

**Invasive Species Management and Prevention Internship**  
**Final Report**

**December 15, 2019**

**Overview:**

This project engaged two Vassar College students through a comprehensive internship that focused on invasive species management, monitoring, and outreach. The interns implemented invasive species management plans, utilized best management practices, monitored the response of populations to management, designed presentations for various audiences, created outreach materials, and educated the community through meetings, presentations, outreach events, and citizen science.

The interns engaged a diverse group of partners in a variety of ways. They engaged municipalities and natural resource managers through presentations that were hosted by the Town of Poughkeepsie's Conservation Advisory Council, the City of Poughkeepsie's Watershed Advisory Council (WAC), the City of Poughkeepsie's Shade Tree Commission (STC), and Vassar College. They tabled during NY's Invasive Species Awareness Week at the Poughkeepsie Farm Project to increase awareness of the spotted lanternfly. Throughout their internship, they hosted six public outreach events that reached 213 people. Their outreach focused on general information about invasive species, the spotted lanternfly, best management practices, how to stop the spread of invasives, and how to prevent the introduction of new invasive species.

The management work the interns conducted was a vital piece of the implementation of our Conservation Action Plan and helped to protect the biodiversity of an ecologically significant open space. They worked on managing six invasive species that are emerging on our site with the goal of eradication. They worked on containing populations of four isolated invasive species. They also worked to control common invasive species in our priority habitats and in an area that contains a rare species. Additional years of monitoring and management will be required to eradicate emerging invasive populations from our site. By prioritizing management of common invasives in our conservation targets we were able to start strategically managing our common invasive species.

The interns conducted regular monitoring for spotted lanternfly and the response of populations to invasive species management efforts. They documented the phenophase of invasive species through weekly observations in the National Phenology Network's Nature's Notebook and iNaturalist. They also participated in regional monitoring efforts and attending a Monitoring and Managing Ash Workshop and a Blockbuster Training. The interns completed their assigned block and set up a lingering ash plot at our site.

**Summary of Accomplishments**

**Management**

The interns used strategic management to protect conservation targets at our site. They assisted the PRISM strikeforce in trying to eradicate several species that are emerging in our region.

- Two days were spent cutting the known populations of *Fallopia japonica*, Japanese knotweed. The known populations were cut twice. Additional populations of knotweed were found nearby. It is unclear whether containment will be possible with current resources.
- The interns spent 6 work days removing the known populations of *Rhodotypos scandens*, jetbead, with a weed wrench. Monitoring after removal found <20 seedlings at removal sites. This fall additional populations were found nearby with >75% cover.
- Five populations of *Euonymus fortunei*, fortune's spindle, were hand dug and removed. The areas were small (1-5 m<sup>2</sup>) with <5% cover but widespread on the property.
- The populations of *Vincetoxicum nigrum*, black swallowwort, in our old fields were hand dug twice during the growing season. Two populations that had been hand dug in previous seasons had not resprouted by September. A population that was managed for the first time this season was resprouting by September.
- *Artemisia vulgaris*, Mugwort, was mapped, marked, and mowed twice (June and September) in our old fields. This successfully prevented seed production and the plants were < 0.25m tall at the end of the growing season.
- Climbing vines *Celastrus orbiculatus*, Oriental bittersweet, and *Ampelopsis grandulosa* var. *brevipedunculata*, porcelain berry, were cut along the edge of 75% our priority corridor. Each vine was cut at the ground and again overhead.
- Invasives species were removed and a fence was constructed in an area that contains a rare species.
- Invasive species were removed from a vine gap in a priority conservation area in preparation for flame treatment after resprouting occurs.
- Interns and preserve staff worked with the PRISM Strikeforce to locate and manage known populations of *Kalopanax septemlobus*, castor aralia; *Symplocos paniculata*, sapphire berry; *Viburnum dilatatum*, linden viburnum; and *Akebia quinata*, chocolate vine.
  - *Kalopanax septemlobus*, castor aralia was treated by using Accord XRT foliar treatment and Pathfinder II basal bark treatment. The basal bark treatment was approximately 75% effective. Additional seedlings and saplings were discovered post treatment.
  - *Symplocos paniculata*, sapphire berry was treated by using Pathfinder II on the cut stumps of non-reproductive adults and Accord XRT II on reproductive adults. There were additional plants that were manually pulled. Post treatment monitoring estimated that there was regrowth on less than 25% of treated stumps. There are seedlings and saplings remaining in the area and the overall cover of the species is approximately 25%.

- *Viburnum dilatatum*, linden viburnum was treated by using Pathfinder II on the cut stumps. Plants were also manually pulled. 10-25% cover remains in the treatment area. There were additional populations that were found in adjacent areas. A population of *Viburnum sieboldii* was treated with Pathfinder II on the cut stumps.
- *Akebia quinata*, chocolate vine was treated using Roundup Pro foliar treatment. There was no response to treatment and cover remains over 75% in the 2,000 square meter infestation.
- Interns assisted with the care of goats that were being used to manage vines in a heavily invaded area.

### **Monitoring**

The interns monitoring efforts increased our knowledge of the response to management efforts, invasive species phenology, and helped scout for invasive forest pests.

- Interns monitored for *Lycorma delicatula*, spotted lanternfly on the *Ailanthus altissima*, tree of heaven, near the Poughkeepsie Farm Project parking area weekly.
- The interns documented invasive phenophases using two citizen science platforms. The Hudson Valley Invasive Species Phenology Project was created in iNaturalist. The project has captured 3,490 observations of 294 species. The interns and other preserve employees began making reports of invasive phenophases. 58 observations were made on the Hudson Valley Invasive Species Phenology Project at our site of 37 species by 16 observers. Interns and preserve employees made weekly observations of several invasive species (*Rosa multiflora*, *Berberis vulgaris*, and *Lonicera maackii*) in Nature's Notebook on our Phenology Trail.
- The interns attended a Monitoring and Managing ash Workshop and helped establish a lingering ash plot at our site.
- The interns attended PRISM's blockbuster training and completed a block.
- Interns and preserve staff monitored the response to invasive species management efforts regularly throughout the growing season.

### **Outreach**

The project engaged new audiences and delivered education that communicated the positive impact of invasive species management. Their outreach focused on mitigating pathways by educating about the role that movement of vehicles and people play in invasion, sanitation, the use of native plants in landscaping, properly disposing of waste, and more.

- The interns attended the Local Waterfront Revitalization Project public comment and shared information about the threats from invasive species.
- The interns met with Natalie Quinn, the City of Poughkeepsie Senior Planner, and Tom Meyering, Town of Poughkeepsie Parks, to discuss invasive species, best management practices, and introduce the spotted lanternfly.

- We hosted a Citizen science workshop “Using Digital Platforms to Observe Nature” that 15 people attended. The interns led a nature walk following the presentation where they encourage participants to use the platforms.
- On July 9th and 13th, the interns tabled at the Poughkeepsie Farm Project (PFP). They distributed cards with spotted lanternfly identification guides and ran a kids activity making “Spotted Lanternfly Crowns”, and talked to visitors about invasive species. The interns educated over 60 people about the Spotted Lanternfly and how to respond if they observe it.
- On July 20th, the interns led a guided walk focusing on invasive species identification and best management practices for 8 people.
- On July 23rd, the interns led the Science and Nature program at the Town of Poughkeepsie Parks summer camp for 120 kids. The interns taught a lesson on invasive species, taught basic identification of several species present at the park the camp is hosted at, then walked the perimeter to search for invasives. The kids picked invasives and make crayon leaf rubbings.
- On July 23rd, the interns gave a presentation to a joint meeting of the Watershed Advisory Council (WAC) and Shade Tree Commission (STC) of Poughkeepsie. The interns were successful in convincing the City of Poughkeepsie to include searching for the spotted lanternfly in their upcoming tree survey. They initiated discussions within the WAC and STC regarding future endeavours including: a city wide mailer, PSAs on the city television station, and the addition of invasive vines to their tree survey.
- On July 30th, the interns gave a presentation to 20 members of Vassar’s Grounds Department about invasive species, the threats that they pose, best management practices, and ways that they can prevent the spread of species.
- On August 13th, the interns gave a public presentation that was hosted by Poughkeepsie’s Conservation Advisory Council on invasive species identification and best management practices. The interns also introduced the spotted lanternfly and resources to learn more. 10 people attended.
- The interns created a page for the City of Poughkeepsie’s website on invasive species.
- The interns designed a sign for our boot brush stations.
- The interns designed a mailer that will be sent to adjoining properties about how to prevent the spread and introduction of new invasive species.