

LOAN COPY ONLY

# ZEBRA MUSSELS

and anchor ropes, bait buckets, engine cooling systems and other boat parts and accessories that typically get wet. A pressurized steam cleaner or high-pressure power washer is also effective and requires less time. Chlorine bleach and other environmentally unsound solutions are not recommended.

4. Thoroughly dry boats and trailers in the sun for one to two days before transporting them to other waterways. If no other precautions are taken, allow boats and trailers to dry for a minimum of two weeks.

For boats that are stored in infested water, or water that may become infested, it is recommended that you:

1. Avoid leaving outdrives in the down position. Hulls and drive units should be inspected. Mussels can attach to outdrives, cover water intakes and cause clogging, engine overheating and damage to the cooling system.

2. Anti-fouling paints may be effective in preventing zebra mussels from attaching to boat hulls, outdrive units, propellers and other underwater boat components and accessories. Consult your local marine dealer or manufacturer for applicability, local use and environmental restrictions. Hull waxes have not proved effective.

## KEEP AN EYE OUT FOR ZEBRA MUSSELS AND INFORMATION ABOUT THEIR MOVEMENT.

If you see them, save a few in alcohol, scrape off and crush the rest and dispose of them in the trash. To report all suspected sightings, or for more information, call the UNC Sea Grant College Program at (919) 515-5287.

*Information obtained from Maryland Sea Grant, New York Sea Grant and the Virginia Department of Game and Inland Fisheries.*

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## A Costly Threat to North Carolina

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## WHAT ARE ZEBRA MUSSELS?

Zebra mussels are small freshwater bivalves, no more than 1 to 2 inches long, that attach to solid surfaces in the water. Marked by alternating light and dark bands, the zebra mussels were first encountered in the Great Lakes in 1988. The non-native mollusks were probably introduced into Lake St. Clair near Detroit, Mich., through the discharge of ballast water from European ships. They have since spread to the Hudson, Susquehanna, Ohio, Illinois, Tennessee and Mississippi river systems.

A high reproductive capacity has enabled the rapid spread of zebra mussels. Female mussels have the potential to produce more than 30,000 eggs per season. The fertilized eggs develop into free-swimming larvae called veligers that can remain suspended several weeks before attaching to a solid surface. The hardy adult mussels can withstand drying for several days with their shells closed.

## WHY BE CONCERNED ABOUT ZEBRA MUSSELS?

Because zebra mussels have an affinity for water currents, they tend to colonize the intake pipes of power plants, municipal water treatment facilities and other industrial water users that draw from lakes or rivers. The resulting obstruction lessens pumping capacity. And when the mussels die, they can impart a foul taste to drinking water.

In waterways, the zebra mussels can attach to boat hulls, causing a drag that reduces speed and fuel efficiency. Larval mussels that are drawn into a boat's cooling system intake and allowed to grow can cause engine damage through overheating.

The pesky mollusks will attach to other solid surfaces — marker buoys, docks, piers, pilings, ladders and ropes — and accelerate corrosion of

these structures. And their sharp shells can litter beaches in infested areas and give off an unpleasant smell, detracting from shoreline recreational activities.

Native mussel and crayfish species have also been found encrusted with zebra mussels, which smother their unwilling hosts and compete for food and space. Rare and endangered mussel populations are particularly threatened.

Zebra mussels filter about one liter of water per day, removing large amounts of phytoplankton from lake and river systems. It is unknown what effects this may have on fish populations that depend on phytoplankton for food.

## WHAT CAN YOU DO?

Zebra mussels are currently not in North Carolina, but they are forecasted to arrive within the next few years. They are dispersed naturally by birds, turtles and currents, as well as by human activities. You can help slow the spread of zebra mussels to North Carolina by not transferring water, boats, trailers, bait or equipment (anchors, buckets, etc.) from infested to uninfested areas. However, if it is absolutely necessary to transport your boat to another water body, the following precautions are recommended:

1. Drain all bilge water, live wells and bait buckets before leaving infested areas. Do not transport leftover bait to other waters.
2. Thoroughly inspect your boat's hull, outdrive, trim plates, trolling plates, prop guards, transducers, trailers and other parts exposed to infested waters. If surfaces feel grainy, small zebra mussels may be attached. These mussels should be scraped off.
3. Using hot water (at least 140 F), thoroughly flush hulls, outdrive units, live wells and pumping systems, bilges, trailer frames, anchors

*Continued*