



News Around The Water Tower

VOLUME 2, ISSUE 3

MAY, 2009

Rural Water District No. 2 Miami County, KS

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Aquatic Hitchhikers

Summer is the time to enjoy the great outdoors. Many people head to area lakes and water reservoirs for boating, fishing and swimming. These summer activities are at great risk. There is an alien invasion going on. No not from outer space, but from the water we use and enjoy everyday.

The invasion of zebra mussels in the US was discovered in Lake St. Clair near Detroit in 1988. They came into North American waters in the ballast water of transoceanic freighters. Zebra mussels are native to freshwater rivers and lakes in Eastern Europe and western Asia. The mussels have been in existence there for centuries. In 1769 their existence was recorded in the Caspian Sea and Ural River in Russia.

In less than ten years, since their discovery in the United States the zebra mussels have spread to all five great lakes and into the connecting waterways of the Mississippi, Tennessee, Hudson and Ohio River Basins. The Lake of the Ozarks, a very popular Midwest vacation spot has been invaded. Brian Canaday, Conservation Department Invasive Species Coordinator, stated "that each year there are tens of thousands of visitors to the lake. It's likely the zebra mussels were unintentionally transported into the lake of the Ozarks by someone who did not detect the tiny mussels attached to his or her boat." **Several Kansas lakes and reservoirs have been invaded the same way. Kansas lakes reporting zebra mussel invasions are Marion Reservoir, Perry Reservoir, Cheney Reservoir, El Dorado Reservoir, the Walnut River, Winfield City Lake and Lake Afton.**



What is a Zebra Mussel?



Closeup of zebra mussels on stick.

S. van Mechelen, University of Amsterdam, The Netherlands

Zebra mussels are a small freshwater mollusk. They get their name from the striped pattern of their shells. They look like small clams, usually the size of a fingernail, but can grow up to two inches long, with a D-shaped shell. They can live up to five years. During that time frame a female zebra mussel can produce 5,000,000 eggs.

The fertilized eggs quickly develop into free-swimming larvae called veligers. Veligers are invisible to the naked eye. They are smaller than a period. The veligers can be carried by water currents, transported unknowingly in boat live wells, bait buckets or anything that carried small amounts of water (even on SCUBA equipment). The veligers immediately begin to grow shells. At three to four weeks, the veligers' shells weigh enough to cause them to sink. They must attach to something to survive. Some of the veligers attach to hard surfaces: rocks, wood glass, metal native mussels and each other. Once they attach themselves to a hard surface they are difficult to remove. The can withstand short

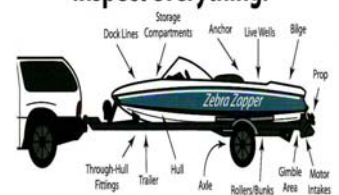


Follow these simple steps:

- Clean**
Remove all plants, animals and mud then thoroughly wash everything, including all crevices and other hidden areas on your boat and equipment.
- Drain**
Eliminate all water before leaving the area, including wells, ballast, and engine cooling water.
- Dry**
Allow time for your boat to completely dry before launching in other waters.

If your boat has been in infested waters and you cannot perform the above steps, you should have your boat professionally cleaned with high-pressure scalding water (>140 °F) before travelling to any other body of water.

Before leaving and before launching... inspect everything!



Aquatic Hitchhikers cont.

periods (several days) out of the water if conditions are moist and humid. This allows survival during transportation from one water source to another, thus the invasion continues.

Evidence of the Invasion

Adult zebra mussels colonize all types of living and non living surfaces including boats, water-intake pipes, buoys, docks, piers, plants and slow moving animals such as native clams, crayfish and turtles. They can form dense layered colonies up to one foot thick. On boats, they may attach to the hull, motor, or any item immersed in the water. Both large and small boats can be severely impacted. Small zebra mussels may get into the engine cooling systems, causing overheating and other damage. In addition to boats, the shells of zebra mussels can wash onto shores and swimming beaches. The sharp edges of the shells can be a hazard to unprotected feet and not to mention the smell of decaying mussels.



A pipe filled with Zebra Mussels
Credit: Don Schloesser, Great Lakes Science Center,
National Biological Services

The mussels' need to attach to hard surfaces has made water intake structures for power plants and water utilities (like RWD # 2) very susceptible. The mussels colonize inside the pipes reducing flow, pumping ability, obstructing valves, increasing corrosion of cast iron pipes and creating obnoxious smells from decaying mussels. The clogging of water pipes and intake structures can be severe enough to totally shut down a utility, until the clog can be cleared. The invasion of these mussels can create a costly impact on residential, industrial and recreational water users. The cost of cleanup, repair and replacement of items and materials damaged by the mussels is high. Once the mussels become established in a water body they are impossible to eradicate. Until a method for eradication is developed, control

and repairs will be costly and continual.

How To Stop The Invasion

DON'T PICK UP HITCHHICKERS. Although the eradication of zebra mussels from a lake or river is almost impossible preventing their spread into new areas is not. Human activities have spread the mussels into many inland lakes and water ways. If you are a water recreationist (boater, angler, water-skier, scuba diver, sailor, canoeist or waterfowl hunter) there are some important things you can do to prevent the transportation and spread of the zebra mussels.

- **Inspect**-Thoroughly inspect your boat's hull, drive unit, trim plates, trolling plates, prop guards, transducers, centerboards, roller, axles, anchor, anchor rope and trailer. Scrape off and remove all mussels and weeds hanging from the boat or trailer **before** leaving any body of water.
- **Drain**-Drain water from the motor, livewell, bilge and transom wells and any other water from your boat and equipment while on land **before** leaving any water body.
- **Dump**-Trash leftover bait on land, away from water, before leaving any water body. Leftover live aquatic bait that has contacted infested waters should not be taken to uninfested waters.
- **Rinse**-When you get home-before launching your boat, trailer or equipment into uninfested waters-thoroughly rinse and dry the hull, drive unit, livewells (and livewell pumping system), bilge, trailer, bait buckets, engine cooling system and other boat parts that got wet while in infested waters: use a hard spray from a garden hose. If your boat was in infested waters for a long period of time or if you find any attached adult mussels, use HOT (104° F or 40° C) water instead of cold, or tow the boat through a do-it-yourself carwash and use the high pressure hot water to "de-mussel" your boat. Do not use chlorine bleach or other environmentally unsound washing solutions.
- **Dry**-Boats, motors, trailers should be allowed to dry thoroughly in the sun for at least five days before boating again.

What Do To If You Find Zebra Mussels

If you find a zebra mussel, **do not release it back into the water**, note the date and the precise location where they were found, Take the zebra mussel with you and store it in rubbing alcohol. Immediately contact the Kansas Department of Wildlife and Parks, Research and Survey Office at 620-342-0658 or any of the department's regional offices or other offices listed on the website <http://www.kdwp.state.ks.us>.

ADDITIONAL STEPS are recommended for the following activities.

Shore and fly-fishing

Remove aquatic plants, animals, and mud from waders and hip boots.

Drain water from bait containers.

Personal watercraft

Avoid running engine through aquatic plants.

Run engine for 5-10 seconds on the trailer to blow out excess water and vegetation from internal drive, then turn off engine.

Remove aquatic plants and animals from water intake grate, steering nozzle, watercraft hull, and trailer.

Sailing

Remove aquatic plants and animals from hull, centerboard or bilgeboard wells, rudderpost area, and trailer.

Scuba diving

Remove aquatic plants, animals, and mud from equipment.

Drain water from buoyancy compensator (bc), regulator, tank boot, and other containers.

Rinse suit and inside of bc with hot water.

Waterfowl hunting

Remove aquatic plants, animals, and mud from boat, motor, trailer, waders or hip boots, decoy lines, and anchors (elliptical and bulb-shaped anchors can help reduce snagging aquatic plants).

Cut cattails or other plants above the waterline when they are used for camouflage or blinds.

