



Summary of Fishery Surveys Pulaski Lake, Rusk County, 2012-13

WDNR's Fisheries Management Team from Park Falls along with the Treaty Fisheries Assessment Team completed fyke netting and electrofishing surveys to assess the status of important fish populations in Pulaski Lake. Fall 2012 fyke nets targeted crappies and spring 2013 fyke nets targeted walleye and northern pike. A late-spring electrofishing survey documented the abundance and size structure of largemouth bass and bluegill populations. An electrofishing survey was conducted in fall of 2013 to determine if any young walleyes had survived to fall. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society. "Keeper size" is based on known angler behavior.

Survey Effort

On October 6, 2012, WDNR's Fisheries Management Team from Park Falls set 4 fyke nets and fished them overnight for 2 nights in attempt to characterize crappie population status. The water temperature was 53°F.

The Treaty Fisheries Assessment Team set fyke nets to capture and mark (with fin clips) walleyes shortly after ice out. Six fyke nets were set on May 4, 2013 and fished overnight for 3 nights, for a total of 18 net-nights of effort targeting walleye and northern pike. To complete the walleye population estimate, an electrofishing run was made on May 7, 2013 in order to recapture previously marked fish. With water temperatures 40-56°F, netting and shocking occurred throughout the walleye and pike spawning periods.

WDNR's Fisheries Management Team conducted an electrofishing survey on May 29, 2013 when water temperatures were 65-66°F. This was well-timed for purposes of estimating the relative abundance and size structure of largemouth bass and bluegill populations during their spawning activities. Sampling included 2.0 miles of shoreline in 0.87 hour with 1 mile sub-sampled for panfish in 0.47 hour.

On September 23, 2013 The Treaty Fisheries Assessment Team performed an electrofishing survey with the purpose of assessing walleye recruitment for the season. A total of 2.5 miles of shoreline were sampled in 0.80 hour. Only small walleye were collected during this survey.

Habitat Characteristics

Pulaski Lake is a 126 acre seepage lake located about 14 miles south of Bruce, WI in Rusk County. It has a maximum depth of 40 feet and an average depth of 17 feet. The lake's water is moderately clear and the substrate is made up of 80% sand, 10% gravel, and 10% muck. The shoreline vegetation is all upland hardwoods except for the north shore which is shrub swamp and bog. In 1970, 19 log cribs were

installed. In 2003, 30 tree-drop structures were placed along the northern shoreline. Aquatic invasive species include banded mystery snails, Chinese mystery snails, and freshwater jellyfish. Visitors have access to the lake from a public boat landing on the southeast side of the lake.

Summary of Results

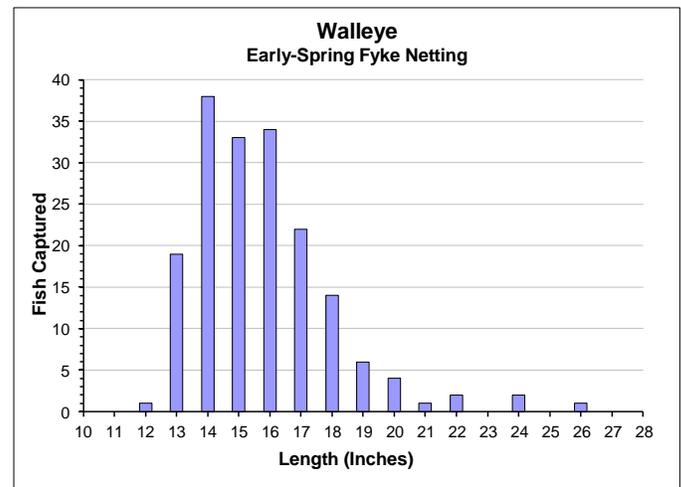
We captured eleven fish species in our netting and electrofishing surveys. Walleye, northern pike, and largemouth bass were the principle predators with bluegill as the principle prey species. Other forage species observed included white suckers and golden shiners. Black crappie and yellow perch were present in very low numbers. Perch were captured at a rate of 1.6 per net-night during spring netting, and crappies were captured at a rate of 0.4 per net-night during fall netting.

Walleye



Early Spring Fyke Nets

Captured 11 per net-night ≥ 10 "	
Quality Size ≥ 15 "	67%
Preferred Size ≥ 20 "	6%
Memorable Size ≥ 25 "	0.6%



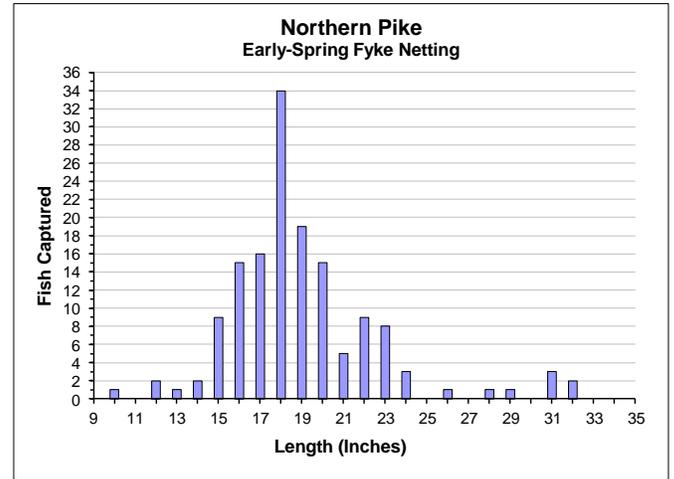
We estimated walleye population density to be 3.1 adults per acre. Size structure was very good, as two-thirds of all adults were of legal size (≥ 15 inches). These predators have exerted effective control over young panfish, allowing a thinned-out population of bluegills to grow to angler-preferred sizes. This walleye population was maintained by natural reproduction for 33 years before stocking resumed in 2003 at a rate of 35 or 50 small fingerlings per acre every other year. However, during the fall 2013 electrofishing survey, we captured no young-of-the-year walleyes, so neither natural reproduction nor survival of stocked fingerlings occurred in 2013. Walleyes frequently coexist with moderate numbers of northern pike, but they rarely coexist for very long with abundant largemouth bass. Our high electrofishing capture rate of largemouth bass 10-11 inches long suggests that survival of young bass was high during the past 3-4 years; and their increased abundance may explain the absence of juvenile walleye in our fall 2013 survey. Natural reproduction or survival of small stocked walleye fingerlings is unlikely to continue if electrofishing capture rates of largemouth bass ≥ 8 inches remains well above 10/mile of shoreline electrofishing.

Northern Pike



Early Spring Fyke Nets

Captured 10 per net-night $\geq 14"$	
Quality Size $\geq 21"$	23%
Preferred Size $\geq 28"$	5%
Memorable Size $\geq 34"$	0%



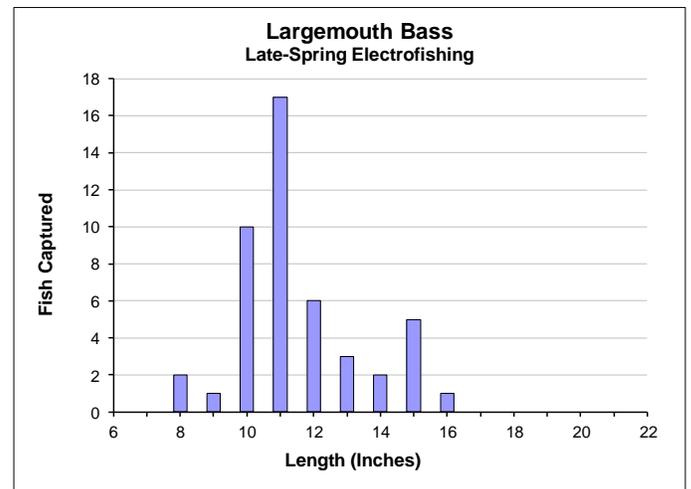
Northern pike were abundant and relatively small in early spring fyke nets. High pike density is further indicated by the near absence of their preferred prey – yellow perch. Without many sizable perch, the growth rate of pike may be slowed, causing fish to stockpile around 18 inches in length. Since previous surveys in 2000 and 1995, the numbers of pike have increased and size structure has declined.

Largemouth Bass



Late Spring Electrofishing

Captured 24 per mile or 54 per hour $\geq 8"$	
Quality Size $\geq 12"$	36%
Preferred Size $\geq 15"$	13%
Memorable Size $\geq 20"$	0%



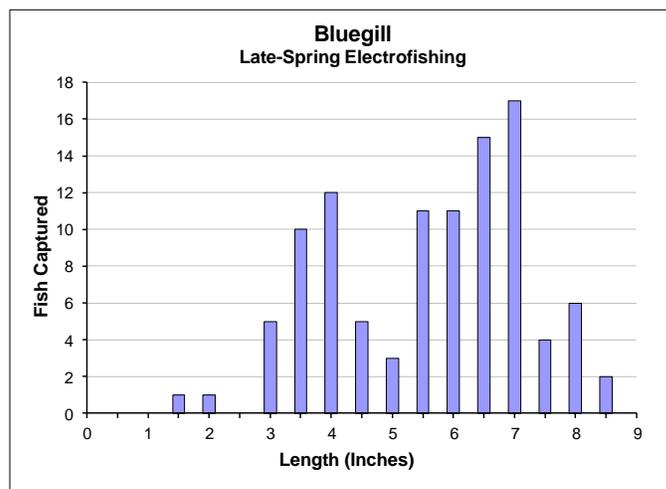
Largemouth bass were captured at a relatively high rate by late spring electrofishing, indicating moderately high abundance and poor size structure. The majority of bass captured were 10 to 12 inches long, which typically are 3 to 5 years old; so high bass abundance may be a relatively recent development in Pulaski Lake. We would need to age some largemouth bass in order to confirm these fears, but increased abundance of largemouth bass does not bode well for continued recruitment of walleyes. Smallmouth bass do not compete well with largemouth bass and were captured at a very low rate of 1 per mile during our late spring electrofishing survey.

Bluegill



Late Spring Electrofishing

Captured 101 per mile or 215 per hour ≥ 3 "	
Quality Size ≥ 6 "	54%
Keeper Size ≥ 7 "	29%
Preferred Size ≥ 8 "	8%



Bluegill captured by late-spring electrofishing indicated a moderate abundance with good size structure. Very few public lakes in Rusk and surrounding counties support bluegill populations in which more than 5% of fish exceed 8 inches; and 29% of bluegills captured were of “keeper size” 7 inches and longer. Continued predation by a walleye population maintained at high density will be necessary to keep Pulaski Lake bluegills growing fast enough to achieve angler-preferred sizes.

Survey Data Collected and Analyzed By: WDNR Fisheries Management Team at Park Falls
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