

Heron Lake Management Plan Summary – October 2021

General Lake Information

- **County:** Jackson
- **Size:** 7,997 acres (entire basin; DOW# 32005700)
 - Heron Lake is divided into four sub-basins:
 1. Duck Lake (DOW# 32005702) – 462 acres
 2. North Marsh (DOW# 32005701) – 1,075 acres
 3. North Heron (DOW# 32005705) – 3,381 acres
 4. South Heron (DOW# 32005707) – 3,079 acres
- **Watershed:** Des Moines River, West Fork Des Moines - Headwaters
 - Watershed area: 283,930 acres (444 square miles)
 - Watershed-to-lake ratio: 36:1
- **Depth:** Average depth is ≈ 2.9 ft. at normal summer pool, with a maximum depth closer to 6.5 ft.
- **Water Control Structure:** The outlet for Heron Lake is controlled by a dam that consists of a 60.25 ft. reinforced concrete weir, two 5 ft. stop-log bays fitted with removable steel gates, and a 40 ft. hydraulic gate. The hydraulic gate can be operated between 1400.2 ft. and 1396.2 ft. (NGVD 29). The concrete weir and the stop-log bays have a crest elevation of 1399.5 ft. (NGVD 29). The Minnesota Department of Natural Resources (DNR) owns and operates the water control structure.
- **Fish Barrier:** An electric fish barrier was installed in the outlet of Heron Lake in 1991.
- **Lake designations:** Heron Lake is a designated Wildlife Lake (Minnesota Statute [M.S.] 97A.101). Part of the basin also has been established as a Migratory Waterfowl Feeding and Resting Area (M.S. 97A.095).
 - Heron Lake was designated as a Wildlife Lake in 1973. All sub-basins, except for Duck Lake, were included in the Wildlife Lake Designation. The DNR commissioner also implemented surface use regulations under M.S. 97A.101 on Division Creek, North Heron, and North Marsh in 1999.
 - Parts of South Heron and North Heron were designated as Migratory Waterfowl Feeding and Resting Areas in 1986 and 1990 respectively.

Important Consideration: This management plan summary will only focus the management goal, objectives, and actions for the part of Heron Lake that is designated as a Wildlife Lake (i.e., North Marsh, North Heron, and South Heron).

Management Goal and Objectives

Goal: Optimize aquatic plant growth to improve water clarity and enhance fish and wildlife habitat.

- **Objective 1:** Promote growth of emergent and submersed aquatic vegetation through active water level management.
- **Objective 2:** Monitor fish community structure and sustain high predator fish populations through regular stocking.
- **Objective 3:** Promote Best Management Practices (BMPs) within the Heron Lake watershed to prevent further degradation of water quality and identify projects to reduce external nutrient loading.

Proposed Management Actions to Achieve Objectives

1. Repair or modify the existing water control structure.

- Currently, the hydraulic gate on the outlet dam is inoperable because the hydraulic cylinders that raise and lower the gate are in need of replacement. The DNR will hire an engineering consultant to evaluate design options for repair or modification.

2. Conduct periodic managed drawdowns, when climatic conditions provide an opportunity, to achieve a lower managed pool elevation as authorized by M.S. 97A.101.

- Shallow lake ecosystems are adapted to periods of low water levels, but often deteriorate during periods of high or stable water levels. Therefore, drawdowns are an effective tool for shallow lake management. Drawdowns help reestablish beds of aquatic vegetation and reduce rough fish (e.g., common carp, black bullheads, and fathead minnows) populations.
- A managed drawdown will be considered anytime the Heron Lake watershed is experiencing a year with average or below average precipitation (i.e., North Marsh's water surface elevation is ≤ 1400.00 ft.) and at least one of the following conditions are met:
 - Average summer Secchi disk reading from June–September falls below 2.3 ft.;
 - Submersed aquatic plants cover less than 70% of the lake using present day systematic point sample stations;
 - Undesirable fish are present at densities high enough to affect water quality and habitat conditions.
- Desired outcomes of a drawdown include improved water quality and clarity, increased aquatic plant diversity and abundance, increased waterfowl use, and a high predator fish population (e.g., northern pike, walleyes, and yellow perch).

3. Develop a fisheries lake management plan for Heron Lake in coordination with DNR Section of Fisheries.

- In addition to drawdowns, predator fish stocking has been used to reduce or manage fish communities within shallow lake ecosystems. The DNR will use predator fish stocking as another management strategy to help reduce rough fish (e.g., fathead minnows, common carp, black bullheads) populations in Heron Lake and maintain the best water clarity and quality possible. Therefore, a fisheries lake management plan will be developed for all the sub-basins of Heron Lake, except Duck Lake, to address a more detailed fish-stocking plan. All fish management options will be considered to enhance Heron Lake, especially as new information or techniques become available. However, no aeration systems will be used in Heron Lake.

4. Collect water level information, precipitation records, and bathymetric data in addition to conducting detailed watershed modeling to help guide future management activities.

- The DNR plans to install a radar data logger at the outlet dam and water level logger at Heron Lake WMA to collect more frequent water level data. The DNR also would like to install an automated rain gage at the outlet dam to record local precipitation information. Furthermore, the DNR will work on developing a detailed watershed hydrologic model to help guide future management activities.

5. Collaborate with local partners to identify strategic watershed management opportunities and promote BMPs in the watershed.

- The DNR will continue to coordinate with local partners to target conservation programs and land stewardship improvements within the Heron Lake watershed.

Please direct questions to Maggie Gross at margaret.gross@state.mn.us or 507-832-6016. Questions also can be mailed to Minnesota DNR, 175 County Road 26, Windom, MN, 56101.