

**Statement of Robert W. Johnson, Commissioner  
Bureau of Reclamation  
U.S. Department of the Interior  
Before the  
Committee on Natural Resources  
Subcommittee on Water and Power  
United States House of Representatives  
On  
Quagga/Zebra Mussel Infestation of Western Water Facilities  
June 24, 2008**

Madam Chairwoman and Members of the Subcommittee, I am Robert Johnson, Commissioner of the Bureau of Reclamation. I am pleased to provide the Department of the Interior's views on the effect of quagga and zebra mussels on Reclamation's water infrastructure.

The main distribution of quagga and zebra mussels is in the Great Lakes region and within the major rivers of the East. Zebras were first discovered in the Great Lakes in 1988 and quaggas were discovered in 1989. Both probably arrived in the ballast water of ships originating in Europe – where they first became a problem in the 19<sup>th</sup> century. But, as all of us here today are aware, today we are seeing the spread of the both quaggas and zebras in the West. Quaggas have spread to Arizona, Southern Nevada, California and beyond, and we also have reports of zebras in some of our western reservoirs. And while we have only recently discovered mussels in our western reservoirs which will require action by our agency, the westward movement of the invasive mussels did not catch the Department by surprise.

The Department of the Interior has been monitoring these mussels since they first appeared in the Great Lakes. In 1998, DOI created the 100<sup>th</sup> Meridian Initiative with the specific intent of preventing and/or slowing the westward spread of invasive species. While the appearance of invasive mussels in the west was not inevitable, we believe that the activities and programs instituted by the 100<sup>th</sup> Meridian Initiative and other Interior actions forestalled the spread, giving an additional 10 years without these mussels in the West. Similarly, we are better prepared to deal with the presence of quaggas and zebras because of what we have learned through these activities.

To date, these invasive mussels have not prevented the delivery of water to any Reclamation customers. But there are three primary ways that mussels can impact efficiency at Reclamation's and others' water facilities. First, flow restrictions are our main concern; second, chemical degradation, which basically means rust on our infrastructure; and third, the destruction of habitat, impaired water quality, and potential accumulations of toxic materials.

We are continuing to learn and improve ways to treat facilities already impacted by the quaggas. At present, it is a very labor-intensive process. Control strategies vary from proactive approaches aimed at preventing settlement or addressing the larval stage; to taking removal actions after settlement; to redesigning or modifying systems in order to prevent and better manage quagga infestations. Copper coatings and foul release coatings show great promise, and Reclamation is currently testing 19 different coatings to determine the most appropriate ones for our facilities and water conditions. There is also a bacterial product being developed which may

be both proactive and reactive in neutralizing quaggas and zebras. This has already shown great promise under laboratory conditions, and we will begin testing it in the field later this year.

There are also various other techniques that were developed in eastern waters that we are working on to see if they can be adapted to western conditions. These include oxygen deprivation, temperature treatments, exposure and dry-up, passive and barrier filtration, removable substrates, electric currents, sonic vibration, and biological controls. We are working with our partners here today including the Metropolitan Water District of Southern California (MWD), the Central Arizona Project (CAP), the Southern Nevada Water Authority (SNWA) and other state and federal agencies on developing management techniques.

Reclamation is also undertaking activities in an effort to learn more about quaggas and zebras and prevent further spread. In fiscal year FY 2008, Reclamation's research spending for the above activities is \$800,000. In FY 2009, we plan to expend \$1.5 million on a variety of initiatives. We have reprioritized our research program – making invasive mussels our top research priority. We are also cooperating with all of the impacted states to do public outreach to educate and coordinate with our partners and stakeholders. We have put together a regionally based, Reclamation-wide team to address this issue.

Meantime, other federal agencies are also aware of how the mussels can impact their mission areas and are taking action. The U.S. Geological Survey is spending approximately \$200,000 in FY 2008 to support DOI partners as they deal with this recent invader. USGS researchers have been providing technical assistance to DOI managers since the quagga mussel was first found in the Colorado River, and the USGS Nonindigenous Aquatic Species Database has been providing Federal, state and other managers with continuously updated distribution and location information on zebra and quagga mussel infestations since the early 1990s.

The U.S. Fish and Wildlife Service (Service) is spending \$5.4 million for the Service's entire Aquatic Invasive Species Program in FY 2008 and FY 2009 (approximately \$1.8 million of that will be spent on western waters). Finally, the National Park Service has also been an active participant in addressing mussel-related challenges. NPS's focus has been on inspection, education, and rapid response. NPS is spending \$5 million on its inspection program in six high-risk parks to prevent further spread. There are any number of ways that invasive mussels are being spread from basin to basin – some within our control and others outside our control.

Ultimately, the presence of invasive mussels will change the way we design and operate our facilities in the future. For Reclamation, addressing the infestation of mussels in the Western river basins is a high priority as it is central to our core mission of delivering water and generating power. Further, the long- and short-term economic and environmental consequences of not controlling and mitigating for the infestation of the zebra and quagga mussels are significant. At the same time, we need to balance the need for control and prevention with the short-term economic implications of the response. Additionally, Reclamation is working closely with our managing partners, customers, contractors, and state and local governments to implement a four-part strategy of:

- Outreach and education
- Research
- Monitoring and prevention of infestation; and

- Control and mitigation

In implementing this strategy, it is important to remember that each region and each project is different, has different conditions and, as such, each reservoir and basin requires a customized response.

It is important to keep in mind, invasive mussels pose a significant challenge to water systems in the West, but it is just one of many such challenges we can and will meet. Reclamation and our partners have faced many other invasive species before, and we will continue to do what is necessary to assure the delivery of water and power. Aquatic nuisance species, such as mitten crabs, tamarisk (salt cedar), Russian olive, hydrilla, watermilfoil, have all appeared at one time or another in western water infrastructure or Reclamation facilities, and we have always developed processes to operate around them. Ultimately, the Federal government will have to rely on states and local entities to play a substantial role in cooperation and monitoring. We are pleased to share the witness table with these partners today.

This concludes my written statement. I am pleased to answer any questions the Subcommittee may have.