



Aquatic Invasive Species Program 2016 Final Report

Hudson River Sloop Clearwater, Inc.



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This project was contracted by the Lower Hudson Partnership for Regional Invasive Species Management (PRISM) using funds from the Environmental Protection Fund as administered by the New York State Department of Environmental Conservation.

Project Objective:

Hudson River Sloop Clearwater, Inc. (Clearwater) was awarded funding in March 2016 to continue a program developed during the previous year. This multi-faceted program works to educate a wide variety of people throughout the Hudson Valley including, but not limited to, boaters, anglers, lake association members, and the general public about aquatic invasive species (AIS) identification and spread prevention, and to promote citizen science by getting locals involved in AIS early detection surveying. Clearwater's AIS Program includes:

- Watercraft Inspection Steward Program
- Education and Outreach Program
- Volunteer Training/Surveying Program

This program was started at a critical time for the Hudson River. Storms have decimated the native plant populations in the Hudson River leaving the river bottom primed for new plant introductions. While native species such as eelgrass (*Vallisneria Americana*) have been attempting to rebound, aquatic invasive plants have taken advantage of the sparsely populated river bottom.

In 2013 the aquatic invasive plant *Hydrilla verticillata* (hydrilla) was found in the Croton River during a rare plant survey. Hydrilla is one of the world's most invasive aquatic plants, and its introduction to the Hudson River would be detrimental to native plant and animal species. This plant has the ability to grow several inches a day, eventually clogging waterways and choking out native species. These dense mats inhibit boating, fishing, and swimming, which can eventually impact the local economy.

The first step in mitigating the spread of invasive species such as hydrilla is to educate the public about species identification, impacts, management options, and spread prevention methods. The Hudson River is currently home to over 120 aquatic invasive species (AIS), many whose introduction could have been prevented through clean boating practices and proper aquarium disposal. Some of these species, such as water chestnut, have been here for over 100 years. Others, including hydrilla, are new to the Hudson River Valley. It is our responsibility to contain these newly emerging species, and prevent those that have not yet entered the region from becoming established.

Scope of Work and Deliverables

Watercraft Inspection Steward Program

Watercraft inspection stewards are becoming more common across New York and the United States as invasive species become a more widely recognized environmental problem. One of the most common modes of spread for aquatic invasive species is via boats, trailers, and boating equipment. Many species can survive for extended periods outside of water, giving them countless opportunities to “hitchhike” from one waterbody to another. These stewards help to prevent the spread of aquatic invasive species at the source.

Clearwater started the first Watercraft Inspection Steward Program in the Hudson Valley in 2015. Two stewards were hired for the season, one placed in Croton (site of the hydrilla infestation), and the other in Staatsburg. They each worked 16 weekends (Saturday-Sunday) between Memorial Day and Labor Day. By the end of the season, they had inspected nearly 800 boats and prevented various hitchhikers from entering and leaving the Hudson River, including hydrilla.



Clearwater steward inspecting a boat

This year we were able to expand the program to include three stewards that each worked four days/week. Stewards were hired to work at Haverstraw, Newburgh, and Staatsburg, and worked Thursday-Sunday. While we had a very successful season, we will still be making changes to the program next season.



Clearwater steward speaking with boaters about AIS spread prevention

Next year we will be increasing the amount of stewards from three to five, including one traveling steward. The four stationary stewards will work three days/week and the traveling steward will be working four days/week. These changes are being made for two reasons: safety and efficiency. We do not want to leave stewards alone at the Newburgh boat launch because our 2016 steward had various safety concerns. All stewards also noted that Thursdays at their boat launch were extremely quiet, and we felt that the funding could be used more efficiently spread over four stewards working three days/week rather than three stewards working four days/week.

Target Area:



The target area for the Watercraft Inspection Steward Program included 3 boat launches: Haverstraw, Newburgh, Staatsburg. Stewards inspected boats that were last launched into waterbodies in Connecticut, Delaware, Maine, New Jersey, New York, North Carolina, and Pennsylvania.

2016 Watercraft Inspection Stewards Summary:

- Inspected 1,317 boats
- Spoke with 3,378 boaters (not including general public that stopped to ask questions)
- 78.7% of boaters were willing to participate
- 8% of boats had hitchhikers on them
 - Brittle naiad, coontail, Eurasian watermilfoil, native pondweeds, water chestnut, zebra mussels
- 72.5% of boaters had previous knowledge about aquatic invasive species
- 69.3% of boaters take precautions to clean their boat

Comparison to 2015 Watercraft Inspection Stewards Summary:

- Inspected 792 boats
- 98.3% of boaters were willing to participate
- 4.8% of boats had hitchhikers on them
 - Brittle naiad, elodea, Eurasian watermilfoil, fish eggs, hydrilla, native pondweeds, water chestnut
- 50.3% of boaters had previous knowledge about aquatic invasive species
- 63.5% of boaters take precautions to clean their boat

Newburgh:

- Inspected 535 boats
- Spoke with over 1,462 boaters (not including general public that stopped to ask questions)
- 92% of boaters were willing to participate
- 2% of boats had hitchhikers on them
 - Water chestnut, Eurasian watermilfoil, zebra mussels
- 76.8% of boaters had previous knowledge about aquatic invasive species
- 75.7% of boaters take precautions to clean their boat

Staatsburg:

- Inspected 517 boats
- Spoke with over 1,243 boaters (not including general public that stopped to ask questions)
- 80.1% of boaters were willing to participate
- 16.7% of boats had hitchhikers on them
 - Brittle naiad, water chestnut, Eurasian watermilfoil, coontail, native pondweeds, zebra mussels
- 67% of boaters had previous knowledge about aquatic invasive species
- 55.2% of boaters take precautions to clean their boat

Haverstraw:

- Inspected 265 boats
- Spoke with over 673 boaters (not including general public that stopped to ask questions)
- 64% of boaters were willing to participate
- 4.9% of boats had hitchhikers on them
 - Eurasian watermilfoil
- 79.6% of boaters had previous knowledge about aquatic invasive species
- 76.6% of boaters take precautions to clean their boat

Deliverables met:

- Increased recreational boater knowledge
- Education and outreach materials (described in Education and Outreach Deliverables)
- Updated field guide and training materials
- Standardized data sheet for stewards
- Open Data Kit survey created to move away from hand-written data collection (increase speed and accuracy of surveys, and decrease human error)
- AWI steward training and local training at Newburgh boat launch
- Data collected and analyzed
- Decisions made about future locations of stewards based on data from 2016

AIS Education and Outreach Program

Educating the public about invasive species is the first step to preventing their spread. The Program Coordinator held and attended a wide variety of events to reach the widest range of people possible, including invasive species removal events, AIS identification and survey trainings, tabling events, and hands-on workshops. By holding a wide variety of events we were able to reach teachers, students, Lake Association members, boaters, anglers, town and village officials, and more.

The Program Coordinator created numerous informational materials including pamphlets, brochures, and field guides.

Breakdown of Education and Outreach Events

- **# Trainings: 8**
 - # People Trained: 53
- **# Clearwater Events: 6**
 - # People Reached: 755
- **# Presentations: 10**
 - # People Reached: 397
- **# Tabling Events: 16**
 - # People Reached: 1,580
- **# Invasive Species Removals: 1**
 - # People Involved: 30

Total:

- **# Events: 41**
- **# People Reached: 2,815**



Trapa natans removal in Newburgh, NY

Training: event where individuals are taught AIS identification, management, and surveying protocol

Clearwater Event: educational programs, workshops, or seminars held by Clearwater

Tabling: Outreach event where informational material was distributed

Removals: Invasive Species removal held by Clearwater

Target Area:

The goal of the Education and Outreach Program is to reach people all across the Lower Hudson PRISM region. Riverside towns are targeted, but outreach occurs at clubs, schools, businesses, and community events across the region.

Deliverables met:

- 8 Trainings
- 6 Clearwater events
- 10 Presentations
- 16 Tabling events
- 1 AIS Removal
- New and updated education/outreach materials

AIS Volunteer Program

Invasive species become much more difficult to manage as they become more widespread. Clearwater is working to prevent hydrilla, among other species, from becoming widespread by conducting early detection surveying across the Lower Hudson PRISM region. Eradication can still be possible if a species is found early enough. Clearwater's AIS Volunteer Program promotes citizen science by training people to identify and survey for some of the most invasive aquatic plants in the region.

These trainings are hands-on, allowing volunteers to see first-hand what the plants look like and how to differentiate them from their native (and sometimes invasive) lookalikes. After seeing the plants, volunteers are brought to the water where they are given all of the necessary equipment, including data sheets, a field guide, a GPS, and a weed rake. There they have an opportunity to practice using the weed rake and identify the species they pull up. When they feel confident with their identification skills they are sent into the field to either survey high priority areas surrounding the Croton hydrilla infestation, or to survey any of the other waterbodies found throughout the region.



Clearwater intern surveying for AIS in Peekskill, NY

This year, while we still held public trainings, Clearwater focused its trainings on larger groups including Lake Associations. Next year we will continue to work with more Lake Associations to train larger groups of people that can do routine surveys of their lakes, which should give us an idea of how the lake vegetation is changing over time.

Target Area:



Aquatic species surveying was focused around the Croton hydrilla infestation, but volunteers were free to survey any waterbody that they came across.

Deliverables met:

- AIS Field Guide – 2016 Focal Species
- Standardized data collection sheets
- 264 data points taken at 41 locations
- 1 Lake Association trained
- 8 trainings total

Project Summary:

Clearwater's 2016 Aquatic Invasive Species Program was very successful. Below are the statistics that summarize all of the measurable deliverables previously set in the 2016 PRISM contract:

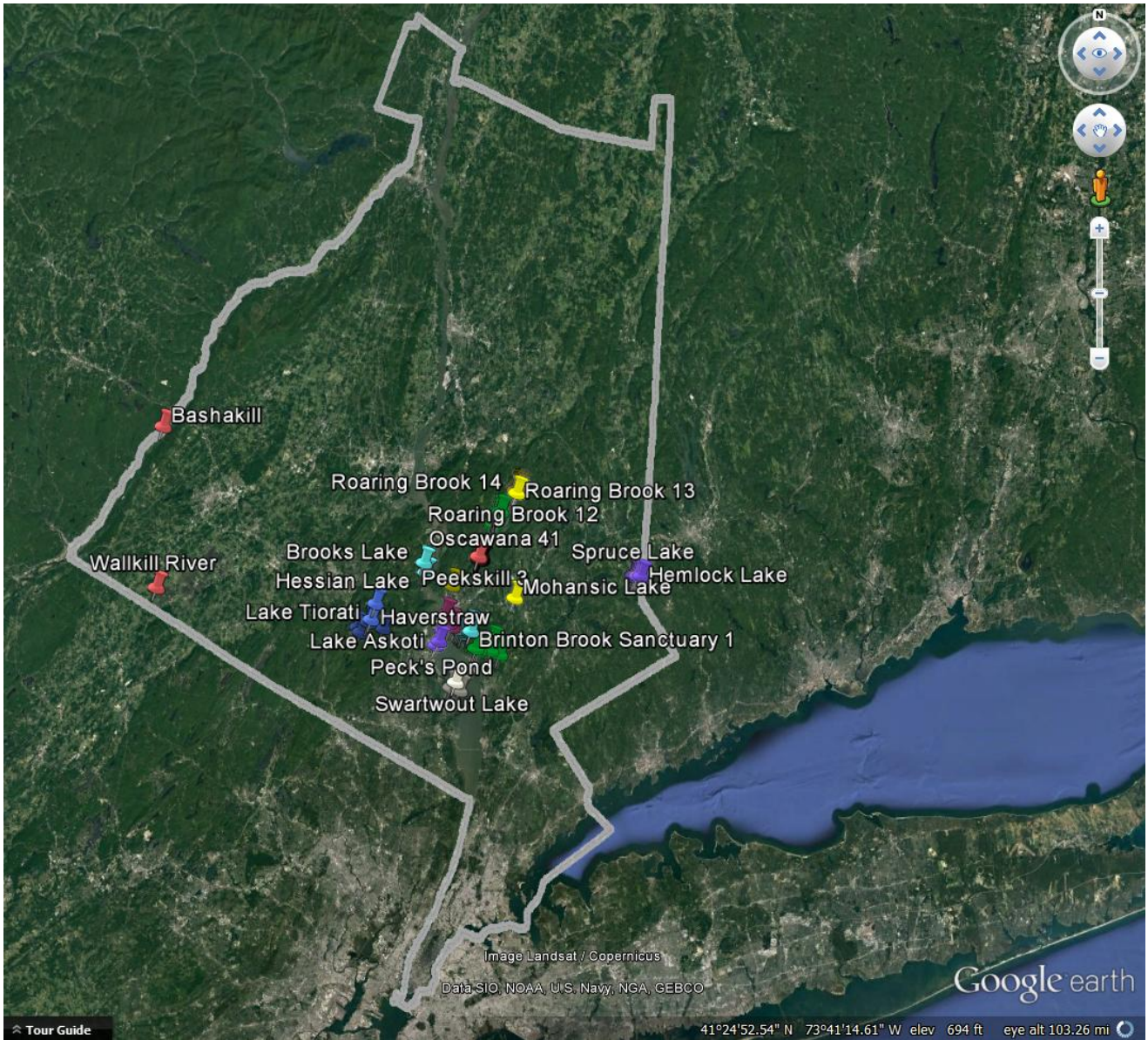
- 6,193 People reached
 - 3,378 boaters/anglers
 - 2,815 people including students, teachers, lake associations, canoe associations, city officials, etc.
- 41 Waterbodies surveyed
 - 264 points mapped and sent to iMapInvasives
- 41 Events held/attended
 - 8 Trainings
 - 6 Clearwater events
 - 10 Presentations
 - 16 Tabling events
 - 1 AIS Removal

Appendix A:

Date	Location	Type	Event Name	# People Reached	Type of People
4/6/2016	Croton, NY	Presentation	Croton Yacht Club Meeting	20	Boaters
4/13/2016	Croton, NY	Presentation	Croton Mayor/Village Mgr/Engineer Presentation	4	Mayor/Village Mgr, Engineer
4/16/2016	New Paltz, NY	Tabling	New Paltz Earth Day	70	General Public
4/21/2016	NYC, NY	Training	Whaler Station	5	SCA members
4/22/2016	NYC, NY	Training	Whaler Station	20	High School Students
4/29/2016	Hamilton, NY	Training	Watercraft Inspection Stewards Program Training	30	General Public
4/30/2016	Croton, NY	Tabling	Croton Earth Day	40	General Public
5/1/2016	Kingston, NY	Clearwater Event	Hudson River Stewards Program	125	4 th graders
5/2/2016	Kingston, NY	Clearwater Event	Hudson River Stewards Program	100	4 th graders
5/3/2016	Kingston, NY	Clearwater Event	Hudson River Stewards Program	100	4 th graders
5/4/2016	Kingston, NY	Clearwater Event	Hudson River Stewards Program	120	4 th graders
5/9/2016	Croton, NY	Presentation	Croton Village Board Meeting	25	Village Board members, general public
5/10/2016	Kingston, NY	Clearwater Event	Hudson River Stewards Program	125	4 th graders
5/11/2016	Kingston, NY	Clearwater Event	Hudson River Stewards Program	100	4 th graders
5/12/2016	New Paltz, NY	Presentation	Waterfront Alliance Hudson River Breakfast	15	Engaged public/Professionals
5/16/2016	Croton, NY	Presentation	Croton High School Science Symposium	60	High school students
6/1/2016	Millbrook, NY	Presentation	DEC WAVE Training	40	Engage public/Professionals, general public
6/5/2016	Croton, NY	Tabling	Croton Summerfest	30	General public
6/11/2016	New Paltz, NY	Tabling	Ulster County Girl Scouts Camporee	200	Girl scouts, age 8-16
6/12/2016	Beacon, NY	Tabling	Beacon Strawberry Festival	45	General Public
6/25/2016	Kingston, NY	Tabling	Hudson River Day	80	General public
7/7/2016	Croton, NY	Training	AIS Training	1	General public

7/9/2016	Newburgh, NY	Removal	Water Chestnut Removal	30	General Public
7/10/2016	Beacon, NY	Tabling	Farmers Market	120	General public
7/16/2016	Croton, NY	Training	AIS Training	2	General public
7/23/2016	Poughkeepsie, NY	Tabling	Dutchess Dragon Boat Festival	130	General public
7/28/2016	Haverstraw, NY	Training	Conservation Corps AIS Training	5	Conservation Corps Members
7/30/2016	Harriman, NY	Training	Private AIS Training	20	Harriman State Park Camp Leaders
8/3/2016	Putnam Valley, NY	Training	Private AIS Training	15	Roaring Brook Lake Association
8/5/2016	Cold Spring, NY	Clearwater Event	AIS Workshop	13	Young Woman at the Helm Program
8/6/2016	Poughkeepsie, NY	Tabling	Upper Landing Day	60	General public
8/13/2016	Croton, NY	Training	AIS Training	1	General public
8/17/2016	Yonkers, NY	Clearwater Event	AIS Workshop - Sail	15	Teachers
8/31/2016	Croton, NY	Clearwater Event	AIS Sail	25	General public
9/10/2016	Kingston, NY	Clearwater Event	Clearwater's Family Day	120	General public
9/24/2016	NYC, NY	Tabling	Submerge!	650	General Public
10/1/2016	Peekskill, NY	Tabling	OctoberFeast	50	General Public
10/16/2016	Beacon, NY	Tabling	PumpkinFest	75	General Public
11/1/2016	Poughkeepsie, NY	Tabling	Vassar Teachers Event	30	Teachers
11/29/2016	NYC, NY	Tabling	NYC Outdoor Expo	45	Teachers and students

Appendix B:



Overview of waterbodies surveyed in 2016

