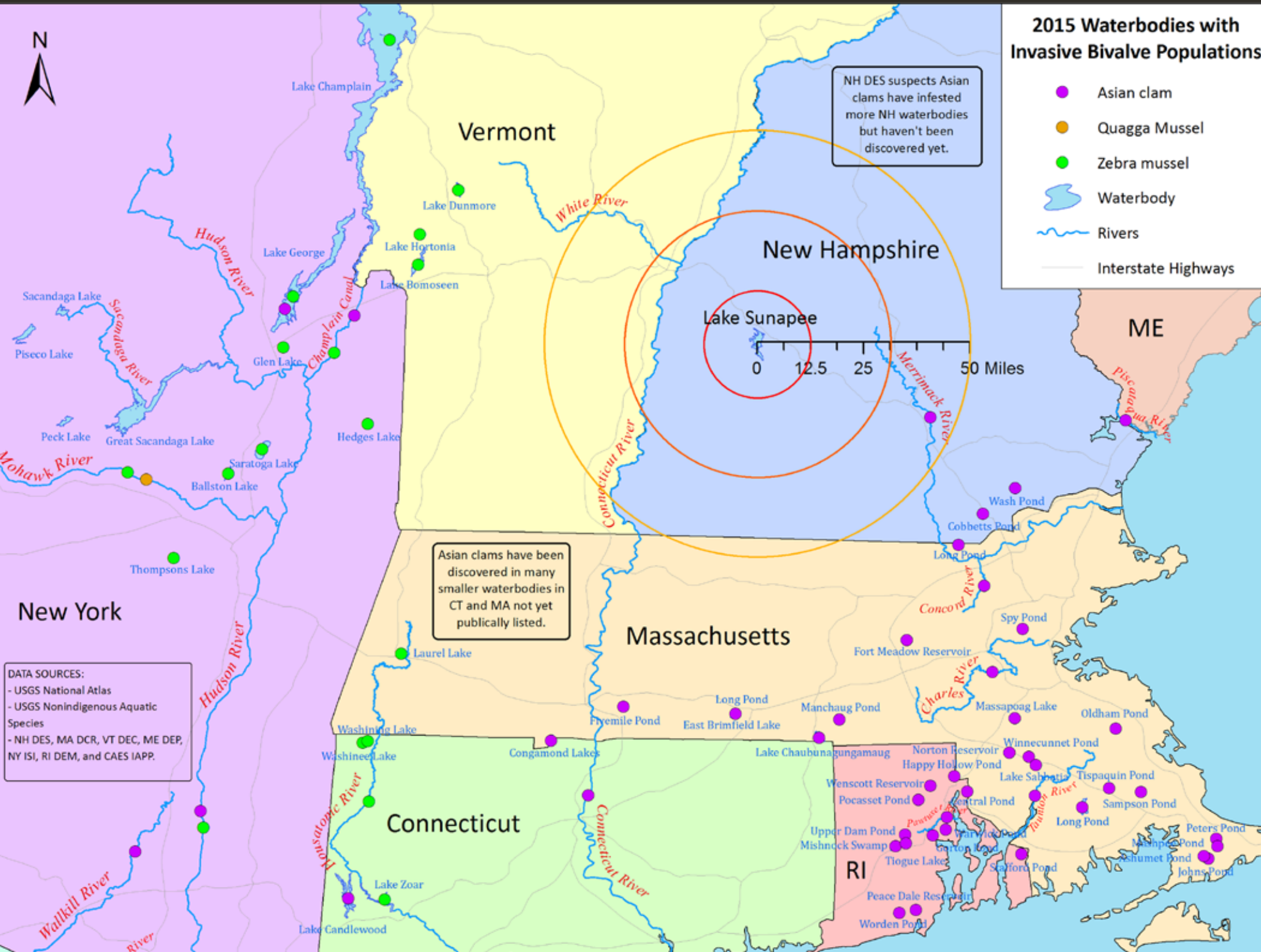
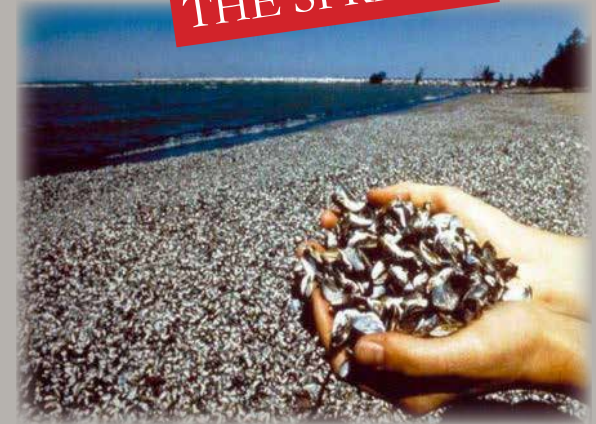


Invasive Bivalves

Asian Clam, Zebra, & Quagga Mussels

HELP STOP THE SPREAD



LSPA

Devoted to the Environmental Quality of the Lake Sunapee Watershed

Where Did They Come From? The Asian clam, native to Southeast Asia, was first discovered in the Columbia River (Washington State) in 1938 and was possibly introduced as a food item. Zebra and quagga mussels, native to Eurasia, were likely transported to the United States in the late 80's via ballast water of cargo ships in the Great Lakes. These exotic species have become invasive by quickly spreading and altering aquatic habitats in North America because they have no natural predators and because they adapt to different environments. These species are known as bivalves because of their hinged shell structure. Other common bivalves include oysters, scallops and cockles.

Are NH's Waterbodies Threatened?

According to the NOAA Fisheries Services, zebra mussels and Asian clams live and reproduce in waterbodies having moderate to high calcium and moderate pH levels. According to the NH DES, waterbodies in NH that are most at risk for infestation are the Connecticut and Merrimack rivers, and lakes and ponds in the western New Hampshire. However, these species may adapt to different water conditions over time putting more waterbodies in NH at risk for infestation. See map (back of pamphlet) of current waterbodies with invasive bivalve populations.

How Do They Get Into a Waterbody?

Bivalves can spread in the following ways:

- ◆ Attachment to boat hulls, trailers, recreational and fishing gear
 - ◆ In boat ballast and bilge water
 - ◆ Bait buckets
- Bait (Asian clams are sold as bait in certain areas in the US)
 Aquarium dumping (Asian clams are sold as pygmy and gold clams for aquariums)
 Waterfowl



Asian Clam



Zebra mussel



Quagga Mussel

What do They Look Like?

Adult Asian clams and zebra mussels are about the size of your thumbnail. Quagga mussels are very similar looking to zebra mussels but are slightly larger.



Lake Sunapee Protective Association

Native Mussel

Why Invasive Bivalves are a Problem -

1. Severely alter a lake or riverine food web effectively starving native species.
2. Interfere with the feeding, growth, movement, respiration, and reproduction of native species such as finfish, mussels and crayfish.
3. Excretion can increase algae growth and cause algae/cyanobacteria blooms.
4. Create hazardous shorefront conditions from the shells of dead and living specimens that can cut bathers in shallow waters.
5. Destabilize or sink docks and marker buoys from colonization.
6. Restrict or stop the flow of raw water intakes such as drinking water pipes.
7. Cover and degrade under water historic sites and structures.
8. Damage cooling system of watercraft engines via intake of abrasive juvenile shells.

Cleaning Watercraft and Gear

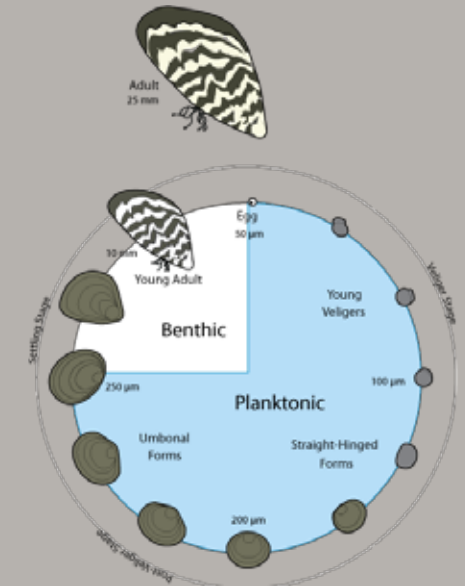
To prevent the spread of invasive bivalves, perform the following activities after using your watercraft and recreational gear in infested waters **AWAY FROM ANY SURFACE WATER or STORMDRAINS.** You may be able to feel veligers with your hand (gritty feeling) on smooth surfaces.

1. Drain bilge and live wells of your watercraft.
2. Dump bait buckets and clean/dry containers.
3. Inspect watercraft and trailer thoroughly by checking the hull, trim plates, anchors, axles, wheel areas and remove any attached bivalves and plants, discarding onto the ground.

4. Using a pressure washer, wash watercraft, anchor(s), trailer and recreational gear with hot water (high pressure and a water temperature of 140° F is needed to effectively kill bivalves) and allow to dry.
5. If using a pressure washer and hot water is not an option then allow the watercraft, trailer and gear to thoroughly dry (under cover).

What You Can Do

- ◆ Avoid boating and fishing in waterbodies infested with invasive bivalves if possible.
- ◆ Clean and Dry your watercraft, trailer and recreational gear when leaving a know or suspected infested waterbody.
- ◆ Avoid the use of felt-soled waders & shoes as they are difficult to clean and disinfect.
- ◆ Do no transport bait and clean and dry bait buckets when leaving a waterbody.
- ◆ Do not dump aquarium water into or near any waterbody or storm drain.
- ◆ Do not release any exotic aquarium fish, bivalves or other animals/plants into a waterbody or storm drian.



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