Arrowhead Invasive Species

latest news

From the Cook and Lake County Invasives Teams

September, 2015
Vol. 5, Issue 2

From the Invasive Species Coordinator

This summer has been a whirlwind of outreach activities, invasive plant treatments and plenty of learning experiences. I'm happy with what we have accomplished and look forward to catching up this fall and winter to hear more about your activities. I hope we can brainstorm ways to improve the communication and cooperation between the Invasives Teams and their member organizations.

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Inside this Issue

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Invasives Team Updates

The purpose this newsletter is to provide Invasives Team members, and other interested parties, with an occasional update on the progress of the cooperative. This serves as a place where plans and accomplishments can be reported, and provides a forum where additional ideas and suggestions can be generated between meetings and across groups.

Cook County

CCIT member organizations have been hard at work this summer. MnDOT and the CCIT worked together to treat the Dalmatian toadflax sites in Schroeder and Lutsen. Dalmatian toadflax is listed as a restricted noxious weed on the MN Department of Agriculture's eradicate list meaning that landowners are legally required to eradicate it from their property. This is the only species on the eradicate list known to be in Cook County.

The CCIT led three wildflower walks to teach native and non-native plant identification. Walks took place at the Temperance River, Cascade River and Sweetheart's Bluff and drew in a total of 15 participants.

In August, Laurel gave a presentation at the Seagull Fire Hall on invasive plants and control techniques. Afterwards a group of volunteers pulled spotted knapweed near the Forest Service Guard Station.

Photo courtesy of Amanda Weberg

The CCIT helped staff the Stop Aquatic Hitchhikers booth during Fisherman's Picnic. The booth provided information about invasive species identification and how to reduce their spread.

Amanda Weberg, Cook County AIS coordinator, donned a rusty crayfish costume during the Fisherman's Picnic parade and passed out bobbers encouraging people to "spread the word, not the species". Amanda has been keeping regular hours at the Visit Cook County office this summer to provide information to visitors about aquatic invasive species.

See page 10 for more information about the outreach and education events that took place in Cook County this summer.

Invasives Team Updates

Lake County

In Lake County, surveys of invasive plant species in the right-of-way of county roads were completed in July. Invasive plant populations were documented using a tablet and a new monitoring database created by the Lake County Soil and Water Conservation District. The data collected will be submitted to EDDMapS, a nation-wide invasive plant mapping service.

This summer, Minnesota Conservation Corps crews treated large infestations of Japanese barberry and Japanese knotweed in Two Harbors. These two species are not widespread in the Arrowhead region and are high priorities for control. At the Finland Community Center, the Lake County Invasives Team and Finland Youth Night participants controlled common tansy and spotted knapweed.

Lake County Soil & Water Conservation District Update

Photos by Emily Nelson

This summer staff from the Lake County Soil & Water Conservation District have been coordinating efforts, in conjunction with four interns from Vermilion Community College in Ely, to trap the invasive rusty crayfish. This is an effort to slow the spread of rusty crayfish into the BWCAW via the Kawishiwi River. Rainy River Headwaters Coordinator, Derrick Passe, could be found at the Ely farmers market on many occasions, educating the public about the negative impacts of rusty crayfish in northern Minnesota and serving up the crayfish to anyone who cared to taste them.

In July, Derrick Passe and Emily Nelson joined the Finland youth group at Dumbbell lake to trap rusty crayfish and educate the youth about the impacts of the invasive species. The kids took turns going out on the lake with Derrick to pull previously set traps, and in the end over 500 crayfish were caught. While waiting by the dock for their turn on the boat, the kids were able to catch many crayfish of their own using hand held nets. Two weeks later, Derrick and Emily joined the youth group at the Finland farmers market to hold a crayfish boil. The kids were very involved, and almost everyone had a taste.

In August, Derrick and Dan Schutte (Lake County SWCD District Administrator) met with the International Rainy-Lake of the Woods Watershed Board to discuss the importance of collaboration within this International Watershed to control AIS. The Crayfish Pate was well received.

1854 Treaty Authority Rusty Crayfish Exclosure and Enclosure Studies

By: Tyler Kaspar
Environmental Specialist - 1854 Treaty Authority

The 1854 Treaty Authority is an inter-tribal natural resource management organization that manages the off-reservation hunting, fishing and gathering rights of the Bois Forte Band of Chippewa and Grand Portage Band of Lake Superior Chippewa in the territory ceded under the Treaty of 1854. Lake and Cook counties are entirely within the 1854 Ceded Territory and the resources within those counties are important to the bands and the 1854 Treaty Authority.

Rusty Crayfish (Orconectes rusticus) are an invasive species in Minnesota that originated from the Ohio River Valley. They have invaded a number of lakes in Minnesota, including ones in Lake and Cook counties. In lakes that have been invaded, Rusty Crayfish have been found to negatively impact aquatic plants by clearing out vegetated areas. Because of their known impacts to aquatic vegetation and public observations of decreasing Manoomin (Wild Rice) on lakes infested by Rusty Crayfish, the 1854 Treaty Authority has conducted pilot studies consisting of exclosures and an enclosure to investigate whether Rusty Crayfish negatively impact Wild Rice.

Exclosures
In years 2013 (White Iron and Farm lakes) and 2014 (Farm and Garden lakes), one exclosure (10' x 10') was placed in each lake infested with Rusty Crayfish and in an area known to produce Wild Rice shortly after ice-out (before Wild Rice germinates). The exclosures were designed to keep Rusty Crayfish out so Wild Rice density inside the exclosure could be compared to the outside area inhabited by Rusty Crayfish. Traps were set inside the exclosures to capture any Rusty Crayfish that may be within and traps were set outside and near the exclosure to verify Rusty Crayfish were in the area. Exclosures were visited once every two weeks and Wild Rice conditions (pictures), surface temperature and water levels were recorded. Once Wild Rice became harvestable (late August/early September), densities inside and outside the exclosures were recorded and the exclosures were removed.

Results from the exclosures (although limited) suggested that Rusty Crayfish were not impacting Wild Rice in those areas (densities inside the exclosures were similar to outside, see Figure 1) and that Rusty Crayfish were not typically found in the Wild Rice beds with soft, mucky substrate. Most of the crayfish caught in the Wild Rice beds were the native Calico (or Papershell) Crayfish (*Orconectes immunis*). Rusty Crayfish were found in higher abundance on the outer edge of Wild Rice and in areas nearby with rocky substrate and woody debris. The exclosures did not completely keep crayfish (native or invasive) out, but did limit their access and lower their density compared to outside of the exclosures.

1854 Treaty Authority Crayfish Studies *Cont.*

Enclosure

Due to findings from the exclosure studies, an enclosure study was conducted to investigate whether Rusty Crayfish would graze on Wild Rice in an enclosed (forced) setting. In 2015, an enclosure was placed on Dumbbell Lake with similar design and methods used for the exclosures described above. Sand bags and a wire mesh skirt were added to the bottom to help keep Rusty Crayfish inside. The enclosure was set up in an area with Wild Rice (before germination) and 75 Rusty Crayfish were added to an approximately 10' x 10' area. The enclosure was checked every two-three weeks. After two months, traps were set inside to verify Rusty Crayfish presence. Only seven Rusty Crayfish were caught inside the enclosure. To re-establish a density of 75, 68 Rusty Crayfish trapped from Dumbbell Lake were added. At this time, one standing (aerial) stalk of Wild Rice was observed inside the enclosure while other stalks were observed on the edge of and throughout the area outside the enclosure. After two weeks, the enclosure was checked again and traps were set outside to verify Rusty Crayfish were in the area. Few were caught in the Wild Rice (consistent with the exclosure results) and Wild Rice was absent from inside the enclosure. Upon enclosure removal (9/1/2015), Wild Rice was absent inside the enclosure and four Rusty Crayfish remained inside.

Figure 1. Rusty Crayfish exclosure on Farm Lake (8/20/2014) comparing Wild Rice abundance outside to inside the exclosure. Estimated densities were not found to be significantly different.

1854 Treaty Authority Crayfish Studies *Cont.*

Figure 2. Rusty Crayfish enclosure on Dumbbell Lake (8/31/2015) comparing Wild Rice abundance outside (sparse) vs inside (absent) the enclosure.

Results from the enclosure indicate that under certain (forced) conditions, Rusty Crayfish will graze upon and impact Wild Rice. In our study, Wild Rice (with the exception of two plants) was absent inside the enclosure throughout the project. We are not certain of exactly which stage of growth the Wild Rice was grazed upon, but we do know it was during early growth well before the floating leaf stage. Two Wild Rice plants grew to floating leaf stage, which may have been due to the declining Rusty Crayfish density. One of the plants died and the other became aerial. When the Rusty Crayfish density was re-established to 75 per 10' x 10' area, the aerial stalk of Wild Rice was eliminated. Knowing the stage at which Wild Rice is vulnerable to Rusty Crayfish grazing could help inform management decisions for areas where grazing is thought to have occurred and actions may take place to potentially limit their impact. We may conduct further research to investigate whether our results are repeatable and which stage(s) Wild Rice is vulnerable to Rusty Crayfish grazing. If further research is conducted, new enclosure design options will be explored to help ensure Rusty Crayfish do not escape and additional monitoring of Rusty Crayfish density inside the enclosure will be done to determine have declined and why.

Notes from a CCIT Volunteer

Written by Jessica MacCudden

Before I started volunteering with the Cook County Invasives Team the only invasive plant I knew was tansy. After doing some volunteering, I learned that there are many more. As a CCIT volunteer I helped younger kids learn about invasive plants by helping out with an invasive species educational activity at the YMCA camp. I really enjoyed volunteering this summer. If I could do it again next summer I would.

Jessica MacCudden volunteered with the Cook County Invasives Team this summer through the Cook County Extension Service's Incredible Exchange program for Cook County residents ages 11-14.

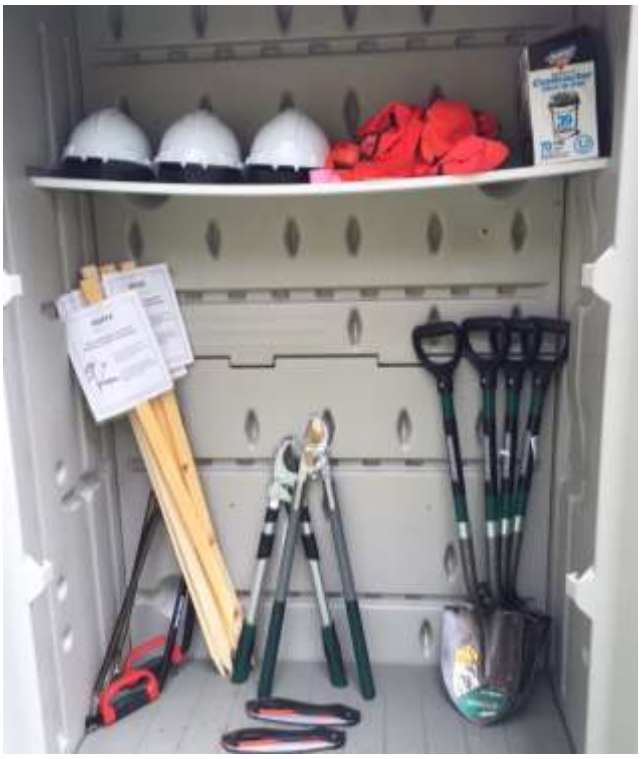
Learning to paddle a canoe and helping Cook Co. SWCD with lake monitoring

Teaching other volunteers about invasive plants including spotted knapweed

Pulling spotted knapweed around Grand Marais.

Sugarloaf Community Shed – Year 2

The Community Forest Restoration Shed at Sugarloaf Cove had another successful year. Fifteen people went through the training which focuses on invasive plant identification and control as well as how to safely and effectively apply herbicides. Participants are able to borrow equipment and use herbicides from the shed after completing the training. This year, trainees borrowed equipment to treat common tansy, Canada thistle and spotted knapweed in Lake and Cook counties.



Invasives Team Grant Proposal Passes First Hurdle

In July, Invasives Team Coordinator, Laurel Wilson and Sugarloaf: The North Shore Stewardship Association submitted a preliminary grant proposal to the National Fish and Wildlife Foundation's *Pulling Together Initiative* program. If awarded, the grant would fund a two-year early detection and rapid response project in Cook and Lake counties. Workshops held in local communities would increase detection of high priority invasive plant populations including buckthorn, garlic mustard, Japanese knotweed and more. Additionally, a contracted position would be hired to work 20 hours per week in the summer months of 2016 and 2017 controlling populations of these high priority species on public and private land. In August, Sugarloaf received a request to submit a full proposal which is due at the end of September. The final decision on funding will be made in December of this year.

Plant Profile: Purple loosestrife (*Lythrum salicaria*)

Purple loosestrife is native to Europe and Asia. In North America, this plant invades wetland areas, wet ditches, marshes, shorelines, streams, and areas with wet ground.

Growth: 3-6' tall perennial with an angular semi-woody stem. Large woody taproot with fibrous rhizomes.

Leaves: smooth-edged, opposite, linear, and sessile.

Flowers: numerous long spikes of ½" to ¾" purple flowers. Blooms July-Sept.

Seeds: spreads mainly by seed, but also vegetatively by root or stem fragments. Has a large seedbank.


L. Wilson

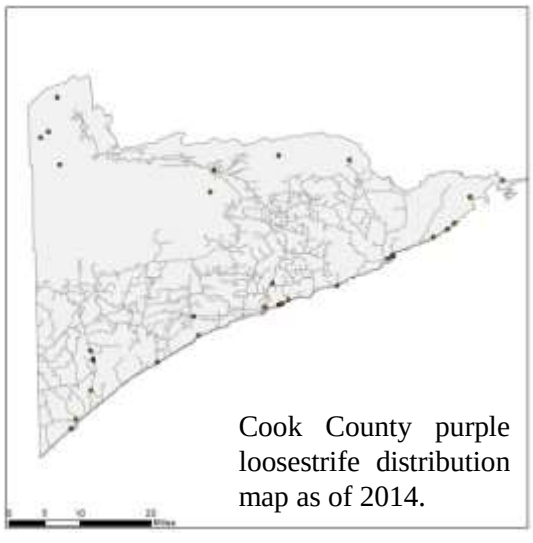

A. Edgerton

Control:

- Pulling can be effective, but root fragments will re-sprout if left.
- Purple loosestrife typically grows in very wet areas and burning may not be appropriate.
- Mowing is difficult in the wet habitats where purple loosestrife grows.
- 2,4-D, glyphosate, triclopyr, imazapyr and aminocyclopyrachlor are effective (typically requires aquatic formulations).
- Two leaf eating beetles (*Galerucella pusilla* and *G. calmariensis*) are approved as biological controls.

Purple loosestrife is currently established in the Minnesota Arrowhead but has only scattered populations.

To report a sighting contact Laurel at lwilson@boreal.org or 218-387-3772.



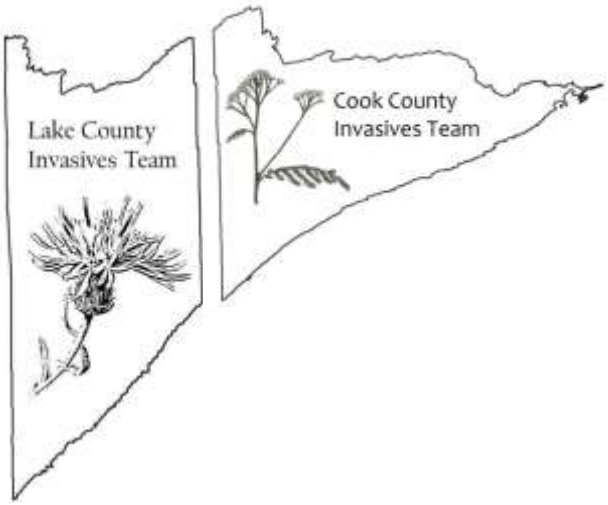
Cook County purple loosestrife distribution map as of 2014.

Outcomes of the MN DNR Coastal Program Grant

The Cook County Invasives Team and Cook County Soil & Water Conservation District received a grant from the Minnesota DNR's Coastal Program to conduct a series of educational programs within the county this year. So far, the CCIT and SWCD have put on seven workshops including presentations on gypsy moth and emerald ash borer, a shoreline restoration project, and a pontoon tour to learn about aquatic invasive species. The CCIT also connected with visitors of Cascade River State Park with a booth for PlayCleanGo day. These workshops have reached over 100 people in total. The grant also funded four inserts in the Cook County News Herald (pictured below). **The final event of the season will be held Thursday, September 24th from 10am-12pm.** Join the Cook County Invasives Team and Cook County AIS Coordinator, Amanda Weberg for a morning of monitoring madness at Devil Track Lake. Participants will take a boat tour around the lake to learn techniques for aquatic invasive species monitoring. Devil Track Lake is known to be infested with spiny waterflea and the group will test out different methods of collecting this and other aquatic invasive species.


K. Berg


L. Wilson



Thank you to those involved with the Cook and Lake Invasives Teams for their participation and support.

University of Minnesota Extension

Sugarloaf The North Shore Stewardship Association

Cook County Highway Department

The Nature Conservancy

Wolf Ridge Environmental Learning Center

1854 Treaty Authority

Forest Service U.S. Department of Agriculture

Lake County Soil & Water Conservation District

Cook County Soil & Water Conservation District

Gunflint Trail Scenic Byway

National Park Service

Minnesota Department of Transportation — Moving Minnesota

Grand Portage Chippewa

Minnesota Department of Natural Resources

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