



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Fishery Survey Summary

Wellington Lake

Taylor County, Wisconsin, 2022

Introduction

The Wisconsin Department of Natural Resources' (DNR) Fisheries Management Team from Park Falls completed netting and electrofishing surveys in 2022 to assess the abundance, size structure and reproductive success of important sportfish populations in Wellington Lake. The estimate of adult Walleye population density derived from the early spring surveys also helped us evaluate the survival and growth of Walleye raised in local ponds and stocked into Wellington Lake under a Cooperative Fish Rearing Agreement between DNR and the Rib Lake Area Fish & Game Association. An electrofishing survey in late spring characterized the status of Largemouth Bass and Bluegill, and fall electrofishing measured natural Walleye recruitment. Stock, 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 the team's description for Black Crappie and Yellow Perch 9 inches or longer and Bluegill at least 7 inches long, based on observed angler behavior.

HABITAT AND PUBLIC ACCESS CHARACTERISTICS

Located about 2 miles southwest of Rib Lake, Wisconsin, Wellington Lake is a soft water, seepage lake that drains intermittently to Silvernagle Creek. Its surface area is 43 acres, and its maximum depth is 41 feet. Near-shore bottom materials are roughly comprised of 10% rock, 25% gravel, 20% sand and 45% muck. Wellington Lake is classified among lakes that have a simple fish community, dark water and a cool thermal regime. Half the shoreline is hardwood-grass upland lightly developed with a few dwellings, agricultural fields and a roadside park maintained by Taylor County. The remaining shoreland is predominantly conifer-shrub swamp and leatherleaf bog. In 2008, the Taylor County Sportsman's Club installed 31 fish cribs in three deep-water clusters. The municipal park offers a gravel boat ramp, a swimming beach, parking, vault toilets and a pavilion with picnic tables and grills.

SURVEY EFFORT

Shortly after the ice thawed when water temperature ranged from 40 to 43°F, we captured, marked and released spawning Walleye in 16 net-nights of fyke netting effort from April 26-30, 2022. We also measured or counted all fish species encountered in that netting effort. On May 1, 2022, we targeted mature Walleye again by nighttime electrofishing along the entire shoreline. We sampled 1.28 shoreline miles in 0.68 hours of electrofishing effort when the water temperature was 44°F. The proportion of marked Walleye in our electrofishing survey allowed us to estimate adult Walleye density.

With water temperature between 65 and 67°F, our June 2, 2022 electrofishing survey coincided with the early spawning and nest-building activities of Largemouth Bass and Bluegill. We collected gamefish species along Wellington Lake's entire shoreline, sampling 1.27 miles in 0.67 hours and subsampling all fish species for a half mile in 0.30 hours.

Our September 21, 2022 electrofishing survey targeted young Walleye, but we collected all gamefish along the entire lake perimeter, sampling 1.26 miles in 0.68 hours when the water temperature was 66°F.

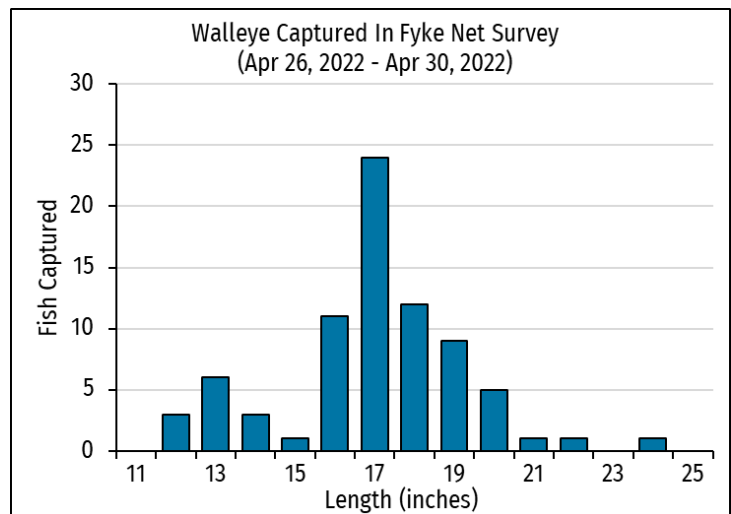
Results and Discussion

FISH COMMUNITY

Though these surveys were not designed to characterize the entire fish community, our combined netting and electrofishing efforts in spring and fall 2022 captured eight fish species that included all seven collected by those methods in spring 2011. It appears that Walleye and Northern Pike have overtaken Largemouth Bass as the predominant predators in the fish community, and Bluegill and Yellow Perch are the primary panfish populations. Pumpkinseeds were conspicuously absent from the electronic records of all fishery surveys completed in Wellington Lake from 1962 through 2022.

WALLEYE

Early spring fyke netting captured 125 Walleyes at a rate of 7.8 fish \geq 10 inches per net-night. That catch rate far exceeded the 75th percentile value among lakes in the simple-cool-dark category. Those Walleye captured just once in nets ranged between 12.0 and 24.2 inches and averaged 17.4 inches long. Early spring electrofishing captured 15 Walleyes, including 11 that we marked and released in our netting survey. Electrofishing catch rates were 12 Walleyes \geq 10 inches per mile or 22 per hour. Those four Walleyes not handled before ranged from 17.5 to 21.9 inches and averaged 19.6 inches. From these netting and electrofishing samples, we estimated that Wellington Lake’s Walleye population had 108 adults or 2.5 adults per acre. Walleye density in Wellington Lake was above the average value of 1.8 adults per acre in populations maintained primarily by stocking in Wisconsin’s Ceded Territory. The ratio of males to females in our early spring samples was 1.4.



Local stakeholders’ annual fundraising, fish rearing and stocking efforts from 2008 to 2022 resulted in a total of 3,870 Walleyes released into Wellington Lake under a Cooperative Fish Rearing Agreement between the DNR and the Rib Lake Area Fish & Game Association. In early summer, the DNR delivers about 15,000 Walleyes as small fingerlings between 1.5 and 2 inches long to two small ponds where, over the next 3½ months, cooperators feed and grow them to 6- to 7-inch large fingerlings. In early October, volunteers from several conservation groups join to harvest and distribute 5,000 – 7,000 large fingerlings to 15 authorized lakes in Price and Taylor counties, where Walleye help to control panfish abundance and offer “bonus” angling opportunities. Though stocking is the main source of new recruits to Wellington Lake’s Walleye population, the two natural fingerlings captured

in our fall electrofishing survey indicate a modest contribution from in-lake production in 2022. We suspect that the five age-1 Walleyes from 7.0 to 8.2 inches long that we captured in fall 2022 at electrofishing rates of 3.9 yearlings per mile and 8.3 yearlings per hour represent the contributing survivors of 400 fingerlings stocked in fall 2021.

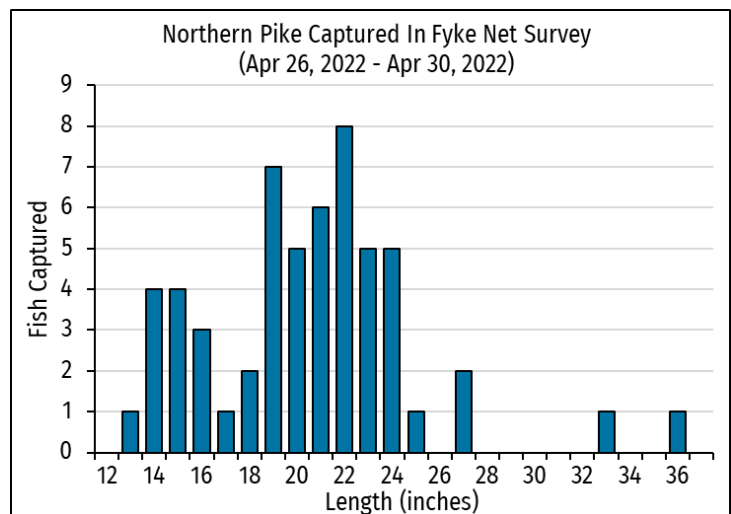
Walleyes grew fast in Wellington Lake. Ring counts on sectioned dorsal spines revealed that, on average, males grew to 13.4 inches in three years (range 12.4-14.4; n=9), 14.7 inches in four years (range 13.8-16.1; n=4), 17.1 inches in five years (range 16.1-18.3; n=12) and 17.9 inches in six years (range 16.7-19.6; n=15). Female Walleye reached 17.7 inches in five years (range 16.7-19.2; n=12) and 19.1 inches in six years (range 18.0-20.2; n=10). We found no mature females less than four years old. In a pooled sample of males, females and Walleye whose gender was unknown, growth outpaced the regional average by 1.6 to 2.4 inches at ages 3 through 9.

This faster-than-average growth rate enables the population to produce higher-than-average proportions of large fish. With 84% of Walleye in fyke nets at least 15 inches and 10% at least 20 inches long, the population's size distribution should meet the expectations of most anglers, including those who want to keep a meal. Seventy-four percent of Walleye in fyke nets were legal-size fish between 15 and 19.9 inches long, and one legal-size Walleye was over 24 inches. A daily bag limit of three Walleyes from 15 inches but less than 20 inches long may be kept, except one of the three may be over 24 inches.

NORTHERN PIKE

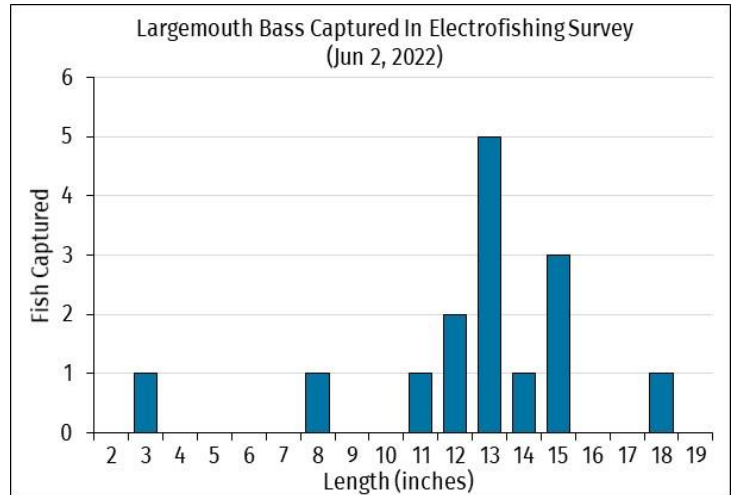
Early spring fyke nets set for spawning Walleye incidentally captured 126 Northern Pike at a rate of 7.9 pike per net-night. That catch rate ranked above the 95th percentile value for Northern Pike in cool, dark lakes with simple fish communities. The 56 pike captured just once ranged from 13.1 to 36.4 inches and averaged 21.0 inches long. Fifty-three percent were quality-size fish \geq 21 inches long. Two pike (3.6%) attained preferred size \geq 28 inches, and one achieved memorable size \geq 34 inches. Using the Schnabel calculation and pooling all

sexes and sizes, we estimated that the Northern Pike population density was 1.3 adults per acre (n= 58; CI_{95%} = 42-93), based on the ratio of fin-clipped to newly captured fish in four successive fyke net lifts. Anglers may keep a daily bag limit of five Northern Pike of any size.



LARGEMOUTH BASS

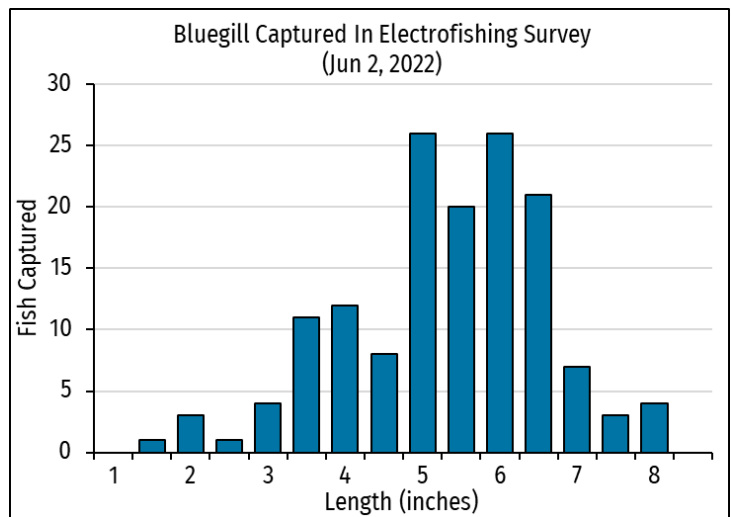
In our late-spring electrofishing survey, we captured 15 Largemouth Bass ranging from 3.5 to 18.1 inches and averaging 12.9 inches long. Our catch rates of 11 bass \geq 8 inches per mile or 21 per hour suggest that population abundance has decreased substantially since 2011, when late-spring electrofishing captured 45 bass per mile and 84 per hour. Grouping Largemouth Bass of all sizes, the electrofishing capture rate of 11 bass per mile in Wellington Lake in the spring of 2022 matched the 25th percentile rank among lakes classified as having a “simple” fish community, a “cool” thermal regime and “dark” water. By comparison, bass catch rates in electrofishing surveys completed in spring 2011 ranked above the simple-cool-dark category’s 95th percentile.



With decreased abundance, the size structure of Wellington Lake’s Largemouth Bass population has improved. The average length increased only one-tenth of an inch from our last survey eleven years ago. However, the proportions of quality-size bass \geq 12 inches, legal-size bass \geq 14 inches and preferred-size bass \geq 15 inches rose from 79%, 6% and 2% in 2011 to 86%, 36% and 29% in 2022. Wellington Lake lies with the Northern Bass Management Zone where anglers may keep Largemouth Bass from the first Saturday in May through the first Sunday in March. Smallmouth Bass may be kept from the third Saturday in June through the first Sunday in March. A daily bag limit of five Largemouth Bass or Smallmouth Bass in any combination may be kept, but they must be at least 14 inches long.

BLUEGILL

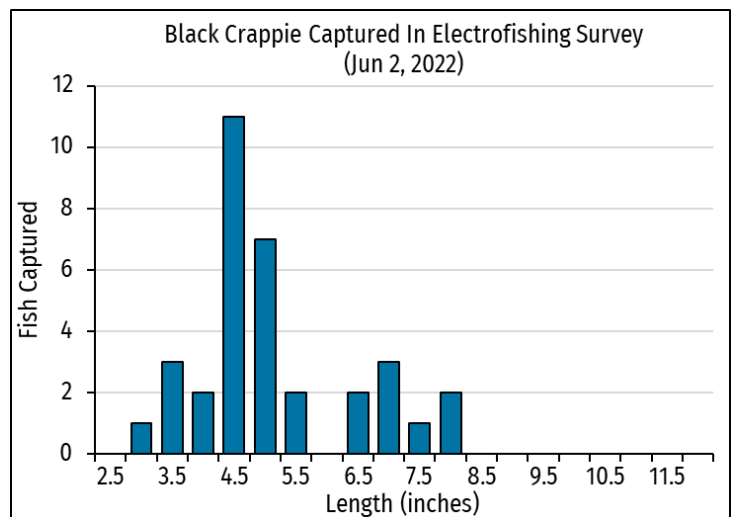
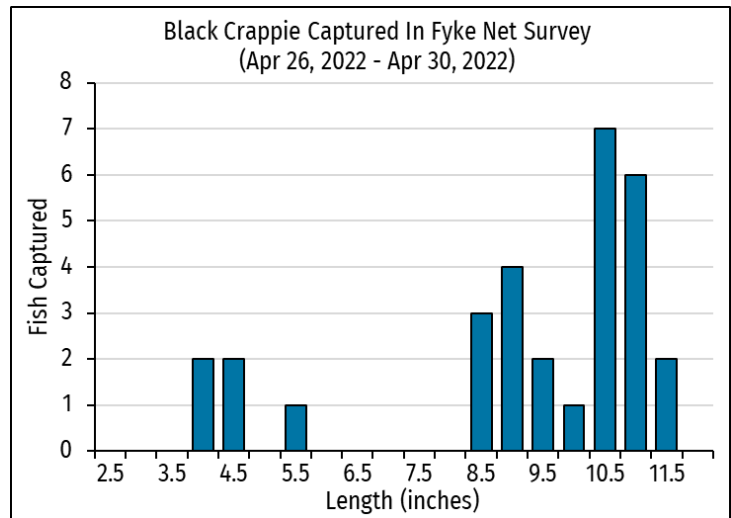
Electrofishing along a half mile of Wellington Lake’s shoreline produced a robust sample of 147 Bluegills that ranged from 1.8 to 8.4 inches and averaged 5.5 inches long. Electrofishing catch rates of 284 Bluegills \geq 3 inches per mile and 473 per hour indicate moderately high population abundance. Despite added predatory pressure from stocked Walleye, Bluegill abundance has increased nearly fourfold since our last measures. Pooling all sizes, the capture rate of 294 Bluegills per mile in the spring of 2022 ranked above the 95th percentile among simple-cool-dark lakes. By comparison, in spring 2011, the electrofishing catch rate of 77 Bluegills per mile in Wellington Lake was below the median value for that lake class.



The increase in Bluegill numbers has resulted in lower shares of quality-size fish ≥ 6 inches, keeper-size fish ≥ 7 inches and preferred-size fish ≥ 8 inches. Proportions of the population in these size groups have decreased from 80%, 28% and 13% in 2011 to 43%, 10% and 2.8% in 2022. The average Bluegill length has also decreased by an inch in that period. We do not know why Bluegill numbers have increased, and Bluegill size has decreased so much in Wellington Lake. Perhaps in this system, the indigenous Largemouth Bass population was more effective than the introduced Walleye population in curbing panfish abundance by predation. Typically, we find the opposite case to be true in northern Wisconsin lakes.

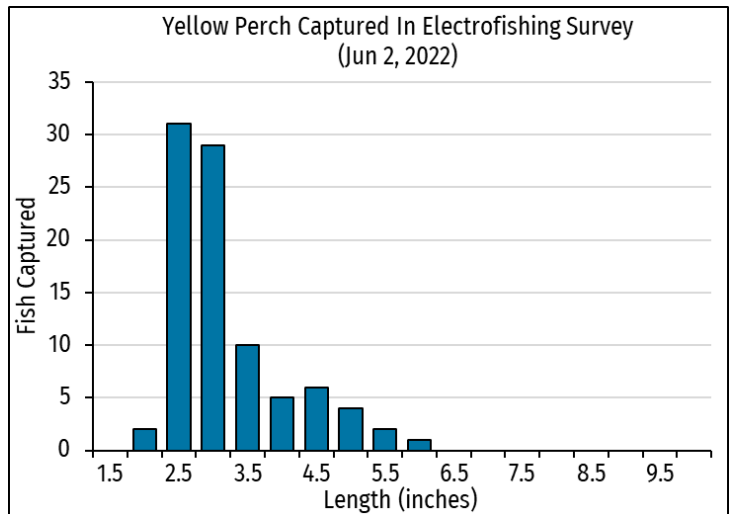
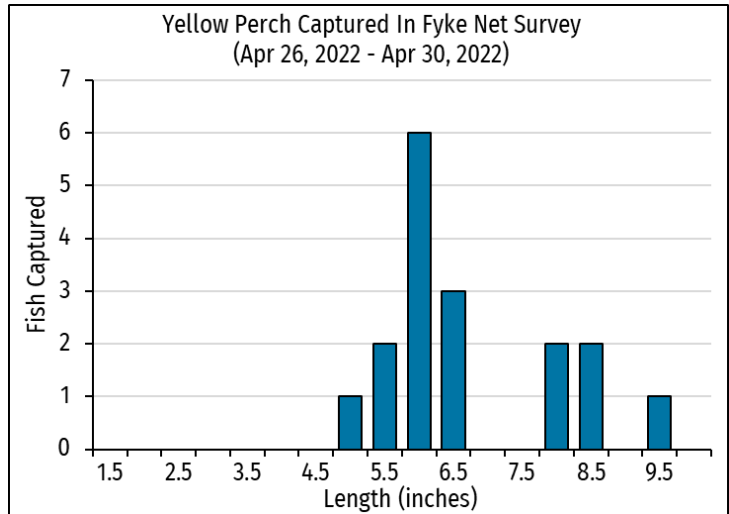
BLACK CRAPPIE

Fyke netting captured 31 Black Crappies ranging from 4.0 to 11.9 and averaging 9.4 inches long. The catch rate of 1.7 crappies per net-night points to a moderately low population abundance. Crappies in the fyke net sample had a favorable size distribution that should satisfy anglers looking for a meal. Nearly 85% of crappies ≥ 5 inches were keeper-size fish at least 9 inches long, and 62% attained the preferred size of 10 inches or longer. Our late-spring electrofishing sample included 34 mostly smaller, younger crappies that ranged from 3.4 to 8.3 inches and averaged 5.3 inches long. Catch rates for all sizes were 68 crappies per mile and 113 per hour, but those rates were halved when we excluded the fish less than 5 inches long, which are not fully recruited into the population. Only 12% of crappies ≥ 5 inches captured by electrofishing were between 8.0 and 8.4 inches, and none grew longer. Together, our netting and electrofishing samples portray a self-sustaining crappie population comprised of several year classes that should offer good fishing as the younger fish grow to catchable size in the next several years.



YELLOW PERCH

Our fyke netting survey yielded a small sample of 17 Yellow Perch ranging from 5.3 to 9.9 and averaging 7.0 inches long at a catch rate of 1.1 perch \geq 5 inches per net-night. Twenty-nine percent of the perch in fyke nets were \geq 8 inches, and 6% were keeper-size fish 9 inches or longer. Electrofishing captured 90 perch between 2.3 and 6.2 inches long at rates of 180 perch per mile and 300 per hour. Most were small, so catch rates of stock-size perch \geq 5 inches were much lower at 14 per mile and 23 per hour. The combined samples include perch in a broad range of sizes and ages that serve as one of the favorite foods of Walleye, Northern Pike, Largemouth Bass and anglers, who often compete against these predators to eat the largest perch as an efficient ration.



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