WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Fishery Survey Summary
Camp Eight Flowage
Taylor County, Wisconsin, 2022

Introduction

The Wisconsin Department of Natural Resources' (DNR) Fisheries Management Team from Park Falls completed an impromptu electrofishing survey in the fall of 2022 to characterize the fish community in Camp Eight Flowage in advance of a reservoir drawdown to facilitate dam renovation in 2023. The results helped inform management decisions on potential enhancements to fish habitat and fishing access or fish stocking to mitigate unavoidable project impacts. 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

Camp Eight Flowage is a 13-acre impoundment on an unnamed tributary to Wood Creek, located about 7 miles east of Rib Lake, Wisconsin. The dam was built in 1968, and the reservoir was filled in 1969. The flowage is entirely surrounded by public land managed for timber production and outdoor recreation by the Taylor County Forestry and Recreation Department. A dense band of wild rice grew 30 feet lakeward along the shallow west shore. The lakebed sloped steeply on the east shore to a measured depth of 24 feet, where submerged woody structure recruits naturally into the lake from the upland hardwood forest. Taylor County maintains the dam, a public boat access, a campground on the west shore and a system of motorized trails on the property. The mowed grass and open canopy near the dam provide undeveloped shorefishing access.

SURVEY EFFORT

Anticipating that Largemouth Bass and Bluegill were the predominant fish species in this impoundment, our electrofishing survey in the fall served as a surrogate for the late spring electrofishing protocol we typically use to assess their population status. On the night of September 7, 2022, when the water temperature ranged from 72 to 76° F, we dip-netted all fish species along Camp Eight Flowage's entire shoreline, sampling 0.79 miles in 0.45 hours. As far as we know, this survey was the first quantitative fishery assessment in Camp Eight Flowage.

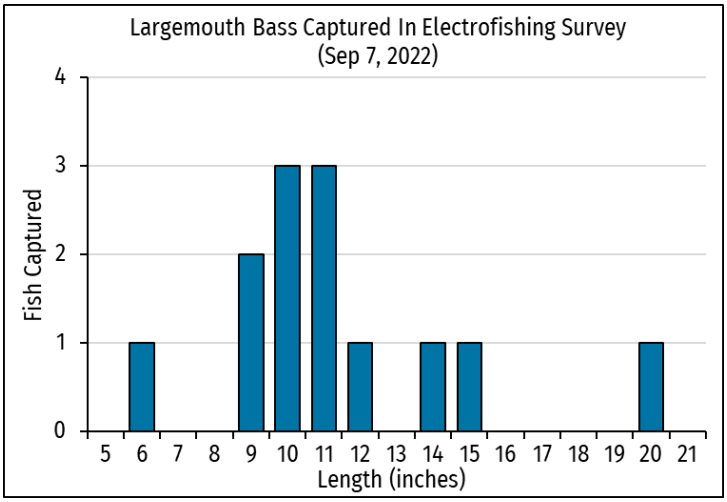
Results and Discussion

FISH COMMUNITY

Electrofishing captured Black Crappies, Bluegills, Largemouth Bass and White Suckers, mostly along the east shore. We saw few fish on the deep side of the wild rice that fringes the west shore. These four species represented the simple fish community composition we

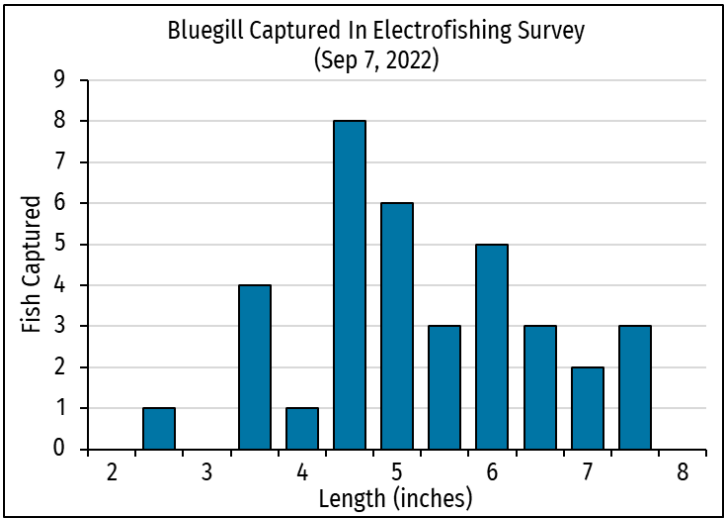
expected to find in this third-order tributary to a Class 2 trout stream. Pumpkinseeds and Yellow Perch were expected but absent in our sample. Each year since 1981, the DNR has stocked Rainbow Trout as 9-inch yearlings in spring and as adult broodstock ranging from 11.1 to 21.4 inches and averaging 14.7 inches long in the fall. Yearling and adult Brook Trout were also stocked into Camp Eight Flowage almost annually from 1981 to 2009. Trout stocking in Camp Eight Flowage provides one of two put-and-take trout fishing opportunities in lakes within a 20-mile radius of Medford, Wisconsin. We encountered no trout in our survey, though we did not expect trout would be vulnerable to capture by electrofishing near shore if they occupy the deeper, cooler parts of the flowage. A gillnetting survey near the dam in late summer or early fall could be used to evaluate the seasonal and year-to-year survival of the stocked trout.

LARGEMOUTH BASS



We captured 13 Largemouth Bass ranging from 6.0 to 20.9 inches and averaging 11.8 inches long. If electrofishing catch rates in spring and fall are equally useful to represent the relative abundance of the Largemouth Bass population, then our catch rates of 15 bass ≥ 8 inches per mile or 27 per hour point to the moderately low density that is needed to keep bass growing at a satisfactory rate to legal size ≥ 14 inches, preferred size at least 15 inches and memorable size 20 inches or longer. Our small sample included bass in a broad range of ages and sizes, confirming that natural reproduction provides a reliable source of new recruits to replace the adults that die due to angling and natural causes.

BLUEGILL



Electrofishing in early September captured 36 Bluegills ranging from 2.8 to 7.8 inches at rates of 44 Bluegills ≥ 3 inches per mile and 78 per hour. Those electrofishing catch rates would indicate moderately low population abundance if our survey had occurred in late spring. In our small sample, 37% of Bluegills ≥ 3 inches were quality-size fish 6 inches or longer, 14% were keeper size at least 7 inches long, but none attained preferred size ≥ 8 inches. We expected to find higher proportions of large fish when Bluegill numbers are low. Perhaps the

small sample size did not properly represent the population's size distribution, or maybe fall electrofishing catch rates did not properly characterize Bluegill abundance.

PROTECTION, MITIGATION AND ENHANCEMENT MEASURES

Drawing down the reservoir volume slowly and gradually should prompt fish to swim upstream, like minnows do when you slowly drain a bait bucket. This adaptive response to changing reservoir levels and discharge should help to minimize escapement and permanent displacement of fish to the lotic habitat downstream from the dam. Largemouth Bass, Bluegill and other fish will likely find and occupy satisfactory habitats in the stream channel upstream from the dam renovation site. The instream habitat there may not offer optimal conditions for all species and life stages, so some population losses are inevitable. Nonetheless, we expect enough individuals will survive the short project duration to recolonize and eventually repopulate the reservoir as it refills.

Options to hasten the recovery of sportfish populations by fish stocking are limited. The DNR's fish hatcheries no longer produce Largemouth Bass, and panfish are currently not available from the state's fish propagation system. Opportunities for restoring the appropriate genetic strains include requesting and obtaining DNR approval to purchase and stock Largemouth Bass and Bluegill from a private fish farm. The DNR's fishery staff may also capture and transfer panfish within a Genetic Management Unit if the source and destination waters are hydrologically connected. Panfish are prolific, and stocking is typically unnecessary, except in restorations. Panfish transfers following complete reservoir drawdown and other planned events that depopulate the fishery hold the highest restoration priority in the DNR's revised fish stocking guidance. The abundant Bluegill population in Stone Lake could serve as a genetically appropriate and convenient source for transfer to Camp Eight Flowage. Stone Lake is located in southeastern Price County, about 11 miles by road from Camp Eight Flowage. Both waters lie within the Upper Wisconsin Genetic Management Unit (Level 2).

The reservoir drawdown scheduled for dam reconstruction also offers a rare occasion to install woody material on the exposed lakebed to increase fish habitat and biotic productivity in the shallow nearshore zone of the reservoir after refill. "Tree-drop" structures are whole trees placed individually and anchored to shore at least 50 feet apart. "Fish sticks" structures are whole trees or partial trees connected together and placed in clusters just offshore. The submerged woody structure has many essential ecological functions as an external source of carbon energy, as substrate for invertebrates and adhesive eggs, as ambush cover for predators and as hiding cover for prey. In controlled evaluations, both tree-drops and fish sticks submerged near shore have been shown to increase biological production in lake ecosystems.

Traditionally, "fish crib" structures are assembled with log cabin design, filled with branches, weighted and sunk in deep water where they concentrate fish in known locations. Fish cribs tend to attract fish and increase angling catch and harvest rates, but there is no evidence to demonstrate that fish cribs serve to produce more fish or bigger fish. In this case, however, if fish cribs can improve angling success, then placing a few cribs within castable distance from shore could bolster the return on the DNR's investment in put-and-take trout stocking. If some measure of substantial angler use in May and June can justify

the cost, Taylor County and the DNR should consider installing an accessible fishing pier that extends beyond the cattail fringe on the west shore near the outlet. Fish cribs placed near a shorefishing pier would make a better fishing experience in this small impoundment, especially for families with young children and anglers with mobility challenges.

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