Chapter 10
Invasive Plants and Animals that Displace Our Native Habitats

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RESOURCE HISTORY

A wetland exotic species program two-year grant was received from the Environmental Protection Agency (EPA) in 2001. In 2003, a Quality Assurance Project Plan was approved by the EPA as part of this grant. The project attempted to identify and map locations of Purple Loosestrife and large populations of Reed Canary Grass within the boundaries of the Oneida Reservation.

Purple Loosestrife

In 2003, work was conducted to raise Galarucella beetles for Purple Loosestrife control. The Wetland Program Coordinator worked with the Oneida Nation High School and the Brown County Extension office to capture Galarucella beetles. The beetles were released onto loosestrife plants being grown in a controlled setting. In 2003, the beetles were released at the Green Acres Greenhouse and at a property on Johnson Road. Beetles were collected and raised again in 2004. Release sites included the stormwater swales in the parking lot of the Oneida Health Center, Green Acres, and along Hwy. 54 near the Apple Orchard. Work continued in 2005 with the hiring of a summer intern to identify and map Purple Loosestrife and Buckthorn. In 2006, a roadside inventory of invasive plant species identified the locations and densities of Phragmites, Purple Loosestrife, Teasel and Japanese Knotweed. These plants were chosen because of their ease of identification and potential to rapidly spread along roadways. The locations and densities were mapped by the Oneida GIS Department.

A result of the survey was the realization that there were several other invasive plant species spreading along the roadways. In 2006 and 2007, the roadside survey was expanded to map the locations and densities of Spotted Knapweed, Garlic Mustard, and Honey Suckle.

2007 brought an opportunity to work with Americorps and the UW-Extension system. The hiring of an Americorps volunteer facilitated the completion of the roadside survey and assisted with grant writing to fund a project studying the effects of treating Garlic Mustard and Phragmites. In 2008, grants were received from the BIA for $10,000 and the Wisconsin Tribal Conservation Advisory Council (WTCAC) for $29,499. The BIA grant was used to pay for materials and the WTCAC grant covered 10% of the salaries of the Wetland Program Coordinator, the Environmental Project Manager, and wages of an intern. In 2008 and 2009, work focused on controlling Phragmites and Garlic Mustard.

Garlic Mustard

During the 2008 field season a total of 5 acres of Garlic Mustard was mapped and treated in the vicinity of the Norbert Hill Woods. A combination of mechanical and herbicidal control methods were used. The 2009 survey indicated that there was less than one acre of Garlic Mustard remaining. Although the results are encouraging, the reduction in acreage is mostly attributed to second year, flowering plants. The residual seed bank is allowing the plants to persist. In some of our test plots an increase in the amount of garlic mustard was noted. Work will continue at this site until the seed bank is exhausted and the Garlic Mustard is virtually eliminated. Follow-up monitoring and treatment will need to occur for the foreseeable future.

Phragmites

Sites targeted for Phragmites control starting in 2008:

Edge of the Woods – 16.5 acres were mowed in July of 2008. A follow-up aerial spraying occurred on 23.3 acres. Follow-up survey work in 2009 indicates roughly 0.5 acres of Phragmites remain at Edge of the Woods. Management will continue for the foreseeable future and forestry work is scheduled to be tried on an experimental basis in 2011.

Foxtails Wildlife Area — 1.5 acres of Phragmites identified in the 2008 survey. Aerial spraying of herbicide used on 0.9 acres and manual herbicide application used on the remaining 0.6 acres. Follow-up reconnaissance in 2009 indicates 0.14 acres of Phragmites remain. This acreage reflects portions that were missed during the aerial spray. All areas that received herbicide treatment had a 100% kill. Follow-up monitoring and treatment occurred in the 2010 field season.

"Sand Pit"— 6.15 acres of Phragmites in the 2008 survey. Aerial spray covered 5.7 acres and the manual application covered 0.45 acres. Follow-up monitoring in 2009 revealed 24 small patches or individual plants. The patches were too small to occupy a measurable area. Follow-up monitoring and control will occurred in 2010.

"Where the Waterbirds Nest" — 3.3 acres of Phragmites in 2008. Aerial spraying was used on 3 acres and 0.3 acres were manually sprayed. Monitoring in 2009 revealed 0.25 acres remain. This area represents spots missed by the aerial spray. Monitoring and treatment occurred in 2010.

RESOURCE DESCRIPTION

What are invasive, exotic species?

Species that are not native to this area that have been introduced and are becoming dominant components of native plant communities.

How do invasives get here?

Generally invasive species were planted in local yards or gardens, came in with seed grown in other parts of the country/world or were inadvertently brought into the area.

- Purple loosestrife was propagated and sold by nurseries.
- Phragmites was planted in gardens and as a boarder for wetlands.
- Buckthorn was promoted as a food source for wildlife.
- People traveling to and from other parts of the country/world inadvertently collect and transport seeds in their pants cuffs, boots, etc.

- Boats and other recreational equipment (ATVs) can transport seeds and vegetative parts of plants from one area to another.
- Animals and/or food shipped from one part of the world to another can provide viable seed that can germinate and initiate a new area of occurrence.

Why do invasive species spread so rapidly?

Species that grow naturally in a given environment have adapted to local conditions throughout their development. Predators, competing plant species, diseases, etc., adapted with naturally occurring species and kept their numbers in check and allowed for them to be used as food and/or cover by local animals. Species that come from other parts of the world (exotics) can become invasive if they adapt to the climatic conditions in the area of release and have no natural controls.

When an exotic species is introduced they often lack natural controls that keep their populations under control. Some of these control mechanisms are:

- Parasites that would normally attack them.
- Competing plants that limit the ability to spread.
- Diseases that can destroy populations if they occur over a large area.
- Animals that are adapted to eat them.
- Human understanding of the plants utilitarian value or traditional uses.

Why should we worry about invasive species?

Invasive species are capable of taking over large portions of available land that would normally be populated by native species. Some reasons to control invasive plant species are:

- They typically do not provide high quality food and/or cover for native species of wildlife.
- They out-compete native species for resources and often completely displace them.

- They may pose a health hazard for humans, plants or wildlife.
- They take over large areas and reduce biological diversity.
- They may be a threat to public health and safety.

The net result of invasive species becoming established is a loss of diversity of our native plants and animals. About 42% of the species on the federal threatened or endangered lists are at risk primarily because of invasive species.

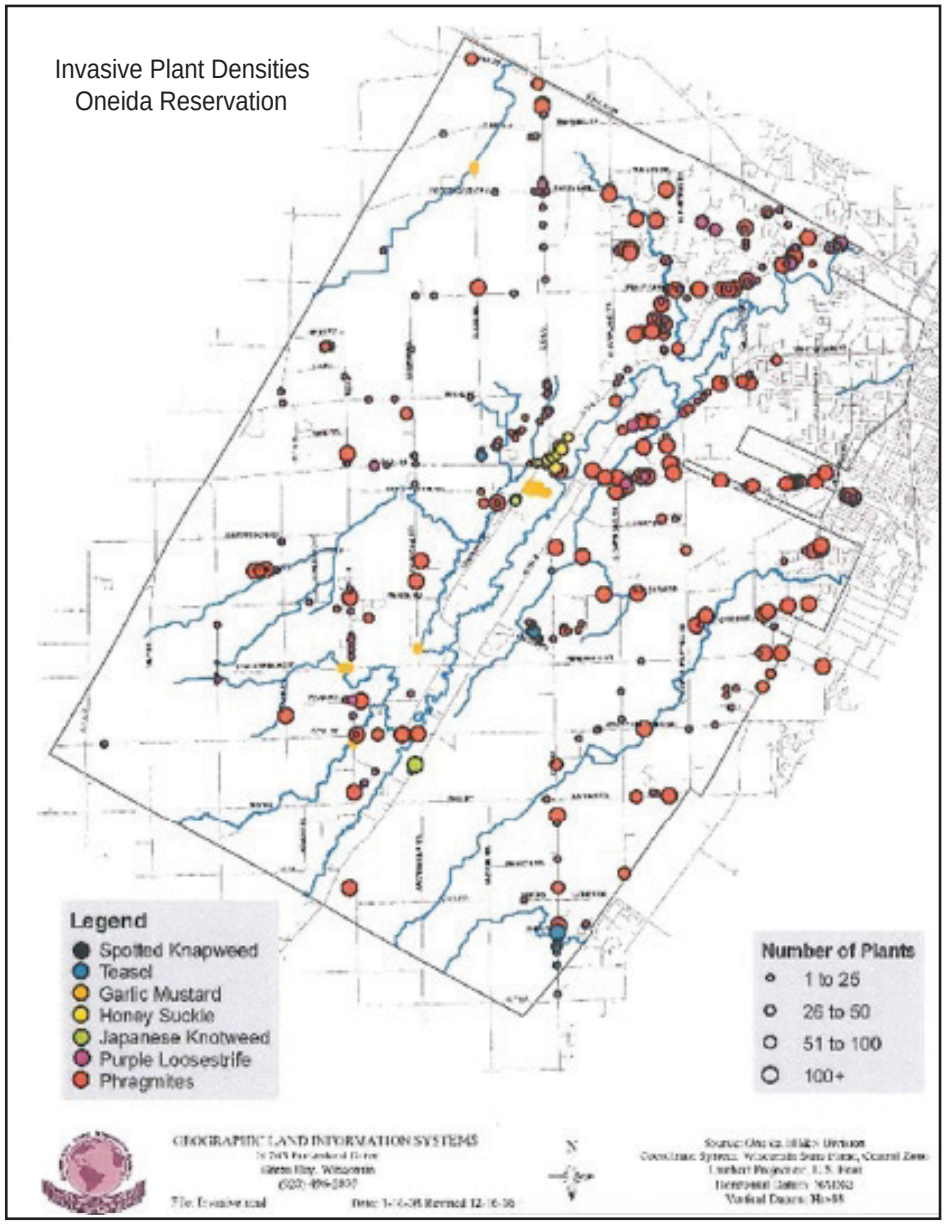
What is being done on the Reservation to identify and document invasive plants?

- A Reservation wide inventory has been conducted as in continually updated.
- Biological, chemical and mechanical control efforts are planned and implemented each year.
- All Tribal natural areas and restoration sites are given priority.

What is being done to control/remove invasive plant species on the Reservation?

- Biological control (Galarucella beetles) for Purple Loosestrife.
- Mowing and spraying herbicides to control Phragmites and Reed Canary Grass
- Mechanically removing Garlic Mustard when it is flowering and spraying with herbicide in the fall when native vegetation is dormant.
- Winter herbicide treatment for Buckthorn control.

Figure 10.1 Location of Major Invasive Species Infections



COMMUNITY SUGGESTIONS & FEEDBACK

The results from the Live, Sustain, Grow survey indicate that the vast majority of respondents are not familiar with the names of invasive plants. 88% are not familiar with Phragmites. 81% are not familiar with Buckthorn. 70% are not familiar with Garlic Mustard. 68% are not familiar with Purple Loosestrife. However, 74% of all respondents are supportive of removing invasive plants from natural areas and wildlife habitat on the Reservation. The Oneida Environmental Quality Department will continue education and outreach to community members regarding the importance of invasive species removal to protect indigenous species of cultural significance to Oneida.

GOALS AND OBJECTIVES

The overarching goals and objectives of the Oneida Invasive Species Program are as follows:

- Prevent the spread of invasive species into culturally important areas (such as the Norbert Hill Woods).
- Control and eradication at Oneida's priority restoration sites.
- Utilize the approach of early detection and rapid response to maintain an efficient and productive invasive species program.
- Implement best practices for the priority species, including: Phragmites, Reed Canary Grass, Purple Loosestrife, glossy and common Buckthorn, Garlic Mustard, Teasel and Japanese Knotweed.
- Maintain a zero tolerance policy for Phragmites in or near restoration areas. Phragmites requires eradication over control as its effect on habitat is far too detrimental compared to other invasives.
- Mechanical control is preferred over chemical, but the use of herbicides is often the only viable tool to obtain desired results. Biological control (Galarucella beetles) has been used with limited success on Purple Loosestrife.

- Priority locations include: Sand Pit, Where the Waterbirds Nest, Ducks Gathering, Norbert Hill Woods, Edge of the Woods, Foxtails, Suamico Wetland Restoration, Duck Creek Spring restoration at Seminary Rd., and Coyote Run.

BENEFITS ASSESSMENT

Environmental

- Limiting invasive species infringement on the Oneida Reservation helps protect the natural diversity of native species.

Cultural

- Projects to reduce the presence of native species provide more natural habitat for traditional species important to Oneida community members for use in medicinal, ceremonial, and social applications.

Economic

- Invasive species can damage economic activity related to agriculture, silviculture, aquaculture, and the natural systems that provide for clean water, species diversity, and prime hunting lands.

IMPLEMENTATION PLAN

Oneida is currently fortunate to have funds available for invasive species management, which include funding from the BIA and the Great Lakes Restoration Initiative. Additional funding opportunities that will be pursued include U.S. Fish & Wildlife Service funds, additional BIA grant opportunities, and yearly funding opportunities through the Environmental Quality Incentive Program of the Natural Resource Conservation Service of the United States Department of Agriculture (USDA). Oneida's growing track record on managing invasive species should assist in continuing to secure funds for these important projects in the future.

The Live Sustain Grow Plan is implemented by the Oneida Environmental, Health & Safety Division which is a department within the Oneida Tribe of Indians of Wisconsin.

LIVE SUSTAIN GROW