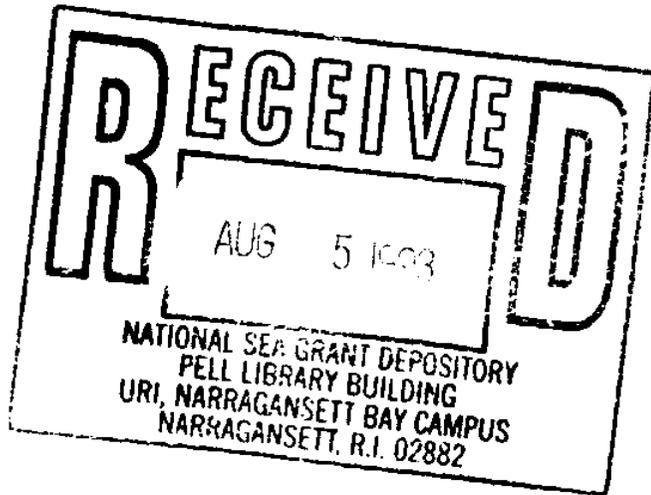


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***Northern
New England
ZEBRA
MUSSEL
Watch***

ZEBRA MUSSEL Watch
Sea Grant/Cooperative Extension
Kingman Farm
University of New Hampshire
Durham, NH 03824-3512

UNHMP-B-SG-93-15



WHAT ARE ZEBRA MUSSELS?

Zebra mussels are non-native, freshwater, bivalve mollusks. Their shells are marked by varying patterns of alternating dark and light bands. They are typically less than two inches long. The veligers (larval form) are free-swimming, nearly invisible and profuse. The adults secrete strong byssal threads by which they attach and reattach themselves to a variety of surfaces. These threads allow them to colonize quickly and reach densities of 100,000 or more mussels per square yard. The mussels have an average life span of 3.5 to 5 years.

Zebra mussels originated in the drainage basins of the the Black, Caspian and Aral seas of eastern Europe and have been in western European fresh water since the 1700s. Zebra mussels were first found in North America during 1988 in the waters of Lake Saint Clair, which is located between Lake Erie and Lake Huron. It is suspected that they arrived there as free-floating veligers within the ballast waters of a transoceanic ship during 1986.

WHAT DO ZEBRA MUSSELS DO?

In areas they infest, zebra mussels...

- attach themselves to boat hulls, creating drag.
- enter boat engine cooling systems, clogging them and causing overheating.
- colonize and clog raw water intake pipes and screens at

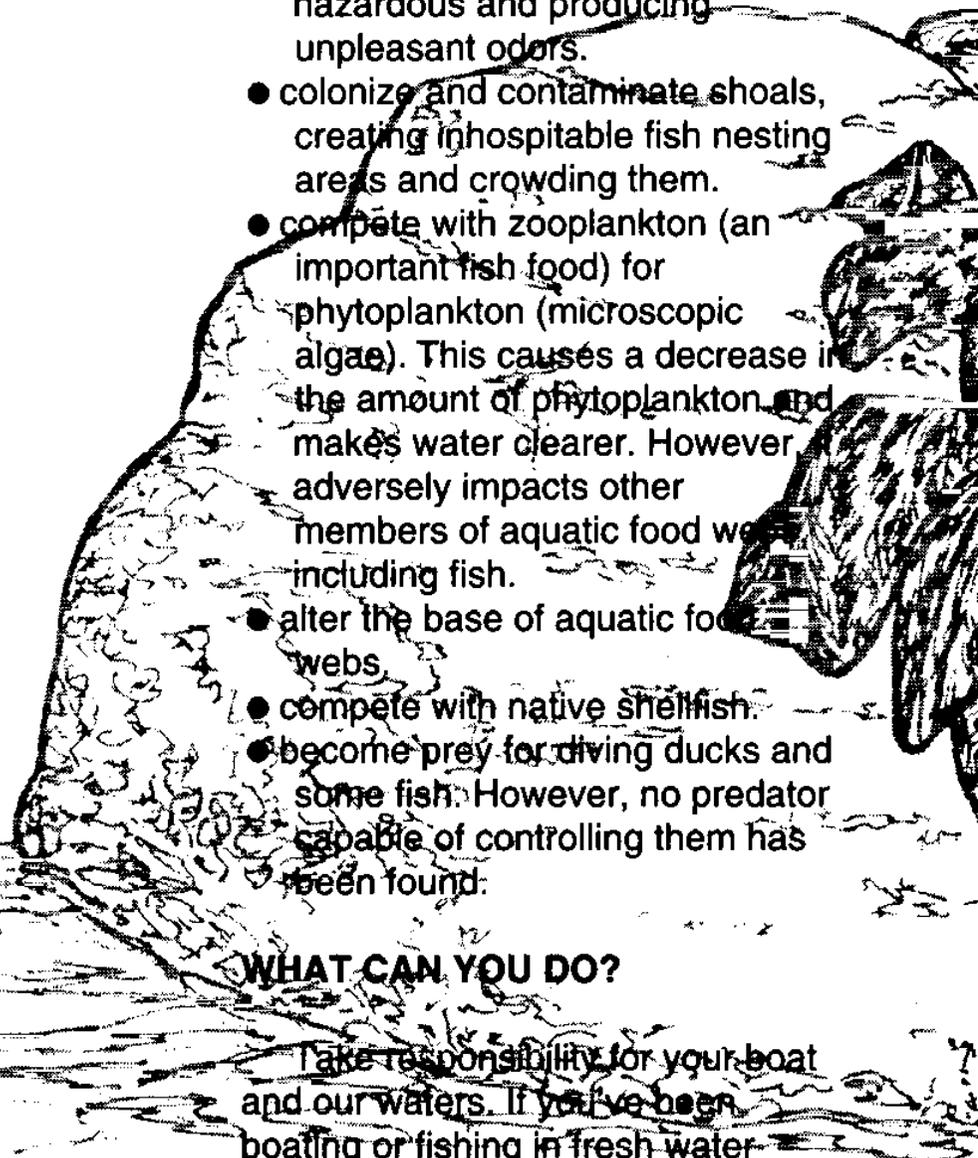
municipal water facilities, power plants, industrial facilities and shoreline residences.

- produce foul smells and bad tastes in water supplies where they are decomposing.
- litter beaches, making walking hazardous and producing unpleasant odors.
- colonize and contaminate shoals, creating inhospitable fish nesting areas and crowding them.
- compete with zooplankton (an important fish food) for phytoplankton (microscopic algae). This causes a decrease in the amount of phytoplankton and makes water clearer. However, adversely impacts other members of aquatic food webs including fish.
- alter the base of aquatic food webs.
- compete with native shellfish.
- become prey for diving ducks and some fish. However, no predator capable of controlling them has been found.

WHAT CAN YOU DO?

Take responsibility for your boat and our waters. If you've been boating or fishing in fresh water outside of New England within the past 10 days and plan to launch locally, please...

- Inspect** your boat and trailer for weeds. Remove and discard any you find. Zebra mussels are commonly found on aquatic plants in areas of infestation.



- Flush** the cooling system, bilge areas and live wells with tap water.
- Discard** all bait that has contacted waters that might be infested.
- Leave** your boat out of the water to dry for 48 hours. If it is visibly fouled by algae, leave it out until the exterior is completely dry or...

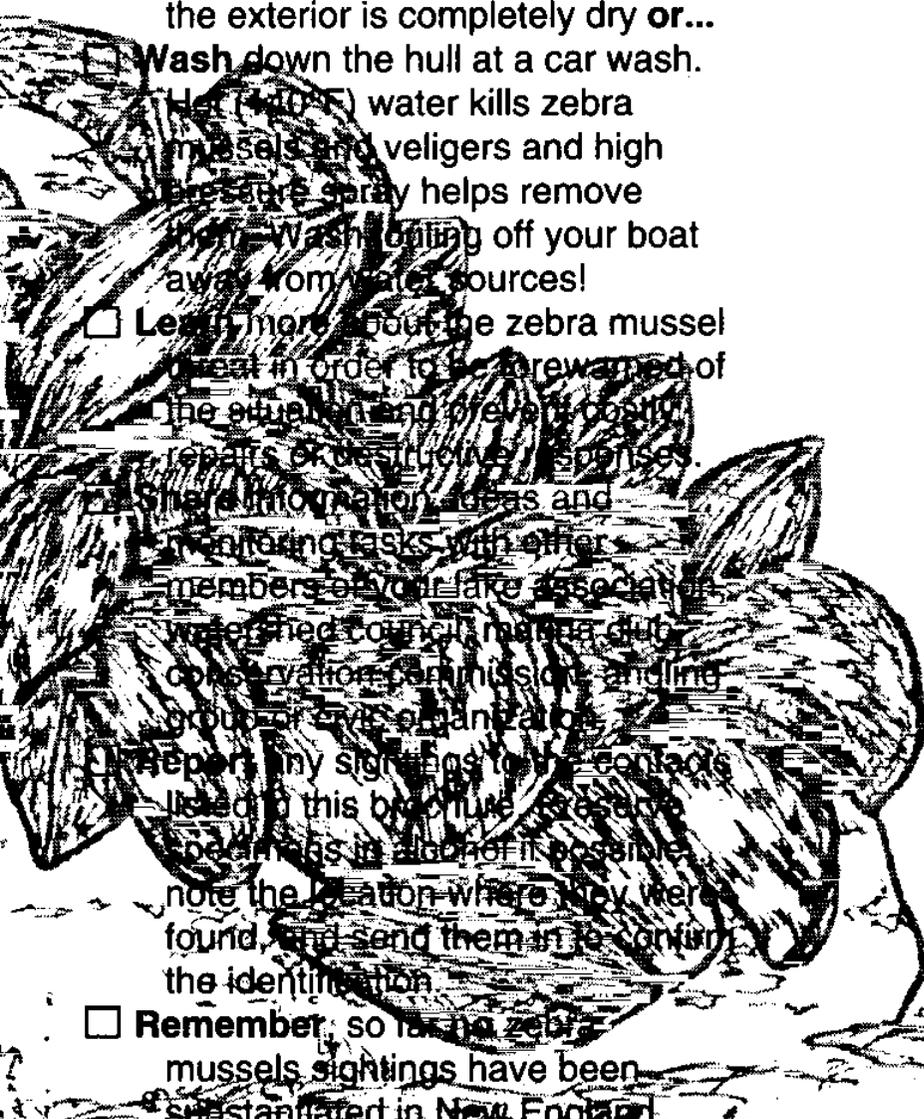
Wash down the hull at a car wash. Hot (140°F) water kills zebra mussels and veligers and high pressure spray helps remove them. Wash boating off your boat away from water sources!

Learn more about the zebra mussel threat in order to be forewarned of the situation and prevent costly repairs or destructive surprises.

Share information, ideas and monitoring tasks with other members of your lake association, watershed council, marina club, conservation commission, and/or group or civic organization.

Report any sightings to the contacts listed in this brochure. Preserve specimens in alcohol if possible, note the location where they were found, and send them in to confirm the identification.

Remember, so far no zebra mussels sightings have been substantiated in New England waterways. Confirm suspect specimens with an authority before alarming others.



HOW DO YOU RECOGNIZE ONE?

Zebra mussels commonly collect in vegetation, on docks or pilings, and along shoreline cobble and rocks.

- Adult zebra mussels are about the size of a dime and have dark and light stripes on their shells.
- Each half of the adult shell has a ridge running lengthwise down it. This creates a flat side where the two shells meet.
- Zebra mussels are the only freshwater mussels that attach to objects with byssal threads.
- A gritty feeling on your boat's hull may indicate that zebra mussel veligers have settled.

WHERE CAN YOU GET MORE INFORMATION?

To receive more information, request an educational presentation for your next group meeting, become involved in monitoring efforts, or confirm an identification, contact:

Sea Grant/Cooperative Extension
Kingman Farm
University of New Hampshire
Durham, NH 03824-3512
(603) 749-1565

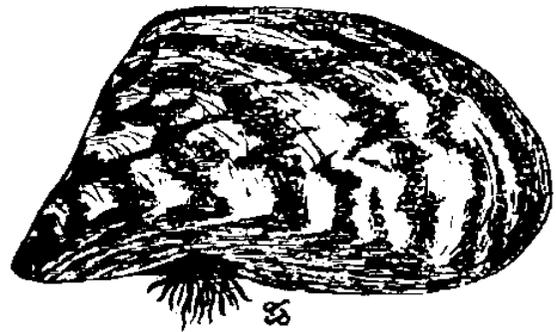
N.H. Lakes Lay Monitoring Program
109 Pettee Hall
University of New Hampshire
Durham, NH 03824-3599
(603) 862-3848

Since first being introduced to North America in 1986, zebra mussels (*Dreissena polymorpha*) have dramatically altered the balance of freshwater systems and fisheries. These small water-dwelling animals have also caused millions of dollars in expenses for industrial water-users, drinking water facilities, commercial and recreational boaters, farmers, and other groups and organizations in Canada and the Great Lakes region.

The range occupied by these unwelcome visitors has expanded and continues to grow rapidly. In North America, sightings have been recorded as far north as the Saint Lawrence River near Quebec, as far east as the lower portion of the Hudson River, as far south as the Mississippi River near Vicksburg, and as far west as the Arkansas River in Oklahoma.

Although no confirmed zebra mussel sightings have been recorded in New England waters to date, residents and boaters are being encouraged to arm themselves with knowledge about the natural history and geographic spread of the mussels. Interstate boaters and anglers, in particular, should become familiar with boating and fishing practices that decrease the likelihood that zebra mussels will be transferred from an infested water body to an uninfested one.

The infestation risk factor for any particular water body is determined mainly by the amount and type of



Zebra mussels are the only freshwater mussels that attach to objects with byssal threads.

boat traffic it supports and the chemical characteristics and temperature it maintains. While the goal is to prevent the mussels from becoming established in New England waters, zebra mussels have proven to be adaptable creatures able to survive in a growing range of environmental conditions. Cooperative monitoring activities will help determine if and when zebra mussels have become established in the region. If zebra mussels are found, information about control techniques can help those concerned choose the best method to reduce the destructive impacts of the mussels.

Since the zebra mussels arrived in the United States, a coalition of private and public organizations has been working to lessen their impact. In northern New England, the University of New Hampshire/University of Maine Sea Grant College Program and UNH Cooperative Extension's Lakes Lay Monitoring Program are leading this effort by developing educational materials and programs and by coordinating monitoring efforts.