

Biosecurity for submerged structures

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Interim guidance – avoiding the spread of invasive non-native species on submerged structures and surfaces.

This guidance sets out simple instructions for disinfection measures to prevent the accidental transfer of invasive non-native species on man made submerged structures and surfaces. This advice is relevant to a range of invasive non-native species, including:

- invasive shrimp *Dikerogammarus villosus*
- carpet sea squirt *Didemnum vexillum*
- leathery sea squirt *Styela clava*
- slipper limpet *Crepidula fornicata*
- zebra mussel *Dreissena polymorpha*
- wakame *Undaria pinnatifida*
- wireweed *Sargassum muticum*.

This guidance should be adopted when removing or transferring any structure or hard surface that has been submerged, including pontoons, walkways, jetties, buoys, posts, chains, ropes, hulls, engines, anchors and cages. The diversity and extent of biofouling species will be largely determined by the length of time the structure has been submerged.

Principles

- Managers of structures deployed in the water environment, including boat users, harbour masters, managers of marinas and boat yards and anyone working within the marine, freshwater or aquaculture industry should familiarise themselves with [what these species look like](#) and how they can avoid spreading it.
- Biofouling is one of the major causes of invasive species spread in the freshwater, marine and estuarine environment. Biofouling increases cost and maintenance and alters the ecology of habitats.
- Where feasible, structures should be removed and thoroughly cleaned at the earliest opportunity before transfer, to allow the maximum period of drying. They should also be carefully inspected and, in necessary, thoroughly cleaned on arrival.

- Biofouling waste must be disposed of appropriately.

Actions

- Structures should be removed from the water before cleaning, to reduce potential spread in the environment.
- Heavy encrustations and holdfasts should be removed with scrapers, prior to pressure-washing.
- Particular attention is needed on parts of the structure where access is difficult. These areas are more likely to retain encrustations, moisture and viable biofouling species. When designing structures, avoid these features to reduce cleaning and maintenance effort.
- Thorough drying is essential. The structure should therefore be removed, cleaned and left in a well-ventilated and preferably sunlit location for the maximum duration prior to transfer.
- Structures and boats that have been transferred to the site should be inspected prior to deployment. Any evidence of biofouling must be thoroughly removed away from the water environment. Failure to do so may result in an offence under Section 14 of the Wildlife & Countryside Act 1981.
- Some biofouling species are fairly easy to identify, and records of their presence are very useful. If possible, the species present should be identified and records provided to [DASHH, The Data Archive for Seabed Species and Habitats](#), hosted by the Marine Biological Association. Identification guides are available from the [Non-Native Species Secretariat](#) and the Marine Biological Association [MarLIN project](#).
- If you can't identify a species, you can upload an image of it onto [iSpot](#) and experts may be able to identify it for you for free.
- If you identify an invasive non native species (including those listed above) on a structure that has been transported to your site you should inform an appropriate person, such as the structure owner or site manager, at the site from which the structure was last deployed.
- Washings must not be allowed to enter the water environment. Microscopic larvae or fragments of organisms are capable of spreading into the wild.
- Waste produced from the cleaning process must be disposed of appropriately. Scrapings may contain residues of anti-fouling paints and must not be allowed to contaminate the environment. This waste must be disposed of at a licensed landfill site. Biofouling organisms

may remain alive for some time after removal and be capable of surviving and spreading if disposed of in the environment.

- Drying waste is an effective method for killing the biofouling organisms, but any other contaminants may still pose a risk to the environment. If the waste only contains organic material that has originated from the site, it can be left to dry just above the spring high water mark if it can be done so without causing a nuisance.
- Otherwise, you should agree the collection and disposal of waste with the Port Health Authority and the Environment Agency.
- Ideally, all cleaning and inspection operations should be supervised by a volunteer or member of staff.
- Invasive species have the potential to be spread on shellfish shells, and cages and ropes used in their cultivation. The Invasive Species Ireland project has produced a draft [Marine Aquaculture code of Practice](#) specifically for the shellfish industry.

Useful links

For general information on recognising and managing *Dikerogammarus villosus* and other invasive non-native species, see the Non-Native Species Secretariat website

<https://secure.fera.defra.gov.uk/nonnativespecies/alerts/index.cfm?id=3>

Guidance and identification guides are also available at the Marine Biological Association MarLIN project <http://www.marlin.ac.uk/>

For specific news and advice for boat users see the Royal Yachting Association website <http://www.rya.org.uk/Pages/Home.aspx>

For advice avoiding the spread of invasive species for the aquaculture industry

<http://www.invasivespeciesireland.com/files/public/Codes/Aquaculture%20CoP.pdf>

Biological records of marine species should be provided to [DASHH, The Data Archive for Seabed Species and Habitats](#)

If you are having problems identifying a plant or animal, advice is available from the iSpot website if you are able to upload an image of it

<http://ispot.org.uk/>

If you believe you have found a record for *Dikerogammarus villosus* or *Didemnum vexillum* at a new site, send an image to

alert_nonnative@ceh.ac.uk

The Australian Government have set up a comprehensive web site to manage the incursion of marine pests. This web site includes a wide range of marine INNS biosecurity guidelines: <http://www.marinepests.gov.au/>

DEFRA Guidance on Section 14 of the WL&C Act published in 2009 and updated in 2010 can be downloaded at: <http://www.defra.gov.uk/wildlife-pets/wildlife/management/non-native/legal.htm>

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For further information please contact Trevor Renals, Conservation & Ecology Technical Services. Tel: 01208 265033, trevor.renals@environment-agency.gov.uk