

Invasive Plant Survey Report Crystal Lake Scout Reservation 2019



Submitted to
Samoset Scout Council

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BACKGROUND

Since 2010, the Wisconsin Headwaters Invasives Partnership (WHIP) has served Oneida, Vilas, and Lincoln Counties with invasive species education and management, on both public and private lands. When our partnership was approached in late 2018 to contribute to updated conservation documents for the Samoset Scout Council, we were pleased to offer an assessment of the status of any invasive plant species at the Crystal Lake Scout Reservation.

It is well-known that ecology and conservation are a large part of the Scouting program and ethos, with a good portion of the programming devoted to stewardship and land responsibility. Similarly, part of WHIP's mission is to offer outreach for county residents of all ages throughout our work. Therefore, for this project a secondary goal was to also provide suggestions for active educational opportunities for the campers to learn about invasive species in our ecosystem. Both groups share the belief that when we involve young people in land stewardship it becomes a lifelong commitment for them.

Through conversations with our formal partners at the Natural Resource Conservation Service (NRCS), we formed a plan to visit, survey, and report on invasive plants at the camp property. Since WHIP is entirely grant-funded, we needed to determine financial support for the work, and were able to secure funding through the Wisconsin Department of Natural Resources' [Weed Management Area grants](#). These grants are meant for cooperative groups like ours to assist private forest landowners with invasive species issues. After a waiting period, funding was approved in early summer of 2019.

The camp areas plus the larger forested property play an important role as a relatively protected forest within the county landscape. Controlling invasive plants here would be an excellent way to ensure that its diverse habitats are preserved and protected from the spread of invasives along roadsides and trails. It is beneficial for the land to include invasive species information in the new conservation plan prepared by the Scout Council.

METHODS

With the WMA funding, we proposed the following activities to assist the Scout Council:

- carry out a terrestrial invasive plant survey to record invasive plants along roads and common areas
- create a map or visual guide of species found
- offer recommendations for any needed control and management
- assist with control within our scope of capability
- provide outreach and educational materials

When assessing for invasive species, the most likely areas of invasion are places that experience heavy usage. This is because invasive species often spread by "hitching a ride" on vehicle tires,

gear, hiking boots, mowers or other machinery. Therefore, in order to maximize time and efficiency, we began by focusing on high traffic areas, such as roadsides, parking lots, and trails. These surveys are often recommended to be done in the fall since invasive species stay green and hold their leaves later into the season than other native species, making them easier to spot.

- Survey work took place on October 7-9, 2019.
- All surveying was done on foot, walking both sides of roads focusing on one side of the roadside at a time.
- Other areas surveyed included common gathering places, recreational fields, parking lots, lake launch area, and building surroundings.
- Invasive plants were recorded by entering a data point into Avenza-enabled PDF maps, and later uploaded into a Google Map platform. This allows anyone with the link to access the data and view locations and photos.

RESULTS AND SPECIES

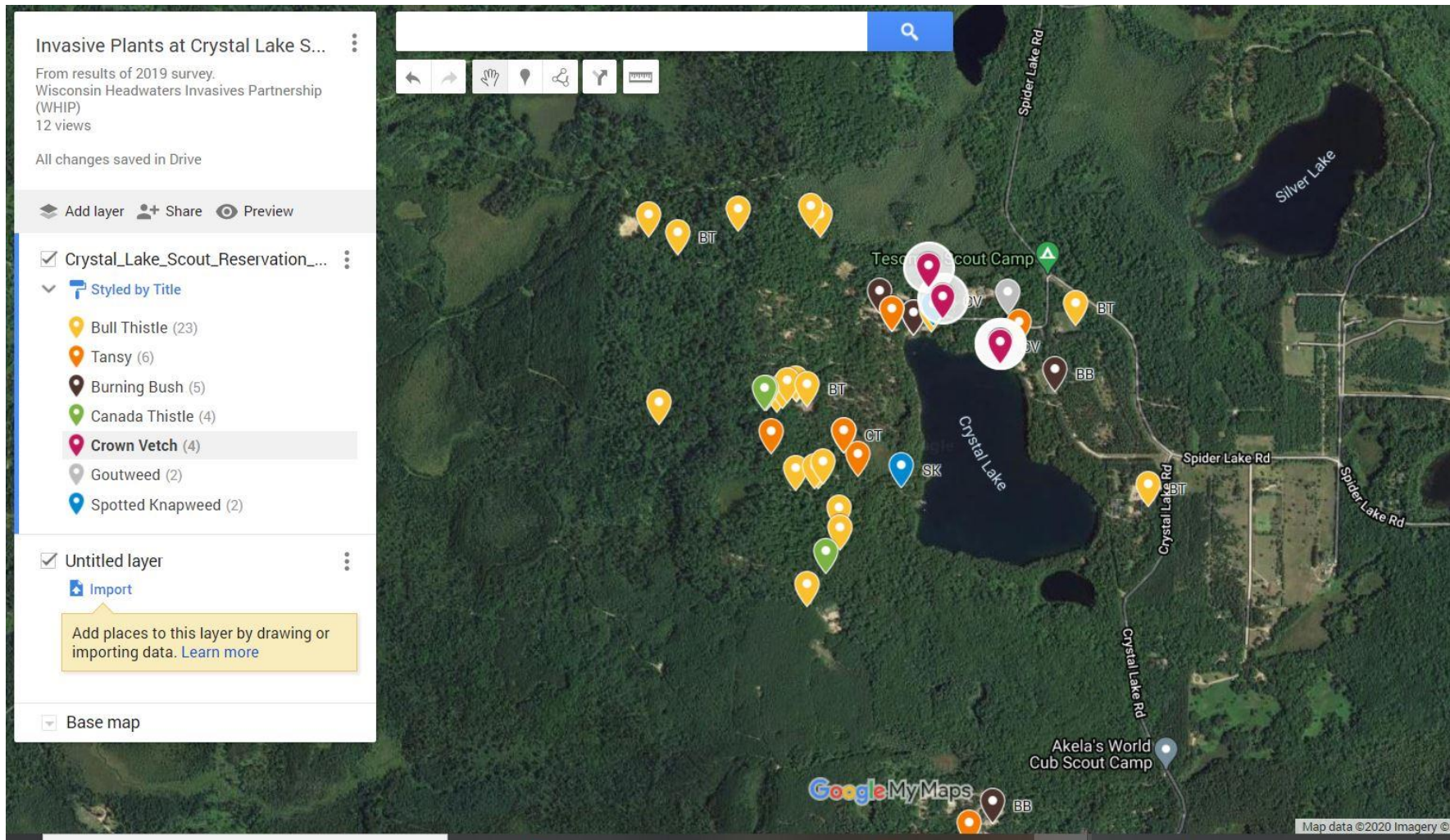
Throughout the survey, we saw a significantly lower presence of invasive species than expected, when compared to similarly-sized properties across Oneida and Vilas counties with high levels of visitation. This was a very encouraging result.

The survey showed seven invasive plants were present on the property: bull thistle (23 sites), tansy (6), burning bush (5), Canada thistle (5), crown vetch (5), goutweed (2), and spotted knapweed (2). These are considered relatively common invasive plants across the Northwoods, depending on location. Fortunately, none are considered “high priority” on our WHIP priority plant lists, and none are designated as “prohibited” in the state under Wisconsin’s invasive species legislation NR40.

INVASIVE PLANT SPECIES AT CRYSTAL LAKE SCOUT PROPERTY, SURVEY 2019

Common Name	Scientific Name	Frequency (number of sites)
Bull thistle	<i>Cirsium vulgare</i>	23
Tansy	<i>Tanacetum vulgare</i>	6
Burning bush	<i>Euonymus alatus</i>	5
Canada thistle	<i>Cirsium arvense</i>	5
Crown vetch	<i>Coronilla varia</i>	5
Goutweed	<i>Aegopodium podagraria</i>	2
Spotted knapweed	<i>Centaurea stoebe</i>	2

Results and species distribution can be seen in the following figure, and are available to examine online at the shared Google Map address: <https://www.google.com/maps/d/edit?mid=1h7vUxhRTsjpGwISOS70uhLHRDrE7V75X&usp=sharing> Please contact Rosie Page at rpage19@gmail.com if there are problems viewing data.



Bull thistle

- This is one of a handful of invasive spiny thistle species becoming more common in sunny disturbed areas throughout the state.
- Biennial plant, lives for two years. 1st year plants are rosette clusters of spiny toothed leaves, and 2nd year plants grow a thick hairy stem up to 7 feet with stout spines and large purple flowerheads.
- **Control:** slash stems or mow repeatedly in spring; or spray plant leaves with herbicide in early fall or late spring. Remove seedheads any time of year to prevent spread.

Tansy

- A very hardy perennial plant starting to become established in the Northwoods on roadsides and any areas that are disturbed or where yard waste is deposited.
- Easy to identify with feathery leaves and tiny yellow button-like flowers in late summer.
- Spreads by seed and also root fragments; needs careful monitoring.
- Toxic to most wildlife
- **Control:** pull after a rain; or cut or mow prior to flowering to prevent seed set; or spray in spring.

Burning bush

- Recently included under Wisconsin's invasive species legislation due to its tendency to spread and invade forests along edges, is causing major disruption to woods in the Northeast and now Midwest
- Shrubs have distinctive wings (ridges) on stems, simple leaf arranged in opposite pairs, turns bright red in fall.
- **Control:** small seedlings can be handpulled but larger shrubs require the cut-stump treatment: saw stump and paint it carefully with herbicide in late summer or fall.
- **Replace** with similar attractive native shrub such as chokecherry, dogwood, highbush blueberry, viburnum, or a low-growing fragrant sumac.

Canada thistle

- This small thistle is an aggressive perennial, and will reproduce clonally by horizontal roots, rapidly spreading to dominate an area in just a few seasons.
- Grows no more than 4 feet or so, with delicate but spiny stems and leaves, small pink flower heads that develop seeds by September.
- **Control:** pull or mow minimum of 3 times while growing; or spray foliage in spring or fall.

Crown vetch

- This is an unfortunate result of a plant being used for a certain purpose without its true ecological effects being known. The legume Crown Vetch was planted for erosion control and its ability to fix nitrogen in soil, but this also makes it more capable of altering native ecosystems along forest edges, prairies, roadsides, and more.

- Long trailing stems in dense colonies, small pairs of opposite leaves, pale pink flowers.
- Underground rhizomes can reach 10 feet long.
- **Control:** hand pull or dig up entire plant; or mow repeatedly over several seasons, or spray foliage in fall.

Goutweed

- AKA “Snow-On-the-Mountain” Another garden ornamental plant now known to be widely invasive across the country, shade-tolerant, and outcompeting other ground cover plants and spreading rapidly through rhizomes underground.
- Variegated green and white leaflets of 3, taller flat white flowers.
- **Control:** handpull or dig plants diligently, bag securely to prevent escape and resprouting; or cover patch in black plastic to smother for at least one year, or spray with herbicide in late summer if no other garden plants are present or near.

Spotted knapweed

- One of the most common and recognizable invasive plants in the state, spreading as a contaminant of agricultural products and seed mixes, and now spreading to most county roadsides and disturbed areas of the Northwoods.
- 1st year plants grow as a cluster of rosette leaves on the ground, then older plants grow branched stems. Leaves pale green to gray, very linear. Flowers resemble small pink thistle heads but not spiny. Leaves contain irritants and toxic chemicals to wildlife.
- Plants produce enormous numbers of tiny lightweight seeds that stick to tires and shoes for long distance dispersal.
- **Control: wearing longsleeves and gloves**, handpull small populations with entire root; or spray leaves during flower stage.

More detailed information can be found for each species on the Wisconsin DNR’s invasive plant website: <https://dnr.wisconsin.gov/topic/Invasives/what.html>.

DISCUSSION AND RECOMMENDATIONS

According to this survey, invasive plants are present at relatively low levels at the Crystal Lake Reservation, both in number and species diversity. Only fifty-eight sites were encountered, and roughly a third of these were thistle rosettes that can be easily controlled. More importantly, none of the seven species present are considered high risk or “prohibited” under state legislation which would require mandatory removal. This means that the property’s invasive species management can be worked into regular grounds maintenance, with some recommended workdays and annual monitoring.

Invasive species management is often divided into several practices or components: *early detection, monitoring, control, and prevention*.

Early Detection

When species are detected early, this means that they are only present in small numbers, and it is much easier and more cost-effective to carry out management. In contrast, if new invasive species are ignored and allowed to expand into large numbers, management becomes much more difficult in terms of labor and dollars.

Thanks to the scout council's awareness of invasive species and due to their request for a survey, it appears that the invasives at Crystal Lake have been detected early. With the exception of Bull Thistle, numbers of each species are under ten which is very manageable.

Action:

- One idea is to survey the roadsides a mile or so in each direction outside of camp property, to discover any additional invasive populations that might spread to camp in the future. Invasive species surveying on Newbold town roads over the past three years has recorded shown higher numbers of invasive species such as spotted knapweed, non-native honeysuckle, and buckthorn; so detecting these early would allow for management while it is still possible.

Monitoring

Once a baseline of invasive species data is established, it is very important to monitor these sites changes. There is always a possibility a previous survey missed something, but even after control takes place, additional invasive seeds can germinate from the soil.

Action:

- The property's new conservation plan could include a written statement to commit to monitoring, and to ideally repeat the invasive plant survey roughly every five years. This could be done in partnership with WHIP or could be done by Scouts and staff independently with a bit of weed ID training first.
- If the camp creates any new programs or clears any new locations that are frequently used, commit to monitoring these new places for new invasive plants, since seeds can spread on footwear, tents, or other gear.
- The Google Map can be updated as data changes or new plants get reported.

Control

The actual removal of invasive plants is the most satisfying part of management, but it needs to be done appropriate and at the right time of year for the plant's growth cycle. Control can consist of mechanical (cutting or digging), burning or flooding (such as on a prairie), biocontrol (using one species to prey on another), or chemical. Generally a combination of these is used at any given site.

At WHIP, our default recommendation is to use non-chemical control methods if they work as well against the target plant. **This way we always err on the side of fewer chemicals on the landscape, not more. But with certain hardy plants that spread so quickly, herbicides are our best tool, so we do use them where necessary, and this allows the natives to regrow and**

regain their competitive edge. Herbicidal treatments could be done by camp and property staff, or by having WHIP come assist as well.

Since the current invasive plants are more of an annoyance than a rapid danger at this property for now, we suggest launching a focused effort over the next year, to control the small number of plants that we know of. Then in subsequent years, only a light effort would be needed as long as regular monitoring takes place. Involving the campers and families as much as possible would be a perfect partnership. The following paragraph suggests specific control steps.

Action:

- One of the highest priorities for control is the Canada thistle due to its ability to spread rapidly, and also because it does not respond well to pulling or digging. Treating these spots (see map; near campsite 16, 13, and on road north of 17), as soon as possible will keep them contained and prevent additional patches. Walking over or near Canada thistle is painful and not pleasant for camp visitors. Spray these patches in early fall or in spring as soon as they become green. Spray again if any plants stay green into fall 2021, then monitor afterwards. If any flowerheads develop they should be removed and bagged and disposed with trash.
- Tansy can be pulled (removed by hand) after a period of rain since the ground soil typically loosens its grip. Wherever there are a few small leaves or seedlings, pulling can work. However, in areas where Tansy stretches more than a few feet of roadside, an herbicide treatment could be a more efficient solution, followed by monitoring for regrowth. Tansy is invading the Crystal Lake property in a couple of areas of high use or high traffic (presumably) along parking areas and fences, but it was also found at three spots in the campsite area which may mean its seeds are sticking to gear and/or footwear. As long as these sprouts are pulled early, the population won't explode.
- Crown vetch should be brought under control over the next year to prevent a rapid spread and new patches being established. This plant can be pulled but the patches are so dense that herbicide may be the best tool here. At the back of the parking lot, a spray treatment should not be a problem since it's not an area being managed for hiking or for biodiversity. The flowers are very easily identified, so if a group of younger campers needed an outdoor project, they could effectively help pull or pick the flowers to prevent spread.
- The Burning Bush is something that should be worked into the Conservation Plan. Not all of these bushes (there are several large attractive ones) need to be cut and replaced all at once, but it should be planned for and gradually turned over into native shrubs. Substitutions are mentioned above. Native shrubs will also provide better habitat and healthier berries as a nutritional food source for songbirds as well.
- Goutweed can be pulled by campers or staff fairly easily and should not require use of herbicide, since it is a low ground cover, but also because it is growing in garden areas which would then be replanted. Mowing can be used if it is repeated every few weeks. The memorial area and the roadside spot would be revitalized by removing the

goutweed and doing some native replantings. Both spots are also very accessible for campers or families to visit and help monitor.

- Finally, Bull Thistle is the most widespread species found in the survey, but one of the easiest to handle. If caught in the first year of growth, the rosettes are low and easy to dig with a trowel so they don't grow the next year. Rosettes can also be sprayed in spring or fall. If the adult thistles do grow and mature, just remove their flowers in June or July so they do not develop seeds. Adult plants can be left standing or cut and disposed of (even burned), since they only live for one year. During our survey we did have a great conversations with property staff Elvis Bauman, regarding thistles (he is aware and currently treats them when encountered) and other plants we recorded.

Prevention

Despite all of our best control efforts, the very best way to keep a property clean of invasive species is to prevent them in the first place. With lightweight seeds, invasive species spread in many natural ways (wind, rain, birds), but they are spread so much more quickly through human-mediated pathways. These include: roads, other transportation corridors like rails or trails, recreational activities like camping or moving firewood, or just hitching a ride by sticking to the soles of our hiking boots or pets paws.

In a camping setting, there are many ways to prevent more invasive species from coming in and establishing. We suggest incorporating as many of these recommendations into camp policy as possible:

Actions:

- Clean footwear and gear when changing locations!
 - Hand out boot brushes at the end of every hike so seeds don't get spread around.
 - Shake out tents extremely well before packing up to leave.
 - Use a boot brush to scrub off bike tires or backpacks if they get caked in mud/dirt.
- Always stick to the trails when hiking. That way you avoid walking through a surprise weed with seeds ripe for the spreading. It also protects native or rare plants.
- Leave firewood at home, and find it or buy it within 10 miles of camp. This prevents transporting invasive insects under bark (such as Emerald Ash Borer).
- Make invasive species a solid part of any camp programming. This way, campers and visitors become accustomed to hearing the word "invasive" and learn to watch for new plants or weeds that look like they might be spreading quickly.
- Introduce a regular event that could be done annually as part of a camp cleanup day, such as "I SPY A WEED" or "Weed Warriors" or "Stop the Invaders". Campers could compete against each other to find and pull invasive plants.
- Keep a good supply of invasive species brochures and resources on hand, for adults, teens, and family members who visit. (WHIP can supply these at no cost)
- Know the watch list: in our area, we have certain invasive species that we are on the lookout for, which have not established here yet, and would be a very high priority if we

did see them. These priority lists are available at our website:

<http://www.whipinvasives.org/governance.html>

YOUTH PROGRAMMING IDEAS

In a group:

- Constructing frames for bootbrush signs in order to encourage their peers to brush off footwear before and after a hike or activity. WHIP can provide plans.
- Quick weed ID training session, followed by locating and pulling as many thistle rosettes as they can on a given stretch of road or trail. (workgloves needed)
- Suggest ways to monitor for invasive plants like thistles at the Pollinator Garden
- Observing local native wildflowers to guess how many would be affected by invasives.
- Work session to pull goutweed for one hour and then make a plan for native plantings. Could involve a field trip to a greenhouse like Hanson's Garden Village.
- In teams, compete to see who can fill the biggest (or heaviest) bag of crown vetch before you run out.
- Play Memory or Go Fish with Wisconsin Wild Cards:
<https://dnr.wisconsin.gov/topic/parks/learn/wildcards>
- Art: draw the features of an invasive plant you think help make it succeed? (e.g., spines, thistles, many seeds, hardy roots and stems, etc)
- Create a scavenger hunt to find thistle plants around the soccer field
- Keep in touch with WHIP and request a guided walk or presentation

Individually:

- Assign segments of a common area or trail, for each camper to "adopt" and keep free of invasive plants.
- Assess the invasive species signs at Crystal Lake property, and create or design new ones.
- Research about a potential new invasive plant that could do damage if it invaded the Crystal Lake property, and teach peers to recognize it just in case.
- Suggest ways to improve or monitor for invasives at the Pollinator Garden

RESOURCES

Excellent sets of Best Management Practices for different groups of outdoor recreationists such as gardeners, campers, hikers, etc. <https://dnr.wisconsin.gov/topic/Invasives/bmp.html>

Understanding Control Methods. <https://dnr.wisconsin.gov/topic/Invasives/control.html>

Wisconsin's NR40 legislation. <https://dnr.wisconsin.gov/topic/invasives/classification.html>

Signage ideas: see <https://www.playcleango.org/invasive-species-education-materials>

Online field guide (we can offer a supply of printed copies):

<https://dnr.wi.gov/topic/Invasives/documents/WI%20inv%20plant%20field%20guide%20web%20version.pdf>

Online Wisconsin Flora (Freckmann Herbarium): <http://wisflora.herbarium.wisc.edu/>

PHOTOS (on each page, the lower set are from camp property)

Bull Thistle



Michael Shephard, USDA Forest Service, Bugwood.org



At camp: adult thistle by rec field and rosette near site 12

Canada Thistle



Stephen Solheim and Elizabeth Czarapata



At camp: near pollinator garden

Tansy



1Elizabeth Czarapata; Richard Bauer



At camp: along parking fence by lake

Burning bush



Nisa Karimi; Elizabeth Czarapata



At camp: used as ornamentals in front of several buildings

Crown Vetch



Paul Berry; Robert Bierman



At camp: growing along large parking lot at side

Goutweed



Nisa Karimi; Jerzy Opiola



At camp: at fork in main entrance road, and planted as ornamental

Spotted Knapweed



At camp: at lake launch boardwalk and near program area J

For more information or outreach materials, contact WHIP Coordinator Rosie Page at rpage19@gmail.com or 313-590-4419, or WHIP Member and Lumberjack RC&D Council Executive Director Tracy Beckman at tracybeckman.lumberjack@frontier.com or 715-369-9886.