

# Artificial reefs

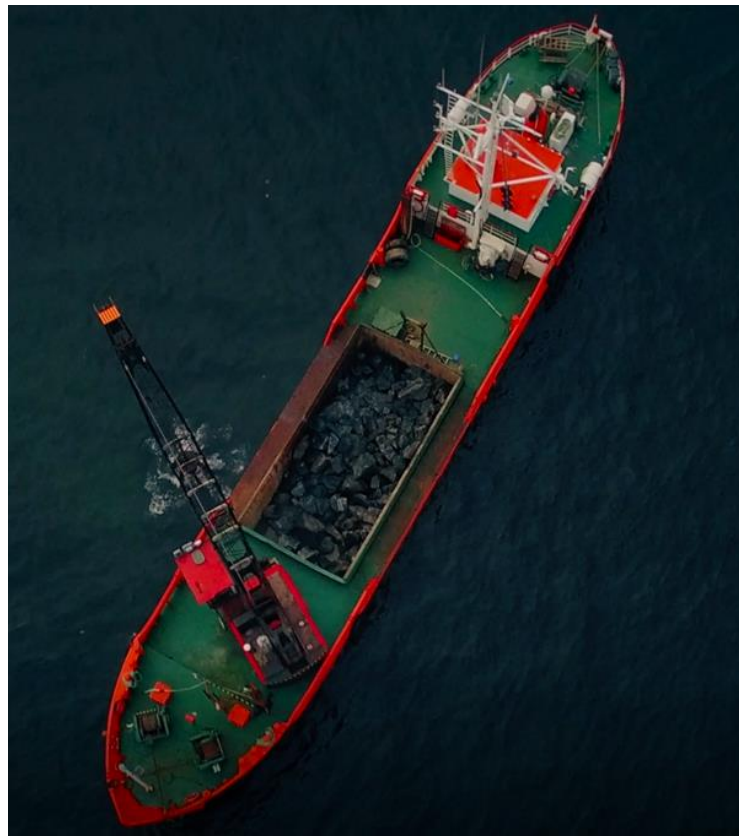
## ► Installation of artificial reefs for protection and recreation of marine ecosystems and habitats.

Peter Madsen Marine Contractors have been involved in several key projects in Northern Europe, where artificial reefs have been created to either recreate marine habitats or to compensate for the effects of major construction projects in the surrounding area.

Using our fleet of six vessels, we are able to carefully place rocks or other suitable materials to create the desired structures facilitating the intended biological developments. Our vessels are equipped with either backhoe hydraulic excavators or wire excavators with grabs, all suitable for these activities.

The vessels have fixed holds for transportation of materials and can self load and unload. The PDS2000 guidance system enables us to accurately place rock either en-mass, as separate layers or as separate blocks. Placement and validation is supported by our own multibeam survey package, including in-house equipment, surveyors and processing.

We can handle the entire project from material supply, load-out and placement to validation surveys and final documentation.



- Own vessels and crew
- Stone loading, unloading and placement capability
- Accurate stone placement with RTK GPS
- Multibeam survey validation
- Experience from key projects in Northern Europe
- Ship to ship stone transfer
- Removal of stones and seabed restoration
- Biodegradable hydraulic oil on most excavators
- Material supply and handling offered as well

### Key projects:

- Als Stenrev (DK), 14,000 m<sup>3</sup> Construction of new marine habitat
- Anholt Offshore Wind Farm (DK). 7,200 glacial dropstones placed in artificial reef to create new marine habitat.
- Blue Reef (DK), recreation of stone reefs in different formations north of the island of Læsø. 13,000mt placed in total



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