

Potential Impacts of Marine Energy Development on Scotland's Marine Ecological Environment - User guide

Query

In order to query the impact assessment tool, select your query from the list under each heading. Each menu can be left as 'All', or can be narrowed down to a more specific search by selecting one or more of the options. To select multiple options press the Ctrl key and click on the relevant options (note that multiple selections are not possible for the technology category, species category or species group / benthic habitat).

For example, to examine the potential impacts of an attenuator with a drag embedment anchor click on these two options and then click continue.

Environmental Pressure

- All
- Barrier to movement
- Change in coastal character and profile
- Change in coastal processes
- Change in mixing zone location/structure

Technology Category

- All
- Attenuator
- Horizontal axis turbine
- Oscillating water column (offshore)
- Oscillating water column (shoreline)

Mooring or Support Structure

- All
- Drag embedment anchor and mooring lines
- Gravity/deadweight anchor and mooring lines
- Rock anchors and mooring lines

Species Category

- All
- Benthic Habitats and Species
- Fish and Shellfish
- Marine Birds
- Marine mammals

Species Group/Benthic Habitat

- All
- A1.1 : High energy littoral rock Including BAP Habitat "Tida...
- A1.2 : Moderate energy littoral rock Including BAP habitat "...
- A1.4 : Features of littoral rock
- A2.1 : Littoral coarse sediment

Individual Species

- All
- (Scandinavian) Herring Gull
- (Western) Herring Gull
- (Western) Lesser Black-backed Gull
- Angler Fish (Monkfish)

On the results page the tool then returns a list of environmental pressures and associated key issues in relation to that search query, as shown below:

Pressure	Key Issue			
Direct abrasion	Direct loss of protected or sensitive sub-littoral seabed communities due to the presence of wave and tidal energy converters and associated moorings / support structures on the seabed	Summary Assessment Results	Detailed Assessment	Assessment and Monitoring Guidance
Loss of habitat	Direct loss of protected or sensitive sub-littoral seabed communities due to the presence of wave and tidal energy converters and associated moorings / support structures on the seabed	Summary Assessment Results	Detailed Assessment	Assessment and Monitoring Guidance

For each of these environmental pressures and associated key issues you can click on the buttons in the table.

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Summary assessment results

Summary Assessment Results

The summary assessment results will show a matrix which summarizes the judgments made in the assessment between a species & technology for each identified environmental pressure.

	Technology & Moorings and Support structures			
	Combination A	Combination B	Combination C	Etc.
Species 1	1	1	0	
Species 2	1	1	0	
Species 3	unknown	unknown	NA	
Etc.				

Detailed Assessment Results

Detailed Assessment

The detailed assessment results will show each assessed interaction between a species & technology for each identified environmental pressure. As for the summary assessment results above, a score for the potential significance of each interaction is given along with a brief explanation of the judgement made.

Assessment of potential significance of identified interactions

The score for the potential significance of an interaction in the table above is based on the assumption of a 10MW array with the necessary supporting moorings and structures in place. Separate criteria were developed for benthic habitats and species, marine mammals, marine birds, and fish and shellfish (see 0).

Assessment and Monitoring Guidance

Assessment and Monitoring Guidance

The assessment and monitoring guidance will link to a pdf containing the Assessment and Monitoring Guidance which is relevant to each key issue query.

Full results

The buttons at the bottom of the page give a full output of the results for this query click on the buttons at the bottom of the page.

Summary Assessment Results

Detailed Assessment Results

Assessment and Monitoring Guidance

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Table 1.1 Scoring criteria for assessing significance of interactions

Score	Marine birds	Marine mammals	Fish and shellfish	Benthic habitats and species
1	There is a reasonable hypothesis that the potential exists to cause death/injury or to affect behaviour in a way that has negative consequences for energy intake that could lead to a change in the stability of the regional population or within an SPA population	<p>There is a reasonable hypothesis that:</p> <ul style="list-style-type: none"> the development of a 10MW array may potentially lead to the death/severe injury of an individual cetacean; <p>or</p> <ul style="list-style-type: none"> the development of a 10MW array may lead to the death/injury/disturbance of a significant number of seals/otters to the extent that would result in a change in stability of the local/regional population or an SAC population 	There is a reasonable hypothesis that a 10MW array would result in a change in the stability of the Scottish population bearing in mind that some species may already be under pressure due to other factors (e.g. climate change, fisheries pressures)	<p>There is a reasonable hypothesis that the impact from a 10 MW array will cause:</p> <ul style="list-style-type: none"> the habitat to be fully or partially destroyed; <p>or</p> <ul style="list-style-type: none"> major and larger-scale (beyond the seabed footprint of the array) effects on the survival or viability of species that characterise the habitat, that provide key structure or function for the habitat or that are of natural heritage importance in that habitat (i.e. those in Biodiversity Action Plans)

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Score	Marine birds	Marine mammals	Fish and shellfish	Benthic habitats and species
0	There is a reasonable hypothesis that a 10MW array will not result in a change in the stability of the regional population or within an SPA population	There is a reasonable hypothesis that: <ul style="list-style-type: none"> the development of a 10MW array will not lead to the death/severe injury of an individual cetacean; or <ul style="list-style-type: none"> the installation of a 10MW array will not lead to the death/injury/disturbance of a significant number of seals/otters to the extent that would result in a change in stability of the local/regional population or an SAC population 	There is a reasonable hypothesis that a 10MW array would not result in a change in the stability of the Scottish population bearing in mind that some species may already be under pressure due to other factors (e.g. climate change, fisheries pressures)	There is a reasonable hypothesis that the impact from a 10 MW array has, at most, only minor and local effects (within the actual seabed footprint of the array) on the survival or viability of species that characterize the habitat, that provide key structure or function for the habitat or that are of natural heritage importance in that habitat (i.e. those in Biodiversity Action Plans)
NA	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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Score	Marine birds	Marine mammals	Fish and shellfish	Benthic habitats and species
Unknown	<p>It is unknown at this time:</p> <ul style="list-style-type: none"> • whether an interaction between the species and technology/mooring /support structure is possible/likely to occur; or • if the effect on the species concerned is likely to result in a change in stability of the local/regional population 	<p>It is unknown at this time:</p> <ul style="list-style-type: none"> • whether an interaction between the species and technology/mooring system/support structure is possible/likely to occur; <p>or</p> <ul style="list-style-type: none"> • if the effect of a particular environmental pressure or a combination of pressures on the species concerned is likely to result in a change in stability of the local/regional population; <p>or</p> <ul style="list-style-type: none"> • whether the removal of a single individual from a population is significant and likely to result in a change in stability of the local/regional population 	<p>It is unknown at this time: whether a 10MW array would or would not result in a change in the stability of the Scottish population bearing in mind that some species may already be under pressure due to other factors (e.g. climate change, fisheries pressures)</p>	<p>Category not used for benthic habitats/species</p>