Bureau of Reclamation Invasive Mussel Research

Sherri Pucherelli
Bureau of Reclamation

The Bureau of Reclamation oversees water resource management in the western United States and is responsible for the operation of diversion, delivery, storage and hydropower facilities. The first detection of invasive dreissenid mussels in the western United States was in the Lower Colorado River in 2007. Hydropower facilities along the Colorado River have experienced operational impacts related to mussel presence, including unplanned outages, overheating of critical systems, and increased maintenance. Reclamation has developed a robust early detection and research program designed to mitigate the impacts of mussels, as well as continue to provide financial support to partners for watercraft inspection and decontamination across the West. Currently, research is focused on the development and examination of a variety of control methods to reduce the impacts of invasive mussels in Reclamation managed waters and hydropower facilities. Development of passive and environmentally responsible methods for mussel settlement prevention on critical structures at hydropower facilities has been the focus of the research. Methods examined for settlement prevention in generator cooling systems include ultra-violet light, turbulence, laser-pulsed pressure, and carbon dioxide. The durability and effectiveness of anti-fouling and foul-release coatings have been extensively examined for use on equipment such as trash racks and fish screens. Centrifugal separation and self-cleaning strainers and filtration are being examined for shell debris mitigation. Reclamation is also currently involved in several research projects designed for mussel eradication in open water including biocontrol agent identification, genetic control methods, and potash. Reclamation is also collaborating with the researchers of the winning solution resulting from the recent crowdsourcing prize challenge designed to elicit theoretical solutions for the eradication of invasive mussels in open water.