

An Evaluation of Fishery Trends at the Lake Onalaska Habitat Project

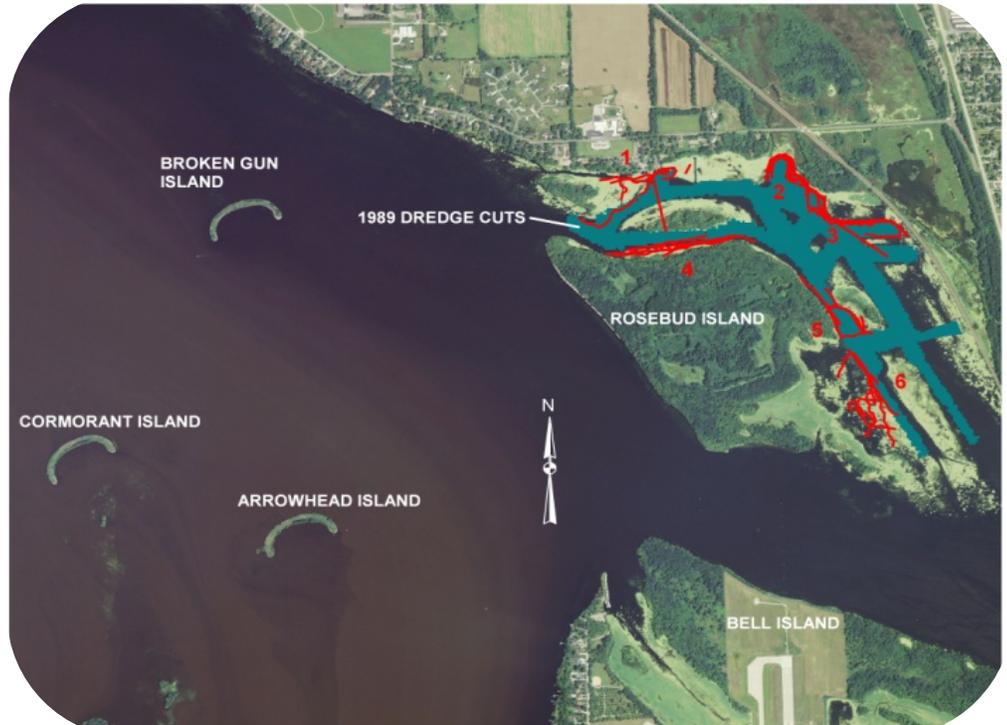


Lake Onalaska is a very popular fishery for bluegill, yellow perch, crappie and largemouth bass. It is located near La Crosse in Pool 7 of the Mississippi River. The federal Upper Mississippi River Restoration Program (UMRRP) completed the project in 1989 for 2.1 million dollars. Features included dredged channels adjacent to Rosebud Island which provided depth and oxygenated water to a historic fishery. The dredged material was used for the construction of three islands in open water and as fill for a nearby highway construction project. This habitat project, located on the Upper Mississippi River National Wildlife and Fish Refuge, was spearheaded by the U.S. Army Corps of Engineers.

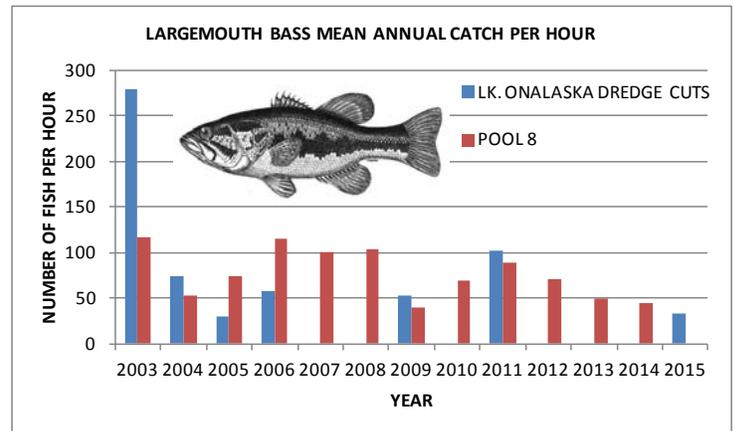
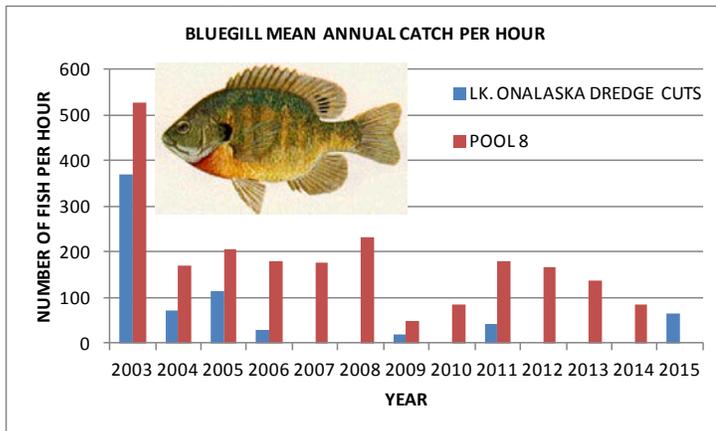
Partners included the Wisconsin Department of Natural Resources (WDNR), the Wisconsin Department of Transportation, the U.S. Fish and Wildlife Service, and local interests.



During 2003-2006, 2009, 2011 and 2015, the WDNR sampled fish using electro-fishing at six locations near the dredge cuts. These samples were taken from mid-October through November. Electro-fishing runs were typically 300 meters long; forty runs were conducted, and all game fishes were captured, measured and released.

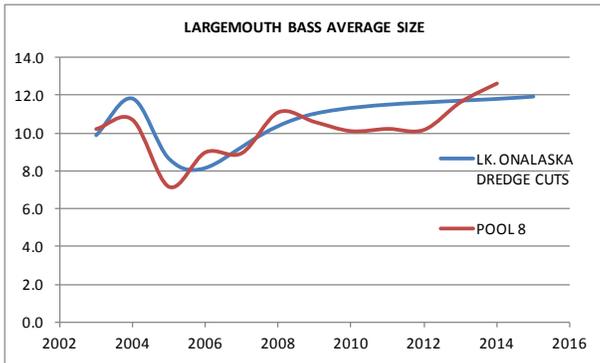


Measuring changes to the fishery due to project construction was not possible because sampling did not initiate until 15 years after the project's completion. However, we did find population trends since 2003. The samples suggest a decline in bluegill and largemouth bass numbers in the project area.



Declines of bluegill and largemouth bass within the project area from 2003-2015 mirrored similar trends in nearby Pool 8 from the federally funded UMRRP*. This suggests a regional trend, rather than one unique to the dredge cuts. This also suggests that fish populations within habitat projects may fluctuate similarly to populations within the general surrounding habitat. We would need additional work on a broader scale to confirm this.

Of the three fishes examined, largemouth bass had the only significant size change through time. The average size of juvenile and adult largemouth bass increased 1.7 inches from 2003 to 2015. This increase in average size was also seen in nearby Pool 8, where



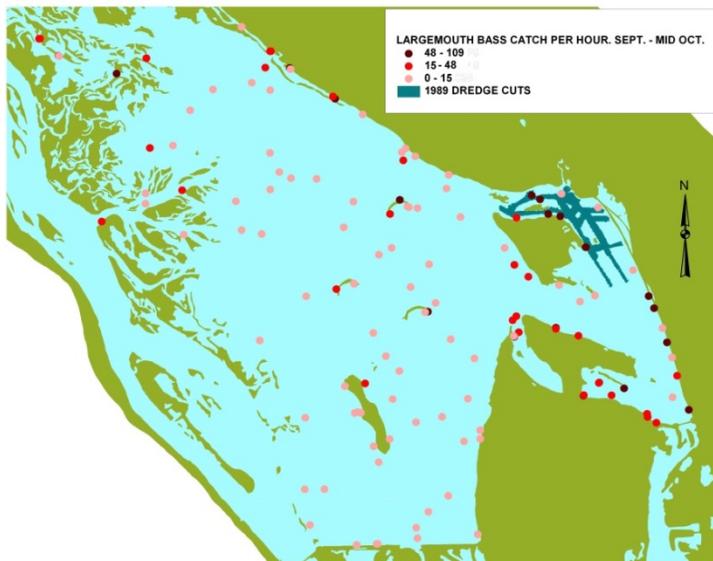
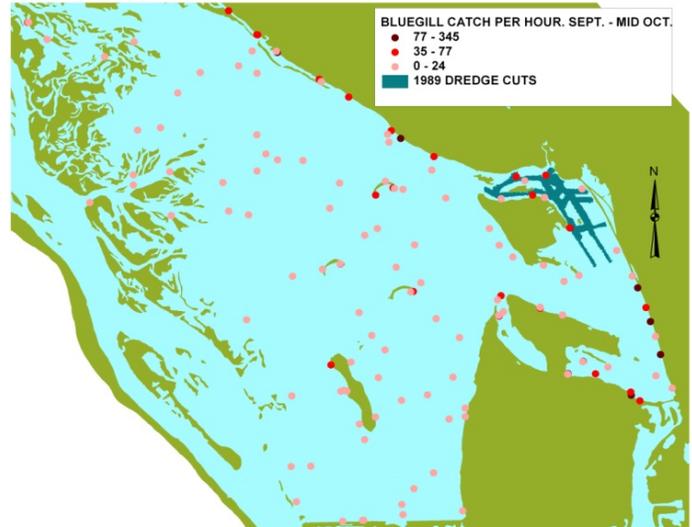
bass size increased 1.9 inches. Again, these parallel trends may indicate that some fish species in habitat projects follow similar trends as the surrounding population. Bluegill and largemouth bass in the Lake Onalaska habitat project had the same abundance and size characteristics compared to nearby populations.

Although we could not compare pre- to post- project fish populations, angler use suggests an improvement. Based on early 2000's winter aerial ice angler surveys, recreational ice fishing effort is high near the dredge cuts.

About 5% of anglers

throughout the Mississippi River bordering Wisconsin fish in or near the dredge cuts. Half of Lake Onalaska anglers fish these cuts. A total of 10% of river wide ice fishing shacks are in the dredge cuts and about 40% of Lake Onalaska shacks are here. This project has annual provided suitable winter fish habitat where anglers routinely concentrate. We anticipate this high use will continue for a long time.

In addition to sampling the dredge cuts periodically between 2003 and 2015, we also sampled fish lake-wide during 2008 and 2012. Bluegill and yellow perch abundance patterns during these early fall (September –mid-October) samples was similar both within the habitat project and outside of it. This suggests that, at least during early fall, both bluegill and yellow perch did not have an apparent affinity for the dredge cuts. Conversely, largemouth bass sampled in early fall had a higher abundance in the vicinity of the dredge cuts compared to the rest of the lake; capture rates near the dredge cuts were over three times greater than elsewhere in the lake.



These patterns were from early fall. It is well known that by the time ice forms on the lake most game fish concentrate. Areas of concentration include the dredge cuts as well as three others. These fish generally stay in these four locations throughout the winter and are heavily angled.

SUMMARY

- Since 2003, the abundance of largemouth bass and bluegill has declined within the Lake Onalaska Habitat Project. This decline is similar to populations in nearby Pool 8.
- From 2003 through 2015, largemouth bass captured within the Lake Onalaska Habitat Project increased in average size by 1.7 inches; a similar length increase was found in nearby Pool 8. Bluegill and yellow perch average size did not change.
- Yellow perch and bluegill did not show an affinity to the dredge cuts in early fall. Based on lake-wide sampling, largemouth bass had an affinity for the dredge cuts; they were

caught at over three times the capture rate within the dredge cuts compared to elsewhere in the lake.

- High angler use suggests that the project was successful.

**The U.S. Army Corps of Engineers' Upper Mississippi River Restoration (UMRR) Program Long Term Resource Monitoring (LTRM) element is implemented by the U.S. Geological Survey, Upper Midwest Environment Sciences Center (UMESC), in cooperation with the five Upper Mississippi River System (UMRS) states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The U.S. Army Corps of Engineers (Corps) provides guidance and has overall Program responsibility.*

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