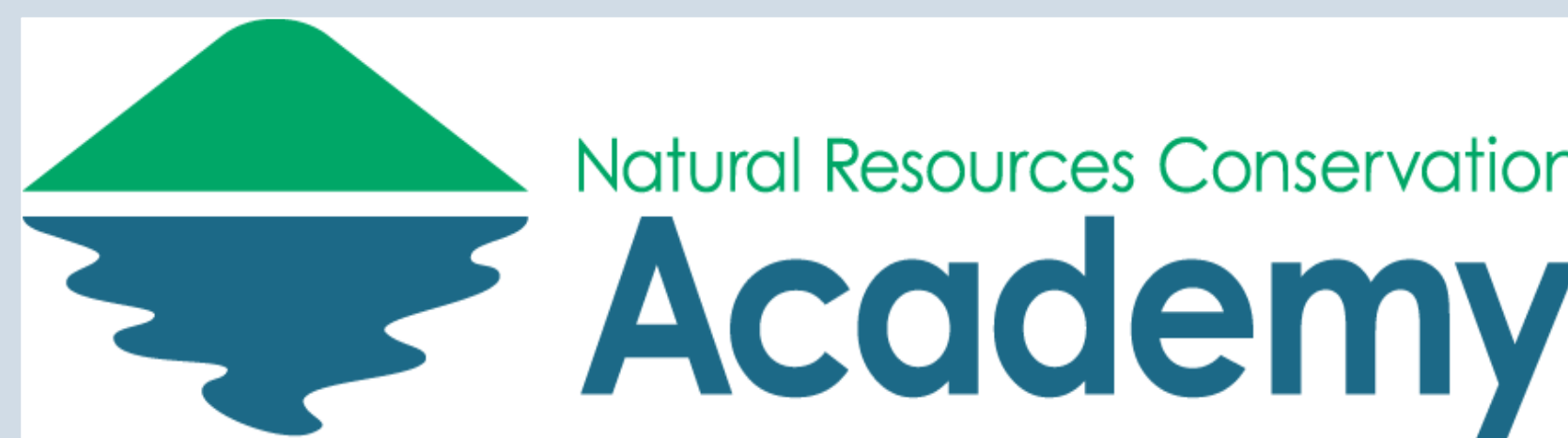


Prevention of Japanese Knotweed Infestation Along a Wild and Scenic River



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Housatonic Valley Regional High School Housatonic Valley Association



Introduction

The Housatonic Valley Association is designed to help protect and restore the Housatonic River Watershed. In doing so they partner with local ecologists and volunteers to create riparian buffers, monitor water quality and push for environmentally sound legislation. One such program in the Japanese Knotweed Project. A collective effort by (insert #) towns, the hope is that the invasive can be identified, surveyed and managed.

Japanese knotweed is the world's most invasive plant. Introduced to the United States as an ornamental plant, very few rivers are considered knotweed free. Knotweed is a perennial plant with hollow stocks (similar to bamboo) with creamy white flowers arranged in spikes at the end of its stems. The flowers bloom in August and September while the stalks persist year round. It can grow three to ten feet high in stature.

The reason that it is the world's most invasive plant is that it forms dense monocultures that suffocate native species, eliminating them from the understory. In doing so it changes the composition of the soil and secretes toxins that suppress the growth of native species. It is spread easily as it can propagate from very small cuttings known as propagules. That makes the banks of the Housatonic and any disturbed area, especially at risk.

Purpose

The goal of this project was to survey the extent of the species' infestation in the town of North Canaan, CT. The data was mapped and will be used by the HVA as they look to treat the plant in the spring and summer months. The hope is to preserve the Wild and Scenic designation of the river by also partnering with local organizations and governments through outreach. This includes, but is not limited to, lobbying local politicians so as to ensure sound policy decisions that will not impede the elimination of this species.

Knotweed Survey

- The project took place between the months of September and February.
- Sites were located along the Housatonic in North Canaan along with local tributaries and streams.
- Permission was granted for much of the surveying to take place on private farms and other property.
- The measurement of each plant was taken using a pacing method and the site was named using the side of the bank on which it resides and the name of the stream or river
- Photos of each site were taken to preserve GPS coordinates which were sent to the HVA for the creation of the map

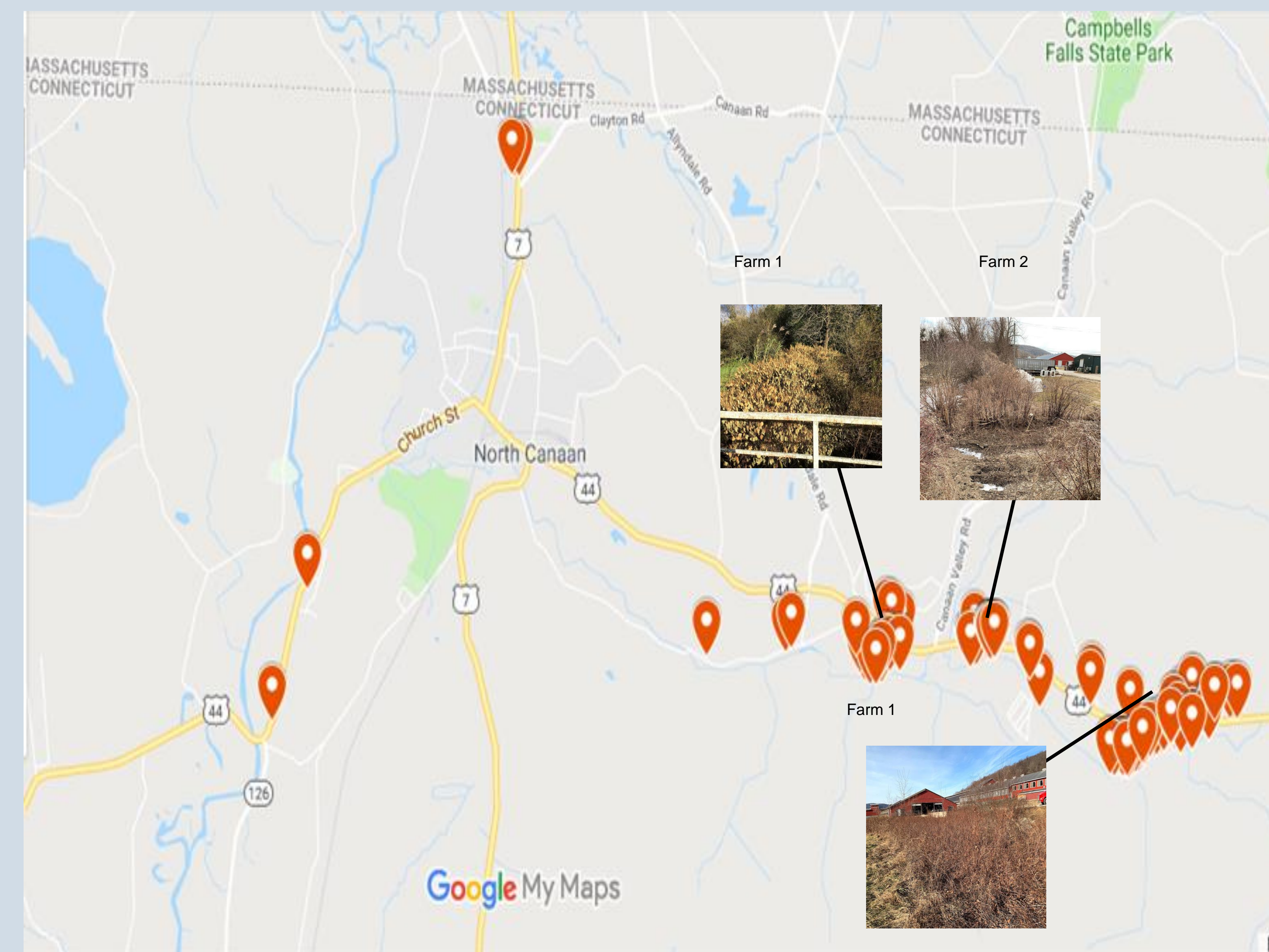
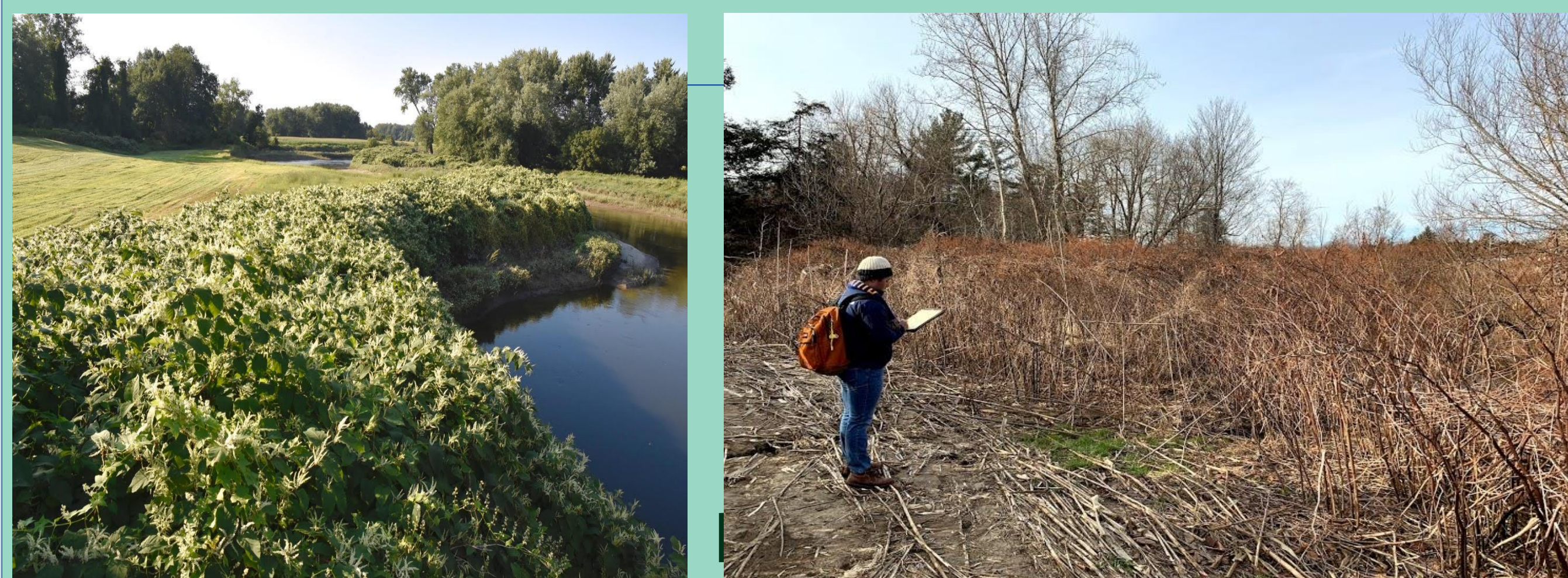
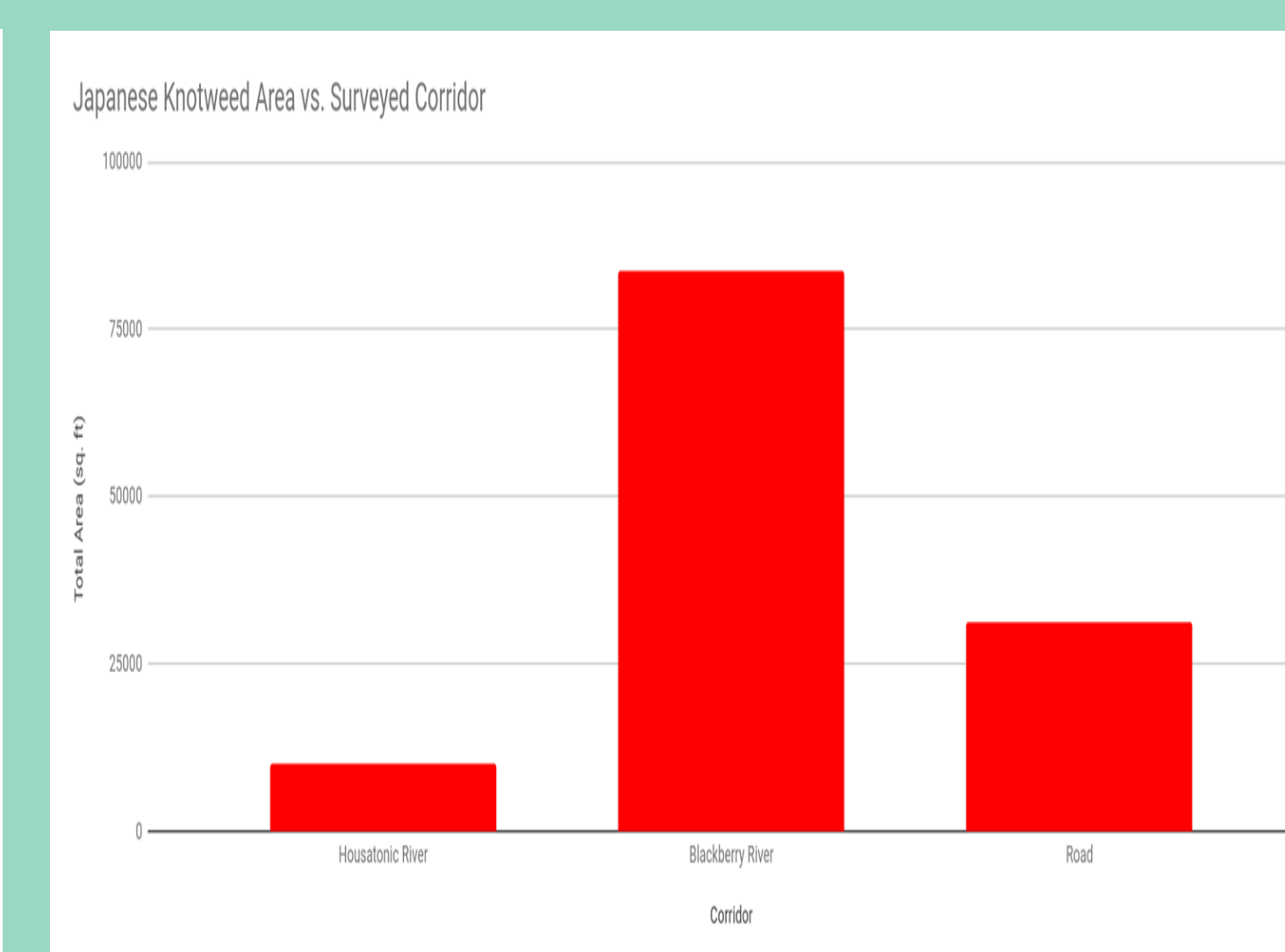
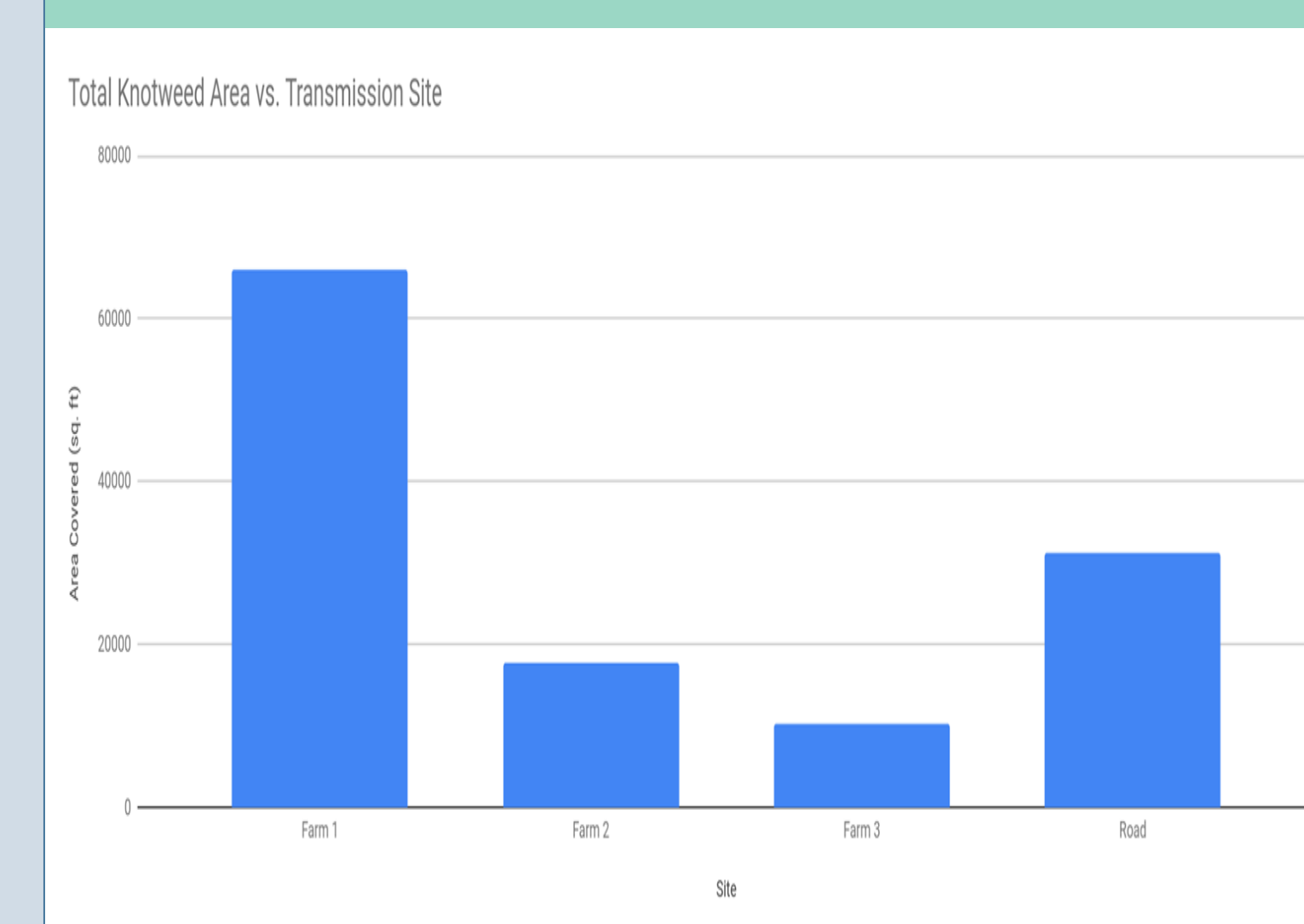


Figure 1: This is a map of the town of North Canaan, CT and the individual Japanese knotweed sites discovered during the surveying process.

Results and Discussion

The Blackberry River, a tributary of the Housatonic, is by far the most infested water body. Supplying water to many farms along its banks, the river is prone to disturbance. This has made it increasingly susceptible to infestation. As a result a total of 91 sites were discovered and were largely concentrated around Farm 1. This farm is also found upstream of all other farms and the outlet of the river into the Housatonic. It can only be inferred that if this property and all others along the Blackberry River are not controlled, then the Housatonic will become increasingly prone to knotweed infestation. This is also means, however, that a town facing population decline due to a lack of employment opportunities, may be revitalized with the growth of an invasive management industry.



Policy & Community Outreach

The second component of the project included public outreach to educate and advise community members. Those members include the Northwest Connecticut Council of Governments, the Housatonic Valley Regional High School Envirothon Team, and State Representative of the 64th District, Rep. Maria Horn. A selectmen's meeting for the town of North Canaan is scheduled for April and will be another opportunity to raise awareness.

- Northwest Hills Council of Governments - a forum designed for the chief elected officials of twenty-one towns to discuss issues of intermunicipal concern.
- Housatonic Valley Regional High School Envirothon Team - a student led club of environmentally conscious students who participate in the largest environmental competition in North America.
- State Rep. Maria Horn - elected in 2018, Rep. Horn has been placed on the Environment, Appropriations and Judiciary Committees.
- North Canaan Selectmen - the small town of North Canaan, CT is a largely agrarian community. Local farmers serve as stewards of the land and are on the front lines of combating Japanese knotweed prior to its introduction to the Housatonic River.



Figure 2a: An outreach event with the Housatonic Envirothon team.



Figure 2b: Rep. Maria Horn is seen speaking to local farmers to learn of their sustainable practices.

Future Directions

As of now any feasible control method for Japanese knotweed along the Housatonic River and its tributaries must rely on herbicide application. Applicators must be especially careful, however, around water bodies, so as to prevent the bioaccumulation of these chemicals in the wildlife. More research must be done into safe herbicide development, but for now glyphosate is the most reasonable herbicide as it dissipates reasonably quickly in bodies of water. In six months traces of the chemical would no longer be found. Other alternatives to chemicals could be implemented, such as the cut and cover method, but managers must be careful so as to not allow a propagule to make its way down the river.

By realizing the extent of the problem, local governments should look towards boosting the development of the invasive management industry in their towns. The Northwest corner of Connecticut, like many rural communities is experiencing population decline and with this burgeoning industry the towns could see potential in growth.

All of these management methods are contingent on appropriate policy changes by local legislators. Instead of laws that restrict pesticide use along roadways, which are both a corridor for knotweed and see the most problems from lack of visibility, our legislators should advocate for responsible pesticide use.

The future of the Housatonic Wild and Scenic designation will be contingent on the management of invasive on a local level and with the presence of one of the world's most invasive species, control must start now. While surveying is but the first step, control and maintenance may eliminate this species from our river.

Acknowledgements

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Resources

"Know Your Invasives: Japanese Knotweed." *Housatonic Valley Association*, Housatonic Valley Association, 10 Sept. 2018, hvatoday.org/know-invasives-japanese-knotweed/.