

# Aquatic Invasive Species in Rhode Island: What can you do?



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# RIDEM Office of Water Resources

## Monitoring & Assessment of Water Quality

Survey Lakes/ponds and Outreach for AIS (Aquatic Invasive Species)

Stream Macroinvert Biomonitoring, Bioassessments and Biocriteria

Water Quality Monitoring in Rivers



# RICKA Talk March 16, 2021

1. The Problem with Invasives
2. 4 Fearsome Invasives in RI to look for (data & where to find more info)
3. How YOU can help:
  - Paddlers Preventing the Spread – Know before you go
  - Paddlers Preventing the Spread – Go with the Flow
  - Paddlers Preventing the Spread – Clean, Drain, Dry
  - Keep an Eye out for Water Chestnut (June – September)
  - Volunteer for Hand Harvesting Events

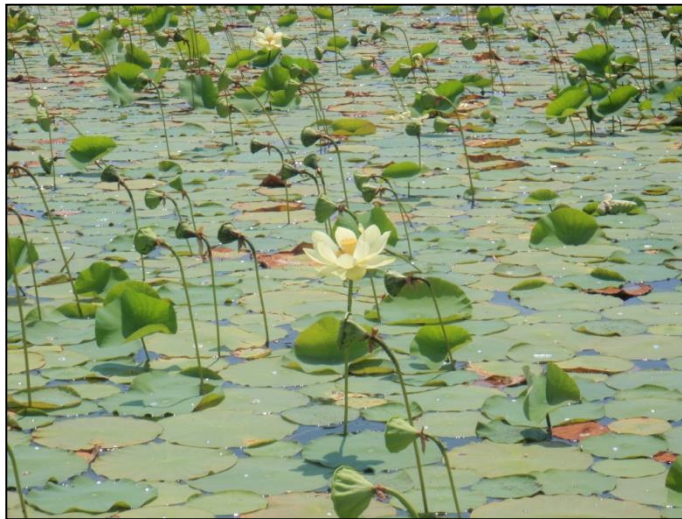




# The Problem with Aquatic Invasive Species (AIS):



Non-native plants/animals (no natural predators in Rhode Island)





# The Problem with Aquatic Invasive Species (AIS):



Non-native plants/animals (no natural predators in Rhode Island)



Introduced (accidentally or intentionally)



Grow quickly or have another competitive advantage over natives



Growth threatens the diversity/abundance of natives



Jeopardize stability of the ecosystem



Impedes uses (swim, fish, boat, habitat) of the infested water body



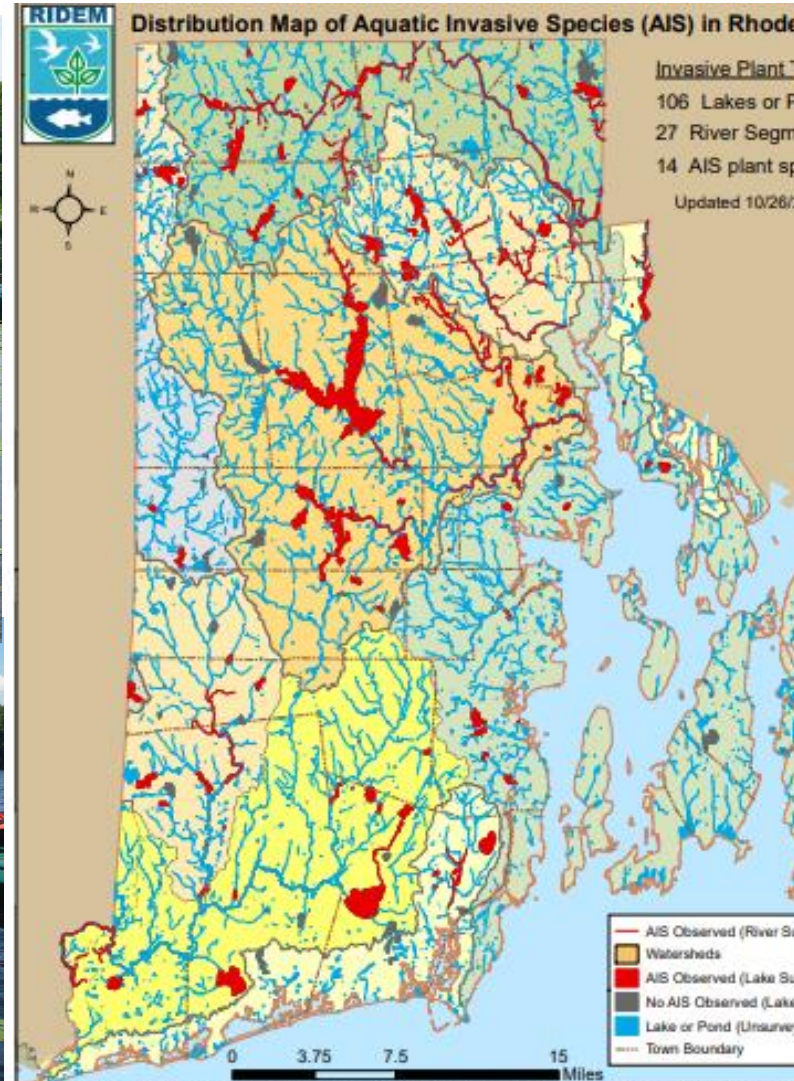
Can cause economic losses (recreation, property values & tax revenues, high cost to manage invasive plants annually and over the long term)





# RIDEM is documenting the problem via surveys

<http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/invasive.pdf>



## Rhode Island Freshwaters with Aquatic Invasive Plants

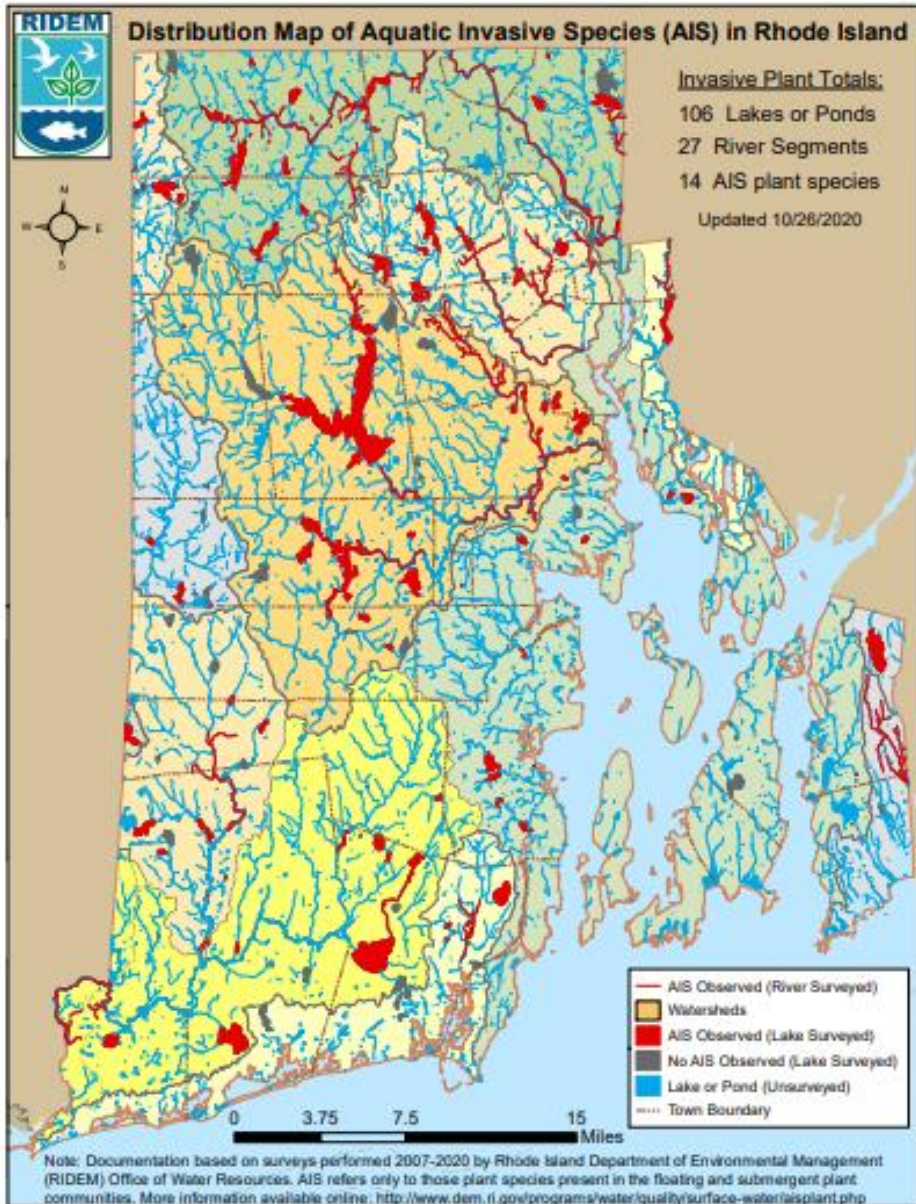
rivers listed first, then lakes listed by city or town, alphabetically

| Town                 | Waterbody                     | Common Name   |
|----------------------|-------------------------------|---|
| <b>RIVERS</b>        |                               |   |
|                      | 27                            |   |
|                      | Woonasquacket River (Seg D)   | variable milfoil  |
| <b>Barrington</b>    |                               |   |
|                      | 28                            |   |
|                      | Brickyard Pond                | curly-leaf pondweed   |
|                      | 29                            |   |
|                      | Echo Lake                     | fanwort   |
| <b>Burrillville</b>  |                               |   |
|                      | 30                            |   |
|                      | Echo Lake (Pascoag Reservoir) | fanwort<br>variable milfoil                                       |
|                      | 31                            |   |
|                      | Round Top State Pond          | variable milfoil  |
|                      | 32                            |   |
|                      | Spring Lake (Herring Pond)    | fanwort<br>inflated bladderwort<br>variable milfoil               |
|                      | 33                            |   |
|                      | Sucker Pond                   | fanwort<br>variable milfoil                                       |
|                      | 34                            |   |
|                      | Wakefield Pond                | fanwort   |
|                      | 35                            |   |
|                      | Wilson Reservoir              | inflated bladderwort  |
| <b>Central Falls</b> |                               |   |
|                      | 36                            |   |
|                      | Valley Falls Pond             | Eurasian milfoil<br>fanwort<br>variable milfoil<br>water chestnut |
| <b>Charlestown</b>   |                               |   |
|                      | 37                            |   |
|                      | Watchaug Pond                 | inflated bladderwort  |
| <b>Coventry</b>      |                               |   |
|                      | 38                            |   |
|                      | Arnold Pond                   | Brazilian elodea  |

RI Freshwaters with Aquatic Invasive Plants as of 10/26/2020



# The Invasive Problem in Rhode Island

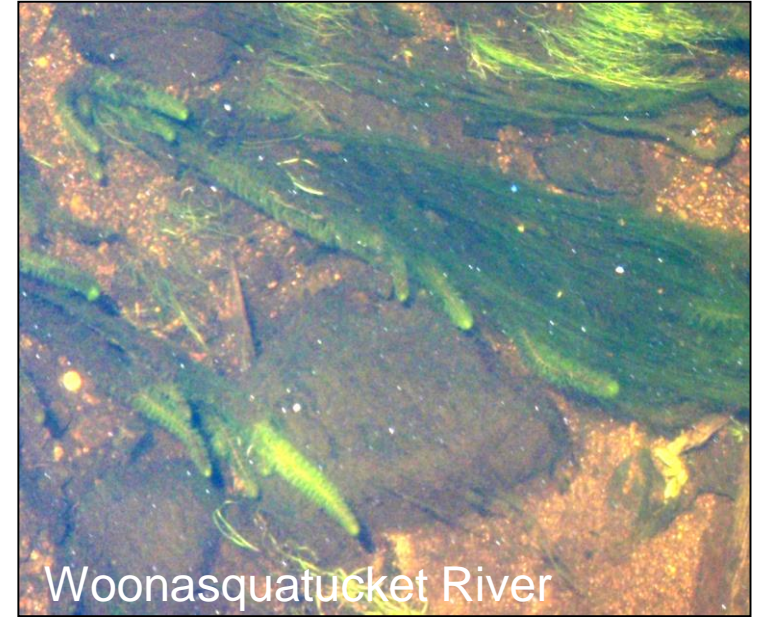


- AIS present in 106 lakes/ponds
- AIS present in 27 river segments
- 14 documented plant species

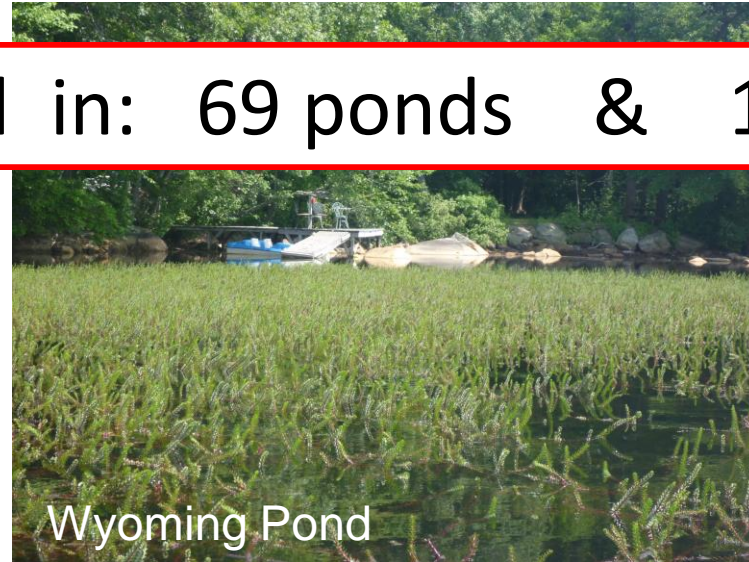
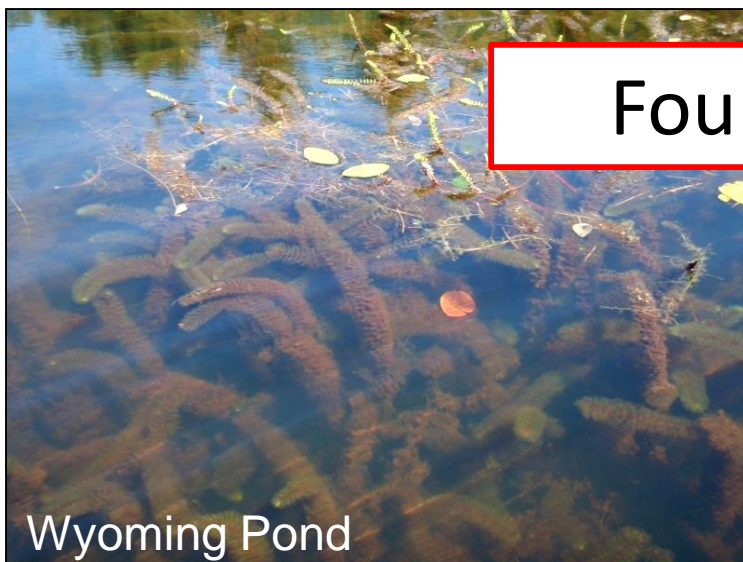




# Fearsome 4 AIS to look for in RI: 1. Variable milfoil

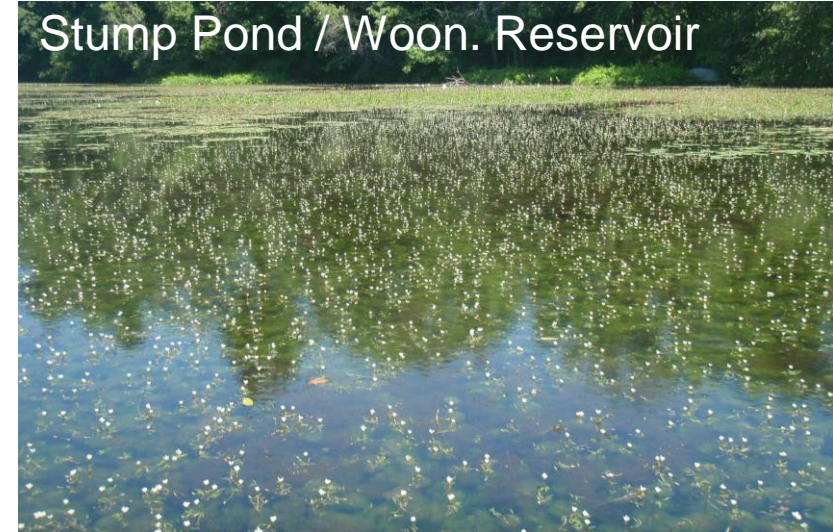
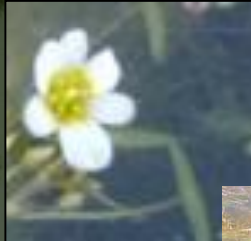


Found in: 69 ponds & 19 rivers

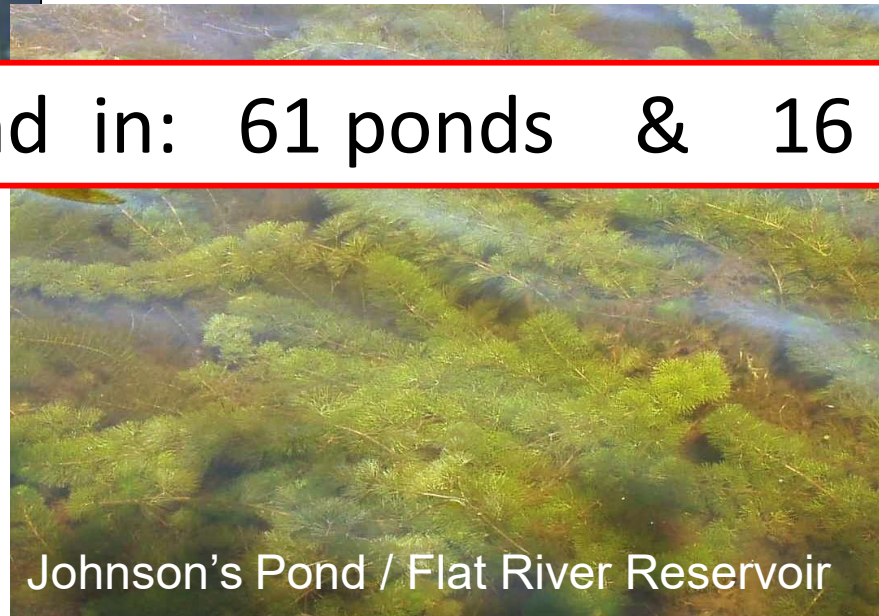




# Fearsome 4 AIS to look for in RI : 2. fanwort



Found in: 61 ponds & 16 rivers

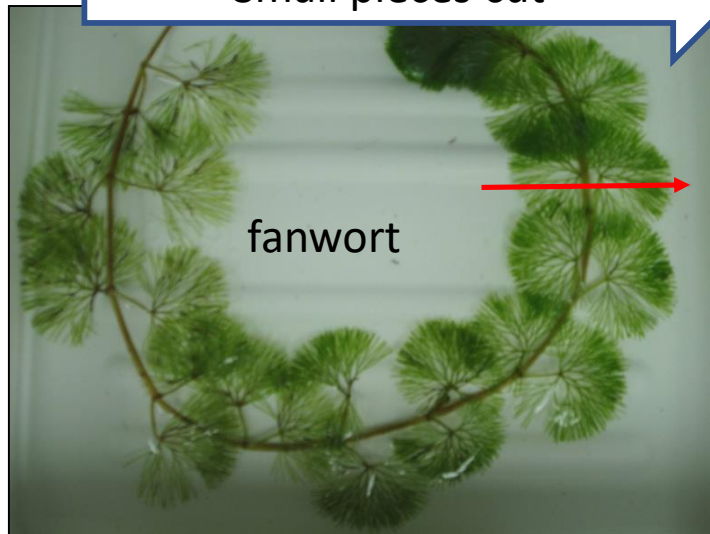




# Both milfoil and fanwort spread easily: fragmentation



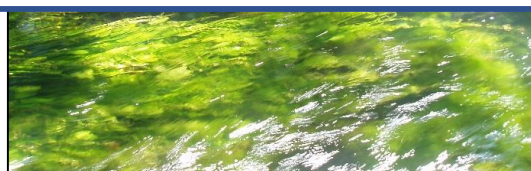
Small pieces cut



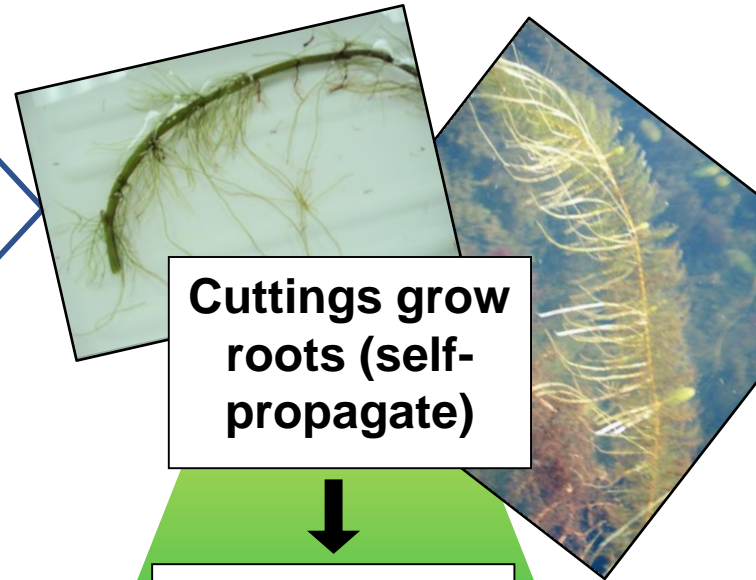
Transported by humans



Flows downriver



Hitchhikes on wildlife



Cuttings grow roots (self-propagate)

ESTABLISH


GROW & SPREAD

DISPLACE NATIVES

DOMINATE ECOSYSTEM

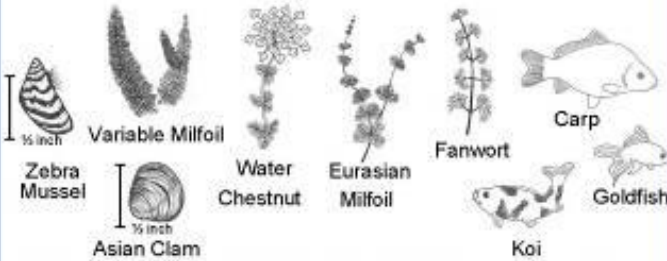


# Clean Drain Dry Reminders – Rhode Island Signs

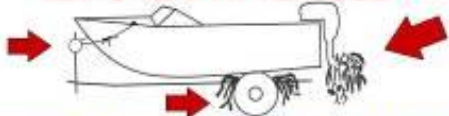


**STOP**

**THE SPREAD OF AQUATIC INVASIVE SPECIES**





**BOATERS: INSPECT VESSEL CAREFULLY BEFORE & AFTER USE!**



- Remove ALL weeds and plant fragments from watercraft & trailer before & after use
- Drain boat & motor far from water; allow to dry before next use
- Clean off all waders, boots and gear after use in any waterbody
- Do not release bait or aquarium fish, shellfish or plants

For more information contact:  
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
Division of Fish and Wildlife  
(401) 789-0281 or (401) 789-7481  
[www.dem.ri.gov](http://www.dem.ri.gov)





# Fearsome 4 AIS to look for in RI : 3. water chestnut

Valley Falls Pond, Central Falls/Lincoln ( ~30 acres covered)



Central Pond, East Providence ( ~50 acres covered)

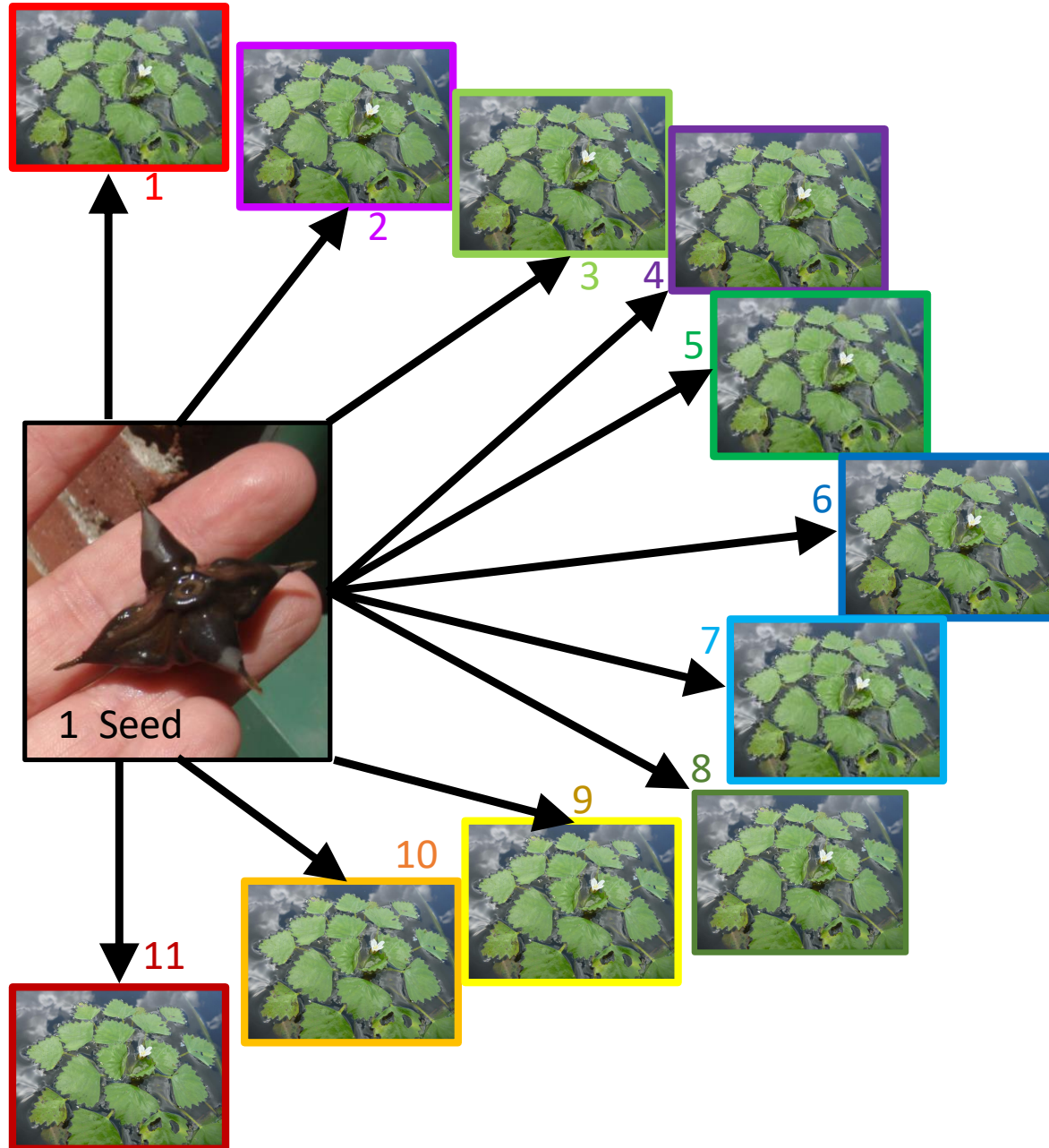


Found in: 13 ponds & 1 river



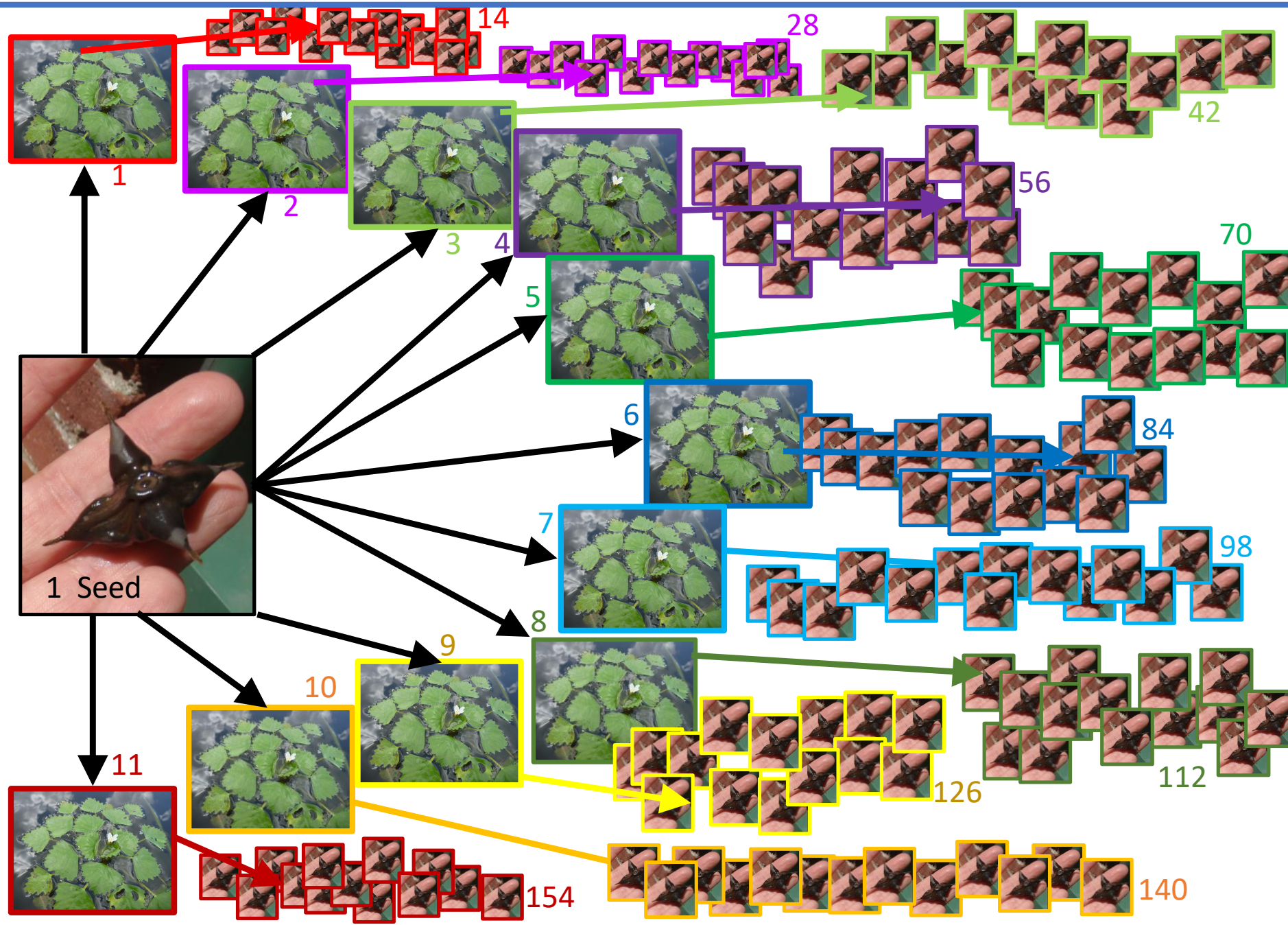


Water chestnut is an annual: 1 germinated seed (Spring) → can produce 10 to 15 rosettes → can produce 10-20 seeds (Fall)

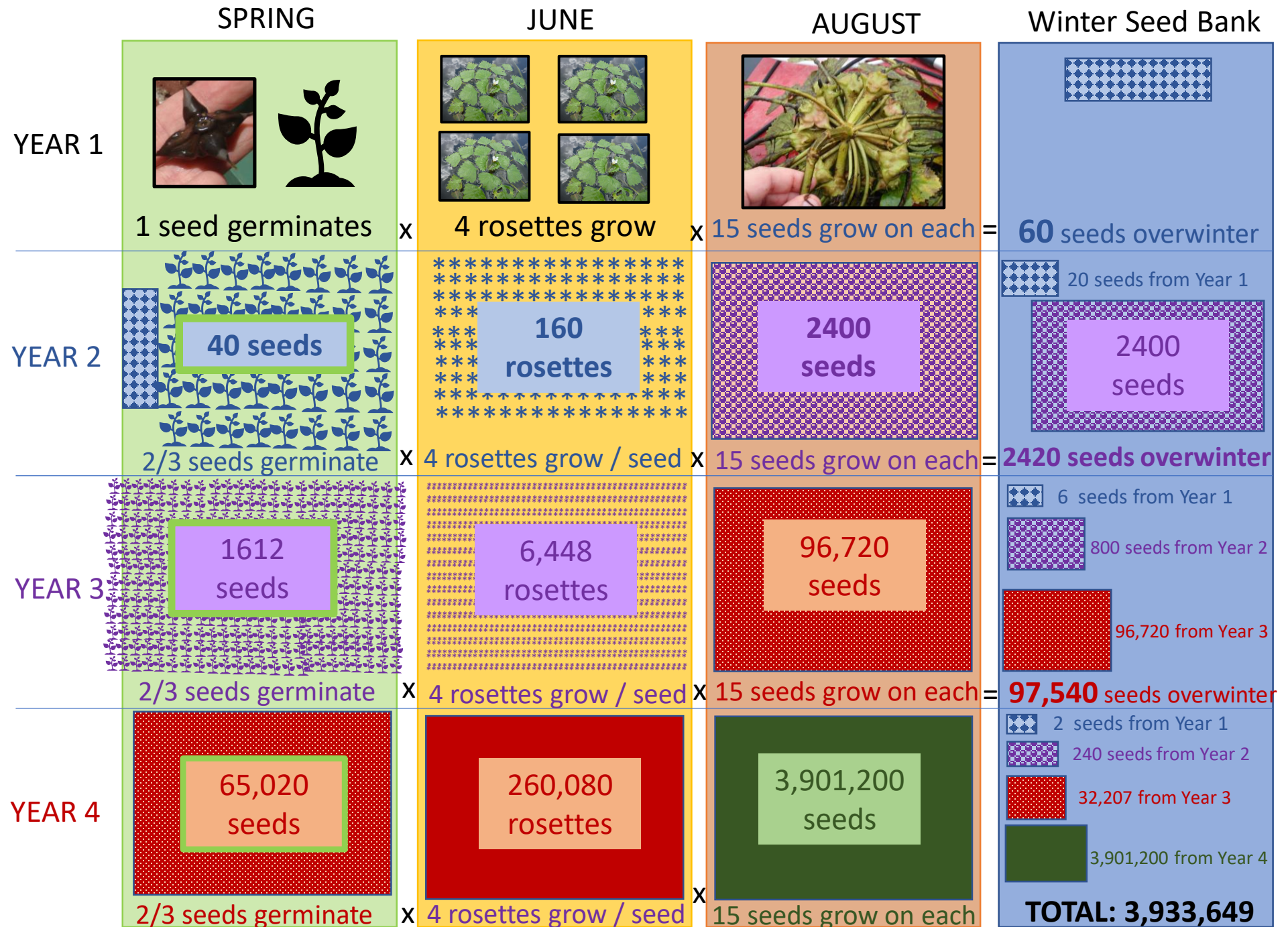




Water chestnut is an annual: 1 germinated seed (Spring) → can produce 10 to 15 rosettes → can produce 10-20 seeds (Fall)









With Community Pulls/Harvesting:



YEAR 1

SPRING

1 seed germinates

JUNE

4 rosettes grow

AUGUST

15 seeds grow on each

Winter Seed Bank

60 seeds overwinter

YEAR 2

40 seeds

2/3 seeds germinate

160 rosettes

4 rosettes grow / seed

2400 seeds

15 seeds grow on each

20 seeds from Year 1

2400 seeds

2420 seeds overwinter

YEAR 3

1612 seeds

2/3 seeds germinate

6,448 rosettes

4 rosettes grow / seed

REMOVE ALL

0 seeds grow on each

6 seeds from Year 1

800 seeds from Year 2

802 seeds overwinter

YEAR 4

534 seeds

2/3 seeds germinate

2,136 rosettes

4 rosettes grow / seed

REMOVE ALL

0 seeds grow on each

2 seeds from Year 1

240 seeds from Year 2

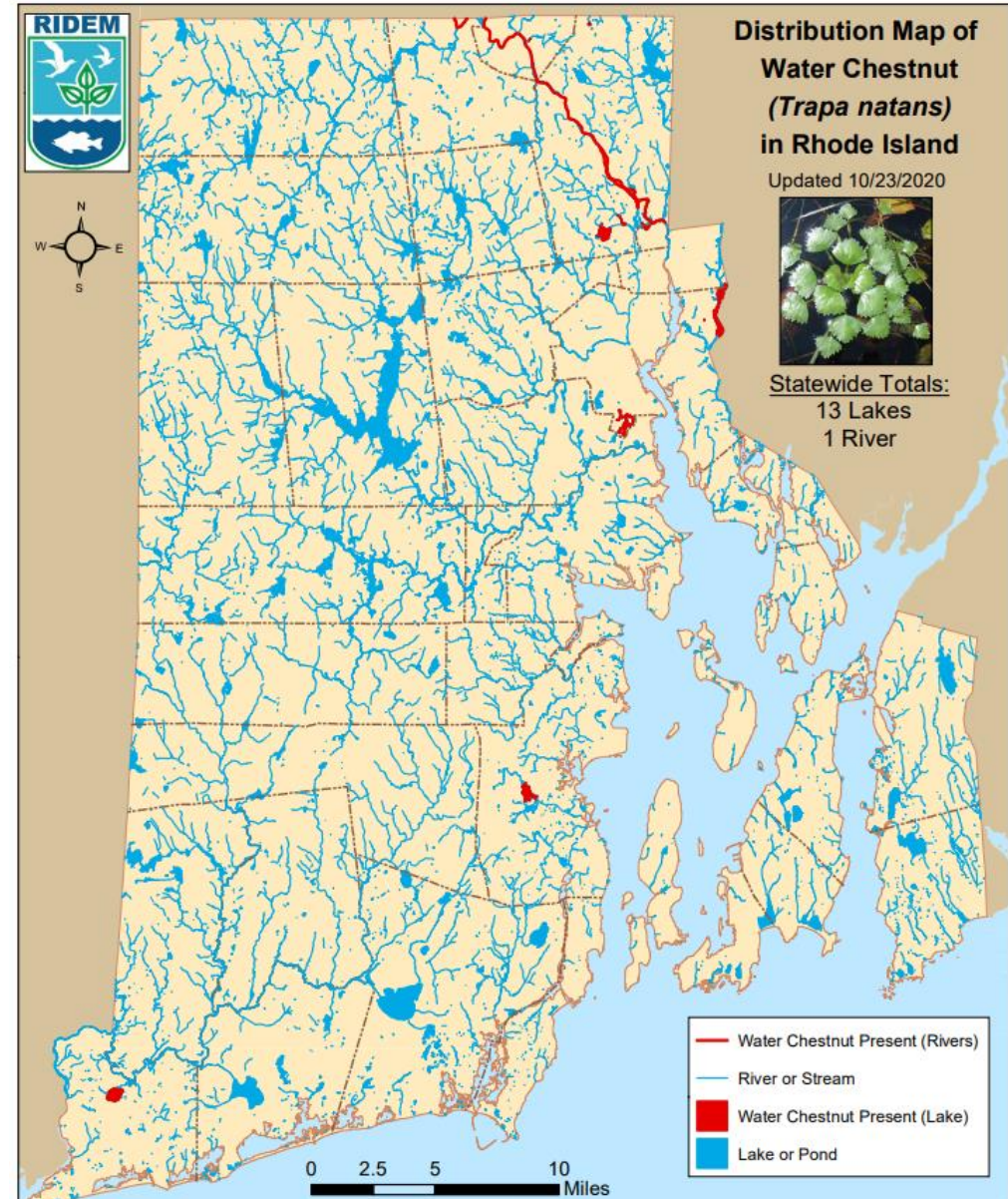
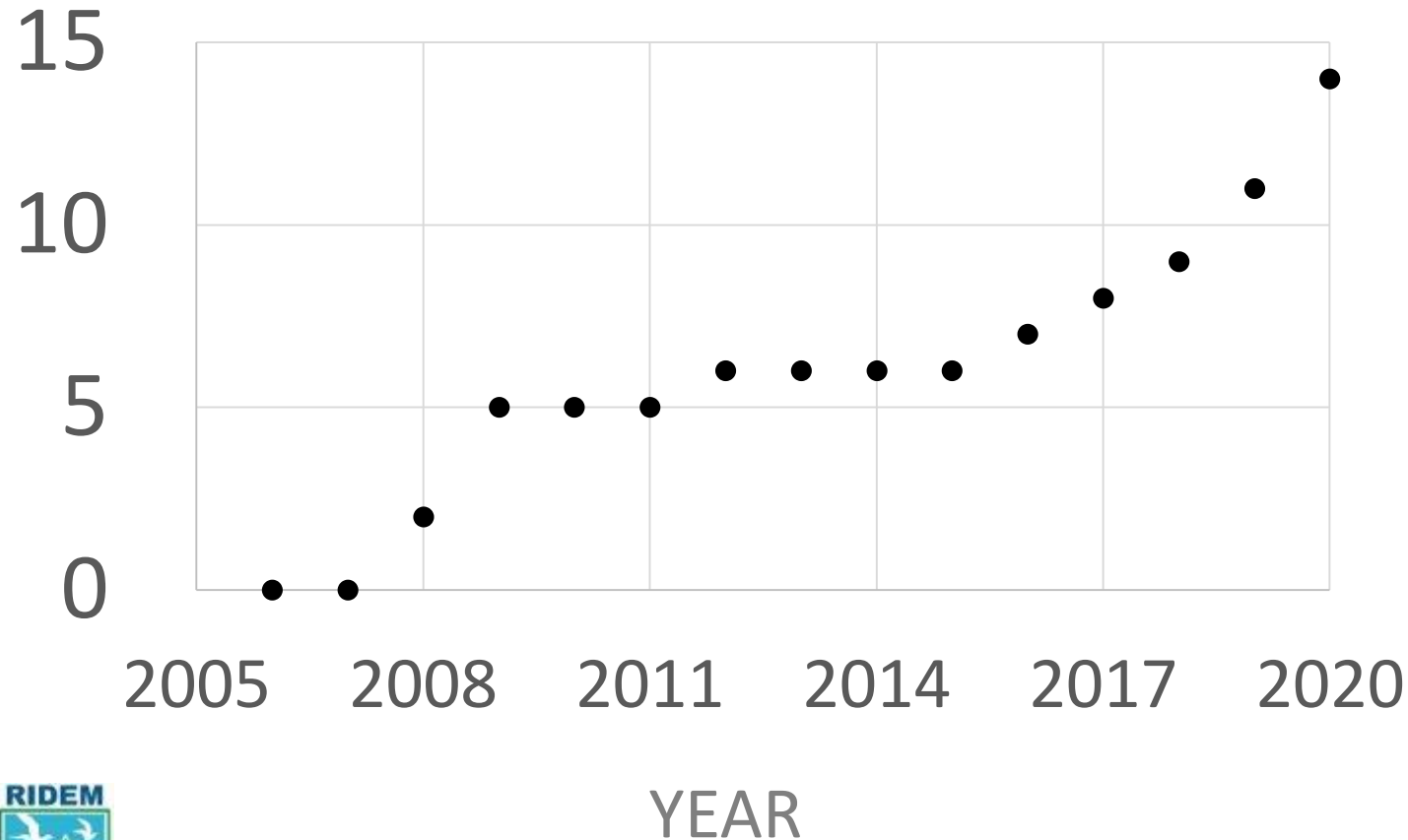
**TOTAL: 242 SEEDS**





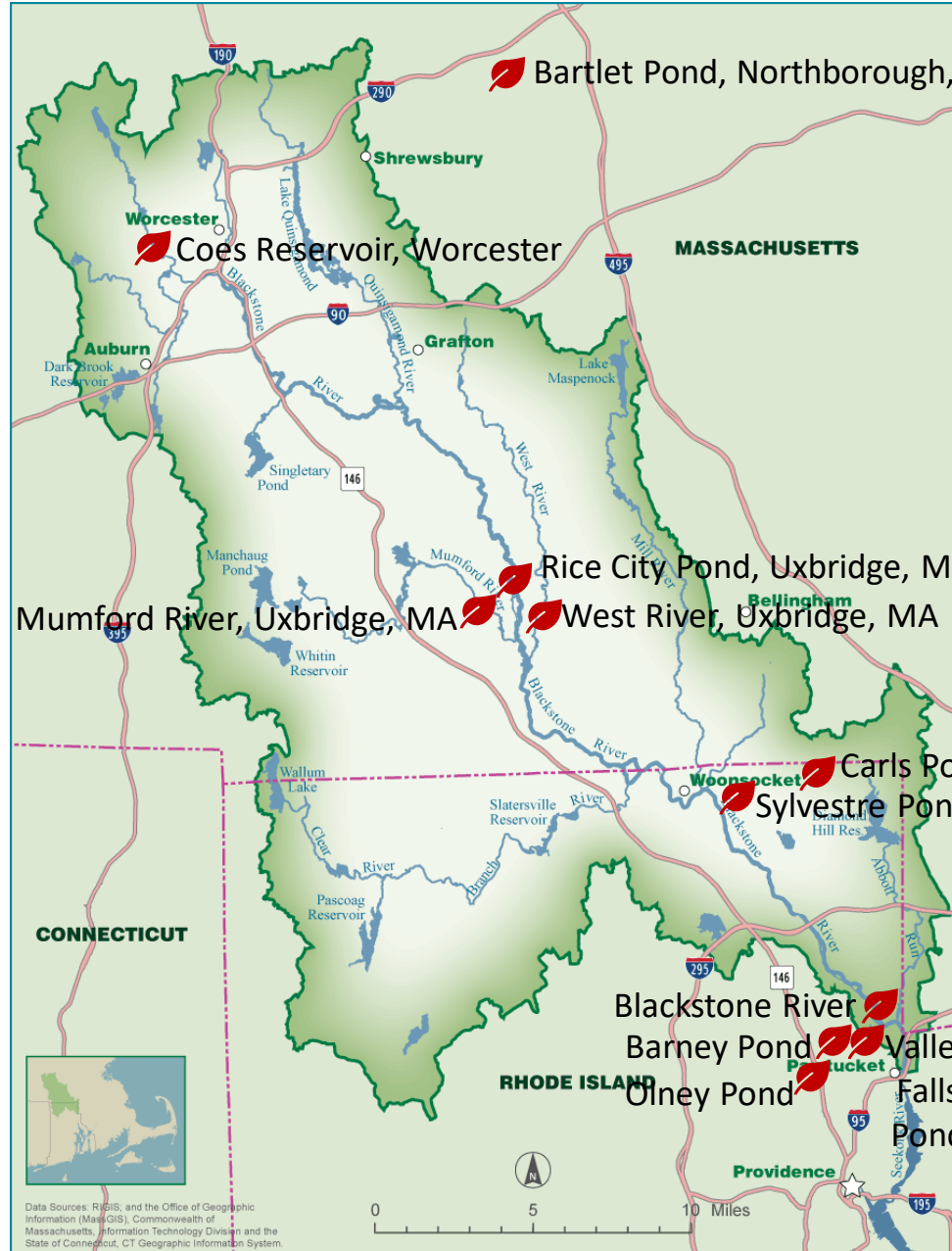
# Fearsome 4 AIS to look for in RI : 3. water chestnut

## Number Lakes w/ Water Chestnut





# Have you seen water chestnut anywhere else ??



- Sturdy Pond
- Farmers Pond
- Mechanics Pond
- Bunguay River
- Dodgeville Pond
- Ten Mile @ PCC
- Central Pond
- Turner Reservoir
- Lakeside Cemetery



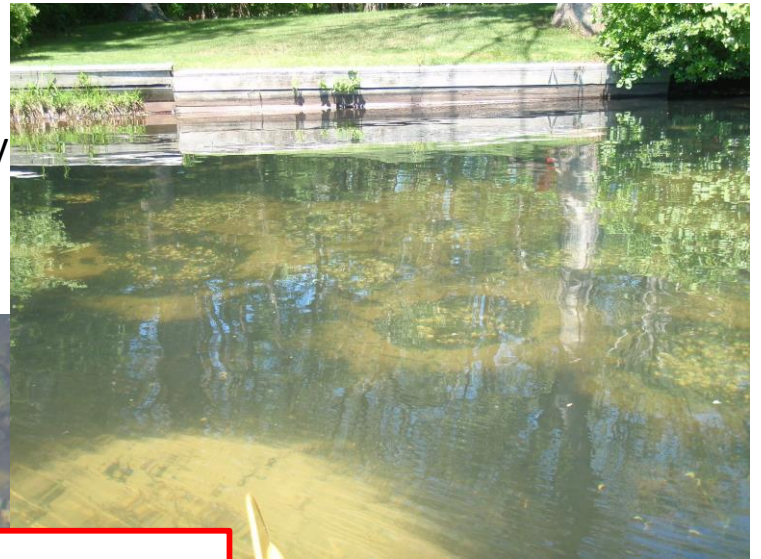


# Fearsome 4 AIS to look for in RI : 4. Asian clam



## Asian Clam is on the rise

- One mature clam can release thousands of larvae per day
- There is no way to control them once established
- Invasive clams compete with native mussels for Calcium



Found in: 16 ponds & 8 rivers





# Fearsome 4 AIS to look for in RI : 4. Asian clam

## The Problem:

Invasive Asian Clams Threaten to Outcompete Native Freshwater Mussels



4 of 8 mussel species in Rhode Island are “critically imperiled” - considered rare, and are high conservation priorities

– RI State Wildlife Action Plan

NATIONAL GEOGRAPHIC

which flows through Virginia and Tennessee.  
PHOTOGRAPH BY JOEL SARTORE, NATIONAL GEOGRAPHIC PHOTO ARK

ANIMALS

### A freshwater mussel apocalypse is underway—and no one knows why.

Is it climate change, pollution, an unknown disease? A dedicated few are trying to crack the mystery.


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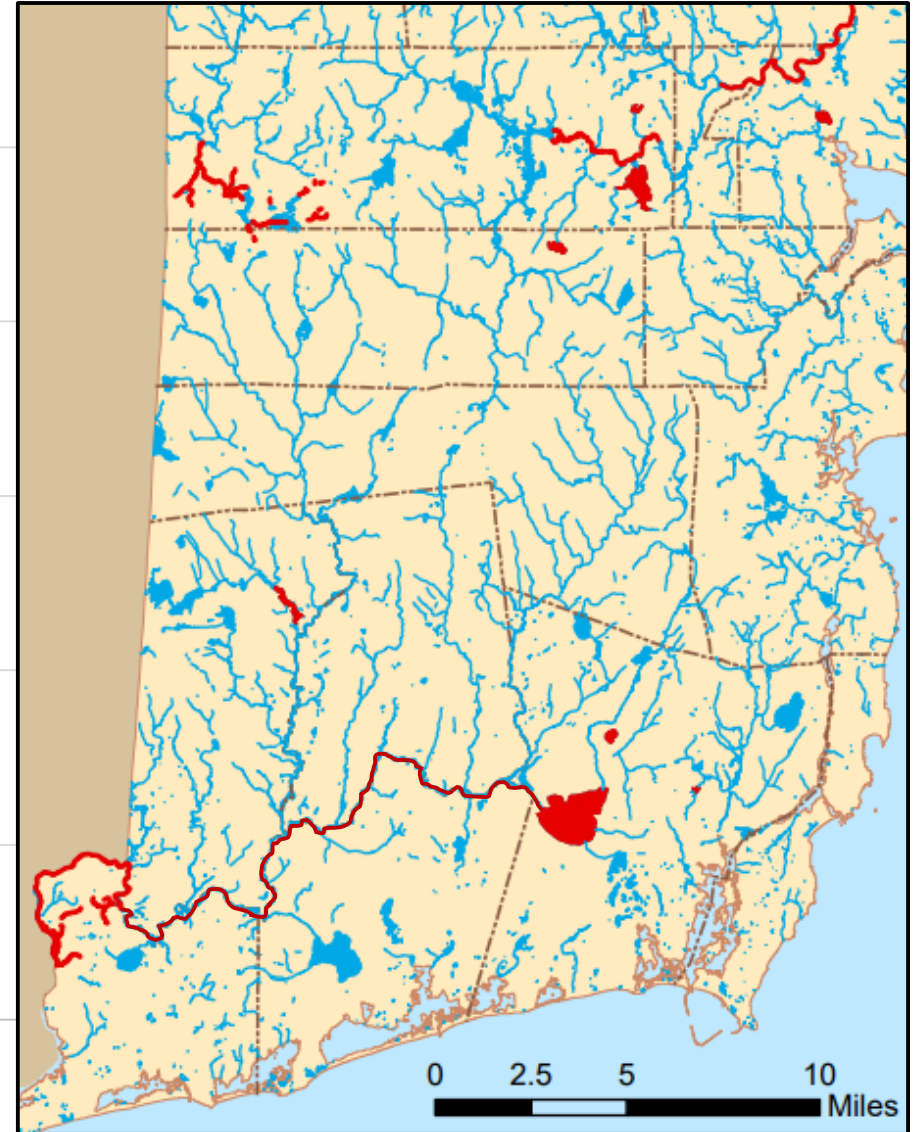
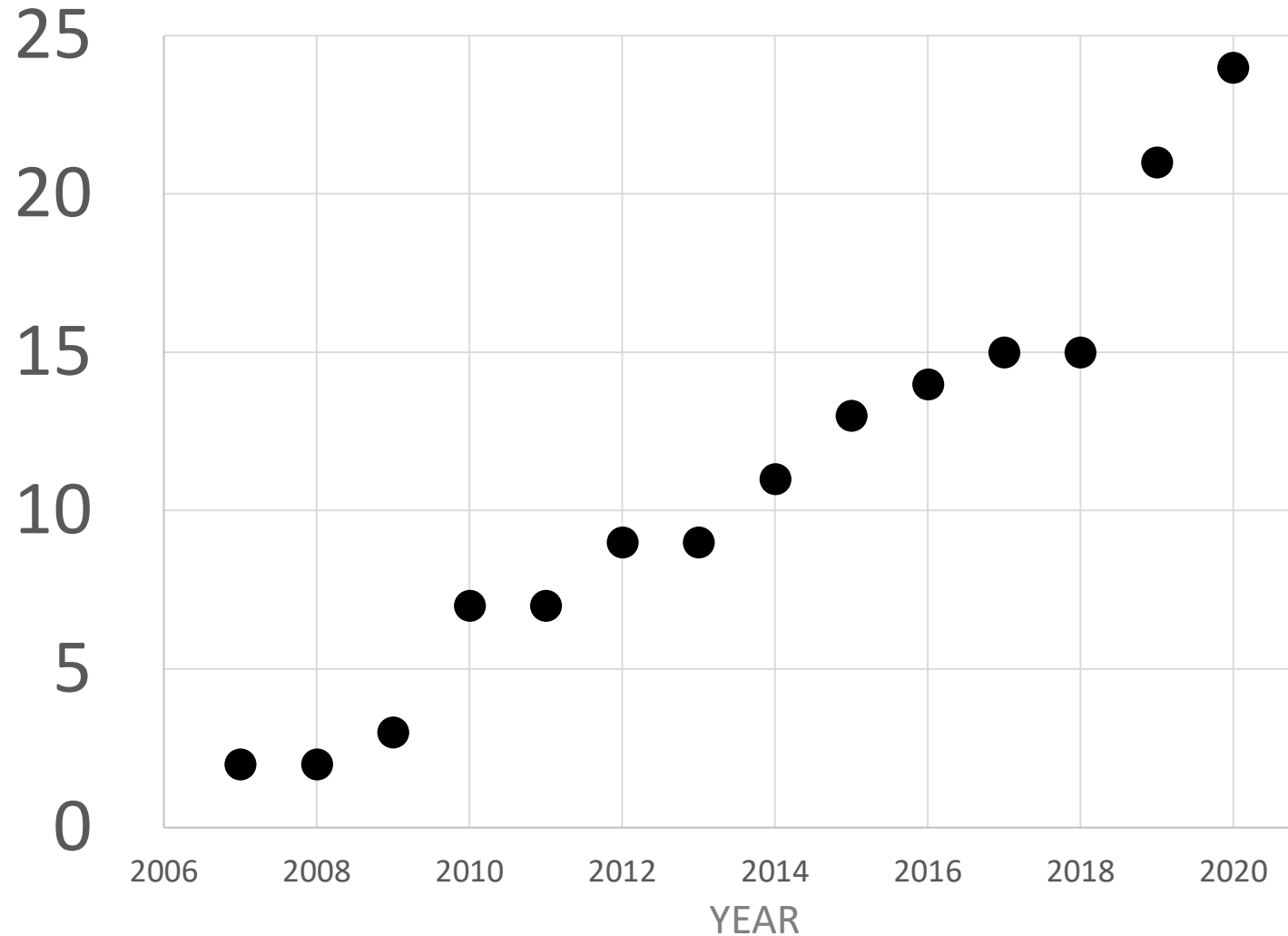
 *Extinction Countdown*

## America's Freshwater Mussels Are Going Extinct--Here's Why That Sucks



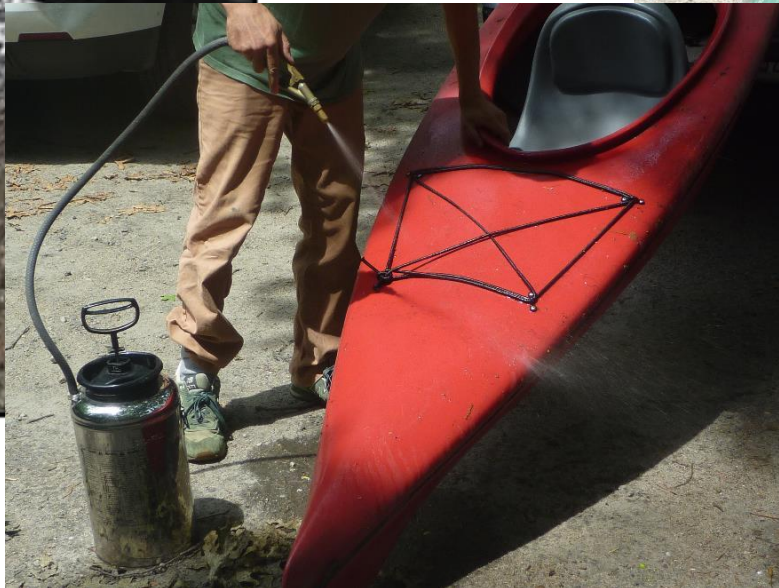
# Fearsome 4 AIS to look for in RI : 4. Asian clam

## Number Places with Asian Clam





# Clean Drain Dry Reminders – Rhode Island Signs



**CAUTION!**

**Invasive Asian Clams**  
Are here in this water, slow spread to other places!

**Decontaminate Your Gear:**

**CLEAN**

Remove mud & debris on:

- Boats, Trailers, Fishing rods
- Anchors, Paddles, Gear
- Hose off, use hot water if available (best at 140° F)

**DRAIN**

- Motor Boats
- Canoes and Kayaks
- Motors
- Live Wells
- Bait Buckets

**DRY**

All wet gear & equipment:

- Hang or leave out in sun
- Dry completely before going to another lake, pond or river

 **RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
To report invasive animals, contact: Division of Fish and Wildlife (401) 789-0281  
To report invasive plants, contact: Office of Water Resources (401) 222-4700





# Fearsome 4 AIS in RI: Where to find more data

<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/pdfs/aisridist.pdf>

## Freshwater Aquatic Invasive Species in Rhode Island

Species-specific Statewide Distributions

November 2020

### Overview and Contents

Between 2007 and 2020 the Rhode Island Department of Environmental Management, Office of Water Resources (OWR) has been documenting the presence of aquatic invasive species (AIS) in lakes, ponds and rivers, statewide. RIDEM OWR monitors approximately 20 lakes or ponds during the summer by visually surveying for invasives, and as resources allow, may visit additional ponds in response to public concerns. To date, RIDEM has visited 164 lakes or ponds, and visited hundreds of sites on streams.

As of November 2020, at least one invasive species was documented by RIDEM staff at 106 lakes or ponds (65% of the visited locations) in addition to invasives found at sites along 27 distinct rivers. A map of this data and list of each location by town, with the invasives species that were identified can be downloaded here: <http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/invasive.pdf>. Provided herein are maps showing the species-specific statewide distribution of 16 different invasive species (not all species were documented at every location) accompanied by a list of locations where the species was documented (not all species were documented at every location).

### Number of Documented Freshwaters with Invasive Species (listed most common to least common)

| Invasive Species                                     | Scientific Name                   | Rivers    |
|--|-----------------------------------|-----------|
| 1. Variable milfoil                                  | <i>Myriophyllum heterophyllum</i> | 19        |
| 2. Fanwort   | <i>Cabomba caroliniana</i>        | 16        |
| 3. Curly-leaf pondweed                               | <i>Potamogeton crispus</i>        | 7         |
| 4. Mudmat  | <i>Glossostigma cleistanthum</i>  | 1         |
| 5. Water chestnut                                    | <i>Trapa natans</i>               | 1         |
| 6. Eurasian milfoil                                  | <i>Myriophyllum spicatum</i>      | 2         |
| 7. Spiny naiad                                       | <i>Najas minor</i>                | 0         |
| 8. Inflated bladderwort                              | <i>Utricularia inflata</i>        | 0         |
| 9. Water hyacinth                                    | <i>Eichhornia crassipes</i>       | 1         |
| 10. Brazilian elodea                                 | <i>Egeria densa</i>               | 0         |
| 11. Yellow floating heart                            | <i>Nymphoides peltata</i>         | 0         |
| 12. American lotus                                   | <i>Nelumbo lutea</i>              | 0         |
| 13. Parrot feather                                   | <i>Myriophyllum aquaticum</i>     | 0         |
| 14. Sacred lotus                                     | <i>Nelumbo nucifera</i>           | 0         |
| 15. Asian clam                                       | <i>Corbicula fluminea</i>         | 8         |
| 16. Chinese mystery snail                            | <i>Cipangopoda chinensis</i>      | 3         |
| <b>Total waterbodies with at least one invasive*</b> |                                   | <b>27</b> |

### Number of Documented Freshwaters with Invasive Species (as of November 6, 2020) (listed most common to least common)

| Invasive Species       | Scientific Name                   | Rivers | Lakes/Ponds | Total | Page Number |
|------------------------|-----------------------------------|--------|-------------|-------|-------------|
| 1. Variable milfoil    | <i>Myriophyllum heterophyllum</i> | 19     | 69          | 88    | (1)         |
| 2. Fanwort             | <i>Cabomba caroliniana</i>        | 16     | 61          | 77    | (8)         |
| 3. Curly-leaf pondweed | <i>Potamogeton crispus</i>        | 7      | 13          | 20    | (14)        |
| 4. Mudmat              | <i>Glossostigma cleistanthum</i>  | 1      | 12          | 13    | (17)        |
| 5. Water chestnut      | <i>Trapa natans</i>               | 1      | 13          | 14    | (19)        |



Rhode Island Department of Environmental Management  
Office of Water Resources  
235 Promenade Street – Room 200  
Providence, RI 02908




Page 4 lists links to factsheets for more info on each species



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**Freshwater Aquatic Invasive Species in Rhode Island**  
Species-specific Statewide Distributions  
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| Number of Documented Freshwaters with Invasive Species (as of November 6, 2020)<br>(listed most common to least common) |                                   |           |             |       |             |
|---|-----------------------------------|-----------|-------------|-------|-------------|
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| 3. Curly-leaf pondweed  | <i>Potamogeton crispus</i>        | 7         | 13          | 20    | (14)        |
| 4. Mudmat   | <i>Glossastigma cleistanthum</i>  | 1         | 12          | 13    | (17)        |
| 5. Water chestnut   | <i>Typha latifolia</i>            | 1         | 13          | 14    | (19)        |
| 6. Eurasian milfoil   | <i>Myriophyllum spicatum</i>      | 2         | 11          | 13    | (22)        |
| 7. Spiny naiad  | <i>Najas minor</i>                | 0         | 9           | 9     | (24)        |
| 8. Inflated bladderwort   | <i>Utricularia inflata</i>        | 0         | 7           | 7     | (26)        |
| 9. Water hyacinth   | <i>Eichhornia crassipes</i>       | 1         | 4           | 5     | (28)        |
| 10. Brazilian elodea  | <i>Egeria densa</i>               | 0         | 5           | 5     | (30)        |
| 11. Yellow floating heart   | <i>Nymphoides peltata</i>         | 0         | 3           | 3     | (32)        |
| 12. American lotus  | <i>Nelumbo lutea</i>              | 0         | 2           | 2     | (34)        |
| 13. Parrot feather  | <i>Myriophyllum aquaticum</i>     | 0         | 1           | 1     | (36)        |
| 14. Sacred lotus  | <i>Nelumbo nucifera</i>           | 0         | 1           | 1     | (38)        |
| 15. Asian clam  | <i>Corbicula fluminea</i>         | 8         | 16          | 24    | (40)        |
| 16. Chinese mystery snail   | <i>Cipangopaludina chinensis</i>  | 3         | 22          | 25    | (43)        |
| <b>Total waterbodies with at least one invasive*</b>  |                                   | <b>27</b> | <b>106</b>  |       |             |

\*some waterbodies have more than one invasive species; therefore, total reflects distinct waterbodies



49 pages  
(wait for download)

**Distribution of fanwort (*Cabomba caroliniana*) in RI**  
river segments listed first alphabetically; then lakes listed by city or town

| Town                 | Waterbody Name                      | First documented | Last Surveyed |
|----------------------|-------------------------------------|------------------|---------------|
| <b>Burrillville</b>  |                                     |                  |               |
| 18                   | Echo Lake (Pascoag Reservoir)       | 9/25/2007        | 9/13/2012     |
| 19                   | Spring Lake (Herring Pond)          | 9/25/2007        | 6/8/2018      |
| 20                   | Sucker Pond                         | 10/9/2009        | 8/20/2018     |
| 21                   | Wakefield Pond                      | 9/10/2007        | 8/22/2017     |
| <b>Central Falls</b> |                                     |                  |               |
| 22                   | Valley Falls Pond                   | 8/9/2017         | 8/9/2017      |
| <b>Coventry</b>      |                                     |                  |               |
| 23                   | Carbuncle Pond                      | 9/5/2007         | 8/31/2020     |
| 24                   | Flat River Reservoir (Johnson Pond) | 9/5/2007         | 9/21/2018     |
| 25                   | Maple Root Pond                     | 7/27/2016        | 7/27/2016     |
| 26                   | Tiogue Lake                         | 9/5/2007         | 9/9/2020      |
| <b>Cranston</b>      |                                     |                  |               |
| 27                   | Meshanticut Pond                    | 8/6/2018         | 9/11/2020     |
| 28                   | Print Works Pond                    | 8/7/2009         | 8/7/2009      |
| 29                   | Randall Pond                        | 7/13/2011        | 7/19/2017     |
| <b>Cumberland</b>    |                                     |                  |               |
| 30                   | Happy Hollow Pond                   | 8/18/2010        | 8/18/2010     |
| 31                   | Robin Hollow Pond                   | 8/18/2010        | 8/18/2010     |
| 32                   | Sneech Pond                         | 6/3/2010         | 9/24/2018     |
| 33                   |                                     |                  |               |

RI lakes and river segments with fanwort as of 10/19/2020 10 of 45





# RICKA Talk March 16, 2021

## ✓ 1. The Problem with Invasives

## ✓ 2. Top 4 Invasives in Rhode Island to look for (data & where to find more info)

### 3. How paddlers can help:

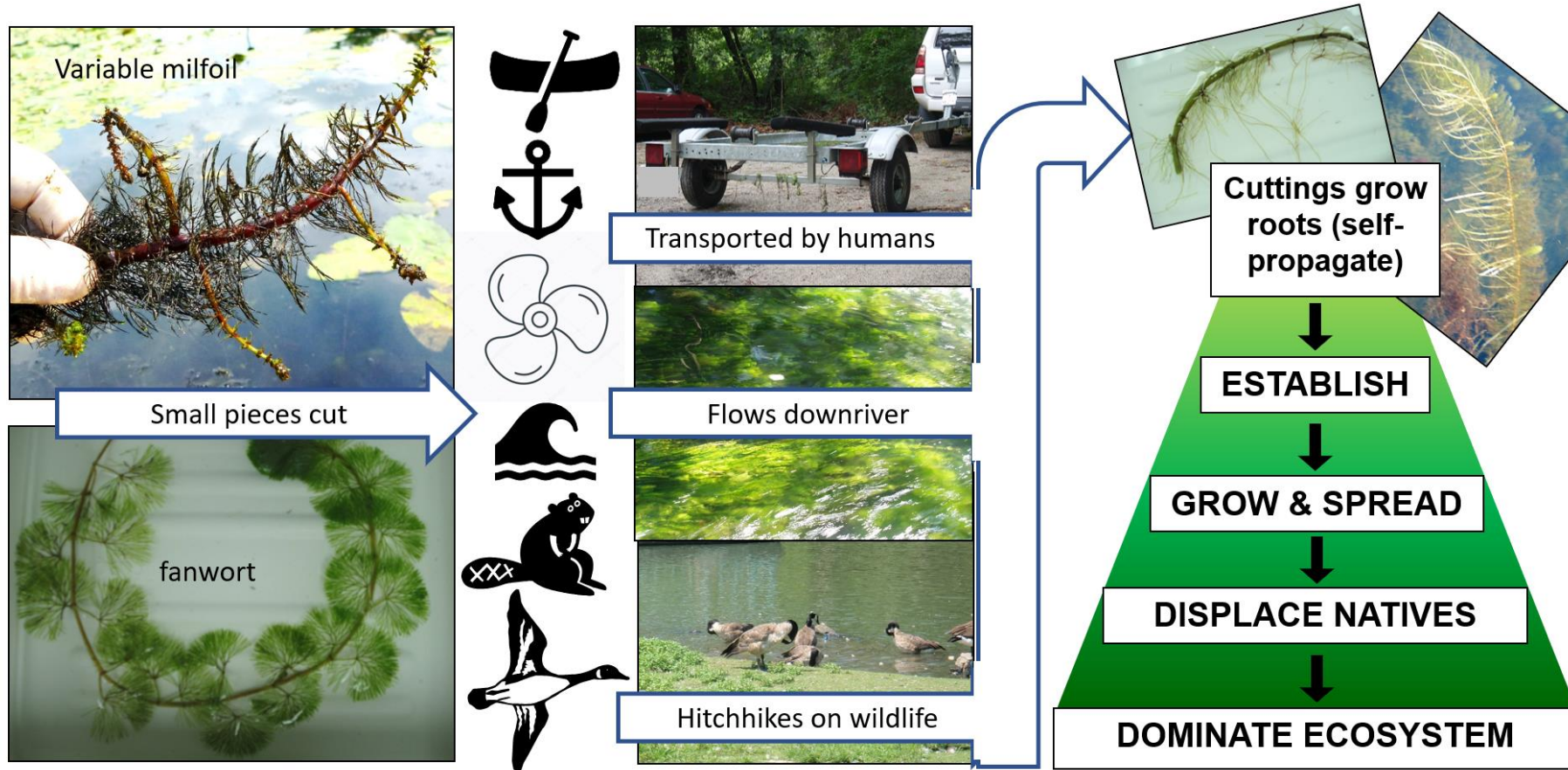
- Preventing the Spread – Know before you go
- Preventing the Spread – Go with the Flow
- Preventing the Spread – Clean, Drain, Dry
- Keep an Eye out for Water Chestnut (June – September)
- Volunteer for Hand Harvesting Events





# How paddlers can help

An ounce of prevention = pound of cure



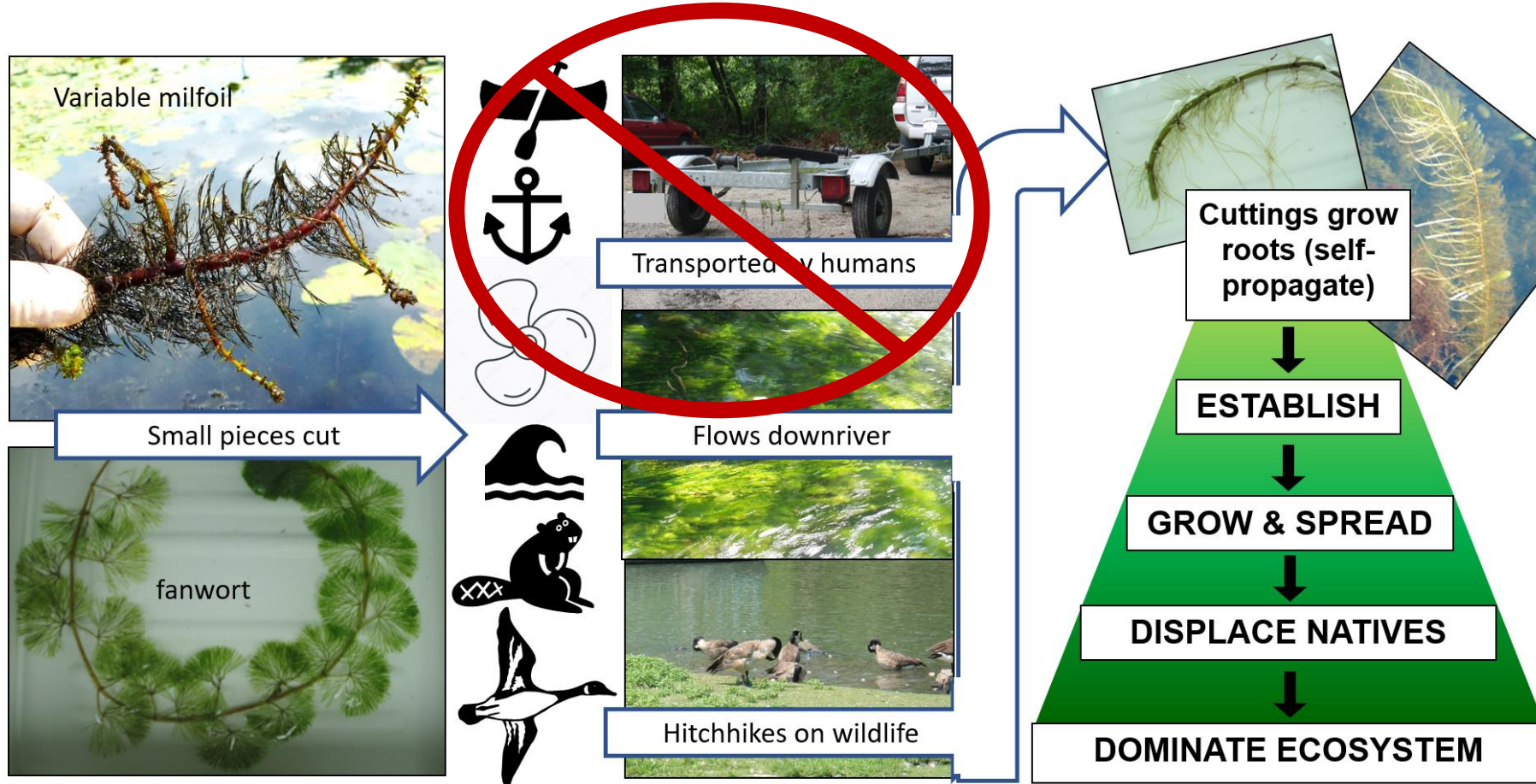
How to prevent transport/spread of invasives





# How paddlers can help

An ounce of prevention = pound of cure



How to prevent transport/spread of invasives





# How paddlers can help: Remove ALL plants

## **RIDEM Division of Fish and Wildlife Freshwater Fisheries Regulations (Section 10.6.1 A18)**

In February 2020, amended to prohibit the transport of **ANY** plant or plant part into or out of any Rhode Island waterbody on any type of boat, motor, trailer, fishing supplies, or gear. The new regulation carries a \$100 fine.





# How YOU can prevent the spread of AIS!

Prevent the spread of AIS:

1. Know before you go!



Plan trips with invasives in mind



# How YOU can prevent the spread of AIS!

## Prevent the spread of AIS:

### 1. Know before you go!



Plan trips with invasives in mind



Check online if paddling location has invasives



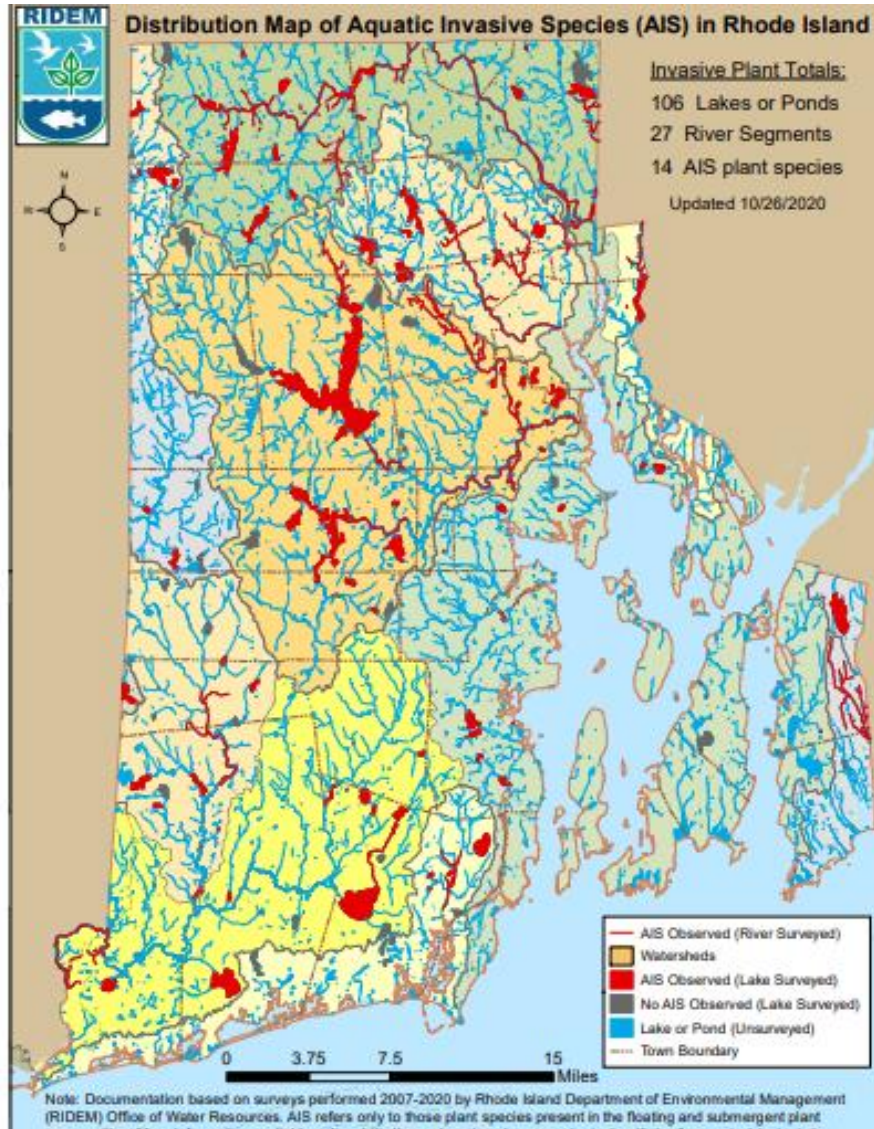
YES

NO



# Check online if paddling location has invasives (pdf)

<http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/invasive.pdf>



**Rhode Island**

| Town          | Waterbody |
|---------------|-----------|
| <b>RIVERS</b> |           |
| 1             | Abbot     |
| 2             | Adam      |
| 3             | Black     |
| 4             | Brand     |
| 5             | Brand     |
| 6             | Chipu     |
| 7             | Clear     |
| 8             | Clear     |
| 9             | Mosh      |
| 10            | Pawc      |
| 11            | Pawt      |
| 12            | Pawt      |
| 13            | Pawt      |
| 14            | Pawt      |

RI Freshwaters with Aquatic I

**Rhode Island Fr**

| Town          | Waterbody    |
|---------------|--------------|
| <b>RIVERS</b> |              |
| 27            | Woonasquat   |
| 28            | Brickyard Po |
| 29            | Echo Lake    |
| 30            | Echo Lake (F |
| 31            | Round Top S  |
| 32            | Spring Lake  |
| 33            | Sucker Pond  |
| 34            | Wakefield Po |
| 35            | Wilson Rese  |
| 36            | Valley Falls |
| 37            | Watchaug P   |
| 38            | Arnold Pond  |

RI Freshwaters with Aquatic Invasiv

**Rhode Island Freshwaters with Invasive Clams and Snails**  
rivers listed first, then lakes listed by city or town, alphabetically

| Town          | Waterbody                           | Common Name                         |
|---------------|-------------------------------------|-------------------------------------|
| <b>RIVERS</b> |                                     |                                     |
| 1             | Blackstone River (Seg A)            | Chinese mystery snail<br>Asian clam |
| 2             | Cold (Cole) Brook & Tribs           | Chinese mystery snail               |
| 3             | Pawcatuck River & Tribs (Seg E)     | Asian clam                          |
| 4             | Pawtuxet River (Main Stem)          | Asian clam                          |
| 5             | Pawtuxet River (South Branch Seg A) | Chinese mystery snail<br>Asian clam |
| 6             | Roaring Brook & Tribs               | Asian clam                          |
| 7             | Ten Mile River & Tribs (Seg A)      | Asian clam                          |
| 8             | Ten Mile River & Tribs (Seg B)      | Asian clam                          |
| 9             | Woonasquatucket River (Seg D)       | Asian clam                          |
| 10            | Echo Lake                           | Chinese mystery snail               |
| 11            | Spring Lake (Herring Pond)          | Chinese mystery snail               |
| 12            | Saw Mill Pond                       | Chinese mystery snail               |
| 13            | Togue Lake                          | Asian clam                          |
| 14            | Upper Dam Pond                      | Asian clam                          |
| 15            |                                     |                                     |

RI Freshwaters with Invasive Clams or Snails as of 10/26/2020

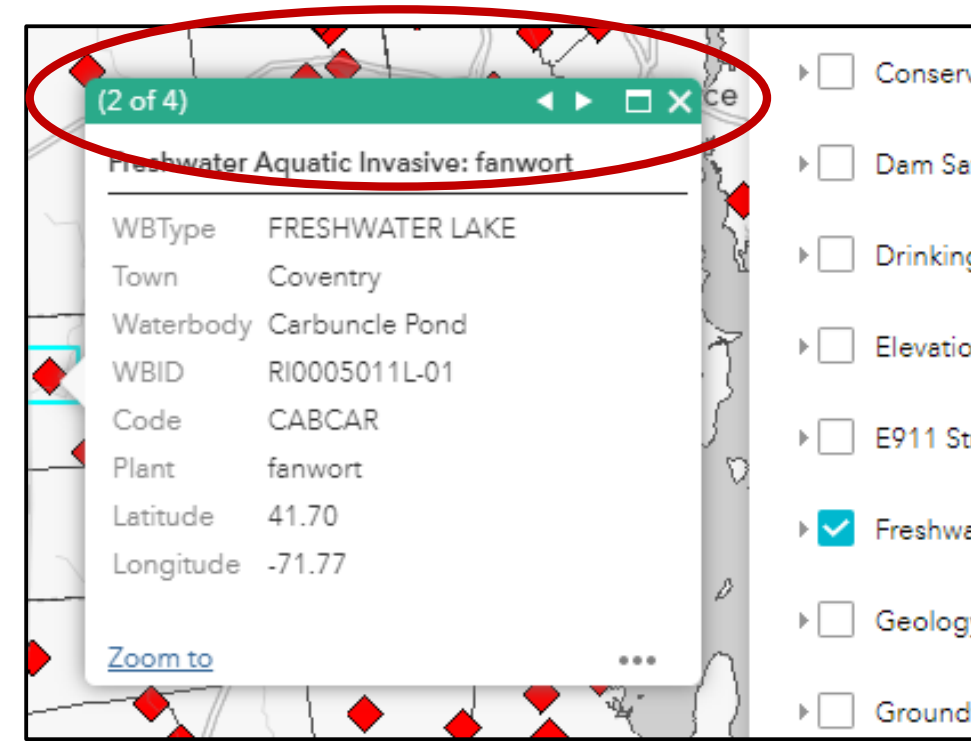
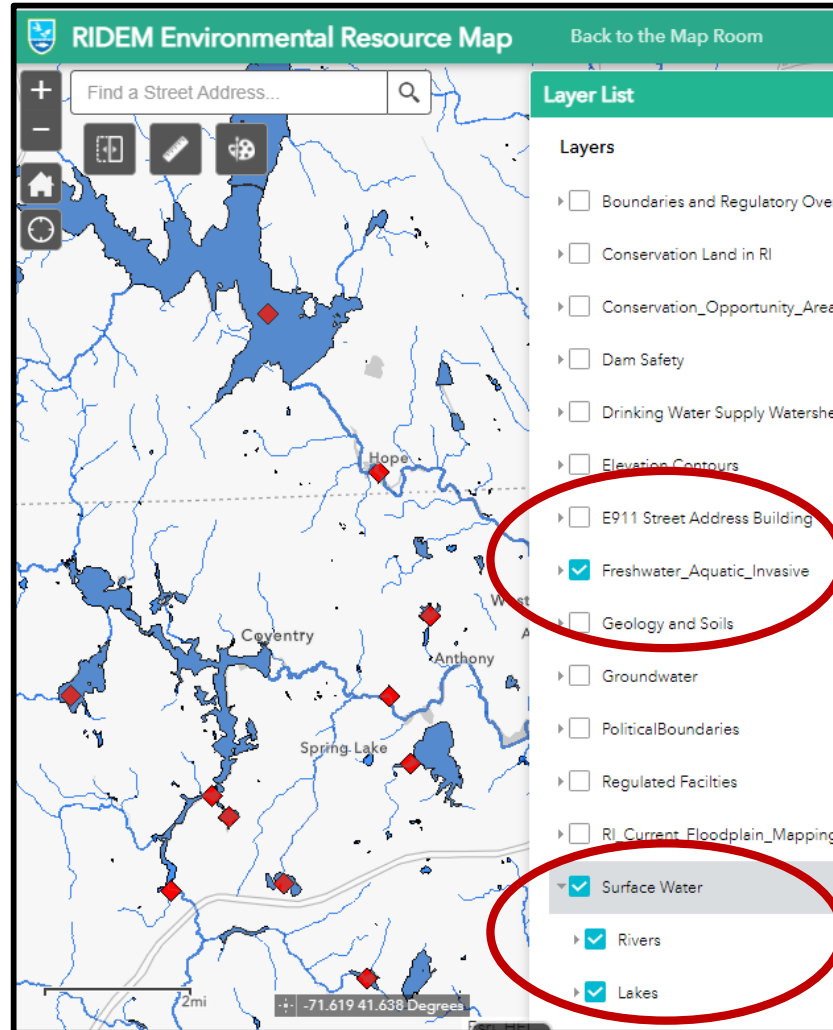
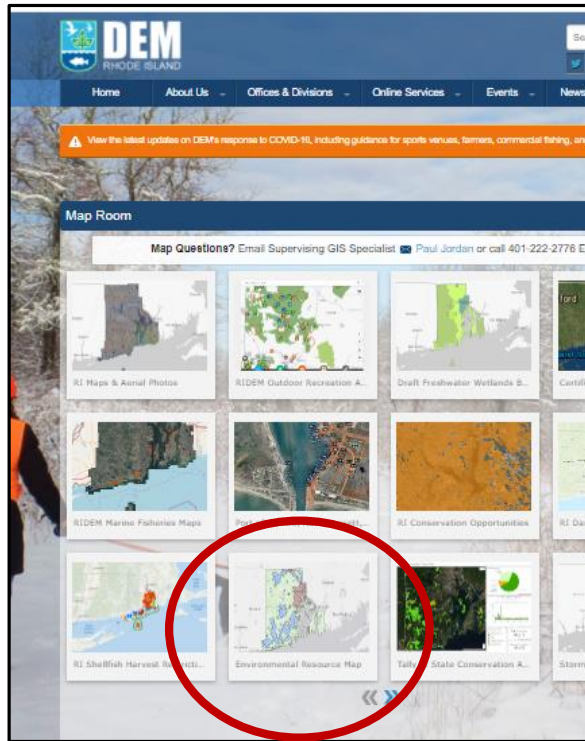




# Check online if paddling location has invasives (mapper)

dem.ri.gov/maps/ → Choose Environmental Resource Map

<https://ridemgis.maps.arcgis.com/apps/webappviewer/index.html?id=87e104c8adb449eb9f905e5f18020de5>





# How YOU can prevent the spread of AIS!

## Prevent the spread of AIS:

### 1. Know before you go!



Plan trips with invasives in mind



Check online if paddling location has invasives



YES

NO

# How YOU can prevent the spread of AIS!

## Prevent the spread of AIS:

### 1. Know before you go!



Plan trips with invasives in mind



Check online if paddling location has invasives



YES

NO

Beware not to spread it further!





# How YOU can prevent the spread of AIS!

## Prevent the spread of AIS:

### 1. Know before you go!



Plan trips with invasives in mind



Check online if paddling location has invasives



YES

NO

Don't Bring in new AIS!



# How YOU can prevent the spread of AIS!

## Prevent the spread of AIS:

### 1. Know before you go!



Check on planned locations to allow drying in between trips, or re-order paddling trips (visit pristine lakes before a paddle with clams)

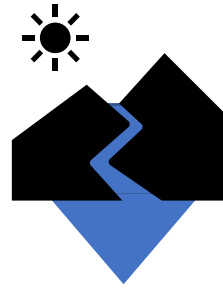




# How YOU can prevent the spread of AIS!

Prevent the spread of AIS:

1. Know before you go!



Plan trips to go downstream

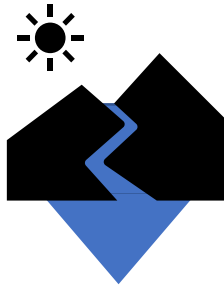
2. Go with the flow ~



# How YOU can prevent the spread of AIS!

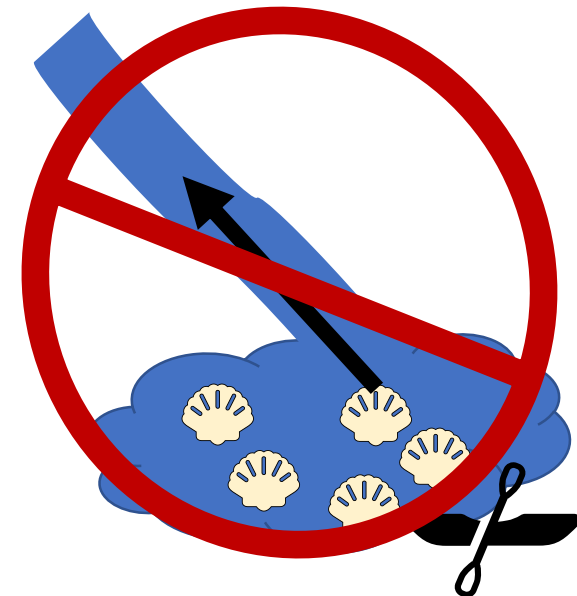
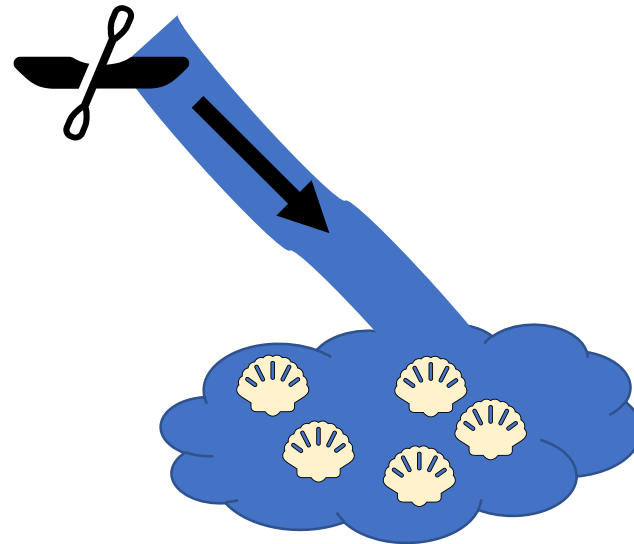
Prevent the spread of AIS:

1. Know before you go!



Plan trips to go downstream

2. Go with the flow ~





# How YOU can prevent the spread of AIS!

Prevent the spread of AIS:

1. Know before you go!

2. Go with the flow ~

3. Clean, Drain, Dry



Check boat for plant fragments



# How YOU can prevent the spread of AIS!

Prevent the spread of AIS:

1. Know before you go!

2. Go with the flow ~

3. Clean, Drain, Dry



Clean plants off boat and gear





# How YOU can prevent the spread of AIS!

Prevent the spread of AIS.

1. Know before you go!

2. Go with the flow ~

3. Clean, Drain, Dry



Check boat for plant fragments



Clean plants off boat and gear



Drain water from boat

# How YOU can prevent the spread of AIS!

Prevent the spread of AIS.

1. Know before you go!

2. Go with the flow ~

3. Clean, Drain, Dry



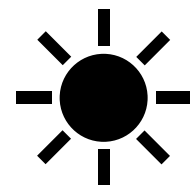
Check boat for plant fragments



Clean plants off boat and gear



Drain water from boat



Dry boat and gear min. 24 hours





# Clean Drain Dry Reminders – National Campaigns

## STOP INVASIVE SPECIES IN YOUR TRACKS.

Give Invasive Species The Brush Off.



Help Prevent The Spread Of Invasive Plants And Animals.

- REMOVE plants, animals & mud from boots, gear, pets & vehicle.
- CLEAN your gear before entering & leaving the recreation site.
- STAY on designated roads & trails.
- USE certified or local firewood & hay.



STOP INVASIVE SPECIES IN YOUR TRACKS.  
PlayCleanGo.org

## Don't Move A Mussel!



### STOP AQUATIC HITCHHIKERS!™

Be A Good Steward.  
Clean. Drain. Dry.

[StopAquaticHitchhikers.org](http://StopAquaticHitchhikers.org)

Stop the Transport of Invasive Species:

- CLEAN boots, gear, boat, trailer & vehicle of plants, fish, animals & mud.
- DRAIN bilge, ballast, wells & buckets before you leave the area.
- DRY equipment before launching watercraft into another body of water.

## COME CLEAN LEAVE CLEAN

Invest in Nature. Clean Your Gear.



Stop the Transport of Invasive Species:

- CLEAN boots, gear, boat, trailer & vehicle of plants, fish, animals & mud.
- DRAIN bilge, ballast, wells & buckets before you leave the area.
- DRY equipment before launching watercraft into another body of water.

## WASH"EM OFF! WIPE"EM OUT!

Protect Our Natural State.



Stop the Transport of Invasive Species:

- CLEAN boots, gear, boat, trailer & vehicle of plants, fish, animals & mud.
- DRAIN bilge, ballast, wells & buckets before you leave the area.
- DRY equipment before launching watercraft into another body of water.



STOP AQUATIC HITCHHIKERS!  
Be A Good Steward.  
Clean. Drain. Dry.  
[StopAquaticHitchhikers.org](http://StopAquaticHitchhikers.org)



National Prevention Campaigns:

- [PlayCleanGo.org](http://PlayCleanGo.org)
- [StopAquaticHitchhikers.org](http://StopAquaticHitchhikers.org)
- [ProtectYourWaters.net](http://ProtectYourWaters.net)
- [CleanDrainDry.org](http://CleanDrainDry.org)



SHARE ON SOCIAL MEDIA!

# Clean Drain Dry Reminders – Rhode Island Signs



**STOP**

**THE SPREAD OF AQUATIC INVASIVE SPECIES**



Zebra Mussel (1/8 inch)  
Variable Milfoil  
Water Chestnut  
Eurasian Milfoil  
Fanwort  
Carp  
Asian Clam (1/8 inch)  
Koi  
Goldfish

**BOATERS: INSPECT VESSEL CAREFULLY BEFORE & AFTER USE!**



- Remove ALL weeds and plant fragments from watercraft & trailer before & after use
- Drain boat & motor far from water; allow to dry before next use
- Clean off all waders, boots and gear after use in any waterbody
- Do not release bait or aquarium fish, shellfish or plants

For more information contact:  
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
Division of Fish and Wildlife  
(401) 789-0281 or (401) 789-7481  
[www.dem.ri.gov](http://www.dem.ri.gov)



**CAUTION!**

**Invasive Asian Clams**  
Are here in this water, slow spread to other places!

**Decontaminate Your Gear:**

**CLEAN**

Remove mud & debris on:

- Boats, Trailers, Fishing rods
- Anchors, Paddles, Gear
- Hose off, use hot water if available (best at 140° F)

**DRAIN**

- Motor Boats
- Canoes and Kayaks
- Motors
- Live Wells
- Bait Buckets

**DRY**

All wet gear & equipment:

- Hang or leave out in sun
- Dry completely before going to another lake, pond or river

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

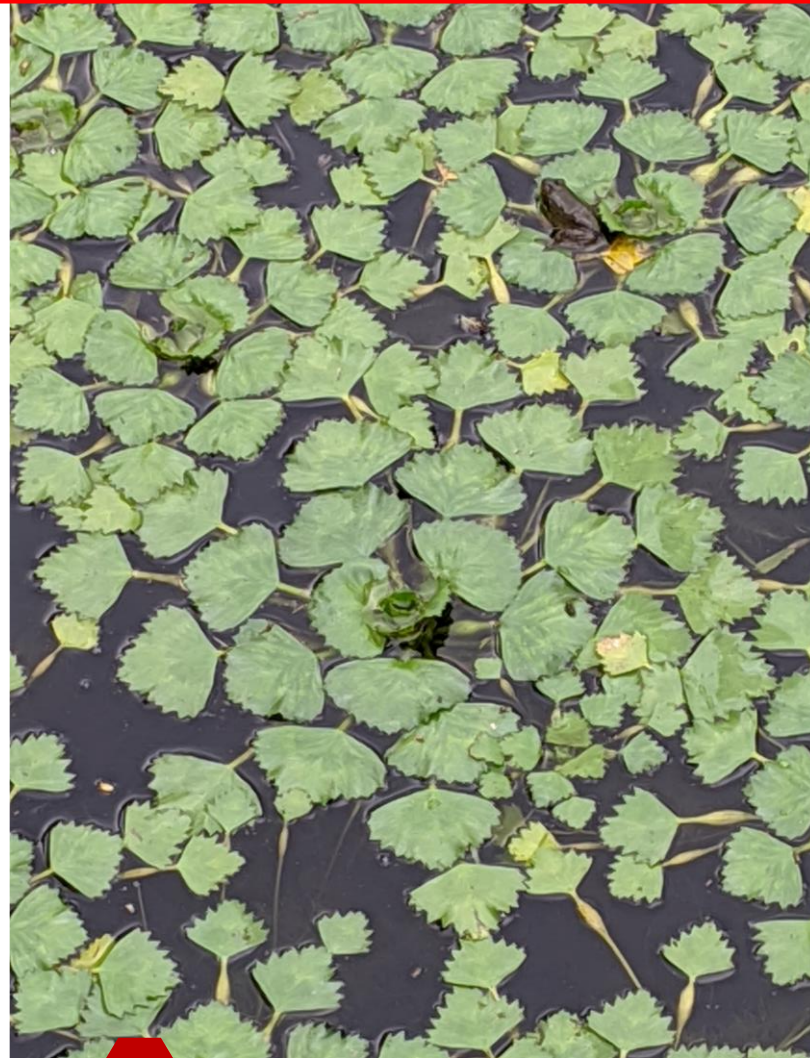
To report invasive animals, contact: Division of Fish and Wildlife (401) 789-0281  
To report invasive plants, contact: Office of Water Resources (401) 222-4700





# June & July: Keep an eye out for water chestnut

Early detection is crucial to keep it in check!



Report new populations to [katie.degoosh@dem.ri.gov](mailto:katie.degoosh@dem.ri.gov)



# Look out for Volunteer Hand Harvesting/Community pulls



Tune Into: Blackstone River Watershed Council, Ten Mile RWC, Friends of Ten Mile, Belleville (NK), Barney & Olney Ponds (Lincoln)

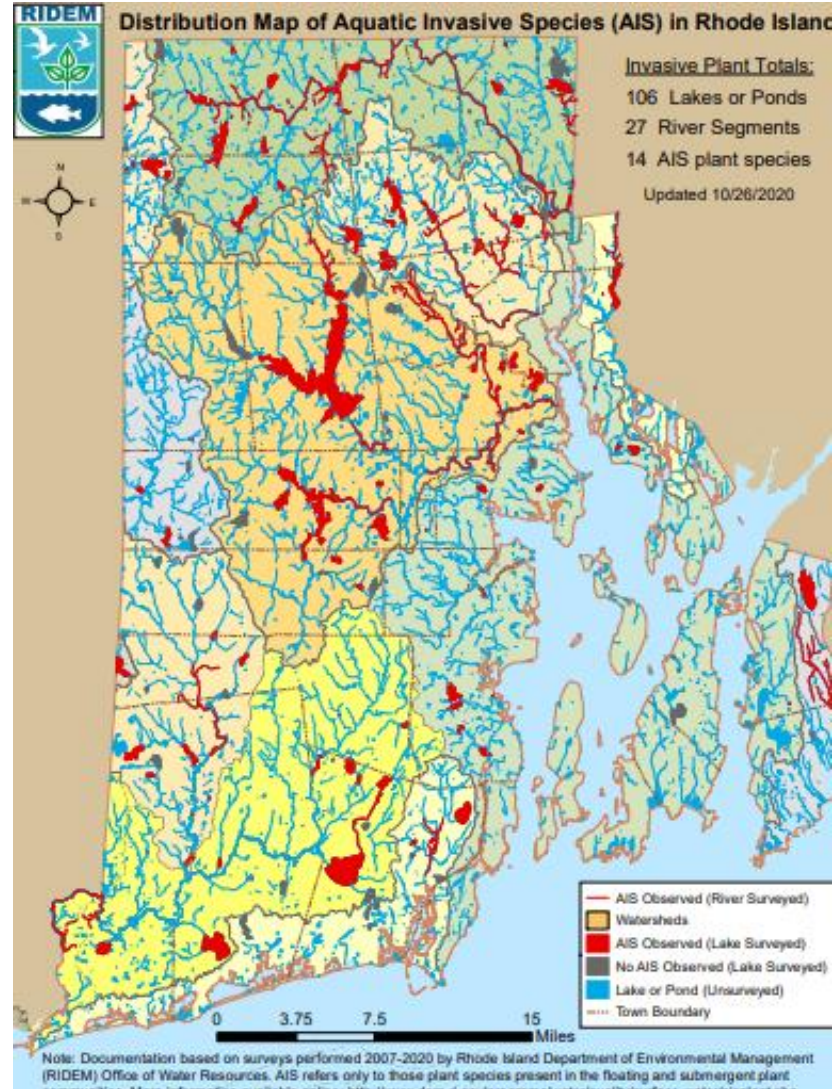




Questions?

Comments?

Water Chestnut Sightings?



**CAUTION!**

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Katie DeGoosh-DiMarzio  
RIDEM Office of Water Resources

katie.degoosh@dem.ri.gov