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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, and a band west of FR 6380), CR 535 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 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, together with donations from supportive individuals and organizations, 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 and the Perimeter Area. The results of our work during 2014 are summarized below.

Work Description

We covered approx. 1,000 acres, visiting previously reported sites of invasives (coordinates provided to us by the ONF and coordinates we recorded in 2011, 2012, and 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.

Two-way radios permitted the team to spread out and thus cover a larger area while maintaining safety and coordination. At each visited 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 in August 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: The most densely infested core area was mowed and the less densely infested patches around the perimeter were hand-pulled.

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 working in Sylvania for several field seasons, we are becoming increasingly concerned about other species. Prime examples are tansy and curly dock which we found in numerous locations both in the Perimeter and in the Wilderness Area. Tansy, because of its rhizome root system, is extremely difficult to remove and control; and curly doc has a long taproot and numerous seeds.

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 almost 30 hours pulling European swamp thistle at the southern end of Crooked Lake. In July and August, volunteers from the Land O'Lakes Fish & Game Club spent almost 40 hours pulling a variety of invasive plants along a section of FR 6320. Conserve School students and instructors spent almost 140 hours pulling thistles rosettes from the islands on Big Bateau and Deer Island Lakes in October and November. 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 Shackleford, Botanist, USFS ONF, in the fall of 2014:

- Known Invasives Locations
- New Locations 2011-2013
- New Locations 2014

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**	**4 (4)**	**0 (0)**	**4 (4)**	**7 (7)**

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 over 500 previously identified sites. Sites that were not revisited included sites that were part of the initial ONF inventory for species that are not within the scope of the FoS invasive removal program, sites of species difficult to control (such as tansy), and sites of species we decided to visit less frequently.

In addition, about 150 new sites were identified. This is fewer new sites than in previous years which 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 Sylvania.

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 any 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 few 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. However, given the difficulty of controlling this plant, we have made recording additional sites a lower priority.

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, four are located within Sylvania and two are on private properties located adjacent to Sylvania. Of the four located in Sylvania, one has been found to be clean the past 4 years; and one of those four is located in the Perimeter Area.