

## **Aliens are not a black and white issue**

Zebra mussels, ground goby, and ruffe are group of alien invaders that hitch lifts around the world in ballast waters causing damage to the marine environment, public property and human health. The problems with the exotic organisms causing environmental chaos around the world notably Australia, Caspian Sea and the Great Lakes are well known, but the methods of solving the challenge are less so, said Port of Rotterdam's Cornelius de Keyzer.

The three recognised approaches to handle the issues raised by the IMO's Marine Environment Protection Committee Annex I of its (draft) Ballastwater Management Code of cleansing the water are dilution, flow-through and sequential. Capt Keyzer put forward a strong case in favour of treating ballast water on board rather than at sea or within a port boundary. He dismissed port cleansing as being too expensive and impractical in terms of land space needed for large decontamination units. Deepsea cleansing provided its own provided notably contaminating other waters with pests and "the burden on ships constructions ... even under favourable conditions.

"Shear forces, bending moments, torsional forces, hull vibration... to name but a few are already threatening the safety of ships."

Capt. Keyser said a number of research projects have been initiated to assess onboard ballastwater treatment methods. "It seems that the EVTN vortex centrifugal separation technology with a second stage UV treatment or for larger flow rates a second stage biocide treatment or the OptiMar Ballast Systems with an integrated cyclone/ Microkill UV treatment are looking most promising.

"Lately a project with the MSI centrifugal started aboard the USMA vessel Cape May, in Baltimore," said Capt Keyser. Results are expected later this year.

A highly experienced mariner and port official, Capt. Keyser said: "I am convinced that the most effective and feasible approach and solution will be onboard treatment." While praising the IMO for "its efforts to achieve a multilateral and harmonised solution...I feel worried about the slow progress and the emphasis on deep sea ballastwater treatment."