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RE: NLDC reporting for Wisconsin Department of Natural Resources, AEPP-470-16 Town of Winchester Phase II, Birch, Rainbow, and Tamarack Lakes
Activities from March 1, 2018-August 31, 2018

Overview

The Town Aquatic Invasive Species Partnership (TAISP), founded in 2010, consists of the North Lakeland Discovery Center (NLDC), the Towns of Manitowish Waters, Boulder Junction, and Winchester, the Manitowish Waters Lake Association (MWLA), and the Winchester Town Lakes Committee. The TAISP works together to prevent the introduction of and minimize the spread of aquatic invasive species (AIS) in the Winchester area and its associated surrounding wetlands and riverways. The TAISP partners with Onterra, LLC, to complete a phase-based management plan for Winchester Lakes. Each phase covers 2-3 lakes within the Town of Winchester, where the NLDC and Onterra study the lakes in current phases extensively. Results are compiled into individual management plans for each lake, and contribute to a larger, overall management plan for the entire Town. A large, underlying issue of each grant is also the control and treatment of curly-leaf pondweed, and aquatic invasive plant. Each year NLDC monitors the Winchester Lakes with the goal of mapping current populations of AIS, and to look for any new infestations.

Curly-leaf pondweed (CLP) has been the main AIS of concern, as the Harris Lake Association (HLA) discovered it in Harris Lake in 2008, but NLDC also treats and maps purple loosestrife infestations, and monitors for other AIS such as Eurasian-water milfoil, spiny water flea, rusty crayfish, mystery snails, and yellow iris. At the moment, Harris Lake is the only known lake containing populations of CLP. The HLA contracted with Onterra in the fall of 2008 to develop a strategy for CLP management. After the monitoring and assessment surveys in 2009 and 2010, herbicide was applied on approximately 10.4 acres in the spring of 2011. CLP was treated again in 2012 (4.1 acres) and 2013 (2 acres). Smaller patches of CLP not treated with herbicide were hand pulled by HLA volunteers. No CLP was found in 2014. In 2015 Harris Lake joined Onterra and NLDC in the first phase of the Town of Winchester Lake Management Planning Project. No CLP was found in 2015. Onterra located and removed 3 small plants in 2016. In 2017, NLDC Water Program Coordinator located several more plants in the same area as 2016. NLDC staff and volunteers removed the plants. NLDC located several CLP plants in the same area as 2017. NLDC staff removed the plants. Please see Onterra reporting for additional information and maps of the Harris Lake CLP.

The lakes covered in each phase are as follows:

Phase I (2015): Harris and Hiawatha Lakes

Phase II (2016): Birch, Rainbow, and Tamarack Lakes

Phase III (2017): South Turtle, North Turtle, and Rock Lakes

Phase IV (2018): Pardee, Circle Lily, Adelaide, and Helen Lakes

Activities and Deliverables

1. Stakeholder participation: stakeholder survey, planning meetings, kick-off meeting, wrap-up meeting, news releases and newsletter articles.
 - a. Details for stakeholder survey, kick-off meeting, and planning meetings provided in report for activities February 15, 2016-August 31, 2017
 - b. A wrap-up meeting was held on May 19, 2018 at the Winchester Town Library. Onterra presented the final management plans for each of the 3 lakes. 10 people attended.
 - c. Please see supporting document for copies of articles from newsletters and social media.
2. Water quality sampling and analysis
 - a. Please see Onterra reporting documents.
3. Watershed assessment and P load modeling
 - a. Please see Onterra reporting documents.
4. Fisheries assessment
 - a. Please see Onterra reporting documents.
5. Shoreline and coarse woody habitat assessment
 - a. Please see Onterra reporting documents.
6. Early-season AIS monitoring and professional Dreissena monitoring
 - a. Details for Dreissena monitoring provided in report for activities February 15, 2017-August 31, 2017
 - b. NLDC staff located and removed several CLP plants from Harris Lake. Plants were located on June 14, 2018, and removed on June 20, 2018. The removal took 3 people 2 hours for a total of 6 person hours. Plants were located in the same area on Harris as in 2017.
 - c. Please see list of activities below for dates of AIS monitoring on Winchester Lakes.
7. Aquatic plant surveys
 - a. Please see Onterra reporting documents.
8. Volunteer AIS and lake level monitoring and water craft inspections
 - a. NLDC Water Program Coordinator monitors lake levels on 39 lake in Vilas County, including Birch, Rainbow, Tamarack, Harris, Pardee, and Hiawatha in Winchester. This is an 8-year partnered effort between NLDC, Lac du Flambeau, and Trout Lake Research Center. NLDC Water Program Coordinator and a licensed volunteer surveyor install and remove each lake gauge. Volunteers read gauges once per week from ice out to ice on. Data are compiled into a long-term database, as well as entered into SWIMS each year. Data are shared with Trout Lake Station in Boulder Junction, WI to be analyzed for scientific research.
 - b. See list of programs and events for gauge removal information, AIS trainings, and CBCW trainings.
9. Data analysis
 - a. Please see Onterra reporting documents.
10. Develop lake management plan
 - a. Please see Onterra reporting documents.
11. Hire AIS Coordinator and Water Education Intern

- a. Emily Heald, Water Program Coordinator at NLDC, continued to serve as project manager for this grant.
- b. Colby Durre hired as primary water education intern, with support from Johnny Behrendt and Braden Westerhoff.

12. AIS educational activities

- a. AIS Coordinator attends all lake association meetings for lakes involved in the phase-based lake management planning process, providing updates on projects, promoting the volunteer program, and teaching about issues significant to water resources.
- b. AIS Coordinator provides articles to the Winchester lake association newsletters regarding project updates, AIS information, promotion of the volunteer program, and general lake ecology. In some cases, lake association board members prefer to write the articles, in which case the AIS Coordinator informs the member of the updates and the board member writes and publishes the articles.
- c. See list of programs and events for program information.

Additional list of NLDC aquatic educational programs and events:

February 3, 2018

Guided “Winter Waterfall” trip for Discovery Center members. Discussion topics included watersheds, water movement throughout a watershed, and effects of human development on water within a watershed.

February 7, 2018

“Life Under the Ice” presentation at the Boulder Junction library to teach about lake life adaptations to cold water.

February 8, 2018

Attended University of Wisconsin Steven’s Point career fair to promote internships at the Discovery Center.

February 15, 2018

“Secret Love Lives of Animals” program – a Jeopardy-style program about the mating habits of animals, including a category on invasive species.

February 17, 2018

“Wisconsin Ice Fishing Basics” program – a program designed to teach beginner fishermen how to ice fish, including laws and regulations around bait transportation, and responsible fishing behaviors to prevent the spread of AIS.

March 7, 2018

“Turtles of Wisconsin” program about the adaptations and lifecycle of Wisconsin’s turtles, including habitat requirements.

March 8, 2018

“Wisconsin’s Lake Sturgeon” program about the unique history and biology of sturgeon in the area.

March 12, 2018

Provided a two-sided flyer for the Manitowish Water Chamber of Commerce “May Mailer” regarding AIS and how to become involved in the Discovery Center’s AIS monitoring program.

April 4, 2018

“Duck, Duck, Goose – The World of Waterfowl” program about migration, adaptations, behavior, and habitat of Wisconsin’s waterfowl.

April 7, 2018

Attended Regional Citizen Science meeting at Moon Beach to discuss a network of citizen science in the Northwoods. Included projects such as AIS monitoring and lake level monitoring.

April 14, 2018

“Humanity for Habitats Series: Waterfowl Habitat”- A program designed to teach the community about habitat requirements of waterfowl, and ideas for preserving private property to appeal to waterfowl. Included building a wood duck box for each participant.

April 18-20, 2018

Attended the Wisconsin Lakes Convention in Steven’s Point, WI to network and stay up to date with Wisconsin water issues. Water Program Coordinator, Emily Heald, was also nominated for the Wisconsin Lake Stewardship Award.

April 28, 2018

“Humanity for Habitats Series: Fish Sticks/Native Shoreline Gardens” – A program designed to teach riparian owners the importance of native shorelines, and ways to improve shorelines.

May 3, 2018

“Hidden Lake Creatures” program about the invisible life within lakes.

May 5, 2018

“Meandering the Manitowish” canoe river trip designed to discuss the ways rivers change over time, and abundant wildlife viewing.

May 9, 2018

7th graders from North Lakeland Elementary School assisted in digging up purple loosestrife roots for beetle rearing project.

May 11, 12, 16, 2018

Lake gauge installation to monitor lake levels in Vilas County.

May 18, 2018

Winchester Phase 3 (Turtle Chain) meeting where Onterra, the consulting company we work with, provided updates on the 2017 field season, and Emily Heald provided an update on volunteer hour progress and the upcoming field season.

May 19, 2018

Winchester Phase 2 (Birch, Rainbow, Tamarack) wrap up meeting with Onterra to present final management plans for each lake.

May 19, 2018

Winchester Phase 4 (Pardee, Circle Lily, Helen, Adelaide) kick off meeting where Onterra and NLDC provided a project overview for what volunteers can expect with the project, as well as an overview of required volunteer hours.

May 21, 2018

Interns arrived, NLDC training day

May 25, 2018

Interns attended Clean Boats, Clean Waters training with Vilas County AIS Coordinator in Eagle River

May 29, 2018

Winchester Phase 2 Wrap Up meeting to present the final lake management plans for Rainbow, Birch, and Tamarack Lakes.

May 29, 2018

Winchester Phase 4 Kick Off meeting to meet and greet with Circle Lily and Pardee Lakes, and to provide an overview of the lake management planning process.

May 31, 2018

Installed lake gauge at Crab Lake.

June 1-3, 2018

Interns participated in DNR's Drain Campaign during CBCW hours to further promote draining of all water in boats before moving away from the lake. Included free ice pack hand out for icing fish.

June 2, 2018

Construction of fences for shoreline restoration projects.

June 4, 2018

67 Arbor-Vitae Woodruff kindergarteners assisted in planting shoreline restoration gardens.

June 8, 2018

NLDC hosted Vilas County Aquatic Invasive Species Coordinator, Cathy Higley, to host a CBCW training open to the public.

June 9, 2018

Presque Isle River Canoe Trip – a paddle on the scenic Presque Isle River to view songbirds, nesting waterfowl, and shorebirds.

June 9, 2018

Attended Rainbow Lake Association annual meeting to present on lake management plan.

June 10, 2018

Attended Pardee Lake Association picnic to introduce lake management planning project

June 12, 2018

Provided specialty classes and training to Center for Conservation Leadership about water ecology, including portions about aquatic invasive species.

June 13, 2018

Purple loosestrife beetles arrived and were placed on netted plants.

June 13, 2018

Early season AIS survey completed on Rainbow and Hiawatha Lakes in Winchester.

June 14, 2018

Early season AIS survey completed on Harris Lake in Winchester.

June 16, 2018

Clean Boats, Clean Waters training for Winchester residents

June 16, 2018

Attended Van Vliet Lake Association annual meeting to provide AIS updates.

June 19, June 29, July 14, July 24, August 4, August 14 2018

“Aquatic Invasive Species Identification Training” at Koller Park in Manitowish Waters to teach participants how to identify and report locally relevant aquatic invasive species.

June 20, 2018

Curly-leaf pondweed hand pulled on Harris Lake in Winchester. Two interns and water program coordinator spent 3 hours (9 person-hours) pulling and surveying the area.

June 21, 2018

Early season AIS survey completed on Tamarack Lake in Winchester.

June 21, 2018

Early season AIS survey partially completed on Birch Lake in Winchester.

June 22, 2018

“Wonders of Wildlife: Shorebird” program about adaptation and migration of shorebirds in Wisconsin.

June 23, 2018

Float Your Boat Trivia Rally- an on-water scavenger hunt on the Manitowish Waters Chain of Lakes to test participants’ knowledge on area history and ecology.

June 26, 2018

Water Program Coordinator and interns attended Aquatic Plant Identification Training Course offered by UW-Extension to be better able to identify aquatic plants during meander surveys.

June 29-July 4, 2018

Interns participated in WDNR’s Landing Blitz during CBCW hours to promote the CBCW message to boaters during busy boating times.

June 29, 2018

Steering committee meeting for Winchester Phase 3 (Turtle Chain) to discuss first steps in creating a management plan.

June 30, 2018

Provided AIS identification training for Turtle Chain in Winchester.

July 3, 2018

Clean Boats, Clean Waters training for Turtle Chain.

July 3, 2018

Water program coordinator and one intern interviewed for Newswatch 12 for a segment on AIS.

Interview can be found at: <http://www.wjfw.com/stories.html?SKU=20180703182447&textsize=large>

July 5, 2018

Discovery Center's Family Play Day, a free event for families, featuring several water topics such as AIS and fishing.

July 6, 2018

First round of purple loosestrife beetles matured and ready for release.

July 6, 2018

Early season AIS surveys completed on the Turtle Chain in Winchester

July 6, 2018

Clean Boats, Clean Waters and AIS identification training provided for Pardee Lake (Winchester Phase 4).

July 7, 2018

Attended Turtle Chain Lake Association to provide AIS and lake management planning updates

July 5, 2018

Family Play Day – An all-ages event for fun in the outdoors at the Discovery Center. Included topics relation to water such as frog catching, AIS identification, and macroinvertebrates.

July 6, 2018

Plunket Lake Canoe Trip – A relaxing canoe program to observe a wide variety of shoreline habitats and diverse aquatic life.

July 13, 2018

Mussel Workshop and Canoe Trip – WDNR Mussel Biologist joins us to discuss freshwater mussels of Wisconsin, threats to their habitats, and way to monitor and protect them.

July 15, 2018

AIS booth at the Lion's Chicken BBQ lunch in Winchester.

July 19, 2018

NLDC's annual meeting, which included an introduction and season update from interns.

July 24, 2018

Completed PL survey on Birch, Circle Lily, and Hiawatha Lakes in Winchester (no PL found).

August 3, 2018

Hosted Vilas County for a lakeshore erosion workshop.

August 3, 2018

Water Monitoring Interns attended Trout Lake Station's open house.

August 6, September 7 2018

Acoustic Bat Monitoring Pontoon Survey – An opportunity to learn about how your activities in and around the water affect our night-flying friends – bats.

August 8, 2018

Completed PL survey on Rainbow and Harris Lakes in Winchester. No PL found.

August 8, 2018

Attended workshop about how tribal government works in Lac du Flambeau.

August 9, 2018

Allequash Lake State Natural Area Canoe – A relaxing paddle to learn about wild rice and birds.

August 12, 2018

AIS booth at Boulder Junction's Musky Jamboree

August 14, 2018

"Eco-Discoverers (Ages 4-7) – Lake Rangers" program about Wisconsin's waters and the creepy crawlers that invade it.

August 15, 2018

"Eco-Explorers (Ages 7-10) – Aquatic Safari" program to catch critters in the lake, observe plankton, and meet live aquatic animals in the Nature Nook.

August 15, 2018

Appreciation Potluck for Volunteers, Interns, and Sponsors. An evening dinner to thank all who have helped us during the summer. Interns present on summer experiences and individual projects.

August 16, 2018

PL survey completed on Tamarack and wetland near Birch Lake in Winchester

August 18, 2018

Palmer-Tenderfoot Nature Conservancy Area Canoe and Hike day trip along the Ontonagon River to the Tenderfoot Forest Reserve. A discussion of cultural history, old growth forests, and shoreline development are included.

August 18, 2018

Participated in Wisconsin's Snapshot Day

August 21, 2018

AIS identification training for Boulder Lakes Alliance group.

Reimbursement requests and rationale:

Staff time:

- NLDC Executive Director salary: The Executive Director attends meetings and communicates grant progress to the Board and Finance Committee; tracts restricted funding from grants in the NLDC budgets; establishes program schedules and staffing; attending planning meetings
- NLDC Bookkeeper salary: The NLDC Bookkeeper provides Quickbooks oversight; assists in filing receipts of reimbursable expenses; tracks credit expenditures; pays bills; prepares financial reports for the AIS Coordinator; payroll; prepares invoices for consultants and towns
- NLDC AIS Coordinator salary: The AIS Coordinator develops and conducts public outreach at community events; identifies potential AIS samples collected by volunteers; recruits and trains volunteers; compiles volunteer hours for grant requirements; maintains presence in newspaper and newsletter articles and social media; monitors waters for AIS; grant administration and financial management; oversees purple loosestrife bio-control project, monitoring, and flower head clipping; attends town meetings, Winchester Town Lakes Committee meetings, and lake association meetings to provide updates and answer questions; attends lake management planning meetings and discussion; coordinates contractors, reviews contractor reports, and provides feedback; hires and oversees water monitoring interns
- AIS Coordinator mileage to attend meetings with towns, lake associations, and town lakes committees to secure funding and provide updates
- Intern mileage for AIS monitoring
- Onterra LLC (consulting company) consulting costs
- Gas for NLDC van for transportation to and from monitoring sites