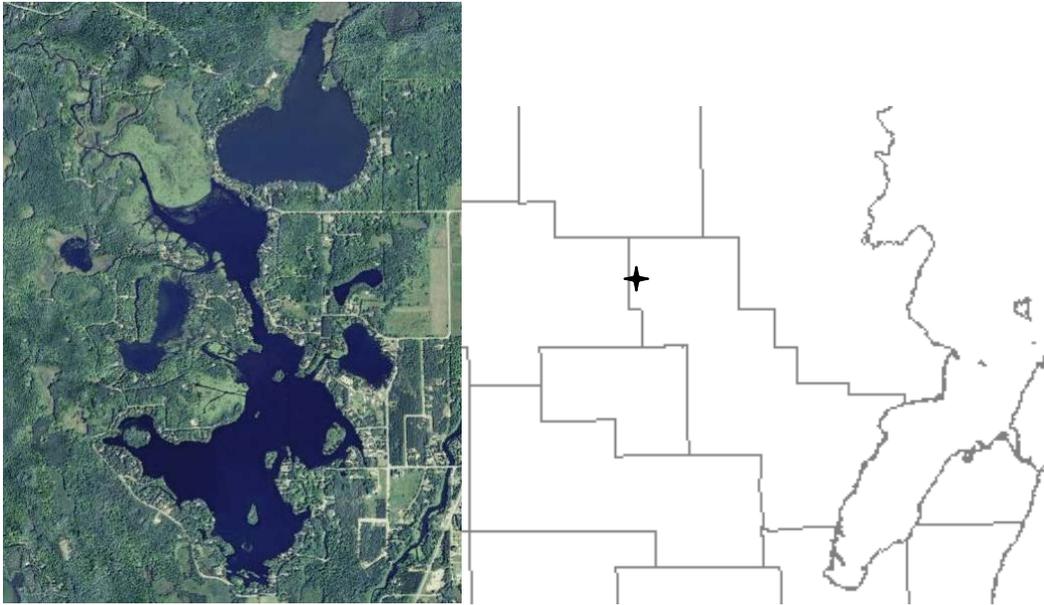


RESERVOIR POND
(including Horn Lake, Little Horn Lake, and Explosion Lake)
Oconto County
2015 Fish Management Report

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Reservoir Pond - Oconto County, Wisconsin
2015 Fish Management Report

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SUMMARY

Lake and location:

Reservoir Pond, Oconto County, T33N R15E Sec 28

Physical / chemical attributes (Wisconsin DNR, 1977):

Surface acres: 417

Maximum depth (ft): 16

Average depth (ft): 5

Shoreline length (mi): 12.1

Lake type: Drainage

Basic water chemistry: Hard water, slightly alkaline, light brown/stained water with moderate transparency, Secchi = 9 ft. (summer).

Littoral substrate: 95% muck 4% sand and 1% gravel.

Aquatic vegetation: Moderate

Other features: This lake (and connected lakes) is highly developed with homes along the shoreline and is located within the Ceded Territory.

Purpose of survey:

Determine the current status of fishery.

Surveys:

WDNR Survey ID: 515077820 – Spring fyke netting: 4/22/2015 to 4/30/2015

WDNR Survey ID: 496447870 – Gamefish/Panfish electrofishing (SEII): 6/2/2015

Fishery:

The fishery of Reservoir Pond is comprised of panfish species (bluegill, black crappie, pumpkinseed, yellow perch and rock bass) and gamefish species (walleye, smallmouth bass, largemouth bass and northern pike).

EXECUTIVE SUMMARY

- Reservoir Pond is located in northern Oconto County just west of Townsend. Three other lakes are connected to Reservoir Pond (417 acres); Horn Lake (134 acres), Little Horn Lake (24 acres), and Explosion Lake (31 acres). There are three boat landings available to access these lakes.
- The Wisconsin Department of Natural Resources (WDNR) has annually stocked both small and large fingerling walleye since 2005 in either Reservoir Pond or Horn Lake (Table 1). In 2012, Reservoir Pond was drawn down in the fall (and all winter) to complete repairs to the dam and water control structure. A preemptive plan was put in place to restock fish in case a winter kill occurred. All other stockings were sponsored by the Inland Lakes Protection and Rehabilitation, District 1 (ILPRD).
- The goal of the 2015 comprehensive fisheries survey was to characterize gamefish populations based on relative abundance, proportional stock density (PSD), relative stock density (RSD), catch per unit effort (CPUE) and mean length at capture (age and growth).
- Overall, 4,006 fish representing 13 species and 1 hybrid were collected during the 2015 sampling season (Table 4). The six most abundant species collected by number were bluegill (34%), black crappie (28%), pumpkinseed (9%), rock bass (9%), yellow bullhead (8%) and northern pike (8%).
- A total of 1,354 bluegill was collected which accounted for 34% of the fish collected (Table 4). Bluegill ranged in length from 1.7 to 9.5 in and averaged 6.0 in (Figure 1). Forty-nine percent of the bluegill measured were 6.0 in or greater and considered harvestable. Growth was average at all ages compared to the mean length at age of bluegill in northern Wisconsin (Figure 2).
- Black crappie made up 28% of the fish collected totaling 1,119 fish (Table 4). Crappie ranged in length from 4.1 to 13.4 in and averaged 7.8 in (Figure 3). Forty-two percent (363) of the black crappie measured (866) were 8.0 in or greater and considered harvestable. A subsample of 72 black crappie was aged from 2 to 15 years old. Growth was below average at all ages compared to the mean length at age of bluegill in northern Wisconsin (Figure 4).
- A total of 338 northern pike was collected during the 2015 fisheries survey and accounted for 8% of the fish collected (Table 4). Pike ranged in length from 12.1 to 31.9 inches and averaged 20.0 inches (Figure 7). Due to the lack of recaptures during the fyke netting survey, a population estimate was not calculated.
- Seventy largemouth bass were collected during the 2015 survey (Table 4). Bass ranged in length from 6.1 to 20.3 in and averaged 14.2 in (Figure 8). Largemouth bass PSD was 65 and RSD^P was 24 (from electrofishing sample). Sixty percent of largemouth bass collected were over the 14-in minimum length limit. Bass are reaching legal size (14 in) around age 6.
- Forty-seven walleye were collected, which accounted for 1% of the fish collected, during the 2015 survey (Table 4). Walleye ranged in length from 9.2 to 27.2 in (inches) and averaged 21.5 in (Figure 10). The Schnabel multiple census fyke net population estimate for walleye was approximately 0.1 walleye/acre. A subsample of 35 walleye from fyke nets was aged from 2 to 18 years old. Walleye were reaching legal size (18 in) by age 5 (Figure 11).
- Alternate-year stockings of large fingerling walleye should continue at the rate of 10 fish/ acre. However, if the contribution to the fishery is minimal and does not produce an adult density of at least 2.0 adults per acre during the next survey (2023), it may be justified to discontinue trying to establish a quality walleye fishing opportunity in Reservoir Pond.
- The next comprehensive fisheries survey (spring fyke netting and SEII electrofishing) of Reservoir Pond (including connected lakes) is scheduled for 2023 and will focus on the age, growth, abundance, and recruitment of the dominant gamefish.

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INTRODUCTION

Reservoir Pond is located in northern Oconto County just west of Townsend. At 417 acres, it is one of the larger lakes in the immediate area and offers a variety of recreational opportunities in addition to fishing. Three other lakes are connected to Reservoir Pond; Horn Lake (134 acres), Little Horn Lake (24 acres), and Explosion Lake (31 acres). Since fish can move freely between all 4 lakes, for the purposes of fisheries management WDNR considers this one lake. There are three boat landings available to access these lakes; all public launches are maintained by the Town of Townsend. Parking is limited at all three locations.

The Wisconsin Department of Natural Resources (WDNR) has annually stocked both small and large fingerling walleye since 2005 in either Reservoir Pond or Horn Lake (Table 1). Beginning in 2013, large fingerling walleye were stocked under the Wisconsin Walleye Initiative (Table 1). In 2012, Reservoir Pond was drawn down in the fall (and all winter) to complete repairs to the dam and water control structure. A preemptive plan was put in place to restock fish in case a winter kill occurred. Even though no winterkill occurred, panfish (bluegill, black crappie and yellow perch) were stocked in 2013 and 2014 (Table 1). All other stockings were sponsored by the Inland Lakes Protection and Rehabilitation, District 1 (ILPRD).

The last fisheries survey of Reservoir Pond was conducted in 2005 (Hasz, 2005). The 2005 survey consisted of one night of mini-fyke netting in July and two separate night electrofishing samples in October. The 2005 survey reported similar results to a survey completed in 1993. Largemouth bass and northern pike were the most abundant gamefish species collected while bluegill were the most abundant panfish species collected. It was noted that other species were collected in “moderate” numbers during the survey. It was recommended that stocking was not necessary and no changes to the fishing regulations were necessary (Hasz, 2005).

The goal of the 2015 comprehensive fisheries survey was to assess the status of the fishery by characterizing gamefish populations based on relative abundance, proportional stock density (PSD), relative stock density (RSD), catch per unit effort (CPUE) and mean length at capture (age and growth).

METHODS

Data collection:

Standard fyke nets (3-foot hoop, $\frac{3}{4}$ -bar, 1.5-inch stretch), mini-fyke nets ($\frac{1}{4}$ -inch stretch with turtle exclusion) and a standard WDNR electrofishing boat were used to collect fish on Reservoir Pond. Sampling gear, effort, date, and target species for the survey are listed in Table 2. All gamefish fish collected were measured to the nearest 0.1 inch total length (TL) and separated into half-inch groups (X.0-X.4 for inch group and X.5-X.9 for half-inch group). Not all panfish were measured; representative samples were taken to reduce handling mortality from a net or electrofishing run when the sample size was large. A sub-sample of scales or dorsal spines was collected for age and growth analysis from gamefish. Aging structures (scales or spines) were collected from 5 non young-of-the-year (YOY) fish per half inch group. If gender could be determined, structures from 5 fish per sex were collected per half inch group. Aging structures for panfish consisted of 5 samples per half inch group when gender could not be established. Ages were assigned to each fish using standard WDNR procedures.

Data analysis:

Relative abundance was calculated as the percentage each species represented from the total sample (i.e. 22 fish of a single species from a sample of 100 total fish = 22% relative abundance). Catch per unit effort (CPUE) was calculated as catch by gear divided by sampling effort for each species collected. Length frequency distributions were tabulated for dominant gamefish and consisted of combined April and May electrofishing samples as well as fyke net data. Proportional stock density (PSD) and relative stock density for preferred length fish (RSD^P) were calculated for dominant gamefish (Table 3; Anderson and Neumann 1996). Preferred lengths of various gamefish have a minimum length between 45 and 55% of the world record length for that species (Anderson and Neumann 1996). Stock, quality, and preferred lengths were used as proposed by Gabelhouse (1984). Mean length at capture data was calculated for dominant gamefish and compared to the average of mean length at age for northern Wisconsin.

A population estimate for walleye was obtained during the spring fyke net survey by giving each captured fish a top caudal fin clip. Marks (fin clips) were noted in subsequent collections until the survey was complete. The Schumacher-Eschmeyer and/or Schnabel formulas for multiple census were used to generate population estimates (Schneider, 1998; Schnabel, 1938).

RESULTS

Overall, 4,006 fish representing 13 species and 1 hybrid were collected during the 2015 sampling season (Table 4). The six most abundant species collected by number were bluegill (34%), black crappie (28%), pumpkinseed (9%), rockbass (9%), yellow bullhead (8%) and northern pike (8%).

A total of 1,354 bluegill was collected which accounted for 34% of the fish collected (Table 4). Bluegill ranged in length from 1.7 to 9.5 in and averaged 6.0 in (Figure 1). One-thousand twenty-three bluegill were collected during the spring fyke netting and 131 during the SEII gamefish/panfish electrofishing survey (Tables 5 & 6). Electrofishing CPUE was 231.2/h and fyke net CPUE was 16.1/NN (Tables 5 & 6). Forty-nine percent of the bluegill measured were 6.0 in or greater and considered harvestable. Bluegill PSD was 23 and RSD^P was 0. While PSD was within the desirable range for a balanced population, RSD^P was not (Table 3). A subsample of 51 bluegill was aged from 3 to 12 years old. Age-5 bluegill averaged 6.4 in and bluegill were reaching 8 inches by age 8 or 9. Growth was average at all ages compared to the mean length at age of bluegill in northern Wisconsin (Figure 2). Successful reproduction and recruitment of bluegill was evident.

Black crappie made up 28% of the fish collected totaling 1,119 fish (Table 4). Crappie ranged in length from 4.1 to 13.4 in and averaged 7.8 in (Figure 3). One thousand, one hundred eighteen crappie were collected during the spring fyke netting and one fish during the SEII gamefish/panfish electrofishing survey (Tables 5 & 6). Electrofishing CPUE was 1.8/h and fyke net CPUE was 14.7/NN (Tables 5 & 6). Forty-two percent (363) of the black crappie measured (866) were 8.0 in or greater and considered harvestable. A subsample of 72 black crappie was aged from 2 to 15 years old. Age-6 crappie averaged 8.0 inches in length. Growth was below average at all ages compared to the mean length at age of bluegill in northern Wisconsin (Figure 4). Successful reproduction and recruitment of crappie was evident.

During the survey, 357 pumpkinseed were collected (Table 4). Electrofishing yielded a CPUE of 97.1/h and fyke netting a CPUE of 4.0/NN (Tables 5 & 6). Pumpkinseed ranged in length from 2.8 to 8.4 in and averaged 5.8 in (Figure 5). Pumpkinseed were not aged but the length frequency suggests that the population is well balanced in terms of size structure.

Three hundred forty-eight rock bass were collected during the 2015 survey (Table 4).

Rock bass ranged in length from 4.1 to 11.1 in and averaged 7.1 in (Figure 6). Electrofishing CPUE was 26.5/h and fyke net CPUE was 4.4/NN (Tables 5 & 6). Overall, the length frequency (Figure 6) suggests that the rock bass population is well balanced in terms of size structure.

A total of 338 northern pike was collected during the 2015 fisheries survey and accounted for 8% of the fish collected (Table 4). Pike ranged in length from 12.1 to 31.9 inches and averaged 20.0 inches (Figure 7). Northern pike electrofishing and fyke netting CPUE was 1.9/h and 4.4/NN, respectively (Tables 5 & 6). Pike PSD was 37 (and within the desirable range of 30 to 60; Table 3) and RSD^P was 4. No northern pike were aged from this survey. Due to the lack of recaptures during the fyke netting survey, a population estimate was not calculated.

Seventy largemouth bass were collected during the 2015 survey (Table 4). Electrofishing yielded a CPUE of 18.0/h and fyke netting a CPUE of 0.4/NN (Tables 5 & 6). Bass ranged in length from 6.1 to 20.3 in and averaged 14.2 in (Figure 8). Largemouth bass PSD was 65 and RSD^P was 24 (from electrofishing sample). Bass PSD and RSD^P are within the desirable range for a balanced population (Table 3). Sixty percent of largemouth bass collected were over the 14-in minimum length limit. A subsample of 36 largemouth bass was aged from 2 to 15 years old. Largemouth bass growth was average until age 9 and below average at older ages compared to the average mean length at age for bass in northern Wisconsin (Figure 9). Bass are reaching legal size (14 in) around age 6. Successful reproduction and recruitment of largemouth bass was evident.

Forty-seven walleye were collected, which accounted for 1% of the fish collected, during the 2015 survey (Table 4). Walleye ranged in length from 9.2 to 27.2 in and averaged 21.5 in (Figure 10). A total of 46 walleye (8 recaptures) was collected during the spring fyke netting survey with a mean catch per net night (NN) for of 0.6/NN (Figure 10 & Table 5). Walleye PSD and RSD^P from the spring fyke net sample was 92 and 76, respectively. Walleye PSD was well above the desirable range of 30 to 60 (Table 3). The Schnabel multiple census fyke net population estimate for walleye 12 inches and larger was 88 (95% CI of 51 to 343) or approximately 0.1 walleye/acre for Reservoir Pond (including connected lakes). A subsample of 35 walleye from fyke nets was aged from 2 to 18 years old. Walleye were reaching legal size (18 in) by age 5 (Figure 11). Compared to the average length at age for northern Wisconsin, walleye growth was slightly above average until age 7 but average at older ages (Figure 11).

Additionally, yellow perch, smallmouth bass, green sunfish, hybrid sunfish, golden shiner, and black bullhead were also collected during the 2015 survey and accounted for approximately 1% of the remaining fish collected (Table 4).

DISCUSSION

Reservoir Pond is moderately fertile because it is a flowage and has a larger upland, forested watershed than other lakes in the area. Populations of panfish (bluegill, black crappie and rock bass) and gamefish (largemouth bass and northern pike) are present and offer anglers a respectable fishing opportunity.

Since the previous fisheries survey in 2005, fish sampling protocols were evaluated and changed; specifically the timing of gamefish/panfish electrofishing (SEII). In 2005, SEII sampling was conducted in the fall (i.e. October) where as in current survey, SEII electrofishing was conducted in June. Therefore, it's difficult to detect changes in bass and panfish populations between surveys. Viable comparisons between years/surveys can still be made between spring (SEI) and fall electrofishing, as well as fyke netting surveys. However, spring fyke netting survey and a fall juvenile assessment was not conducted in 2005.

Bluegill were by far the most abundant species collected in both 2005 and 2015 (Table 6). While the total number of bluegill collected via electrofishing declined between years, it is important to mention that more electrofishing sampling effort occurred in 2005 than in 2015 (Table 2). Bluegill PSD improved from 8 in 2005 to 23 in 2015. Essentially this means the proportion of larger fish increased between samples. This change could also be another artifact of summer versus fall electrofishing for panfish. It makes sense that PSD would be higher from a summer electrofishing sample since adults are near shore in shallow water to spawn. Nevertheless, the 2015 spring fyke netting survey (Table 5) confirmed that the bluegill population is thriving.

Black crappie was the second most abundant species collected during the 2015 spring fyke netting survey (Table 5). However, only a single fish was collected during the 2015 electrofishing survey. In 2005, 33 black crappie were collected during the October electrofishing. Growth was below average compared to other lakes in northern Wisconsin. Crappie were not aged from the 2005 survey therefore, the current length at age data (Figure 4) will serve as a good benchmark for future comparisons in Reservoir Pond. The 2,487 crappie stocked in 2013 (Table 1), were likely age 4, around 7 inches in length, and comprised a majority of the fish in this year class (Figure 3).

Based on the length at age data (Figure 4), it is safe to assume that the crappie stocked in 2013 only grew approximately 1 inch before the 2015 survey.

After the 2012 drawdown, the Inland Lakes Protection and Rehabilitation (District 1) agreed not to incorporate largemouth bass into the restocking plan if a winterkill occurred. Between 2005 and 2015, largemouth bass CPUE declined from 28.0/h to 18.0/h, respectively (Table 6). But like panfish (bluegill and black crappie) much more sampling effort occurred during the 2005 electrofishing survey (Table 2). Coupled with the fact that the timing of the electrofishing sample changed between surveys, we were unable to detect a change in largemouth bass abundance based on the data from these surveys. On the other hand, bass PSD and RSD^P were nearly identical between surveys. Largemouth PSD increased from 62 to 65 between 2005 and 2015, respectively and RSD^P also increased from 22 to 24 between years. PSD and RSD^P estimates for largemouth bass were derived from the June SEII electrofishing sample in 2015 and the October SEII electrofishing survey in 2005. Overall, largemouth bass growth was average in 2015 compared to other lakes in northern Wisconsin but declined compared to 2005 (Figure 9). The slower growth observed in larger/older largemouth bass could be attributed to our ability to accurately assess ages of older fish using dorsal spines (Figure 9).

The walleye fishery in Reservoir Pond has been maintained primarily by sporadic stocking and immigration of walleye from Horn Lake (Table 1). Additionally, previous stockings by the ILPRD were well below the recommended large fingerling stocking rate of 5/acre and WDNR was stocking small fingerling walleye. Both of these stocking efforts produced limited results. In 2013, the Wisconsin Legislature appropriated funds to WDNR to begin the Wisconsin Walleye Initiative (WWI). This program has increased the production and distribution of large fingerling walleye throughout the State, including Reservoir Pond and Horn Lake. Walleye stocking under the WWI occurred in both lakes during 2013 and 2015 (Table 1). Walleye stockings listed as “WWI (non-DNR)” were walleye purchased from a private producer through the initiative (Table 1). The switch by WDNR from small fingerling walleye to large fingerling walleye stockings was also a result of the WWI. It is too soon to determine the contribution of these walleye stockings to the fishery but it is estimated that between 20 and 30% of extended growth (large fingerling) walleye that are stocked will survive to a catchable size (15 inches). Therefore, the future of walleye stockings by WDNR will depend on the success of stocking between the current survey

and the next survey (scheduled for 2023) since previous walleye stockings have resulted in few adult fish.

Northern pike were the most abundant gamefish species collected (Table 4). Pike PSD was 37 and within the desirable for a balanced population but few fish over 26 inches were collected (Figure 7). Reservoir Pond has excellent northern pike habitat and contains an abundance of shallow, heavily vegetated water. Additionally, this shallow water habitat that is heavily vegetated also provides good habitat for small panfish which are likely the main staple in the diet of northern pike. Therefore, a potential fishing regulation option to improve northern pike size structure might liberalize the daily bag limit (> 5 fish / day) and allow harvest of only one large fish / day (i.e. ≥ 26 inches). This type of regulation would reduce the abundance of smaller fish but still maintain a quality fishing opportunity for northern pike. Currently there is not a more consumptive/liberal regulation option available other than the current statewide regulation for northern pike (no minimum size and a daily limit of 5 / day). Future collaboration with the WDNR Northern Pike Management Team is necessary before such a regulation could be proposed and implemented.

CONCLUSIONS & RECOMMENDATIONS

The current fishing regulations (Table 7) are adequate and should continue to provide quality fishing opportunities. Panfish abundance is stable even though catch rates declined somewhat between years (Table 6). Future surveys should continue to utilize spring fyke netting to characterize panfish populations, if time allows. The 2015 spring fyke netting data will serve as a good benchmark for comparison of panfish populations in future years. Additionally, the local interest in establishing a quality walleye and northern pike fishery will need to be assessed using spring fyke netting.

Panfish stockings in 2013 and 2014 were planned in case a winterkill occurred as a result of the 2012 winter drawdown. This survey indicated healthy populations of most panfish species including bluegill, black crappie, pumpkinseed and rock bass. Therefore, future panfish stockings are not necessary or recommended.

New walleye fishing regulations were implemented in 2015. The previous regulation consisted of a 15-inch minimum length limit and the daily bag limit fluctuated based on tribal harvest declarations. In 2015, the minimum length limit was increased to 18 inches and the daily bag limit is 3 regardless of tribal harvest declarations. This regulation is for all lakes including

Reservoir Pond, Horn Lake, Little Horn Lake and Explosion Lake. Therefore, alternate-year stockings of large fingerling walleye should continue at the experimental rate of 10 fish/ acre in 2017 and 2019. However, if the contribution to the fishery is minimal and does not produce an adult density of at least 2.0 adults per acre during the next survey (2023), it may be justified to discontinue trying to establish a quality walleye fishing opportunity in Reservoir Pond especially since it is currently being stocked at twice the recommended rate.

The largemouth bass population in Reservoir Pond is good, especially when compared to other lakes in northern Oconto County. There is ample habitat, and an adequate forage base comprised of panfish, that will allow this to continue indefinitely. Fishing regulations for black bass were changed in the northern bass zone in 2014 (whereby largemouth bass are no longer protected under the early catch-and-release season from the first Saturday in May to the second Saturday in June). No additional fishing regulation changes are being proposed for largemouth or smallmouth bass in Reservoir Pond (and/or connected lakes). Recent creel surveys in other northern Oconto County lakes (Maiden Lake in 1999/2000; Wheeler Lake in 2008/2009) revealed that harvest of both largemouth and smallmouth bass was negligible. Therefore, additional changes to the black bass regulations, if necessary, would likely be ineffective and are not recommended.

The next comprehensive fisheries survey (spring fyke netting and SEII electrofishing) of Reservoir Pond (including connected lakes) is scheduled for 2023 and will focus on the age, growth, abundance, and recruitment of the dominant gamefish. Boat access to Reservoir Pond is adequate. Three public boat landings are available to anglers however; parking is extremely limited at all locations. Shore fishing opportunities are extremely limited for the public. Boaters are reminded to remove all vegetation from their boat and trailer before leaving to limit the spread of invasive species. A map of Reservoir Pond can be found at the following internet address; <http://dnr.wi.gov/lakes/maps/DNR/0466700a.pdf>

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APPENDIX I – TABLES

Table 1. Stocking history of Reservoir Pond, Little Horn Lake and Horn Lake; Oconto County, WI.

Waterbody Name	Year	Species	Size	Number Stocked	Average Length (in)	Stock Source Group
RESERVOIR POND	1985	WALLEYE	FRY	39000	1.0	
RESERVOIR POND	1994	WALLEYE	FINGERLING	1600	6.0	
HORN LAKE	2003	WALLEYE	SM FINGERLING	6000	1.3	ART OEHMCKE SFH
HORN LAKE	2005	WALLEYE	SM FINGERLING	6600	1.5	ART OEHMCKE SFH
HORN LAKE	2006	WALLEYE	LG FINGERLING	1835	7.9	NON-DNR
LITTLE HORN LAKE	2006	YELLOW PERCH	ADULT	500	7.9	NON-DNR
RESERVOIR POND	2007	YELLOW PERCH	ADULT	1000	5.7	NON-DNR
HORN LAKE	2007	WALLEYE	LG FINGERLING	1450	8.0	NON-DNR
RESERVOIR POND	2008	WALLEYE	LG FINGERLING	1146	7.0	NON-DNR
HORN LAKE	2008	WALLEYE	LG FINGERLING	499	7.0	NON-DNR
RESERVOIR POND	2009	WALLEYE	YEARLING	1150	7.0	NON-DNR
HORN LAKE	2009	WALLEYE	YEARLING	499	7.0	NON-DNR
HORN LAKE	2009	WALLEYE	SM FINGERLING	4594	1.7	ART OEHMCKE SFH
RESERVOIR POND	2010	WALLEYE	YEARLING	1143	7.0	NON-DNR
HORN LAKE	2010	WALLEYE	YEARLING	500	8.0	NON-DNR
RESERVOIR POND	2011	RAINBOW TROUT	ADULT	25	11.0	NON-DNR
RESERVOIR POND	2011	WALLEYE	YEARLING	1938	7.0	NON-DNR
HORN LAKE	2011	WALLEYE	SM FINGERLING	3300	1.8	WILD ROSE SFH
HORN LAKE	2011	WALLEYE	SM FINGERLING	1708	1.8	ART OEHMCKE SFH
RESERVOIR POND	2012	RAINBOW TROUT	ADULT	25	10.0	NON-DNR
RESERVOIR POND	2013	BLUEGILL	ADULT	4685	6.0	NON-DNR
RESERVOIR POND	2013	YELLOW PERCH	ADULT	2000	6.0	NON-DNR
RESERVOIR POND	2013	BLACK CRAPPIE	ADULT	2487	6.0	NON-DNR
RESERVOIR POND	2013	WALLEYE	LG FINGERLING	492	7.8	ART OEHMCKE SFH
RESERVOIR POND	2013	WALLEYE	LG FINGERLING	3669	6.8	WWI (NON-DNR)
RESERVOIR POND	2013	NORTHERN PIKE	SM FINGERLING	29535	4.8	WILD ROSE SFH
HORN LAKE	2013	WALLEYE	LG FINGERLING	1340	7.8	ART OEHMCKE SFH
RESERVOIR POND	2014	RAINBOW TROUT	ADULT	25	10.0	NON-DNR
RESERVOIR POND	2014	BLUEGILL	LG FINGERLING	40482	1.0	FEDERAL HATCHERY
RESERVOIR POND	2014	BLACK CRAPPIE	LG FINGERLING	52025	1.5	FEDERAL HATCHERY
RESERVOIR POND	2014	NORTHERN PIKE	SM FINGERLING	7490	2.5	LAKE MILLS SFH
RESERVOIR POND	2015	RAINBOW TROUT	ADULT	25	12.0	NON-DNR
RESERVOIR POND	2015	WALLEYE	LG FINGERLING	4126	8.1	ART OEHMCKE SFH
HORN LAKE	2015	WALLEYE	LG FINGERLING	1341	7.0	WWI (NON-DNR)

Table 2. Sampling gear, date, target species, sampling effort, and location (distance) for 2005 and 2015 fisheries surveys on Reservoir Pond; Oconto County, WI.

Gear	Date		Target Species	Sampling Effort hours (h) or net night (NN)	Shoreline Distance (mi)
	2005	2015			
Fyke net		Apr. 22 - 30	All fish	76 NN	
Electrofishing		02-Jun	All fish	0.6 h	1.0
			Gamefish	2.1 h	4.0
Electrofishing	October 3 & 11		All fish	0.9 h	1.0
			Gamefish	3.4 h	4.0

Table 3. Proposed length categories for various fish species. Measurements are total lengths for each category in inches. Updated from Anderson and Neumann (1996), Bister et al. (2000), Hyatt and Hubert (2001).

Species	PSD	RSD-P	Stock	Quality	Preferred	Memorable	Trophy
Black crappie			5	8	10	12	15
Bluegill	20 - 40	5 - 20*	3	6	8	10	12
Brown bullhead			5	8	11	14	17
Largemouth bass	40 - 70	10 - 40*	8	12	15	20	25
Muskellunge	30 - 60		20	30	38	42	50
Northern pike	30 - 60		14	21	28	34	44
Pumpkinseed	20 - 40		3	6	8	10	12
Rock bass	20 - 60		4	7	9	11	13
Smallmouth bass	30 - 60		7	11	14	17	20
Walleye	30 - 60		10	15	20	25	30
Yellow perch	30 - 50		5	8	10	12	15
Yellow bullhead			4	7	9	11	14

*Range based on management strategy for balanced populations.

Table 4. Number, relative abundance (%), and length range (in) of fishes collected in 2015 from Reservoir Pond; Oconto County, WI.

SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER			
*Common Name of Fish	Number	Percent	Length Range (inches)
Bluegill	1354	33.8%	1.7 - 9.5
Black crappie	1119	27.9%	4.1 - 13.4
Pumpkinseed	357	8.9%	2.8 - 8.4
Rock bass	348	8.7%	4.1 - 11.1
Yellow bullhead	338	8.4%	7.7 - 12.8
Northern pike**	338	8.4%	12.1 - 31.9
Largemouth bass**	70	1.7%	6.1 - 20.3
Walleye**	47	1.2%	9.2 - 27.2
Yellow perch	15	0.4%	4.1 - 9.2
Smallmouth bass**	6	0.1%	13.5 - 18.6
Green sunfish	5	0.1%	5.6
Hybrid sunfish	3	0.1%	7.7 - 7.9
Golden shiner	3	0.1%	4.2
Black bullhead	3	0.1%	13.0
TOTAL	4006		
* Common names of fishes recognized by the American Fisheries Society.			
**Includes recaptures.			

Table 5. Summary of spring fyke netting (76 net nights) on Reservoir Pond (4/22/15 - 4/30/15); Oconto County, WI.

Species	Fish Count	CPUE / NN
Bluegill	1223	16.1
Black crappie	1118	14.7
Yellow bullhead	338	4.5
Northern pike	334	4.4
Rock bass	333	4.4
Pumpkinseed	302	4.0
Walleye	46	0.6
Largemouth bass	32	0.4
Yellow perch	14	0.2
Smallmouth bass	6	0.1
Green sunfish	5	0.1
Golden shiner	3	0.0
Black bullhead	3	0.0

Table 6. Electrofishing summary from 2005 and 2015 at Reservoir Pond (including connected lakes); Oconto County, WI.

Gamefish/Panfish electrofishing (SEII)						
Species	2015 June			2005 October		
	Total	CPUE	CPUE	Total	CPUE	CPUE
	Catch	/hour	/mile	Catch	/hour	/mile
Bluegill	131	231.2	131.0	347	377.2	347.0
Pumpkinseed	55	97.1	55.0	34	37.0	34.0
Largemouth bass	38	18.0	9.5	94	28.0	23.5
Rock bass	15	26.5	15.0	13	14.1	13.0
Northern pike	4	1.9	1.0	37	11.0	9.3
Black crappie	1	1.8	1.0	33	35.9	33.0
Yellow perch	1	1.8	1.0	11	12.0	11.0
Walleye	1	0.5	0.3			

Table 7. Current fishing regulations (2015 - 2016) for Reservoir Pond; Oconto County, WI.

Species	Fishing Season	Daily Limit	Minimum Length
Largemouth bass	May 2- March 6	5	14 inches
Smallmouth bass	May 2- June 19	Catch and release	
	June 20- March 6	5 in total with LMB	14 inches
Northern pike	May 2 - March 6	5	None
Walleye	May 2- March 6	3	18 inches
Panfish (bluegill, pumpkinseed, crappie, and yellow perch)	Open all year	25 in total	None
Bullheads	Open all year	None	None
Rock bass	Open all year	None	None

APPENDIX II – FIGURES

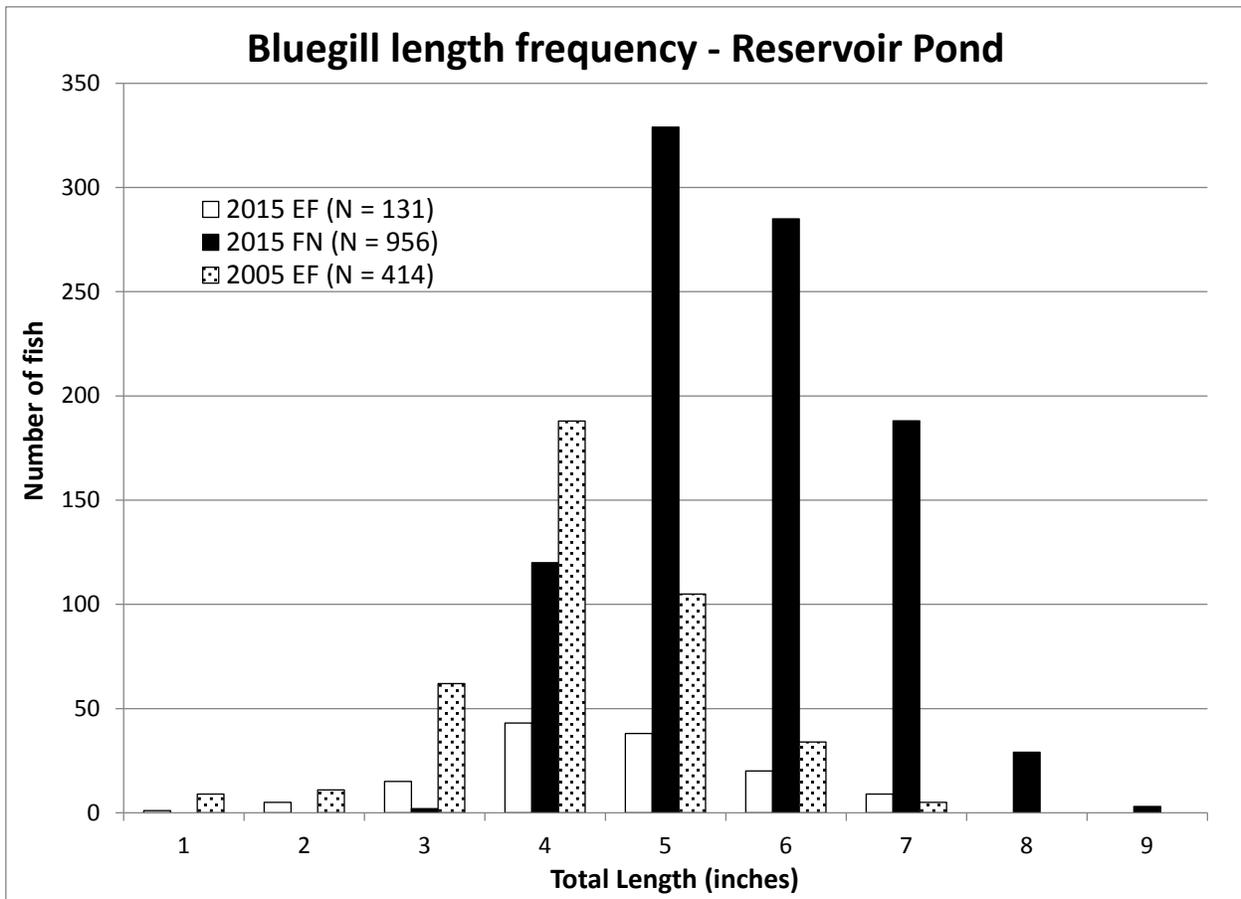


Figure 1. Bluegill length frequency from 2015 fisheries survey at Reservoir Pond; Oconto County, WI.

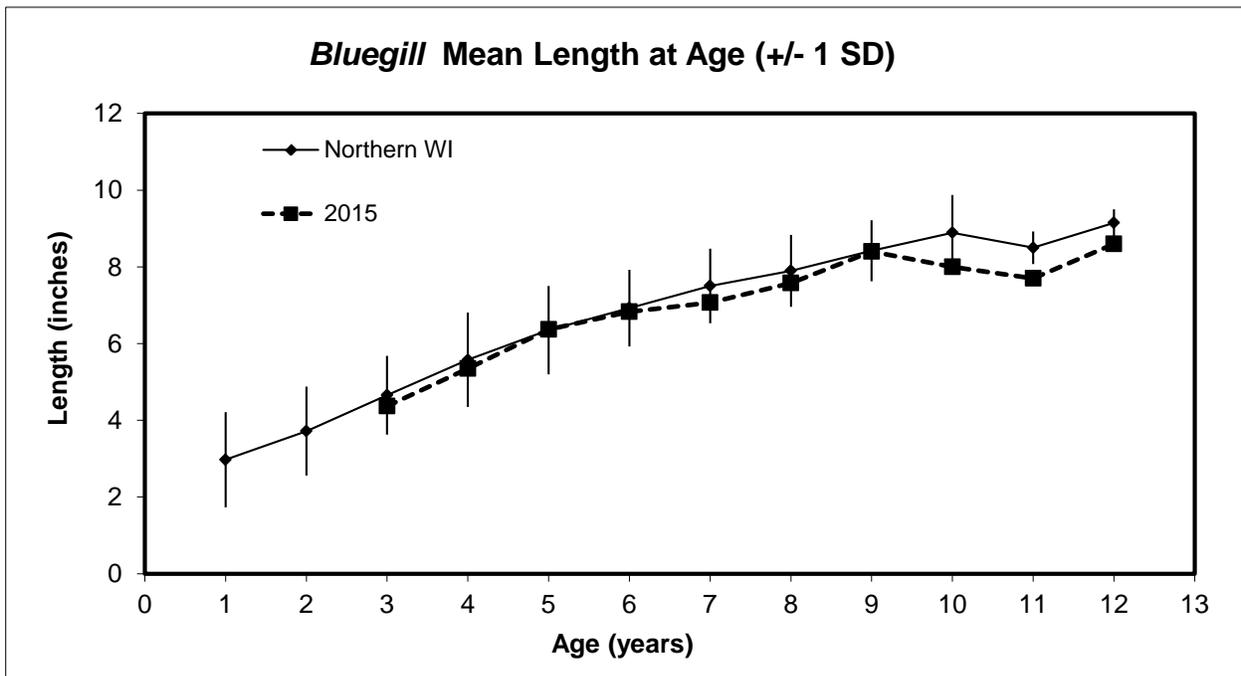


Figure 2. Bluegill mean length at age comparison from Reservoir Pond; Oconto County, WI.

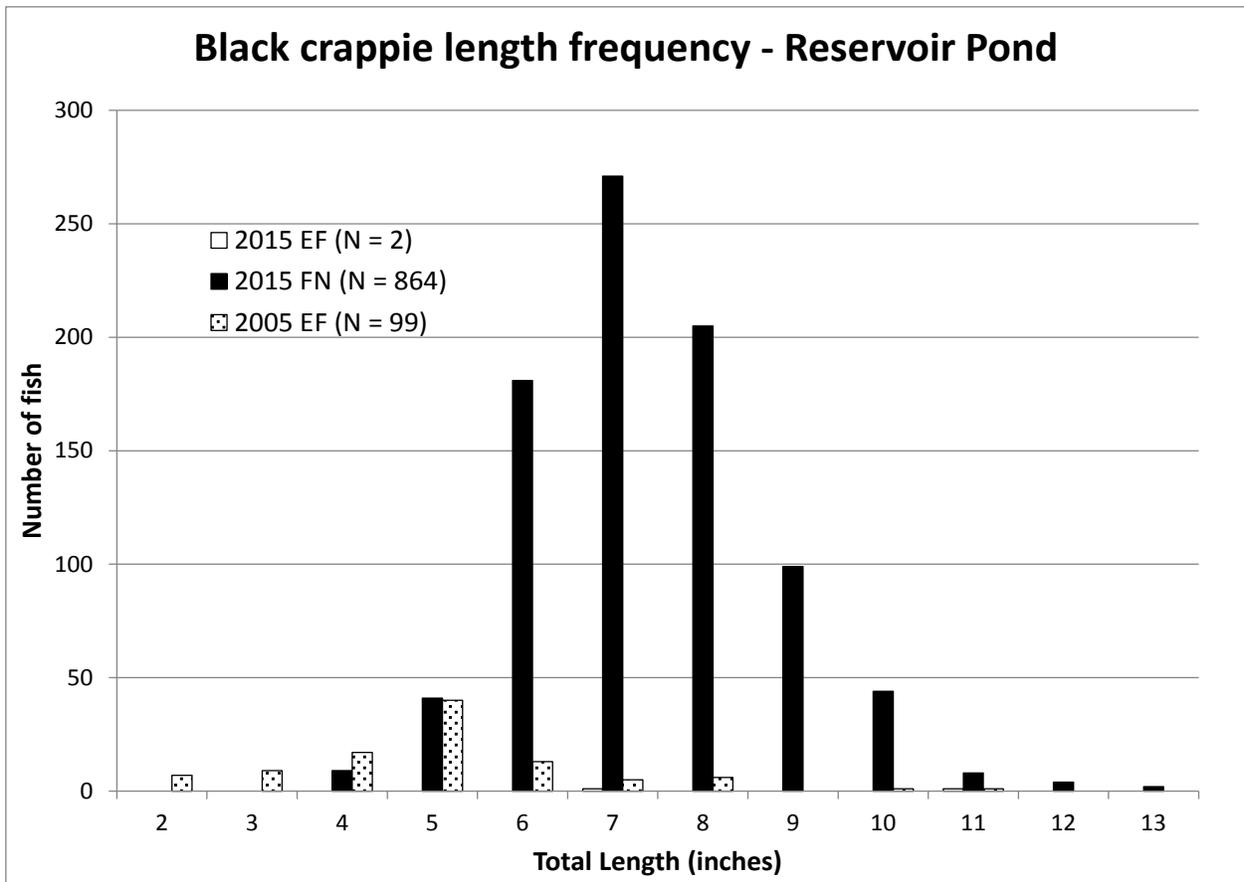


Figure 3. Black crappie length frequency from 2015 fisheries survey at Reservoir Pond; Oconto County, WI.

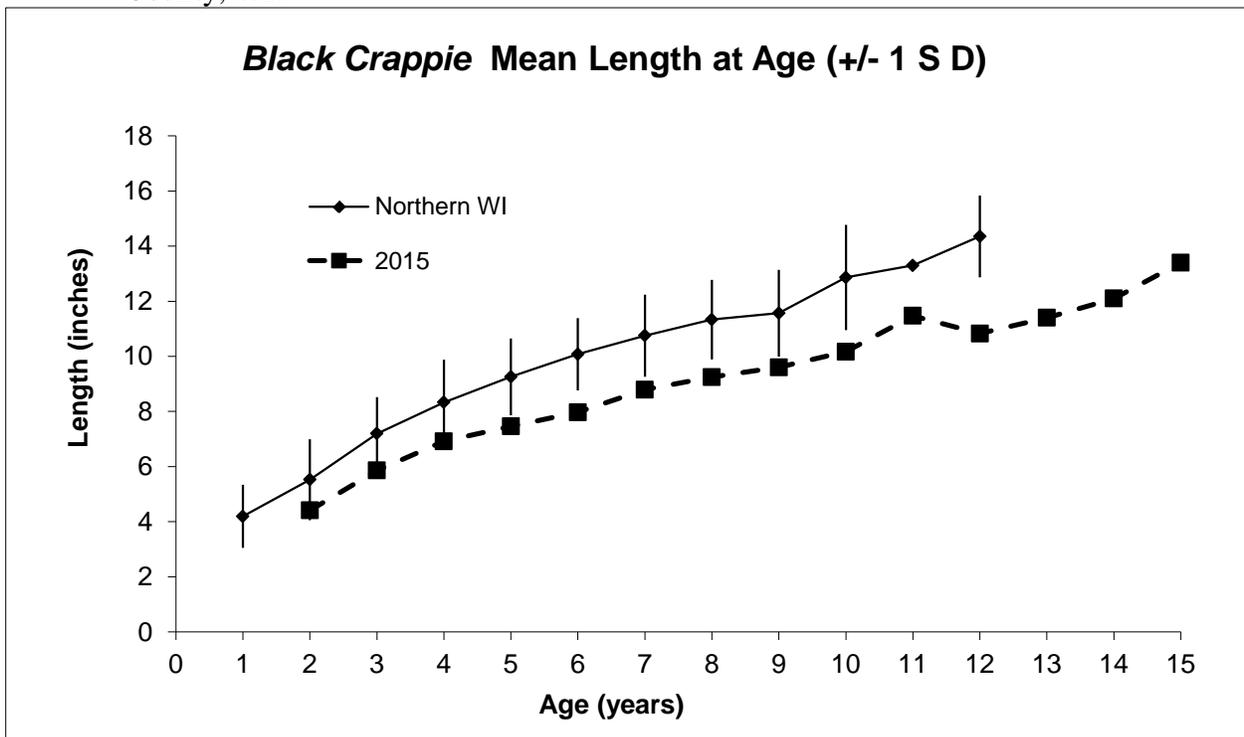


Figure 4. Black crappie mean length at age comparison from Reservoir Pond; Oconto County, WI.

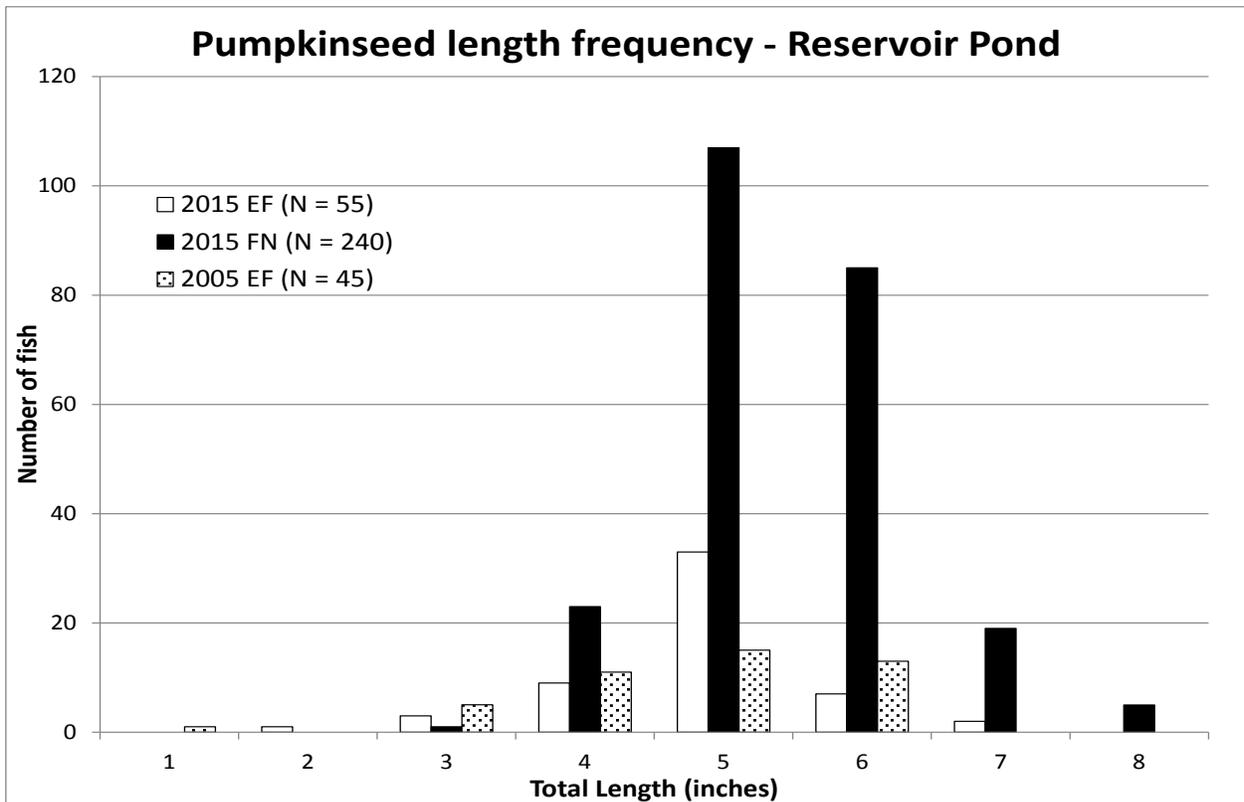


Figure 5. Pumpkinseed length frequency from 2015 fisheries survey at Reservoir Pond; Oconto County, WI.

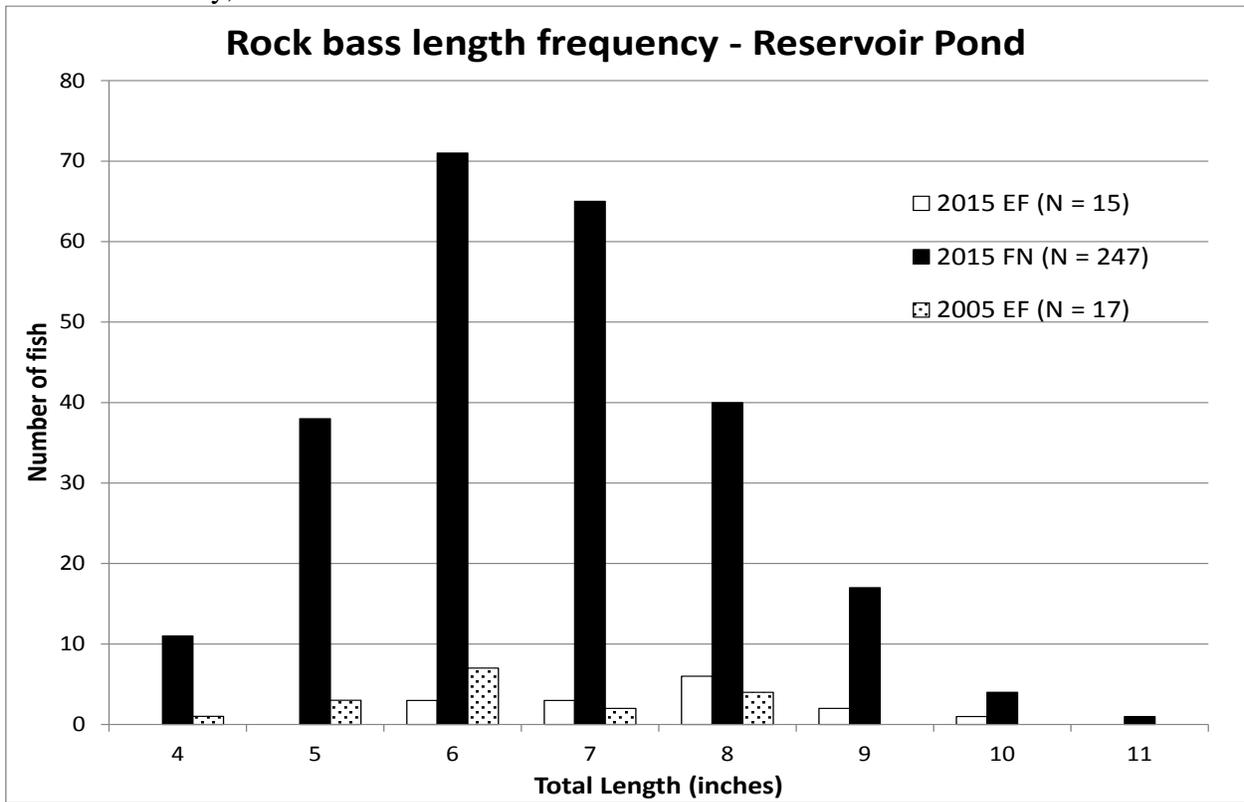


Figure 6. Rock bass length frequency from 2015 fisheries survey at Reservoir Pond; Oconto County, WI.

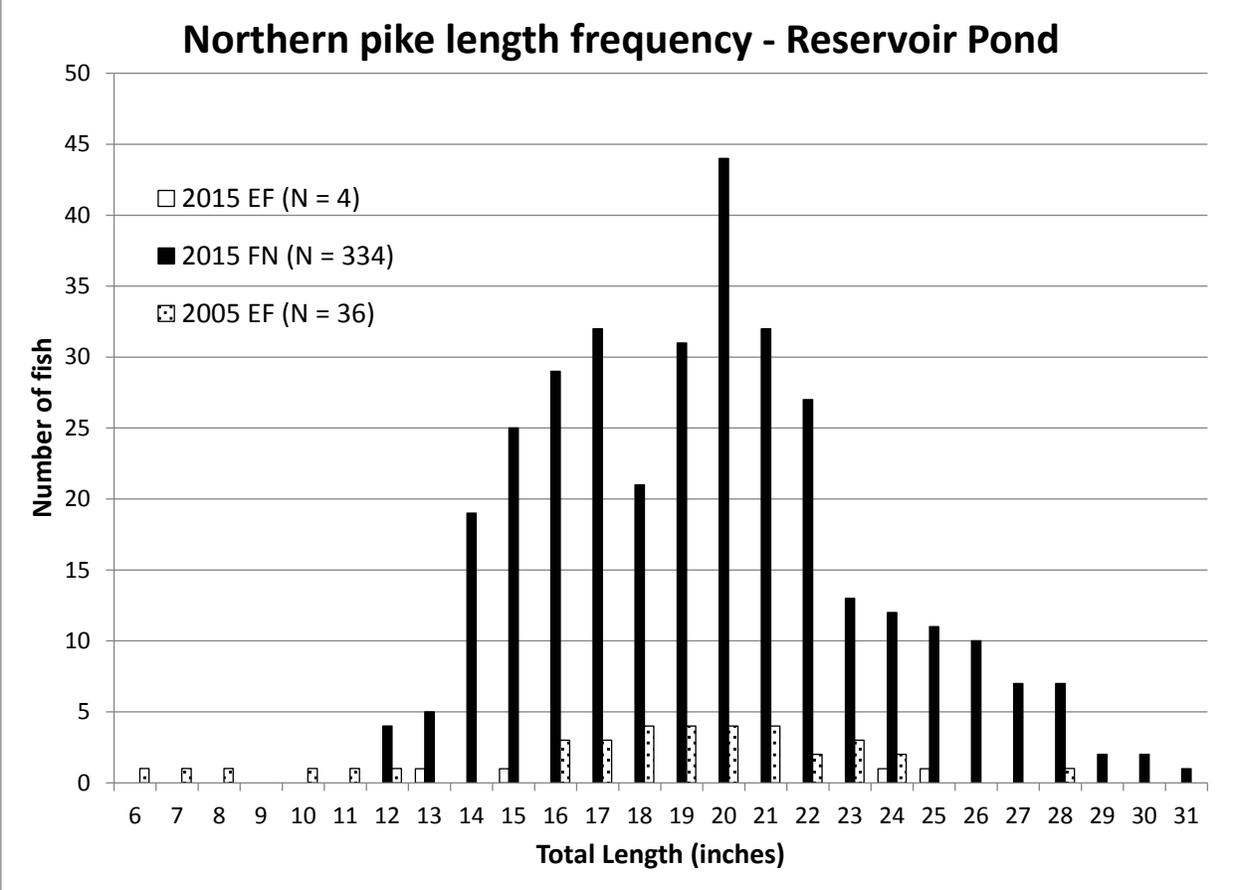


Figure 7. Northern pike length frequency from 2015 fisheries survey at Reservoir Pond; Oconto County, WI.

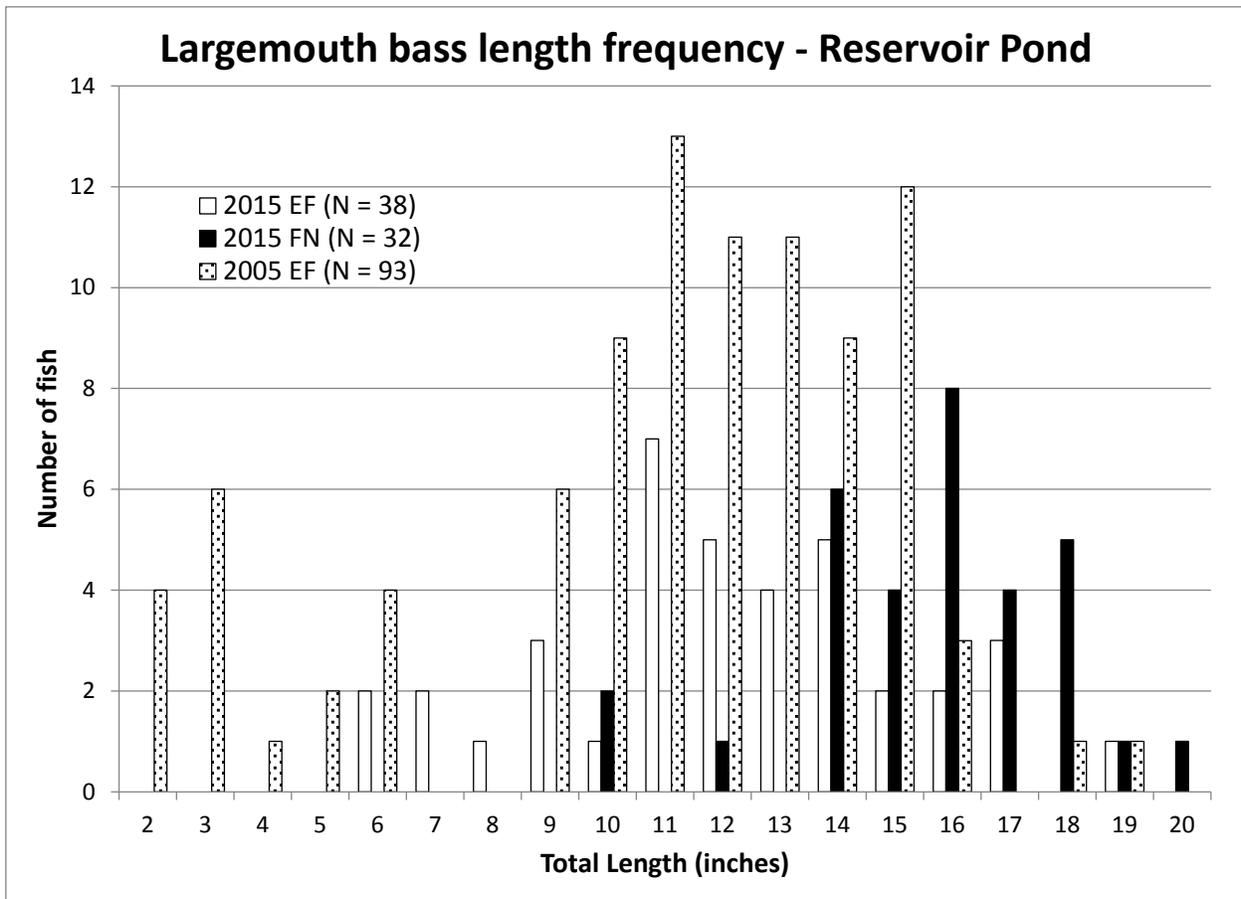


Figure 8. Largemouth bass length frequency from 2015 fisheries survey at Reservoir Pond; Oconto County, WI.

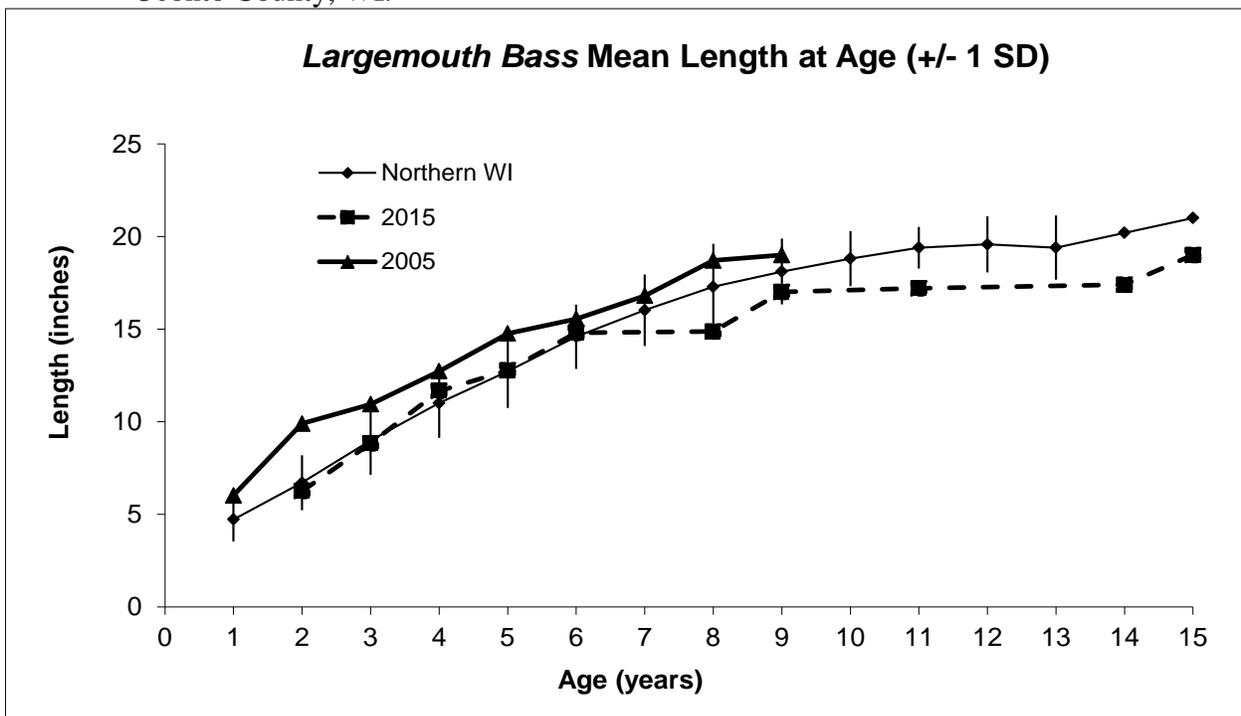


Figure 9. Largemouth bass mean length at age comparison from at Reservoir Pond; Oconto County, WI.

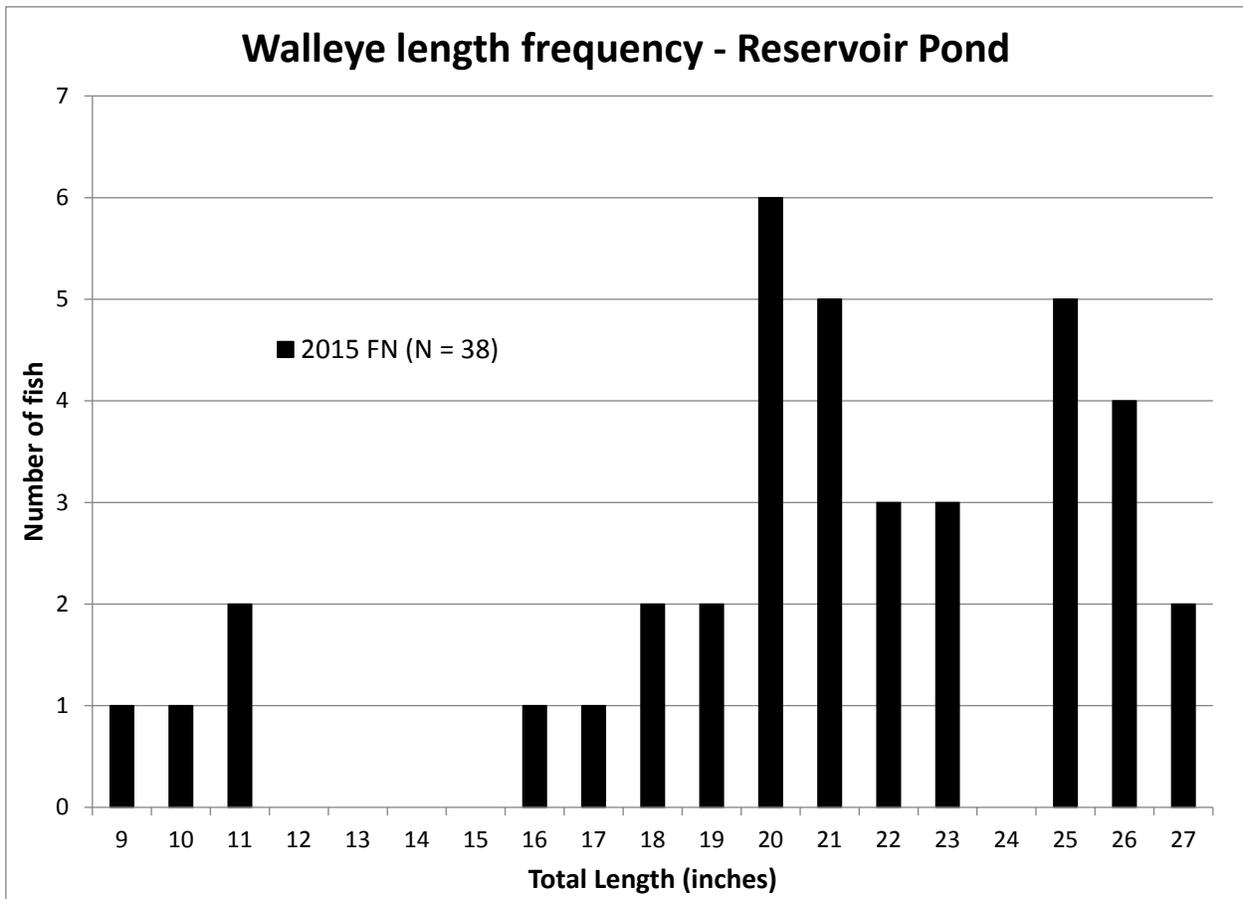


Figure 10. Walleye length frequency from 2015 fisheries survey at Reservoir Pond; Oconto County, WI.

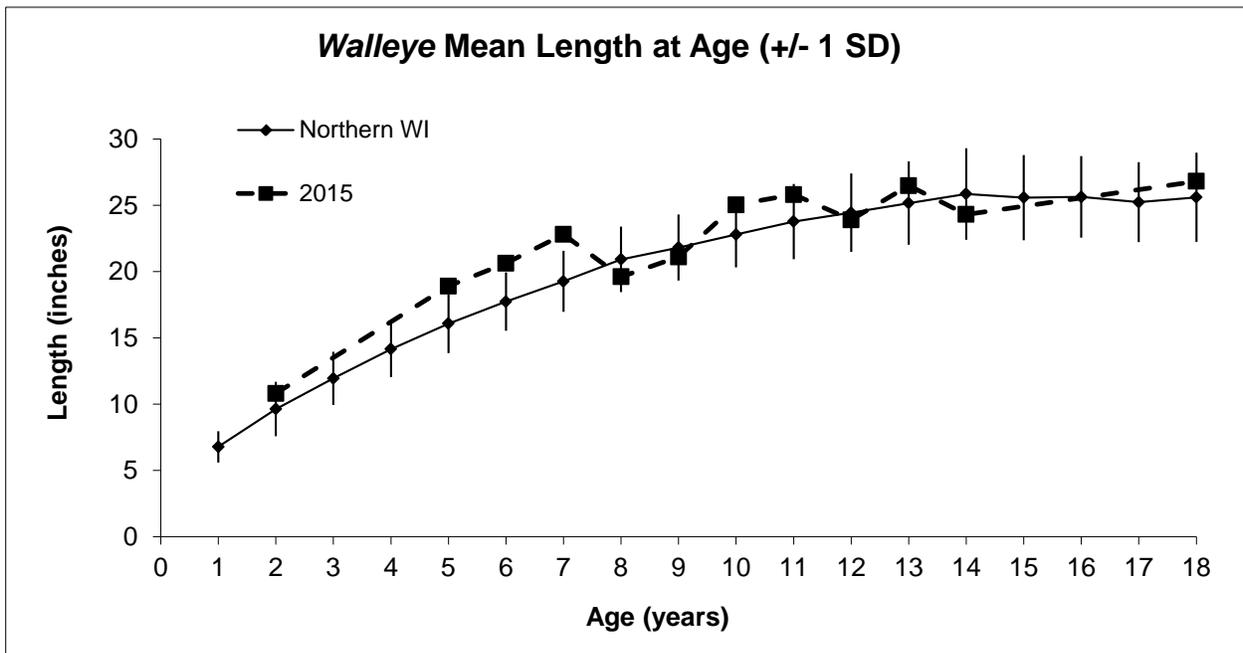
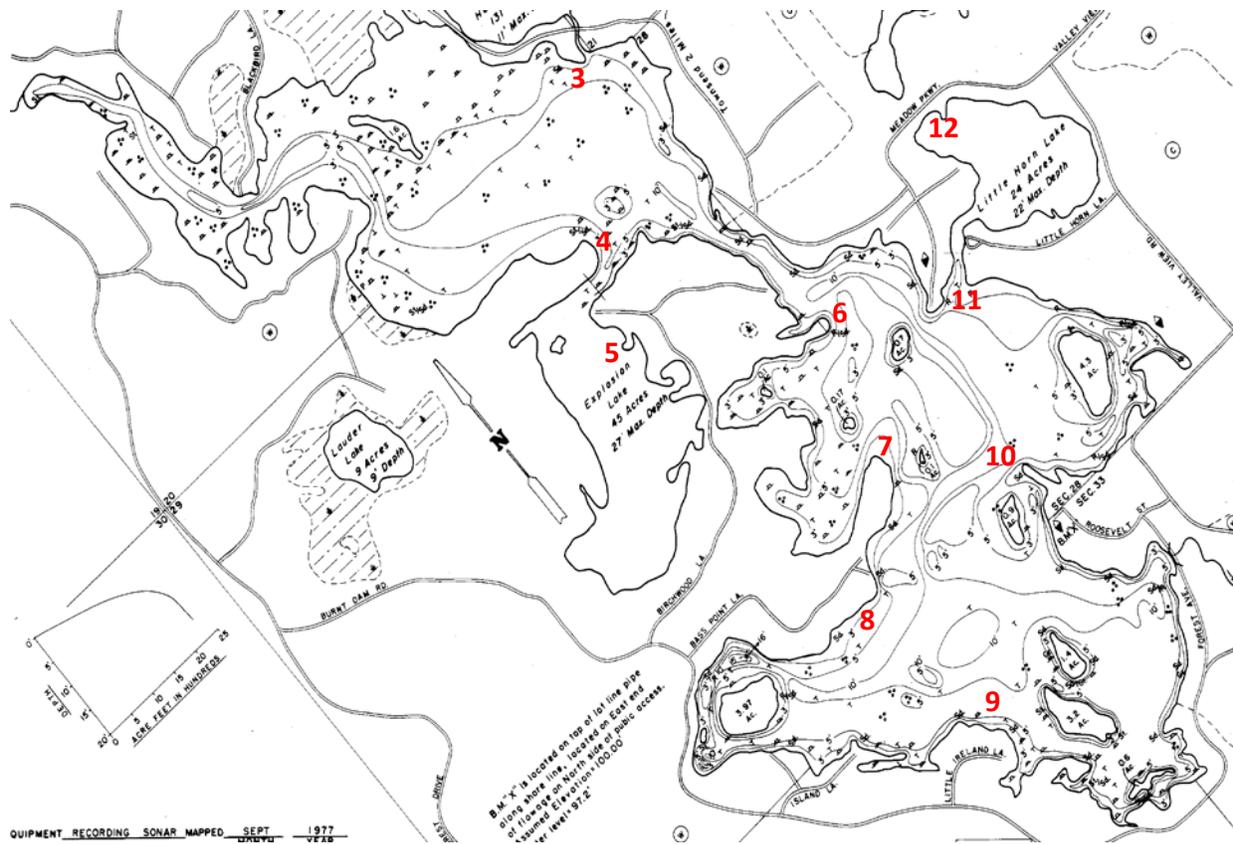


Figure 11. Walleye mean length at age comparison from at Reservoir Pond; Oconto County, WI.

APPENDIX III – SAMPLING LOCATIONS



EQUIPMENT RECORDING SONAR MAPPED SEPT 1977
 DEPT. OF NATURAL RESOURCES

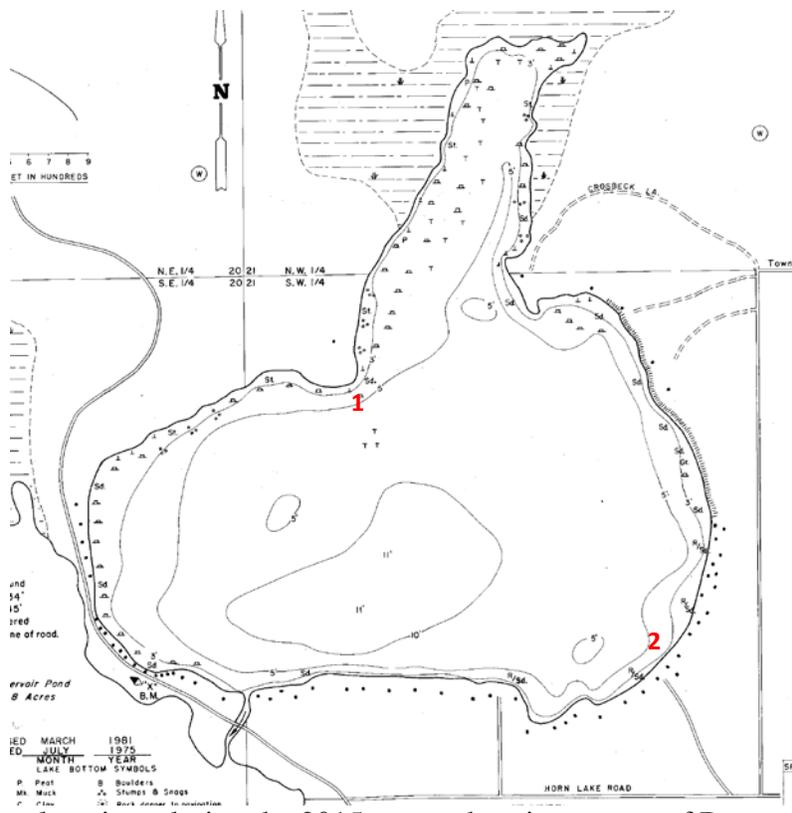


Figure 12. Fyke net locations during the 2015 comprehensive survey of Reservoir Pond; Oconto County, WI.