Project Title:

Determining priority invasive species conservation actions and enhancing public awareness in the Town of Colonie

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BACKGROUND

Invasive species threaten ecological systems and human health on various scales, yet the most developed models of effective partnerships and coordinating efforts are at global, regional, and state-wide scales. Approaches to implementing successful partnerships at local scales are less consistent and outcomes are highly variable. Exploring successful ways to grow and nurture highly-effective local partnerships can serve as a much-needed model for invasive species outreach and management at the local scale.

In 2018 and 2019 we surveyed natural areas in the Town of Colonie to identify the distribution and abundance of invasive plant species in the town. These included natural areas owned by the Town of Colonie and other public and private organizations. To be time efficient, terrestrial invasive plant surveys were conducted along key invasion areas (e.g., roads, trails) and for aquatic invasive plant species we surveyed shorelines at key public access points (e.g., public boat launches). Locations of invasive species encountered (and rough information on their relative abundance) was recorded and uploaded to *i*MapInvasives. We identified two key natural areas that have high conservation value in the town. Both sites have unusually low numbers of invasive species on the property (Ashford Glen Preserve) or have invasive species concentrated at a small portion of the property, with much of the property free from invasive species (Ann Lee Pond).

The current project expanded on this previous work. As a result of COVID-19 hiring, travel, and social distancing restrictions, we performed a reduced scope of work at a reduced funding level. Original proposed work including surveying for high priority invasive plant species, uploading records into *i*MapInvasives, determine priority species and conservation actions, and advancing outreach efforts in the town. Reduced scope of work was determined by what aspects was feasible (given COVID-19 restrictions) and what would move the proposed work forward. We determined work that could be done during Summer/Fall 2020 (under contract), work that could be done during Winter 2020-2021 (outside of contract), and suggested future work (next steps).

SUMMARY OF WORK – completed, ongoing, and next steps

Tier 1 and 2 invasive plant surveys

One component of this project was to survey and map invasive plant species along key areas of invasion (e.g., roads, trails) in natural areas in the Town of Colonie. During the 2018 and 2019 projects, properties surveyed were primarily government owned (town or county), or owned and managed by private entities (e.g., Mohawk Hudson Land Conservancy), but accessible to the public. Students were trained to identify invasive plant species, with an emphasis on high priority species (i.e., higher than Tier 3). All invasive plant species encountered were recorded at regular intervals, and observation records were uploaded to *i*MapInvasives. This provides both: 1) identification of high priority species (Tier 1 and 2) so that action can be taken to prevent those species from becoming established, and 2) distribution and abundance data of all invasive plant species, which helps to better inform decision-making.

To close the existing “gap” of Town of Colonie natural areas that have been surveyed, we identified several areas to survey. Specifically, large natural areas associated with the Albany Rural Cemetery, and several smaller natural areas (e.g., Littles Lake, Pruyn House). Although we identified key areas to sample, COVID-19 restrictions did not allow students to conduct field surveys. As such, this survey work was delayed and will be considered for Next Steps.

Public Programs and Outreach Efforts

We have worked with the Town of Colonie Conservation Advisory Council (CAC) to identify two Town of Colonie properties that are ideal locations for public outreach efforts: The Crossings of Colonie and the Hudson-Mohawk Bike Path. Both properties have high numbers of visitors and have the potential to reach a large number of town residents. We proposed to hold a student-led Invasive Species Interpretive Walk at The Crossings, but due to COVID-19 restrictions for public gatherings we did not proceed with this. In past years, we held student-led interpretive walks at The Crossings that were highly successful and well attended, especially when the weather cooperated. We expect to resume this, or a similar public event, in the future.

For this project, we proposed a new outreach effort: designing and constructing a boot brush station/educational kiosk at the Hudson-Mohawk Bike Path. This project was also put on hold. The Town of Colonie CAC worked with Town of Colonie officials to determine location for the boot brush station/educational kiosk. It will be located in a highly visible location at one of the main entrances to the trail. PlayCleanGo signage templates will be used for designing signage for the kiosk. We reached out to the Finger Lakes PRISM and received advice and guidance on how to construct the boot brush/educational kiosk stations. This initiative is on track to completion when COVID restrictions are lifted.

Priority Species and Actions

This project proposed to develop priority conservation actions based on reviewing distribution and abundance data we collected (and other records that are in *i*MapInvasives), priority tier status, and feasibility of eradication or control methods. We were not able to conduct the surveys to close the existing “gaps” in coverage of natural areas in the town, so we have incomplete invasive species data. However, we have researched methodological approaches being done at a statewide and regional PRISM level. First, we have consulted Dylan Finley (SUNY College of Environmental Science and Forestry graduate student) and Dr. Jennifer Dean (invasive species biologist, New York Natural Heritage Program) to understand the methodology Dylan is currently using to develop draft tier lists for New York State and the regional PRISMs. Second, we will continue to work with existing *i*MapInvasives data (albeit incomplete) to develop potential priority tier lists for the Town of Colonie. This project is ongoing and is being done with student researchers. (Student research project should be completed by the end of January 2021.)

For the tier list creation, we have downloaded existing *i*MapInvasives data for the Town of Colonie and within a buffer around the town (e.g., 100 mile). Observations will be clustered to determine number of populations for each species within the town and in the buffer. We will compare different clumping thresholds that are used for clustering nearby observations into single populations. (For example, 100 m vs. 50 m.) This clumping of observations will help control for species-specific differences in reporting. Other criteria that will be evaluated appropriate tier status include species invasiveness ranking and their subcomponents: ecological impact, biological characteristic and dispersal ability, ecological amplitude and distribution, and difficulty of control (<http://nyis.info/invasiveness-rankings/>), and socioeconomic scores (NYS Department of Environmental Conservation). This current student research project will evaluate and compare different ranking criteria, and will present a draft methodology for developing a tier list for the Town of Colonie. The resulting tier list of species will be considered a draft ranking. We will solicit feedback from experts, and will update it if we are able to close the existing “gap” in invasive species plant surveys in the town.