

Marine recreation evidence briefing: coasteering

This briefing note provides evidence of the impacts and potential management options for marine and coastal recreational activities in Marine Protected Areas (MPAs). This note is an output from a study commissioned by Natural England and the Marine Management Organisation to collate and update the evidence base on the significance of impacts from recreational activities. The significance of any impact on the Conservation Objectives for an MPA will depend on a range of site specific factors. This note is intended to provide an overview of the evidence base and is complementary to Natural England's *Conservation Advice* and *Advice on Operations* which should be referred to when assessing potential impacts. This note relates to coasteering. Other notes are available for other recreational activities, for details see *Further information* below.

Coasteering

Definition

Coasteering is an activity that involves traversing along the intertidal, subtidal and supralittoral zones, using a combination of scrambling, walking and swimming to complete the journey, without the aid of boats, surf boards or other craft. It often involves a series of jumps into deeper water.

Distribution of activity

Most activity is undertaken along discrete sections of coast with suitable access and with appropriate features for coasteering (such as rocks, cliffs and islets). The nature of the activity means that it is restricted to rocky sections of the UK coastline (particularly in the south and south west of England). Hotspots of activity in England include Newquay (Cornwall), Torquay (Devon) and near Durdle Door (Dorset) (Jethro Moore, National Coasteering Charter, pers. comm. March 2017). In 2007 it was estimated that coasteering occurred at over 100 locations in the UK, with the majority of these being broadly grouped in a few areas along the western coastline from Cornwall to Western Scotland (Thomas, 2007).

Levels of activity

Coasteering is a popular emerging activity. The Watersports Participation Survey 2015 (Arkenford, 2015) estimated that 101,000 people participated in coasteering activities in the UK in 2015.

Pressures

This note summarises the evidence on the pressures and impacts of coasteering on rocky coastline. The direct pressures considered to arise from the activity are shown in Table 1 and the potential biological receptor groups affected by these pressures are shown in Table 2.

The information presented on pressures associated with the activity builds upon, and is complementary to, Natural England's Conservation Advice and Advice on Operations which should be referred to for MPA specific information and sensitivities of specific MPA features to those pressures¹.

For this activity, access on foot to the locations where this activity takes place and participation in the activity itself (ie movement along a rocky coastline) have not been considered to be separate components of the activity (ie access to the activity and participation in the activity have been assumed to exert the same pressure on the same receptors).

The main pressure-receptor impact pathways arising from this activity are considered to be:

- Abrasion/disturbance of the substrate surface in intertidal and shallow subtidal areas, through general footfall (trampling).
- Above water noise disturbance of hauled out seals and birds, related to people noise (from groups taking part).
- Visual disturbance, of hauled out seals and birds, related to the presence and movement of people participating in the activity.

As the activity is generally undertaken on rocky shores, no sub-surface abrasion/disturbance of the substratum is considered to arise from this activity and hence this pressure has been scoped out. Activities undertaken in the sea (eg jumping into the sea and swimming) are not considered to result in underwater noise changes above ambient background levels. As such this pressure has been considered to be negligible and has not been considered further.

The potential for visual disturbance of fish receptors when participants jump into the sea during the activity has been considered negligible (expert judgement) due to the low likelihood of overlap between the activity/pressure and sensitive receptors such as basking sharks.

For Tables 1 and 2 see page 11.

Impacts

Where an impact pathway has been identified between the pressures arising from the activity and a biological receptor group, a summary of the evidence of impacts has been presented below.

¹ <https://www.gov.uk/government/collections/conservation-advice-packages-for-marine-protected-areas>

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Intertidal and shallow subtidal habitats

Abrasion / disturbance of intertidal and subtidal substratum surface – from trampling

The impacts of trampling on rocky shore communities are relatively poorly studied in the UK. Most of the available literature focuses on sloping, publicly accessible shores that are moderately wave exposed or sheltered and therefore may not be directly applicable to the types of shore on which coasteering activities occur, which are generally more wave exposed, steeply inclined shores.

Potential physical disturbance which may occur during coasteering includes: physical contact with gully walls, brushing against epifaunal crusts and turfs, pulling on seaweeds (especially kelp in the lower shore), trampling over and standing on rock surfaces and collection of souvenir organisms (Tyler-Walters, 2005).

Reviewing the impacts of trampling and physical disturbance on rocky shore species and habitats, Tyler-Walter (2005) summarised that:

- Fucoid seaweed species were particularly intolerant and sensitive to trampling.
- Trampling damaged erect coralline turfs, barnacles, and resulted in an increase in bare space; in some cases paths across the shore were visible.
- On brown seaweed dominated shores, understory seaweed could suffer due to increased desiccation but turf species, opportunists and gastropod grazers (eg limpets) could increase in abundance as an indirect effect of trampling.
- Delicate slow growing lichen communities were potentially vulnerable.
- The impact of trampling relates to the intensity, frequency, duration and the weight and footwear of the participant and is highly localised.

Marine mammals

Above water noise changes and visual disturbance (hauled out seals only)

It is very difficult to separate out the relative contribution of noise and visual stimuli in causing a disturbance response to seals due to human presence and activity and the available literature generally makes no distinction. Therefore, these pressures are reviewed collectively.

Seals hauling out on rocky coastline are potentially susceptible to disturbance as a result of coasteering. Specific evidence assessing potential impacts is limited although disturbance effects are expected to be similar to that of more general human presence on the foreshore, with a flight response typically observed up to several hundred metres away (Bishop *et al.*, 2015; Anderson *et al.*, 2012). Most established seal colonies along rocky coastline are generally remote and isolated with difficult access (SCOS, 2016) including pupping areas in caves which could potentially overlap with coasteering activity. However, the majority of coasteering activity does not overlap with sections of coast utilised by seals for hauling out.

Birds

Above water noise and visual disturbance

It is very difficult to separate out the relative contribution of noise and visual stimuli in causing a disturbance response to birds due to human presence and activity and the available literature generally makes no distinction. Therefore, these pressures are reviewed collectively.

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Nesting seabirds and coastal birds foraging along rocky coastline are potentially susceptible to disturbance as a result of coasteering. Specific evidence assessing potential impacts is limited although disturbance effects are expected to be similar to that of more general human presence on the foreshore. The primary responses observed are likely to include increased vigilance, avoidance walking and flight responses, typically at approach distances < 100 m although distances over 200 m have been recorded for some sensitive species.

The level of any response will vary depending on a range of factors including the speed, randomness and distance of approach and also the level of habituation as a result of existing activity (IECS, 2009; McLeod, *et al.*, 2013; Guay *et al.*, 2014; Dwyer, 2010).

Some disturbance effects may have more direct negative impacts, such as loss or failure of eggs or chicks leading to decreased breeding productivity, to birds than others, eg temporary displacement from feeding or roosting areas leading to increased but non-lethal energetic expenditure.

Repetitive disturbance events can result in possible long-term effects such as loss of weight, condition and a reduction in reproductive success, leading to population impacts (Durell *et al.*, 2005; Gill, 2007; Goss-Custard *et al.*, 2006; Belanger and Bedard, 1990).

Assessment of significance of activity pressure

The following assessment uses the evidence base summarised above, combined with generic information about the likely overlap of the activity with designated features and the sensitivity range of the receptor groups, to provide an indication of the likelihood of:

- i) an observable/measurable effect on the feature group; and
- ii) significant impact on Conservation Objectives based on the effect on the feature group.

The assessment of significance of impacts has been based on the potential risk to the achievement of the conservation objectives for the features for which a site has been designated. The assessment is made using expert judgement and is designed to help identify those activities that are likely to be of greatest or least concern, and, where possible, suggest at what point impacts may need further investigation to determine potential management requirements within MPAs to reduce the risk of an adverse effect on the integrity of the site. Note, the assessment only considers the impact pathways considered in the evidence section (pressures which were considered negligible in Tables 1 and 2 are not considered in this assessment).

The outputs are shown in Table 3. The relative ratings of likelihood of significant impact on Conservation Objectives (COs) are defined as:

- Low – possible observable/measurable effect on the feature group, but unlikely to compromise COs.
- Medium – observable/measurable effect on the feature group that potentially could compromise COs.
- High – observable/measurable effect on the feature group that almost certainly would compromise COs.

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The relative risk ratings are based on the activity occurring without any management options, which would be considered current good practice, being applied. The influence that such management may have on the risk rating is discussed in the *Management options* section below.

It must be noted that the above assessment only provides a generic indication of the likelihood of significant impacts, as site-specific factors, such as the frequency and intensity of the activity, will greatly influence this likelihood. As such, further investigation of the risk to achieving COs will need to be done on a site specific basis, considering the following key site-specific factors:

- The spatial extent of overlap between the activity/pressure and the feature, including whether this is highly localised or widespread.
- The frequency of disturbance eg rare, intermittent, constant etc.
- The severity/intensity of disturbance.
- The sensitivity of specific features (rather than the receptor groups assessed in Table 3) to pressure, and whether the disturbance occurs when the feature may be most sensitive to the pressure (eg when feeding, breeding etc).
- The level of habituation of the feature to the pressure.
- Any cumulative and in-combination effects of different recreational activities.

For Table 3 see page 12

Management options

Potential management options for marine recreational activities, note, these are not specific to coasteering, include:

On-site access management, for example:

- designated areas for particular activities (voluntary agreements or underpinned by byelaws);
- provision of designated access points eg slipways, in locations likely to be away from nature conservation access (voluntary or permit condition or underpinned by byelaw).

Education and communication with the public and site users, for example:

- signs, interpretation and leaflets;
- voluntary codes of conduct and good practice guidance;
- wardening;
- provision of off-site education/information to local clubs/training centres and/or residents.

Legal enforcement of, for example:

- byelaws which can be created by a range of bodies including regulators, Local Authorities and landowners (collectively referred to as Relevant Authorities);
- permitting or licence conditions.

Specific examples of management measures which have been applied to coasteering activities are described further in a Management Toolkit which can be accessed from [Marine evidence > Marine recreational activities](#), and include:

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- codes of conduct;
- good practice guidance (Coasteering best practice video);
- voluntary zonation, for example: voluntary agreements on areas not to be commercially developed as coasteering routes as deemed highly sensitive (based on a feasibility study which mapped the distribution of sensitive features along the coastline);
- production of maps showing areas to avoid at particular times; and
- voluntary access agreements between commercial activity providers and the landowner (coasteering concordat).

The examples of management of this activity through voluntary zonation have arisen via partnership working between commercial operators/charter groups, NGOs and/or Coastal Forums.

Based on expert judgement, it is considered that where management measures, which would be considered current good practice, are applied to coasteering activities, adhered to and enforced, the likely risk of significant impact on a site's Conservation Objectives would be **Low** in relation to all activity/pressure impact pathways.

For further information and recommendations regarding management measures, good practice messaging dissemination and uptake, refer to the accompanying project report which can be accessed from [Marine evidence > Marine recreational activities](#).

National governing body and good practice messages for coasteering activities

National governing body

There is no National Governing Body for coasteering activities. However, the National Coasteering Charter (NCC) is an Advisory Organisation which represents companies offering coasteering experiences.

The Charter has a Code of Conduct for Coasteering Guides - which includes a specific section on protecting the natural environment, including in relation to avoiding disturbance of seabirds and seals at sensitive times. The Code of Conduct is available here:

<http://www.nationalcoasteeringcharter.org.uk/wp-content/uploads/Coasteering-Code-of-Conduct-for-Guides-1.pdf>

To retain membership of the NCC, coasteering businesses' agree to the terms of the NCC Membership Charter 2016-2017, which include the requirements to abide by countryside access legislation and avoid damage to sites and minimise any disturbance to wildlife in accordance with the above code of conduct and any relevant wildlife legislation_(see: <http://www.nationalcoasteeringcharter.org.uk/wp-content/uploads/Member-Charter-2016-2017-1.pdf>).

Good practice messaging

The Code of Conduct for Coasteering Guides promotes conduct to address the pressures arising from this activity (abrasion, noise and visual disturbance). Hence it is not considered that there are any major gaps in the messaging.

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Key messages to minimise impacts include:

Noise and visual disturbance:

Avoid disturbing wildlife - be prepared to change your route if necessary. Ensure that you understand and respect any site specific access agreements that are in place to protect wildlife from disturbance / prevent damage to the environment; and

Be aware of nesting seabirds from 1st March to the end of July, and of grey seals pupping and moulting from 1st August to the end of January. Some coasteering routes have agreed seasonal restrictions in place.

The code is less explicit about potential abrasion impacts to intertidal/subtidal habitats and associated flora and fauna, however it does include the following general messages which should help to minimise impacts from this pressure:

- do not damage rocks or remove fossils from the coast; and
- before developing a new stretch of coast for coasteering it is essential to contact local conservation organisations to determine if there is any sensitive wildlife / geology or access issues in that area.

Furthermore the NCC Membership Charter 2016-2017 includes the message:

- Avoid damage to sites and minimise any disturbance to wildlife in accordance with the Coasteering Code of Conduct and any relevant wildlife legislation.

Further information

Further information about the Advisory Organisation for Coasteering, good practice messaging resources, site specific conservation advice and management of marine recreational activities can be found through the following links:

- National Coasteering Charter: <http://www.nationalcoasteeringcharter.org.uk/>;
- Conservation Advice - Advice on Operations;
- for site specific information, please refer to Natural England's conservation advice for each English MPA which can be found on the Designated Sites System <https://designatedsites.naturalengland.org.uk/> This includes Advice on Operations which identifies pressures associated with the most commonly occurring marine activities, and provides a broad scale assessment of the sensitivity of the designated features of the site to these pressures;
- for further species specific sensitivity information a database of disturbance distances for birds (Kent et al, 2016) is available here: <http://www.fwspubs.org/doi/abs/10.3996/082015-JFWM-078?code=ufws-site>
- some marine species are protected by EU and UK wildlife legislation from intentional or deliberate disturbance. For more information on the potential requirement for a wildlife licence: <https://www.gov.uk/guidance/understand-marine-wildlife-licences-and-report-an-incident>

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- The Management Toolkit which can be accessed from [Marine evidence > Marine recreational activities](#).

Evidence notes for other marine recreational activities can be accessed from [Marine evidence > Marine recreational activities](#) and include:

- Boardsports with a sail
- Boardsports without a sail
- Diving and snorkelling
- Drones (recreational use at the coast)
- General Beach Leisure
- Hovercraft
- Motorised and non-motorised land vehicles
- Light aircraft
- Non-motorised watercraft
- Motorised watercraft
- Personal Watercraft
- Wildlife Watching

Natural England Evidence Information Notes are available to download from the Natural England Access to Evidence Catalogue <http://publications.naturalengland.org.uk/> For information on Natural England contact the Natural England Enquiry Service on 0300 060 3900 or e-mail enquiries@naturalengland.org.uk.

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Table 1 Potential direct pressures arising from coasteering

	Abrasion/disturbance of the substrate surface	Abrasion/disturbance below substrate surface	Underwater noise changes	Above water noise changes	Visual disturbance
Coasteering – access to rocky shore and participating in activity	✓ ¹	X	Negligible	✓ ²	✓ ³
<p>X - No Impact Pathway</p> <p>1 - Pressure relates to potential abrasion/disturbance of intertidal and shallow subtidal substratum during the activity</p> <p>2 – Pressure relates to changes in air-borne noise levels created by people noise during participation in the activity</p> <p>3 – Pressure relates to the presence and movement of people participating in the activity</p>					

Table 2 Biological receptors potentially affected by the pressures arising from coasteering

	Abrasion/disturbance of the substrate surface	Abrasion/disturbance below substrate surface	Underwater noise changes	Above water noise changes	Visual disturbance	
Intertidal Habitats	✓	Impact pathways scoped out	Impact pathways scoped out	Impact pathways scoped out	Impact pathways scoped out	
Subtidal Habitats	✓ (shallow subtidal)		Negligible		✓ (hauled out seals)	Negligible
Fish	Impact pathways scoped out		Negligible	✓ (hauled out seals)		✓ (hauled out seals)
Marine Mammals			Negligible			✓
Birds				Negligible		

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Table 3 Assessment of indicative likelihood of significant impacts from coasteering activity

Pressure	Likely overlap between activity and feature (confidence)	Evidence of impact (confidence)	Sensitivity of feature to pressure (confidence)	Likelihood of observable/measurable effect on the feature	Likelihood of significant impact on Conservation Objectives
Abrasion / disturbance of intertidal and shallow subtidal substratum during activity	High – Coasteering involves traversing the supralittoral, intertidal and shallow subtidal on foot (expert judgement)	Lack of evidence relating specifically on the effect of coasteering activity Evidence of impacts of trampling on rocky intertidal biotopes (analogous pressure; medium), although the majority of studies relate to habitats not likely to be used for coasteering	Low-Medium (low)	Low-Medium based on high degree of overlap between pressure and feature and general evidence of impacts of trampling on rocky shores (albeit not necessarily comparable habitats)	Low-Medium
Above water noise changes and visual disturbance – marine mammals (hauled out seals)	Low – Medium depending on geographical location of activity (expert judgement). Most established seal colonies along rocky coastline are generally remote with difficult access.	No direct evidence of noise or visual disturbance from coasteering activities Evidence of ‘flight response’ of seals to general human presence on the foreshore (analogue pressure; high confidence)	High - hauled out seals are sensitive to visual disturbance (medium)	Low – Medium based on the relatively low likelihood of overlap of pressure and feature	Low-Medium

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<p>Above water noise changes and visual disturbance – birds</p>	<p>Low-Medium depending on geographical location of activity (expert judgement)</p>	<p>No direct evidence of noise or visual disturbance from coasteering activities Evidence of disturbance (increased vigilance, avoidance walking and flight responses) from general human presence on the foreshore (analogue pressure; high confidence)</p>	<p>Low-High (medium) Sensitivity will differ between species. Some species e.g. red-throated diver, curlew, are highly sensitive to disturbance; other species e.g. gulls, have high thresholds (low sensitivity) to disturbance. Certain behavioural activities are considered more susceptible to disturbance e.g. nesting seabirds or breeding birds (expert judgement)</p>	<p>Low - Medium based on wide range of likely overlap between pressure and feature. Where overlap occurs strong evidence base for impact, especially if high feature sensitivity</p>	<p>Low - Medium</p>
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