

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 #2

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General comment

The paper tests the hypothesis that doses of low salinity water could be used to kill fouling species in ships sea-chests

The scope of the study is novel and data presented in the study of importance in the search for new antifouling methods for sea chests. From a biosecurity perspective the method is of interest as can help reduce risk of spreading invasive species. The new method proposed can also lead to a future decrease in use of biocidal (Cu) systems that presently are on the market to mitigate sea chest fouling (and I suggest that that aspect, of other sea chest mitigation alternatives, also is included, to balance the background with AF-paint historical overview)

C1

However I think the authors clearly should state that it is somewhat a case study from a specific site (southern UK) and with the fouling community present in this region. This is a relevant fouling for the NE Atlantic but it should also be mentioned that fouling community composition can vary greatly and include for example higher percentage of hard fouling organisms like barnacles/mussels that have the possibility to close their calcareous shell when in unfavourable conditions (like low salinity).

Conclusions are ok but I think it would be good if limitations (of that the study was conducted in one single geographic area) and also with a fouling community grown under static condition and not in a sea chest onboard a ship in route, should be included.

Specific comments

At page 2 (Line 57) where said (e.g. bryozoan) suggest adding (e. g. bryozoan and algae) At page 2 (between Line 59-60) I suggest to include a sentence stating that the most commonly used AF paint systems used today are copper-based (as standing now it looks like the substances from marine organisms became the alternative to TBT, which is misleading. Here should also be explained the difference between biocides and boosterbiocides before referring to the example study regarding soy-bean as one of the booster biocides (there are numerous booster biocides currently in use in commercial paints with role to be effective against algal fouling)

Page 3 (Line 88) "low saline environment can kill fouling species" is described a bit short. I suggest a sentence is added with a more developed reasoning. Killed by what mechanism (osmosis) and that it is the rapid change in salinity (not necessarily the low salinity?) that are stressful but the change from the environment where the fouling was developed.

Page 4 (Line 123) at what temperature was the organisms stored (compared to the marina water temp)?

Page 4 (Line 143) I do not get the "onwards" in this sentence, please clarify

C2

