MINNESOTA DEPARTMENT OF NATURAL RESOURCES
NORTHWEST REGION

ECOLOGICAL & WATER RESOURCES
2115 BIRCHMONT BEACH RD NE
BEMIDJI, MN 56601

August 2, 2016

Mr. Myron Jesme
Red Lake Watershed District
1000 Pennington Ave. South
Thief River Falls, MN 56701

Dear Mr. Jesme:

The Minnesota Department of Natural Resources (DNR) thanks you for giving us the opportunity to participate in the watershed planning process for Pine Lake. The DNR is committed to working with local resource managers and the Red Lake Watershed District (RLWD) to improve the health of watersheds throughout Minnesota. As part of our commitment, in December 1998, the DNR was a party to the Red River Basin Flood Damage Reduction Work Group Agreement. This agreement is the framework for collaboration on flood damage reduction and natural resource protection and enhancement in the Red River Basin. This watershed planning process provides a great opportunity for us to work with the RLWD to identify issues of concern and put comprehensive plans in place to improve conditions within this watershed.

Pine Lake is intensively managed to provide a diverse fishery in an area of northwest Clearwater County where similar fishery resources are limited. Historically, this lake functioned as a periodic winterkill lake with intermittent fish populations consisting of low oxygen tolerant species such as northern pike, white sucker, yellow perch and bullhead. As a winterkill lake, the lake varied in depth and fish populations, but most importantly, had a vast quantity of aquatic vegetation that provided a significant amount of food, and was attractive to migratory waterfowl.

More recently, intensive fisheries management actions include periodic reintroduction of desirable species (i.e. crappie, sunfish, and bass) to diversify the fishery, maintenance stocking to sustain a walleye fishery, commercial bullhead removal, and winter aeration to prevent winterkill events. The DNR and the local Sportsmen's Club have worked together to manage the lake as a fishery, by incorporating many techniques such as winter aeration. Winter aeration has been successful at maintaining the fishery by stabilizing the existing fish population and providing a diverse fishery, but this management has been somewhat detrimental to migratory waterfowl use (deeper lake versus shallow lake characteristics).

Pine Lake remains vulnerable to winterkill conditions. Low dissolved oxygen concentrations have been documented multiple times since aeration was installed and some partial fish kills have occurred. Proper timing of start-up is critical to avoid depleting dissolved oxygen concentrations when they are high, but also to mix and stabilize dissolved oxygen levels before reaching lethal mean concentration in the water column.

Pine Lake is a Public Water Basin (15-0149-00), and is listed as a Type 5-Inland Open Fresh Water basin of about 1,465.00 acres. The OHWL is 1284.10 and the 100 year Flood Elevation is 1287.10 with the highest known water elevation to be at 1286.60 and an outlet elevation of 1283.50 (in NGVD 1929 datum). The Pine Lake watershed contains numerous lakes/wetlands and other wetland types such as shrub swamp and bogs. The Lost River, which flows through the lake, is also impaired for dissolved oxygen, and DNR recommends that this plan discuss potential water quality improvements to Pine Lake and the Lost River.

One of the goals listed for this planning process is for flood damage reduction for both properties along the lake and for downstream of the lake. Achieving this goal, as well as the additional goal of enhancing fish and wildlife will be challenging. Traditionally, reducing runoff volume in the watershed and increasing temporary storage in the lake basin would be options to consider for reducing flood damages downstream and increasing wildlife habitat. Increasing temporary storage could be accomplished by drawing down lake levels in the fall and using a gate controlled outlet to temporarily increase water levels in the spring. However, if a goal of this process is also to maintain fish populations and reduce the risk of flood damages to lakeshore properties, use of the lake basin for increased temporary storage would be challenging as increased storage could flood homes along the shoreline and disrupt the habitat for fish. DNR recommends that several alternatives be developed to determine the impacts of these competing goals.

Also, local interests have expressed a desire to increasing spring and summer water elevations to improve fish population. However, this would further reduce the water storage capacity of the lake and further diminish the use of the lake by migrating and breeding waterfowl. DNR recommends that the planning group clearly discuss and prioritize the goals for this project and conduct a thorough review of multiple alternatives to determine an appropriate path forward. We look forward to assisting in the development of those alternatives.

The environmental review process should also consider these issues:

- MN Rules 6115.0220 and 6115.0221 on water control structures would require a Public Waters works permit from DNR for any changes to the water level control structure.
- Review of existing data indicates that some homes surrounding the lake may be below the ordinary high water mark. This issue needs to be investigated if the project intends to change water level management that may affect ordinary high water level.
- Pine Lake is a priority shallow lake as defined by MNDNR's Shallow Lake Program Plan due to the association with the Pine Lake WMA. This WMA is managed for the protection of lakeshore and aquatic vegetation, particularly wild rice which is highly dependent on water level management.
- Pine Lake has a rank of "Moderate" under Minnesota Biological Survey Site Biodiversity Significance Ranks (http://www.dnr.state.mn.us/eco/mcbs/ biodiversity_guidelines.html) (see attached map). These ranks are used to communicate the statewide native biological diversity significance of each site to natural resource professionals, state and local government officials, and the public. The biodiversity ranks help to guide conservation and management. "Moderate" sites contain occurrences of rare species, moderately disturbed native plant communities,

and/or landscapes that have strong potential for recovery of native plant communities and characteristic ecological processes. Pine Lake is classified in the highest category of phosphorus sensitivity (see attached map and reference page). Phosphorus sensitivity was calculated using lake phosphorus and hydrology data. Based on the calculated phosphorus sensitivity, the significance of that sensitivity, and the presence of any negative trends in water clarity, lakes were grouped and assigned to one of three priority classes (high, higher, or highest). Highest ranking means it has the highest priority for protection or restoration.

- A calcareous fen is located approximately 4 miles to the northeast. DNR recommends ensuring that any watershed project does not interfere with the hydrology of the fen as per the Wetland conservation Act (MN Statute 103G.223) (http://www.bwsr.state.mn.us/wetlands/Calc_fen-factsheet.pdf).
- Widgeon grass (*Ruppia cirrhosa*), a submerged aquatic plant species of special concern in Minnesota, has been documented in Pine Lake.
- Trumpeter swans have been documented using Pine Lake for breeding. Trumpeter swans are listed as species of special concern in Minnesota. Trumpeter swans were once extirpated from the state but through reintroduction efforts the current population estimate is 17,021 swans. While overhunting is blamed for the extirpation, continued threats include loss or degradation of wetland habitat, lead poisoning, power line collisions, and illegal shootings.
- Wild rice is present in Pine Lake. This important native Minnesota plant has a high level of cultural, ecological, and economic values. Wild rice is one of the most important foods for waterfowl in North America and provides habitat for 17 species of wildlife listed in the MNDNR's Comprehensive Wildlife Conservation Strategy as a species of greatest conservation need (http://www.dnr.state.mn.us/cwcs/index.html).

Thank-you again for the opportunity to comment. If you have any additional questions, please contact me at theresa.olson@state.mn.us or at 208-308-2672.

Sincerely,

Theresa Olson
Regional Environmental Assessment Ecologist