

## Key issue 18 - Direct loss of protected or sensitive littoral coastal communities due to the placement of shoreline or nearshore wave energy converters

### What are the relevant technologies and support structures?

The following technologies and support structures were identified during the assessment process as having the potential to significantly affect seabed communities through loss of habitat and should therefore, be subject to further investigation on a project specific basis.

Relevant technologies and support structures	Relevant features, components or activities	Phase
<b>Wave technologies</b>		
Oscillating water column (shoreline) Overtopping device (shoreline)	<b>Loss of habitat</b> <i>Loss of habitat due to new structures placed directly on the seabed / shoreline</i>	Operation
Oscillating water column (shoreline) Overtopping device (shoreline) Oscillating wave surge converter	<b>Change in coastline character and profile</b> <i>Large structure introduced into the shoreline</i>	Operation

### What species / groups may be vulnerable?

The following habitats and species were identified during the assessment as being particularly sensitive to habitat loss and should therefore, be considered further on a project specific basis.

Relevant technologies and support structures <sup>1</sup>	Relevant features and components
A1.1 : High energy littoral rock A1.2 : Moderate energy littoral rock A2.7 : Littoral biogenic reefs	<b>Loss of habitat</b> <i>All these species are sessile or sedentary and will be affected by loss of habitat.</i>  <i>Even small amounts of lost habitat may diminish populations of species that recorded as rare.</i>
A1.1 : High energy littoral rock A1.2 : Moderate energy littoral rock A2.7 : Littoral biogenic reefs A2.8 : Features of littoral sediment	<b>Change in coastline character and profile</b> <i>Changes to coastal character and profile themselves may influence directly these species because this habitat is intertidal and, where present, forms the actual coastline. Other conditions that change as a consequence (e.g. coastal currents, tidal flow, reflectance of waves, etc.) may also cause indirect effects on these species.</i>

<sup>1</sup> Species or habitats of conservation interest (e.g. Habitats directive, BAP habitat, OSPAR, CITES) or limited distribution found within the following Eunis habitats (see assessment for details):

### What species / groups are affected by which technologies and support structures

The following table provides a summary of the assessment results for each species or habitats in combination with each technology & Moorings/Support structures listed above.

Potentially significant at a 10MW scale	Unknown whether this will be significant at a 10 MW scale	Not Applicable	Assessed as not significant at a 10MW scale
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Loss of habitat	Technology & Moorings and Support structures	
Habitat	Oscillating water column (shoreline)	Overtopping device (shoreline)
A1.1 : High energy littoral rock Including BAP Habitat "Tidal swept channels"		
A1.2 : Moderate energy littoral rock Including BAP habitat "Under boulder communities"		
A2.7 : Littoral biogenic reefs Including BAP habitat "Blue mussel beds"		
A2.8 : Features of littoral sediment Including BAP habitat "Blue mussel beds"		

Change in coastline character and profile	Technology & Moorings and Support structures		
Species Group or Habitat	Oscillating water column (shoreline)	Overtopping device (shoreline)	Oscillating wave surge converter & Gravity base structure
A1.1 : High energy littoral rock Including BAP Habitat "Tidal swept channels"			
A1.2 : Moderate energy littoral rock Including BAP habitat "Under boulder communities"			
A2.7 : Littoral biogenic reefs Including BAP habitat "Blue mussel beds"			
A2.8 : Features of littoral sediment Including BAP habitat "Blue mussel beds"			

## How could the issue be addressed on a project and site specific basis?

The following tables provide a series of suggested activities and recommendations that may be taken forward to address the effects of habitat loss on littoral coastal communities for those technologies and/or support structures, and species/habitats, assessed as significant in the assessment. This information is not prescriptive and should be used as a platform for discussion on a project and site specific basis in order to develop an appropriate impact assessment strategy and monitoring programme for the project.

### Single test deployments

#### *Preliminary desk based studies*

Activity	Objective	Recommendation / comment
Review of existing information regarding coastal communities in the proposed development area	To inform baseline survey plans and predict the presence / absence of habitats or species identified	This work should be undertaken for all projects.
Undertake impact assessment	To identify any particular areas of concern regarding the proposed development and to determine what/if further baseline characterisation is required (see below)	This should follow the normal project specific EIA procedures.

#### *Baseline characterisation surveys*

Activity	Objective	Recommendation / comment
Baseline survey using Phase 1 Habitat Mapping along coastline	To identify any particularly sensitive habitats / species within and adjacent to the proposed development area	This work should be undertaken for all projects (in unsurveyed areas).  If sensitive a species / habitat is found to be present, wider survey to establish distribution of that species in the wider area.

#### *Further desk based studies*

Activity	Objective	Recommendation / comment
Impact assessment	To determine the suitability of the proposed deployment site in terms of the habitats and species present within and adjacent to the proposed development area.  To determine, based on baseline characterisation surveys, whether or not there are likely to be any potentially significant effects on the species identified	This should follow the normal project specific EIA procedures.

#### *Monitoring during and post installation*

Activity	Objective	Recommendation / comment
No activity recommended	N/A	N/A

## Demonstration arrays

### *Preliminary desk based studies*

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Undertake impact assessment	To identify any particular areas of concern regarding the proposed development and to determine what/if further baseline characterisation is required (see below)	This should follow the normal project specific EIA procedures.

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### *Monitoring during and post installation*

Activity	Objective	Recommendation / comment
No activity recommended	N/A	N/A