Performance Progress Report

Continued AIS Coordinator, Multi-Purpose AIS Team, and Aquatic Plant Management on Long Island, New York

F23AS00259 FY 2023

Award Number: F23AP01731

Reporting Period: December 1, 2023 to September 30, 2024

State University of New York at Stony Brook
Department of Ecology and Evolution

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Below are the enumerated priorities of the project with the corresponding actions taken in the past year of this award (December 2023 - September 2024) to meet these priorities. If any priorities were not met, an explanation is provided.

TASK 1: Throughout the year, the AIS Coordinator will participate in biweekly scheduled check-in calls with the NYSDEC Invasive Species Coordination Section.

- AIS Coordinator participated in biweekly check-in calls, during which updates were given and program needs were identified.

TASK 2: Throughout the year, the Coordinator will attend the Long Island-Metro AIS Task Force meetings and LIISMA meetings as class schedule allows.

- Meetings were attended virtually or in person if offered/time allowed.

TASK 3: In January through March, the Coordinator will work with DMR (Division of Marine Resources), OPRHP (Office of Parks, Recreation, and Historic Preservation), local municipalities, lake associations, and others to obtain permission for deployment of the AIS Team at chosen freshwater launches (Lake Ronkonkoma, Peconic River-Forge Pond) and marine launches (Ponquogue Bridge in Hampton Bays, Captree State Park, Heckscher State Park, Nissequogue River State Park, and Stony Brook Harbor). This will be the second season at the majority of these sites and we will be collecting data about level of traffic to assess whether or not these locations are the most impactful locations for steward outreach.

- Lake Ronkonkoma and Peconic River-Forge are NYS DEC owned launches and therefore no paperwork was required.
- Heckscher State Park was identified as a marine launch at which to station a steward. The coordinator worked with NY State Parks and the park manager (David Auguste) to obtain the required permissions and to identify the specialized needs of the park that would be addressed by the assigned steward.

TASK 4: In January, the AIS Coordinator will attend the Northeast Aquatic Plant Management Society (NEAPMS) meeting in person if class schedule allows.

- AIS Coordinator Morantes Ariza contributed to a DEC talk “Changes in Plant Communities from Analyzing Long-term Data Sets of Croton and the Hudson Rivers” at the January 2024 NEAPMS meeting.

TASK 5: Recruitment for the AIS Team will occur in January and February. The AIS Coordinator will recruit and hire AIS Team members with proven outreach ability and field skills and will utilize the diverse applicant pool available through local universities and Partnership for Regional Invasive Species Management (PRISM) listservs. Unpaid volunteers will also be recruited as needed. The AIS Coordinator will continue providing and attending education and outreach events, including tabling events and presentations.

- AIS Team members were recruited from Stony Brook University. Each application was reviewed by AIS coordinator Morantes Ariza, PI Thacker, and Heidi O'Riordan (Region 1 Fisheries Manager). The top five ranked applicants were interviewed by this set of reviewers via Zoom.
- The AIS Coordinator and the AIS Team attended multiple outreach events including three fishing clinics and a crabbing clinic.

TASK 6: The AIS Coordinator will review use of the Watercraft Inspections Steward Program app (WISPA), install it on all tablets, and train the AIS Team to use the app and troubleshoot technical difficulties reported by the team. The AIS Coordinator will also QA/QC the data before it is submitted to the centralized database managed by New York Natural Heritage Program.

- AIS coordinator updated the Survey123 WISPA app in each of the tablets.
- AIS Coordinator trained the AIS Team on the use of the app and addressed all questions asked by the team members.
- AIS Coordinator reviewed the data prior to submission of the data.

TASK 7: Between January and April, the AIS Coordinator will begin the preparation for aquatic plant surveys and the process of obtaining permission/permits for the surveys, developing protocols for data collection, and creating a database for survey data and the mapping of distribution points. Surveys will be conducted in freshwater habitats (rivers and lakes) by the AIS Team, volunteers, and stakeholders at the Peconic River, Guggenheim Lakes, Caleb Smith State Park: Phillips Mill Pond and Willow Pond, Blydenburgh County Park (including Stump Pond), Swan Pond, Franklin Melville Pond, Twin Ponds, and additional locations where *Hydrilla* has been reported. Additional surveys at Nissequogue River, Connetquot River, and Carmans River may occur if time permits. Access will be through launch areas and non-motorized watercraft will be used for the surveys. The methodology used for the surveys will include the point-intercept method (GPS coordinates), which involves rake tosses at designated points and qualitative assessment of density, species identification, visual surveys, and polygon delineation. All individuals performing the surveys will be trained to 1) identify federally endangered sandplain gerardia (*Agalinis acuta*) and federally threatened seabeach amaranth (*Amaranthus pumilus*) in order to avoid damaging or disturbing these plants and 2) identify three listed birds (Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), and Roseate Tern (*Sterna dougallii dougallii*) in order to avoid disturbing or injuring these birds.

- The AIS Coordinator planned and carried out vegetation surveys in Lake Blydenburgh, Swan Pond, Twin Ponds, Great Patchogue Lake, Greenes Lake, Lotus Lake and Setauket Millpond as part of the *Hydrilla* survey on Long Island.
- The AIS team performed supplementary surveys of the Peconic River to assess the efficacy of prior treatments to remove *Ludwigia* from the river.
- The AIS team surveyed vegetation in Lake Ronkonkoma; additional surveys of Massapequa preserve, Swan Pond, Twin Ponds and Lake Blydenburgh (Stomp Pond) were conducted. All findings were recorded using iMapInvasives.

- Macroinvertebrate communities were surveyed at three different points in the Peconic River 5 weeks before, 1 week before, 2 days after, and 9 weeks after herbicide treatments. *This data collection assessed impacts of herbicide treatments being performed by a NYS DEC Environmental Protection Fund (EPF) contractor; herbicide application was not supported by this grant.* We recorded no impact of herbicide treatment on aquatic macroinvertebrate communities. These data were incorporated into the end of season project presentation for the stakeholder meeting.

TASK 8: The AIS Coordinator will collaborate with LIISMA, Long Island-Metro AIS Task Force, and other partners on aquatic invasive plant removal efforts. The AIS Coordinator will use iMapInvasives, SASPro, and survey data to designate aquatic invasive plant populations in need of control efforts and track the change in population coverage. Water chestnut removal will be conducted by hand and involve the launching of non-motorized watercraft from access launches in freshwater lakes and rivers. All individuals performing the surveys will be trained to 1) identify federally endangered sandplain gerardia (*Agalinis acuta*) and federally threatened seabeach amaranth (*Amaranthus pumilus*) in order to avoid damaging or disturbing these plants and 2) identify three listed birds (Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), and Roseate Tern (*Sterna dougallii dougallii*) in order to avoid disturbing or injuring these birds. Water chestnut (*Trapa natans*) hand removal efforts involving use of non-motorized watercraft will occur at Massapequa Preserve, Lake, and Creek in Massapequa, Mill Pond Preserve in Wantagh, Swan Pond in Calverton, Twin Lakes Preserve in Wantagh, and Mill Pond in Oyster Bay NWR. In terms of early detection-rapid response, small populations of purple loosestrife (*Lythrum salicaria*) will be controlled by digging up plants and cutting and bagging flower heads at 4-5 locations along the Peconic River and floating water primrose (*Ludwigia peploides*) may be hand-pulled as needed around Peconic River access sites. Small populations of Phragmites (*Phragmites australis*) will be removed via hand digging at Tarkill Pond (coastal pond) in Brookhaven and Fox Pond in Robert Cushman Murphy County Park (pine barrens pond). Aquatic plant surveys will be conducted at all locations to monitor efficacy of the removal efforts. The team will take photos to document progress made and for social media postings.

- Wantagh Mill Pond: Water chestnut was removed as a part of Aquatic Invasive Species Awareness Week. Collaborations occurred with LIISMA, NYS DEC, the Rubicon team, and the public.
- Upper Twin Lake in Nassau County was treated with hand pulling to help prevent further infestation of downstream Wantagh Mill Pond. LIISMA, NYS DEC, and Nassau County Parks all participated in this effort.
- Massapequa Lake (i), Preserve (ii), and Creek (iii) were surveyed for water chestnut; the population was controlled at ii and iii.
- Artist Lake in Suffolk County had a small population of water chestnut that was hand pulled for the past 4 years; NYS DEC surveys did not detect any new individuals.
- LIISMA and the NYS DEC AIS team removed small populations of *Phragmites* in Tarkill and Fox Pond by cutting the stalks below the waterline.
- All surveys, treatments, and removals were reported in iMapInvasives

- The AIS coordinator implemented drone imagery to assess the extent of water chestnut invasion in Massapequa Lake, Mill Pond, and Twin Lakes.
- The AIS team coordinated the use of a mechanical harvester operated by Nassau County at Mill Pond.
- The AIS team coordinated the future use of mechanical harvesters operated by Nassau County at Mill Pond, Massapequa Lake, and Little Twin Lake in 2024.

TASK 9: Between June and October, the AIS Coordinator will hold various public trainings for lake associations, marinas, and yacht clubs. The AIS Coordinator will continue to provide presentations to students, teachers, and municipal leaders to educate people about AIS identification, management, and prevention. The AIS Coordinator will work closely with LIISMA's Education and Outreach Coordinator so that both programs' efforts complement each other.

- The AIS Coordinator participated in education and outreach events at the Women's Fly-Fishing Expo and Fall Fishing Festival on Long Island
- The AIS Coordinator held a Facebook Live event in which the public was taught to identify common aquatic invasive species. Emphasis was placed on the NYS DEC Clean, Drain, Dry program.
- The AIS Coordinator participated in three Fishing Clinics.
- The AIS Coordinator presented the water chestnut management plan to the AP Environmental Science class at West Babylon High School.

TASK 10: In May, the AIS Team and volunteers will receive two days of training (including how to use the Watercraft Inspection Steward Program app) on Long Island in collaboration with LIISMA and other stakeholders. The AIS Team will begin working at launches on the Friday before Memorial Day and will continue working every weekend through Labor Day (including July 4th). The AIS Team will note the presence or absence of clean, drain, dry signage and AIS disposal stations at each location they cover for future efforts to educate the public. The AIS Team will conduct outreach and inspections at boat launches from Memorial Day Weekend through Labor Day Weekend, 2-3 days per week. Shifts will generally fall between 8 am and 4pm. The AIS Coordinator will visit the Team on a weekly basis to troubleshoot problems with technology and public interactions and to replenish supplies. The AIS Coordinator will participate in biweekly update calls with ISCS to assist with any site or personnel issues.

- The AIS Coordinator received training from Cornell University on management and coordination of boat ramp stewards.
- The AIS Coordinator provided hands-on training in which the stewards were taught how to use the WISPA app and how to inspect watercraft.
- The AIS Coordinator updated the WISPA app to its latest version (released in July 2023).
- The AIS Team performed inspections at all three boat launch sites conducting more than 500 surveys.

TASK 11: AIS Coordinator will arrange for the collection of *Ludwigia peploides* seeds and greenhouse space with pots for growing such seeds as a test of viability and a means of spread.

- Due to lack of logistic capacity, this task was delayed to the beginning of the following season.
- The AIS coordinator built a collaborative effort to test for viability of seed from *Ludwigia peploides* with assistance from the AP Biology class at West Babylon High School (WBHS). The assessment will be performed at WBHS facilities.

TASK 12: AIS Coordinator will monitor changes in coverage and health of Eurasian watermilfoil and hydrilla in Lake Ronkonkoma and Belmont Lakes to assess dynamics of plant interaction. Coordinator will also monitor key water chemistry parameters and hydrilla/Eurasian watermilfoil coverage at Belmont Lake in Belmont State Park and Stump Pond/New Mill Pond in Blydenburgh County Park.

- The AIS coordinator carried out vegetation surveys on Lake Ronkonkoma, Belmont Lake and New Mill Pond. Water chemistry data was collected using YSI equipment from NYSDEC Region 1 Freshwater Fisheries.
- The AIS coordinator used low elevation drone footage to survey the former Blydenburgh Lake after the dam was damaged by a severe storm and flooding event.

TASK 13: Between October and December, the AIS Coordinator will QA/QC and analyze the data collected by the AIS Team during the boating season and submit data to the centralized database maintained by the New York Natural Heritage Program. The AIS Coordinator will continue to provide outreach events to the public.

- The AIS Coordinator QA/QCed, analyzed the survey data, and submitted the results to the NYNHP.
- The AIS Coordinator and AIS team implemented the aquatic macroinvertebrate community survey protocol for the Peconic River. *This data collection assessed impacts of herbicide treatments being performed by a NYS DEC Environmental Protection Fund (EPF) contractor; herbicide application was not supported by this grant.*
- The AIS Coordinator analyzed the data collected and concluded that herbicide treatment against the invasive species *Ludwigia peiploides* does not negatively impact the macroinvertebrate community.
- The AIS Coordinator participated in discussions to determine the research questions to be addressed by long-term data on aquatic invasive species in the Hudson and Croton rivers.

TASK 14: In October-November, the AIS Coordinator will attend the NYS Invasive Species Summit as class schedule allows.

- The AIS coordinator attended the summit. Following this meeting, the AIS coordinator followed up with the Connetquot River State Park Preserve director and LIISMA to organize surveys of two streams in the park and to develop management strategies for the following years.
- In addition to this meeting, AIS Coordinator Morantes Ariza also attended the Ecological Society of America's 2024 meeting in Long Beach, California; he presented a poster titled "Optimizing Water Chestnut (*Trapa natans*) Management Using Population Dynamics Models, a Long Island Study"

TASK 15: The AIS Coordinator will submit a summary of work completed and an annual plan for the subsequent year by December 31, 2024. The annual plan will be developed in collaboration with NYS DEC (Division of Lands and Forests, Bureau of Invasive Species and Ecosystem Health) Invasive Species Coordination Section, Region 1, Division of Marine Resources, and the Department of Ecology and Evolution at SUNY Stony Brook.

- The coordinator worked with PI Thacker (SUNY Stony Brook), Heidi O'Riordan (Manager, NYS DEC Region 1 Fisheries), Dr. Cathy McGlynn (AIS Coordinator, NYS DEC Invasive Species Coordination Section), and Dr. Steven Pearson (Research Scientist I, NYS DEC Invasive Species Coordination Section) to review tasks completed during 2024 and to develop plans for AIS management in 2025 and 2026.