Preventing ballast-water invasions of alien species

Transcript

Hi my name is George Smith and I am a marine biologist with the Smithsonian Environmental Research Center and I am here in the port of Baltimore working on this gigantic ship. The purpose of me being on this ship is to look at phytoplankton, zooplankton, small marine animals and how the ballast water aboard the ship moves those plants and animals around the world and how to treat the ballast water to make the ballast water safe for our harbors and our ecology. Ballast water on a ship this size is 100 Olympic swimming pools in the bottom of the ship filled with water that keep the ship from rocking in the seas and keep the ship weighed down so they can sail the ship safely across oceans.

The problem with ballast water is that when they fill the tanks up when they come into port and drop off the cargo they will need to discharge the ballast water. There you have got a situation where the ballast water has come from one side of an ocean to another and has brought with it millions of small organisms and on discharge in a fresh habitat they can compete with the local animals and cause economic, ecological and social problems when they affect our fisheries, our beaches, or our harbor waters.

We are in here with the Smithsonian Environmental Research Center is to test out systems to remove the little plants and animals from the water and make that water safe to discharge in our ports and harbors. This ship is special because we have installed in it a waterworks system for testing the treatment methods for ballast water. Each test has two parts on one day we fill the two tanks the treated and the untreated and take some measures and then five days later we come back and discharge the tanks but divert part of the flow into special sampling tanks which are then are drained through nets condensed down and put under a microscope where we will do a direct analyses and count the numbers of live and dead organisms in the samples. If everything works well, then the untreated side which is just plain harbor water will still be packed with life and the side that's received treatment will not have any more animals in it. One example which is pretty well known is the invasive species in the marine environment called the zebra mussel went to the Great Lakes from the Baltic Sea and became quite well known nationally when it settled on all the beaches, and the rocks, and the sides of the canals. This little creature forms a solid coating of shellfish, is encrusting on all of the surfaces and gets inside the electric power plants and costs a lot of money to clean out, has basically changed the shoreline of the Great Lakes and is creeping down the river way systems of this country as we speak. So ballast water treatment is one way to try to avoid those kinds of issues. With the ships and the shipping companies being required to have these systems in place, somebody has to test the systems and make sure they are going to do the job and provide accurate data to the regulatory agencies and the legislatures so that they know and we know and the ships know that they are going to work and serve the purpose.