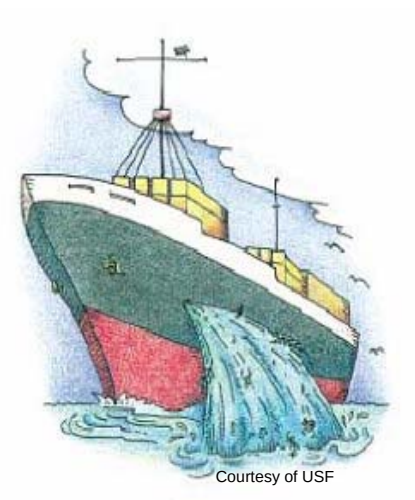
BALLAST WATER AND AQUATIC INVASIVE SPECIES



Courtesy of USF

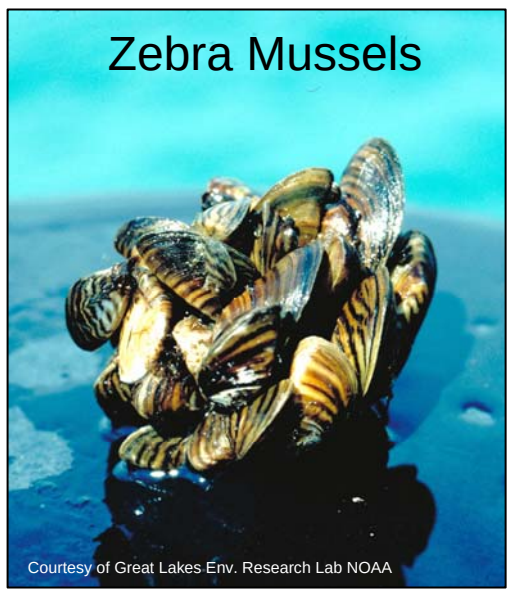
Ballast water is a major source for introducing non-native species into aquatic ecosystems where they would not otherwise be present. If the non-native species become established, they can adversely impact the economy or the environment, or cause harm to human health. For example, the management of zebra mussels near the Great Lakes has cost the U.S. economy millions of dollars annually. Costs include cleaning, monitoring, and retrofitting water intake pipes. Additionally, zebra mussels accumulate high levels of toxins which leads to health advisories for species in the food web.

With growing international trade, there are increases in the amount and frequency of ballast water transfers, and associated organisms, between distant ports.

Ballast water discharges from vessels on international and domestic voyages can contribute to the spread of invasive species in the U.S.

WHAT IS BALLAST WATER?

- Ballast water is water from a port or other location that is taken onboard a ship and stored in tanks to add weight, thereby maintaining the ship's trim and stability.
- For example, ballast water is often taken onboard as cargo is unloaded, and discharged as cargo is loaded.
- Depending on where the ballast water is taken onboard, it may be freshwater, brackish, or saltwater, and might contain organisms that are not native to the port area where ballast water will be discharged.



Courtesy of Great Lakes Env. Research Lab NOAA

Courtesy of California Interagency Ecological Program

WHY IS BALLAST WATER TAKEN ONBOARD OR DISCHARGED FROM SHIPS?

- Prior to departure or while en route, a ship may need to take ballast water onboard to maintain its stability and safety or to maximize its propulsion efficiency.
- On entry into a port, the ship may need to discharge ballast water to lighten the ship in order to maintain clearance under the keel in navigational channels or berthing areas, or to offset additional weight resulting from the loading of cargo or fuel.

WHAT ARE THE IMPACTS OF SPECIES INTRODUCED THROUGH BALLAST WATER?

- Aquatic invasive species constitute a significant threat to biodiversity in the world's coastal waters because they often have no natural predators and may out-compete native species for food in their new environment.

- Once established, invasive species can cause major environmental and economic harm as they multiply and spread. They can be very difficult, if not impossible, to control or eradicate following introduction into the receiving waters.

- Not all introduced organisms will become invasive species and harm native ecosystems; for example, some species taken onboard from a freshwater environment may not be able to survive if discharged into saltwater.

- Due to the variability in organisms and complex environmental interactions affecting their establishment, it is not yet possible to accurately predict whether an introduced species will become an invasive species in a new location.

Scientists Sampling Contents of a Ballast Water Tank

Courtesy of USCG

WHAT IS BEING DONE TO REDUCE THE IMPACT OF AQUATIC INVASIVE SPECIES IN BALLAST WATER?

- The U.S. Coast Guard, the primary Federal agency charged with establishing controls on ballast water discharges, is working closely with EPA and other Federal agencies to improve ballast water management by ships and to reduce the potential for introduction of invasive species by ships.

- Individual states affected by invasive species from ballast water are also working to address the issue for their waters.

- The International Maritime Organization (IMO) developed a treaty in February 2004 that, once it goes into effect, will help control the discharge of ballast water and sediments from ships on international voyages in order to reduce the risk of introduction of invasive species.

HOW CAN I OBTAIN MORE INFORMATION?

- Visit our website at www.epa.gov/owow/invasive_species/ .

- Contact the Oceans and Coastal Protection Division at 202-566-1200.

Office of Water
Office of Wetlands, Oceans, and Watersheds
1200 Pennsylvania Ave., N.W. (Mail Code 4504T), Washington, D.C. 20460
EPA-842-F-05-001g
October 2005