning rivers. However, the amount of movement appears to be less than noted other Walleye movement studies across the Great Lakes (Dembkowski et al 2018, Roseman et al. 2010). DNR survey recaptures also show that in general Walleye have high site fidelity for spawning rivers with fish usually returning to spawn in the river from which

they were originally captured. Subsequent annual spring movement patterns will likely provide additional information about long-term site fidelity.

Many questions remain regarding the Walleye population in lower Green Bay including those regarding stream/river use, site fidelity, and contributions to the sport fishery from unique spawning locations. Further detailed survey work that utilizes acoustic telemetry will be necessary to answer these and other questions regarding Walleye management in Wisconsin waters of Green Bay.

References

Dembkowski, D.J., D.A. Isermann, S.R. Hogler, W.A. Larsen and K.N. Turnquist. 2-18. Stock structure, dynamics, demographics and movement of walleye spawning in four tributaries to Green Bay. *J. Great Lakes Research* (2018) 44:970-978.

Hogler, S. 2014. Green Bay Walleye Tagging Surveys- 2012-2013 Update. Unpublished. Wisconsin Department of Natural Resources. Madison, WI. 51 pp.

Hogler, S., R. Lange, and S. Surendonk. 2015. Green Bay Walleye Tagging Surveys- 2014 Update. Unpublished. Wisconsin Department of Natural Resources. Madison, WI. 51 pp.

Hogler, S., R. Lange, and S. Surendonk. 2017. Green Bay Walleye Tagging Surveys- 2012-2015. Unpublished. Wisconsin Department of Natural Resources. Madison, WI. 70 pp.

Hogler, S., S. Surendonk and J. Taylor. 2018. Green Bay Walleye Tagging Surveys- 2016. Unpublished. Wisconsin Department of Natural Resources. Madison, WI. 26 pp.

Kapuscinski, K., T. Zorn, P. Schneeberger, R. O'Neal and B. Eggold. 2010. The Status of Lake Michigan Walleye Stocks. *In* Status of walleye in the Great Lakes: proceedings of the 2006 Symposium. Great Lakes Fish, Comm. Tech. Rep. 69. pp 15-69.

Roseman, E., Kocovsky, P., Vandergoot, P. [EDS]. 2010. Status of walleye in the Great Lakes: proceedings of the 2006 Symposium. Great Lakes Fish, Comm. Tech. Rep. 69.

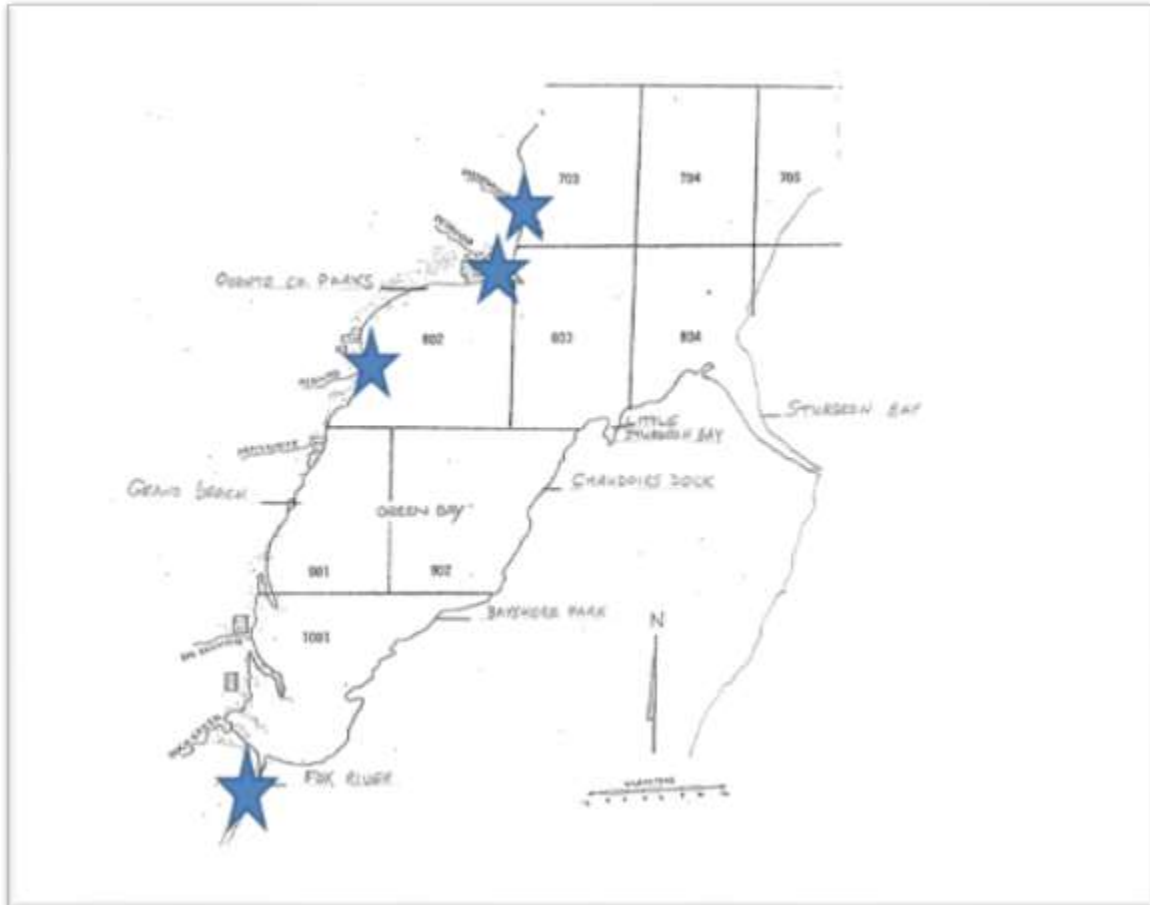


Figure 1. The tagging locations for Walleye in Green Bay and the Fox River, 2012-2018. In 2018 Walleye from Fox Peshtigo and Menominee Rivers were tagged. Walleye were not tagged from the Oconto River in 2018.

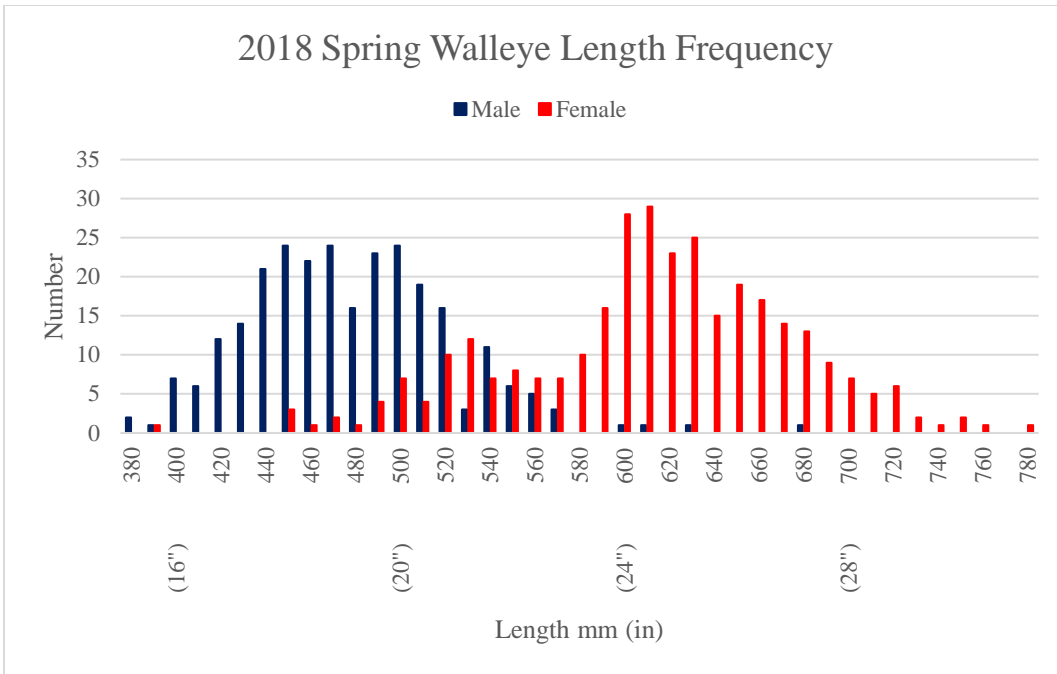


Figure 2. The length distribution of male and female Walleye captured from the Fox River during March and April electroshocking runs in 2018. Lengths are in mm and inches ().

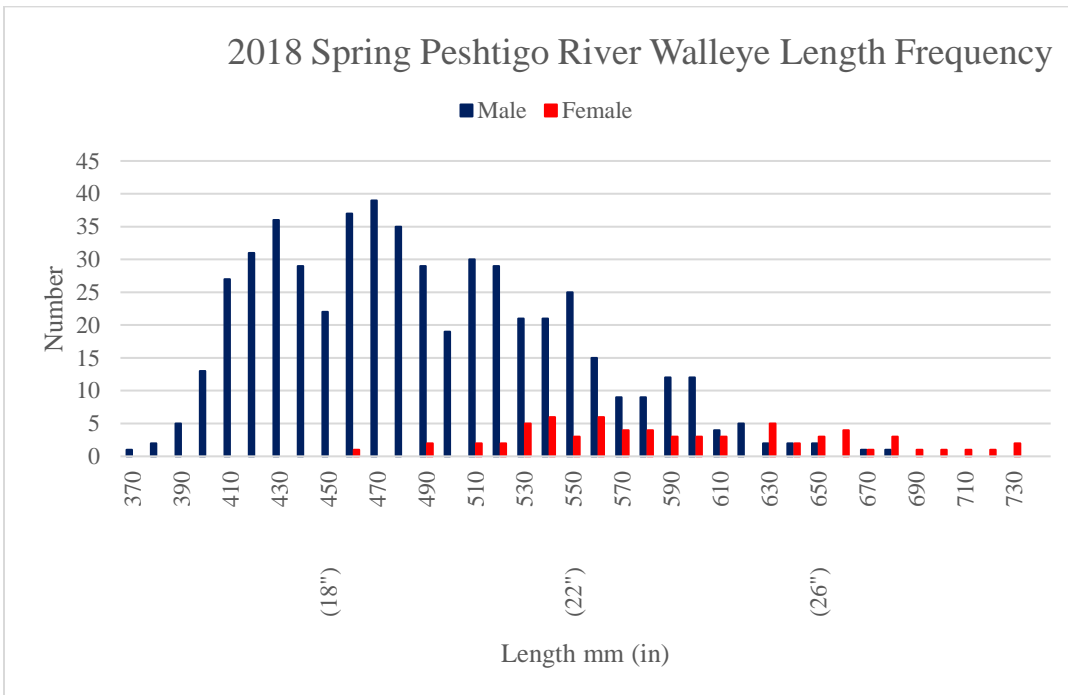


Figure 3. The length distribution of male and female Walleye captured from the Peshtigo River during April electroshocking runs in 2018. Lengths are in mm and inches ().

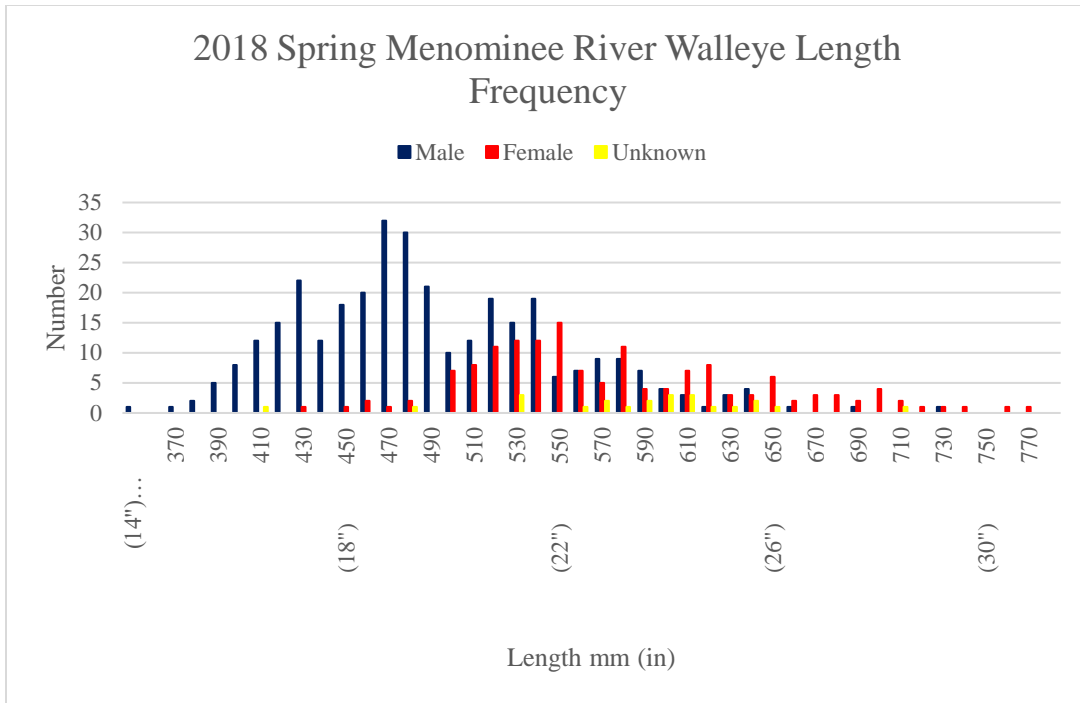


Figure 4. The length distribution of Walleye captured from the Menominee River during April electroshocking runs in 2018. Lengths are in mm and inches ().

Table 1. Walleye tagging summary for surveys conducted between 2012 and 2018 on the Fox, Oconto, Peshtigo and Menominee Rivers. Lengths are reported in mm and in ().

Year		Menominee River			Peshtigo River			Oconto River			Fox River		
		Captured	Tagged	Ave. Length	Captured	Tagged	Ave. Length	Captured	Tagged	Ave. Length	Captured	Tagged	Ave. Length
2012	Male				428	289	537 mm (21.1")	114	112	459 mm (18.1")			
	Female				71	71	593 mm (23.3")	90	90	580 mm (22.8")			
	Unknown				0	0		8	7	472 mm (18.6")			
	Total				499	360		212	209				
2013	Male	205	204	507 mm (20")	305	305	519 mm (20.4")	401	401	478 mm (18.8")	422	422	472 mm (18.6")
	Female	250	250	606 mm (23.9")	148	148	606 mm (23.9")	131	131	579 mm (22.8")	62	62	613 mm (24.1")
	Unknown	0	0		0	0		0	0		0	0	
	Total	455	454		453	453		532	532		484	484	
2014	Male	258	258	507 mm (20")	295	295	527 mm (20.7")	272	272	477 mm (18.8")	201	201	480 mm (18.9")
	Female	236	236	589 mm (23.2")	133	133	592 mm (23.3")	177	177	551 mm (21.7")	315	315	591 mm
	Unknown	1	1		0	0		0	0		0	0	23.3")
	Total	495	495		428	428		449	449		516	516	
2015	Male	339	339	521 mm (20.5")	310	310	515 mm (20.3")	210	201	497 mm (19.6")	179	179	477 mm (18.8")
	Female	95	95	577 mm (22.7")	154	154	595 mm (23.4")	60	60	565 mm (22.2")	379	379	589 mm (23.2")
	Unknown	0	0		0	0		0	0		0	0	
	Total	434	434		464	464		270	270		558	558	
2016	Male	346	337	511 mm (20.1")	299	287	493 mm (19.4")	342	335	467 mm (18.4")	199	191	496 mm (19.2")
	Female	124	122	598 mm (23.5")	165	162	634 mm (25")	116	116	580 mm (22.8")	213	210	632 mm (24.9")
	Unknown	0	0		1	1	391 mm (15.4")	1	1	345 mm (13.6")	1	1	517 mm (20.4")
	Total	470	459		465	450		459	452		413	402	
2017	Male	336	332	502 mm (19.8")	240	236	494 mm (19.4")	0			159	156	503 mm (19.8")
	Female	126	125	583 mm (23.0")	36	36	610 mm (24.0")	0			351	348	630 mm (24.8")
	Unknown	0	0		11	11	484 mm (19.1")	0			3	3	497 mm (19.6")
	Total	462	457		287	283		0			513	507	
2018	Male	330	330	495 mm (19.5")	525	525	493 mm (19.4")	0			269	269	481 mm (18.9")
	Female	151	151	582 mm (23.0")	68	68	598 mm (23.5")	0			310	310	618 mm (24.3")
	Unknown	23	23	588 mm (21.3")	2	2	443 mm (17.4")	0			2	2	644 mm (25.4")
	Total	504	504		596	595		0			581	581	

Table 2. The length frequency of Walleye captured from the Fox River during spring 2018 electroshocking. Lengths are reported in mm and inches ().

Length (in) mm	Male	Female	Unk.	
	380	2		
	390	2		
(16")	400	7		
	410	6		
	420	12		
	430	15		
	440	21		
(18")	450	26	1	
	460	22		
	470	24	3	
	480	16	1	
	490	24	4	
(20")	500	24	6	
	510	19	4	
	520	17	9	
	530	2	12	
	540	11	7	
(22")	550	6	8	
	560	5	7	
	570	3	7	
	580		10	
	590		16	
(24")	600	1	28	
	610	1	29	
	620		23	
	630	1	26	1
	640		15	
(26")	650		19	1
	660		17	
	670		13	
	680	1	12	
	690		8	
(28")	700		6	
	710		5	
	720		6	
	730		2	
	740		1	
(30")	750		2	
	760		1	
	770			
	780		1	
Total		269	310	2
Ave. Length		481 mm (19.0")	618 mm (24.3")	644 mm (25.4")
S.D.		44.1 mm (1.7")	59.4 mm (2.3")	11.3 mm (0.4")

Table 3. The age frequency of male Walleye captured from the Fox River during spring 2018 electroshocking. Lengths are reported in mm and inches ().

Length		Number	Age									
(in)	mm		3	4	5	6	7	8	9	10	11	12
	380	2	2									
	390	2	1	1								
(16")	400	7	2	5								
	410	6	2	4								
	420	12	2	10								
	430	15	3	8	4							
	440	21	2	10	9							
(18")	450	26		11	15							
	460	22		10	11	1						
	470	24		4	17	3						
	480	16		2	11	3						
	490	24		2	16	4	2					
(20")	500	24			6	10	7	1				
	510	19			5	7	5	2				
	520	17			2	7	5	3				
	530	2					1	1				
	540	11				2	4	4	1			
(22")	550	6					3	2	1			
	560	5				3	1	1				
	570	3						2	1			
	580											
	590											
(24")	600	1							1			
	610	1							1			
	620											
	630											
	640											
(26")	650											
	660											
	670											
	680	1										1
Total		269	14	67	96	40	28	16	5	0	0	1
Ave. Length		481 (18.9")	418 (16.5")	444 (17.5")	475 (18.7")	511 (20.1")	524 (20.6")	540 (21.3")	579 (22.8")			688 (27.1")
SD		44.1 (1.7")	19.2 (0.8")	23.5 (0.9")	22.4 (0.9")	23.7 (0.9")	19.9 (0.8")	22.5(0.9")	32.6 (1.3")			--

Table 4. The age frequency of female Walleye captured from the Fox River during spring 2018 electroshocking. Lengths are reported in mm and inches ().

Length (in) mm	Number	Age											
		4	5	6	7	8	9	10	11	12	13	14	15
440													
(18") 450	1	1											
460													
470	3	3											
480	1		1										
490	4	2	2										
(20") 500	6	2	4										
510	4	1	3										
520	9	1	8										
530	12	3	9										
540	7		4	2		1							
(22") 550	8		4	1	2	1							
560	7		2	2	2	1							
570	7		1	2	2	2							
580	10		1	1	3	2	3						
590	16			2	4	7	2	1					
(24") 600	28				5	13	8	2					
610	29				6	11	11	1					
620	23					8	12	3					
630	26			2	3	8	9	3	1				
640	15					6	4	3	1	1			
(26") 650	19					2	11	4	2				
660	17				1	3	5	1	2	3	2		
670	13					1	3	3	5	1			
680	12						2	1	2	5	2		
690	8						2	2	2	1	1		
(28") 700	6							2	2		2		
710	5								1	1	1		2
720	6							1	2	2	1		
730	2									1			1
740	1										1		
(30") 750	2									1		1	
760	1											1	
770													
780	1											1	
Total	310	13	39	12	28	66	72	27	20	16	10	3	3
Ave. Length	618 (24.3")	500 (19.7")	531 (20.9")	580 (22.8")	600 (23.6")	616 (24.3")	633 (24.9")	653 (25.7")	680 (26.8")	692 (27.2")	697 (27.4")	765 (30.1")	719 (28.3")
SD	59.4 (2.3")	26.4 (1.0")	21.7 (0.9")	28.8 (1.1")	25.4 (1.0")	25.9 (1.0")	26.4 (1.0")	34.1 (1.3")	25.3 (1.0")	29.3 (1.2")	27.7 (1.1")	12.9 (0.5")	13.9 (0.5")

Table 5. The length frequency of Walleye captured from the Peshtigo River during spring 2018 electroshocking. Lengths are reported in mm and inches ().

Length (in)	mm	Male	Female	Unk.
	370	1		
	380	2		
	390	5		
(16")	400	13		
	410	27		
	420	31		
	430	36		
	440	29		2
(18")	450	22		
	460	37	1	
	470	39		
	480	35		
	490	29	2	
(20")	500	19		
	510	30	2	
	520	29	2	
	530	21	5	
	540	21	6	
(22")	550	25	3	
	560	15	6	
	570	9	4	
	580	9	4	
	590	12	3	
(24")	600	12	3	
	610	4	3	
	620	5		
	630	2	5	
	640	2	2	
(26")	650	2	3	
	660		4	
	670	1	1	
	680	1	3	
	690		1	
(28")	700		1	
	710		1	
	720		1	
	730		2	
	740			
Total		525	68	2
Ave. Length		493 mm (19.4")	598 mm (23.5")	443 mm (17.3")
S.D.		59.2 mm (2.3")	63.7 mm (2.5")	--

Table 6. The length frequency of Walleye captured from the Menominee River during spring 2018 electroshocking. Lengths are reported in mm and inches ().

Length (in)	mm	Male	Female	Unk.
(14")	350	1		
	360			
	370	1		
	380	2		
	390	5		
(16")	400	8		
	410	12		1
	420	15		
	430	22	1	
	440	12		
(18")	450	18	1	
	460	20	2	
	470	32	1	
	480	30	2	1
	490	21		
(20")	500	10	7	
	510	12	8	
	520	19	11	
	530	15	12	3
	540	19	12	
(22")	550	6	15	
	560	7	7	1
	570	9	5	2
	580	9	11	1
	590	7	4	2
(24")	600	4	4	3
	610	3	7	3
	620	1	8	1
	630	3	3	1
	640	4	3	2
(26")	650		6	1
	660	1	2	
	670		3	
	680		3	
	690	1	2	
(28")	700		4	
	710		2	1
	720		1	
	730	1	1	
	740		1	
(30")	750			
	760		1	
	770		1	
	780			
Total		330	151	23
Ave. Length		495 mm (19.5")	582 mm (22.9")	588 mm (23.1")
S.D.		61.2 mm (2.4")	66.7 mm (2.6")	61.1 mm (2.4")

Table 7. 2018 angler returns of tags from Walleye tagged during this project by original tagging location. The days at large are from the date tagged to the date of recapture.

Year Tagged	Fox River	Menominee River	Oconto River	Peshtigo River	Total
2012	--	--	3	2	5
2013	1	2	3	5	11
2014	5	7	4	8	24
2015	3	4	3	14	24
2016	3	10	19	17	49
2017	34	18	--	21	73
2018	21	40	--	42	103
Total	67	81	32	109	289
Ave. Days at Large	449 days	482 days	1134 days	605 days	597 days

Table 8. 2018 angler tag returns by the location the angler recaptured the tagged Walleye. The bolded numbers indicate the river in which tagging occurred. Recapture locations were not provided by anglers for one Walleye tagged in the Menominee River and four Walleye tagged in the Peshtigo River.

Recapture Location	Tagging Location				Total
	Fox River	Menominee River	Oconto River	Peshtigo River	
Fox River	42		1		43
Inner Bay	3			1	4
Bayshore Park	10	2	3	1	16
Door County	2	7	1	5	15
Northern Green Bay		3			3
Suamico Area	1	3		2	6
Geano Beach	6	10	8	31	55
Oconto (Bay)	1	10	3	15	29
Oconto River			12		12
Peshtigo (Bay)	1				1
Peshtigo River		5	3	47	55
Marinette (Bay)	1	6	1	1	9
Menominee River		33		2	35
Michigan Waters		1			1
Total	67	80	32	105	284

Table 9. The location of recapture for Walleye that were tagged in 2018. The bolded numbers indicate the river in which the tagging occurred.

Recapture Location	Tagging Location			Total
	Fox River	Menominee River	Peshtigo River	
Fox River	15			15
Inner Bay				
Bayshore Park	4	1		5
Door County		4	2	6
Northern Green Bay		1		1
Suamico Area		2	3	5
Geano Beach	1	5	10	16
Oconto (Bay)	1	6	6	13
Oconto River			1	1
Peshtigo (Bay)			4	4
Peshtigo River			13	13
Marinette (Bay)		2		2
Menominee River		16	1	17
Michigan Waters		1		1
Total	21	38	40	99

Table 10. 2018 DNR survey recaptures of tagged Walleye by location. Walleye were not tagged in the Fox River or Menominee River in 2012 or in the Oconto River in 2017 and 2018.

River Tagged	Year Tagged	Recapture River		
		Fox River	Peshtigo River	Menominee River
Menominee River	2013			1
	2014			2
	2015			2
	2016			2
	2017			7
	2018			
Peshtigo River	2012			
	2013			
	2014		2	1
	2015		1	
	2016		7	
	2017		2	
	2018		2	1
Oconto River *	2012		1	
	2013		1	
	2014			
	2015			
	2016			
	2017			
	2018			
Fox River	2013			
	2014			
	2015			
	2016			
	2017	4		
	2018	1		
	Total	5	16	16