

Zebras beyond the 100th Meridian

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Most of us know about the Mason Dixon Line that partially demarcated the northern free states from the southern slave states during the Civil War Era. The 100th Meridian runs from North Dakota south to Texas, separating two distinct worlds. To the west, most states are free of invasive zebra and quagga freshwater mussels. To the east, states are held in bondage.

Source: USGS Archive



Zebra mussels

Zebra and quaggas are smaller than your thumbnail but pose serious environmental and economic threats to all waters they inhabit. Originally from Europe, these aquatic hitchhikers stowed away on transoceanic ships bound for the Great Lakes. Once in the United States, they were released in the ships' ballast water. Zebra mussels were first detected in the Great Lakes in 1986. Quaggas, named after the extinct African relative of the real four-legged zebra, showed up in 1989. The mussel takeover of the Great Lakes was swift and totally altered the region's ecology. Since their original introduction to the United States, both mussel species have once again hitchhiked, moving westward. They've done it as adults attached to boat hulls or as microscopic larvae called veligers found in water pooled within a boat, or

in water contained in the boat motor or live well. They are then transported overland by boat owners seeking to recreate in a different water body.

Each adult mussel is capable of filtering one or more liters of water each day and feeds on the microscopic plant and animal life of the lake. Their waste product is nutrient rich and often contributory to the biomagnification of pollutants in the food web. The effects of zebra mussels are suspected of having created dead zones in Lake Erie. Zebras and quaggas are known to colonize any artificial structure, including clogging pipes. At stake are municipal water intake structures and any private water pumping systems. The mussels can also colonize docks, buoys, and boats.

Other Western states and government agencies have enacted laws and are spending a boatload of money to police the threat. Montana has recently joined in the effort. All recognize that the money placed in prevention is a pittance to what the cost would be if these tiny creatures invade. The battle, however, is hard fought. Zebras are already found in a handful of waterbodies west of the 100th meridian, including Colorado, Utah, Nevada, and California.

The threat to Montana is real. In 2005, zebra mussels were found on a boat that was purchased in Indiana and transported across the 100th Meridian to Montana. The owner intended to launch it at Canyon Ferry Reservoir but fortunately contacted officials after he sus-

pected that what he saw attached to his boat were, in fact, zebra mussels. This type of story has been repeated in other states where inspection stations or private individuals have caught the threat before the mussels could cause damage.

Vigilance is key! Contact the Montana Department Fish, Wildlife and Parks if you see anything that looks like a little clam less than $\frac{3}{4}$ of an inch long with white stripes on a background ranging from black to cream (zebra mussels got their name for a reason). Keep your eyes focused on your boat hull and the boat hull of your friends from out of state. Take the time to educate yourself on this issue by visiting the 100th Meridian Initiative at www.100thmeridian.org or Montana Fish, Wildlife & Parks at fwp.mt.gov where you can see pictures of these creatures.

If these mussels find their way here, you can be assured that scientists probably won't get too far beyond scratching their heads in dealing with the issue. The inevitable carpetbaggers will follow, trying to sell their magical chemicals and engineering formulas that will almost certainly fall short in their attempt to control these persistent pests.

Source: Department of Interior/USGS, 2000



Zebra mussels impacting water intake