U.S. Department of the Interior
Bureau of Reclamation
Environmental Compliance Division

Invasive Mussels

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 Mohave, and Lake Havasu on the Colorado River in January 2007, and zebra mussels were confirmed to be present in San Justo Reservoir in California in January 2008. Quagga mussels were later confirmed in Lake Powell in 2013. Invasive mussels have since spread to many reservoirs in southern Arizona and California

Mussel Impact

Invasive mussels pose significant challenges for Reclamation because they are prolific breeders that permanently settle on or within water infrastructure. Maintaining and operating water supply and delivery facilities, water recreation, and other water-dependent industries in mussel-infested water bodies is significantly more complex and expensive. Mussels also affect public recreation, the natural ecology, and water quality. Shell fragments degrade swim beaches, watercraft inspection and decontamination requirements increase time and cost for boaters, and populations of game fish can be affected. A single adult dreissenid mussels can filter approximately a liter of water each day, detrimentally reducing the availability of algae and zooplankton for native and endangered mollusks and other aquatic organisms, including fish. Extensive filtration has also increased water clarity, leading to the proliferation of aquatic weeds that can further augment the ecosystem.

Reclamation’s Response

Reclamation utilizes a variety of strategies to help reduce the spread and impacts caused by mussels to Reclamation facilities and structures- specifically: the prevention of mussel spread- through partnerships for watercraft inspection and decontamination; early detection and monitoring; facility vulnerability assessments; research on mussels control and novel monitoring technologies and; public outreach and education.

In 2009, Reclamation also established a mussel monitoring and detection program headed by the Ecological Research Laboratory (Eco Lab) at the Technical Service Center. The goal is to detect the first stages of mussel exposure at Reclamation reservoirs, and to develop protective measures to prevent mussel spread and mitigate the effects of a future infestation.