LAKE MANAGEMENT STATUS REPORT

DATE OF REPORT: 6/28/2024 **FISHERIES MANAGER:** Rob Hilsabeck
DISTRICT No.: 4 **LAKE NAME:** Rice Lake **COUNTY:** Fulton
WATER No.: 1007 **OWNERSHIP:** State **ACREAGE:** 1,400

D.F.M. **DATE** **R.F.M.** **DATE**

1. Fishery regulations - sport fishing seasons and limits are uniform with statewide rules. However, boat fishing is not allowed during the waterfowl hunting season and the week 2013preceding it.

Effective 4/1/2000, Largemouth and Smallmouth Bass will have a 12-inch minimum size limit on the Illinois river and all backwaters.

2.

1. D.C. electrofishing surveys were recently completed in 2021, 2022, and 2024. The 2024 data will be added to an upcoming report.

2. No fish kills were reported in 2017, but the remains of a low D.O. fish kill was noted on 5/29/2018 in the Rice Lake Ditch area. Low D.O. fish kills were reported in the late summers of 2003, 2005, 2006 and 2007. And annual fish kills have been reported and documented since 2019.

Recent trend data:

	2003	2004	2005	2006	2007	2009	2013	2014	2015	2017	2018	2021	2022
Sample Tme	47	58	48	53	32	35	65	40	53	21	14	45	15
# Species	22	21	24	20	17	20	32	25	23	24	18	24	24
Largemouth Bass													
# Fish	1	2	0	0	0	18	10	2	32	7	3	19	0
CPUE	0.02	0.03				0.5	0.2	0.05	0.6	0.3	0.2	0.4	0
Bluegill													
# Fish	17	50	36	26	11	28	29	57	311	40	20	110	29
CPUE	0.4	0.9	0.8	0.5	0.5	0.8	0.5	1.4	5.9	1.9	1.4	2.4	1.9
Yellow Bullhead													
# Fish	3	34	27	2	4	0	0	0	3	0	1	6	0
CPUE	0.06	0.6	0.6	0.04	0.2				0.06		0.07	0.13	0
Brown Bullhead													
# Fish	20	47	15	1	1	8	5	1	0	5	0	0	0
CPUE	0.4	0.8	0.3	0.02	0.04	0.2	0.08	0.03		0.2	0	0	0
Black Bullhead													
# Fish	35	84	69	17	1	14	37	0	1	0	2	0	0
CPUE	0.7	1.5	1.4	0.3	0.04	0.4	0.6		0.02		0.1	0	0
Carp													
# Fish	43	44	59	58	9	16	22	55	69	3	0	18	0
CPUE	0.9	0.8	1.2	1.1	0.4	0.5	0.3	1.4	1.3	0.1	0	0.4	0
Bigmouth Buffalo													
# Fish	19	12	20	47	0	10	21	30	1	0	1	17	0
CPUE	0.4	0.2	0.4	0.9		0.3	0.3	0.8	0.02		0.07	0.4	0
Smallmouth Buffalo													
# Fish									20	11	0	3	1
CPUE									0.4	0.5	0	0.07	0.07

4. Due to the annual inundation of Rice Lake by the Illinois River and summer water level drawdown for moist soil agriculture, fish species management on this small scale is a difficult objective. The associated sedimentation, loss of lake water volume, annual introduction of carp species and the loss of aquatic plants have all negatively impacted the sportfish habitat present in Rice Lake. However annual documentation of the fish populations is very important in our understanding of how these backwater lakes function with the Illinois river. The water quality of the Illinois River has drastically improved over the last twenty years and with this improvement the fish community has also drastically improved. The key for the future will be the restoration of habitat. In the Illinois River valley, Rice Lake and Anderson Lake are two of the deepest lakes that remain and are predicted to have the longest "half-life" of the remaining bottomland lakes.

The current emphasis on habitat restoration in the Illinois River valley is a strong reason to continue and maintain the fish population documentation in these two lakes. Restoration projects need baseline data, and data that shows the historical potential of the resource, if a good comprehensive project is to be completed. Future backwater lake restoration projects should continue to complement the function of the Illinois river ecosystem and not be focused on single-minded management goals. The data collected now will be needed to evaluate and improve the design for future restoration projects.

The current fishery is hindered by the lack of deep-water habitat for the winter and the summer stress periods. An accessible deep-water refuge of 7 to 10 feet of water in approximately 20% of the Rice Lake/Big lake complex would be a goal for a future restoration project at this site. The current function of the site is not always beneficial for the fishery of the Illinois river and often may be a death trap. The EMP project plans with the U.S. Army Corps of Engineers did move along once the state's land acquisition of Duck Island was completed.

The 2021 and 2024 electrofishing surveys were able to be completed at several stations in Rice Lake, while the 2022 survey was restricted to the boat ramp ditch due to low water levels in the main lake basin. The 2021 and 2022 collections had a similar average diversity compared to the last 10 years with 24 species collected.

The density of bluegill, largemouth bass, black and brown bullhead populations are still very low. Water level does not appear to be the only factor for their population densities. Dramatic declines have been observed after low water years, and then surge after high water years. But this is not currently evident. The low water levels and late summer fish kills appear to have a direct effect on these populations too.

In early July 2003, a severe fish kill occurred in the drawdown water basin of Rice Lake. A conservative estimate of 38,044 fish were killed due to low dissolved oxygen and high-water temperatures. The main fish species in the kill were common carp, bighead carp, brown bullhead, black bullhead, bigmouth buffalo, gizzard shad, freshwater drum, mosquito fish, white crappie, channel catfish and shortnose gar.

No fish kill was observed in 2004.

In late July and early August 2005, repeated low dissolved oxygen fish kills occurred on Rice Lake. Most of the fish killed were large Asian and common carp. The estimated total number killed was 50,000.

In late July and early August of 2006, fish kills again occurred on Rice Lake.

In late July and early August of 2007, fish kills again occurred on Rice Lake.

High Illinois River levels in 2008 and 2009 prevented major water level draw downs in Rice Lake and no fish kills occurred.

No major fish kills occurred from 2010-2017 with wide fluctuations of the Illinois River water levels.
From 2019 thru 2023 annual fish kill were observed and

documented.

No fish kill occurred in Big Lake or the attached gravel pits during these same time frames. These fish kills indicate that once again, that without a deepwater refuge and/or escapement and with the current water level management, Rice lake will serve as very poor habitat for aquatic life. **The proposed HREP project was supposed to alleviate this problem, however all the project features were not completed as designed!**

A commercial fish harvest permit program is allowed completed each year at Rice Lake when the water levels permit boat access.

Recommended Lake Management Activities with Rationale for Implementation:

Fishery surveys - An annual spring fish population analysis survey utilizing the three designated stations will be used to monitor the fishery and evaluate its quality. The major parameters to be used in measuring the species quality will include the following:

1. Catch per unit of effort values (density using fish/min.).
2. Index of condition (average relative weight Wr).
3. Overall species composition.

Future plans - Continue participation in the EMP HREP planning process, with a goal of providing deep water habitat for fish refuge in the Rice Lake and adjacent Big Lake area.