John W. Flannagan Reservoir 2023 Fisheries Management Report

Flannagan Reservoir is a 1,143-acre impoundment located in Dickenson County. The reservoir was built to provide flood control, fish and wildlife habitat and recreational opportunities. The U.S. Army Corps of Engineers completed construction of the dam and project in 1964. Fifty miles of beautiful shoreline consisting of mature hardwood forest interspersed with spectacular rock bluffs surround this deep, clear reservoir. At full pool elevation of 1,396 feet above sea level, the lake has a maximum depth of 166 feet and an average depth of 58 feet. The lake level fluctuates about 16 feet in a normal water year. The lake is drawn down to winter pool during October and November and is typically returned to summer pool in April.

Flannagan Reservoir is home to a variety of sport fish species including: Largemouth and Smallmouth Bass, Walleye, Hybrid Striped Bass, Channel Catfish, Flathead Catfish, Black Crappie, Bluegill, Redear Sunfish, Rock Bass, Common Carp and Muskellunge. Alewives and Gizzard Shad provide forage for the sportfish populations. Most of these populations are self-sustaining and do not require maintenance stockings.

The overall fisheries management goal for Flannagan Reservoir is to provide quality angling opportunities for a diversity of fish species. In order to provide quality fishing opportunities, fish populations need to offer both abundance and good size structure. Abundance is measured in terms of how many fish are collected per hour of electrofishing or per net night of sampling. Size structure is measured by looking at the proportion of adult fish in the sample that are larger than a given size. For example, we consider the proportion of adult Largemouth Bass larger than 15 inches, or the proportion of adult Black Crappie that are over 10 inches. Catch rates and size structure data provide a standardized means of comparing this year's fish sample to last year's catch, as well as to the samples collected at other lakes. Catch rates do not represent the number of fish you might catch while fishing, because you may be more or less effective than the sampling gear. Size structure measures give information about the sizes of fish available in the population.

Stocking

Flannagan Reservoir is currently managed as a priority Walleye water with the goal of maintaining an exceptional Walleye population. As a priority Walleye water, the lake generally receives annual stockings of Walleye at a rate of about 100 fingerlings per acre. Approximately 100,000 Walleye and 75,594 Saugeye fingerlings were stocked into Flannagan Reservoir in 2022. The standard allocation of 114,300 Walleye fingerlings for was exceded for Flannagan Reservoir in 2022. The excess fish were added to help the lake rebound from previously missed stockings. The lake also received 17,145 Hybrid Striped Bass fingerling.

Regulations

Flannagan Reservoir is currently managed under the following regulations. Statewide regulations apply to all other species.

Species	Length Limit	Creel Limit
Largemouth Bass	12-inch minimum	5 per day all bass combined
Smallmouth Bass	15-inch minimum	5 per day all bass combined
Sunfish (all species combined)	none	50 per day
Crappie	10-inch minimum	25 per day
Walleye	18-inch minimum	5 per day
Hybrid Striped Bass	20-inch minimum	4 per day
Catfish (Channel and Flathead combined)	none	20 per day
Muskellunge	30-inch minimum	2 per day

Population Sampling

Black Bass - Largemouth Bass was the most abundant species in the 2022 spring electrofishing sample. Three Hundred and seven Largemouth Bass were sampled resulting in an overall catch rate of 58 fish/h (Figure 1). The catch rate for Largemouth Bass was highest in the main (lower) portion of the lake (82 fish/), while the catch rates in the Pound River arm (56 fish/h) and Cranesnest River (48 fish/h) were similar to previous years.

Largemouth Bass sampled in 2022 ranged in length from 4– 23 inches with an average length of 15 inches (Figure 2). Eighty-six percent of adult (≥ 8 in) Largemouth Bass were ≥ 12 in and 57% exceeded 15 inches. Largemouth Bass ≥ 20 inches accounted for 3% of the sample. Although no trophy-size Largemouth Bass were collected, the sample indicates that there are good numbers of harvestable-size fish (≥ 12 in) available to anglers. However, the abundance of fish exceeding the 12-inch minimum length limit for Largemouth Bass suggests that harvest of legal-size fish is low. This is supported by the results of the 2016 creel survey in which anglers voluntarily released 88% of the legally harvestable Largemouth Bass caught.

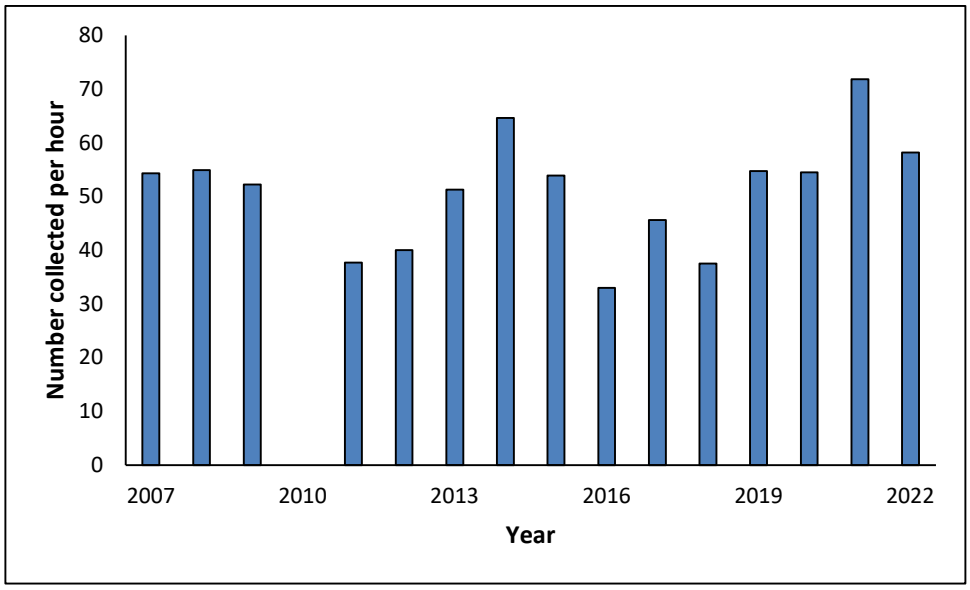

Figure 1. Number of Largemouth Bass collected per hour of electrofishing in Flannagan Reservoir annually from 2007-2022. The lake was not sampled in 2010.

Smallmouth Bass were collected at a rate of 4 fish/h in the 2022 sample, which was slightly lower than that observed in 2021 (7 fish/h; Figure 3). Smallmouth Bass have historically been present in lower numbers when compared to Largemouth Bass. Monitoring data suggests a decline in Smallmouth Bass relative abundance from previous years, especially from 2011 and earlier. Whether or not this trend reflects a true decline in Smallmouth Bass abundance is difficult to determine at this time. However, in an effort to improve the Smallmouth Bass population the minimum length limit was increased from 12 inches to 15 inches effective January 1, 2021. The minimum length limit for Largemouth Bass remained unchanged.

Smallmouth Bass observed in the 2022 sample ranged in length from 3-20 inches in length with an average length of 15 inches. Eighty-three percent of adult (≥ 7 in) Smallmouth Bass were ≥ 11 in and 67% exceeded 14 inches. Smallmouth Bass ≥ 17 inches accounted for 39% of the sample.

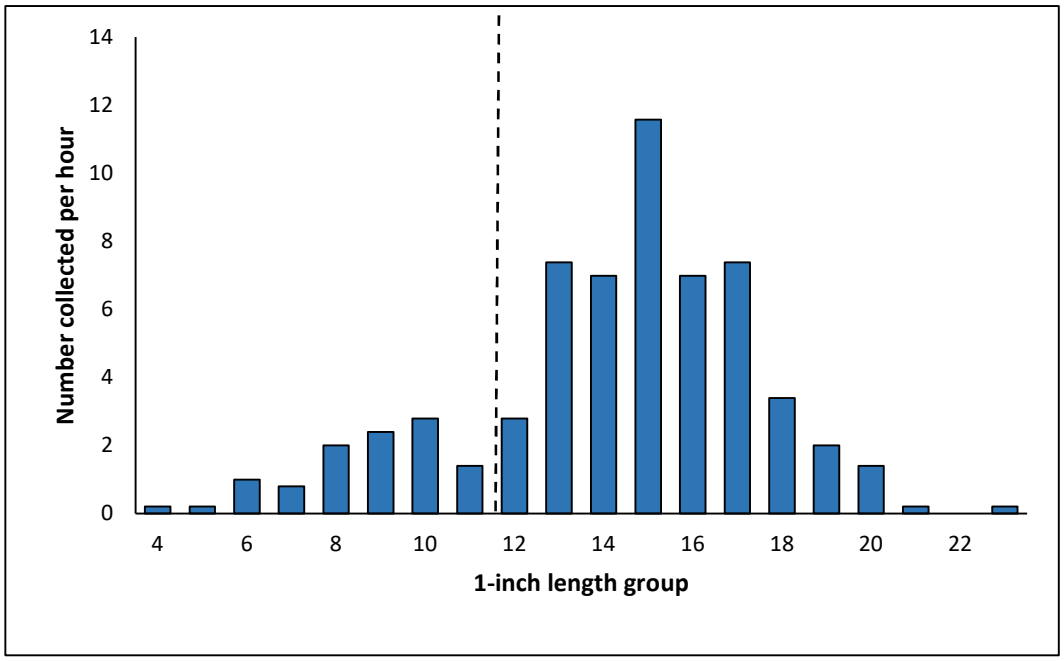

Figure 2. Length frequency distribution of Largemouth Bass collected from Flannagan Reservoir during electrofishing samples in spring 2022. Dashed, vertical line represents the 12-inch minimum length limit for this species.

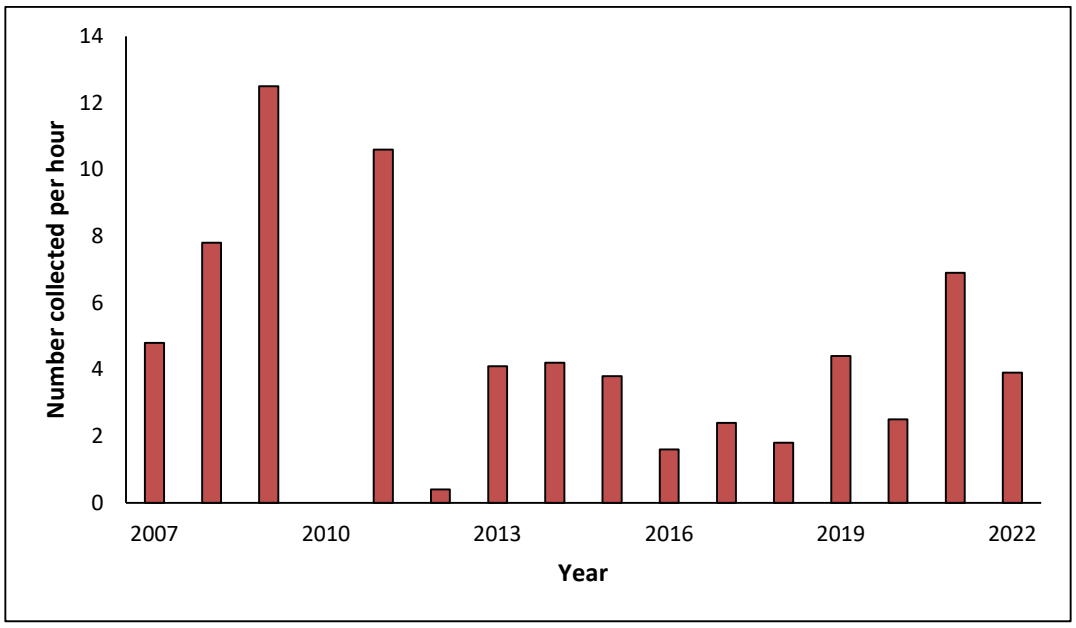

Figure 3. Number of Smallmouth Bass collected per hour of electrofishing in Flannagan Reservoir annually from 2007-2022. The lake was not sampled in 2010.

Black Crappie - Since 1998, one fisheries management goal has been to re-establish the Black Crappie population in Flannagan Reservoir. Biologists have used a variety of strategies to accomplish this task. The annual stocking of about 1,000 adult Black Crappie (6 to 8 inches) from 1998 to 2002 was the first step toward recovery. Habitat enhancement has also played a vital role in the effort. A 10-inch minimum length limit was also established to allow crappie an opportunity to spawn for a couple of seasons before being legal for harvest.

The relative abundance of crappie populations varies considerably from year to year and crappie are often characterized as having "boom and bust" cycles of abundance. This variability in abundance is generally the result of inconsistent spawning success. When the crappie population has a really good spawn, that year class of fish will increase the population abundance and provide good fishing for several years. Poor spawning success creates missing year classes that have the opposite effect.

Black Crappie were collected at a rate of 8 fish/h in the spring 2022 sample (Figure 4). This was higher than the catch rate observed in 2021 (1 fish/h). Black Crappie sampled ranged in length from 7 – 13 inches with an average length of 11 inches. Seventy-eight percent of the adult Black Crappie observed exceeded the 10-inch minimum length limit for this species. Although overall numbers of crappie are relatively low, the current population is providing opportunities for anglers to harvest crappie.

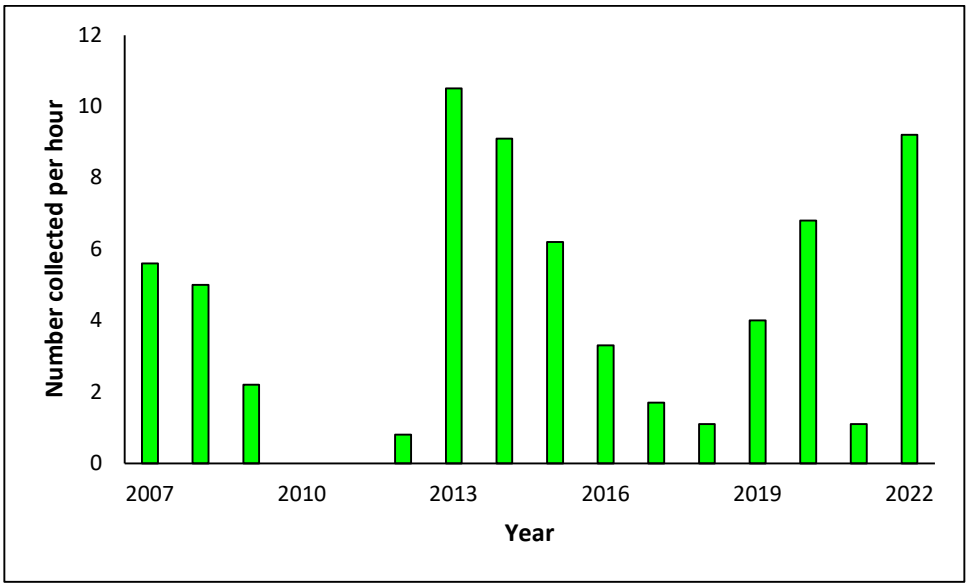

Figure 4. Number of Black Crappie collected per hour of electrofishing in Flannagan Reservoir annually from 2007-2022. The lake was not sampled in 2010.

Walleye/Saugeye – The combined catch of Walleye and Saugeye in the 2022 fall gill netting sample (7.4 fish/net night) was lower than that observed in the previous year (9.5 fish/net night). Walleye in the sample ranged in length from 10 - 29 inches while Saugeye measured from 22 – 28 inches (Figure 5). Absent from the 2022 sample were Age-4 and Age-6 Walleye resulting from the lack of stocking in 2016 and 2018 (Figure 6). These age classes typically contribute substantially to the overall population and their absence would help to explain some of the decline in overall abundance. Figure 6 also shows a great age-3 year class that are now harvestable size.

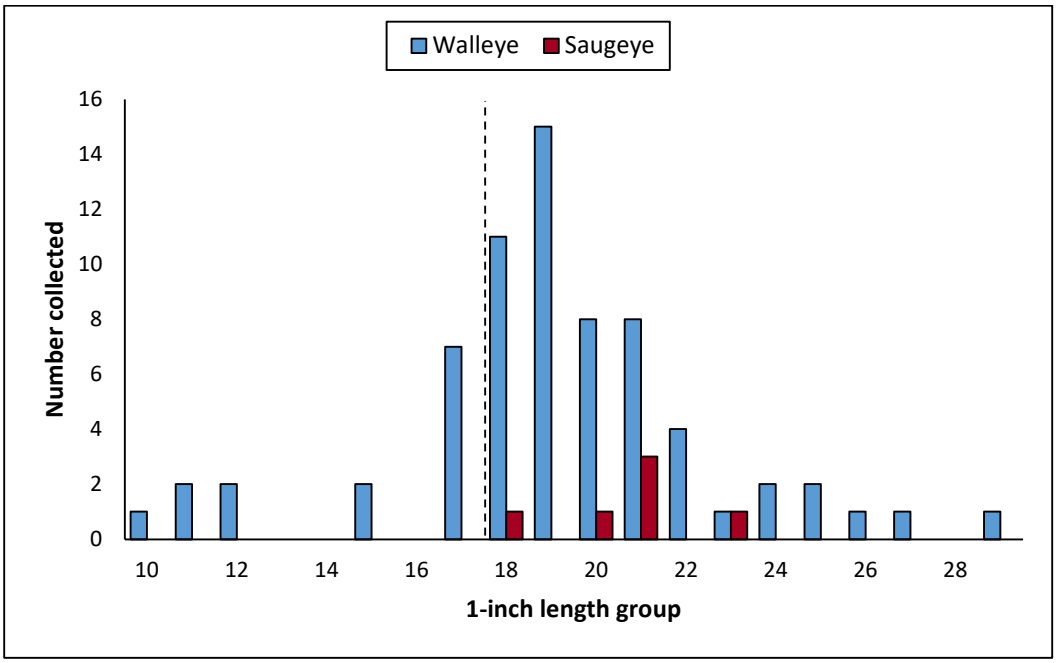

Figure 5. Length frequency distribution of Walleye and Saugeye collected from Flannagan Reservoir during gill netting samples in winter 2022. Dashed, vertical line represents the 18-inch minimum length limit for these species.

Figure 6. Age frequency distribution of Walleye and Saugeye collected from Flannagan Reservoir during gill netting samples in winter 2022.

Hybrid Striped Bass – The gill netting catch rate for Hybrid Striped Bass was down slightly in 2022, but may be a reflection of sampling efficiency rather than a true population trend. Seventy-eight percent of Hybrid Striped Bass exceeded the 20-inch minimum length limit for this species. Additionally, 44% of the Hybrid Striped Bass were 24 inches or longer.

Other species - Flannagan also offers some very good fishing for Bluegill and Redear Sunfish. Population sampling yielded good numbers and sizes of both species. Channel Catfish and Flathead Catfish populations provide good fishing opportunities as well. Again, samples yield mostly "average size" catfish, whereas anglers often catch trophy catfish. Although not abundant, Muskellunge are present and can provide some exciting action for those anglers lucky enough to hook one. Some huge carp also roam Flannagan's clear waters, just waiting to test an angler's skills and equipment.

Please remember that moving fish from one lake to another is not a good practice. Stocking fish can have undesirable effects on the existing fish populations through predation, competition or disease introduction. Stocking fish into a public lake or any stream without a written authorization from the Department of Wildlife Resources is also ILLEGAL.

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