



# Biosecurity risks associated with in-water and shore-based hull cleaning operations



Biofouling that is removed from vessels can still be a biosecurity threat if it is not contained and disposed of appropriately.

Biofouling removed during hull cleaning operations can still pose a biosecurity risk if viable, non-native organisms or their offspring are released back into the marine environment. Different methods of cleaning may affect the volume of biofouling released and its viability in different ways. This study compared the effects of in-water hull cleaning by divers using manual scraping tools and shore-based haul out facilities (with and without capture and treatment of waste) on the biofouling organisms removed from 36 marine vessels. The biomass of material removed and its viability following removal were compared among the cleaning methods.

Manual in-water cleaning resulted in higher proportions of viable biofouling organisms surviving cleaning ( $62.3 \pm 7.1\%$  of all organisms examined) compared to dry dock ( $37.8 \pm 8.6\%$ ) and haul-out ( $20.1 \pm 5.3\%$ ) operations. For shore-based facilities with effluent treatment systems, concentrations of organisms and/or their propagules in cleaning effluent was reduced by greater than 98.5% compared to initial hydro-blast effluent concentrations. These results can be used in guidance for hull cleaning operations to minimize associated biosecurity risk.

## Additional Reading:

- Woods, C.M.C.; Floerl, O.; Jones, L. (2012). Biosecurity risks associated with in-water and shore-based marine vessel hull cleaning operations. *Marine Pollution Bulletin* 64: 1392-1401, doi: [10.1016/j.marpolbul.2012.04.019](https://doi.org/10.1016/j.marpolbul.2012.04.019).

## Related content:

- McClary, D. (2001). [Alternative Biosecurity Management Tools for Vector Threats - Technical Guidelines for Acceptable Hull Cleaning Facilities](#). MPI Technical paper. Project Code ZBS 2000/03 [PDF 437 kb]

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