

ARROWHEAD INVASIVE SPECIES

Latest news

From the Cook and Lake County Invasives Teams

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"Every individual matters. Every individual has a role to play. Every individual makes a difference."

-Jane Goodall

**Thank you to everyone
who joined us in the
effort to control invasive
species this year!**



Cook County HS Biology Class



Incredible Exchange Volunteers



Conservation Corps of MN

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.

Lake County

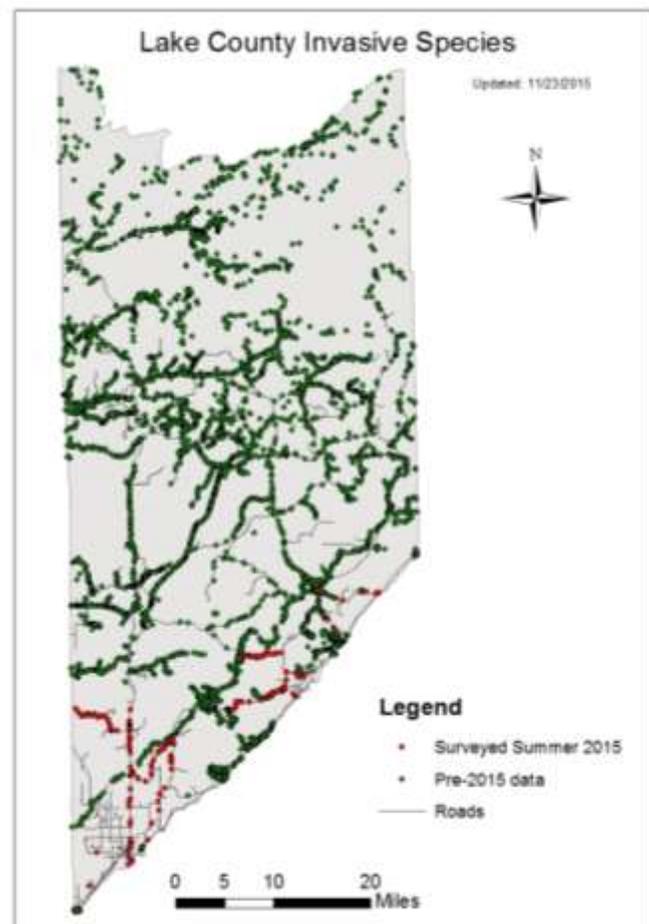


In Lake County, a large population of Japanese barberry in the Larsmont area has been the focus of outreach and management efforts. This fall a Conservation Corps of Minnesota crew worked in some of the densest areas of Japanese barberry. The crew cut the shrubs down to allow it to break down over the winter. In the spring re-growth will be foliar treated. The idea is that these smaller-statured plants will respond better to herbicide treatment. This fall, the Lake County Soil & Water Conservation District sent to postcards to 450 people living within a 2.5 mile radius of the infestation of Japanese barberry and common buckthorn. The postcards provided contact information to find out more about treatment options. There have been seven contacts made and three site visits so far as a result.

Invasive plant surveys were completed in the fall to capture the woody plants that were missed in the summer surveys. These non-native species hold their leaves later than the native trees and shrubs which makes them easier to spot. Overall, the invasive species surveys greatly expanded our knowledge of plant distributions in the county.

The end of the year is a time for summarizing and celebrating our accomplishments for the year. Here's a look back on what the LCIT accomplished in 2015...

- 169 acres of invasive plants treated (with chemicals and mechanical removal)
- 7 education events and presentations
- 4 youth education activities
- 2 invasive species interviews on KTWH radio



Invasives Team Updates

Cook County



This fall the CCIT worked on two school outreach projects. CCIT coordinator, Laurel Wilson, and Cook County AIS coordinator, Amanda Weberg spent two days with 10th grade biology classes at Cook County High School. The students learned about how invasive species are spread and why they are harmful to the environment in a classroom presentation. Amanda highlighted two aquatic invasive species that can be found in Cook County and the students got an up-close look at spiny waterfleas. The students also participated in a spotted knapweed removal project on county property and learned about native plant restoration.

Throughout the school year, Laurel will be working with the 2nd and 3rd grade class at Oshki Ogimaag Community School in Grand Portage on a native plant project. This fall Laurel visited the class to talk about invasive species and taught the students how to avoid spreading invasive plants. In late October, the students learned about the cultural and ecological importance of a native plant, sweet grass. The class collected sweet grass seed with the help of Brandon Seitz from the Grand Portage National Monument. In the spring, the students will start the sweet grass plants indoors and transplant them into a medicinal native plant garden at the school. Laurel put together a radio piece describing the project that aired on WTIP. Follow this link to listen... <http://www.wtip.org/planting-and-harvesting-native-sweet-grass-sacred-hair-mother-earth>



Here's a look back on what the CCIT accomplished in 2015...

- 144 acres of invasive plants treated (with chemicals and hand pulling)
- 22 education events and presentations
- 15 people trained in safe and effective herbicide use
- 5 youth education activities

Plant Profile: European buckthorn

Rhamnus cathartica

European buckthorn is invades forest borders, roadsides, fencerows, river banks, occasionally in swamps.

Growth: Deciduous shrub that forms dense thickets. Several stems creating a spreading, loosely-branched crown to 25'. Thorny.

Leaves: Elliptic, smooth on both surfaces, minutely toothed, and retained late in the growing season.

Flowers: Inconspicuous green flowers that produce black berries. Blooms early summer (May-June)

Seeds: Contain a laxative compound and are bird dispersed.

Control:

- Hand pulling or using weed-wrenches can control small patches.
- Cutting must be accompanied by herbicide use to be effective.
- Prescribed fire can control small plants if done repeatedly, but will stimulate re-sprouting.
- Herbicide is an effective control by foliar application (2% triclopyr or glyphosate), cut-stem (20% triclopyr or glyphosate applied to the cambium or layer of active tissue) or basal bark (specially formulated chemical such as Garlon 4 applied to the bark at the base).



L. Wilson

Female buckthorn flowers



Landscape Restoration, Inc.

Cut-stem treatment of the cambium layer



MnDOT



MnDOT

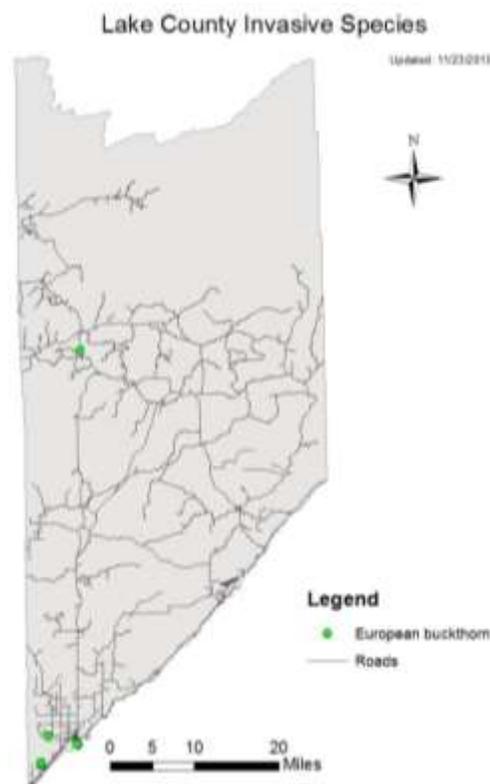


D. Schutte

European buckthorn in Grand Marais

By Laurel Wilson

Whether walking through the woods or driving down the highway at 65 miles-per-hour, I often find myself thinking, “Tansy, tansy, knapweed, tansy”. Anyone in the invasive species management field knows that it’s difficult to avoid being plagued by unconscious plant identification outside of work. Throughout the summer I had an obsession with a tree in Grand Marais I would regularly pass on afternoon walks with my dog. The tree is the non-native, invasive plant European or common buckthorn and this individual is unique because (1) there are no other reports of buckthorn in Cook County, and (2) it is very large by buckthorn standards, the largest individual I have ever seen. European buckthorn is distributed throughout Minnesota but has not yet become widespread in the Arrowhead region. This species can be found in southwestern Lake County, in the Two Harbors and Larsmont areas, but has not been documented further up the north shore. European buckthorn is typically a shrub or small tree in the forest understory, growing 10 to 25 feet high. The buckthorn in Grand Marais has four main trunks that range in diameter from 6 inches to over 10 inches with a height of approximately 22 feet.



European buckthorn was first brought to North America in the 1800s and was promoted for use in hedge rows and for wind breaks. In the 1920s, researchers discovered that buckthorn serves as a host for a disease that impacts wild and cultivated oats and by the 1930s its sale in the nursery trade had stopped¹. By this time, however, European buckthorn had already escaped from cultivation and spread. In Minnesota, the Department of Agriculture has listed European buckthorn as a Restricted Noxious Weed which prohibits its sale and transport, but does not require landowners to attempt to control or eradicate it on their properties². The location of the Grand Marais buckthorn, in front of the entrance of an historic building (ca. 1900), suggests that it was planted. If it were purchased around the time that sales stopped, this tree would be over 75 years old, which is within the age range for buckthorn. A study in Saskatchewan recorded a 56 year-old European buckthorn tree. In the Netherlands, part of buckthorn’s native range, individuals more than 70 years old have been identified³.



L. Wilson

Crown view of European Buckthorn in Grand Marais

European buckthorn in Grand Marais *cont.*

The size and presumed age of the European buckthorn tree in Grand Marais made me nervous. I could picture it laden with hundreds of small, black berries, each containing 2-4 seeds that would go on to create yet another buckthorn individual. Could there be a large, back-alley population of buckthorn in Grand Marais that had escaped my notice? I decided to monitor the tree to see if it flowered. European buckthorn is dioecious, meaning that individuals have either all male or all female flowers. Only plants with female flowers will produce fruit and seeds although they require pollen from male flowers to do so. In June I noticed flowers on the tree; although buckthorn flowers are very small, the pistil, the female reproductive part of a flower, was apparent. It was a painful waiting game to see if these flowers would lead to fruit.

Buckthorn berries typically develop in August; I walked by the tree for months before I was confident that this individual would not bear fruit. I contacted the landowner this fall and they confirmed that they had not observed any fruit on the tree in the more than 10 years that they have owned the property. But what does this really tell us about the status of buckthorn in Grand Marais? Is it still possible that there are other European buckthorn individuals, even male individuals, in town? Buckthorn is pollinated by bees and flies. Experts in the Twin Cities have observed mining bees (*Andrena* species) and occasionally small sweat bees (*Lasioglossum* species) visiting the flowers. Mining bees range in size from slightly smaller to slightly larger than a honey bee. Native bees this size fly between 300 and 600 yards (440 yards = ¼ mile) from where they nest in the ground⁴. At this time, it is possible that there is just a lack of pollen exchange between buckthorn plants due to distance or other factors impacting pollinators. In a way the Grand Marais buckthorn will act as a sort of canary in a coal mine – fruiting when there are enough male buckthorn plants close by for pollinators to travel between trees. Until then, I plan on continuing to casually monitor the tree on my afternoon walks and hope that I never spot a berry.



A. Moorehouse

Above: *Andrena* bee species on prairie willow

Right: *Lasioglossum* species on purple prairie clover



A. Moorehouse



J. Martinez

¹<http://www.dnr.state.mn.us/invasives/terrestrialplants/woody/buckthorn/index.html>

²<http://www.mda.state.mn.us/plants/pestmanagement/weedcontrol/noxiouslist.aspx>

³Qaderi et al. 2009. The Biology of Canadian Weeds. 139. *Rhamnus cathartica* L. Can. J. Plant Sci. 89: 169188.

⁴Observations by Heather Holm - www.restoringthelandscape.com

Member Profile

Amanda Weberg

Cook County Aquatic Invasive Species Coordinator



Rusty Crayfish at Fisherman's Picnic

A county aid tax bill was formed in 2014 to provide Minnesota counties funding to help prevent the spread of aquatic invasive species (AIS). The amount of funding provided to each county is based on the number of public watercraft trailer boat launches and trailer boat parking spaces. Cook County accepted the prevention aid and in July 2015 Amanda Weberg accepted the task of coordinating the county's state AIS prevention aid funds.

Amanda has a Bachelor's degree in biology and chemistry from UW-Superior. Before moving to Grand Marais, Amanda worked in water quality at the Center for Limnology in Boulder, CO and the Mussel Lab at Virginia Tech in Blacksburg, VA.



Zooplankton net tow for spiny water fleas on Devil Track Lake

In September Laurel and Amanda partnered to offer a Monitoring Madness event to the public. On a wet and chilly day, a boat set out on Devil Track Lake to test methods of spiny water flea (SWF) monitoring, and also to trap for crayfish. Devil Track Lake was chosen because it is confirmed with SWF. Using an 80 micron mesh zooplankton net, SWF were found during vertical tows and a weighted horizontal tow near the bottom of the lake. The invasive crustacean was not found on two types of fishing line towed behind the boat. No invasive rusty crayfish were found in the traps, but lots of native crayfish took the bait. More experiments will be conducted to determine the best methods for SWF monitoring. If you spend time on lakes and would be interested in being a SWF monitor, Amanda would be ecstatic to talk to you!



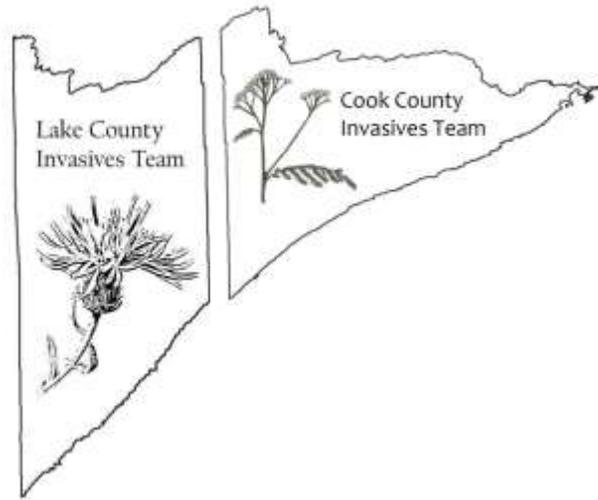
Native crayfish in Devil Track Lake

Summer 2016 will bring passionate watercraft inspectors to landings in Cook County. The educated and enthusiastic inspectors will form positive relationships with recreationists to increase awareness of the negative effects AIS have on aquatic ecosystems, their impacts to local economies, and prevention techniques for boats, canoes, and kayaks.

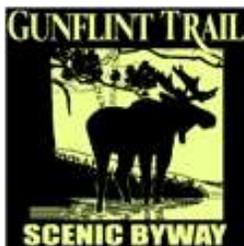
Contact Amanda at cookcountyais@gmail.com or 218.387.2792 with any questions or comments.

SPREAD THE WORD, NOT THE SPECIES





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



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