

Aquatic Invasive Species Prevention, Identification, and Reporting

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Finger Lakes Institute

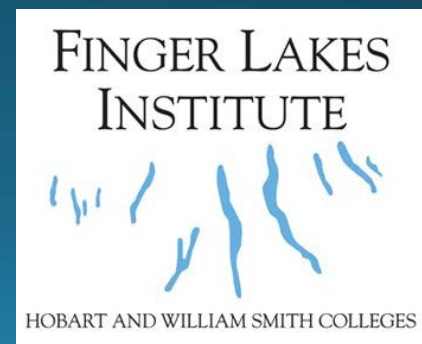
Hobart and William Smith Colleges

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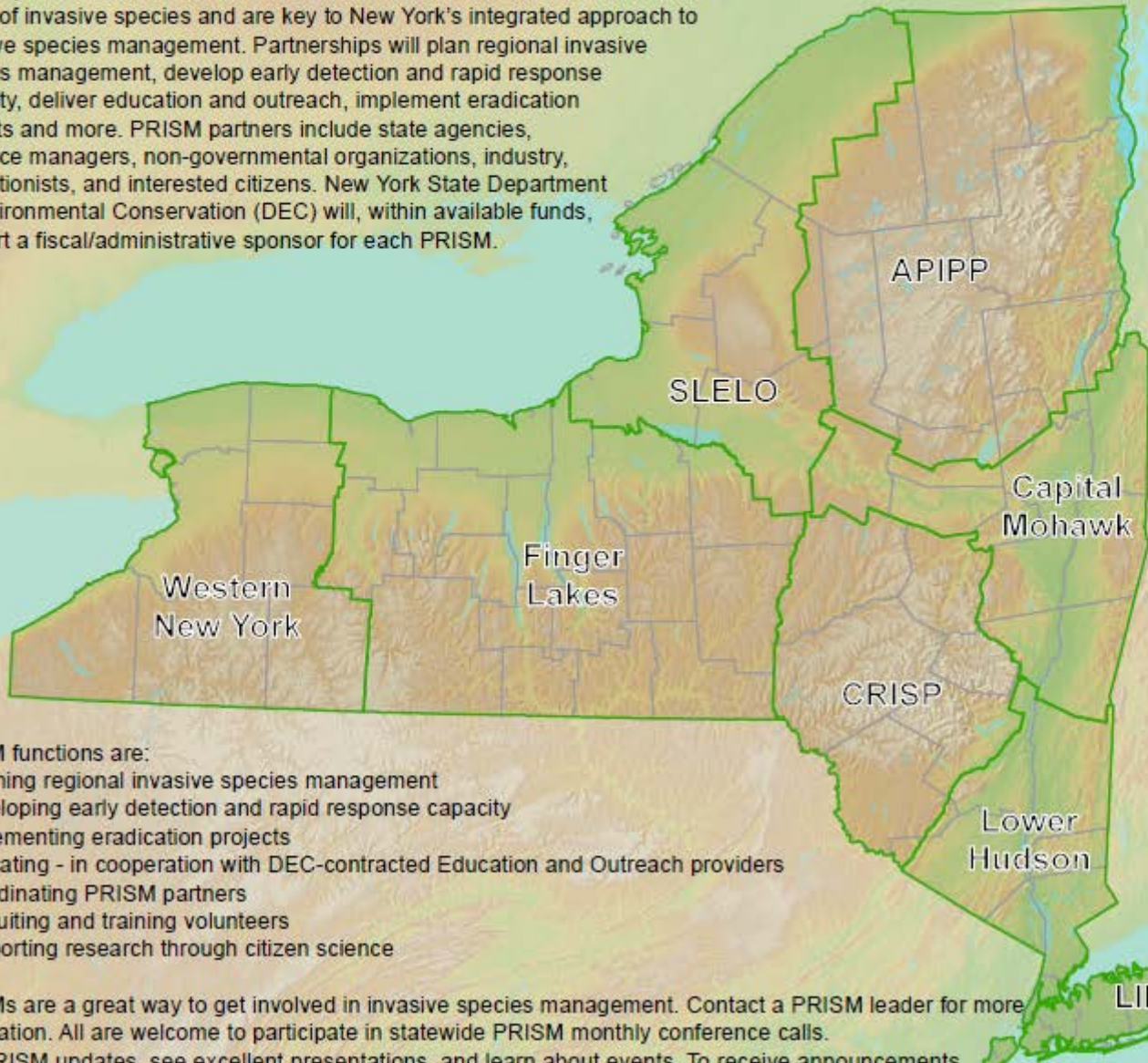
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315.7814385



New York State's Partnerships for Regional Invasive Species Management (PRISMs)

What's a PRISM? They are Partnerships for Regional Invasive Species Management (PRISM) that stakeholders have formed across New York State to address the threat of invasive species and are key to New York's integrated approach to invasive species management. Partnerships will plan regional invasive species management, develop early detection and rapid response capacity, deliver education and outreach, implement eradication projects and more. PRISM partners include state agencies, resource managers, non-governmental organizations, industry, recreationists, and interested citizens. New York State Department of Environmental Conservation (DEC) will, within available funds, support a fiscal/administrative sponsor for each PRISM.



PRISM Contacts and Listserves

APIPP (Adirondack Park Invasive Plant Program)
Brendan Quirion: (518)576-2082
bquirion@tnc.org

Capital Mohawk PRISM
Laurel Gailor: (518)885-8995
lrg8@cornell.edu

CRISP (Catskill Regional Invasive Species Partnership)
Molly Marquand: (845)588-2611
mmarquand@catskillcenter.org

Finger Lakes PRISM
Hilary Mosher: (315)781-4385
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LIISMA (Long Island Invasive Species Management Area)
Steve Young: (518) 402-8951
steve_young@dec.ny.gov

Lower Hudson PRISM
Linda Rohleder: (201)512-9348
lrohleder@nynjtc.org

SLELO (St. Lawrence & Eastern Lake Ontario)
Robert Williams: (315)387-3600
rwilliams@tnc.org

Western New York PRISM
Andrea Locke: (716)878-4708
lockeas@buffalostate.edu

For more information on PRISMs and to subscribe to a PRISM listserv visit:

WWW.NYIS.INFO

- PRISM functions are:
- Planning regional invasive species management
 - Developing early detection and rapid response capacity
 - Implementing eradication projects
 - Educating - in cooperation with DEC-contracted Education and Outreach providers
 - Coordinating PRISM partners
 - Recruiting and training volunteers
 - Supporting research through citizen science

PRISMs are a great way to get involved in invasive species management. Contact a PRISM leader for more information. All are welcome to participate in statewide PRISM monthly conference calls.

Get PRISM updates, see excellent presentations, and learn about events. To receive announcements,

Invasive Species

An invasive species is one that is **non-native** to the ecosystem under consideration and whose introduction causes, or is likely to cause, **economic** or **environmental** harm or harm to **human health**.

Economic:

Impacts on agriculture, recreation, wood/forest products, trade/shipping, tourism, utilities (power plants) and management costs.

Environmental:

Impacts on biodiversity, structural diversity, natural processes, aesthetics, ecosystem function and services.

Human Health:

Impacts on soil, water and air quality, flooding, injury, and disease/illness.

Invasive Species Characteristics

- High fecundity
- Aggressively outcompetes more valuable native species
- Free from natural predators
- Often provides little to no nutritional value

<http://stateofthecoast.noaa.gov/references.html#k>

Types of Aquatic-Invasive-Species Impacts

Environmental Effects	Economic Impacts	Wildlife and Public Health
Predation	Industrial Water Users	Disease Epidemics
Parasitism	Municipal Water Supplies	West Nile Virus
Competition	Nuclear Power Plants	Cholera Risk
Introduced Pathogens	Commercial Fisheries	Parasites
Hybridization	Recreational Activities	
Habitat Alterations	Shipping	

THE INVASION CURVE

Asset Based Protection
& Long-term Management

Ideal Time
for
Intervention

Containment

Eradication

Prevention

Look at control costs over time!

CONTROL COSTS →

TIME →

Species
absent

Small number of localized
populations; eradication
possible

Rapid increase in distribution
and abundance; eradication
unlikely

Invasive species widespread and abundant; Long-term
management aimed at population suppression and
asset protection

Introduction

AREA INFESTED →

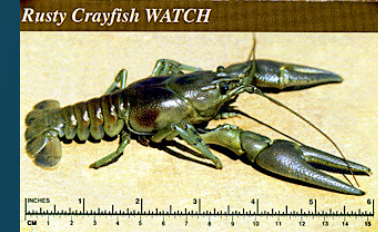




Rusty crayfish Watch Card. Rusty crayfish are thought to be in NYS via bait bucket introduction

Pathway of Introduction: Recreation

- Finger Lakes is the largest tourism region in the state
- \$2.6 billion for tourism in FL in 2010
- Includes hiking, boating, swimming, fishing
- Seeds, plant parts or larvae can catch a ride on boots, waders, clothing, automobiles, boats, paddles, lifejackets, bilge water

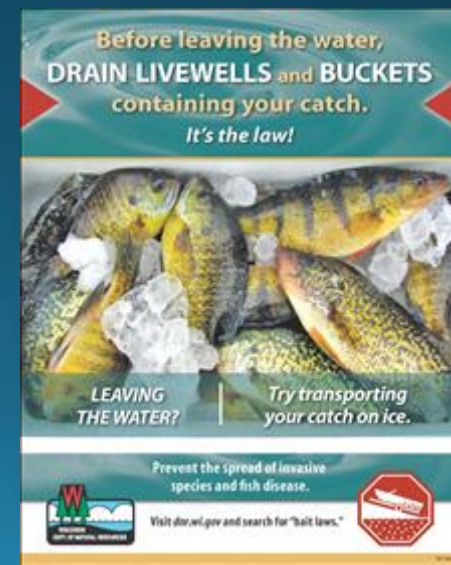


Sign educating public about proper disposal of bait

WI AIS Law prohibits the transport of water and live fish



Photo credit: Oregon.gov



Prevention

Invasive Plant Alert



Hydrilla (*Hydrilla verticillata*) is a highly invasive plant recently found in the Cayuga Inlet.

Hydrilla has small, pointed, often serrated leaves that are arranged around the stem in whorls of 4 to 8. The plant's aggressive growth (25-foot stems can add up to an inch per day) can spread into shallow waters forming thick mats that block sunlight to native plants below. Thick growth of hydrilla can obstruct boating, swimming and fishing and have negative impacts on drinking water and other water withdrawal uses.

Please help keep this harmful plant from spreading.

Clean all vegetation from your boat and recreational equipment (skis, tubes, fishing gear).

Dispose of the plant material on dry land.



STOP AQUATIC HITCHHIKERS!

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

When you leave a body of water:

- Remove any visible mud, plants, fish or animals before transporting equipment.
- Eliminate water from equipment before transporting.
- Clean and dry anything that comes into contact with water (boats, trailers, equipment, clothing, dogs, etc.).
- Never release plants, fish or animals into a body of water unless they came out of that body of water.

For more information contact:
Scott Kishbaugh

NYSDEC Division of Water, Albany, NY

Phone: 518-402-8286
E-mail: sakishba@gw.dec.state.ny.us

Wait! Don't Dump Your Bait!

Keep All Our Lakes Great.

Invading Species threaten Ontario's lakes and fishery.
Never release fish from one waterbody into another.



Round Goby

Rusty Crayfish



Rudd

Eurasian Ruffe



To report sightings call the

**Invading Species Hotline at 1-800-563-7711
or visit www.invadingspecies.com**

Photos: Round goby and rudd: Royal Ontario Museum; Rudd: Ontario Ministry of Natural Resources; Rusty Crayfish: Jeff Gundersen/Minnesota Sea Grant



**Don't Dump
That Bait!**



**Help Michigan's waters stay world class,
put unused bait in the trash!**

Viral Hemorrhagic Septicemia (VHS) can be transferred by fish from your bait bucket!



BE WORM WISE:

Throw unused worms in the trash.

Worms are invasive to Minnesota forests. Worms consume fallen leaves, which prevents the growth of native plants & animals.

✓ **TRASH**
~~GROUND~~
~~LAKE~~

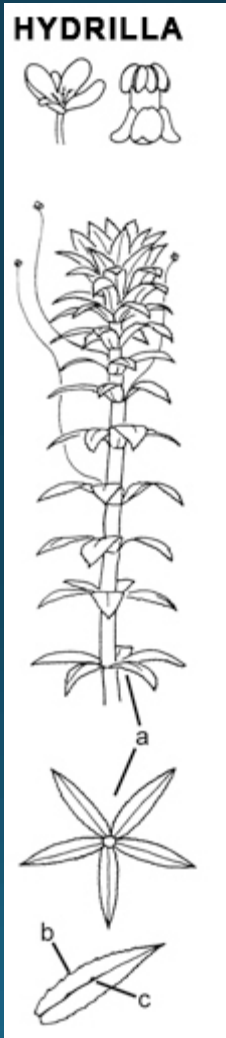
LEARN MORE:

Information provided by the University of Minnesota. www.rnri.umn.edu/worms

A

Case study: Hydrilla (*Hydrilla verticillata*) in NYS

- Ecological
 - Competes with native vegetation- can grow up to a foot/day
 - Reduces habitat for fish and wildlife- forms thick mats blocking sun
 - Acts as substrate for cyanobacteria
- Economical
 - Lowers value of waterfront property
 - Costly to control!!
 - Since 2002, MA spent \$40,000/yr to manage in a single pond in Barnstable Co.!
 - Over \$174M spent in FL to control Hydrilla over past 25yrs
 - ~\$2.5 M/yr to manage hydrilla in SC, \$5 M/yr in NC
 - Interferes with recreation- swimming, boating, and fishing
 - Reduces flow in drainage canals and can cause flooding
- Current eradication efforts (herbicide treatment) ongoing in the Cayuga inlet and Erie Canal, Tonawanda, NY
 - Identified the plant early and swiftly took action



Hydrilla



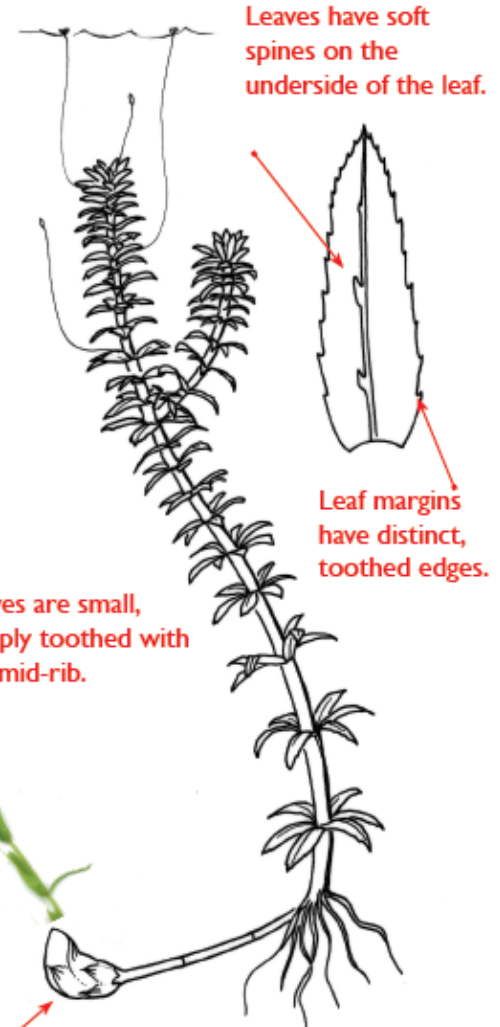
Photo: DEC



Hydrilla (*Hydrilla verticillata*)



Lance-shaped leaves
in whorls of 4-8.



Leaves have soft
spines on the
underside of the leaf.

Leaf margins
have distinct,
toothed edges.

Leaves are small,
sharply toothed with
red mid-rib.

Other Characteristics:

- When pulled from the sediment, tubers might be seen.
- Can grow in deep water up to 20 feet.
- Forms dense beds 2 inches to 20 feet tall.
- Inhabits springs, lakes, marshes, ditches and rivers.

Tuber

High priority species
of concern!

Water Chestnut

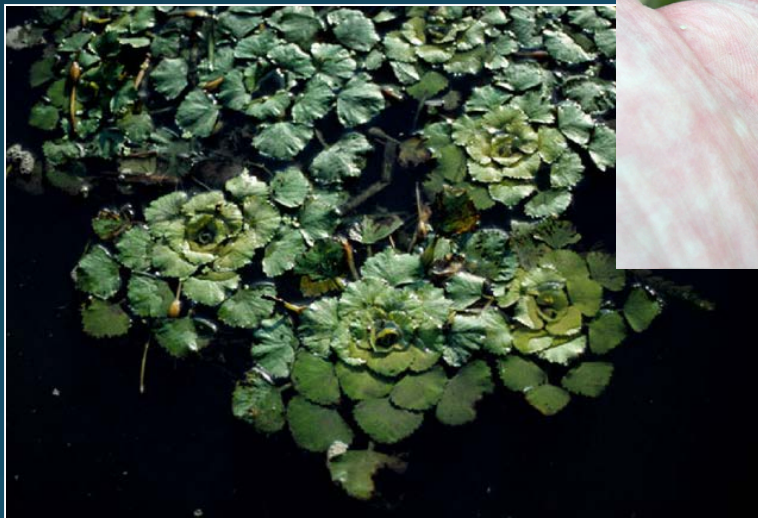
Trapa natans L.

Native To: Europe and Asia

First Observed in NY: 1884

Means of Introduction: Ornamental for garden ponds

Impact: Inhibit boat navigation and decrease habitat diversity





European Frog Bit

Hydrocharis morsus-ranae

Native To: Temperate regions of Eurasia

First Observed in NY: 1974

Means of Introduction: Escapee from ornamental cultivation

Impact: Impede recreational boaters



Curly-leaf Pondweed



UGA5269050

<http://mtweed.org/weeds/curly-leaf-pondweed/>



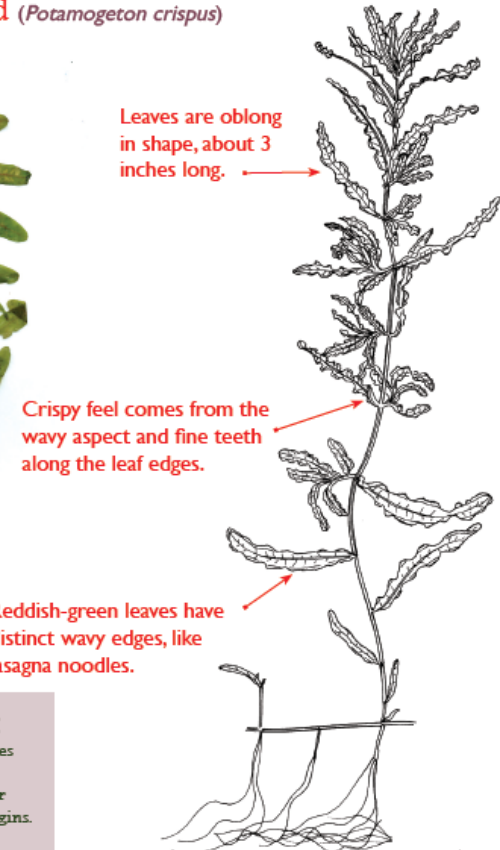
Chris Evans, River to River CWMA

Grows up to 15 feet
Leaves are crinkled and alternate around the stem.
Has small teeth visible along the edge of the leaf
Grows in early spring and is gone by midsummer

Curly-leaved pondweed (*Potamogeton crispus*)



Flat, reddish-brown stems grow 1-3 feet long.



Leaves are oblong in shape, about 3 inches long.

Crispy feel comes from the wavy aspect and fine teeth along the leaf edges.

Reddish-green leaves have distinct wavy edges, like lasagna noodles.

Other Characteristics:

- Grows under ice in early spring, dies back in mid-summer.
- Spring leaves are wider than winter leaves and have less wavy leaf margins.
- Inhabits lakes, ponds, and streams.

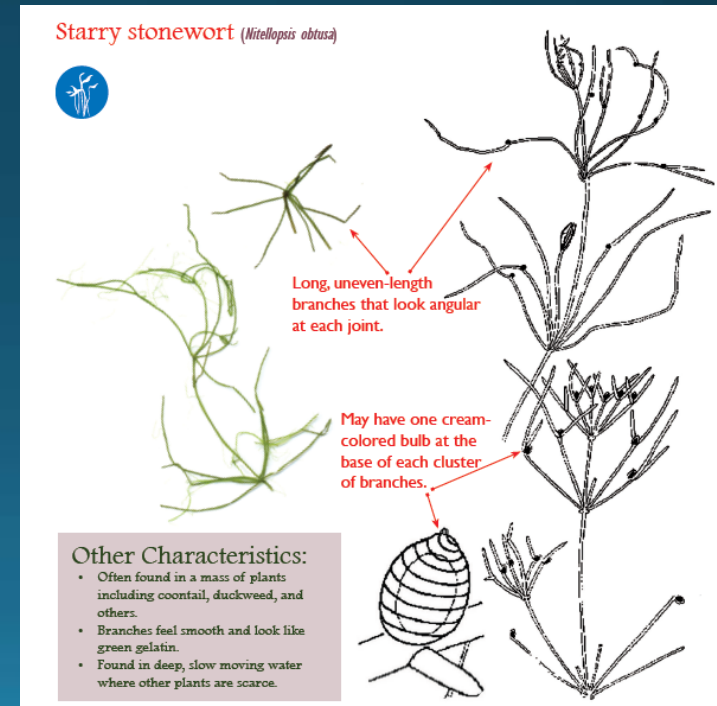
Starry Stonewort



<http://sand-lake.org/invasives/starry-stonewort/>



An algae that forms thick, dense mats on lake bottoms



Online Field Guides

- Northeast Aquatic Nuisance Species Panel Online Guide
<http://www.northeastans.org/online-guide/>
- PA Sea Grant Field Guide to Aquatic Invasives Species
http://www.anstaskforce.gov/Documents/AIS_Field_Guide_Finalweb.pdf
- Invasive Plants of Michigan <http://mnfi.anr.msu.edu/invasive-species/aquaticsfieldguide.pdf>
- iMap Invasives- [Imapinvasives.org](http://imapinvasives.org)
- Weeds Watch Out- Cayuga County
<http://www.cayugacounty.us/Departments/Water-Quality-Management-Agency/Weeds-Watch-Out/Invasive-Aquatic-Plants>

Reporting

- If you suspect a new invader to your lake or see a suspicious organism:
- Obtain Positive ID of Organisms
 - document the organism- photograph or draw, where it was found and size
- Bag It and Tag It–
 - WCS toolkit should include plastic Ziploc bags and a sharpie
 - mark the date, time, location of organisms found
- Send It–
 - Send photo to contact (lake association president, PRISM coordinator, etc.) and send sample if requested
- Mark It
 - use imapinvasives.org to map the invasive after you get a positive ID



Resources

- Finger Lakes Institute
 - Toolkit, datasheets, and education & outreach materials available for your regional efforts
- NYS DEC website
 - Information about launch signs and AIS
- Stop Aquatic Hitchhikers website
 - Logos and outreach materials for your lake
- PRISM Coordinator in your region
 - Information, education & outreach materials and more
- NYIS.info
 - Information about individual species
- Fingerlakesinvasives.org
 - Information about regional invasive species



Photo credit: Katie
Loving