

Final Report for FLOWPA FY 18/19

Submitted by: Oswego County Soil and Water Conservation District

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Contract #: C305139-18/19

October 29, 2021

2021 Water Chestnut Control Program Report

Introduction

Water chestnut (*Trapa natans*, L.) is a highly invasive aquatic species, found throughout New York State. Chestnuts out-compete native species of plants through exponential growth due to their lack of natural predators. This aquatic invasive has severely impacted native aquatic habitats, fishing access, recreational use and economic vitality in the Oswego River, and several other tributaries of Lake Ontario within Oswego County. As such, the Oswego County Soil and Water Conservation District (OCSWCD) utilized this funding to facilitate control work in Oswego County that included chemical treatment and an organized hand-pulling effort.

Projects

Herbicide Treatment

The Oswego County Soil and Water Conservation District arranged for the herbicide treatment of a total of 120 acres of water chestnuts on the Oswego River System (see map for further details). This included sites from Minetto to Phoenix, each consisting of multiple patches. Through a bid process, a qualified applicator was selected to conduct the treatments. The contractor proceeded with obtaining the proper permits with the assistance of this office. Riparian landowners within specified distances from the treatment sites were notified by mail and the appropriate signage was posted to satisfy all NYS requirements. The treatment was scheduled for the week of July 19, but due to high water and the closure of the Oswego River, this was delayed. Unfortunately, the river remained closed for about 2 weeks, forcing the OCSWCD and the contractor to reschedule for the week of August 9. This time period is early enough to disrupt the seed cycle, but too late to schedule a follow-up treatment to treat the boat stripes, which are formed by the airboat passing through the vegetation. The contractor made some adjustments to alleviate as much boat striping as possible with a single application, which worked with moderate success. The application of Clearcast (imazamox) was made at the rate of 1 gallon per acre using a variety of spray nozzles.

In early to mid-September, visual observations of each site were conducted. Throughout the 120 acres treated in the Oswego River, some striping did occur, but the application was determined to be successful. Inspections conducted by Oswego County SWCD staff in early September revealed discolored vegetation, plants that were breaking apart and populations that were significantly reduced in density or almost non-existent in some cases. The goal of this project was to reduce the population densities sufficiently to allow for control to be feasible through only hand-pulling. Repeated applications over several years are usually required for this reduction to be observed.

Team Hand-Pulling

In other areas of the Oswego River that were not dense or large enough to require herbicide treatment, along with additional waterbodies throughout Oswego County, remnant and pioneer populations of water chestnuts were controlled through hand-pulling. The OCSWCD hired 4 college interns for an 8-week period to physically remove water chestnuts from small, scattered populations. Prior to beginning this effort, the seasonal staff received training in aquatic invasive species identification, boater safety, first aid/CPR and GPS/GIS use. The crew used canoes to access the populations in the Oswego River, Ox Creek, Rice Creek and Oneida Lake. In the Oswego River, a focus was given to the scattered water chestnuts located around the chemical treatment sites. This allowed for more effective control of the larger populations. As the weeds were collected, they were bagged and later composted at the Bristol Hill Landfill. The interns conducted hand-pulling from late June until mid-August. In this time, approximately 14,500 lbs of water chestnut were removed from the aforementioned waterbodies. The map attached provides the approximate locations.

Beyond hand-pulling, the interns were also responsible for surveying and mapping populations prior to removal. GPS data was collected and integrated with GIS to make maps, which allows this office to track progress. In addition, a density designation is given to each population which assists in prescribing the proper treatments next year.

As with the herbicide treatment, the high water did present a challenge to the hand-pulling effort as well. The Oswego River was closed for approximately 2 weeks, making it necessary to send the crew elsewhere to Rice Creek and Oneida Lake. This did require us to leave some small populations behind on the Oswego River, which usually happens anyways, but more so this year due to the closure. We also met another challenge related to permitting. Meetings early in 2021 with the NYS Department of Environmental Conservation (NYS DEC) revealed that many locations that were planned for hand-pulling required wetlands permits. The applications took many hours of staff time to complete along with GIS mapping, verification of ownership and communication with landowners for signatures. The review process took several weeks and the permits were obtained only days before the hand-pulling program started.

Future Plans

For next year's program the District is considering mechanical harvesting, experimenting with other herbicides on small sections of the Oswego River and introducing a motorboat into the hand-pulling aspect of this control project. It is hopeful that these will be incorporated into future FLOWPA requests and employed during the field season to increase the effectiveness of this control effort.

Without this funding, a large acreage of water chestnuts would have gone uncontrolled and the outlook would be bleak on reducing the spread of this aggressive invasive species. A continued, annual effort is needed to ensure control over water chestnuts in Oswego County.

Photos



A rosette from a water chestnut plant. The air bladders beneath each leaf allow the plant to float on top which makes it susceptible to hand-pulling and chemical treatment.



This photo depicts the density that this invasive can reach. At this level, herbicide treatment and mechanical harvesting are the only means of control.



South of the Village of Phoenix- Before Treatment



South of the Village of Phoenix-After Treatment



North of the Village of Phoenix - Before Treatment



North of the Village of Phoenix - After Treatment



Treasure Island in the Village of Phoenix– Before Treatment



Treasure Island in the Village of Phoenix– After Treatment



This photo shows the contractor applying herbicides with an air boat during the week of August 9 , 2021.



This photo shows the OCSWCD intern crew from 2021.



Canoes are launched daily for mapping and hand-pulling.



Interns actively hand-pulling water chestnuts.



OCSWCD interns weighing bags of chestnuts to accurately track progress.



A canoe fully loaded with heavy bags of chestnuts.



Chestnuts being composted at the Bristol Hill Landfill.



A photo taken near Fulton showing the water chestnuts before hand-pulling. A dense patch in the background is visible and was part of the chemical control program.



This photo was taken after a hand-pulling effort. The small patches and scattered plants have been removed. The dense mat in the background has been left for chemical control. Herbicide application is not effective on scattered plants/small patches.

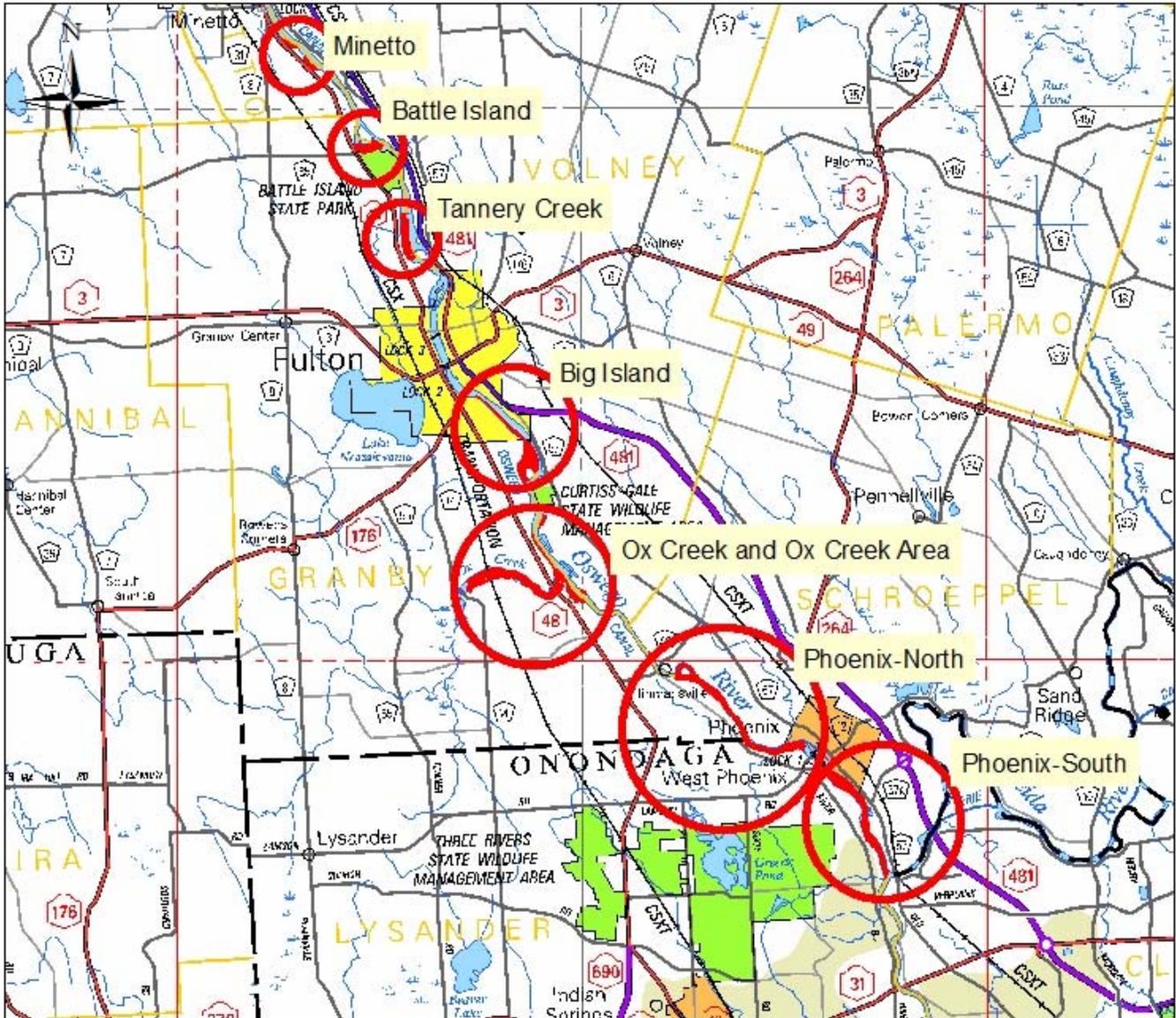


A photo taken near Phoenix, showing a small dense patch of water chestnuts prior to hand-pulling. This population was not included on the chemical treatment due to its size.



This photo was taken near Phoenix, showing the results of hand-pulling.

Oswego River and Ox Creek Locator Map 2021 Water Chestnut Treatment Sites



Legend

2021 Treatment Zone

0 1 2 4
Miles

Disclaimer:

The GIS map above is comprised of shapefiles obtained from the Office of Oswego County Real Property, Oswego County Department of Tourism, Planning and Community Development, and the NYS GIS Clearinghouse. The accuracy of the data is not guaranteed. This map is not a survey and is intended for planning purposes only.

January 2021
Oswego County Soil and Water Conservation District

Oswego County Locator Map 2021 Water Chestnut Handpulled Sites



Legend

 2021 Handpull locations

0 2.5 5 10 15 Miles

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