Appendix B - 2022-26 Aquatic Plant/Lake Management Goals, Objectives, and Actions for Trego Lake

Overall Management Goal

The primary goal of this plan is to protect Trego Lake's ecosystem and native plant community for the benefit of the general public and all lake users through management efforts that will control invasive aquatic plant species and maintain lake usability. The last Aquatic Plant Management Plan was completed in 1994 and has not been updated until now. Management recommendations in that plan did not specifically mention aquatic invasive species, although curly-leaf pondweed (CLP) was already an issue of concern at that time. There was no Eurasian watermilfoil (EWM) in the system at that time. The last whole-lake, point-intercept, survey was completed in 2011, but did not lead to any changes in management.

In the 1994 Plan, management actions were only recommended to open and maintain property owner and lake user access through dense growth aquatic vegetation primarily in that area of the lake known as the east basin. The east basin is the first large open water basin immediately downstream of both the Namekagon River and Potato Creek inlets. In this area, wild rice is abundant, pretty much dominating any part of the basin that is 3-ft or less in depth. CLP dominates at water depths between 3.5 and 5.5 feet in spring and early summer. EWM is now present at roughly the same water depths as CLP and in the same areas. Dense growth native aquatic vegetation (other than wild rice) dominates to varying degrees, the area vacated after CLP completes its life cycle in late June and early July and drops out of the water column. In water depths greater than 6-ft, aquatic vegetation of any kind is much less of an issue.

In areas outside of the east basin and Potato Creek inlet, aquatic vegetation, both non-native and native is less of an issue. However, continued monitoring of these areas for CLP and EWM, and possible navigational impairment annually is necessary.

Goal 1: Protect, preserve, and enhance native aquatic plant communities including wild rice.

Between 2011 and 2020, there were few changes in the aquatic plant community in Trego Lake, other than the discovery of Eurasian/Hybrid watermilfoil in 2019. Measurements of plant community health including SDI, FQI, Mean C and the number of aquatic plant species identified are all very good to excellent.

Trego Lake is a high producing wild rice waterbody. Maintaining the wild rice beds in a similar or better state is not only recommended, but required.

1. Objective: Maintain or increase four measurements of the quality and health of the native aquatic plant community: SDI, FQI, Mean C, and # of native aquatic plant species w/visual and boat survey, based on values from the 2020 whole-lake, summer PI, aquatic plant survey (Table 1).

Table 1: Survey values from 2020 point-intercept survey

Trego Lake
SDI – 0.92
FQI – 34.3
Mean C – 5.8
of aquatic plant species - 47

    1. Action: Complete management planning annually with the intent to minimize negative impacts of management implementation on native aquatic vegetation.
    2. Action: Continue education efforts aimed at changing attitudes of lake property owners and lake users as it relates to the importance of aquatic vegetation in the Trego Lake for water quality, invasive species control, and improved fish and wildlife habitat.
2. Objective: Maintain the distribution and density of wild rice in Trego Lake at 2020 levels or better
    1. Action: Support efforts to protect, maintain, and enhance wild rice beds
    2. Action: Continue property owner and lake user education efforts aimed at establishing the importance of wild rice as a resource in Trego Lake

Measurement: The 2020 whole-lake, summer PI survey of all aquatic plants will be repeated in 2025.

Goal 2: Reduce the impact of AIS on the native plant community and on access and navigation.

The second goal of this project is to provide relief from AIS (primarily CLP) in Trego Lake that is limiting early season native aquatic plant growth and causing navigation impairment in the east basin and Potato Creek inlet. Others areas may be included if prior year monitoring has identified a need. At the same time that CLP is removed, EWM will also be removed. Property owners on Trego Lake will be trained to identify and how to physically remove EWM found in other locations in Trego Lake. If larger beds of EWM are located, management actions could include the use of divers, DASH, or under very tight guidelines/restrictions – possibly herbicides.

1. Objective: Reduce the negative impact of CLP and EWM on native aquatic plant growth and on recreational access limited by access and navigational impairment.
    1. Action: Complete annual CLP and EWM survey and mapping in that area of Trego Lake outside of the east basin and the Potato Creek inlet.
        i. Complete CLP survey work between June 1 and June 30
        ii. Complete EWM survey work between August 1 and September 15
            1. Document any CLP or EWM found with GPS
    2. Action: Harvest all CLP and early season EWM in predetermined areas annually
        i. May 1 – June 15
            1. Approximately 23 acres in water 4-6ft deep
            2. Cut to maximum depth of 2ft
            3. CLP and EWM will be removed regardless of density
    3. Action: Implement physical/manual removal of EWM
        i. Local property owners will be trained to identify and properly remove EWM from their nearshore area
            1. Physical removal will be focused on in areas outside of the east basin and Potato Creek inlet – downstream shoreland all the way to the dam
            2. If an area of EWM is located that is too large for physical removal, other actions including diver removal and DASH will be discussed. While the use of herbicides is not recommended, it may be a possibility in downstream portions of the lake
    4. Action: Prepare a WDNR Aquatic Plant Control Mechanical / Manual Permit Application annually, and once approved, implement large-scale harvesting under the following guidelines:
        i. Harvesting of CLP will take place before the onset of turion production
        ii. Harvesters must stay in at least 3-ft of water and operate cutters at a maximum depth of 2-ft

iii. When harvesting close to shore, harvesters must operate parallel to shore and remain in at least 3-ft of water.
iv. At off-loading sites, efforts to return game fish, turtles, and other wildlife back to the water will be made by the harvesting crew
v. Harvesting crew will identify and record the species and quantity (estimated % of total plant biomass removed) of aquatic plants removed by the harvesters

Measurement: Harvesting records will be kept and submitted to the WDNR annually.

Goal 3: Improve access to open water through dense growth non-native and native aquatic vegetation for property owners and other lake users.

Opening and maintaining access to open water for navigational and recreational purposes is necessary in the east basin, Potato Lake inlet, and Sunfish Bay areas of Trego Lake. These three areas cover a bit more than 50% of the lake and are all considered littoral zone, supporting abundant growth of aquatic vegetation, both native and non-native. This growth causes significant navigation impairment when attempting to access open water from docks and when traveling through these areas.

Wild rice is extremely dense in the upstream third of and along the shallow shores of the east basin and along the shores of the Potato Creek inlet. Where wild rice is not growing, other native aquatic plants and CLP grow to levels that cause impairment. Harvesting is recommended to open and maintain several narrow (up to 30-ft wide) access and navigation lanes through these areas. Where possible, and logical, these access and navigation lanes follow existing river channels, previously harvested lanes, or the edges of the larger open water harvest area and as such may not need more than touch-up removal at any given time.

In addition, the same area harvested in the spring/early summer for CLP and EWM can be harvested throughout the season to maintain open water free of surface matting.

1. Objective: Improve access to open water for property owners and lake users.
    1. Action: Open up and maintain a combined 12.0 miles of navigation and access lanes
        i. May 1 – September 15
            1. Harvesters must stay in at least 3-ft of water and follow predetermined (marked) paths.
            2. Channels up to 30-ft wide can be cut to a maximum of 2-ft in depth.
    2. Action: Maintain open water (without surface matting) in the same area where early summer harvesting of CLP and EWM takes place.
        i. May 1 – June 15
            1. Approximately 23 acres in water 4-6ft deep
            2. Cut to maximum depth of 2ft
            3. Surface mats and vegetative growth can be removed regardless of density
    3. Action: Prepare a WDNR aquatic plant harvesting permit annually, and once approved, implement large-scale harvesting under the following guidelines:
        i. Harvesters must stay in at least 3-ft of water and operate cutters at a maximum depth of 2-ft.
        ii. When harvesting close to shore, harvesters must operate parallel to shore and remain in at least 3-ft of water.

iii. At off-loading sites, efforts to return game fish, turtles, and other wildlife back to the water will be made by the harvesting crew
iv. Harvesting crew will identify and record the species and quantity (estimated % of total plant biomass removed) of aquatic plants removed by the harvesters

Measurement: Harvesting records will be kept each year. A survey could be sent out at the end of each season seeking property owner satisfaction and input into the actions completed.

Goal 4: Determine how best to implement the changes in the harvesting program laid out in this Plan.

Increasing the amount of area harvested, be it for CLP/EWM removal or removal of dense growth native aquatic vegetation, will require greater resources than the current management actions. The total acreage included in this plan (35 acres) should be considered a maximum amount of surface area to harvest. Once a permit for harvesting has been approved, actual harvesting within the area included is not limited in terms of how often the area can be harvested. It may be necessary to harvest any or all of the area included more than once in a season. Or, only one time or possibly no harvesting may be necessary. In most cases the type of growing season experienced and available resources determines how many times an area is harvested.

The TLD is going to have to determine what resources they can tap into to complete whatever portion of, or all of these management recommendations. Contracted harvesting may be a starting point, but in the end may not be the best or most economical way to implement this plan. In this Plan, it is recommended that aquatic vegetation only be harvested to a depth of 2-ft below the surface. This depth was established as it removes much of the biomass, opens up the surface for boat traffic, and at the same time leaves behind enough plant material to provide cover habitat for young of the year fishes. It will also likely limit the time necessary, therefore likely the cost, to complete harvesting.

1. Objective: Determine how and at what level the harvesting actions in this Plan can be most efficiently implemented.
    1. Action: Determine level of constituent support, grant funding availability, and outside support for implementation of management actions
        i. Contracted harvesting versus owning the equipment

Goal 5: Minimize opportunities for new AIS to enter and become established in Trego Lake.

Trego Lake already has several established AIS (CLP, EWM, and Chinese Mystery Snails). Purple loosestrife is likely present in the area, as is yellow iris. These and other AIS should be monitored for on a regular basis. There is also a significant risk for the introduction of zebra mussels as the nearest lake with a current infestation is only 7 miles to the west. Having an educated and informed lake constituency is the best way to keep non-native aquatic invasive species at bay in Trego Lake. Implementation of a watercraft inspection program can reduce the risk that new AIS get introduced but it cannot prevent it entirely. Additional monitoring efforts within the lakes and along the shoreline will help identify new invaders before they become a problem.

1. Objective: Improve the level of knowledge lake property owners and lake users have related to AIS and how they are and could impact the lake.
    1. Action: Host and/or sponsor annual lake community events including AIS identification and management workshops.
    2. Action: Distribute education and information materials to lake property owners and lake users through the newsletter, webpage, social media, and general mailings.
2. Objective: Implement a watercraft inspection and AIS signage program at all public access sites.
    1. Action: Incorporate a CLMN/UW-Extension Lakes Clean Boats, Clean Waters program at the Public Boat Landing
    2. Action: Evaluate and update signage at all public access points on the lakes
    3. Action: Work with resorts, lake related businesses, and others to post signage and encourage watercraft inspection
    4. Action: Consider the installation of an AIS Decontamination Station at the Public Boat Landing
3. Objective: Implement an in-lake and shoreland AIS monitoring program in the lakes
    1. Action: Participate in the CLMN/UW-Extension Lakes AIS Monitoring Program to support in-lake monitoring efforts

Measurement: The best measurement of this goal is keeping Trego Lake free of AIS that are not already present and minimizing the spread of existing AIS.

Goal 6: Reduce pollutant loading into Trego Lake.

Shoreland improvement planning is used on many lakes to reduce erosion, increase and improve native habitat, and improve water quality. Restoration not only improves the lake aesthetic enjoyed by so many, it filters runoff and can keep invasive species at bay. There are many improvement projects that could be implemented. Property owners can create shoreline buffer strips, establish no-mow areas, install rain gardens, plant native species, divert surface runoff away from the lakes, reduce impervious surfaces, or even complete a full shoreland restoration project which may include all of these things and more.

As a riverine system, long and narrow, there are several areas of Trego Lake that fall under "no wake" restrictions. Waves, both natural and those caused by boat use, stir up sediments in shallow water and erode shoreline, particularly in places where aquatic vegetation is limited. Prop wash from boat motors used in shallow areas of the lakes stir up sediment. Reducing these disturbances will reduce the amount of phosphorus readily available to grow algae.

Assuming most septic systems are in good working order and appropriately maintained, they generally contribute a very small percentage of the nutrient loading occurring in a body of water. While the contribution may be limited, making sure all systems on the lake are up-to-date and functioning properly is an easy thing to promote and do.

Land use practices in the watershed surrounding the lakes can contribute significant sediment and nutrient loading to a body of water. Changing poor land use practices can reduce what is contributed. Cover crops, no till, manure storage, field buffers, and nutrient management planning are just a few examples of agricultural best management practices that are and should be implemented throughout the watershed. The logging industry also has accepted best management practices that are and should be implemented throughout the watershed. Actions designed to reduce the amount of sediment blown from the land adjacent to the lakes, like road watering to reduce dust from unimproved roads should be implemented. Reducing the amount of ice melting agents and other pollutants on roadways and driveways will also benefit the lakes.

1. Objective: Promote shoreland improvement projects in the nearshore area that will reduce surface runoff and pollutants entering the lakes.
    1. Action: Promote property owner participation in projects supported by the Healthy Lakes and Rivers grant program
        i. Native plantings, rain gardens, diversions, and infiltration trenches
        ii. Work with a local contractor other qualified person to help property owners plan shoreland improvement projects
        iii. Implement at least 5 projects over a 5 year period

    2. Action: Recognize property owners who participate in and/or complete runoff and pollutant reduction practices
        i. Examples: post signs at the site, articles in the newsletter or on the webpage, social media outlets, and in local news publications
2. Objective: Reduce shoreland erosion caused by boat wakes and disturbances to bottom sediments caused by prop wash including power loading.
    1. Action: Provide education and informational materials to lake property owners and users related to “no wake” restrictions, prop wash, and power loading
        i. Examples: post signs at the landing, articles in the newsletter or on the webpage, social media outlets, and in local news publications
3. Objective: Encourage septic system inspection, maintenance, and repair
    1. Action: Send out reminders to property owners to have their septic system inspected
    2. Action: Encourage property owners to replace or repair septic systems not functioning properly
4. Objective: Encourage the use of agricultural, logging, and other industry best management practices to reduce sediment and nutrient loading from the watershed
    1. Action: Work with the Washburn County Land and Water Conservation Department and other entities to identify problem sites in the watershed and to develop plans to address them
    2. Action: Consider offering financial assistance to the County or other entities to implement first time and additional best management practices throughout the watershed
    3. Action: Encourage business and private property owners around the lake to implement best management practices that will reduce sediment and pollutant loading from the watershed

Measurement: The objectives in this goal can be measured by the number of properties/projects that are implemented through the WDNR Healthy Lakes and Rivers program, and documentation of education and information efforts.

Goal 7: Provide property owner and lake user education and awareness of issues impacting Trego Lake.

Public involvement and input is essential if management actions on a given body of water are to be successful. The lake community must be aware of the issues facing the lake and how those issues impact the lake. They need to know that what they do on a daily basis matters. Encouraging participation and providing ample opportunities to do so is important. Workshops, lake fairs, annual organization events, on-lake monitoring and data collection projects, distribution of educational and informational materials, and sharing of lake data are just a few examples of how to keep the lake community involved.

1. Objective: Continue public outreach and education programs on issues facing Trego Lake.
    1. Action: Facilitate AIS, aquatic plants, and water quality, and wildlife public education opportunities annually
        i. Examples: Lake Fair, Workshops, Public Speakers
        ii. Maintain a TLD webpage, Facebook page, and or newsletter
    2. Action: Promote sustainable and multi-use recreational opportunities on the lake
        i. Hold open forums to discuss lake use issues with interested parties
        ii. Monitor patterns of recreational use in the lake to identify potential conflicts and guide management activities
        iii. Determine the need for a lake-use plan and what that plan should include

Measurement: The best measurement is a record of each of the education and awareness events that are held/sponsored annually.

Goal 8: Collect lake related data to enhance and support current and future lake management planning and implementation in Trego Lake.

There can never be too much data when it comes to determining the best way to manage a lake so that it meets all of its intended uses. Compiling existing data and collecting additional data to document current and future conditions of the lake is important.

1. Objective: For management planning and assessing general lake health, collect lake data that will provide a better understanding of the issues impacting the lakes.
    1. Action: Reinstitute a CLPRD volunteer driven water quality testing program through the CLMN water quality monitoring program
        i. Secchi disk (water clarity) and temperature
        ii. Total phosphorus, chlorophyll-a, and dissolved oxygen
    2. Action: Begin precipitation monitoring
        i. Participate in the Community Collaborative Rain, Hail, and Snow (CoCoRaHS) monitoring program

Measurement: CLMN water quality data will be entered into the WDNR SWIMS database. Precipitation data will be collected and stored within digital project files.

Goal 9: Implement this plan following Integrated Pest Management guidelines from the WDNR.

This document is not intended to be a static, once and for all plan, but rather one that makes room for management changes that still fall under the guise of the stated goals. As the plan is implemented there may be things that would make attaining plan goals easier and more efficient. Integrated Pest Management (IPM) is an ecosystem-based management strategy that focuses on long-term prevention and/or control of a species of concern. IPM considers all the available control practices such as: prevention, biological control, biomanipulation, nutrient management, habitat manipulation, substantial modification of cultural practices, pesticide application, water level manipulation, mechanical removal, and population monitoring. Integrated pest management projects should be informed by current, comprehensive information on pest life cycles and the interactions among pests and the environment.

1. Objective: Follow an adaptive management strategy that measures and analyzes the effectiveness of management activities and modify the management plan as necessary to meet goals and objectives.
    1. Action: The TLD will continue active participation in all discussions related to management of Trego Lake
    2. Action: Annual reports will be completed summarizing actions and results and presenting revisions for future management actions.
        i. Reports will be completed by the TLD or its retainers and shared with its constituency, SCTES, NPS, WDNR, County, and other local resources
    3. Action: Evaluate results and revise management actions in this plan as needed to help meet the needs of the lakes.

Measurement: The measurement for this will be based on actual documents produced each year.