

Interactive comment on “Low salinity as a biosecurity tool for minimizing biofouling in ships sea-chests” by Maria Cecilia T. Castro et al.

Anonymous Referee #1

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Shipping is a major vector for transporting invasive species between ports, and hence an important factor in the introduction and establishment of such species. Biofouling and ballast water are the two vectors, and while the ballast water convention, which entered into force in 2017, deals with the ballast water and sediments in the tanks, there is no similar convention in force when it comes to biofouling.

Although hull is maybe the major surface area for biofouling, also algae and animals living and growing in the sea chests is a factor to take into account. This paper shows that exposing marine organisms to low salinity (7 psu) water in a (model) sea-chest will kill most of the organisms/taxa. The authors thus conclude that a low salinity treatment can be an efficient way of minimizing biofouling from ship sea-chests. To use freshwater as an in-water system to manage biofouling is not a new concept which has been

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suggested earlier.

The paper addresses a relevant scientific question, but can be shortened and more to the point, and the cluster analysis does not add to the main conclusion: freshwater kills marine organisms. In the end, it all boils down to how can this (and other suggestions) be implemented in a way that works for a ship running a tight time schedule. I think the study will have a much heavier impact if the authors also include some practical test onboard ships, not to show that low saline water will kill the organisms, but how is it done? Or at least discusses it. Previous studies have both pointed out the possibility to use osmotic shock (freshwater), but also the practical problems (see e.g. Growcott et al 2016/2017, and references therein). I think this point must be expanded in the paper.

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