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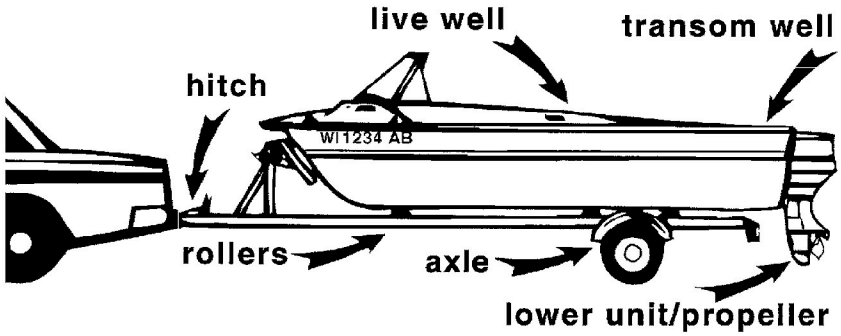
New York State Watercraft Inspection Steward Program Handbook

A Guide for Starting New Watercraft Inspection Programs

Includes
Watercraft Inspection Steward Training & Field Guide



Developed by Mary Penney, New York Sea Grant,
for the Cornell University Statewide Invasive Species Outreach Program
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GOALS

The goals of this handbook are to:

1. provide a tool for organizations interested in starting new watercraft inspection programs
2. suggest standard operating procedures for use statewide, and
3. provide resources for stewards responsible for conducting watercraft inspections to help slow the spread of invasive species.

ACKNOWLEDGEMENTS

This New York State Watercraft Inspection Steward Program Handbook is a guide to implementing new watercraft inspection programs and conducting watercraft inspections. New York Sea Grant incorporated content provided by project partners involved in watercraft inspection in New York State, and thanks those partners for their contributions and efforts.

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This handbook supports the **"Stop Aquatic Hitchhikers!™"** (SAH) campaign led by Wildlife Forever with support from the National Aquatic Nuisance Species Task Force, state and federal agencies and conservation partners across the U.S. We thank them for use of the SAH logo.

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SECTION #1

What is Watercraft Inspection?


Lake George

Recreational boating is identified as a key pathway in the spread of aquatic invasive species (AIS) across the Great Lakes Basin including inland waterbodies (*Rothlisberger et al., 2010*). Indeed, waters everywhere are at risk of AIS influx via watercraft.

Organisms, such as the spiny water flea, Eurasian water-milfoil, and zebra and quagga mussels, can be transported on anything that comes in contact with the water, including boats, trailers, and other recreational equipment. Early life stages of many plant and animal species, as well as pathogens and bacteria, can be transported in spaces that hold water such as bilge water, livewells, and bait buckets.

Steward-demonstrated watercraft inspection is an effective way:

- to inform boaters about AIS issues and teach them how to intercept the potential introduction and establishment of AIS.
- to help reduce the spread of AIS between waters and
- empowers boaters to protect the natural resources they love.

Boaters can help prevent the spread of AIS from one body of water to another by checking boats, trailers, and equipment for aquatic hitchhikers and draining their boats and all other areas that can hold water before entering or leaving a waterbody.

Although more prevalent on motorized and/or trailered boats, AIS can be transported on or in any type of boat. Therefore, all boats should be inspected whenever possible. Specific examples include but are not limited to fishing boats, house boats, cabin cruisers, ski boats, sail boats, row boats, personal watercraft, canoes, kayaks, paddleboards, and inflatables.

Left, a Watercraft Inspection Steward points out areas on the boat trailer that can easily trap aquatic debris; at right:the Steward shows boaters aquatic debris removed from their vessel.

What is Watercraft Inspection?
Watercraft inspection consists of visually inspecting all areas of boating and recreational equipment (i.e., boat, trailer, motor, livewell, anchor, swim fins, scuba gear, etc.) that come in contact with or hold water; removing all visible plants, animals, and mud; and draining water from all compartments and containers. These practices reduce the risk of movement of all organisms from one body of water to another.

The purpose of watercraft inspection is to:

- Reduce the impact of AIS on native aquatic organisms and ecosystems
- Limit or prevent the spread of AIS by containing infestations to current locations, and
- Increase boater awareness about ways they can help prevent the spread of AIS.

A watercraft inspection program is an outreach tool utilizing paid and/or volunteer stewards to engage and teach boaters how to inspect boats, trailers, and recreational gear for unwanted aquatic hitchhikers, and to properly remove and dispose of those hitchhikers.

While voluntary watercraft inspection is common at some launches, regulations overseeing the removal and proper disposal of hitchhiking debris and organisms is increasing across New York State.

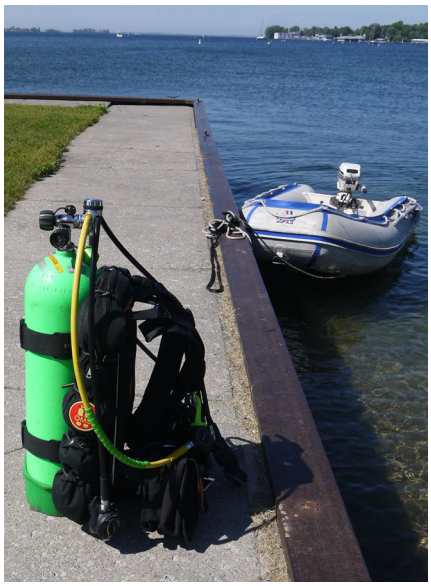
Existing watercraft inspection programs in New York State have adopted the national Stop Aquatic Hitchhiker (SAH) Campaign and the **Clean~Drain~Dry** messaging (Section 6:7).

To accomplish the above objectives, watercraft inspection programs:

- Teach boaters how to look for aquatic hitchhikers through the demonstration of watercraft inspection
- Inform boaters about boating-related and other pertinent laws, AIS identification, common AIS spread vectors, and AIS prevention methods
- Develop and distribute watercraft inspection and AIS educational materials
- Collect data on boater usage patterns and the presence of aquatic organisms
- Respond to the boaters' AIS-related questions, and
- Encourage boaters to continue or adopt behaviors that support **Clean~Drain~Dry** practices with all boats, trailers, and other water recreation equipment.

The Value of Watercraft Inspection Programs

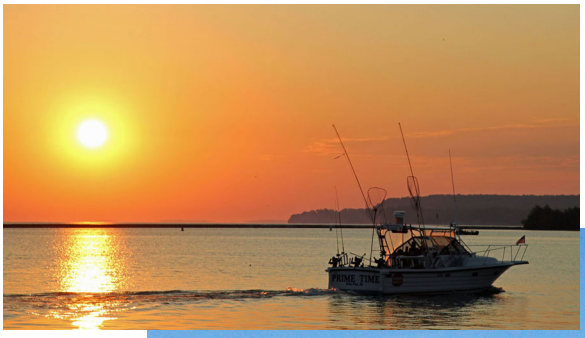
Watercraft inspection and associated steward programs are critical components in protecting aquatic ecosystems and water quality by preventing and limiting the spread of AIS among waterbodies in New York State and neighboring states and provinces. By demonstrating proper watercraft inspection and sharing educational messaging during interactions with boaters, stewards lead by example to increase boaters' awareness about ways they can help prevent the spread of AIS and protect New York's recreational waters. Well-conducted demonstrations show boaters that inspections can be quick and simple, and effective in managing AIS.



The term watercraft inspection immediately brings to mind motorized boats, however, the inspection process also focuses on non-motorized vessels, including canoes, kayaks, and paddleboards; and on recreational equipment, such as scuba diving gear, which can also transport AIS.

Engaging the boating public in watercraft inspections helps reduce the threat and impact of AIS on native aquatic organisms and ecosystems by limiting infestations to waters where the AIS are already established, thus helping to keep AIS from becoming established in more pristine waters.

Preventing the spread of AIS reduces the growing costs associated with AIS control in New York State, and the negative impacts AIS have on native organisms, aquatic ecosystems, and local economies.



Watercraft inspection steward programs help to maintain New York waters as popular recreational and vacation destinations.

SECTION #2

Aquatic Invasive Species: Why Should We Care?

AIS: Hydrilla

What are Aquatic Invasive Species (AIS)

The New York State Invasive Species Task Force defines AIS as aquatic organisms (plants, animals, and pathogens) that are not native to the aquatic ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

The number of AIS in any specific waterbody in New York State varies. More than 180 nonnative and invasive aquatic species have been identified in the Great Lakes Basin alone. AIS are often well-adapted to spread throughout an ecosystem. They can limit food and habitat for, and compete with, and displace, native species. Annual AIS costs in environmental losses and economic damages for the United States are estimated at more than $100 billion; the Great Lakes region accounts for more than $100 million of the total (*Rosaen et al., 2012*). NYS expenditures to address AIS in 2009 and 2010, excluding Great Lakes Restoration Initiative funds, were more than $2 million (*Rosaen et al., 2012*).

Reasons to Be Concerned About AIS

Economics: The federal, state, and local costs to manage AIS increase each year as AIS populations continue to grow and spread. Infestations of AIS that limit recreation, clog waterways, prevent boating, and obstruct water pipes may impact the value of public and privately-owned property.

Health: AIS can carry pathogens and parasites that are harmful to native species and potentially to human health. For example, Botulism (type E) is a bacterial disease that has caused die offs in fish (e.g., freshwater drum, smallmouth bass, lake sturgeon) and water-birds (e.g., ring-billed gulls, common loons, long-tailed ducks) in NY's Lakes Erie and Ontario. Since 1960 there are no reports of human poisoning from type E botulism, however, precautionary measures are recommended when handling animals affected by the

Coping with aquatic invasive species can be expensive in terms of funding: at left, a mechanical harvester at work on Sodus Bay, and in terms of time and manpower: at right, a Rotary Club member helps at a water chestnut hand-pull on Oneida Lake.

toxin (*U.S. Environmental Protection Agency Great Lakes National Office, 2013*). Zebra and quagga mussels (AIS) likely play an important role in two transmittal pathways of botulism. Beds of zebra and quagga mussels change ecosystem conditions, creating suitable offshore habitat for the toxin and the mussels accumulate the toxin. Zebra and quagga mussels also create clearer water conditions, allowing light to better penetrate the water, causing prolific growth of the native Cladophora algae. The dense algal mats decay, creating anaerobic conditions that promote botulism bacteria accumulation in near shore habitats.

Ecology: AIS can out-compete and displace native species, disrupting food webs and altering native aquatic species population abundance and composition. These ecosystem changes may make once suitable habitat less favorable for native aquatic animals such as sport fish and macro invertebrates.

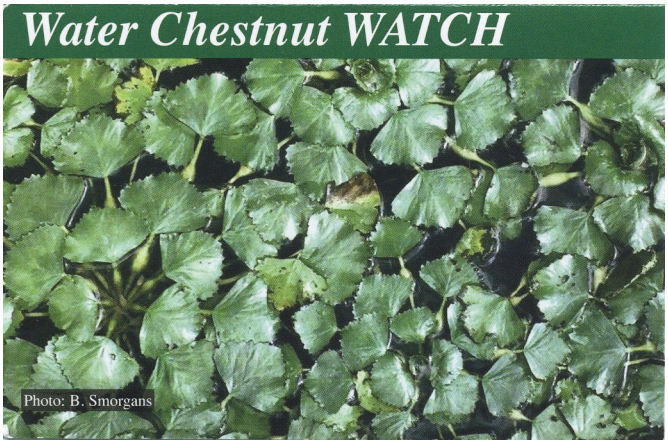
Recreation: With the ability to grow faster and reproduce more frequently than many native aquatic species, and lacking natural predators, AIS can overwhelm the natural habitats. Aquatic invasive plants can form dense mats of vegetation, making it difficult or impossible to boat, swim, or fish. Species such as spiny and fishhook waterfleas are a nuisance to anglers. These invasive waterfleas attach on fishing lines and nets forming cotton-like globs. Zebra mussels can cut the feet of swimmers and encrust historic ship-wrecks.

What Can We Do to Limit the Spread of AIS?

- Develop watercraft inspection programs to intercept the introduction of AIS by teaching boaters how to look for, remove, and properly dispose of aquatic hitchhikers using watercraft inspection.
- Educate boaters on how they can help prevent the spread of AIS by regularly inspecting boats, trailers, and other recreational equipment for hitchhiking organisms and debris, and by draining all spaces that can hold water every time boats enter and leave a waterbody.
- Inspect and **Clean~Drain~Dry** all watercraft and related items; specific examples include, but are not limited to, fishing boats, houseboats, cabin cruisers, ski boats, sail boats, row boats, trailers, personal watercraft, canoes, kayaks, paddleboards, inflatables, and scuba gear.

Above: **Clean~Drain~Dry** *practices help prevent and slow the spread of invasive species from one body of water to another.*

Below: Aquatic invasive species can have a major impact on the ecology of an area where they becomes established.



SECTION #3

What Do I Need to Know About AIS?

With more than 180 nonnative and invasive aquatic species with self-sustaining populations in the Great Lakes Basin alone, watercraft inspection program stewards cannot be expected to know all the aquatic invasive species (AIS) that exist or are at high risk to enter in New York State.

Listed below are 13 AIS known to exist in New York State, but not necessarily in all waters, and Asian carp, a Watch List* fish as of May 2014, i.e., Asian carp. AIS on the Watch List are species identified as being a significant threat to NY's natural resources; these species may not yet have been identified in New York State, or have a very limited range. Stewards should report observations of any invasive species not previously identified in their area (Section 6:14).

AQUATIC INVASIVE PLANTS

Common Name	Scientific Name
Curly-leaf pondweed	*Potamogeton crispus*
Eurasian water-milfoil	*Myriophyllum spicatum*
European frogbit	*Hydrocharis morsus-ranae*
European water chestnut	*Trapa natans*
Fanwort	*Cabomba caroliniana*
Hydrilla/Water thyme	*Hydrilla verticillata*

AQUATIC INVASIVE ANIMALS

*Asian carp	*Hypophthalmichthys spp.*
Asian clam	*Corbicula fluminea*
Northern snakehead	*Channa argus*
Quagga mussel	*Dreissena rostriformis bugensis*
Round goby	*Neogobius melanostomus*
Rusty crayfish	*Orconectes rusticus*
Spiny waterflea	*Bythotrephes longimanus*
Zebra mussel	*Dreissena polymorpha*

Appendix A. has links to AIS fact sheets and a sample AIS Fact Sheet; Appendix B. has info on the *i*MapInvasives maps resource, sample maps for the species listed above, and a link for requesting an iMap account for viewing up-to-date and more detailed AIS-in-NYS maps. AIS information is also found on the following websites:

New York Invasive Species Clearinghouse: http://nyis.info
US Geological Survey Non-Indigenous Aquatic Species website: http://nas.er.usgs.gov.

AIS Regulations
It is the boater's responsibility before boating in any body of water to check and understand federal, state, and local AIS regulations. Federal regulations are overarching for all states. States may adopt additional laws. Mandates become increasingly specific through the state, county, municipal, and local levels. Examples follow.

Key Points

- **AIS regulations exist at the federal, state, regional, and local levels.**
- **Urge boaters to know the regulations for the waters in which they are boating.**
- **Practicing CLEAN~DRAIN~DRY benefits all waters.**

Federal Invasive Species Regulations
The policies within the National Invasive Species Act of 1996 increased national and international focus on ballast water as a vector for AIS introduction. The US Environmental Protection Agency and the U.S. Coast Guard are responsible for regulating the concentration of living organisms in ballast water. Click here for more details on U.S. Coast Guard Ballast Water Management or visit the U.S. Department of Homeland Security Homeport website at https://homeport.uscg.mil/.

The Lacey Act, dating back to 1900, is one of the oldest wildlife-related laws in the U.S. It requires a permit for the import and transportation of live specimens of "'*injurious species,' their offspring or eggs for bona fide scientific, medical, educational, or zoological purposes*." Find more information on the U.S. Fish and Wildlife service website and online at:

Current List of Injurious Wildlife: http://www.fws.gov/injuriouswildlife/
Injurious Wildlife Fact Sheet:
www.fws.gov/fisheries/ans/pdf_files/InjuriousWildlifeFactSheet2010.pdf.

USDA Noxious Weed Program
The U.S. Department of Agriculture (USDA) Animal and Plant Inspection Service (APHIS) Federal Noxious Weed Program "*is designed to prevent the introduction into the United States of nonindigenous invasive plants and to prevent the spread of newly introduced invasive plants within the United States. APHIS noxious weed activities include exclusion, permitting, eradication of incipient infestations, survey, data management, public education, and (in cooperation with other agencies and state agencies) integrated management of introduced weeds, including biological control*." Find the Federal Noxious Weed List at:

www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/weedlist.pdf.

State-Level Invasive Species Regulations

In 2012, Environmental Conservation Law was amended to require the New York State Department of Enviromental Conservation and the NYS Department of Agriculture and Markets to "*restrict the sale, purchase, possession, propagation, introduction, importation, transport and disposal of invasive species*." The legislation requires the Departments to promulgate regulations. NYCRR Part 575 provides a listing of prohibited and regulated invasive species, and specifies the criteria used in making such a classification. The regulations prohibit the possession with the intent to sell, import, purchase, transport, or introduce as well as the importation, sale, purchase, propagation, transportation, or introduction of invasive species classified as prohibited. Regulated species may be sold, purchased, propagated, and transported, but not knowingly introduced into a "*free-living state.*" Permits can be issued for research, education or other approved activities.

New York's Environmental Conservation regulations (Chapter 1, Part 180.9 b) address the buying, selling, offering for sale, possessing, transporting, importing, exporting, and causing to be transported, imported or exported live individuals or viable eggs of designated species of fish, which are determined present a danger to indigenous fish populations. Release into the wild or allowing said species to exist with a likelihood of escape into the wild is prohibited.

AIS Prevention Regulations Related to New York State Boat Launches

Effective June 4, 2014, the New York State Department of Environmental Conservation adopted aquatic invasive species spread prevention regulations requiring boats be clean and drained at State Boat Launch and Fishing Access Sites. These regulations are posted online at http://www.dec.ny.gov/regulations/95111.html.

As of 2014, the NYS Department of Environmental Conservation revised its regulations pertaining to State Boat Launching facilities as follows:

> "*A. No person shall launch, or attempt to launch a watercraft from a state boat launching site, a fishing access site, or any other site from which a watercraft may be launched, or leave from these sites with any plant or animal, or parts thereof, visible to the human eye, in, on, or attached to any part of the watercraft, including livewells and bilges, the motor, rudder, anchor or other appurtenants; any equipment or gear; or the trailer or any other device used to transport or launch a watercraft that may come into contact with the water, unless a written permit is obtained from the department.*
>
> "*B. No person shall launch, or attempt to launch a watercraft from a state boat launching site, a fishing access site, or any other site from which a watercraft may be launched, or leave from these sites without draining the watercraft, including bilge areas, livewells, bait wells and ballast tanks, unless a written permit is obtained from the department.*"

New State Legislation Enacted Relating to AIS

In June 2014, the New York State Legislature passed legislation to amend the State's Environmental Conservation Law as it relates to aquatic invasive species, spread prevention and penalties. The legislation adds new sections to ensure that reasonable precautions - including removal of any visible plant or animal matter, washing, draining or drying as defined by the NYS Department of Environmental Conservation - are taken with watercraft - defined as both motorized and non-motorized - and floating docks at launch to spread the spread of AIS and cites recreational boating as one of the primary ways in which invasive species are inadvertently transported overland to new waterways.

An additional purpose of the new law is cited as a means to protect both New York's waterways as well as the industries that depend on them.

The online summary of the legislation's specific provisions is as follows:

> "*This legislation adds new sections to require, upon launch of a watercraft or floating dock into a public waterbody or any inlet or outlet to such waterbody, the demonstration of reasonable precautions such as removal of any visible plant or animal matter, washing, draining or drying as defined by the department pursuant to rules and regulations.*
>
> *Additionally, the legislation would impose a civil penalty on individuals found guilty of violating the provisions set forth in this legislation, provided, however, that for any first violation in lieu of a penalty there shall be issued a written warning by the Department, and there shall also be issued educational materials at the discretion of the Department.*
>
> *Lastly, the legislation shall take effect one year after it shall have become law, and shall expire and be deemed repealed on June 1, 2019."*

The new legislation defines civil penalties that include a written warning as stated above, issuance of educational materials, and fines.

New York State Baitfish Regulations
The NYSDEC has enacted baitfish regulations to prevent the transfer and potential establishment of AIS and pathogens. Fish commonly purchased and used as baitfish across NYS that are not considered a threat are labeled as Green List Baitfish. All baitfish on the green list must be purchased from a certified bait dealer. The buyer must retain the receipt and procure it upon request of enforcement officials. Bait must be used within 10 days of purchase or disposed of properly in the trash. These fish can be purchased and used in any NYS water body where it is legal to use baitfish. For the complete list of Green List Baitfish, information on certified/uncertified baitfish, and other baitfish-related regulations visit www.dec.ny.gov/outdoor/47282.html .

Regional and Local Invasive Species and Watercraft Inspection Regulations
Regulations addressing AIS on a regional basis may coalesce or differ depending upon the region, group of states, or individual state, county, township, locality, or body of water.

The Great Lakes Panel on Aquatic Nuisance Species — Prohibited Species in the Great Lakes Region notes: "*Under this assessment, 54 aquatic animal and 46 aquatic plant and algae species are regulated within the Great Lakes states and provinces. The list demonstrates a lack of overlap or consistency between states and provinces, as only a few species (other than those that are federally listed) are prohibited or restricted across all jurisdictions. This observation is most pronounced for aquatic plants, reflecting the apparent absence or near absence of any regulations for aquatic plants in the states of New York, Ohio, Pennsylvania, and the provinces of Ontario and Quebec.*

"The lists of prohibited or restricted animals are only slightly more consistent with only a handful of species listed in more than half the state/provincial jurisdictions. No non-federally listed species is listed across all state/provincial jurisdictions. In addition, many of the species more widely listed are already widespread and well established within the basin. Most non-federally listed species are regulated in fewer than three state or provinces. Many of the U.S. federally listed species are not regulated in neighboring Canadian provinces."

The Northeast Aquatic Nuisance Species (NEANS) Panel notes that confusion may arise due to the use of different categorizations (invasive, potentially invasive, etc.) and naming conventions (invasive, banned, noxious) used in various regional lists compiled by various government and non-governmental organizations at the local, state, and national levels.

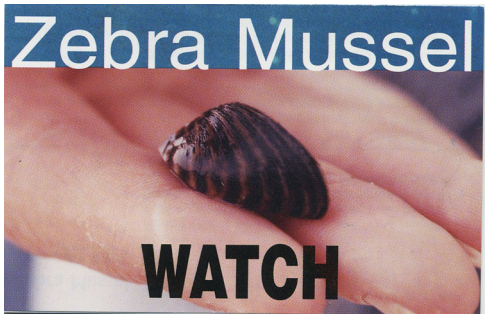
Links to lists of aquatic and wetland nuisance species for the NEANS region: New England and New York in the U.S., and New Brunswick, Nova Scotia, Prince Edward Island and Quebec in Canada are found at www.northeastans.org/specieslists.htm#key.

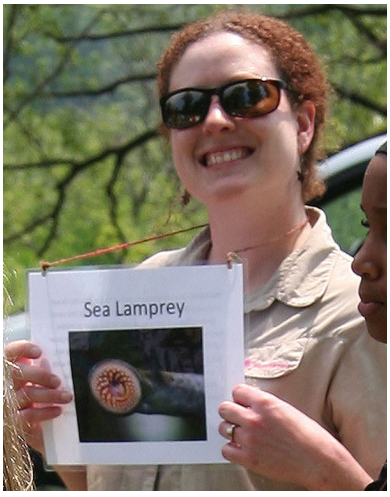
Local Invasive Species and Watercraft Inspection Regulations
Some localities have regulations specific to their locale, e.g., the Lake George Park Commission Lake George Mandatory Boat Inspection and Decontamination Regulations.

Pictured here is one of eight high pressure-hot water decontamination units owned and operated by the Lake George Park Commission. The units are used to clean the exterior of boats and trailers and to flush interior compartments, including the engine, bilge, ballast tanks, and livewells. Lake George is the first lake in New York State to try a unit (in 2012) while working on the development of a mandatory inspection and decontamination program which began in 2014.

SECTION #4

AIS Activities Coordination in New York State





Aquatic invasive species control and management efforts have been ongoing in New York State on the local and regional levels for decades (Timeline: Section 4:3).

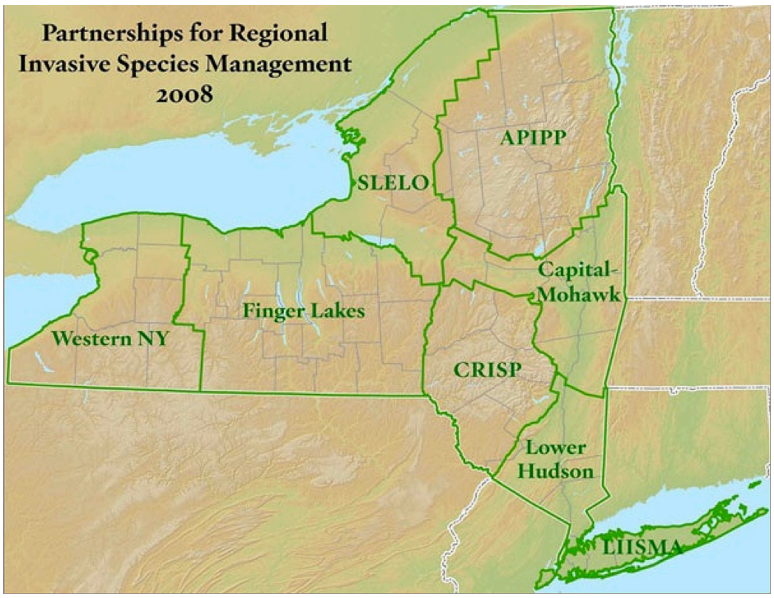
In 2003, New York State undertook a leadership role to identify all the individualized efforts and to bring them together for a coordinated approach to AIS management. That effort now includes efforts by the state organizations identified in the timeline, as well as:

- Cornell University Cooperative Extension
- New York iMapInvasives.org
- New York Heritage Program
- New York Invasive Species Clearinghouse at Cornell University
- New York Sea Grant
- Partnerships for Regional Invasive Species Management (PRISM)
- watercraft inspection steward programs statewide
- program partners
- funders, and
- others, including citizen action groups.

Task Force Report Prompts Partnerships for Regional Invasive Species Management
Among the recommendations listed in the 2005 NYS Invasive Species Task Force Report was the formation of eight Partnerships for Regional Invasive Species Management (PRISMs) to help prevent or minimize the harm caused by invasive species on New York's environment, economy and the health and well-being of the State's citizens.

PRISMs coordinate invasive species management functions including coordinating partner efforts, recruiting and training citizen volunteers, identifying and delivering education and outreach, establishing early detection monitoring networks, and implementing direct eradication and control efforts.

See Appendix C. for links to New York's PRISMs.



Timeline of Invasive Species Activities in New York State

Prior to 2003	Invasive species management was being initiated and conducted at local and regional levels. These local and regional partnerships continue to be essential to the current invasive species coordination and management.
2003	New York State creates NYS Invasive Species Task Force.
2005	NYS Invasive Species Task Force presents a comprehensive report on the status of AIS and localized efforts to address AIS statewide with 12 recommendations to the Governor and State Legislature. The complete report is online at www.nyis.info/pdf/NYS_ISTF_Final_Report.pdf.
Aug. 2007	New York State establishes NYS Invasive Species Council & Invasive Species Advisory Committee under Title 17 of state Environmental Conservation Law to assess "t*he nature, scope and magnitude of the environmental, ecological, environmental, ecological, agricultural, economic, recreational, and social impacts caused by invasive species in the state*" and to identify and coordinate actions to prevent, control, and manage invasive species. The Invasive Species Council webpage is www.dec.ny.gov/animals/6989.html.
Dec. 2007	NYSDEC forms an Office of Invasive Species Coordination to serve as a single point of contact and ensures coordination for New York State on all invasive species matters, in statewide, inter-state, national and international settings. The mission of the OISC is to prevent or minimize the harm caused by invasive species on New York's environment by collaborating and coordinating efforts with all stakeholders, including biologists, foresters, universities, other state agencies, and non-profit organizations to support research and raise public awareness of the AIS issue. Specific tasks have included: • creation of a New York Invasive Species Research Institute at Cornell University, • creation of an integrated map that pinpoints invasives in and near New York (*i*MapInvasives.org), and • support of Partnerships for Regional Invasive Species Management (PRISMs).
2010	NYS Invasive Species Council presents "A Regulatory System for Non-Native Species" report with rankings and processes for invasive species assessment.
Ongoing	AIS management efforts statewide by PRISMS and diverse partners.

The diverse agencies and organizations interested in invasive issues produce a variety of resources which are willingly shared across program and state lines. For example, various Sea Grant programs have produced species Watch Cards for distribution.

SECTION #5
Getting Started:
A Guide for
Organizations Starting
Watercraft Inspection Programs

With more than 7,600 freshwater lakes, including the Finger Lakes and Adirondack lakes, as well as portions of two of the five Great Lakes, Lake Champlain, the Hudson River, marine estuaries, ponds and reservoirs, the potential for AIS to be spread in New York State through recreational boating is of high concern. Being proactive with AIS education and implementing watercraft inspection can prevent AIS introduction and slow contamination.

Among the reasons to start a watercraft inspection program in your area are to:

- Protect your waterbodies from the threats of AIS
- Encourage stewardship of New York's natural resources
- Develop new and nurture existing partnerships, and
- Foster good public relations for your organization and partners.

The following steps for developing a new watercraft inspection steward program are an amalgamation of suggestions from the existing programs across New York State. Depending upon individual program factors, some steps may occur simultaneously and steps may occur in a different sequence.

Step #1: Identify a Program Coordinator

- Takes the lead on developing program components, and
- Typically supervises the daily activities of the stewards.
- See subsequent steps for additional duties.

Even with a dedicated coordinator, developing an effective and efficient watercraft inspection program takes time, patience, and the ability to reach out to partners.

Step #2: Develop Program Partners

- Partnerships were vital in the development of each of NY's existing watercraft inspection steward programs.
- Partners help identify priorities and funding sources, and provide knowledge and expertise.
- Consider seeking partners with expertise in local, regional, statewide, and federal AIS issues and those with varying geographic coverage areas.
- Examples of potential partners include PRISMs, NYSDEC, State Parks, universities, cooperative extension, lake/homeowner associations, and municipalities.

Step #3: Decide on Your Program Structure: Volunteers or Paid Staff?

Some watercraft inspection programs rely on only volunteers, some on only paid staff, and some are a combination of the two. When determining the structure of your program, consider funding availability and resources, recruitment pool, coverage area (one launch, one lake, one county, etc.), and the time/level of commitment of the program coordinator and of potential recruits.

Step #4: Develop a Budget

Expenses associated with the implementation of a watercraft inspection program include:

- Steward pay: hourly, per steward
- Program management: coordinator pay
- Paid staff fringe cost: rate is specific to your program; includes Social Security, Workman's Compensation, etc.
- In-direct costs: rate is specific to your organization; applies to all budget categories except fringe
- Steward supplies: uniform items, chair, table, training materials, clipboard, paper, first aid kit, pens, pencils, etc. (Section 6:10)
- Travel: program coordinator and/or steward(s)
- Program operating costs: storage containers, training fees (food, venue, etc.), registration fees (steward professional development, events, etc.), program-related mailings, cellphone and service fees for coordinator, distributional materials, and technology upgrades (e.g., for hand-held devices for paperless data collection, computer-related, audio/visual equipment for outreach events, etc.).

There is typically more financial flexibility when designing a volunteer-based program. When using volunteers to implement your program, you will not have steward salary costs, but consider allocating funds for supplies, travel, and program/volunteer coordination. Allocating an estimate of volunteer work hours in the budget is necessary in terms of liability insurance and injury protection. Check with your organization and partners to confirm that no other required elements have been overlooked. For budget planning purposes, it may be advisable to calculate a per steward expense.

The sample budget table that follows can be modified to meet the specific needs and requirements of your program/organization/partners.

Figure 1: Sample Steward Program Budget Categories

Steward Pay (per steward)	_____
Program Management (pay)	_____
Fringe (on salary only)	_____
Volunteer hours estimate	_____
Steward Supplies (per steward)	_____
Travel	_____
Program Operating Costs	_____
SUBTOTAL	_____
In-direct (on all categories)	_____
TOTAL	_____
Volunteer Hours Estimate	_____

Step #5a: Define Watercraft Inspection Steward Duties

While some of the duties for watercraft inspection stewards vary among programs, the singular consistent duty is conducting watercraft inspections at boat launches with the following activities:

- Visually checking boats, trailers, and gear for hitchhiking organisms and debris
- Demonstrating watercraft inspection to teach boaters how to conduct inspections on their own
- Collecting and recording standardized data, and
- Providing AIS spread prevention information to boaters.

Examples of additional duties that some steward programs have included based on their organization's mission and goals are:

- Development of fact sheets, newspaper articles, blogs and videos
- Invasive species monitoring, and
- Development and delivery of organized educational programs.

Step #5b: Determine How Your Steward/Inspectors Will Be Recognizable

- Your stewards must be clearly identifiable to boaters. When on duty your stewards should be easily identified by their uniforms: t-shirts, guide-style shirts, hats, jackets, sweatshirts, etc. Uniforms help maintain professionalism and indicate to boaters that the stewards/inspectors are there in a professional capacity.
- You may choose to use uniform items to distinguish between volunteer inspectors and paid inspectors, e.g., by hats of different colors, patches, or polo shirt vs. t-shirt.
- Some programs incorporate the **Stop Aquatic Hitchhikers!™** (SAH) logo on uniforms.
- Some programs have chosen a specifc color for uniform items, e.g., red because it consistent with SAH branding, is bright, and stands out from the surroundings.

Step #6a: Determine Coverage Area and Secure Property Owner Permission

Early in your planning process, it is important to identify who owns and/or manages the launch sites where you are interested in placing stewards.

- Ask each launch property owner for any requirements and liability issues you need to address, for example, municipalities often require written permission to be presented before their monthly board meeting and proof of liability insurance.
- Ask agency-owned launch managers if they require a permit and a list of program participants.
- Plan to allow time for approvals to be granted; it may take four to six weeks for responses to permission requests.
- See Appendix D. for a sample permission request letter.

Step #6b: Determine Best Schedule

Funding levels may limit the number of paid staff you put in the field. Because it is typically not possible for every launch to receive steward coverage, it is recommended that watercraft inspection efforts be focused at high traffic launches. Prior to the onset of the boating season, learn about the usage patterns of the launches where your stewards could or will serve:

- Visit the launches on different days of the week and at different times.
- Ask property owners/operators and people doing research at the launch sites (NYSDEC creel surveys, academic institutions, etc.) for usage data.

Once you have an idea about launch usage, you can better plan your coverage schedule to target the busiest times. Typically launches are busiest on weekends and holidays. Most launches experience waves of activity:

- Early morning: anglers launching
- Late morning/early afternoon: recreational boaters launching
- Evenings: steady with boaters exiting the water, and
- Special event days, such as fishing tournaments.

Work with property owners and launch managers to stay aware of special events and to best identify the role of your watercraft inspection stewards during special events. Some launch property owners do not want stewards scheduled at sites during tournaments, while others work with tournament coordinators to build inspections into the tournament rules.

It can be more difficult to schedule volunteers since they are not being paid for their service. Things to consider when scheduling volunteers:

- Clarity: be clear about the hours for which you need coverage. Volunteers are more likely to participate if your expectations and the required time commitment are clear to them.
- Flexibility: it may be necessary to offer volunteers shorter shifts and shifts on a limited basis. For example, a volunteer may only have time to provide coverage for a four-hour shift twice each month.

Step #7a: Develop Your Steward Training Program

Training for paid and volunteer steward staff is recommended. The goal of training is to provide your stewards with the necessary tools and information to confidently and accurately complete their duties. The length and breadth of training varies among existing steward programs responsible for watercraft inspections from one day to a week or longer. Some training is done in the classroom while other components such as watercraft inspection demonstration and role playing is done in the field at launch sites.

Typical training components include:

- Organizational orientation (specific to managing organization)
- Introduction to the region (including natural resources, partners/local contacts, relationship with law enforcement, and issues of concern)
- AIS identification and data collection protocol
- Boater engagement and interpretation techniques, and
- Launch site visits.

In addition to initial training, watercraft inspection staff may require additional training throughout the season. For example, followup AIS identification training in the field is recommended once aquatic plants are visible.

Step #7b: Develop Data Collection Protocol

Data collection is a vital part of watercraft inspection. Analyses of watercraft inspection data help natural resource managers in AIS management and help leverage funds to continue and grow steward programs.

It is important that you clearly define what, how, and when your stewards will collect data. The following guidelines are recommended by those administering watercraft inspection steward programs across NYS.

- **Use Standardized Data Protocol:** NYS watercraft inspection programs have adopted a standardized set of data attributes (Section 6:16-18).
- **Establish Data Collection Systems:** hard copy paper forms, paperless collection with a hand-held device (smartphone/tablet), or a combination.
- **Determine Collection Frequency and Entry:** Many programs require stewards to collect and enter data regularly (e.g., weekly).
- **Establish a Quality Review Process:** The data collected and entered is typically provided to program coordinators on a weekly basis for quality review. This helps to identify any shortcomings in the stewards' data collection and provide appropriate support/training before a problem escalates. In the absence of weekly data checks, data entry and quality review can become difficult to manage, particularly at busy launches. It is not uncommon for hundreds of boaters to launch/retrieve at select launches daily.
- **Identify And Define Any Additional Desired Data Attributes:** Some programs collect additional data based on needs, local issues and funding sources, for example:
  - Presence of the Lake George Park Commission Registration Decal
  - Have you encountered a steward at a boat launch before?
  - Prior AIS awareness: Please describe your awareness about aquatic invasive species before this inspection. Answer options: very aware, moderately aware, somewhat aware, not at all aware

- To what extent did this inspection raise your awareness of AIS? Answer options: large amount, moderate amount, small amount, not at all
- Frequency of Preventative Methods: Before this inspection, how often did you take actions to prevent the spread of AIS? Answer options: I always took actions, very often, somewhat often, never
- Expected post-inspection actions: Based on this inspection, how often will you take extra precautions to prevent the spread of AIS? Answer options: I will always take action, very often, somewhat often, never.

Step #7c: Develop Training on Proper Identification of Aquatic Organisms
You will need to provide training on aquatic organism identification that should include common AIS and native look-alikes. Often your local PRISM or Cornell Cooperative Extension Association can provide or recommend a trainer.

To ensure accurate species identification, some programs require each steward to collect a specimen of each species they observe the first time they observe it.

Using the specimen collection protocol below, collected specimens are sent to an expert for confirmation or correction of the steward's species identification. In addition to the program coordinator, potential partners that can confirm, or correct, the steward's identification include the local PRISM coordinator, professors at nearby universities, and Cornell Cooperative Extension.

Step #7d: Develop and Define AIS Specimen Collection Protocol
Provide your stewards with a clearly defined specimen collection protocol to follow should they encounter a unfamiliar/unidentifiable species that should be sent for exact identification.

Identify the supplies needed to collect and properly mark the specimen with the date and time of collection; collector's name and contact information, name of waterbody, name of launch site or, if the specimen is found aboard a boat, the boat name; and any ID numbering or lettering system your program will use. A ziplock bag and waterproof marker should be provided as part of your steward supplies.

Identify how the specimen should be delivered for identification. If the specimen will be held for any length of time at the steward location, identify a means for keeping the packaged specimen cool, e.g., in any on-site refrigerator or a cooler. For more details see Section 6:14.

You will also need to develop a protocol for updating your data records and updating or modifying database entries accordingly once identification results are received.

Step #8: Develop Your Quality Assurance Quality Control (QAQC) Plan

New York's existing steward programs have some type of quality assurance quality control (QAQC) protocol for the purpose of defining roles and responsibilities of partners administering the program and paid/volunteer stewards. A QAQC Plan ensures that the work being completed by stewards is consistent each year and between years; and helps maintain the highest level of credibility and consistency in the data collection protocol.

It is recommended that you build QAQC criteria for your watercraft inspection activities, particularly if multiple organizations are overseeing the program. Consider the following information to include in a QAQC Plan:

- Responsibilities of program coordinators and partners
- Responsibilities and required expectations of watercraft inspection stewards
- Reporting requirements of stewards
- Data collection and entry protocol including:
  - data nomenclature
  - procedures and expectations for entering, reviewing, and submitting data
  - definitions of attributes
  - quality control measures and how they are met
- Control measures to consider include:
  - how often data is to be collected and submitted by stewards
  - who is responsible for reviewing the data submitted by stewards
  - how often data will be reviewed
  - what percentage of the data collected and submitted by stewards is reviewed
  - how errors are to be corrected and how excessive errors are to be addressed to avoid mistakes in the future.

Some programs have a separate QAQC Plan document; others include QAQC information in the various sections of their training materials.

If your program includes activities in addition to watercraft inspection, consider developing a QAQC Plan for the comprehensive program.

Step #9a: Recruit Steward Program Personnel

To recruit stewards, learn and apply the advertisement, recruitment, hiring, and human resource (HR) policies of your organization in collaboration with program partners and funders. Potential recruitment pools include lake association newsletters and websites, local schools and universities, and clubs, e.g., gardening clubs, scouts, 4-H, Rotary, etc. Steward programs may qualify as community service programs for some schools and groups interested in placing students/members in such programs.

- When recruiting, be clear about the required application documents, e.g., cover letter, resume, list of references, etc., you expect steward candidates to submit and the process for submitting.
- Be clear about the position's starting and end dates in the job announcement.
- Be clear if your program requires that stewards will be responsible for their own travel to and from launch sites/work stations.
- Establish an application date that allows enough time for interviewing, hiring, and training before you want to have stewards active at launch sites.

Step #9b: Interview, Evaluate and Hire Steward Candidates

Most programs have an internal hiring process based on the HR policies of their organization. In general, when conducting interviews it is best to include at least one other person to participate in the interview process. This protects you from potential HR issues and helps in the candidate review and selection process. Remove as many variables in your process as possible to assure a fair and equal process for all candidates. Using a standard set of interview questions helps frame and focus candidate evaluation. Likewise, use a standard set of questions to check candidates' references.

When considering candidates, remember your stewards will directly represent your organization and your program partners as well as indirectly representing other watercraft inspection steward programs.

Personnel requirements to consider as you build your team of stewards include, but are not limited to:

- How does the candidate present himself/herself?
- Does the candidate indicate he/she possesses appropriate background knowledge or the ability to quickly pick up knowledge about AIS, their impacts, pathways, and preventative measures?
- Does the candidate exhibit an ability to:
  - work with minimal supervision and independently (as appropriate)?
  - effectively communicate to diverse audiences?
  - accurately collect and enter data using established protocol and software?
  - is the candidate willing to work weekends and holidays?

Your evaluation will identify the most desirable candidates. Once you are prepared to offer positions, use standard offer language with each candidate. Because not all candidates will accept your offer for a steward position, be sure you allocate time in your recruitment process to reach further into your applicant pool if necessary.

Step #10: Train Stewards

See Section 6: NYS Watercraft Steward Training & Field Guide for detailed instruction on training your new stewards. Two areas for particular attention follow here.

Step 10a: Determine Steward Location at Launch Sites
Prior to the stewards' start date, work with launch owners/operators to identify the best location for stewards to setup their inspection stations. In general, stations should be located in an area in close proximity to the launch, but in a place that does not create launch congestion. It is preferred that inspections and the draining and removal of aquatic hitchhikers occur at the same location to prevent runoff return into the water, to limit unnecessary movement, and to enhance inspection and data collection efficiency.

The best place to situate stations is on semi-permeable dirt or gravel surface far enough away from the water, or launch ramp, so that drained water and removed debris cannot flow into the waterbody. Typically, watercraft inspection locations allow:

- High steward visibility: station and uniform
- Accessible approach
- Ease of watercraft inspection
- Ease of data collection: visual and boater survey data
- Educational material distribution, and
- Safe exit, including room for the steward to step clear of the boat/trailer/vehicle and be seen by the driver.

Step 10b: Package Educational Materials for Distribution by Stewards
Each geographic region has its own specific AIS concerns. To promote consistency statewide, New York's existing watercraft inspections programs offer the Clean Boats, Clean Waters rack card (Section 6:12) to boaters at the close of each inspection. Program coordinators may add other distributional materials, such as:

- AIS informational rack cards
- AIS Watch Cards
- **Stop Aquatic Hitchhikers!™** stickers: tackle box sticker for placement on trailer winch
- Program business card with program URLs and contact information
- PRISM brochures
- Species-specific fact sheets
- Local recreation maps
- NYS fishing and boating regulation guidebooks.

Links to some of these additional materials are in Section 7: Additional Resources and References.

SECTION #6

Watercraft Inspection Steward Training & Field Guide


Lake Ontario at Oswego, NY

Watercraft inspection stewardship programs exist across New York State (NYS) to protect the integrity of NY's waters and prevent the spread of aquatic invasive species.

New York State's watercraft inspection programs educate watercraft operators at launch sites to increase public awareness of aquatic invasive species (AIS) and how the boating public can help control the spread of AIS through proper watercraft inspection practices and care of recreation equipment. The goal of this training manual is to provide you with the tools and resources to help you be part of a professional and well-received watercraft inspection program.

A Professional Approach to Stewardship

By becoming a watercraft inspection steward, you are joining and strengthening an existing network of educators and people interested in natural resource protection. Your actions as a steward represent yourself, your program, the supervising organization and program partners, and watercraft inspection programs in New York State and elsewhere. As paid stewards and volunteers conducting the watercraft inspections, you are "the face" of your respective programs, and represent New York State to local residents and the thousands of visitors who come to New York to enjoy our water resources.

Prepare Yourself to Engage the Public

Your demeanor while conducting inspections impacts the effectiveness of your program as a public education tool and an AIS prevention method. Professional delivery of the watercraft inspection and the AIS messages encourages the public to take an interest in implementing best management practices to support the program's ultimate mission of protecting pristine waters and preventing the movement of AIS into and out of your region.

Dealing with the public can be both rewarding and challenging. Four key elements to demonstrate professionalism as watercraft inspection stewards are:

- ***Appearance***
- ***Safety***
- ***Interaction with Public and Staff***
- ***Documentation.***

APPEARANCE:
Identifying Yourself Visually

Stewards should wear program-approved dress while on duty. Your uniform helps the public visually identify you as an official representative of the watercraft inspection program. It may draw people to you, creating educational opportunities. When you approach boaters to offer an inspection, your uniform lets the boaters know that they are being approached by someone in a professional capacity for a legitimate reason.

Most programs supply a uniform or uniform components: shirt, jackets, caps, etc. Your clothing should be clean and unwrinkled. Neat personal grooming is expected. Maintain good posture at all times; do not lounge or lay down on duty. Be alert at all times.

SAFETY: **Maintaining Personal and Public Safety**

Your safety and the safety of those around you is your top priority. Boat launches and ramps are typically active places with frequent movement of watercraft, people, vehicles, animals, children, etc. The boaters and visitors are there to relax and may be eager to launch their vessels or load watercraft to leave after a fun day on the water. You are there to work. To protect public and personal safety, follow these steps:

- When setting up your work area, assess the safety hazards and take all appropriate measures to eliminate risks.
- Ask boaters to turn off vehicle engines during inspection.
- Be alert to your surroundings and aware of where the boat owner and others are at all times, particularly those with moving watercraft.
- While checking around wheels, motors, trailers, etc., you will sometimes be out of the direct line of drivers' vision during inspections, so keep those around you alert to your location.
- Always plan for a personal exit path should a boat/vehicle start moving in your direction for any reason. Be especially aware of trailer wheels, propeller, and hitch.
- Have a charged cell phone and a key contact list that includes your program coordinator/immediate supervisor, launch manager, and local law enforcement.
- Avoid dangerous situations and confrontations with the public.

SAFETY: Special Risks and Circumstances

Special safety concerns may occur spontaneously. Stewards should be alert as you may be called upon to communicate your observations as a witness of an incident. Be a good observer and record as much detail about the occurrence as possible.

In Case of Emergency: Be Prepared & Equipped to Call 911

Stewards working in areas with limited cell phone access should know the locations of the nearest accessible landlines.

If you must leave your launch site for safety reasons, notify your designated supervisor/contact person immediately. Follow your program's specific protocol when dealing with the following risks and circumstances. In all circumstances, maintain your composure.

- **Storms/Lightning/High Winds:**
  Storms can approach quickly without warning when on/near water. Use your judgment to determine if you can seek shelter in your vehicle or a nearby building.
- **Rude/Threatening Public Behavior:**
  Do NOT confront people acting in a rude/threatening way. If your personal safety is threatened, retreat to your vehicle and lock the doors. Leave the site, record as much information about the individual and location as possible and relay that information to your supervisor or designated contact person immediately.
- **Fear for Personal Safety:**
  If you fear your safety is being jeopardized, enter your your vehicle and/or leave the launch site. Contact your supervisor, and, if appropriate, law enforcement, immediately. Remember that you do not have law enforcement responsibilities or powers; your role is to educate the public.
- **Potentially Dangerous Facilities:**
  If your assigned launch is unsafe because facilities are in need of repair, potentially dangerous people or animals are frequenting the site, or similar site-related risks exist, notify your supervisor, and, when appropriate, the launch manager.
- **Nuisance/Potentially Dangerous Wildlife Encounter:**
  Do not approach or feed the animal. Make others aware of the animal and notify property manager. In extreme cases, calmly leave your site to enter your vehicle or a nearby building, contact Wildlife Control or appropriate local authority, and notify your supervisor.

- **Environmental Quality Incident**: **gas/toxic spill, litter, sewage/head release, dumping of materials into water, etc.**:
  Contact property manager and New York State Department of Environmental Conservation (NYSDEC) regional headquarters. If the incident occurs after regular business hours, call NYSDEC 24-hour tip line: **1-800-TIPP DEC (1-800-847-7332)**.
- **Lost Person:**
  Call 911 immediately. Record as much information about the lost person as possible, e.g., age, gender, height, weight, complexion, clothing, distinguishing characteristics (scars, tattoos, piercings, etc.), and last known whereabouts. Notify your program supervisor or designated contact person. Complete and submit an incident report as instructed by your program coordinator.
- **Public Injury:** Assess the situation and person's condition; work within the limitations of your steward training and level of comfort. Call 911. Call your supervisor. Complete and submit an incident report as instructed by your program coordinator.
- **Public Fatality:** Assess the situation and call 911. Call your supervisor. Keep the area as secure as possible to prevent contaminating potential evidence.

INTERACTION with the PUBLIC and STAFF:
Communicate Professionally

Communicating effectively and efficiently with boat launch users, managers, program coordinator and fellow stewards increases the opportunity to actively engage the public in controlling the spread of AIS and protecting uninfested waters.

- Maintain a professional but pleasant manner appropriate to the working environment, i.e., a recreational setting for the public. Boaters are more willing to participate in activities when they feel comfortable.
- Be polite and respectful to all boaters and other people at launch sites.
- Stand up to address the public.
- Be respectful if a boater has misinformation or a different point of view. Do not challenge to "prove your point," rather offer to inform them of other details/resources.
- Be punctual for duty; this is especially important at launches where inspection hours are posted at launch facilities.
- If you are working with other stewards, treat one another as professional colleagues at all times.

Establishing Credibility

The most successful stewards are those that the public view as responsible, credible and helpful, and those with the ability to engage and make the public feel comfortable.

- **Identify yourself verbally**
  Always introduce yourself by name, identify the steward program for which you work, and why you are at the launch site.

  Boaters should be completely clear about why you are approaching them. For example, once you are close to the boater, calmly say:

  > "*Hi, my name is Sam. I work for the Paul Smith's College's Watershed Stewardship Program and am here to demonstrate ways to prevent the spread of aquatic invasive species between waterbodies. Do you mind answering a few questions and participating in a watercraft inspection?*"

- **Use an upbeat approach**
  Maintain a respectful attitude in all situations. People are more likely to engage in conversations when you are polite, pleasant, and confident.

  Although rare, some conversations can become negative, especially if a boater arrives already irritated about something. It is vital in these situations that you are positive during and at the close of your conversation. Thank the boaters for helping to protect New York's waters.

- **Be knowledgeable, honest, and realistic**
  One of the best ways to achieve credibility with boaters is to be knowledgeable, honest, and realistic when responding to their questions.

  Inevitably, you will be asked questions that you cannot answer or cannot answer correctly; in those instances, relay the questions to your supervisor with the boater's contact information for follow-up response.

Framing the Message to Inform Boaters

Each time you engage a boater in conversation about AIS, communicate the **Clean~Drain~Dry** message, why it is important to limit the spread of AIS, and the benefits to boaters of practicing watercraft inspection.

Because boaters typically want to protect their access to recreational opportunities, they are likely to listen and implement simple AIS spread prevention practices like watercraft inspection.

When provided with the appropriate educational messages, boaters will quickly understand that their actions, or inaction, can spread AIS and threaten their ability to boat, fish, or otherwise enjoy the water resource.

To maintain consistent educational messaging within your program and across the state, use the primary message: **Clean~Drain~Dry**.

- **CLEAN**: Remove and properly dispose of any visible mud, plants, fish or organisms from boats, trailers, equipment, clothing, dogs, etc.
- **DRAIN**: Before leaving the launch, empty all water from spaces (i.e., bilges, buckets, livewells, ballast tanks, etc.) that can hold water. Dump live bait at bait disposal sites or in an approved trash receptacle. For more information, see NYSDEC Baitfish Regulations: http://www.dec.ny.gov/outdoor/47282.html.
- **DRY**: Dry boat, trailer, and anything that comes into contact with water. Drying time varies greatly with localized environmental conditions. The minimum recommended dry time before launching in new waters is no less than 5 days. The 100th Meridian website has a Drying Time Estimator (for zebra/quagga musssel contaminated boats) interactive map with average drying times based on air temperature and humidity by month and by state.

Conducting Inspections: Expectations of Stewards

During the course of each interaction with boat operators, stewards will teach boaters how to look for and remove aquatic hitchhikers and drain all water from the vessel and compartments; collect visual data; ask survey questions; and provide AIS information to the boaters.

Your responsibilities as a watercraft inspection steward include:

- Engaging boaters and demonstrating how to look for hitchhiking organisms/debris on boats, trailers, and other boating and water recreation equipment
- Informing boaters of the importance of draining water from all water containers, including bilge, bait buckets, livewells, motor, and other compartments
- Informing boaters on properly removing and disposing of any aquatic organisms and/or debris encountered
- Collecting inspection data from launch users, e.g., whether or not the boater takes any measures to prevent the spread of AIS, and the last body of water the vessel was in during the prior two weeks
- Delivering AIS spread prevention messages during inspection
- Distributing AIS educational materials, and
- Responding to boaters' AIS-related questions.

Emphasize the **Clean~Drain~Dry** educational message adopted by existing watercraft inspection programs, and remind boaters why they should follow the easy-to-remember procedures every time they launch and retrieve their boats.

Conducting Inspections: Setting Up Your Inspection Station

Your program coordinator has worked with property owners to determine the best location to set up your stations.

Follow instructions for locating work station: table, chair, sign, display materials, etc. (above) and inspection station (right).

In general, your inspection station should be located in an area in close proximity to the launch area, but in a place that does not create congestion on a semi-permeable dirt or gravel surface.

Whenever possible, set up far enough away from the water and launch ramp that drained water and removed debris cannot flow back into the waterbody.

Removed debris, including plants, should be bagged and trashed, or placed in an approved AIS disposal facility, e.g., Nuisance Invasive Species Disposal Stations (right) at New York State Department of Environmental Conservation-managed launches.

Boat inspections, bilge draining (left) and removal of visible organisms and debris should all occur in one location. This helps limit unnecessary visitor movement and enhances your ability to inspect boats quickly and correctly.

Conducting Inspections: Steward Supplies

- Uniform items (shirt, hat, name tag, etc.)
- Steward on-duty sign (sandwich-board design works well)
- Fully-charged cell phone
- Emergency Contact Lists: Program-related emergency and law enforcement contacts
- Chair, and table, if not available at site
- Data sheets
- Clipboard and weatherproof (e.g. Rite in the Rain) notebook
- Pens/pencils
- AIS specimen sample collection materials: pruning shears, waterproof markers to label plant samples, zip-lock bags, cooler
- Flashlight, magnifying glass, mirrors on extendable wands
- 5-gallon bucket
- Plastic file box with distributional materials
- Paper towels and/or rags
- Hand sanitizer and sunscreen
- First aid kit
- Drinking water for yourself
- Optional: Rake to clear launch of aquatic plants, organisms and other debris.

Conducting Inspections:
Recommended Distributional and Display Materials

Select distribution and display items based on the needs of your area/region:

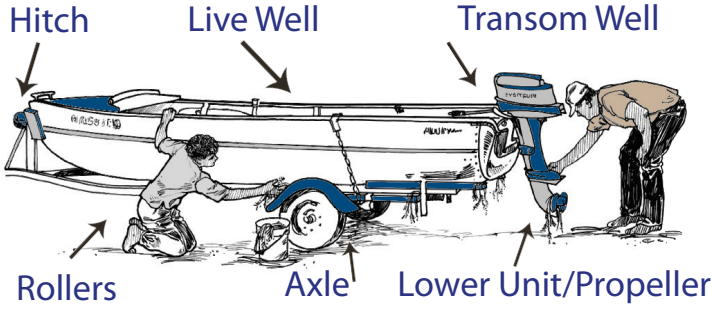
- Clean Boats, Clean Waters rack card (Section 6:12)
- AIS Watch Cards (two examples below)
- Species-specific AIS fact sheets, e.g., Asian Carp: Appendix A, Section 8:3-4
- Display copies of AIS-related regulations and safety guides, e.g., NYS fishing regulations, NYS boating safety guide, firewood transport restriction notice, etc.
- AIS distribution maps: Appendix B.
- Laminated/preserved specimens to illustrate AIS vs. native look-a-likes
- Local Partnership for Regional Invasive Species Management (PRISM) information with upcoming AIS education outreach events, brochure, newsletter, etc.

CLEAN BOATS CLEAN WATERS

Watch for unwanted aquatic hitchhikers when you move from one waterway to another!

Aquatic invasive species (AIS) are non-native plants and animals that threaten native plants, wildlife, and their habitat. AIS degrade boating and fishing areas, and can reduce lakeshore property values and tourism. Once AIS are established, containment is difficult. By practicing watercraft inspection, you can help ***SLOW*** the ***SPREAD*** of AIS.

WATERCRAFT CHECK POINTS



Before you leave a waterway:

- CLEAN & INSPECT: Inspect, remove, and properly dispose of any visible mud, plants, fish or organisms from boats, trailers, equipment, clothing, dogs, etc.
- DRAIN: Before leaving the launch, empty all water from spaces (i.e., bilges, buckets, livewells, etc.) that can hold water. Dump live bait at bait disposal sites or in the trash. Never move live bait fish between bodies of water.
- DRY: Dry anything that comes into contact with water.

Never release plants, fish, or other animals into a waterway unless they came from that waterway.

STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

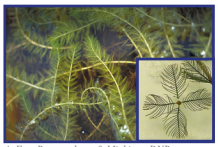
Aquatic Invaders to Watch For:

H. Smith, APIPP

Water Chestnut
- Triangular leaves & toothed edges
- Forms dense floating mats
- Seeds & plants attach to trailers

J.E. Marsden, UVM & D. Jude

Zebra & Quagga Mussels
- Tiny, "D" or oval shaped striped shells
- Cover hard surfaces; sharp shells cut feet
- Shells attach to plants & boat bottoms

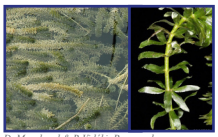


A. Fox, Bugwood.org & Michigan DNR

Eurasian Watermilfoil
- Feathery leaves in whorls of 4
- Forms dense beds
- Plant fragments attach to boats & trailers

DFWI & J. Gunderson, MN Sea Grant

Spiny Waterflea
- Tiny, ½" crustacean with long, barbed tail
- Competes with fish for food
- Masses collect on fishing line



D. Moorhead & R.Vidéki, Bugwood.org

Hydrilla
- Blade-like leaves in whorls of 4-8
- Forms dense beds
- Plant fragments attach to boats & trailers

J. Gunderson & D. Jude, Bugwood.org

Live Bait
- Non-native crayfish and minnows
- Alters aquatic habitats & may carry pathogens
- Often released or illegally stocked

The Launch Steward Program is a collaborative education program offered at water access sites in New York's Lake Ontario and Oneida Lake regions to help slow the spread of aquatic invasive species and help preserve the integrity of water resources, recreational opportunities, and local economies.

SLELO PRISM
Partnership For Regional Invasive Species Management

Sea Grant New York

Cornell University Founded A.D. 1865

Design courtesy of Adirondack PRISM. For more information go to: www.sleloinvasives.org or www.nyis.info

Conducting Inspections: How to Conduct a Watercraft Inspection

NYS watercraft inspection programs strive to change the behavior of boaters through instructional demonstration of watercraft inspection designed to encourage boaters to self-inspect boats, trailers, and equipment in the absence of stewards.

Approach

- Approach boaters as they prepare to enter (launching) and exit (retrieving boat) the water.
- Identify your name, your organization, and why you are there.

For Every Inspection:
Identify your name, your organization, and your purpose

- Initiate conversation with boaters on or near launch ramp. Ask if the boater has time to answer a few questions and participate in a short watercraft inspection. Inform the boater the inspection and associated questions will take only a few minutes.

Sample Steward Introduction Script

"Good morning, my name is Gretchen. I am a lake steward with the Lake George Association. We are here to help prevent the spread of aquatic invasive species in New York's waters. Aquatic invasive species spread from lake to lake by hitchhiking in water and attaching themselves to boats, gear, and trailers. Do you have a few minutes to answer some questions and participate in a quick inspection for hitchhiking organisms? Please join me and I will point out some common places where these organisms collect."

Delivery

- Traffic levels vary at most boat launches. Adapt the length of your message to the traffic level to minimize delays and boat ramp congestion.
- Invite boater to walk around the vessel with you during the inspection. Assisting you in the inspection process makes boaters more likely to conduct inspections on their own. Hands-on participation by the boat operator during the inspection provides stewards with the opportunity to ask valuable survey questions, helping to minimize inspection time.
- Point out the places aquatic hitchhikers are typically found (Section 6:15).
- Collect visual and boater survey data.
- Ask if the boater has any questions. (Also see Appendix E.)
- Give the boater a Clean Boats, Clean Waters rack card.
- Thank the boater for his/her time and participation, and emphasize as your final prevention message: *"Remember to Clean~Drain~Dry to prevent the spread of aquatic invasive species."*

Conducting Inspections: Physically Inspecting a Boat

Although the duration of each inspection will vary depending on the size and type of the boat, conversation with the boater, the amount of hitchhiking debris present, and the level of launch traffic, most inspections generally take about three minutes.

- Do not board watercraft. To inspect interior compartments, ask the operator if they will assist you by boarding the boat and inspecting livewells and bilge compartments for standing water.

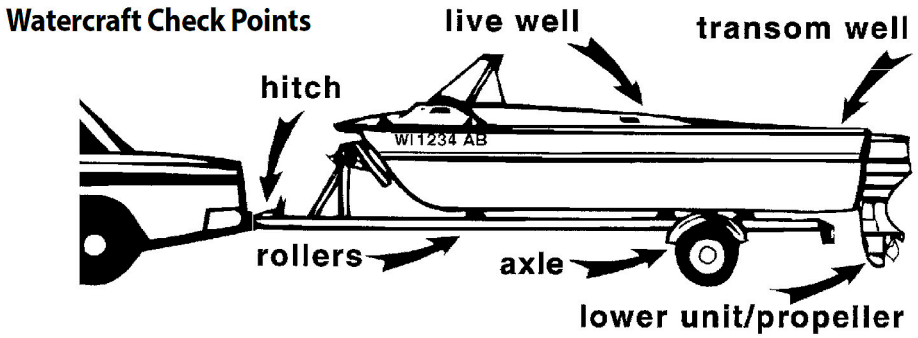
Stewards do not board watercraft. Ask the boat operator to check areas that require being onboard the vessel.

- If any aquatic materials or water are found, ask the operator to drain the water and remove and properly dispose of the materials. Offer to use your bucket to catch water draining from internal compartments. Ask that the operator move motors to vertical position. Place your bucket underneath to catch water draining from the lower unit of inboard/outboard motors.
- While moving through the inspection, refer to the Inspection Checkpoint List (Section 6:15).

Conducting Inspections:
What to Do When Observing Water and Hitchhiking Organisms/Debris

- If in the course of an inspection you encounter water and non-AIS debris, dispose of water and aquatic debris as instructed.
- If you discover an aquatic species that you cannot identify or you suspect may be an invasive species, follow AIS identification and specimen collection protocols as designated by your program (see below) and refer the boater to additional **Clean~Drain~Dry** details on the ProtectYourWaters.net and NYSDEC websites.

  In general, a "bag and tag" specimen collection approach is followed:
  - Using the provided waterproof permanent marker, write the date; time; collector's name and contact information, name of waterbody, name of launch site or, if the specimen is found aboard a boat, the boat name; and any ID numbering/lettering system your program uses on a ziplock bag provided as part of your steward supplies.
  - Follow your program instructions for placing and sealing specimen in bag for delivery for identification. Keep it cool per your program instructions.
  - Follow your program's specimen delivery and reporting protocol developed for:
    - where the specimen goes
    - how the specimen gets there
    - who (contact information) will receive the specimen, and
    - how the expert notifies the program (steward, coordinator, both, etc.) of specimen identification results.
  - Update data records and *i*MapInvasives.org database when results are received.



Inspection Checklist for Thoroughly Inspecting Boats, Watercraft, and Water Gear

BOATS

- ❒ Motor
  - ❒ Prop
  - ❒ Intake pipes
- ❒ Trailer
  - ❒ License plate
  - ❒ Taillights/wiring
  - ❒ Wheels and axels
  - ❒ Frame
  - ❒ Rollers
- ❒ Boat
  - ❒ Floor
  - ❒ Hull
  - ❒ Livewell
  - ❒ Transom well
- ❒ Accessories
  - ❒ Anchor
  - ❒ Bow Line
  - ❒ Ladder
  - ❒ Life jackets
  - ❒ Tow ropes
  - ❒ Water skis, wake boards, tubes
- ❒ Recreational Gear
  - ❒ Swim fins
  - ❒ Scuba/snorkeling gear, including BCDs: buoyancy compensator devices
- ❒ Fishing Gear
  - ❒ Bait bucket
  - ❒ Landing net
  - ❒ Tackle
  - ❒ Fishing reel/rod
  - ❒ Waders
  - ❒ Boots

PERSONAL WATERCRAFT (PWC)

- ❒ Trailer (at left under BOATS)
- ❒ PWC body
- ❒ Intake
- ❒ Propulsion
- ❒ Life jacket

KAYAKS & CANOES

- ❒ Boat
- ❒ Paddles
- ❒ Life Jacket

DOCUMENTATION: Data Collection & Reporting

Data collection and reporting are crucial tasks. Data analyses are only as good as the data collected. The information gained from data surveys, reports, and analyses is useful to natural resource managers for their AIS control activities. The information also supports requests for steward program funding.

Follow the reporting and data-related protocol provided by your coordinator. This includes meeting established deadlines for reporting and data entry, reviewing your data, and correcting errors.

If your program uses paper survey forms, write legibly; properly completed hard copies of the field survey forms are imperative for quality assurance checks. If your program collects data electronically, enter data carefully. Record the GPS coordinates of your launch in decimal degrees. If you need a GPS unit, notify your program coordinator.

Data Attributes and Data Collection Protocol

All watercraft inspection field survey form mandatory fields must be filled out completely. Lack of data entry is considered "no information was collected." (Some programs use additional optional datafields.)

All watercraft inspection field survey form mandatory fields must be filled out completely.

Lack of data entry is considered "no information was collected."

Standardized attributes and how entries should be recorded follow. Items with an *asterisk below may be collected without any contact with boat launch users.

***Time**

- Use military time format (midnight is 0000, noon is 1200; e.g., 1:30pm is 1330)
- This is the time when the boater approaches area (from road or boat launch) to launch or retrieve boat from the water and the steward begins collecting survey data.

***Launch/Retrieve**

- "L" if vessel is preparing to go into the water.
- "R" if the vessel is coming out of the water.

***Boat Type**

- "M" for a motorized vessel
- "C" for canoe
- "K" for kayak
- "PWC" for personal watercraft or jet ski
- "PB" for paddleboard
- "S" for sailboat
- "R" for rowboat
- For another boat type, record the best match for the vessel encountered, e.g., a barge is not listed, but is motorized and should be recorded as "M."

***Group Size**

- Record the total number (numeric form) of people in the vessel party.

***State of Registration:**

- Record two capital letters for the U.S. state of vessel registration.
- Some non-motorized vessels do not have a state of registration for these vessels leave the field blank.
- For vessels registered in Canada, record two capital letters for the province, e.g., Quebec: QC, New Brunswick: NB, with exception of Prince Edward Island: PEI.
- Record other abbreviations (from the boat registration) for later decoding.

Inspected (Y/N):

- "Y" indicates yes, you conducted a courtesy boat inspection on your own or with the assistance of the vessel owner.
- "N" indicates you did not conduct the inspection either because you did not have time or because you did not have cooperation from the vessel owner.

Aquatic organism(s) (Y/N):

- "Y" represents yes, you found organisms (native non-native aquatic plants or animals) on the boat, trailer, or other recreational equipment during inspection.
- "N" indicates no organisms found.

Species Identification

- Record the abbreviation for the species found; if no abbreviation is provided on the field survey form, write in the species name
- If multiple species are found, record each one in this cell
- A blank cell indicates no species were found (record "N" in Aquatic Organism/s Found cell) or that a species was found but was not able to be identified in the field. In such a case, the steward is required to collect a sample to send to the program-designated expert for identification. The steward is responsible for filling in this data point once the species has been identified.

Spread Prevention Methods

- The appropriate question is "*Do you take any steps intentionally to prevent the spread of AIS?*"
- Do not list possible AIS spread prevention measures to elicit a response from the vessel owner. If the owner indicates that he/she does not take any measures, record "None," then provide examples of easy measures the vessel owner may take.
- Indicate whether or not the boat launch user/vessel owner has taken any spread prevention measures to reduce the spread of AIS. Abbreviations are provided for common spread prevention steps on the field survey form.
- If the vessel owner takes some action to prevent the spread of AIS that is not indicated on the sheet, write that method in.

- If the vessel owner has not/does not take steps to prevent the spread of AIS, indicated on the field survey form as "None."
- Multiple spread prevention measures may be entered in the space provided.

Last Waterbody Visited in 2 Weeks

- Record the name of the last water body visited. You must record the name of the body of water and the state in which it is located. Record the town/county name when possible. Pay particular attention to spelling.
- If a vessel has not have been in any body of water in the past two weeks, record "None." Only record the name of the body of water, town/county, and state of the body of water if the vessel has visited it in the past two weeks.
- If a vessel has been in multiple bodies of water in the past two weeks, record only the most recent body of water that the vessel was in during the past two weeks.

Exiting the Inspection

Because boat launches can be hectic with the movement of people, vehicles, trailers, pets, children, etc., make certain you and the boater acknowledge when the inspection is over and when you are safely away from all moving parts of the vehicle and tow equipment. One method is to call out "*CLEAR*" at the end of each inspection.

Conducting Inspections: When Boaters Don't Want to Participate

When a boater does not want to participate in an inspection, respect the boater's wishes. Depending on the circumstance and receptivity of the boater, you might ask

> "*May I share this information card with you with tips to limit the spread of unwanted aquatic hitchhikers? Aquatic invasive species grow quickly and have the ability to outcompete native species. Once established, the invasive species can disrupt the food web, change species composition, limit or prevent recreational activities such as swimming and boating, and lower property values*."

Offer boaters a Clean Boats, Clean Waters rack card and thank them for helping to protect New York's waters.

Summary: Key Points

- How you represent yourself as a steward reflects on you, your program, the supervising organization and program partners, and all watercraft inspection programs, and impacts how well your message is received. Know the proper watercraft inspection protocol from approach to exit.
- Make personal and public safety a priority at inspections sites.
- Maintain professional conduct and composure at all times.
- Stress the boater education message of **Clean~Drain~Dry**.

Sample Data Collection Sheet, page 1

Steward Number: _____ Site Name: _____

Date: _____

#	Inspect Time	Launch Direction	Days in Waterbody	Watercraft Type	Group Size	Reg State	Reg #	Prev Stew	Inspect Agree	Activity	Prior AIS Awareness	Extent AIS Raised	Prior Fq Methods

Sample Data Collection Sheet, page 2

Steward Number: _____ Site Name: _____

Date: _____

#	Post fq Methods	Prevent Measures	Measures Taken	Prev Waterbody	Info Waterbody	Species Detection	Species ID	Comments

SECTION #7

AIS Resources & References

AIS: Round goby

The following resources are referenced in this handbook and provided here for easy access. The following abbreviations apply:

AIS: Aquatic Invasive Species
DEC: Department of Environmental Conservation
NYS: New York State

100th Meridian Initiative Drying Time Estimator for Zebra-Quagga Mussel Contaminated Boats

Adirondack Park Invasive Plant Program

AIS Factsheet Links and Distribution Maps
- **New York Invasive Species Clearinghouse**
- **USGS Invasive Species Program**

AIS Spread Prevention Tips
- **Aquatic Nuisance Species Task Force Recreational Use Guidelines**
- **National Stop Aquatic Hitchhikers!™ Campaign**
- **NYS DEC Prevent the Spread of Aquatic Invasive Species**

BAITFISH Regulations (NYS)

Catskill Regional Invasive Species Partnership

CleanDrainDry.org

Cornell University Cooperative Extension Invasive Species Program

Federal Invasive Species Regulatory Information:
- **US Coast Guard Ballast Water Management**
- **US Environmental Protection Agency Invasive Species Information**

Finger Lakes Institute

General Invasive Species Information
- **Center for Invasive Species and Ecosystem Health**
- **Cornell University's NY's Invasive Species Research Institute**
- **Lake Champlain Sea Grant**
- **New York Sea Grant**
- **NYS Canal Corporation**
- **NYSDEC AIS Information**
- **NYSDEC Invasive & Nuisance Species**

Incident Reporting
NYSDEC TIP LINE online
NYSDEC TIP LINE phone: 1-800-847-7332

Lake Champlain Basin Program

Lake Champlain Sea Grant

Lake George Association

National Invasive Species Act of 1996

New York Invasive Species Clearinghouse

New York Natural Heritage Program

New York Sea Grant Launch Steward Program

New York Sea Grant Watercraft Inspection How-To Video

New York State-Owned Public Boat Launch Sites

Northeast Aquatic Nuisance Species (NEANS) Panel

NYS Canal Corporation

NYSDEC Nuisance and Invasive Species

NYS Federation of Lakes Association

NYS Invasive Species Council and Regulatory Information
- NYS Invasive Species Council/NYSDEC
- NYS Invasive Species Task Force 2005 Report
- NYS Invasive Species Management Strategy, August 2011

NYS Office of Parks, Recreation and Historic Preservation

Partnerships for Invasive Species Management (PRISM)

Paul Smith's College Watershed Stewardship Program

Protect Your Waters Campaign

Report References
- **2005: NYS Invasive Species Task Force Report**
- **A Regulatory System for Non-Native Species Report, New York State Invasive Species Council. 2010.**
- **The Costs of Aquatic Invasive Species to Great Lakes States. Rosaen, et. al. 2012. Anderson Economic Group LLC.**

- Aquatic Invasive Species Transport via Trailered Boats: What is Being Moved, Who is Moving it, and What Can Be Done. Rothlisberger, et. al. 2010. Fisheries. 35 (3), 121-132.
- Type E Botulism Outbreaks: A Manual for Beach Managers and the Public, United States Environmental Protection Agency Great Lakes National Office (GLPO). (2013).

Stop Aquatic Hitchhikers!™ Campaign

US Coast Guard Ballast Water Regulations

USDA APHIS Noxious Weeds Program

US Environmental Protection Agency Invasive Species Information

US Fish & Wildlife Invasive Species Information
- Aquatic Species
- Injurious Wildlife

US Geological Survey Invasive Species Program

Watercraft Inspection Programs in New York State (2013 and Earlier):
- Catskill Regional Invasive Species Partnership
- Finger Lakes Institute
- Lake Champlain Basin Program
- Lake George Association
- New York Sea Grant Launch Steward Program
- Paul Smith's College Watershed Stewardship Program

Wildlife Forever: SAH Campaign Administrator

SECTION #8

Appendices

Appendix A: Selected AIS Information Fact Sheet Links

Section 3 of this handbook lists 14 AIS species of particular interest in New York State. For information and mapping on these and other AIS species, visit the New York Invasive Species Clearinghouse website at http://nyis.info and the US Geological Survey Non-Indigenous Aquatic Species website: http://nas.er.usgs.gov.

Click on the species' common names below to link to the online fact sheet for that species; see Appendix B for a link to *i*MapInvasives.org New York distribution maps for each species.

AQUATIC INVASIVE PLANTS

Common Name	Scientific Name
Curly-leaf pondweed	*Potamogeton crispus*
Eurasian water-milfoil	*Myriophyllum spicatum*
European frogbit	*Hydrocharis morsus-ranae*
European water chestnut	*Trapa natans*
Fanwort	*Cabomba caroliniana*
Hydrilla/Water thyme	*Hydrilla verticillata*

AQUATIC INVASIVE ANIMALS

*Asian carp	*Hypophthalmichthys spp.*
Asian clam	*Corbicula fluminea*
Northern snakehead	*Channa argus*
Quagga mussel	*Dreissena rostriformis bugensis*
Round goby	*Neogobius melanostomus*
Rusty crayfish	*Orconectes rusticus*
Spiny waterflea	*Bythotrephes longimanus*
Zebra mussel	*Dreissena polymorpha*

**Asian carp is a Watch List species; it is not currently identified in New York State waters as of May 2014.*

Appendix A: Example of AIS Fact Sheet: Asian Carp, p. 1-2 only

NEW YORK INVASIVE SPECIES INFORMATION

The New York Invasive Species Clearinghouse

Asian carp (*Hypopthalmichthys* spp.)

Ecological Impacts & Risks Economic Impacts Prevention

Introduction and Spread

In North America, the term "Asian carp" typically refers to two species of invasive fish introduced from Asia: the bighead, or "bigheaded" carp (*Hypopthalmichthys nobilis*) and the silver carp (*Hypopthalmichthys molitrix*). These "bigheaded carp" are native to China. They were originally imported into the southern United States in the 1970s to provide an inexpensive, fast-growing addition to fresh fish markets. They also served to help keep aquaculture facilities clean. By 1980 the carp were found in natural waters in the Mississippi River Basin. As they have moved north through the Basin they have overwhelmed the Mississippi and Illinois River systems where Asian carp now make up more than 95% of the biomass in some areas. Silver carp can now be found in 12 states. Bighead and silver carp are currently in the Illinois River, which is connected to the Great Lakes via the Chicago Sanitary and Ship Canal.

Key bighead carp identification indicators (David Riecks, University of Illinois/Illinois-Indiana Sea Grant)

Key silver carp identification indicators (David Riecks, University of Illinois/Illinois-Indiana Sea Grant)

Two other species of carp imported to the United States from Asia can also become invasive in the wild, the grass carp (*Ctenopharyngodon idella*) and the black carp (*Mylopharyngodon piceus*). The herbivorous grass carp, indigenous to eastern Asia where it is cultivated for food, was introduced to the United States to control aquatic weeds in lakes and waterways. The molluscivorous black carp (i.e., feeding on snails, clams, mussels, and other mollusks) is a native of China where it is cultivated for medicinal purposes and as a food source. It was introduced to the United States to provide snail control in aquaculture settings. By the 1990s the grass carp had escaped from cultivation into the wild and can now be found in waters within or adjacent to 45 states where they are considered a threat to natural vegetation. Black carp have also escaped and are now in several locations along the Missouri and Lower Mississippi River Basins.

Appendix A: Example of AIS Fact Sheets: Asian Carp, p. 1-2 only

The following text from the Asian carp (Hypopthalmichthys spp.) fact sheet at NYIS.info.

Ecological Risks and Impacts of Asian Carp

Silver and bighead carp are filter-feeders which feed on plankton (drifting animal, plant, or bacteria organisms that inhabit the open waters of waterbodies), with an apparent preference for bluegreen algae). Asian carp can dominate native fisheries in both abundance and in biomass. Bighead carp can reach 110 pounds, although 30 to 40 pounds is considered average (silver carp are generally smaller). Bighead carp can live over 20 years, maturing at about 7 years. Asian carp can consume 5 to 20 percent of their body weight per day. As most native fish feed on plankton during their larval and juvenile life stages (and some native fish remain planktivorous for life), this high level of feeding on plankton by Asian carp can have serious impacts on the stability of the food web, with bighead carp potentially outcompeting native fish while eliminating the main source of food for larval fish and native planktivorous fish. Native fish considered most at risk include ciscos, bloaters, and yellow perch, which serve as prey to important predatory sportfish including lake trout and walleye.

The Great Lakes provide a wide range of habitat types which would serve as good spawning, recruitment, and maturation areas for Asian carp. Spawning habitat could be provided in the flowing waters of Great Lakes tributaries, while young Asian carp prefer warm, biologically productive, backwaters and wetlands. When not feeding on plankton, Asian carp have been known to feed on detritus and root in the bottom of protected embayments and wetlands. This disturbance could have significant impacts on Great Lakes wetlands and shoreline vegetation which provide spawning habitat for native fish and breeding areas for native waterfowl.

Black carp, being molluscivores, are not a threat to plankton. Should black carp reach the Great Lakes from the Mississippi Basin, however, they could become a threat to native Great Lakes native clam, snail, and mussel populations (particularly those that are rare or endangered), as well as to lake sturgeon (another molluscivore). Black carp can grow to more than 100 pounds and a length of up to seven feet.

In their native habitats, populations of Asian carp are held in check by natural predators. Unfortunately, there are no native Great Lakes fish species large enough to prey on adult Asian carp. White pelicans and eagles have been observed feeding on juvenile Asian carp in the Mississippi Basin. The pelicans, found in the western reaches of the Great Lakes and eagles throughout the Basin may be expected to do the same. Native predatory fish such as largemouth bass may feed on juvenile Asian carp. Given the growth rates of Asian carp, many juveniles can be expected to grow too large too quickly for fish predation to be a significant pressure to hold down carp populations.

Once populations of Asian carp become established with recruitment of young fish exceeding mortality, eradication is considered to be difficult if not impossible. Populations might be minimized in some areas by denying access to spawning tributaries via construction of migration barriers, but this is an expensive proposition which may inadvertently result in negative impacts on native species. **The best control of Asian carp is to prevent their introduction into the Great Lakes.**

Appendix B: Selected AIS New York Distribution Maps

Section 3 of this handbook lists 15 AIS species of particular interest in New York State. New York distribution maps for those species follow, with the exception of Asian carp which has not yet been identified as being in New York waters.

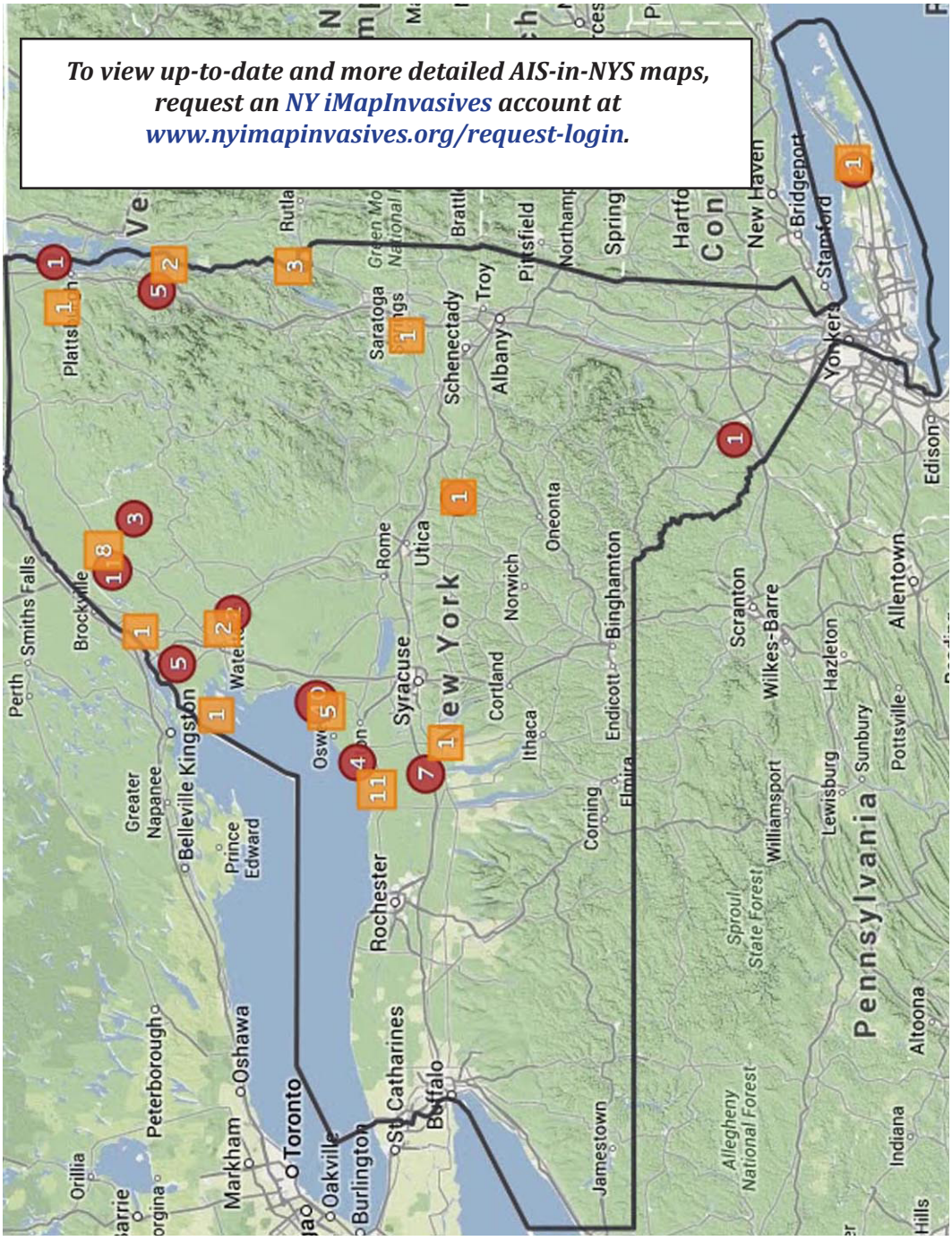
The maps included here were taken from the *i*MapInvasives.org website as of May 2014 and represent sightings only up to that point in time. **As noted in the Key in each map**, the numbers indicate the number of sightings, red circles indicate combined source-vetted sighting, orange squares indicated additional approximate locations of sightings yet to be precisely mapped as of the date of each map.

iMap invasives.org is an online, interactive, GIS-based data management system assisting citizen scientists and natural resource managers working to protect resources from the threat of invasive species. It is also an online tool for invasive species reporting. **To view up-to-date versions of the maps** included here or of any invasive species map in NYS along with more detailed maps showing the impacted water bodies, you can visit NY *i*MapInvasives at www.nyimapinvasives.org/request-login to request an account.

For information and mapping on other AIS species, visit the New York Invasive Species Clearinghouse website at http://nyis.info and the US Geological Survey Non-Indigenous Aquatic Species website: http://nas.er.usgs.gov.

Appendix B: AIS Invasive Species Map: CURLY-LEAF PONDWEED

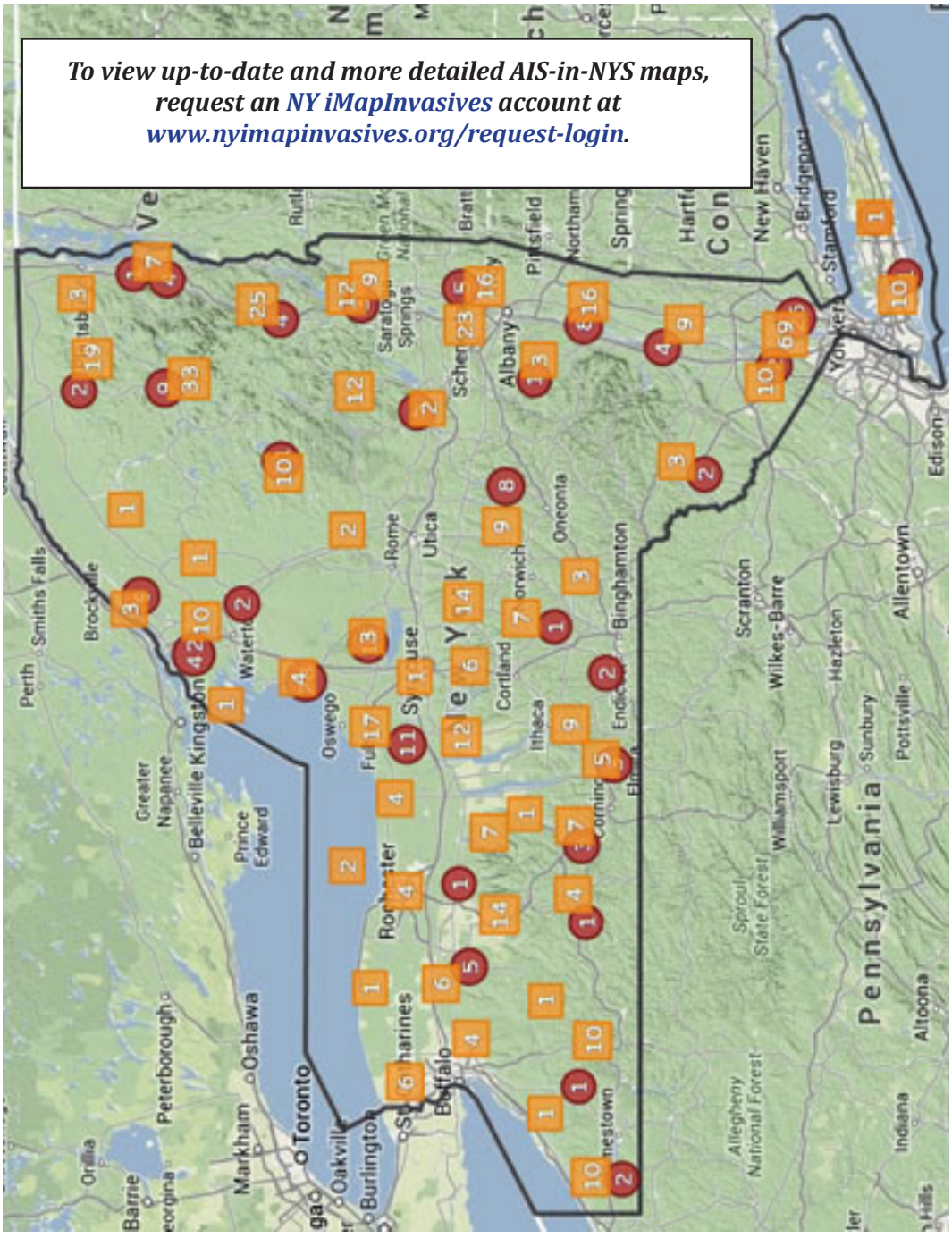
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/14/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: EURASIAN WATER-MILFOIL

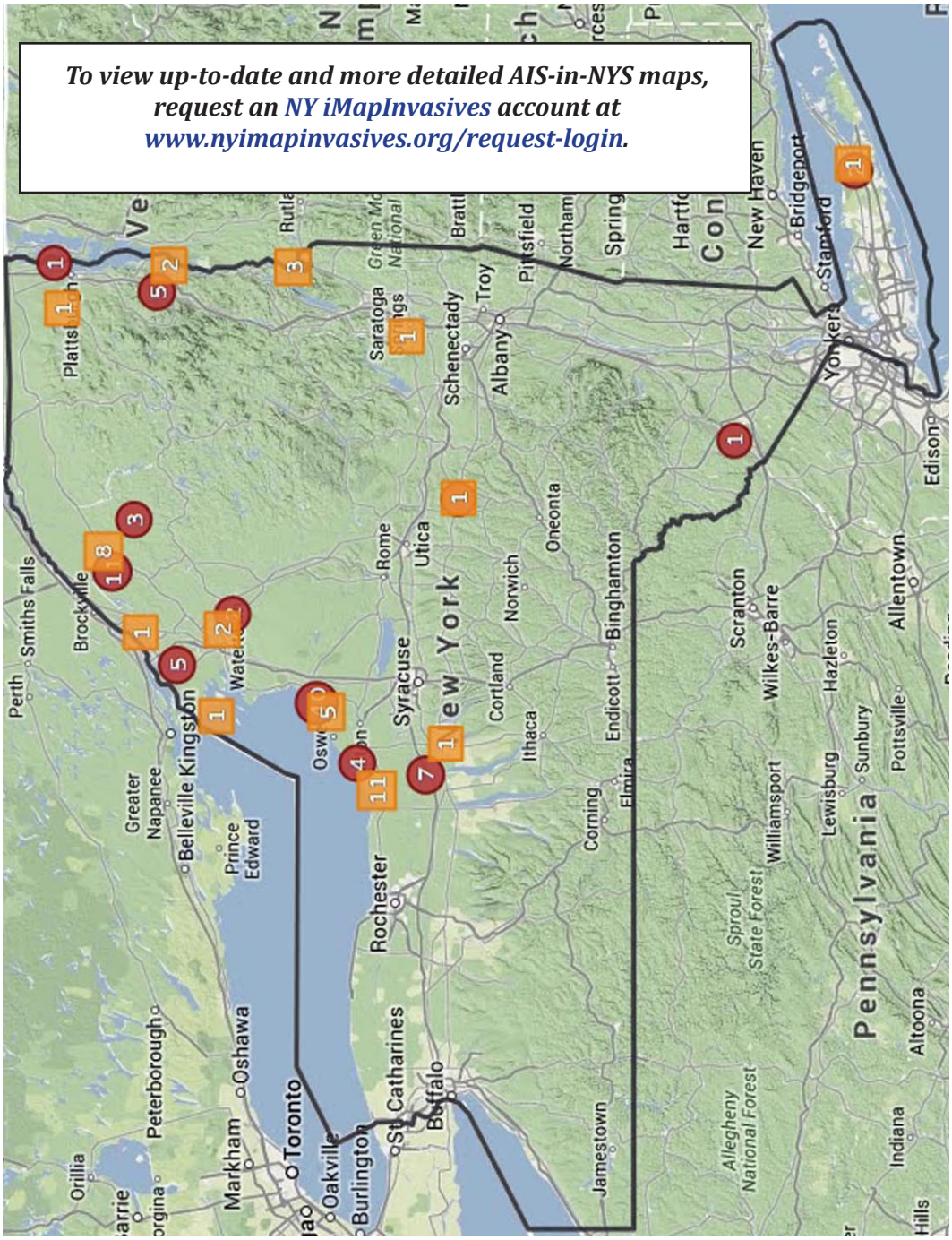
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/14/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: FROGBIT

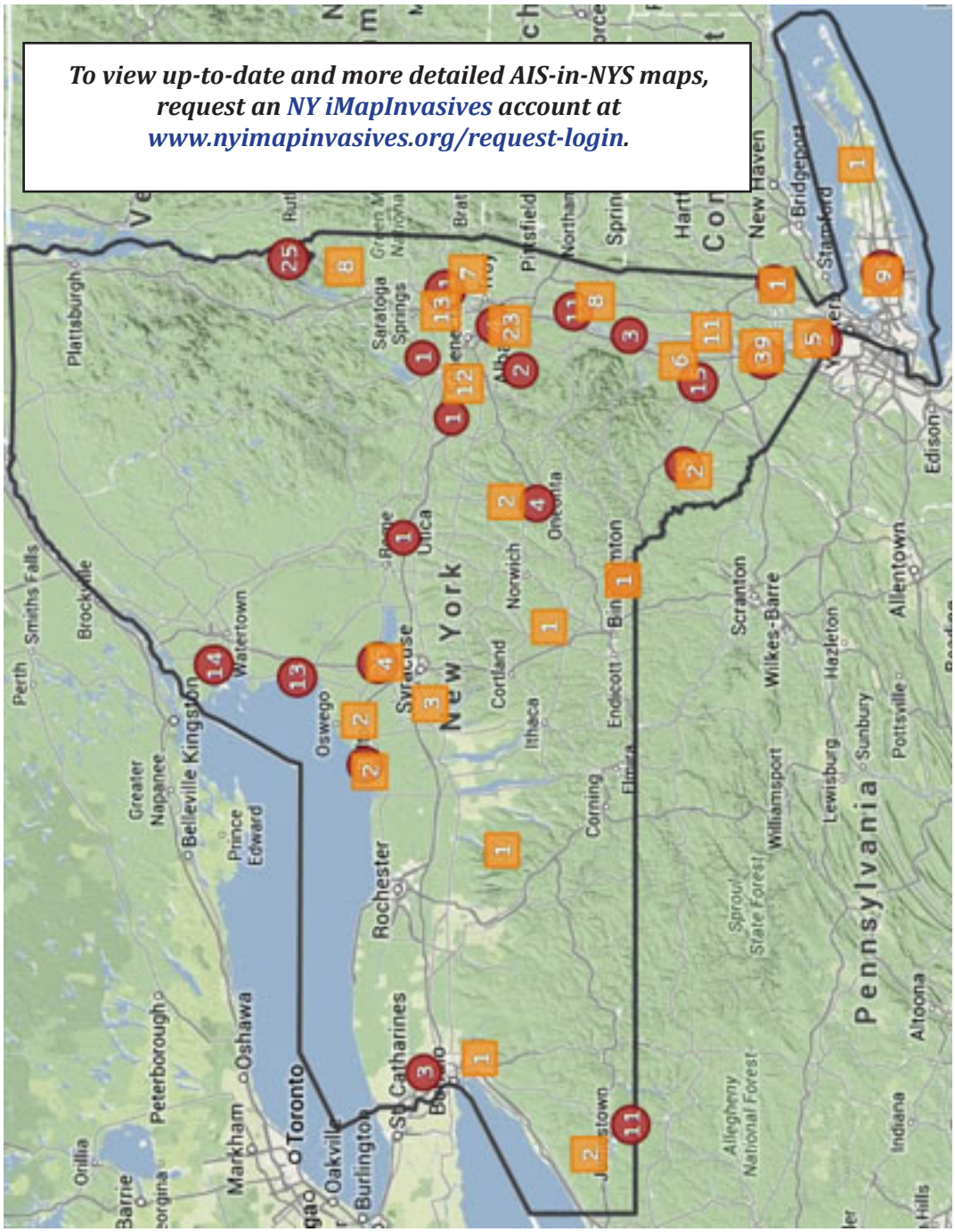
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/14/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: EUROPEAN WATER CHESTNUT

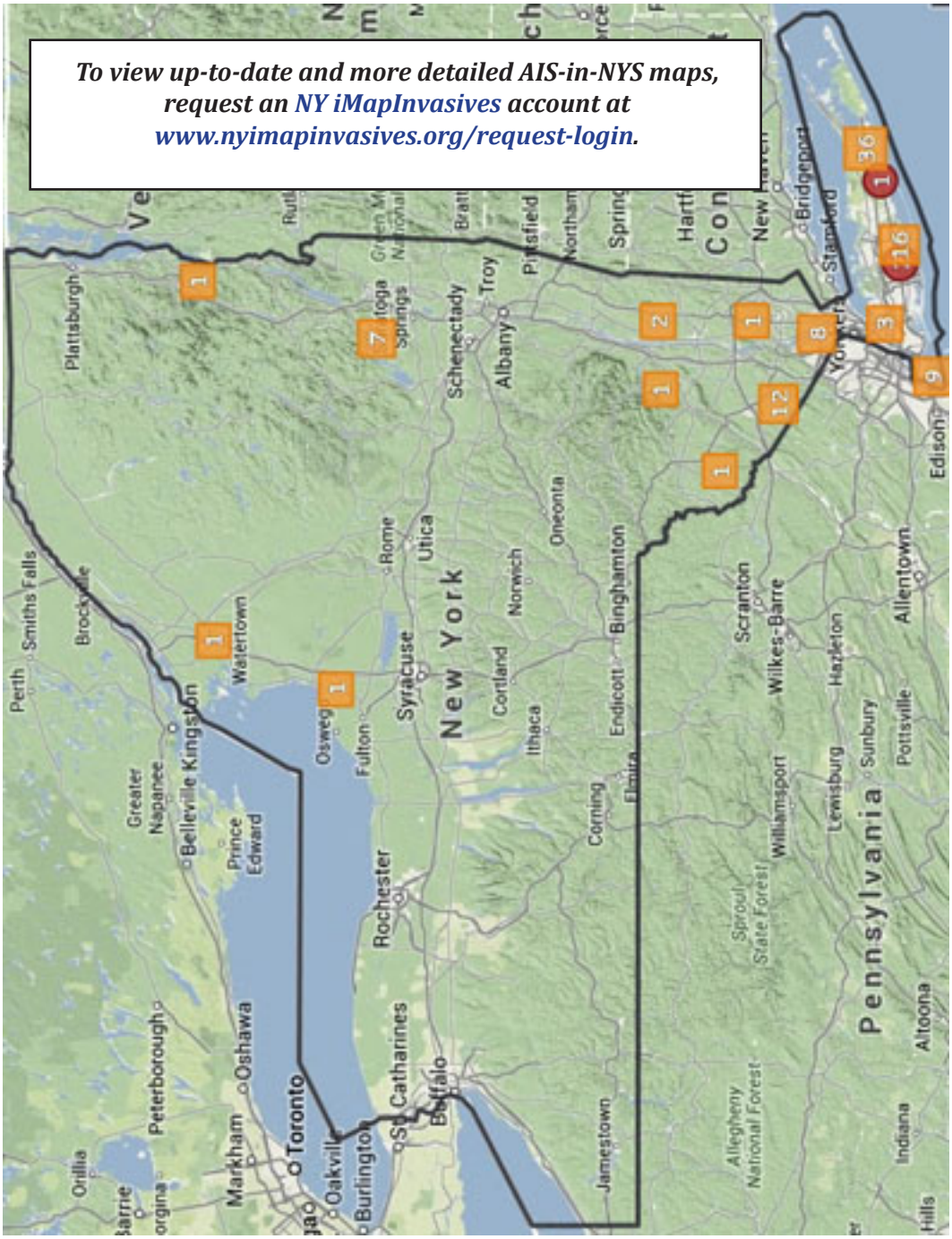
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/14/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: FANWORT

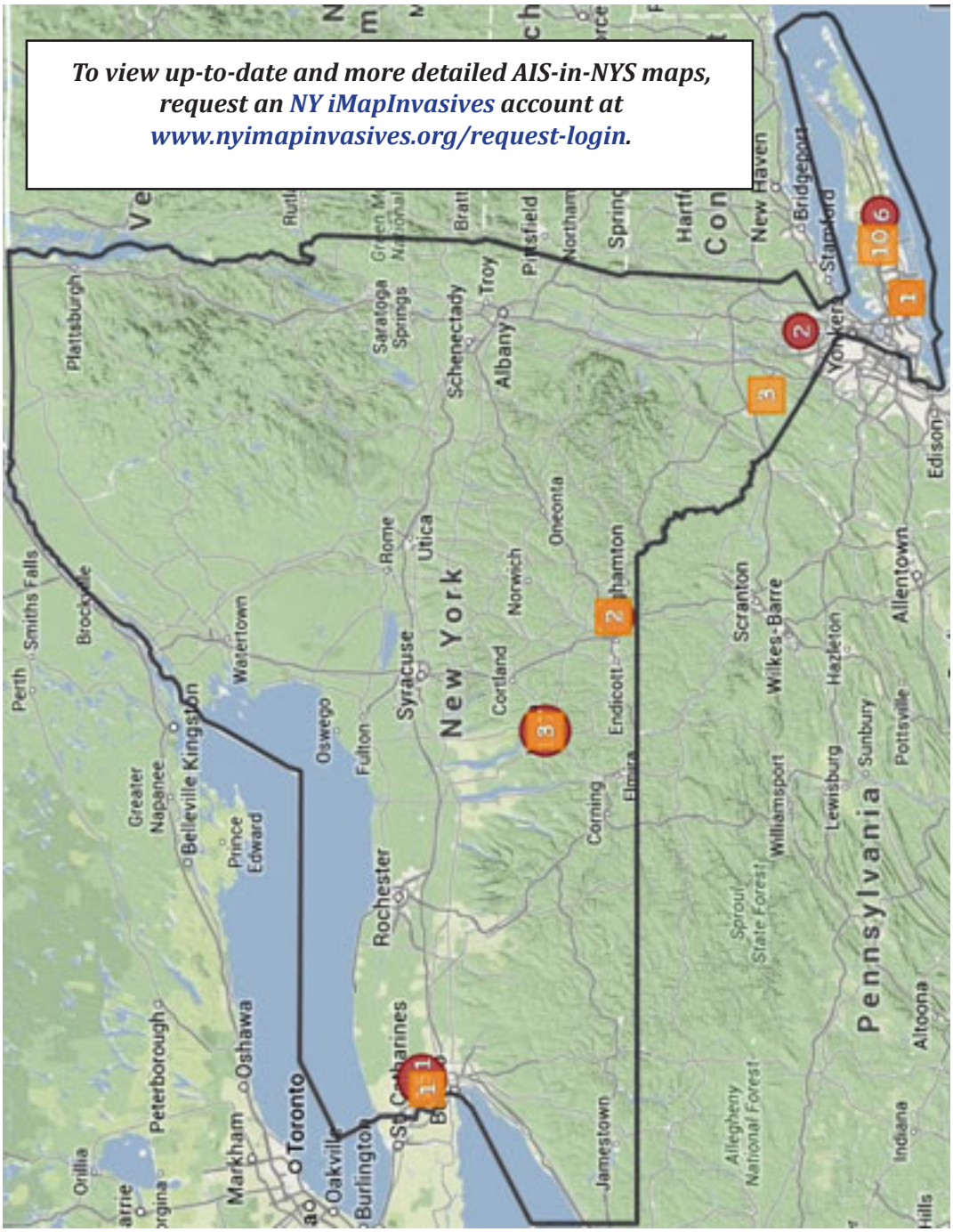
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: HYDRILLA/WATER THYME

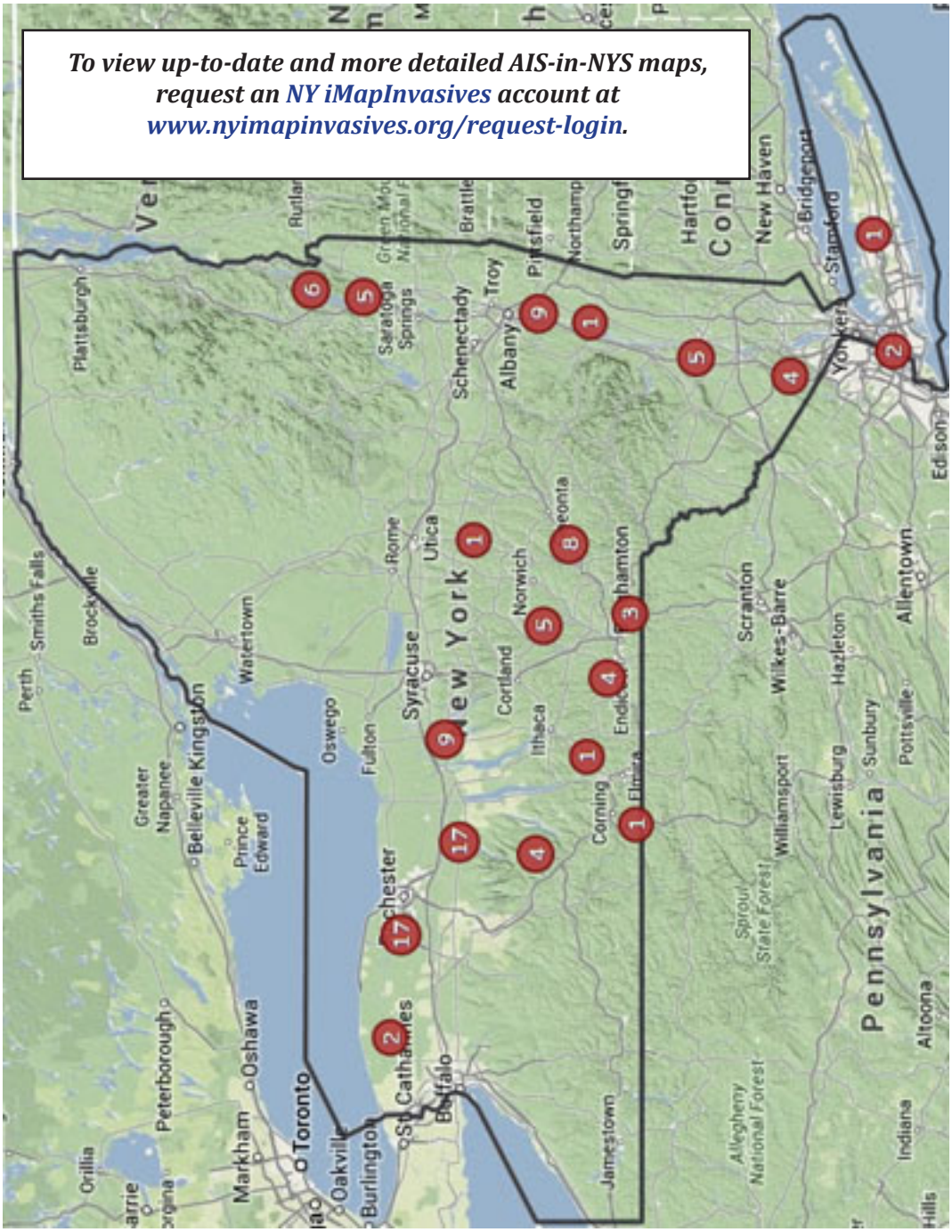
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/14/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: ASIAN CLAM

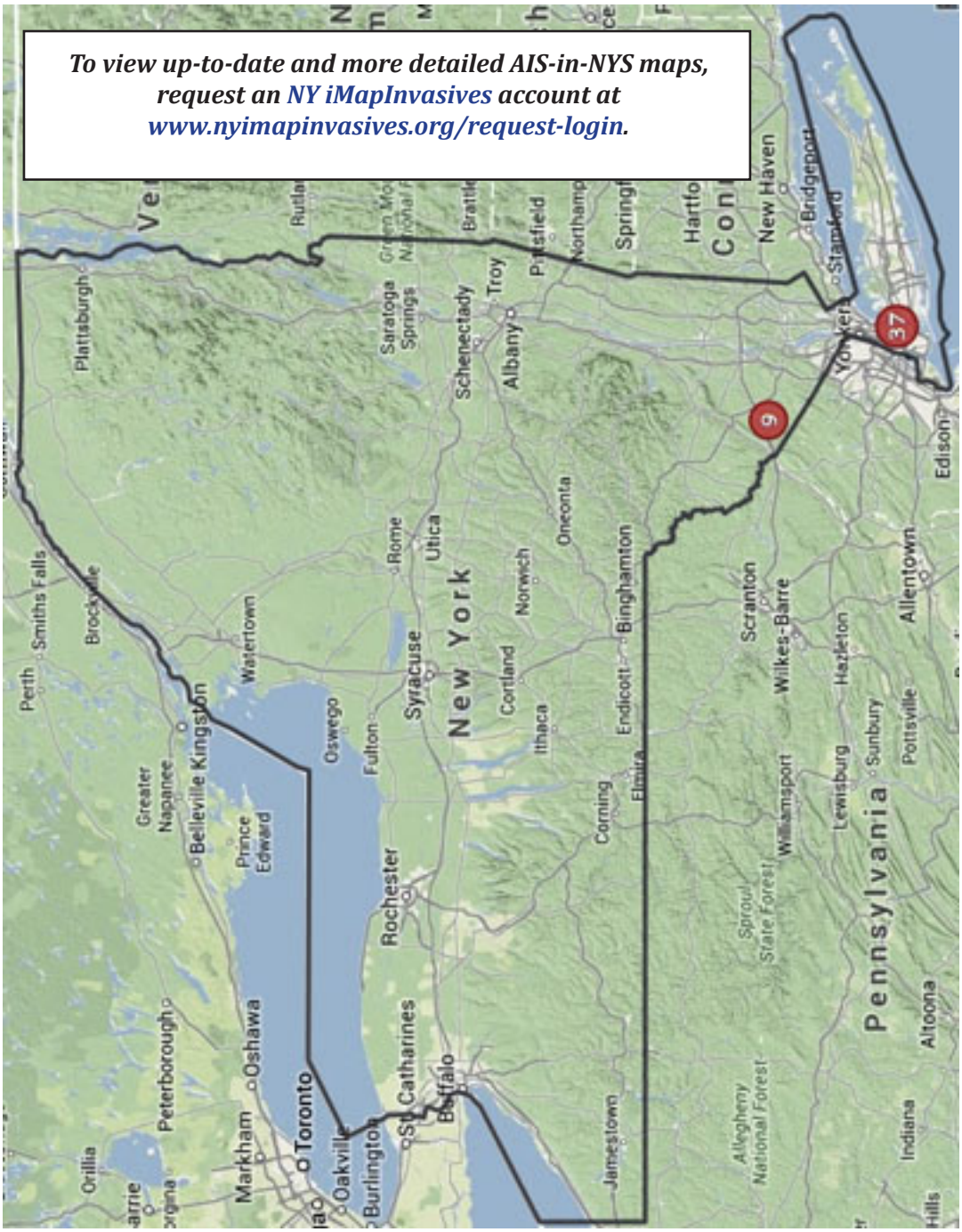
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: NORTHERN SNAKEHEAD

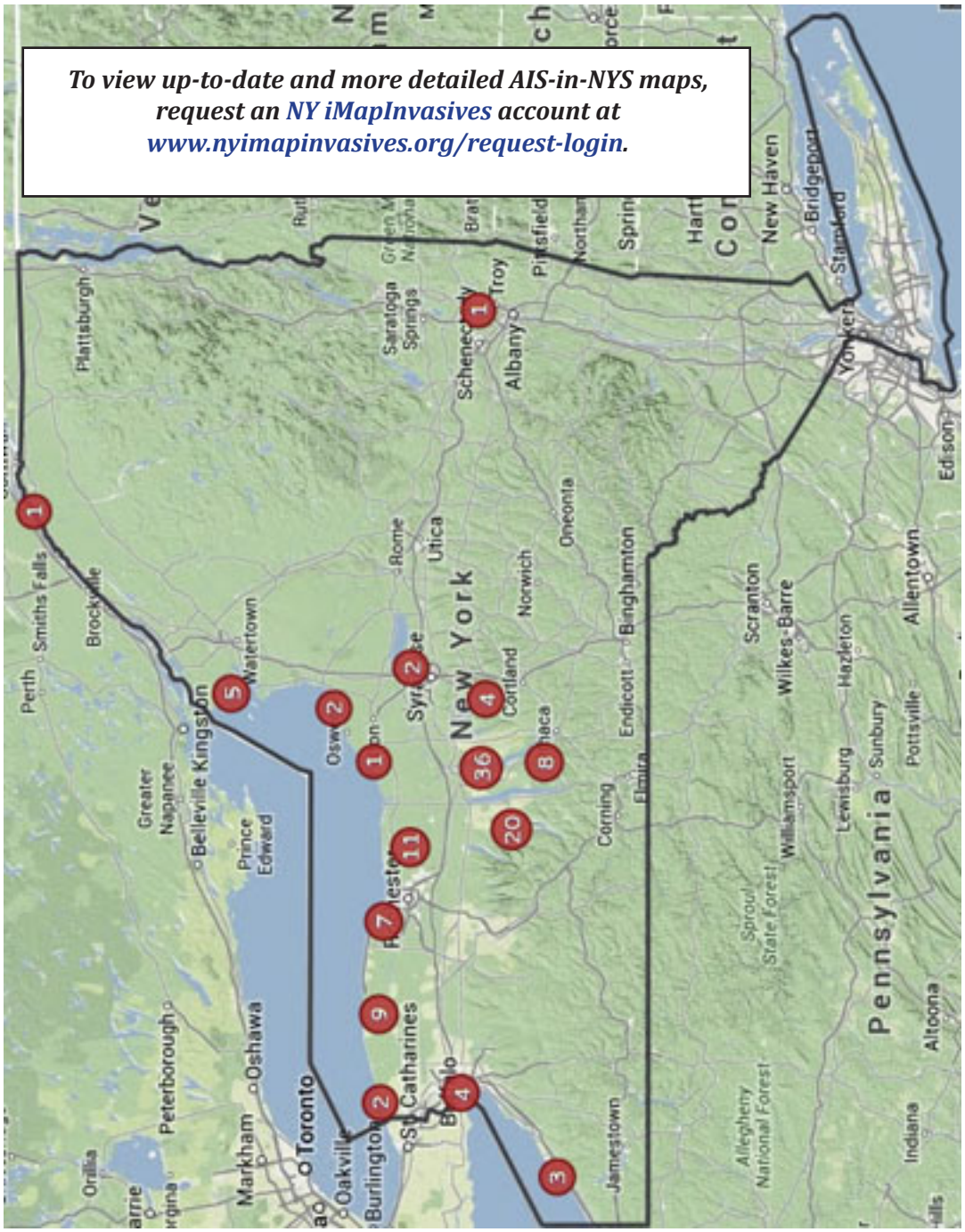
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: QUAGGA MUSSEL

Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14

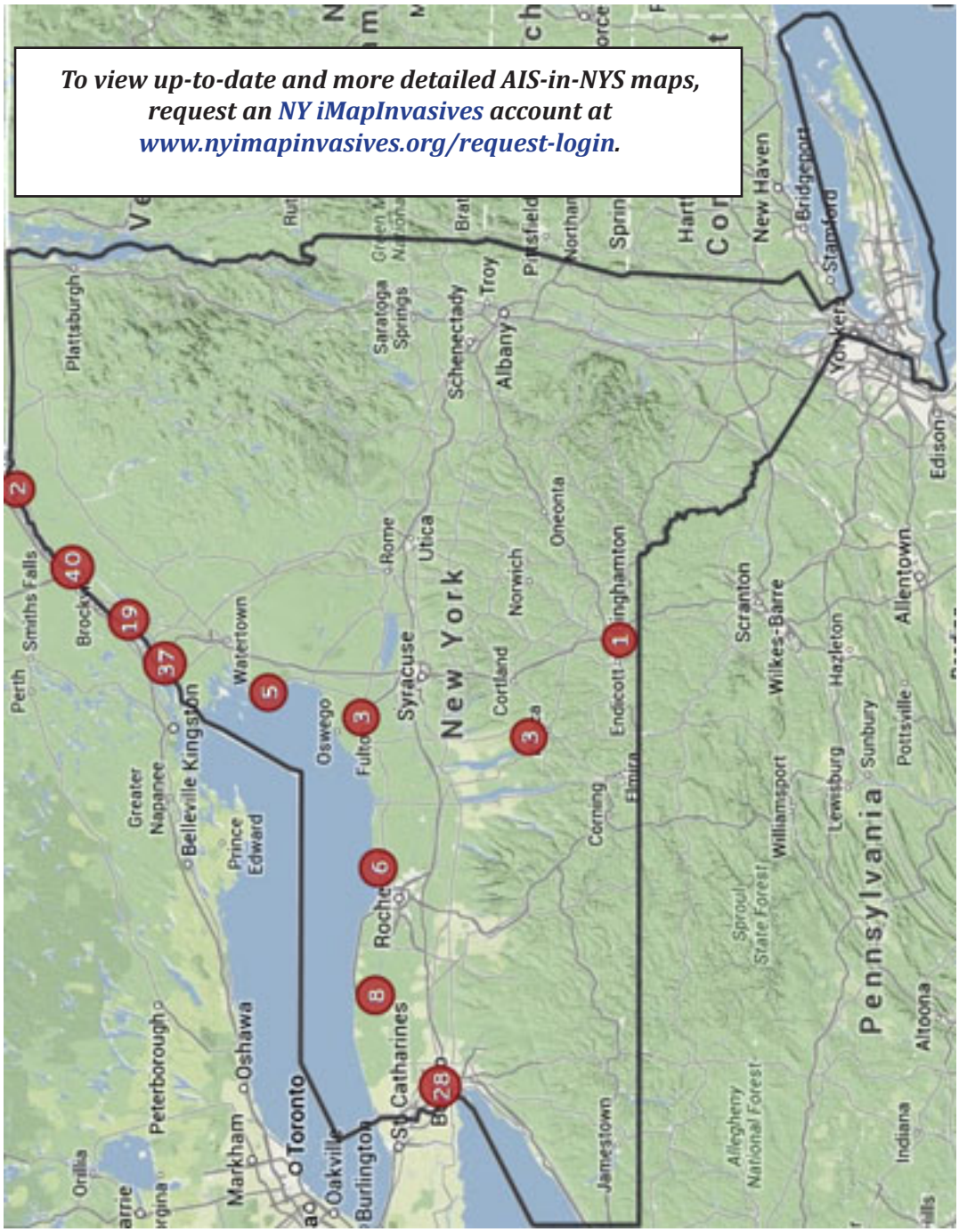


Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: QUAGGA MUSSEL
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14

Appendix B: AIS Invasive Species Map: ROUND GOBY

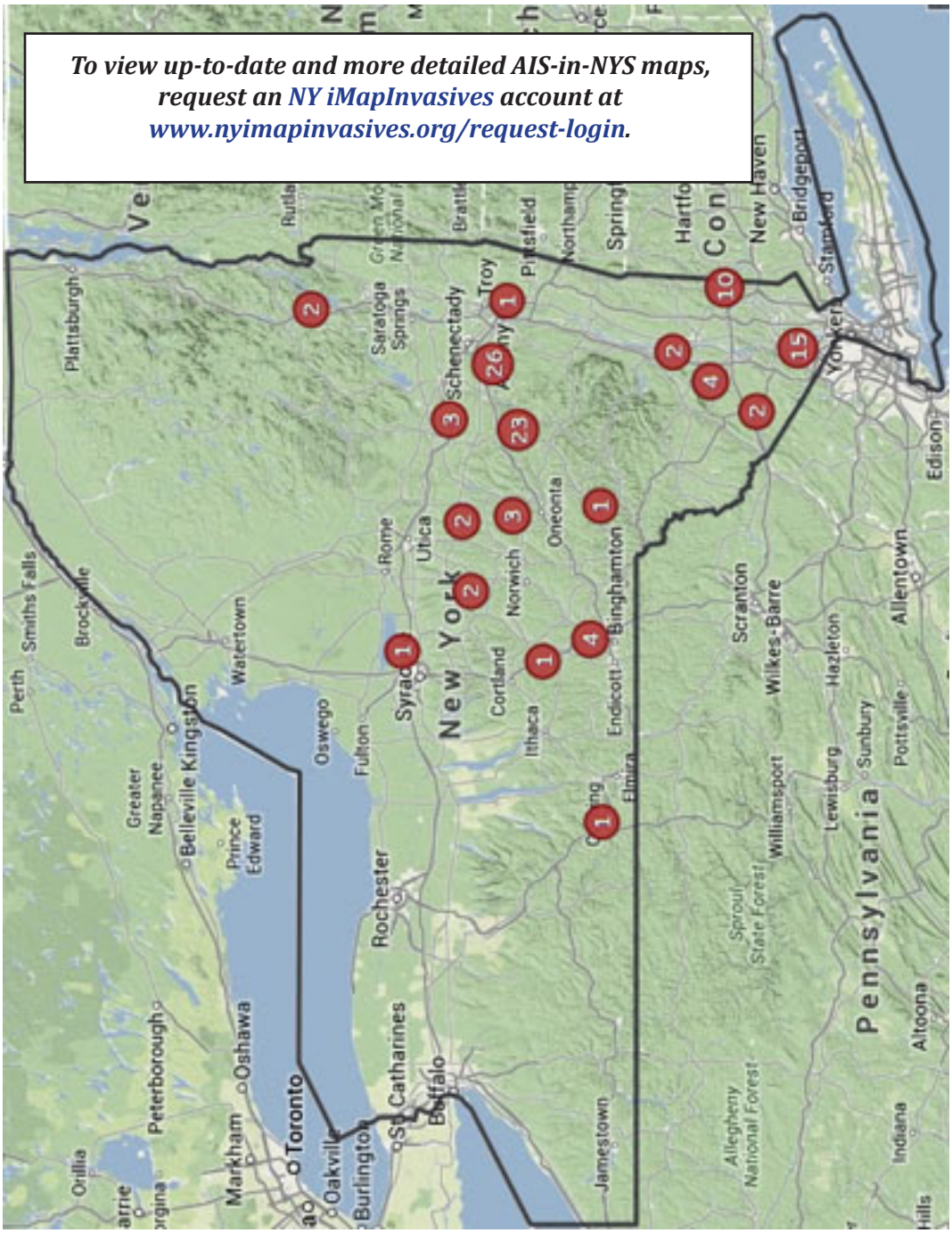
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: RUSTY CRAYFISH

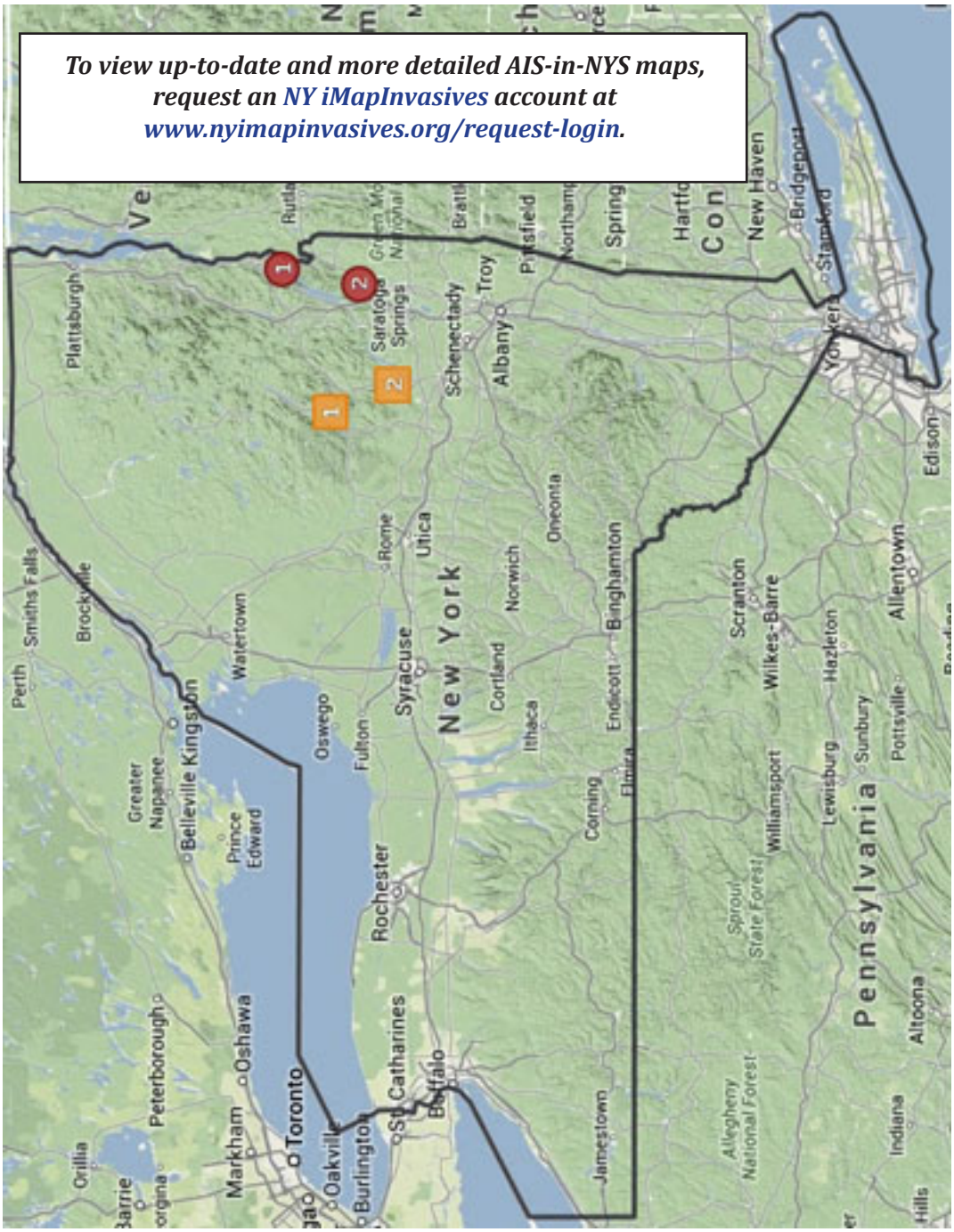
Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: SPINY WATERFLEA

Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14



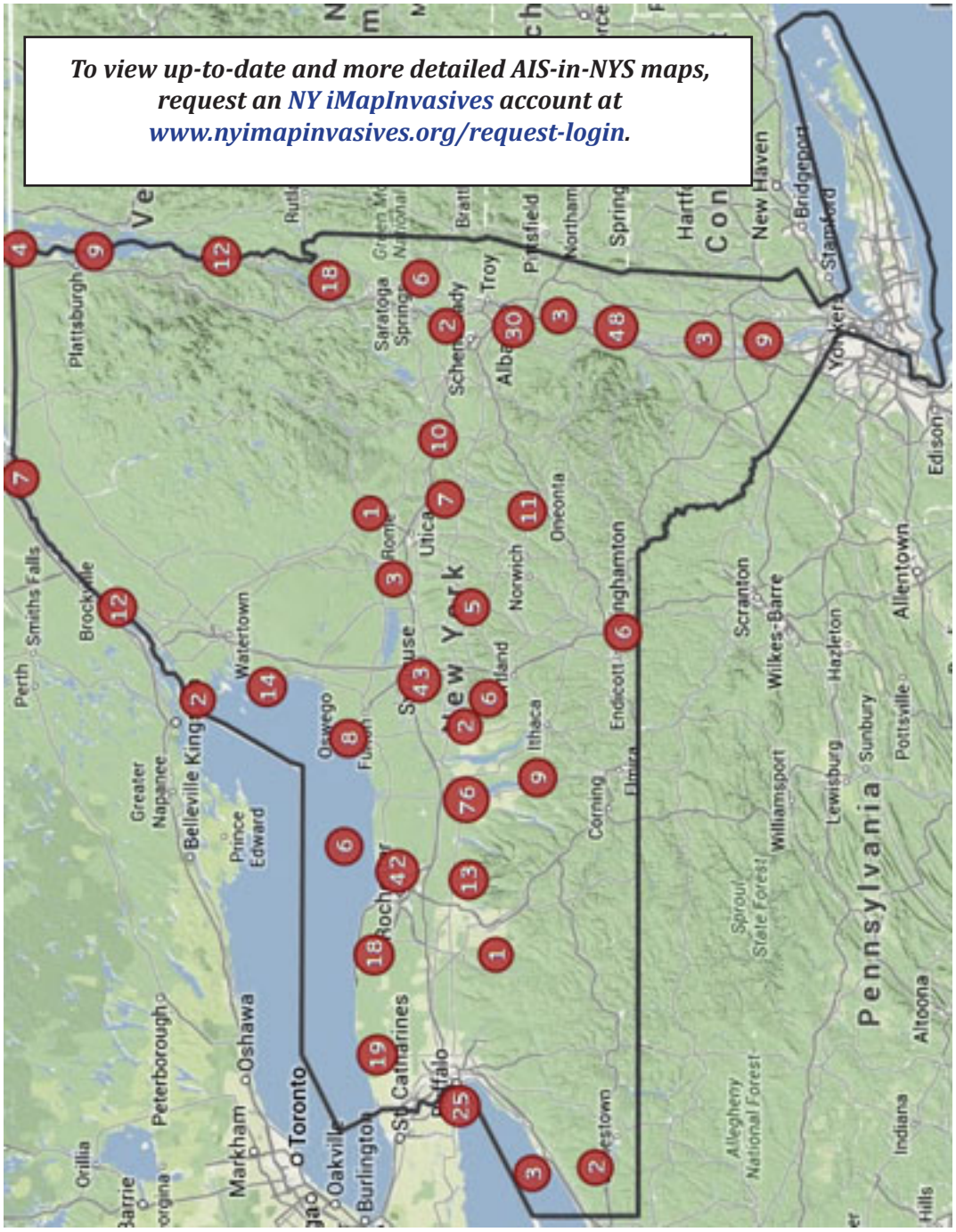
AppendixB: AIS Invasive Species Map: SPINY WATERFLEA

Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14

Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix B: AIS Invasive Species Map: ZEBRA MUSSEL

Source: New York iMapInvasives, www.nyimapinvasives.org, accessed 05/21/14



Key: *Numbers indicate number of sightings. Red circles indicate combined source vetted sighting. Orange squares indicate additional approximate locations of sightings yet to be precisely mapped as of the date of this map.*

Appendix C: New York State Partnerships for Regional Invasive Species Management (PRISM)

Among the 12 recommendations of the 2005 NYS Invasive Species Task Force report to the Governor and Legislature was the formation of eight Partnerships for Regional Invasive Species Management (PRISMs) to help prevent or minimize the harm caused by invasive species on New York's environment, economy and the health and well-being of the State's citizens.

PRISMs are intended to coordinate invasive species management functions including coordinating partner efforts, recruiting and training citizen volunteers, identifying and delivering education and outreach, establishing early detection monitoring networks and implementing direct eradication and control effort.

For a list of the current PRISMs in New York State, visit www.nyis.info/?action=prism_main. As of June 2014, those programs are:

Adirondack Park Invasive Plant Program (APIPP)

Capital/Mohawk Region PRISM

Catskill Regional Invasive Species Partnership (CRISP)

Finger Lakes PRISM

Long Island Invasive Species Management Area (LIISMA)

Lower Hudson PRISM

St. Lawrence-Eastern Lake Ontario (SLELO) PRISM, and

Western New York PRISM.

Appendix D: Sample Launch Site Property Owner Permission Letter

DATE

Name of Property Owner
Address of Property Owner
Address of Property Owner

Dear **TITLE (Mayor/Supervisor) LAST NAME) of the City/Village/Town of _____**:

I am writing this letter to request permission to conduct educational activities, including voluntary watercraft inspections for boaters at the **_____ (Name) boat launch at _____(Location)** and to provide you with the details of the **(YOUR ORGANIZATION'S NAME)** watercraft inspection steward program.

In an effort to slow and/or prevent the spread of aquatic invasive species (AIS), boat launch stewards would work with you as site manager to select an inspection location for conducting educational and voluntary watercraft inspections from **_____ (PROGRAM ACTIVITY DATE) to _____ (DATE).** Days and times of duty at each site will change throughout the season but be limited to daylight hours. This effort is part of a statewide boat/launch steward program and one of the NYS Department of Environmental Conservation's Aquatic Nuisance Species priorities.

The inspection process would not impede launch access/exit. Boater participation in this initiative is 100% voluntary; these are not regulatory inspections. The goal of the program is for the stewards to teach boaters how to look for and remove aquatic invasive species from their boats and to empower boaters with information so they can inspect their watercraft in the absence of stewards. With boaters, the launch stewards will:

- walk through inspection checkpoints using a standardized protocol;
- engage boaters in dialogue about AIS, their impacts on the environment, and the importance of taking measures to prevent their spread;
- provide AIS educational materials; and
- collect boater usage and aquatic invasive species data.

Launch stewards will have field supplies with them at the launch. These supplies may include: sandwich board, folding table, chair, umbrella, preserved specimens for educational purposes, and distribution materials. Stewards will bring supplies to the launch each day and will remove them from the launch at the end of each shift.

Please contact me **by DATE** with your decision about allowing these inspections at your location, or if you would like additional information. I look forward to working with the **City/Village/Town of NAME** to minimize the spread of aquatic invasive species in New York's waters.

Respectfully Submitted,

Your Name and Title
Contact information: address, telephone, email

APPENDIX E: Dealing with Boater Questions and Myths
Boater Question Sample Scenarios

Boater Question #1: Is it reasonable to think that prevention and control efforts will eradicate well-established AIS, e.g., water chestnut in the Oswego River?

The honest answer is probably not. Once invasive species become established, they are difficult and often impossible to eradicate. While complete eradication is often not likely, there are other options such as suppression and containment. It is reasonable to suggest that controlling populations will reduce the risk that they will spread to new bodies of water.

Boater Question #2: Why are you out here wasting public resources when the unwanted species is going to come anyway?

Even the most educated individuals will ask this question. Suggested responses:

- Even if we cannot keep the unwanted species out completely, we can prevent widespread damage by them.
- Management efforts provide some level of control of the range of an AIS and time to adopt new control methods for that AIS as they are developed.
- Prevention efforts to protect currently pristine waters help keep those waters pristine longer and help delay the costs of management and property devaluation after an unwanted species arrives.

Boater Question #3: Aren't all plants a problem anyway?

It is important to clear up this misconception! This is what you can say: Native plants are essential lifelines for an aquatic ecosystem, providing the basis for all life within. The problem lies with invasive (non-native) plants that have no natural inhibitors and therefore outcompete native plants, lowering the water body's aquatic diversity.

Boater Question #4: I don't have time for this... I know all about it already!

This remark is fairly common. If the boaters do not wish to help you with the survey, you must respect their rights and let them be. In such a situation, the suggested action would be to offer them a rack card/brochure and thank them for protecting New York's waters.

Boater Question #5: Why has it taken so long to do something about aquatic invasive species?

Suggested response: Traditionally, environmental problems become established in an area before action responses are developed or implemented. New York is now taking action well before the plants spread into too many of our sensitive environments, and you can help.

Adapted from The Volunteer Monitoring Guidelines for Aquatic Invasive Species 2005 Edition, Wisconsin Department of Natural Resources Water Division, Madison Wisconsin PUB-WT-780 2

APPENDIX E: Dealing with Boater Questions and Myths
Dispelling Myths about Aquatic Invasive Species

Myth #1: Invasive species movement is natural.

Response: Plants and animals have moved around the globe for millennia, but that movement occurred over thousands of years, not overnight. And, historically, it largely occurred unassisted by any human intervention. Invasive species became an increasing problem in the mid 1900s. Why? Because the increased movement of people and goods accelerated the number and rate of accidental or intentional introductions of non-native species. Lands and waters can't keep up with the infusion of all of these new species, which tips the scale in favor of the invader. The resilience of forests, for example, often enabled them to weather past forest pests, but never before have the forests been bombarded by so many in so short a time: beech bark disease, sirex woodwasp, hemlock wooly adelgid, emerald ash borer, Asian longhorned beetle, and the list goes on.

Myth #2: Invasive species increase diversity.

Response: Next to outright habitat loss, invasive species are the second leading cause of the loss of diversity outranking impacts of pollution, overpopulation, and overharvesting. For instance, when loosestrife first arrives in a wetland, one species is added to the existing plant community. But, over time, that one species continues to spread and pushes out native plants by overcrowding and outcompeting them for space, nutrients, and light. Overtime, the introduction of invasive species can result in decreased species diversity. Similarly, invasive animals prey upon native organisms that can result in local species extinction.

Myth #3: The cost of prevention and management of AIS isn't worth it.

Response: Prevention and management of AIS does require funding, but the cost of doing nothing far exceeds an investment in action. Once invasive species are left to spread, their impacts are often irreversible. It is not just natural areas that are at risk. Invaders attacking fruit and vegetables can inflict losses on the billion dollar economy of New York agriculture by reducing crop production, increasing food prices faced by consumers, and undermining export potential. Need to relate this to aquatic environment

Myth #4: There is nothing we can do about invasive species.

Response: Certain invasive species are well established in some areas, but that doesn't mean that we should leave the door wide open for others to freely enter. Opportunities exist every day to reduce the spread of AIS. Simple steps include regularly practicing **Clean~Drain~Dry** with all vessels, water containers, and recreational gear and equipment after every use; using firewood local to the area you are visiting; landscaping with non-invasive plants in the garden, and alerting nurseries to invasives they are selling. Education is a major part of the solution.

Adapted from Smith, H. (2010) Dispelling myths about invasives. Adirondack Daily Enterprise, June 1, 2010.

ART and PHOTO CREDITS

Cover	Illustration: University of Wisconsin Extension—Lakes
1:1, 6:15	Watercraft inspection, photo: Lake George Association
1:2	Top: Boats on Lake George, photo: Lake George Association
1:2	Lower two: Watercraft inspection, photo: New York Sea Grant Launch Steward Program
1:4	Left two: Scuba gear, photo: Lake George Association
1:4	Right: Drying canoe, photo: New York Sea Grant Launch Steward Program
1:5	Clockwise from top: Sodus Boat Launch, photo: Mary Penney/New York Sea Grant; kayakers at Sandy Pond, photo: Connie Ehindero; Million Dollar Beach, Lake George, photo: Lake George Association; charter boat on Lake Ontario, photo: Wayne County Tourism Office
2:1	Hydrilla, photo: Chris Evans/bugwood.org
2:2	Left: Mechanical harvester on Sodus Bay, photo: Mary Penney/New York Sea Grant
2:2	Right: Water chestnut pull, Oneida Lake, photo: Nick Spera/New York Sea Grant Launch Steward Program
2:4	Top: Draining boat, photo: Lake George Association
2:4	Lower: Water Chestnut Watch Card: Minnesota Sea Grant
3:1	Watercraft inspection, photo: Lake George Association
3:6	Decontamination unit at Lake George, photos: Lake George Association
3:8	Lake George, photo: Lake George Association
4:1	Clockwise from top left: Finger Lakes PRISM and New York Sea Grant Launch Steward program personnel with Discover Clean & Safe Boating and AIS information booths at Central New York Boat Show, photo: Brian P. Whattam; Zebra Mussel Watch Card: Wisconsin Sea Grant; 2013 Discover Clean & Safe Boating educational vessel with Asian Carp specimen at Empire Farm Days, photo: Brian P. Whattam; watercraft inspection, photo: New York Sea Grant Launch Steward Program; New York Sea Grant Launch Steward Megan Pistolese with AIS card at Dune Fest, photo: Brian P. Whattam
4:4	NY PRISMs map, source: nyis.info
4:4	Asian Carp Watch Card: Illinois-Indiana Sea Grant
5:1	Watercraft inspection; photo: Lake George Association
6:1	2013 New York Sea Grant Launch Steward and Program Manager Mary Penney (blue shirt), photo: Dave White/New York Sea Grant
6:2	Lake Ontario, Oswego, NY, photo: Ryan Thompson/New York Sea Grant Launch Steward Program
6:3	Steward along Lake Ontario, photo: New York Sea Grant Launch Steward Program
6:4	911 Call, photo: Ryan Thompson/New York Sea Grant Launch Steward Program
6:5	Watercraft inspection, photo: New York Sea Grant Launch Steward Program
6:6	Watercraft inspection, photo: Megan Pistolese/New York Sea Grant Launch Steward Program
6:7	Drying the boat, photo: Megan Pistolese/New York Sea Grant Launch Steward Program
6:8	All: Watercraft inspection location, photo: New York Sea Grant Launch Steward Program
6:9	Watercraft inspection, Nuisance Invasive Species Disposal Station at NYSDEC Boat Launch, draining bilge, photos: Brittney Rogers/New York Sea Grant Launch Steward Program
6:10	Steward station location, photo: New York Sea Grant Launch Steward Program
6:11	Curlyleaf Pondweed and Round Goby Watch Cards: Minnesota Sea Grant
6:12	Clean Boats Clean Waters rack card, New York Sea Grant
6:15	Illustration: University of Wisconsin Extension—Lakes
7:1	Round goby, photo: Megan Pistolese/New York Sea Grant Launch Steward Program
8:1	Boat propeller with debris: Lake George Association

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New York State Watercraft Inspection Steward Program Handbook

A Guide for Starting New Watercraft Inspection Programs

includes

Watercraft Inspection Steward Training & Field Guide

Developed by Mary Penney, New York Sea Grant,
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