



John W. Flannagan Reservoir 2015 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, crappie, bluegill, rock bass, common carp and musky. Alewives and gizzard shad provide forage for the sportfish populations. Most of these populations are self-sustaining and do not require maintenance stockings. The Department of Game and Inland Fisheries does stock walleye fingerlings (114,300) and hybrid striped bass fingerlings (17,145) each year.

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.

Black Bass

A total of 290 largemouth bass and 19 smallmouth bass were collected in the 2014 sample. Largemouth bass were the most abundant species collected in Flannagan Reservoir with an overall catch rate of 64 fish/hr (Figure 1). The catch rate for largemouth bass in the current sample was up from that observed in 2013 and is the highest observed since 2000. The catch rate of smallmouth bass in the 2014 sample (4 fish/hr) was similar to that in 2013. However, these are among the lowest abundances observed in the last fifteen years of monitoring. Smallmouth bass were more abundant in the main lake than either of the river arms.

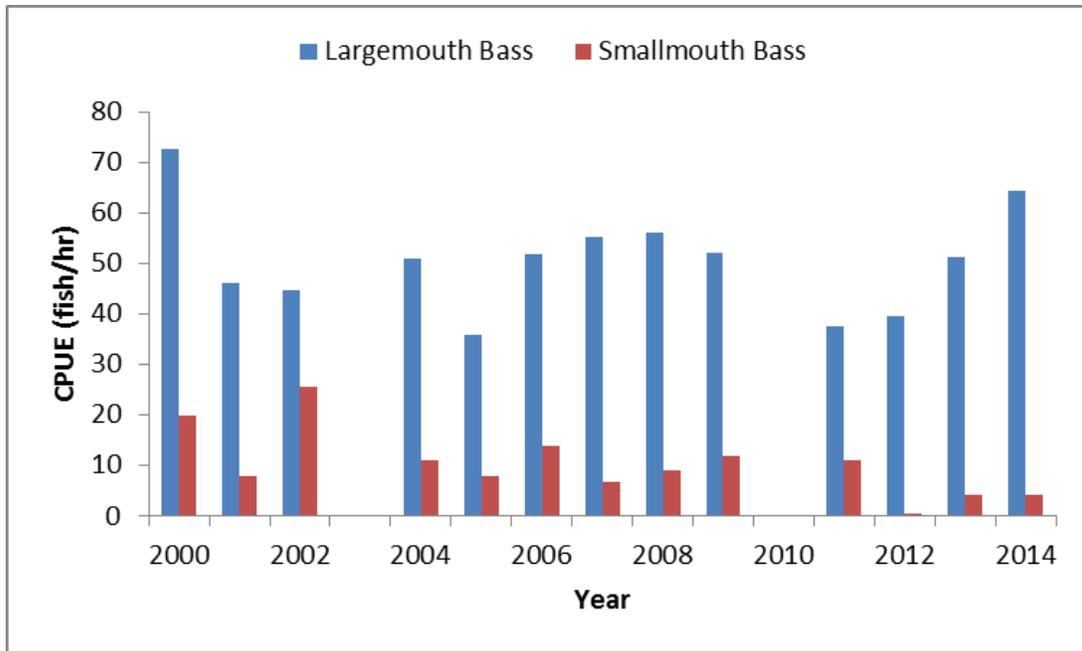


Figure 1. Number of largemouth and smallmouth bass collected per hour of electrofishing in Flannagan Reservoir 2000-2014. The lake was not sampled in 2003 or 2010.

Largemouth bass sampled in 2014 ranged in length from 4 – 22 inches with an average length of 12.7 inches (Figure 2). Approximately 35% of adult largemouth bass in 2014 were ≥ 15 inches and 1% were ≥ 20 inches. Overall the largemouth bass fishery appears to be in good shape.

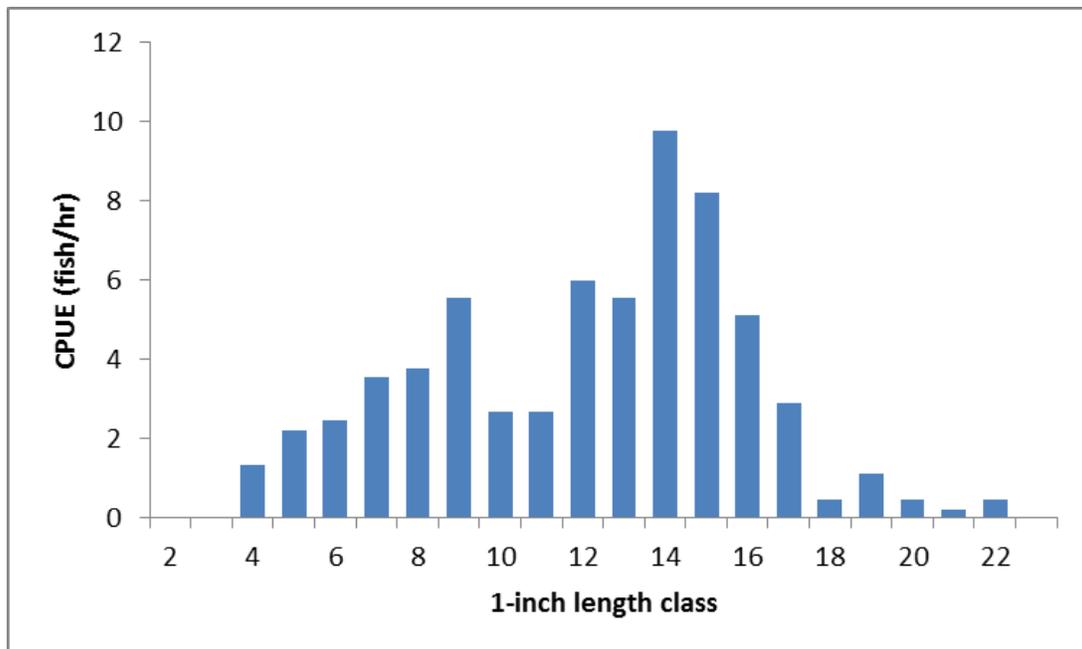


Figure 2. Length frequency distribution of largemouth bass collected from Flannagan Reservoir during electrofishing samples in spring 2014.

Walleye

Spring electrofishing – In the 2014 spring sample walleye were collected at a rate of 12 fish/hr (Figure 3). Although this represented a 45% decrease from 2013, the 2014 catch rate is likely average for Flannagan Reservoir. Fifty-one of the walleye sampled exceeded the 18-inch minimum length limit for this species and 14% exceeded 20 inches.

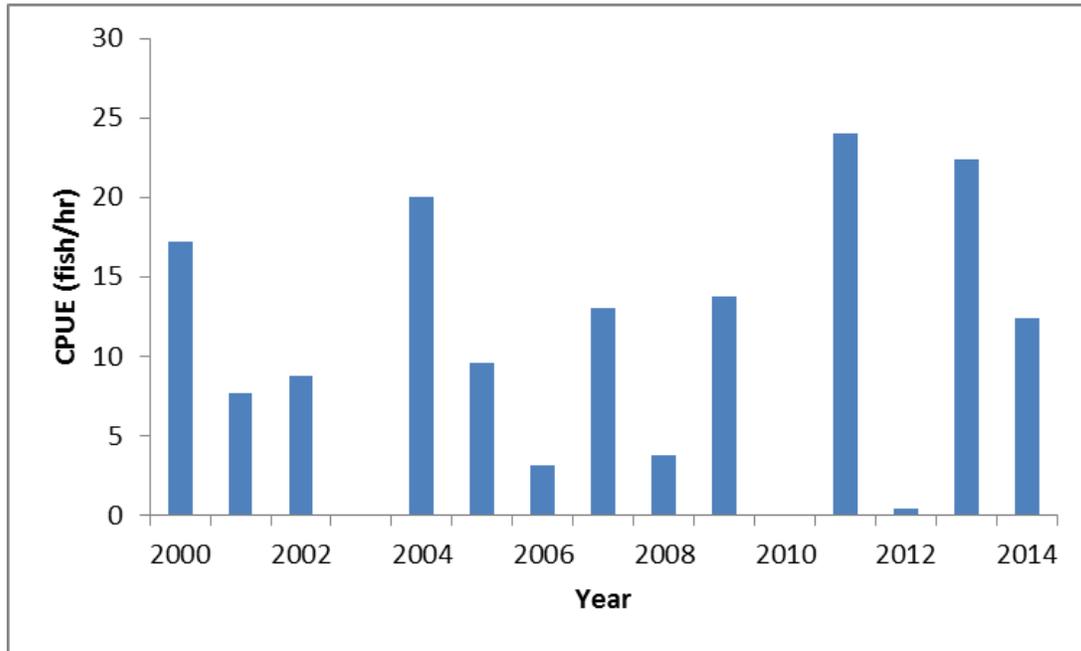


Figure 3. Number of walleye collected per hour of electrofishing in Flannagan Reservoir 2000-2014. The lake was not sampled in 2003 or 2010.

Fall gill netting – The abundance of walleye observed in the fall 2014 gillnet sample (5fish/net night) for walleye was similar to that seen in 2013 (5 fish/net night) and 2012 (6 fish/net night). This differs from the pattern observed from electrofishing samples, which suggested that the abundance in 2014 was dramatically lower than 2013 and higher than 2012.

In 2013, saugeye (walleye x sauger hybrid) were stocked in Flannagan Reservoir in place of walleye as a result of hatchery availability. Fish from this stocking were the most abundant species in the 2014 gill netting sample suggesting good survival of this cohort. These fish were nearly 2 years old (Age 1+) at the time of sampling and averaged 13.7 inches in length (Figure 4). Walleye collected during the gill net sample ranged in length from 16-24 inches with an average 18.9 inches. Nine year classes were represented in the 2014 walleye sample with nearly half (49%) of the fish coming from the 2012 year class (Figure 5). The presence of fish from the 2013 year class suggests limited natural reproduction of walleye in Flannagan Reservoir since no walleye were stocked that year.

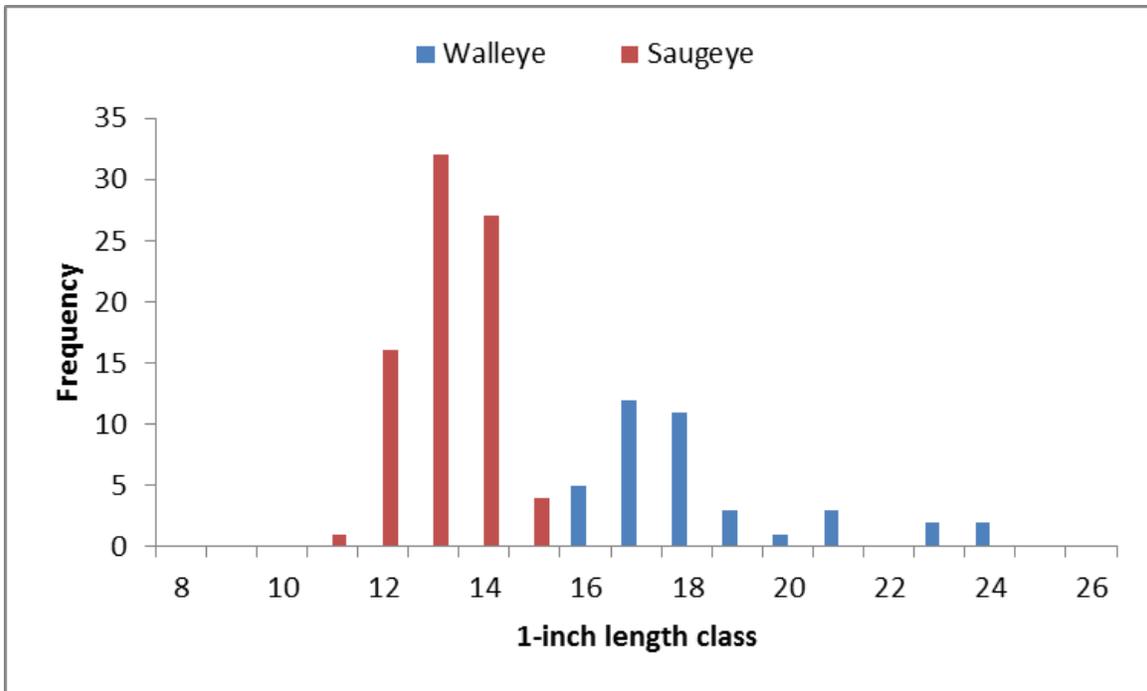


Figure 4. Length frequency distribution of walleye and saugeye collected from Flannagan Reservoir during gill net samples in fall 2014.

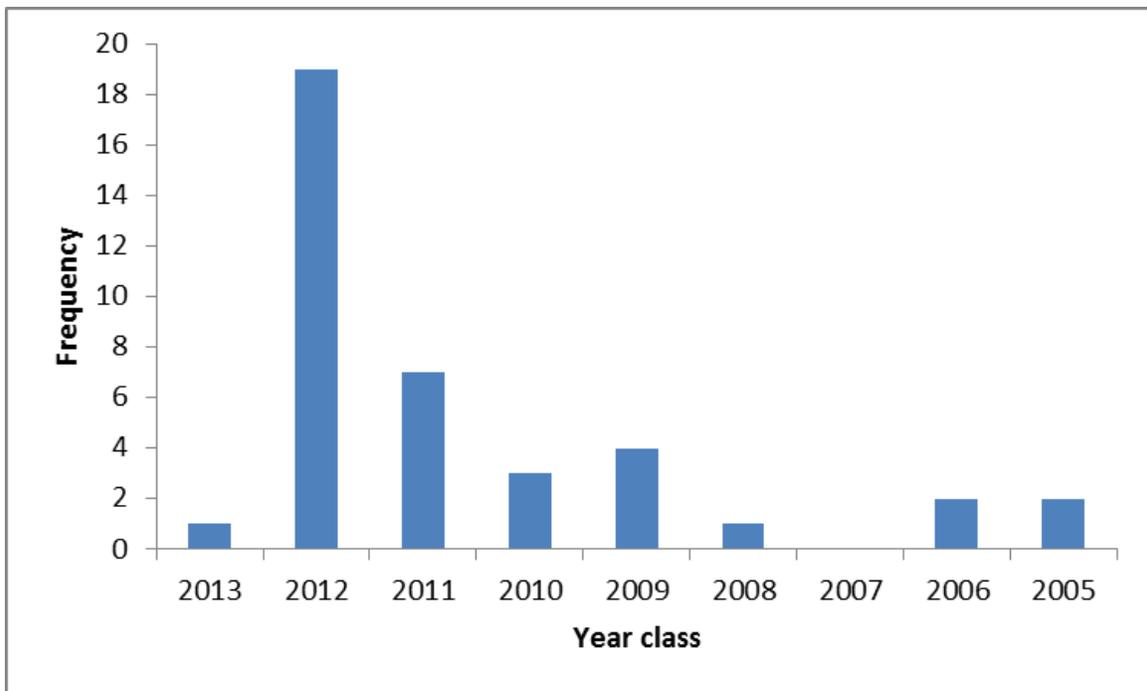


Figure 5. Year class distribution of walleye collected from Flannagan Reservoir during gill net samples in fall 2014.

Hybrid Striped Bass

Hybrid striped bass were first stocked into Flannagan Reservoir in 1999. The hybrid fishery has become quite popular in the relatively short period of time since the first introduction. Hybrids are stocked each year in July or August as fingerlings (two to four inches in length). Hybrid striped bass growth rates are good in Flannagan. They measure eight to ten inches or more after one year in the reservoir, and reach 14 to 16 inches by the end of their second growing season (1.5 years old). Most two year old hybrids are about 18 inches in length. Hybrids generally reach 20 to 22 inches in total length during their third year. At age four, hybrids are about 24 to 25 inches long. Growth slows at this length. Fish from the 2003 stocking are now about 28 inches long.

The relative abundance of hybrid striped bass observed in the 2014 gill net sample (4 fish/net night) was up from that observed in 2013 (2 fish/net night), but was still lower than that observed in 2012 (6 fish/net night). Hybrid striped bass in 2014 averaged 19 inches in length with nearly all (95%) of the fish being 2 year old fish. In past years, the hybrid striped bass sample consisted of a greater number of fish from older age classes. Whether this virtual absence of older fish indicates recent high mortality of older hybrid striped in Flannagan or the older fish were missed by the sampling gear is difficult to determine at this time.

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. The black crappie population in Flannagan is likely still in a “boom” period as indicated by a spring 2014 electrofishing catch rate of 9fish/hr (Figure 6). This was down only slightly from that observed in 2013 (11 fish/hr). Seventy eight percent of the adult black crappie sampled exceeded the 10-inch minimum length limit for this species and 20% were \geq 12 inches (Figure 7).

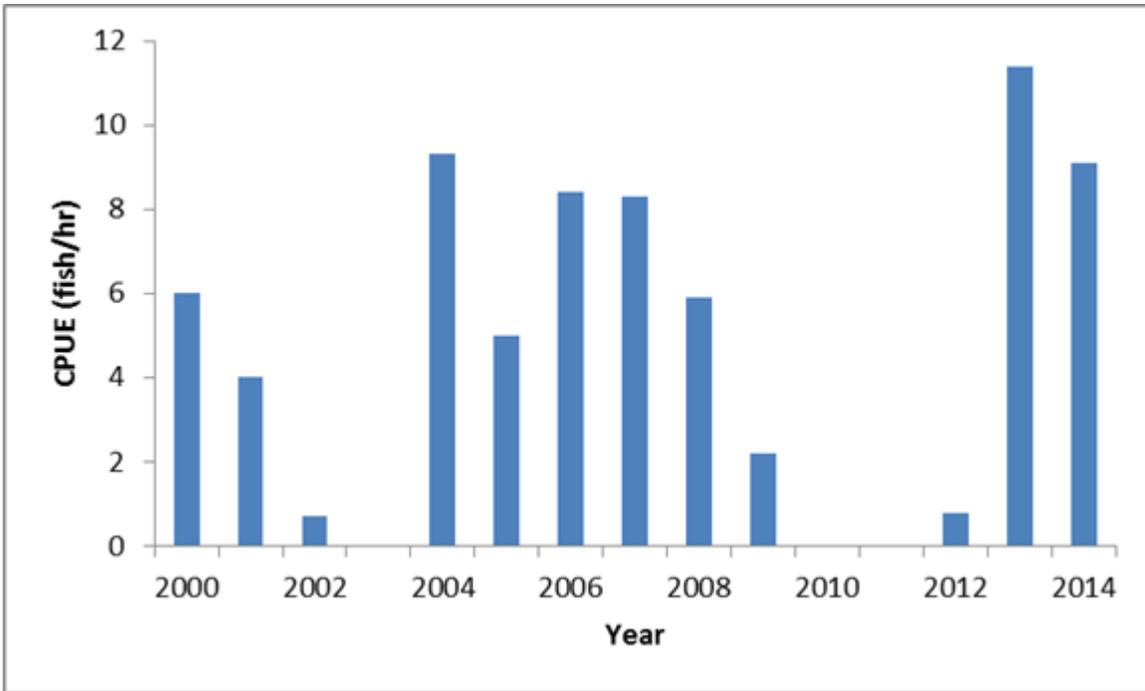


Figure 6. Number of black crappie collected per hour of electrofishing in Flannagan Reservoir 2000-2014. The lake was not sampled in 2003 or 2010.

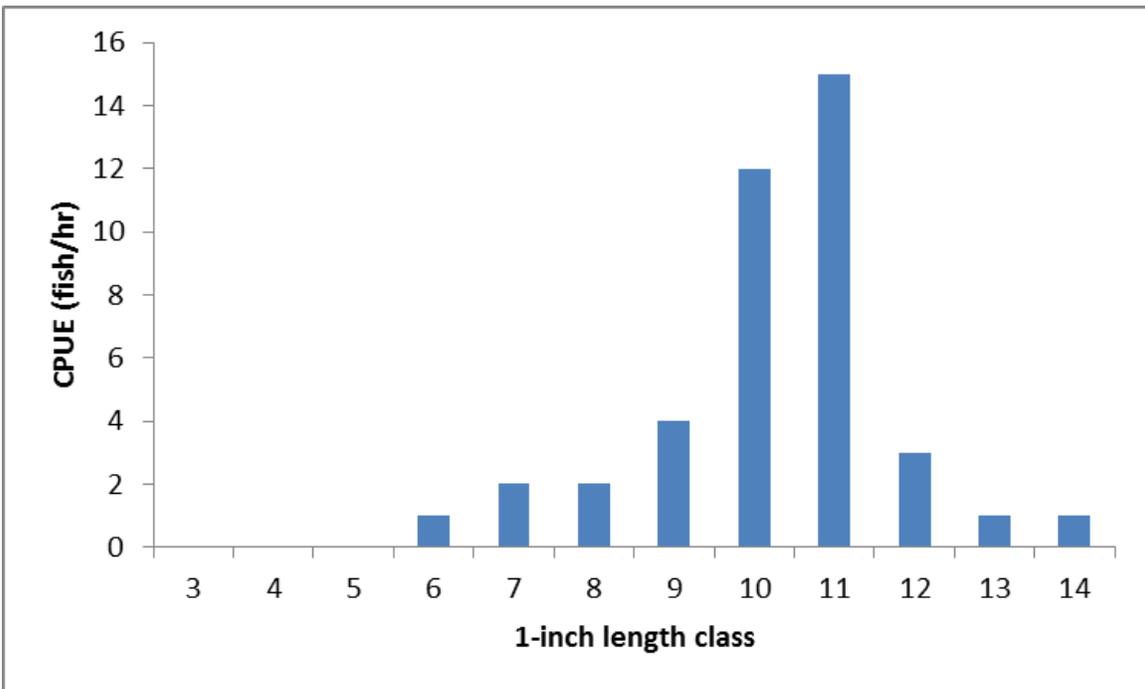


Figure 7. Length frequency distribution of black crappie collected from Flannagan Reservoir during electrofishing samples in spring 2014.

Other species

Flannagan also offers some very good fishing for bluegills. Population sampling yielded high numbers and sizes of bluegills. Anglers frequently report catching very nice bluegills. There are a few hybrid sunfish, sometimes called 'Georgia Giants', in Flannagan. These fish grow to enormous sizes. Sunfish over two pounds have been landed in recent years. George Mullins of Haysi landed a yellow perch on March 8, 2010 that established a new Virginia state record. The record yellow perch weighed 3 pounds even. No yellow perch have been collected by biologists during population sampling, but the rumor is that some yellow perch were caught in another lake and moved to Flannagan by anglers. So, there may be a few more huge yellow perch out there for the angler in the right place at the right time. 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 diseases introduction. Stocking fish into a public lake or any stream without a written authorization from the Department of Game and Inland Fisheries is also **ILLEGAL**.

Channel and flathead catfish populations provide good fishing opportunities as well. Again, samples yield mostly "average size" catfish, whereas anglers often catch trophy cats. Some huge carp also roam Flannagan's clear waters, just waiting to test an angler's skills and equipment.

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