



April 2010

Invasive Species of the Month Zebra and Quagga Mussels (*Dreissena* spp.)

Sponsored by the Oregon State Marine Board, the Clean Boater Program encourages boaters to clean and maintain their watercraft to be free of invasive species. If boaters complete a pledge form and commit to protect the environment while recreating, they are rewarded with a free tote bag filled with items to help them be an environmental steward.



The dreaded quagga mussel (left) and cousin to the zebra mussel (right). These are very small and feel like a grain of sand when they first attach to a solid object. Photos courtesy of Oregon State Marine Board.

What? Zebra and quagga mussels are closely related freshwater, bivalve mollusks that typically have a dark and white (zebra-like) pattern on their shells. Zebra and Quagga mussels are the only freshwater mollusk species that attach to hard surfaces via hair-like threads. They have thin, fragile shells.

Where? Dreissenid mussels are native to the watersheds of the Aral, Azov, Black, and Caspian seas of eastern Europe and western Asia. They were likely introduced to the Great Lakes of North America in the ballast water of cargo ships in the mid 1980s. Once established, dreissenid mussels can dramatically alter the ecology of a water body. Their filtering action enhances water clarity and changes the food web by shifting production from the pelagic to the benthic portions of the water column. By attaching themselves to the surfaces of other bivalves, dreissenid mussels can starve other freshwater mussels and drive indigenous populations to local extinction. They can also negatively affect dissolved oxygen levels.

Lookalike? Zebra and quagga mussels could be confused with Asian clams, however, Asian clam shells are thicker, with distinct ridges. Zebra mussels seldom grow larger than 1 inch and typically have alternating light and dark stripes (but some individuals do not have stripes). Quagga mussels may grow slightly larger than zebra mussels, but generally are about the same size. Asian clams can grow to 1.5 inches and are light yellow-brown to dark brown. Zebra mussel shells are D-shaped, and Quagga mussel shells are more rounded. However, Asian clam shells are more round and symmetrical.

What can you do?

CLEAN, DRAIN, DRY

- **CLEAN** your boat and trailer, especially at the points listed in the graphic. Remove any plants and animals you see before leaving the waterbody. It's best to use a hot-pressure washer, but garden hoses also work.
- **DRAIN** your motor, live well, and bilge on land before leaving the waterbody.
- **DRY** your boat and equipment for as long as possible. Five days is optimal.

ALSO:

Empty your bait bucket on land before leaving the waterbody. Never release live bait into a waterbody, or release aquatic animals from one waterbody into another.

Note: It's possible you may not see young zebra mussels with your naked eye. You should, however, be able to feel them by running your hand along the hull of your boat. A rough texture is a clue that zebra mussels may be attached to your boat. These should be removed with a power sprayer before launching your boat in other waters.