



# Friends of Sylvania

Promoting the protection and careful management of the Sylvania Wilderness

[www.friendsofsylvania.org](http://www.friendsofsylvania.org)

P.O. Box 6353, Monona WI

## **Title II RAC Project “Invasive plants in Sylvania”**

### **2014 Annual Report**

#### **Background**

Invasive plants spread aggressively and outcompete native plants, because of the absence of natural controls and because of specific traits such as the ability to produce numerous seeds (garlic mustard) or the ability to inject chemicals into the soil that inhibit the growth of other species (garlic mustard, spotted knapweed). The spread of invasive plants not only reduces native plant diversity and the wildlife that depends on it but can also affect water quality (Eurasian water-milfoil forms a dense, slimy mat; knapweed taproots lead to decreased soil water holding capacity which increases runoff and sedimentation). The spread of invasive plants is also a health concern (knapweed can cause severe skin reactions, thistle and Japanese barberry have serious thorns).

Several invasive plants are growing in the Sylvania Wilderness, threatening the beauty and natural diversity of this rare ecosystem. The Sylvania Perimeter Area (the Recreation Area to the north of the Wilderness which contains the Entrance Station, the Day Use building and the road between Clark and Crooked Lake, as well as Snap Jack Lake, a band west of FR 6380 and CR535) and Sylvania’s boundary roads CR535 and FR 6320 are the likely source of some of these invasive plants, with people’s boots and equipment, boats, and animals as potential vectors. It is therefore important to control invasives in both the Sylvania Wilderness, the Perimeter Area and the boundary roads.

The Ottawa National Forest (ONF), with the help of the YCC and volunteers, has done and continues to do some invasive plant monitoring and removal work in Sylvania. To assist ONF in this enormous task, the Friends of Sylvania (FoS) began to work on the control of some of the invasives in Sylvania in 2010. In 2011, the FoS received a 3-year Title II Gogebic Resource Advisory Committee grant (2011-2013). Another proposal, submitted in 2012, resulted in additional funding for 2014 and 2015. This funding empowers FoS to have a significant impact on the invasive plant monitoring and removal work in Sylvania. It permits FoS to hire part-time students and buy needed tools. With the help of these students and several volunteers, we are conducting large area invasives surveys, removing plants, and minimizing seed sources in the Sylvania Wilderness, the Perimeter Area and the boundary roads. The results of our work during 2014 are summarized below.

## Work Description

We covered approximately 1,000 acres, visiting previously reported sites of invasives (coordinates provided to us by the ONF and coordinates we recorded in 2011-2013) as well as identifying new sites. The GPS location and number of plants at new sites were noted and entered into a data base provided by the ONF. 2-way radios permitted the team to spread out and thus cover a larger area while maintaining safety and coordination. At each site, all second-year plants found were pulled and flower or seed heads were cut off and bagged. We also pulled first-year rosettes when time permitted in order to reduce the amount of work the following year. In the Sylvania Perimeter Area, we applied cut-stump treatment (using Garlon-4 supplied by ONF) to Japanese barberry. One of the project leaders (W. Brinkmann) is a 'Commercial Pesticide Applicator' with licenses for both Wisconsin and Michigan.

Since the time of year when an invasive is most easily identified (based on early leaf-out, blooming time, etc.) is different for each species, we conducted the surveys throughout the growing season. Some areas were checked more than once during the growing season because some plants flower later than others and small plants in large infestations can be easily missed. Since the landing on islands is prohibited from ice-off to July 15 to protect nesting loons, we have started to check all islands after that date and remove first year thistle rosettes so that there will be few if any second-year seed-producing thistle growing on the islands the following spring/early summer when we cannot land on the islands.

The spotted knapweed infestation on the northeast beach of Clark Lake was treated in two ways: We mowed the most densely infested patches and hand-pulled the numerous less densely infested patches.

Our emphasis initially was on what are generally considered to be the most serious invasives known to be growing and spreading in Sylvania: garlic mustard, Japanese barberry, European swamp thistle, Canada thistle, bull thistle, spotted knapweed. But after our invasive surveys and reviewing documentation in Sylvania for several field seasons, we are becoming increasingly concerned about other species. A prime example is tansy which we found in numerous locations both in the Perimeter Areas and in the Wilderness Areas and which, because of its rhizome root system, is extremely difficult to remove and control.

Our limited funding does not permit us to search as much of Sylvania for invasive plants as we would like to. We therefore initiated partnerships with other organization in this important task. In June 2014 participants from a Sierra Club Service Trip spent 140 hours working on thistles around Whitefish Lake. Also in June, students and instructors from a University of Dubuque environmental science class worked a total of 27 hours pulling European marsh thistle at the southern end of Crooked Lake. In July and August participants from a Land O'Lakes Fish & Game Club Service Outing spent 38 hours pulling a variety of invasive plants along a section of FR 6320. Conserve School students and instructors spent 138 hours pulling thistle rosettes on islands in Big Bateau and Deer Island Lakes. All four groups made significant contributions, learned a lot, and will return in 2015.

## Work Results

The following 3 Excel tables, documenting our work for 2014, were submitted to Ian Shackelford, Botanist, USFS ONF, in the fall of 2014:

- Known Invasives Locations (identified by ONF)
- Known Locations 2011-2013 (identified by FoS)
- New Locations 2013 (identified by FoS)

## Work Discussion

### Invasive Plant Site Numbers

**Table 1: Number of sites in Sylvania Wilderness and Perimeter Areas for all species and for 5 of the most invasive plants**

Species	# sites previously identified by ONF	# sites identified during the 2011-2013 field seasons	# new sites identified during the 2014 field season	Total # sites identified by FoS during the 2011-14 seasons	Total # of sites
All species	133	686 (588)	179 (157)	865 (745)	998 (878)
3 species of thistle	42	536 (441)	140 (123)	676 (564)	718 (608)
Japanese barberry	29	76 (76)	15 (15)	91 (91)	120 (120)
Tansy	2	33 (33)	1 (1)	34 (34)	36 (36)
Spotted knapweed	15	10 (8)	3 (3)	13 (11)	28 (26)
Garlic mustard	3	2 (2)	0 (0)	2 (2)	5 (5)

#### a. Total Number of Sites (Table 1)

At several sites, more than one invasive species was found. The top number in each row in Table 1 is the number of sites when counting each species at a site as a separate site. This is the ONF method of counting sites. The bottom number in brackets is the number of sites when counting several species growing together as a single site. This is the FoS method of counting for the purpose of doing field work dictated by GPS and mapping requirements. The difference in

the method of counting is most obvious in the case of thistles: on many sites more than one species of thistle was found growing in close proximity.

In 2014 we visited 471 (397) previously identified sites. Previously identified sites that we did not visit are mostly sites that are part of the initial ONF inventory for Sylvania (133 sites provided in 2011) for species that are not within the scope of the FoS invasive removal project.

In 2013 we discovered 190 (166) new sites. Of the 190 new sites, 48 were mapped by the US Forest Service as new infestations (sites 4694-4741). The remainder were merged or included with existing nearby infestations.

We did not find as many new sites as in previous years. This means that the quality of our past searches for new sites has been excellent. We suspect, however, that there are still many 'unknown' sites in areas we have not had time to visit, particularly the eastern portion of the wilderness and in damp spots in the interior of forested areas in central and western areas.

**b. Specific species (Table 1)**

There are so many **thistle** sites around Clark, Loon, Deer Island, and Big Bateau Lakes that the ONF had stopped noting new sites; instead, the shores of these lakes are considered one continuous site. That is why the ONF had provided us with relatively few previously reported **thistle** sites when we started the project in 2011. We, however, record sites around those lakes to make sure no sites are missed, particularly those hiding among the bushes, when we return the following year.

We spent less time on **Japanese barberry** than in previous years and therefore recorded only a small number of new sites and did not visit many previously treated sites. The reason for this is that we had searched much of Sylvania's western boundary intensively in 2011 and 2012. New Japanese barberry plants or resprouts from previously treated plants will not grow more than a couple of inches per year and such small plants will not produce flowers and seeds. We therefore decided to spend more of our limited time and resources this year on the road system around Sylvania, particularly CR 535 all the way to the Wisconsin state line, which is a major source of invasives coming into the Sylvania.

Our number of **tansy** sites does not reflect the true spread of this invasive since we did not start recording such sites until the end of the 2011 field season when we realized how prevalent and serious this invasive is. We have attempted to remove some tansy and have recorded those sites. Given the difficulty of controlling this plant, we have also recorded other tansy sites to document the seriousness of this invasive.

Because of the prevalence of **spotted knapweed** in the Perimeter Area, we recorded new sites only if there was some special reason, such as documenting its spread.

Of the 7 **garlic mustard** sites, two are on private properties located adjacent to Sylvania.

**Invasive Plant Site Distribution**

**a. Japanese barberry (see Map 1, Attachment A)**

This map is not much different from that for last year since we did not spend much time on Japanese barberry this year.

This invasive is abundant on private and public properties to the west and northwest of Sylvania. The large number of previously known (ONF data base) and new (identified by us) sites along the western border (FR 6380) and around Snap Jack Lake are therefore not surprising. Only a few sites have been identified deeper into the Wilderness. The most troubling site is the

one in the ditch along 6320 that was found in 2012. It serves as a reminder that Japanese barberry, although less abundant, also grows to the east of Sylvania.

**b. Spotted knapweed (see Map 2, Attachment A)**

This map is not much different from that for last year since we recorded new sites only if there was some special reason, such as documenting its spread.

There is a large spotted knapweed infestation located on the eastern portion of the north beach of Clark Lake. Since the Clark Lake hiking trail runs through this infestation, it is not surprising to see knapweed spreading across the swimming beach and further west. More troubling is the plant found and treated in 2012 along the trail from the shore to Mallard-2 campsite on Loon Lake. It is most likely due to campers carrying seeds from the infestation located at the Loon Lake end of the Clark/Loon portage. Fortunately, it had not come back in 2013. (Sites like that will remain in our data base and will continue to be visited in following years because there could be a seed bank in the soil and new seeds could arrive on the same vectors.)

**c. Thistles (see Map 3, Attachment A)**

The highest concentrations of originally identified infestations are found around the shores of Clark, Loon, Deer Island, and Big Bateau Lakes. There were only a few previously known (ONF data base) sites on Whitefish Lake and hardly any in the eastern portion of the Wilderness. Our surveys resulted not only in the identification of numerous new thistle sites along the shores of Whitefish Lake and some of the other lakes to the east (and their islands) but also in the identification of several “Mega” infestations, most notably one on top of Deer Island Lake island (perhaps up to 1,000 plants on our first visit in 2011) and another along the Whitefish Lake outlet (exceeding 2,000 plants in 2012).

In 2013 we discovered new sites, mostly European swamp thistle, around all of the western and central lakes as might be expected given their abundance there.

For the eastern portion of Sylvania, the initial ONF data base contained only Canada and bull thistle sites (with one questionable exception) which suggested that the terrain in the eastern portion is not as well suited to European swamp thistle as the central and western portions. However, we have found new European swamp thistle sites in the eastern section (High Lake for example) and along FR 6320 every year which is disturbing since that species seems to be spreading more rapidly than the other two thistle species.

**d. Garlic mustard**

Three sites of this invasive had previously been identified (ONF data base): along the trail at the southern end of Clark Lake, and at the Birch and Ash campsites on Clark Lake. The site at the southern end of Clark Lake was a single plant and no new plants have been found there since its discovery in 2008. We did not find any plants at Ash during our 2011 and 2012 searches which made us think that the number of sites in Sylvania has been reduced to 1. Unfortunately, we discovered garlic mustard on the trail between the shore and the fire pit at Squirrel-1 campsite on Crooked Lake in 2012. This year, we did find plants at Ash; and a new site was discovered at the drive-in campground by ONF personal.

The two sites at the north bay of Crooked Lake (in close proximity so it looks like one site on the map) are located on private properties. We intend to keep removing the plants as long as the property owners allow access.

e. **Other species**

As mentioned above, we are becoming increasingly concerned about the spread of **tansy** which, because it cannot be easily pulled without breaking root segments, is difficult to control.

**Bird's-foot trefoil**, another difficult to control invasive, is wide-spread in an open area to the east of the Sewage Lagoon. It also grows around the Sylvania Entrance Station and along the road to the Crooked Lake boat landing. These could be the source of patches of this plant found elsewhere within the Recreational Area and which are spreading. On the north beach of Clark Lake, for example, we identified a small patch beneath a fallen tree about 3 years ago. By 2012 it had spread and formed 3 separate patches. This plant seems to be associated with disturbance from road construction and contaminated reseeding mixes.

Recent road work on FR 6320 (which represents the eastern boundary of the Sylvania Wilderness) resulted in a wide band of disturbed soil along either side of the road. These disturbed areas have become infested with a variety of invasives, particularly **curly dock** (*Rumex crispus*) but also thistle, spotted knapweed, burdock, sweet clover. The control of this area is hard work and time-consuming because the deep curly dock tap roots need to be dug up completely. The curly dock infestation is so dense in some spots that we had to seed the resulting bare spots with native plants provided by the ONF.

### Evidence of Work Effectiveness

Although we have been pulling plants and cutting off flower and seed heads for only 3 field seasons, we are already beginning to see evidence of the effectiveness of our work.

The **difference in the number of hours of work** it took to pull thistle plants on top of Deer Island island is a good example. A fire about 20 years ago had opened up the forest there and provided disturbed soil. Nobody realized that thistle plants had become established. When we discovered that infestation in 2011, it took 3 people over 6 hours (total of 18 work hours) to pull all of the plants. In 2012 there were fewer plants and it took 5 people only 0.75 hours (a total of about 4 hours, most of which was searching) – a reduction of 75%. In 2013 it took 6 people 0.5 hours (a total of 3 hours). Again, most of which was searching.

Another example is the **number of hours of work** it took to pull thistle plants around the Whitefish Lake outlet. This infestation was discovered in 2012, and it took several days for our crew and some volunteers, it took only one day in 2013.

It is clear that we are finding additional sites every year. We believe that is because we are getting better at knowing where to look. The number of new sites this year is also less than last year which suggests that we will have identified and will be controlling nearly all existing sites in the not too distant future in the areas covered by our searches.

### **Personnel**

1. Hired personnel:

- a. 3 part-time college students and 1 high school student (David Sirvio, Samuel Hein, Haily Bares, and Sarah Zelinski-Sauter) who worked a total of 831 hours between May and August
2. Volunteers:
- a. 2 Project Leaders (Daniel Wallace and Waltraud Brinkmann) who donated a total of 500 hours of field work
  - b. Several local (Watersmeet area) and out-of-town (Madison area) volunteers, including participants in the Sierra Club Service Trip, the Land O'Lakes Fish & Game Club and an Iowa college class, who donated a total of 488 hours of field work

**2013 Budget:**

**Expenses:**

Student stipends	\$ 11,766.00
Supplies	<u>\$ 490.59</u>
<b>Total Expenses</b>	<b>\$ 12,256.59</b>

**Income/Payments:**

FS Agreement # 12-PA-11090700-011	\$ 7,803.31
Shortfall, paid by donations to FoS	<u>\$ 4,453.28</u>
<b>Total Payments</b>	<b>\$ 12,256.59</b>

Forest Service Non-Cash contribution:  
 day passes, camping permits, use of aluminum boat

	\$ 464.00
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Friends of Sylvania Non-Cash contribution:  
 988 hours of volunteer field work @ \$21.36/hr\*  
 (our MOU with the FS required a contribution of 130 hours)

	\$ 21,093.00
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\*The rate of \$21.36 for volunteer work is the one the FS uses to determine matching funds

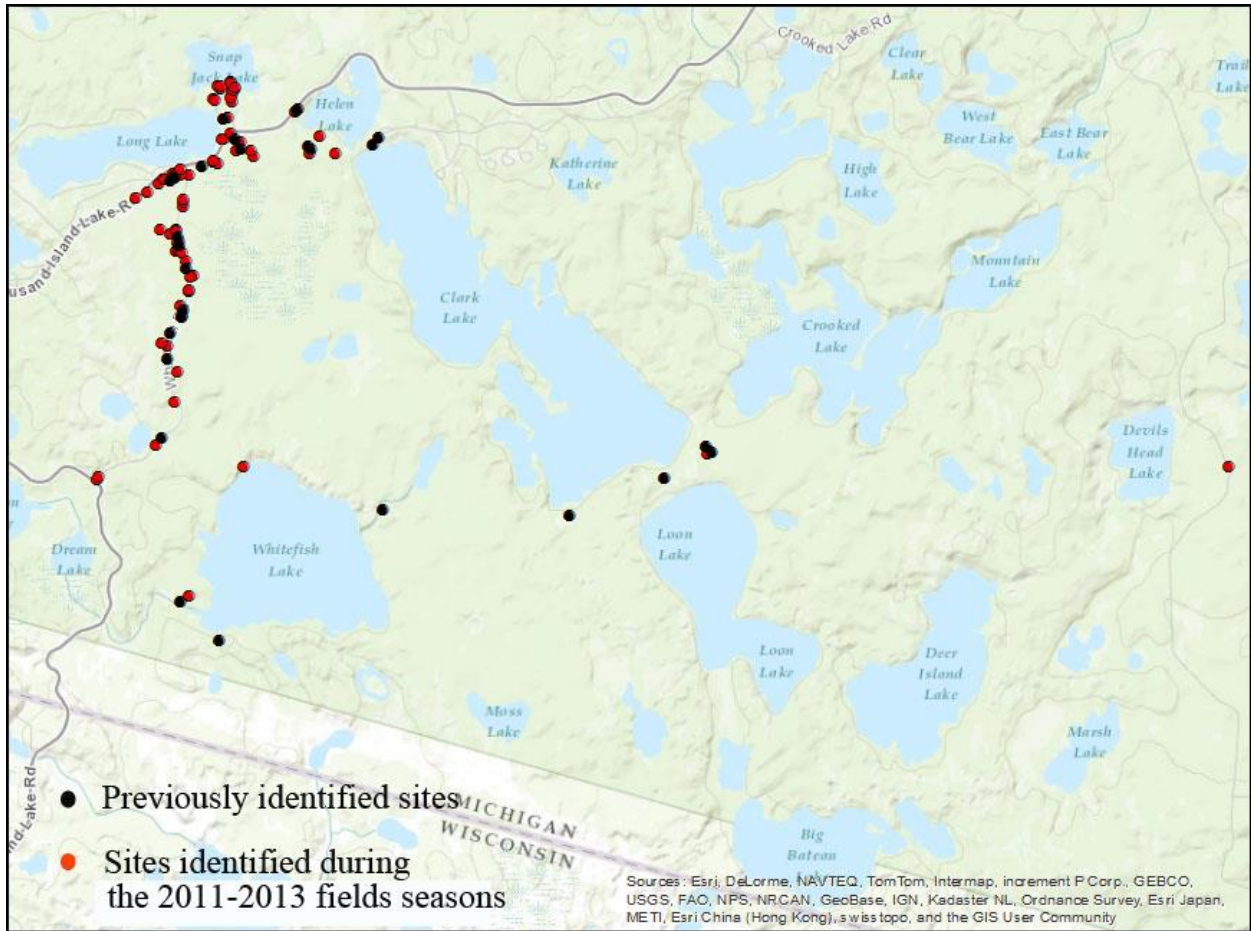
**2014-15 Budget:**

In 2013 FoS was awarded a Gogebic Resources Advisory Committee grant, from a 2012 application, in the amount of \$18,492. The USFS and FoS signed Modification #1 to the existing agreement to deliver the additional funds. In this agreement modification, FoS promised \$9,289.80 of in-kind work. This funding will support Sylvania invasive plant work in 2014 and 2015.

The Friends of Sylvania sincerely thank all our volunteers and the Forrest Service for their assistance in protecting Sylvania with this critical invasives removal project.

## Attachment A

**Map 1: Japanese barberry (*berberis thunbergii*) sites in Sylvania**

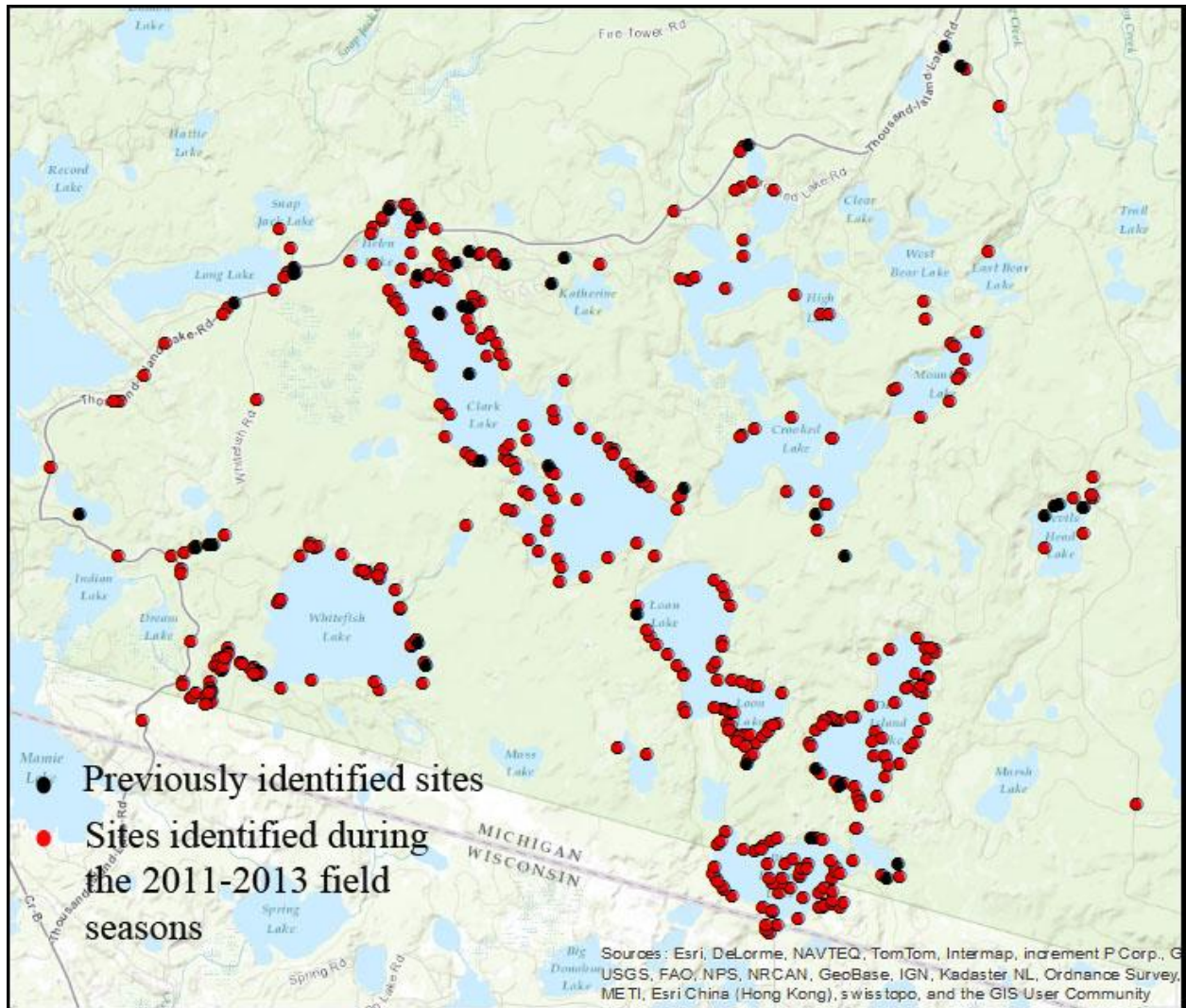




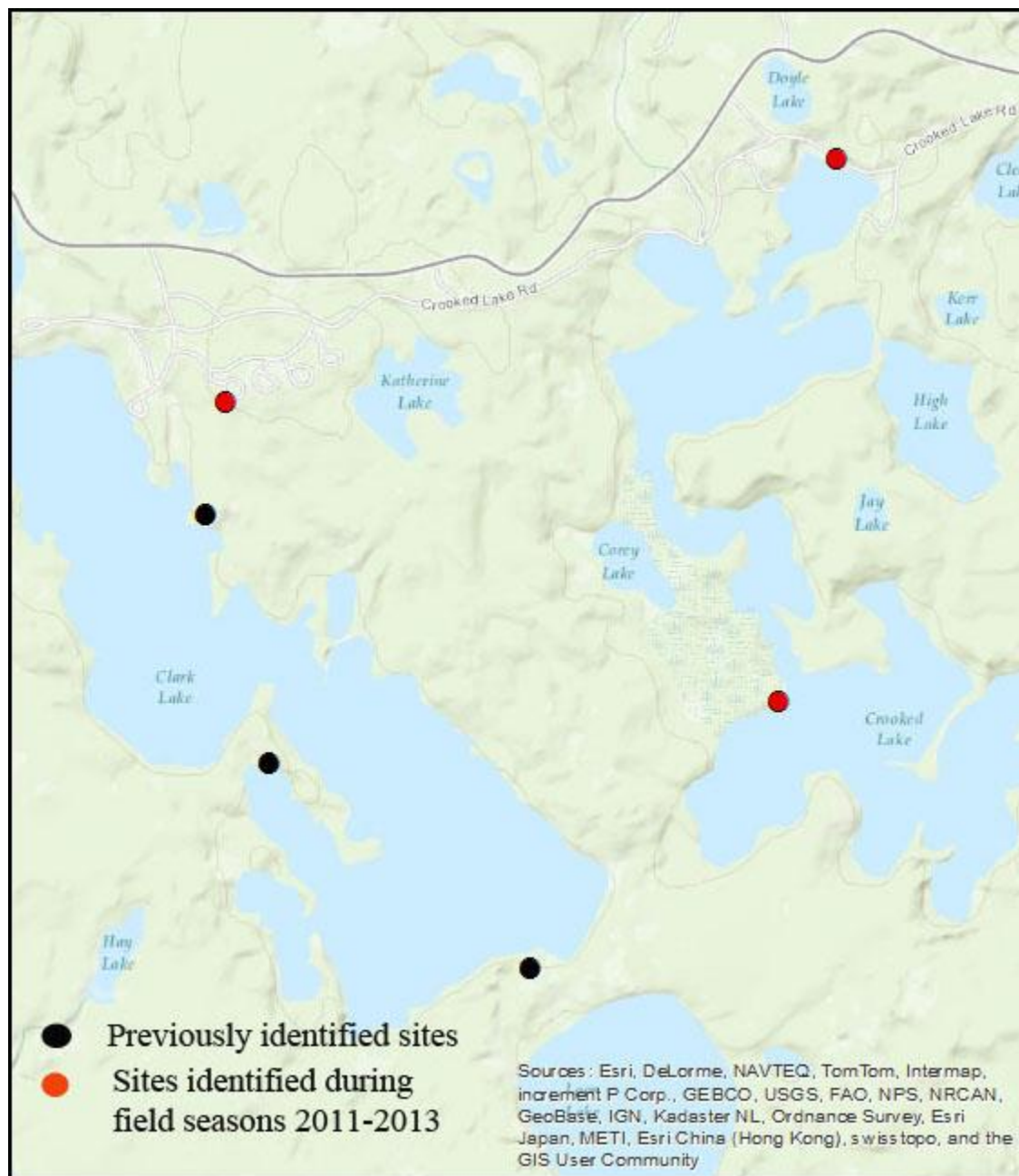
Map 2: Spotted knapweed (*Centaurea maculosa*) sites in Sylvania



Map 3: Thistles (*Cirsium palustre*, *arvense* & *vulgare*) sites in Sylvania



**Map 4: Garlic mustard (*Alliaria petiolata*) sites in Sylvania**



**From:** DANIEL J WALLACE [<mailto:dan.wallace@wisc.edu>]  
**Sent:** Tuesday, February 28, 2017 2:38 PM  
**To:** Shackelford, Ian K -FS <[ishackelford@fs.fed.us](mailto:ishackelford@fs.fed.us)>  
**Cc:** Holland, Anthony R -FS <[aholland@fs.fed.us](mailto:aholland@fs.fed.us)>; Jackson, Linda L -FS <[ljackson@fs.fed.us](mailto:ljackson@fs.fed.us)>  
**Subject:** RE: New draft USFS - Friends of Sylvania agreement

2/28/2017

Ian, Tony and the USFS,

The Friends of Sylvania (FoS) thank you for your past cooperation and assistance in minimizing invasive species in and around the Sylvania Wilderness. We have successfully searched, found, and removed several species of aggressive invasives over the past 6 years to minimize the displacement of native plants and make Sylvania more natural. For the first 5 years, when working with Ian and the Sylvania staff, we accomplished a lot with an atmosphere of friendly cooperation. In the spring of 2016 we were ambushed in a FS meeting with outdated and distorted accusations and were given significantly tighter invasive weed treatment restrictions. The 2016 FoS weed crew, volunteers, and volunteer leaders followed these restrictions and barely managed to properly cover over 900 data points, searched and treated complete shorelines of 14 lakes and treated inland invasive patches. At the 2016 agreement meeting, FoS emphasized the need for increased communication so if there were identified problems they could be addressed promptly – we heard of no problems with our field work in 2016 and this was confirmed by FS staff members.

For the 2017 FS/FoS agreement, we were presented with a draft with all elements significantly more restrictive. When discussion of this agreement began, FoS indicated that we would be willing to follow the details of the previous 2016 agreement but would not be able to properly accomplish protecting Sylvania from invasives with the new, significantly tighter time and access restrictions. These restrictions seem to have been poorly thought out since if they were applied would allow any entity to work only 2 or 3 days a week during the peak weed period and result in a significant amount of travel time (a safety hazard for volunteers and interns) for minimal results in the wilderness. We appreciate the small adjustments from the original 2017 restrictions that the FS has agreed to but we continue to see additional controls that will make our work less functional and not allow us to complete invasive species treatments.

The Friends of Sylvania strongly supports wilderness qualities and we have always tried to minimize our wilderness impact – our intern and volunteer training has this as a major component – most of the time when we are working, we see few Sylvania visitors because we are close to shorelines, in the woods or on remote lakes. FS staff have been invited to join us to increase their understanding of how we operate and how we achieve a high level of quality control – this has not happened. These new restrictions are no longer in the spirit of friendly cooperation and create a dysfunctional and negative atmosphere. As stated in previous discussions, it is enough fun dealing with 8 foot tall invasives, swamps and mosquitoes; volunteers, interns and volunteer leaders do not need additional negatives. Unfortunately, after seriously discussing this situation FoS feels that we can not properly accomplish the Invasives

Removal project with these restrictions and atmosphere; we therefore respectfully remove FoS from these agreements.

FoS has accomplished a significant reduction of invasives in Sylvania and the surrounding areas. FoS is willing to assist the FS with maintaining the value of previous investments and with supporting an invasive species program but at a different level. As any biologist will tell you, if you miss any plants or skip any years you will significantly and literally lose ground. FoS is willing to work with IAN to:

- Share our successful processes for searching, documenting, and removing invasives
- Loan our tools to FS and local volunteers
- Assist in a one day “workshop” for volunteers and interns – providing professional instruction on safe and effective canoeing, effective invasive search methods, documentation, and data entry according to Ian’s program
- Work with IAN to possibly provide volunteers for one weed treatment outing
- Share information on possible intern candidates – we have one excellent returning intern – please let us know soon so we can share information.

If there are other ways that we might be helpful please contact us for positive discussions.

We suggest that the FS finds a mature field leader with a strong work ethic and high level of quality control to continue invasive work in Sylvania. We have used a crew of 4 well vetted, trained interns and trained local and distant volunteers. It is our estimate that to do a careful job in the wilderness with a 5-person crew you will need 17 days before July 26 when the seeds start blowing away. We have found in areas that the YCC crew has worked many missed plants, plants re-growing due to incomplete work, and major digging holes in the wilderness surface which increased our work load – we do not recommend using that crew for any important work in Sylvania. We also recommend that if you find dedicated project leaders that you provide them with support and cooperation.

We will be providing this information to those who have generously provided us funding in the past so those funds can be properly used.

Dan Wallace and Wally Brinkmann, FoS Invasive Weed Project Leaders, retired