Quagga and Zebra Mussels

Quagga and zebra mussels arrived in the United States from Europe in the 1980s and spread to many eastern waterways, rivers, and lakes. Quagga mussels were discovered in Lake Mead, Lake Mojave, and Lake Havasu on the Colorado River in January 2007. Zebra mussels were confirmed to be present in Pueblo Reservoir in Colorado and San Justo Reservoir in California in January 2008.

These mussels spread in numerous ways, mainly by floating in the currents of the water body or by "hitching" a ride on a boat or other water vessels that are used in infested water and then transported to another water body.

Knowledge and experience in the Eastern United States indicates that once introduced, the mussels are almost impossible to eradicate in water bodies and facilities comparable to Reclamation facilities.

A key observation of quagga and zebra mussels in the Western States is not all contemporary measures can be applied to other facilities; one size does not fit all. The observations show that mussels react differently at different facilities because of water temperature, chemistry content differences, and a host of other unknown factors.

Spread of these mussels will cause significant impacts and damage to operation and maintenance of water storage, water delivery, and hydropower structures and systems; recreational use; and aquatic ecosystems.

Reclamation is concentrating on proactive measures to help reduce the post-introduction spread and impacts of the mussels to Reclamation facilities and structures, thereby lessening the need for time-consuming and most costly measures of eradication.

An invasive mussel corporate task force has been implemented. This task force is focused on the development and implementation of regional and Reclamation-wide plans in a four-part strategy; outreach and education, research, monitoring and prevention of infestation, and control and mitigation. The strategy will help guide Reclamation in the effective and efficient use of staff and resources with a focus on those facilities where mussels have been confirmed and those facilities that will likely be impacted in the future. Reclamation has also implemented task forces in each of the five regions to both contribute to, and disseminate, knowledge and practices on addressing mussel issues.

An important factor in developing the corporate strategy is the integration, involvement, and communication within Reclamation and with other affiliated organizations outside of Reclamation.

Simultaneous to the implementation of the corporate task force Reclamation is proceeding in addressing the challenges that quagga and zebra Mussels pose.

- In the lower Colorado River, Reclamation is working with partner entities to share information and coordinate the response to the present infestation. Additionally, Reclamation is participating in outreach efforts to inform the public how they can prevent the spread of mussels, implemented an action plan for mussel detection strategies and, if necessary, preventive maintenance activities, and implemented internal control measures so Reclamation employees do not spread mussels while performing water-related tasks.
- Reclamation has redirected research and development funding to study potential operation and maintenance and control measures. The activities being pursued include testing anti-fouling and other coatings, evaluating biocides (new, experimental bacterial biocides as well as traditional chemicals), investigating other repelling and operational techniques, assessing mechanical removal methods, experimenting with exclusion of larvae through filtration of intake water, and supporting foreign exploration for natural enemies. Researchers are also improving ways of monitoring and detecting mussels in western waters.

Updated: September 2008