Lake Monitoring and Protection Network

Cooperative Agreement, 3rd Quarter Report

Written and compiled by:

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Citizen Science Center

September 2023

CONNECTING PEOPLE WITH NATURE

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Figure 1: Wetland Monitoring in Chippewa County. Purple loosestrife was found in about ½ acre and down the surrounding road.

Citizen Lake Monitoring Network

6/29: Sent out CLMN supplies to volunteers on Lake Holcombe

7/13: Supplied new equipment to CLMN Volunteer at Lake Eau Claire

8/8: Supported CLMN volunteers with sample shipment

8/20: SWIMS data checks for all CLMN volunteers

8/30: Checked in with all CLMN Volunteers via email

9/2: Updated CLMN volunteer information for monitoring at Lake Amacoy

9/7: Updated current monitoring sites

Clean Boats, Clean Waters

7/6: Discussed CBCW grants with Lake Altoona

8/24: Watercraft Inspectors had final presentations to their lake groups

8/27: Discussed CBCW volunteer efforts and goals for next year with Otter Lake

8:27: Discussed lake groups interest in CBCW trainings for next season

8/28: Checked all CBCW SWIMS data and tracked hours for season completion

8/28: Sent out CBCW and CLMN Grant information to all Lake Groups

9/7: Assisted with CBCW grant application for Lake Altoona

Early Detection and Monitoring Surveys

7/3: Completed early detection survey for Wolf River an South Fork Eau Claire River in Eau Claire County

8/8: Completed early detection survey for Red Cedar River, Tainter Lake, and Lake Menomin in Dunn County

8/9: Completed early detection survey for Island Lake and Clear Lake in Rusk County

9/20: Completed Early Detection Survey for Otter Lake in Chippewa County

Lake Groups

Lake Wissota Improvement and Protection Association

Attended LWIPA annual meetings and provided AIS education to members.

Otter Lake Booster Club

Assisted with Clean Boats, Clean Waters information and met to complete AIS survey.

Amacoy Lake Property Owners Association (ALPOA)

Met members of association and discussed AIS efforts including current management strategies, surface water grant application, and future goals.

Cornell Lake Sportsman Club

Met Lake Group and added contact information to mailing list

Island Chain of Lakes

Assisted in Purple loosestrife and SWIMS data entry to beetle release.

Eau Claire River Watershed Technical Committee

Attended meetings, discussed goals, and ongoing projects.

Outreach and Education

6/29: Discussed future events with Girl Scouts and AIS education

7/5: Met with Camp Kenwood to discuss possible future events and AIS education with campers

7/1-7/5: Conducted Site visits to multiple boat launches in Chippewa and Rusk County for Landing Blitz program

7/5: Held CBCW training event for current watercraft inspectors to assist in AIS identification

7/30: Attended Durand Youth Fishing Picnic for AIS Education

8/12: Attended Rusk County Jr Fair for AIS Education

8/12: Partnered with Flambeau River Outfitters for Bait Shop Initiative

9/19: Chippewa County Annual Meeting – Presented on CBCW, CLMN, Waterfowl Event, AIS prevention and management

Snapshot Day

8/19: Snapshot Day on Chippewa River/Dells Pond at Riverview Park in Eau Claire County

Figure 2*: Snapshot Day Volunteers Catching Rusty Crayfish in the Chippewa River*

Project Riverine Early Detection

8/23: Conducted Project RED on Chippewa River in Durand.

Purple Loosestrife Biological Control

8/10: Met with DNR to discuss beetle rearing with Beaver Creek Reserve.

8/18: Officially accepted Mass Rearing Cage for Purple loosestrife biocontrol program at Beaver Creek Reserve.

8/1-9/30 – Surveying and mapping Purple Loosestrife sites in Dunn, Chippewa, Rusk, Eau Claire, Pepin, and Buffalo Counties.

8/9: Wetland Monitoring in Chippewa County (**Figure 1**)

Signage

7/19: Completed signage checks in Rusk (7), Chippewa (5) counties.

7/24: Completed Signage checks in Dunn (5) and Eau Claire (5) counties.

Travel and Meetings

7/6	Met with Lake Altoona Association to Discuss AIS surveys, Snapshot Day, and possible CBCW grants.
7/6	Virtual Meeting for decontamination project training (DSP)
7/27	Met with Chippewa County to plan for Chippewa County Annual Lake Association meeting
8/3	Presented AIS Volunteer Opportunities to Master Naturalists
8/10	Met with DNR to discuss Purple Loosestrife Beetle Rearing
8/11	Snapshot Day Training Event and New Site Selection
8/12	Rusk County Jr Fair – Outreach Event
8/12	Met with Bait shop to discuss partnership with Bait Shop Initiative
8/13	Exotic Pet Surrender Event at Beaver Creek Reserve
8/19	Snapshot Day on Chippewa River in Eau Claire
8/28	Monthly LWSP Meeting with Chippewa County
8/29	Met with Fosters Riverview Inn for Annual meeting planning
8/31	Waterfowl hunter AIS Prevention Outreach Webinar
9/2	Amacoy Lake Association Meeting to Discuss AIS efforts, management, and surface water grant application
9/5	Eau Claire River Watershed Technical Committee Meeting
9/6	Met with Chippewa County Intern to harvest Knotweed Samples for Genetic Testing Project
9/12	Webinar on Overwintering Purple Loosestrife Plants & Beetles
9/14	Lakes and Rivers Partnership Meeting in La Crosse
9/19	Chippewa County Annual Lakes Association Meeting
9/20	AIS Early Detection Survey at Otter Lake

GLOSSARY

AIS – Aquatic invasive species

ALPOA – Amacoy Lake Property Owners Association

BCR – Beaver Creek Reserve

CBCW – Clean Boats, Clean Waters

CLMN – Citizen Lake Monitoring Network

CSC – Citizen Science Center (Beaver Creek Reserve)

LCC – Land Conservation Committee (Eau Claire County)

LCFM – Land Conservation and Forest Management (Chippewa County)

LLLPRD – Lower Long Lake Protection and Restoration District

LMPN – Lake Monitoring and Protection Network

LWIPA – Lake Wissota Improvement and Protection Association

Secchi disk – instrument used to measure water clarity

Station – Specified location on a waterbody with historical and/or continuous associated fieldwork

SWIMS – Surface Water Integrated Monitoring System

WBIC – Waterbody identification code

WCI – Watercraft inspector

WDNR – Wisconsin Department of Natural Resources

Resources on Biocontrol

North American Invasive Species Management Association (NAISMA) supports biological control as an integral part of an Integrated Pest Management (IPM) program. Biological control practitioners from across North America provide technical advice, guidance, and training on IPM, specifically targeting biological control of invasive weeds.

What is biocontrol?

There are many definitions attributed to biological control. For our purposes, we will define the biological control of weeds as the use of live natural enemies (e.g. insects, pathogens, nematodes, mites) of pests to reduce pest population levels below that which would occur in the absence of their natural enemies.

There are commonly three types of biological control recognized:

- Classical – initially small numbers of natural enemies are released in target pest areas for long-term control.
- Augmentative – large numbers of natural enemies are released to control a target pest for a short amount of time.
- Conservation – changing environmental conditions to aid in natural enemy survival.

How is biocontrol used?

For over 100 years, biological control principles have been used throughout the world as an effective, economical, and environmentally responsible way to decrease the damage caused by invasive species. Biological control agents are ideally employed for use against established weeds rather than new invaders. The effectiveness of biological control can range from highly effective, where people may use this approach and exclude other weed control measures, to failure. Most biological control systems fall somewhere between the two extremes outlined above. Where this is the case, an Integrated Weed Management (IWM) approach should be used to control the weed species of concern, with biological control as a component of the strategy (where applicable), but not the sole solution.

Biological control and the general principles of ecology mesh well together by reuniting a target pest with its natural enemy. Ecological theory can assist biological control practitioners to better predict and monitor the target invasive species and the potential effectiveness and possible risks of the biological control agents. By dividing complex ecological processes into manageable, measurable stages, it is possible to identify failures in a biological control system. This adaptive management approach will guard against repeat failures and improve the effectiveness and safety of future programs.

Is biocontrol right for you?

When biological control is successful, biocontrol agents increase in abundance until they suppress (or contribute to the suppression of) the target weed. As local target weed populations are reduced, their biological control agent populations also decline due to starvation and/or dispersal to other target weed infestations. In many biocontrol systems, there are fluctuations over time with the target weed becoming more abundant, followed by increases of its biocontrol agent, until the target weed/biocontrol agent populations stabilize at a much lower abundance. Biological control is not effective in every weed system or at every infestation. We recommend that you develop an integrated weed management program in which biological control is one of several control methods considered.

Additional Biocontrol Resources

Here are some additional resources for information on biological control specifics:

- iBiocontrol.org
- Cornell biological control program
- University of Florida biocontrol program
- 2020 NAISMA Classical Biocontrol Summit Recordings
- 2021 NAISMA Classical Biocontrol Summit Recordings
- 2022 NAISMA Classical Biocontrol Summit Recordings

MANAGING AQUATIC PLANTS IN NORTHERN WISCONSIN

AQUATIC PLANT MANAGEMENT PLAN COMPANION DOCUMENT

Harmony Environmental
finding a balance
People Land Water

Insert Ecological Integrity Service Logo

Insert Burnett County Logo

PHYSICAL CONTROL[8]

In physical management, the environment of the plants is manipulated. Several physical techniques are commonly used: dredging, drawdown, benthic (lake bottom) barriers, and shading or light attenuation. Because these methods involve placing a structure on the bed of a lake and/or affect lake water level, a Chapter 30 or 31 WDNR permit is required.

Dredging removes accumulated bottom sediments that support plant growth. Dredging is usually not performed solely for aquatic plant management but to restore lakes that have been filled in with sediments, have excess nutrients, need deepening, or require removal of toxic substances (Peterson 1982). Lakes that are very shallow due to sedimentation tend to have excess plant growth. Dredging can form an area of the lake too deep for plants to grow, thus creating an area for open water use (Nichols 1984). By opening more diverse habitats and creating depth gradients, dredging may also create more diversity in the plant community (Nichols 1984). Results of dredging can be very long term. However, due to the cost, environmental impacts, and the problem of disposal, dredging should not be performed for aquatic plant management alone. It is best used as a lake remediation technique.

Drawdown, or significantly decreasing lake water levels, can be used to control nuisance plant populations. With drawdown, the water is removed to a given depth. It is best if this depth includes the entire depth range of the target species. Drawdowns need to be at least one month long to ensure thorough drying and effective removal of target plants (Cooke 1980a). In northern areas, a drawdown in the winter that will ensure freezing of sediments is also effective. Although drawdown may be effective for control of hydrilla for one to two years (Ludlow 1995), it is most commonly applied to Eurasian water milfoil (Geiger 1983; Siver et al. 1986) and other milfoils or submersed evergreen perennials (Tarver 1980). Drawdown requires a mechanism to lower water levels.

Although drawdown can be inexpensive and have long-term effects (2 or more years), it also has significant environmental effects and may interfere with use and intended function of the water body during the drawdown period. Lastly, species respond in very different manners to drawdown and responses can be inconsistent (Cooke 1980a). Drawdowns may provide an opportunity for the spread of highly weedy species, particularly annuals.

Benthic barriers, or other bottom-covering approaches, are another physical management technique. The basic idea is to cover the plants with a layer of a growth-inhibiting substance. Many materials have been used, including sheets or screens of organic, inorganic, and synthetic materials; sediments such as dredge sediment, sand, silt or clay; fly ash; and various combinations of the above materials (Cooke 1980b; Nichols 1974; Perkins 1984; Truelson 1984). The problem with synthetic sheeting is that the gases evolved from plant and sediment decomposition collect underneath and lift the barrier (Gunnison and Barko 1992). The problem with using sediments is that new plants establish on top of the added layer (Engel and Nichols 1984).

Benthic barriers will typically kill the plants under them within 1 to 2 months, after which time they may be removed (Engel 1984). Sheet color is relatively unimportant; opaque (particularly black) barriers work best, but even clear plastic barriers will work effectively (Carter et al. 1994). Sites from which barriers are removed will be rapidly re-colonized (Eichler et al. 1995). Synthetic barriers, if left in place for multi-year control, will eventually become sediment-covered and will allow colonization by plants. Benthic barriers may be best suited to small, high-intensity use areas such as docks, boat launch areas, and swimming areas. However, they are too expensive to use

[8] Information from APIS (Aquatic Plant Information System) U.S. Army Corps of Engineers. 2005.

over widespread areas, and heavily affect benthic communities by removing fish and invertebrate habitat. A WDNR permit would be required for a benthic barrier, and these barriers are not recommended.

Shading or light attenuation reduces the amount of light available for plant growth. Shading has been achieved by fertilization to produce algal growth; application of natural or synthetic dyes, shading fabric, or covers; and establishing shade trees (Dawson 1981, 1986; Dawson and Hallows 1983; Dawson and Kern-Hansen 1978; Jorga et al. 1982; Martin and Martin 1992; Nichols 1974). During natural or cultural eutrophication, algae growth alone can shade aquatic plants (Jones et al. 1983). Although light manipulation techniques may be useful for narrow streams or small ponds, in general, these techniques are of only limited applicability.