

## Eliminating Hull-borne aquatic invasive species – an alternative, Non-toxic, practical approach

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Ship, boat and barge hull fouling has increasingly come to the fore as a vector for aquatic invasive species (AIS/NIS). In 2011 the IMO issued guidelines for mitigating this threat, the introduction of exotic species being regarded as one of the greatest threats to global biodiversity. These guidelines are very much under review. Australia and New Zealand are revising the ANZECC Code with a view to protecting their waters from bioinvasion. California is revising state regulations for the same reasons. Conventional wisdom on the subject recommends the use of biocidal antifouling paint to prevent attachment of nuisance species. However, it is acknowledged that copper and other biocides are not effective in keeping the hull entirely free of macrofouling, especially the protected, niche areas, and that copper and biocide tolerant invasive species pose a worse threat of invasion than those which have not become tolerant to antifouling paint biocides. It is acknowledged that in-water cleaning is needed to prevent the spread of hull-borne NIS, yet current biocidal paints are not suitable for in-water cleaning: the abrasive tools used damage and deplete the coatings and cause a pulse discharge of biocides hazardous to the local environment and non-target organisms and further afield when disposed of in dredge spoil. For these reasons in-water cleaning of biocidal antifouling coatings is prohibited in many areas. Foul-release coatings are also not suitable for in-water removal of macrofouling. Current stress is on preventing ships from arriving at their destination with excessive fouling, whereas global elimination of bioinvasion would require that ships leave port with a clean hull. Fuel savings attributed to sailing with a clean hull more than cover the costs involved. An alternative approach to eliminating the hull-borne NIS threat, is the use of a non-toxic surface treated coating system which can be cleaned in the water with no threat to coating or to the environment. This approach can eliminate the hull-borne AIS threat in an economical and environmentally benign way. This presentation will explain this alternative approach and its benefits.