St. Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management

2016 Field Report

Lake Neahtawanta – *Justicia americana*

SLELO-PRISM Early Detection team
July 26th, 2016

Report prepared by Ashley Gingeleski and Ben Hansknecht on August 9th, 2016

Introduction and Background

In 2014 the SLELO PRISM partners submitted a research request to the New York State Department of Environmental Conservation Invasive Species Coordination Unit to continue research needed to identify a biological control for water chestnut (*Trapa natans*). This request was approved by the New York State Invasive Species Council and funds were provided to the Invasive Species Research Institute at Cornell University. One component of the research is to conduct "host specificity" testing of the proposed biological agent as related to the target species *Trapa natans* and some 50 to 60 native species of aquatic plants.

In July of 2016 the SLELO PRISM was contacted and asked to find samples of American water-willow (*Justicia americana*) to be submitted to Cornell as part of the required host specificity testing. This brief field report reflects efforts to locate water-willow.

American water-willow is a perennial plant found on the shores of rivers and lakes, in marshes, swamps and other wetland margins. With oppositely arranged lanceolate leaves, water-willow grows together to heights between 50 and 100 cm along hairless stems. Its flowers, colored either white or pink to red, are bilaterally symmetrical and possess between one and two stamens (**Figure 1**).

Native to many states around the U.S., including New York, water-willow is labeled as endangered in Iowa and threatened in Michigan. Despite its common name, this species is not a woody plant, nor is it closely related to true willows (*Salix spp.*).

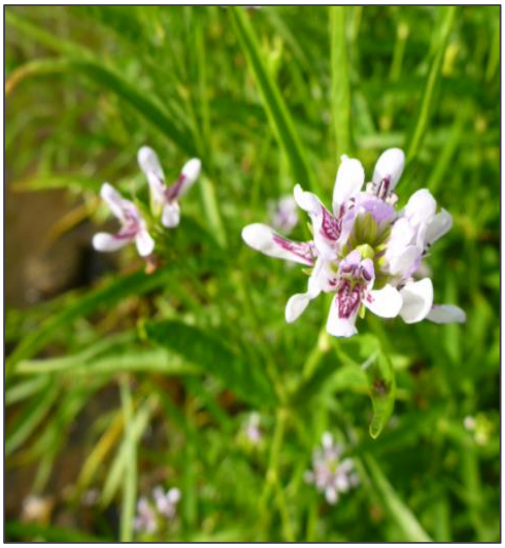

Figure 1. American water-willow flowers at WP 1. Photo by Ashley Gingeleski.

Potential Biological Control *(Galerucella birmanica)*[1]

Galerucella birmanica is a leaf beetle commonly found throughout southeast Asia, whose native range overlaps prominently with that of *Trapa natans* in China. This species has been "identified as the most important pest on water chestnut in Asia, causing complete defoliation of entire populations of water chestnut plants" (**Figure 2**).

Figure 2. *Galerucella birmanica*.[2]

Sampling Methods and Observations

In July of 2016, the SLELO Early Detection team traveled to Lake Neahtawanta in Fulton NY (**Figure 3**) in order to collect samples of American water-willow, one of many native plants to be used in this study. This site was referred to us by Tim Carroll, a local ecologist.

Samples were taken by using a trowel to dig up plant specimens, preserving as much of the root mass as possible. They were then placed into trash bags with ample water supply to keep them fresh (**Figure 4**). The samples were subsequently transported to the quarantine unit at Cornell University for use in their study.

Waypoints (WPs) were marked using a Garmin handheld GPSMAP® 62. The population of American water-willow found at WP 1, can be located at the following coordinates: N 43.31408° W 76.42882°.

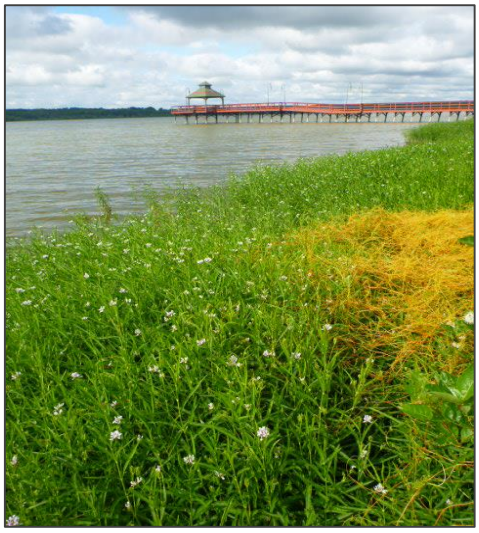

Figure 3. American water-willow near the Lake Neahtawanta pier. Photo by Ashley Gingeleski.

Figure 4. American water-willow samples prepared for transport. Photo by Ashley Gingeleski.

[1] For more information on *Galerucella birmanica* and its potential use as a biological control agent at Cornell University, visit: http://www.invasiveplants.net/personnel/jianqing_ding/jianqing_ding_research.htm