



**Fisheries Management Options Paper:  
EAST ROCKALL BANK SPECIAL AREA OF CONSERVATION**

**JNCC**

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**For further information please contact:**

JNCC, Quay House, 2 East Station Road, Fletton Quays, Peterborough PE2 8YY

<https://jncc.gov.uk/>

[Communications@jncc.gov.uk](mailto:Communications@jncc.gov.uk)

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Please note that this Fisheries Options Paper was developed in April 2014 to feed into the management measure proposal development. Prior to publication in April 2023, the document has been checked and links updated.

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# 1. Management Options Summary

**Table 1.** Fisheries management options for mobile and static bottom contact fishing gears.

Fishing Activity	Management options
<p><b>Mobile bottom contact gears</b></p>	<p><b>No additional management:</b> The conservation objectives for the <b>biogenic reef</b> feature would not be met under this option. There is a significant risk of not achieving the conservation objectives for the <b>bedrock and stony reef</b> features.</p> <p><b>Reduce/limit pressures:</b> This option would reduce the risk of not achieving the conservation objectives for the <b>reef</b> features. Appropriate management could include exclusion of mobile bottom contact gears over the main areas of <b>bedrock and stony reef</b> and all known areas of <b>biogenic reef</b>, allowing fishing to continue in fishable areas between the features. It is possible that these areas may include some areas where the distribution of reef is unknown or uncertain, and some very small areas of known <b>bedrock and stony reef</b> and there would therefore be a risk of localised damage to the structure and function of reef communities in these areas. The location of areas to be covered by management restrictions would include a buffer zone to reduce any risk of accidental contact with the feature. The location of areas to be covered by management restrictions would be decided in consultation with fishers.</p> <p><b>Remove/avoid pressures:</b> This option would reduce the risk not achieving the conservation objectives for the <b>reef</b> feature within the site boundary to the lowest possible levels. Restrictions would be required for all mobile bottom contact gears within the full extent of the site boundary. The site boundary includes a buffer zone based on a ratio of 2:1 fishing warp length to depth around the known features to reduce any risk of accidental contact with the feature. Small areas of Annex I stony reef on iceberg plough marks on the eastern edge of the Rockall Bank summit and to the west of the site boundary were not included within the site boundary as they represent a minimal extent of Annex I stony reef in comparison to that already present within the site boundary, and to reduce the amount of non-Annex I habitat within the site.</p>
<p><b>Static bottom contact gears</b></p>	<p><b>No additional management:</b> The conservation objectives would not be met for <b>biogenic reef</b>. There is a risk of not achieving the conservation objectives for the <b>bedrock and stony reef</b> features.</p> <p><b>Reduce/limit pressures:</b> This option would reduce the risk of not achieving the conservation objectives for the <b>reef</b> feature. Appropriate management could include</p>

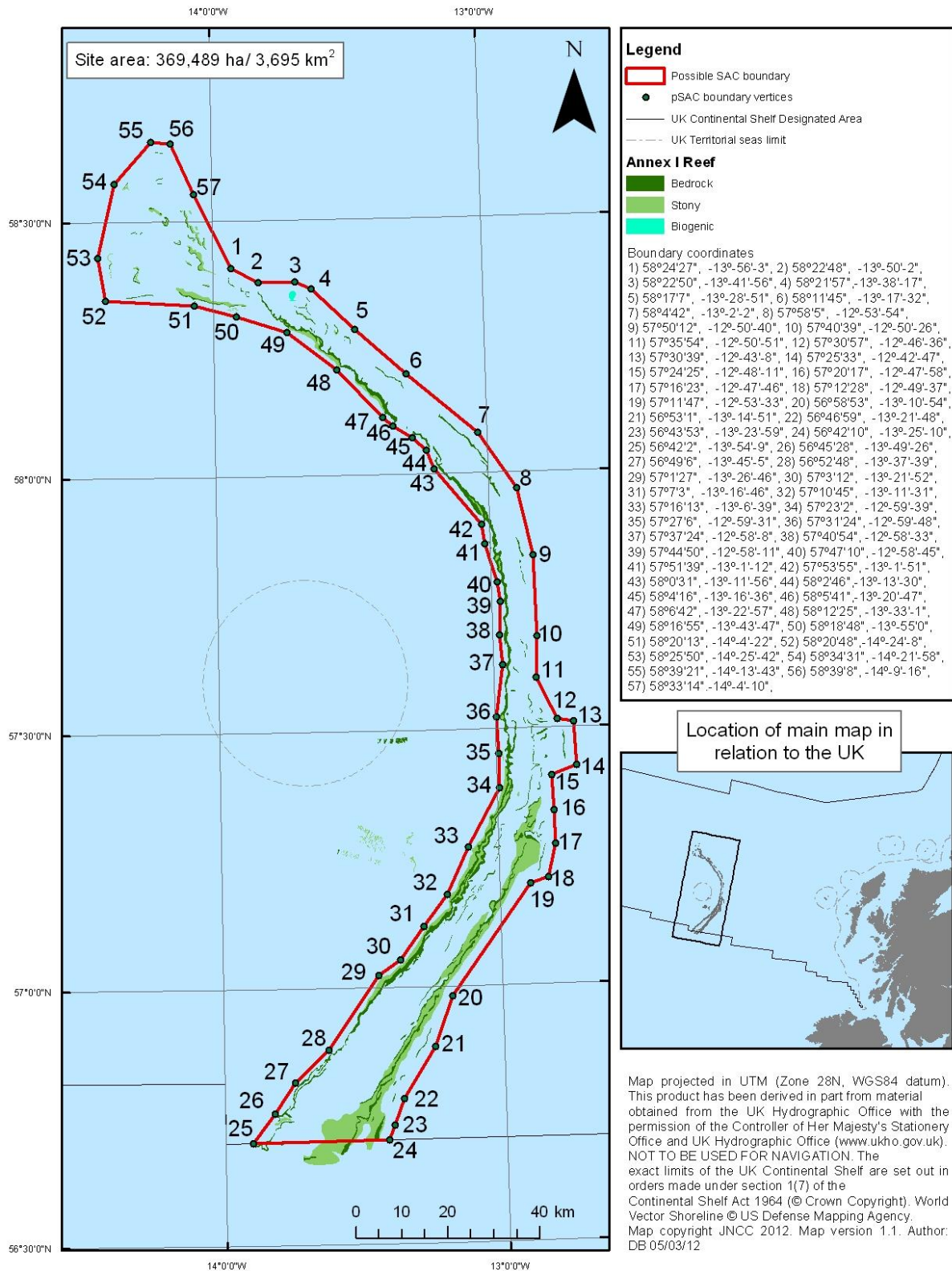
Fishing Activity	Management options
	<p>closure of the known extent of the <b>biogenic reef</b> feature within the site. However, a risk of impact with patches of feature not identified during survey would remain. The location of areas to be covered by management restrictions would include a buffer zone to reduce any risk of accidental contact with the feature. The location of areas to be covered by management restrictions would be decided in consultation with fishers.</p> <p><b>Remove/avoid pressures:</b> This option would reduce the risk of not achieving the conservation objectives for the <b>reef</b> feature within the site boundary to the lowest possible levels. Restrictions would be required for all static bottom contact gears within the full extent of the site boundary. The site boundary includes a buffer zone based on a ratio of 2:1 fishing warp length to depth around the known features to reduce any risk of accidental contact with the feature. Small areas of Annex I stony reef on iceberg plough marks on the eastern edge of the Rockall Bank summit and to the west of the site boundary were not included within the site boundary as they represent a minimal extent of Annex I stony reef in comparison to that already present within the site boundary, and to reduce the amount of non-Annex I habitat within the site.</p>

## 2. Introduction

East Rockall Bank (Figure 1) is located along the eastern flank of Rockall Bank, about 320km west of the Outer Hebrides. The eastern edge of Rockall Bank forms a scalloped faulted scarp slope, which descends steeply down into the Rockall Trough at around 1,000 to 1,500m water depth (Howell *et al.* 2009, Long *et al.* 2010).

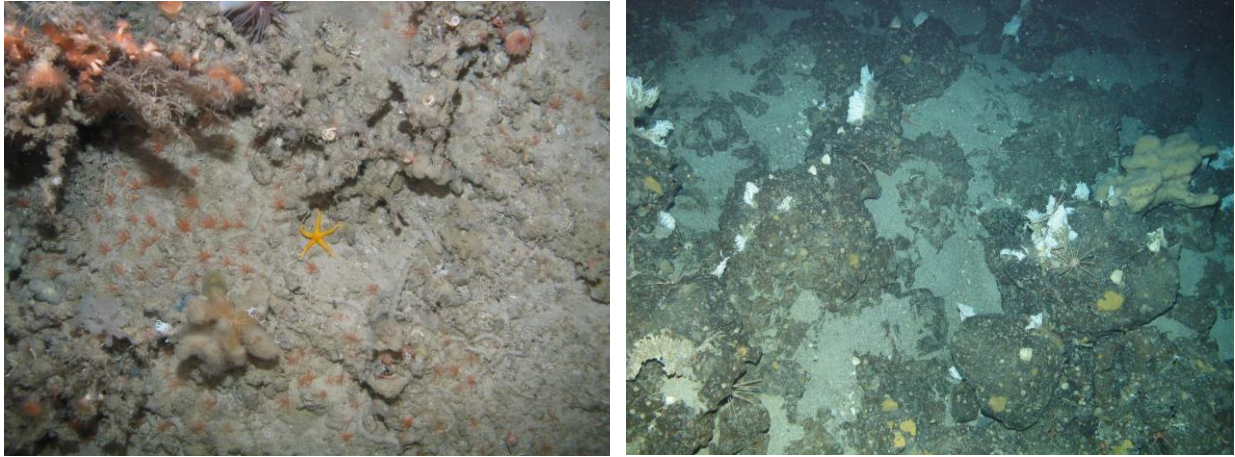
The site is proposed for its Annex I reef (Figure 2), consisting of bedrock, biogenic and stony reef. Parasitic cones in the north of the site support sediment in-filled dead *L. pertusa* framework and live cold water coral reef, with antipatharians and gorgonians. The eastern edge of the Rockall Bank summit comprises fine sand with iceberg plough marks where stony reef of mixed cobbles and pebbles supports erect bryozoans (such as *Reteporella* sp.), *Munida* sp. (squat lobster), axinellid sponges and encrusting sponges. The eastern flank of Rockall Bank comprises steep slopes between 400 – 750m depth which are composed of mixed substrates of boulders, cobbles, and pebbles with areas of exposed bedrock and bedrock outcrop (Howell *et al.* 2009). A rocky ledge of bedrock reef runs the length of the eastern flank, supporting assemblages of lace corals (Stylasterid) and lobose and encrusting sponges (Long *et al.* 2010). Further down the slope of the eastern flank, the substrate changes to stony reef, composed of boulders and cobbles which support lower abundances of Stylasterid corals and higher abundances of sponges. Two canyon features cut into the flanks of the site, and these are characterised by xenophyophores and decapod shrimps, with one canyon also supporting an abundance of caryophyllid corals and sea pens.

# Offshore Special Area of Conservation Site Map: East Rockall Bank



**Figure 1.** East Rockall Bank site map showing its location in relation to the UK, and the location of Annex I reefs within its site boundary.





**Figure 2.** Examples of Annex I Reef habitat within the East Rockall Bank SAC.  
*Left image:* Parasitic cone with *Lophelia pertusa* cold water coral, *Actinaria* anemones, *Caryophyllia* sp. and *Henricia sanguinolenta*. (ER\_N\_04\_251, © JNCC).  
*Right image:* Stylasterids and lobose sponges on bedrock and mixed substrate (Station ER\_C2\_05, © JNCC).

### 3. Protected features and conservation objectives

The East Rockall Bank SAC contains the Annex I habitat 'Reef'.

Conservation objectives set out the desired quality of the protected features within each MPA. They are a set of site specific objectives to be met in order for a site to maximise its contribution to Favourable Conservation Status.

The conservation objective for the East Rockall Bank SAC is to, subject to natural change, restore the bedrock reef to favourable condition, such that:

- The natural environmental quality is restored;
- The natural environmental processes are maintained;
- The extent, physical structure, diversity, community structure and typical species representative of bedrock, biogenic and stony reef in the Rockall Bank and Trough Regional Sea are restored.

### 4. Roles

The role of JNCC is to advise the Scottish Government on management options for the East Rockall Bank SAC. In doing this, JNCC's aim is to ensure the conservation objectives for the protected features are met.

Marine Scotland will lead discussions on management with stakeholders. They will consider JNCC's advice and will lead on the development of specific management measures. They will be responsible for making recommendations to Scottish Ministers on these measures.

Stakeholders can provide additional evidence to support the development of management measures, including local knowledge of the environment and activities. Discussions with

stakeholders will be one way of highlighting the implications of any management measures to both JNCC and Scottish Government. This will contribute to the development of well-designed and effective management measures.

## 5. Effects of fishing on the features

Whilst it is unlikely that mobile bottom contact gear can affect the long-term natural distribution of **bedrock and stony reef** features, there is evidence to indicate that the use of bottom contacting mobile gears can impact the structure and function of the habitat and the long term survival of its associated species.

The use of towed fishing gears is likely to cause damage or death of fragile, erect species, such as sponges and corals (Løkkeborg, 2005; Freese *et al.* 1999). Other species such as hydroids, anemones, bryozoans, tunicates, and echinoderms may also be vulnerable (McConnaughey *et al.* 2000, Sewell and Hiscock 2005). Where fragile, slow growing species occur, even low levels of fishing have the potential to change the structure and function of the habitats and may result in the loss of some characteristic species. Recovery from such damage is estimated to be measured in decades, depending on the environmental conditions (Clark *et al.* 2010; ICES, 2010).

Mobile bottom contact gears reduce the long-term natural distribution of cold water coral (**biogenic reef**) features, as well as impacting the structure and function of the habitat and the long term survival of its associated species.

The passage of trawls may increase mortality of the coral by crushing, burying, or wounding corals, increasing susceptibility to infection and epifaunal recruitment that may eventually smother corals (Fosså *et al.* 2002). The passing of a heavy trawl reduces the three-dimensional structure of the coral to rubble, decreasing the complexity of the habitat with impacts on the associated community composition (Koslow *et al.* 2001, Fosså *et al.* 2002). Indirect impacts on cold water coral reefs from trawling are from increased levels of suspended particles in the water column causing smothering and polyp mortality (Larsson and Purser, 2011). Corals are slow growing so any damage will take many years to repair (ICES, 2010).

Static bottom contact gears are unlikely to affect the long-term natural distribution of **bedrock and stony reef** features, but there is evidence to indicate that their use can impact the structure and function of the habitat and the long term survival of its associated species.

Mechanical impacts of static gear (e.g., weights and anchors hitting the seabed, hauling gear over seabed, rubbing/entangling effects of ropes) can damage some species (Eno *et al.* 1996). Other species appear to be resilient to individual fishing operations, but the effects of high fishing intensity are unknown (Eno *et al.* 2001). Recovery will be slow (Foden *et al.* 2010) resulting in significant reduction or even loss of characteristic species. The individual impact of a single fishing operation may be slight but cumulative damage may be significant (Eno *et al.* 2001; Foden *et al.* 2010).

Static bottom contact gears are likely to reduce the long-term natural distribution of cold water coral (**biogenic reef**) features, as well as impacting the structure and function of the habitat and the long term survival of its associated species. Hooks, lines, nets, and ropes entangle corals and 'pluck' them during hauling (Grehan *et al.* 2004; ICES, 2010). Physical damage to the seabed has been observed which may be caused by dragged anchors (Grehan *et al.* 2004; ICES, 2010). The individual impact of a single fishing operation may be

slight but cumulative damage can be significant. Given the slow growth rate of cold water-water corals, structurally and biologically diverse coral communities may take centuries to recover from damage, if at all (Fosså *et al.* 2000 & 2002; ICES advice, 2005-2010).

## 6. Development of management options

Management options are being developed where we consider that some form of management may be necessary to achieve the conservation objectives for the feature. The approach to identifying management options for each activity will be risk-based, i.e., we are focusing on providing advice where we believe there is a risk to achieving the conservation objectives. To do this, we are using existing data and information on protected features and relevant activities, and also our understanding of the relationships between the feature and relevant activities.

We have identified risks to achieving the conservation objectives where there is an overlap between protected features and activities associated with pressures the features are sensitive to. Our identification of the risk has been refined using available information on the interaction between the features and activities where this is available (see section 5). We have recommended management options to manage this risk. The text focuses on interactions in terms of physical overlap but the assessment of risk in future should also take account of the intensity and frequency of activities within the SAC.

Specific details of the recommended management options for mobile bottom contact and static bottom contact gears are provided in Tables 3 & 4.

A gradient of management options has been considered to reduce the feature's exposure to pressures. These have been described under three potential management option categories:

- a) **No additional management** - where there are currently no site specific fisheries management measures in place, and these are not deemed necessary at this time to achieve the conservation objectives for the site.
- b) **Additional management to reduce pressures** – where fisheries managers may wish to consider a range of measures that could be used to reduce the risk to features by managing fishing activity. These could include:
  - Area restrictions (permanently closing some or all of the feature's area – note this option may be limited due to recent evidence on distribution of the feature.
  - Gear restrictions (e.g., restricting use of the more damaging gears).

Ideally, any measures would generally apply only to the part of the site where the feature is present. However, there may be some circumstances in which it could be desirable to extend management measures beyond the known area of feature distribution, for example, where conditions are suitable for a feature to exist but there are insufficient data to confirm its presence.

- c) **Additional management to remove pressures** – where fishing activities known to adversely affect the feature would be excluded. Such exclusion would generally apply only to the part of the site where the feature is present, although it may occasionally be necessary to apply them to a wider area.

We recognise that stakeholders can provide local environmental knowledge and more detailed information on activities, including distribution and intensity of effort, frequency of



activity, and fishing methods employed. This additional information will help us to develop more specific management options, focussed on interactions between features and activities.

## 7. Overview of activities

Table 2 below lists fishing activities which take place within or close to the East Rockall Bank SAC. Further discussions with those who use the area will improve our understanding of these activities (distribution and intensity etc). Those fishing activities which the protected features are sensitive to are explored in greater detail in the next section. Fishing activities which the protected features are not thought to be sensitive to (i.e., any connection between the activity and the features is considered to be minimal) will not be considered further within this document. New or other fishing activities not identified within the table would need to be considered on a case-by-case basis.

**Table 2.** Overview of existing fishing activities believed to take place within or close to the East Rockall Bank SAC (UK aggregated data only, gear types unverified). \*Only the specific examples of activities listed in the table have been excluded, rather than the broad activity types.

Activities considered capable of affecting the integrity of the SAC	Activities <i>not</i> considered capable of affecting the integrity of the SAC*
<ul style="list-style-type: none"> <li>• Demersal otter trawling</li> <li>• Nephrops trawling</li> <li>• Set gillnets</li> <li>• Demersal longlines</li> </ul>	<ul style="list-style-type: none"> <li>• Mid-water otter trawling</li> <li>• Mid-water pair trawling</li> </ul>

Non-UK nationalities with interest in the relevant ICES rectangles:

- Spain;
- France;
- Ireland;
- Norway;
- Germany.

## 8. Management options

**Table 3.** Management options for mobile bottom contact gear.

Management option	
<b>No additional management:</b>	The conservation objective for the <b>biogenic reef</b> feature would not be met under this option. There is a significant risk of not achieving the conservation objectives for the <b>bedrock and stony reef</b> features.
<b>Reduce/limit pressures:</b>	This option would reduce the risk of not achieving the conservation objectives for the <b>reef</b> feature. Appropriate management could include exclusion of mobile bottom contact gears over the main areas of <b>bedrock and stony reef</b> and all known areas of <b>biogenic reef</b> , allowing fishing to continue in fishable areas between the features. It is possible that these areas may include some areas where the distribution of reef is unknown or uncertain, and some very small areas of known <b>bedrock and stony reef</b> and there would therefore be a risk of localised damage to the structure and function of reef communities in these areas. The location of areas to be covered by management restrictions would include a buffer zone to reduce any risk of accidental contact with the feature. The location of areas to be covered by management restrictions would be decided in consultation with fishers.
<b>Remove/avoid pressures:</b>	This option would reduce the risk not achieving the conservation objectives for the <b>reef</b> features within the site boundary to the lowest possible levels. Restrictions would be required for all mobile bottom contact gears within the full extent of the site boundary. The site boundary includes a buffer zone based on a ratio of 2:1 fishing warp length to depth around the known features to reduce any risk of accidental contact with the feature. Small areas of Annex I stony reef on iceberg plough marks on the eastern edge of the Rockall Bank summit and to the west of the site boundary were not included within the site boundary as they represent a minimal extent of Annex I stony reef in comparison to that already present within the site boundary, and to reduce the amount of non-Annex I habitat within the site.

**Table 4.** Management options for static bottom contact gear.

Management option	
<b>No additional management:</b>	The conservation objectives would not be met for <b>biogenic reef</b> . There is a risk of not achieving the conservation objectives for the <b>bedrock and stony reef</b> features.
<b>Reduce/limit pressures:</b>	This option would reduce the risk of not achieving the conservation objectives for the <b>reef</b> features. Appropriate management could include closure of the known extent of the <b>biogenic reef</b> feature within the site. However, a risk of impact with patches of feature not identified during survey would remain. The location of areas to be covered by management restrictions would include a buffer zone to reduce any risk of accidental contact with the feature. The location of areas to be covered by management restrictions would be decided in consultation with fishers.
<b>Remove/avoid pressures:</b>	This option would reduce the risk of not achieving the conservation objectives for the <b>reef</b> feature within the site boundary to the lowest possible levels. Restrictions would be required for all static bottom contact gears within the full extent of the site boundary. The site boundary includes a buffer zone based on a ratio of 2:1 fishing warp length to depth around the known features to reduce any risk of accidental contact with the feature. Small areas of Annex I stony reef on iceberg plough marks on the eastern edge of the Rockall Bank summit and to the west of the site boundary were not included within the site boundary as they represent a minimal extent of Annex I stony reef in comparison to that already present within the site boundary, and to reduce the amount of non-Annex I habitat within the site.

## 9. Conclusions and further recommendations

Fisheries management measures for the East Rockall Bank site will be developed through discussion with stakeholders. Discussions will focus on our understanding of the features and the likely risks to the designated features where there are interactions with fishing activities. Based on the options presented here, it is hoped that a preferred set of management options will be recommended.

## 10. Further information

The following documents are available for background information on the East Rockall Bank SAC:

[East Rockall Bank SAC selection assessment document, Version 5.0 \(October 2012\)](#)

[East Rockall Bank Conservation Objectives and Advice on Operations, Versions 1.0 \(March 2018\)](#)

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