

## Ballast waters transported zooplankton into Maracaibo system, Venezuela

Félix Morales, Nancy Hernández and Randi Guerrero

University of Zulia, Venezuela

Ballast waters are globally recognized for being one of the principal transport media for invasive species. Yearly, over 100,000 tons of ballast water are transported by boats around the world, and with them, undesirable organisms (over 5,000 species of animals and plants) from diverse habitats. Inadequate ballast water discharge has become a sanitary, but also an economical and ecological, threat. There are not any studies concerning ballast waters organisms transportation in Venezuela, and international treaties covering ballast water exchange and disposal are not enforced by local authorities. The Maracaibo System is a large estuary constantly sailed by large boats, which come into it in order to transport oil, oil derivatives, coal, and different merchandises. This transport carries exotic species, which would probably become invasive in this environment. In order to develop the possible species entering the System from ballast waters, a research project was conducted, that presents a list of zooplankton taxa isolated from ballast waters taken from boats that originated its trip on different Venezuelan and International harbors. The list presents organisms from 5 phyla Arthropoda, Mollusca, Cnidaria, Chatognatha and Annelida. Planktonic organisms and larvae as Anemones, Halacarides, Copepods, Ostracods, Bivalves, Gastropods, among others were found in the incoming waters. Some of the groups are not reported for the System, even though most genuses were already in it. This research pretends to motivate an alert that projects the risk of ballast waters species transport in our System and incentivize authorities to better monitor the incoming boats.

### Biography

Felix Morales is an Oceanographer, has completed his Ph.D. at Florida Institute of Technology. He is a full Professor at University of Zulia in Venezuela, and actually Director of the Department of Biology. He has published more than 20 papers in journals related with biological oceanography and benthic ecology, and participated with over 100 presentations in different scientific congress and meetings.

[felixmorales777@msn.com](mailto:felixmorales777@msn.com)