The Scottish Government
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Independent expert review of the scientific case for the proposal to designate the Sound of Barra as a Special Area of Conservation (SAC).

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Independent expert review of the scientific case for the proposal to designate the Sound of Barra as a Special Area of Conservation (SAC).

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These authors conducted this review independently from their organisations and as such the views stated in this review are those of the authors and not of either the Plymouth Marine Laboratory or the Marine Biological Association of the UK.

Introduction

Background

The scientific case for designation of Sound of Barra was submitted by Scottish Natural Heritage (SNH) in August 2009. Scottish Ministers approved the scientific case for designation in August 2011 and a public consultation followed between September 2011 and January 2012.

The consultation responses included a number of negative responses where the scientific case for designation was not accepted. It was therefore agreed that an independent expert review would be taken into the scientific case for designation.

Terms of Reference

The main aim of the peer review exercise was to "*consider whether the scientific evidence supporting the proposal has been used appropriately and that the assessment correctly reflects the requirements of the EU Habitats Directive*".

This report comprises the review of evidence for the proposed Sound of Barra Special Area of Conservation (SAC). In doing so the review considered the following questions:

- Are the quality, quantity and analysis of biological and geomorphological data used to support the site recommendation scientifically robust?

- Does the interpretation of the resulting biological and geomorphological findings, and the resultant extent of Annex I and Annex II features proposed to be included within the site boundaries, accord with the intent of the EU Habitats Directive and are in accordance with standard data form explanatory notes?
- Are the boundary judgements made reasonable given the available evidence and the JNCC boundary guidance (2008)?

In the light of the consultation documents it is worth stating clearly what is NOT included in the Terms of Reference for this review:

- This is a site-specific assessment. This means that issues relating to the selection of sites to contribute towards the Natura network, as outlined in Annex III of Article 4 of the Habitats Directive (NaturalRange; Sufficiency; Proportionality) are not assessed here.

- There is no statement on whether this site is the 'best' site as this would require an assessment of all potential sites and site areas.

- There is no comment on socio-economic issues or any political or other issues that are not related to the validity of the scientific case.

Review methodology

The assessment was undertaken in 3 steps:

• A review was undertaken of the Site Selection Document (*Contribution to the Scottish Component of the UK Special Area of Conservation (SAC) List: Selection of Sound of Barra to represent sandbanks, reefs and Harbour Seals in the Western Isles*)and other supporting documentation provided by SNH.

• Face to face interviews were carried out with SNH staff as part of a site visit so as to clarify issues and uncertainties that had arisen from the initial review of the Site Selection Document

• Also as part of the site visit, there was a systematic examination of the data used to support the Site Selection Document. Care was taken to examine representative examples of all types of data including GIS layers, species lists and images from both still and video camera surveys.

Assessment

• Quality, quantity and analysis of biological and geomorphological data:

The Sound of Barra proposal was supported by a wide range of evidence including multi-beam data, satellite data, video tows, diver video and grab samples. The Sea Mammal Research Unit (SMRU) seal surveys were used to assess the harbour seal populations. The GIS base-map shown to the reviewers demonstrated that the data gathered by SNH provided a comprehensive spatial coverage across the entire area of interest.

As there were a large number of survey stations, the reviewers undertook a systematic examination of a selection of stations. The stations were chosen to span the site area (from shallow western areas through to deeper eastern areas) and represent the different Annex 1 Habitats, namely ‘Reefs’ and ‘Sandbanks which are slightly covered by sea water all the time’ (Table 1: Figure 1).

Table 1: List of survey stations examined by reviewers with evidence description.

Station Identifier	Evidence type	Reviewers description and comments
SA43	[2006 - drop-video]	dead maerl “sand” with live maerl going into kelp rocks [clear images]
SA44	[2006 - drop-video]	reef with sponges, red algae [clear images]
SA99	[2006 - drop-video]	low lying reef, red algae, sand patches, evidence of live maerl [clear images]
RN9	[2001- ROV video]	Course sand, scallops, (15m deep), evidence of biofilm. Low lying rock with kelp. [clear images]
SA126	[2006 - drop-video]	Dead and live maerl mixture.30m deep. [Dark video. Not as clear as previous but still able to determine seabed features].
SA127	[2006 - drop-video]	Course sand, ripples. Some live maerl. [clear images]
RN11	[2001 - ROV video]	Stone, sand and cobbles, sugar kelp (sparse), scallop. 20m deep, flat seabed. no erect sponges or bryozoans [clear images],
RS28	[2001 - ROV video]	Hard reef, kelp (small), red algae, bryozoans, large starfish. 20m deep [clear images]
SA27	[2006 - drop-video]	Kelp (large well established plants), difficult to see understory but saw evidence of reef and a few starfish. Water a bit murky
SA31	[2006 - drop-video]	Kelp (large well established plants) on low lying rocks out of course sand and rubble (stones and pebbles). Urchins [clear images]
SA32	[2006 - drop-video]	Kelp (large well established plants). [clear images]
SA105	[2006 - drop-video]	Established, dense clean Zostera initially, quickly giving way to sediment with sparse Zostera. Then back to denser patches. [clear images]
SA107	[2006 - drop-video &infaunal grab]	Course, clean sand. [clear images]
SA120	[2006 - drop-video]	Course, clean sand. [clear images]
SB40	[2006 - dive video]	Kelp forest (large well established plants) on reef. Urchins, sponges. Healthy understory. Bryozoans, anemones, gastropods and hydroids. Fish. [clear images]
SB56	[2006- dive video &infaunal]	Course, clean sand. Very sparse, small Zostera plants. [clear images]
DN21	[2001 & 2006, dive/ snorkel video (2006 viewed)]	Course, clean sand with Arenicola and bivalve siphons. [clear images]
SA42	[2006 - drop-video (not viewed) &infaunal grab]	good diverse infauna.
SA87	[2006 - drop-video (not viewed) &infaunal grab]	Appeared impoverished.

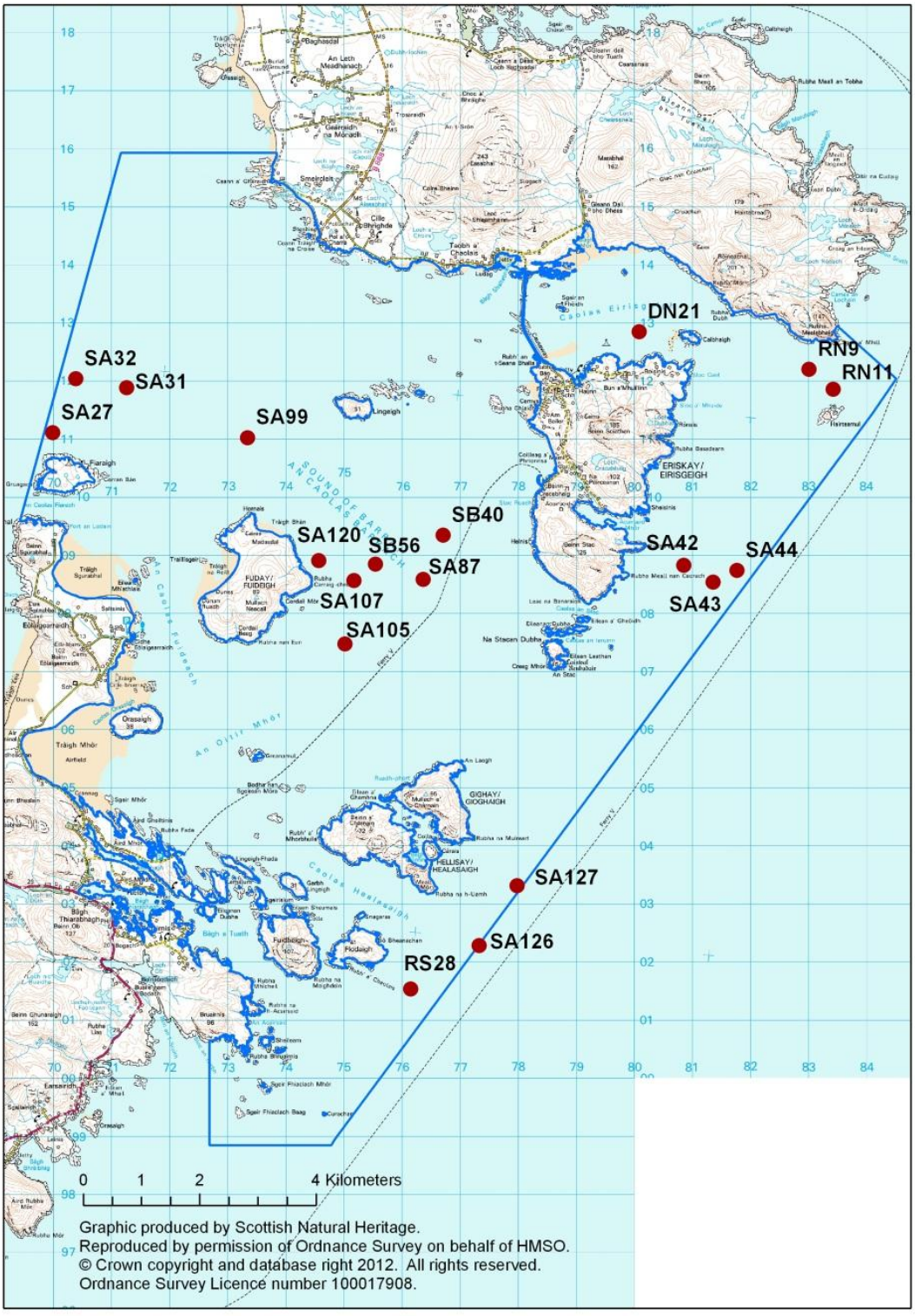

Figure 1: Map showing sites selected by reviewers for further examination.

In the examination of the underlying evidence, the reviewers found that the survey videos were generally of very high quality with images clearly visible. In each case the reviewers agreed with the habitat/species descriptions provided by SNH as part of the supporting evidence. The quantity of the data was sufficient to provide an accurate map and condition assessment for the species and habitats in the proposed SAC area. The reviewers were also provided with a reference list containing links to all the underlying reports containing supporting evidence. Although it was not in the terms of reference to review these reports separately, the reviewers saw there was an impressive amount of supporting evidence from surveys undertaken by a range of organisations. It was also clear that the supporting evidence had been adequately archived and each piece of evidence was readily available for review on request.

The reviewers did ask about the role of 'historic data'[1] as a number of older surveys were shown on the initial GIS base-map. SNH stated that the area had been extensively resurveyed and that the historical data were only used to direct recent surveys, and were not used directly as part of the current evidence base. The importance of only using fairly recent data[1] was stressed in order to have a high confidence in the assessment.

To summarise, the reviewers were satisfied that there were sufficient data of appropriate quality to provide scientifically robust support for the site recommendation.

• Interpretation of biological and geomorphological findings:

The reviewers queried the statements in the Site Selection Document on seagrass density as seagrass is recorded as a subtype of sandbanks. There appeared to be a contradiction in two statements, the first (*P6, 2nd para)* stating that the"…density of the *Zostera* [seagrass] is often low" and the second (*p8, 2nd para)* stating that the site "…supported dense beds of the seagrass*Zostera marina*…".SNH responded to this by providing the following statement:

Having checked with Commissioned Report (CR) no.258 I conclude that I wrote the text in the site selection document on the basis that Zostera *tends to form bands of dense seagrass<u>alternating</u> with open sand. Therefore, although the overall density within the whole geographic areas of* Zostera *distribution was low, where the Zostera specifically grows it can be found in dense patches. Please see Summary (Main findings section), p20 (Section 3.1.1), p46 (Section 3.4.1), p66 (Section 4.2.1), p95 (Section 5.1), and p219 (Table 7.6.1), for reference to these research findings.*

The reviewers are satisfied therefore that there was no misinterpretation of the evidence base with the statements being complementary rather than contradictory.

[1] There is no widely accepted definition of 'historic data' but the Defra MCZ project uses 12 years as the cut-off point at which data is considered 'historic' and therefore not used in the evidence base.

There was also a question concerning a comment on the Maerl beds (P10, 2nd bullet), another sandbank 'subtype'. The report states that the Maerl '*provides a complex niche for a diverse group of species*'. The reviewers asked whether this was supported by evidence or was just an assumption about the habitat. The answer to this is important in terms of statements on the value and condition of the habitat. SNH provided evidence from report Commissioned Report (CR) no. 258 (listed in Annex 1). From this evidence it appears that the statement is well supported by both habitat knowledge and results from sampling in the area (infaunal cores and drop-down video).

Overall the reviewers were satisfied that the interpretations of the evidence were correct with respect to the various grades given to the site features.

• Boundary judgements

The reviewers were satisfied that the boundaries were supported by high quality data. However, there was a question over the 'eastern corridor' in terms of quality of the habitat. Although qualifying feature was clearly present, the videos seemed to indicate that this habitat was not as high quality as the other habitat within the site. However, if current pressures associated with scallop dredging were managedit seems reasonable to assume that habitat quality would improve. Consequently, the reviews are in agreement with SNH that the boundaries are drawn appropriately and the area does not contain significant areas of non-qualifying habitat.

Other

The reviewers were satisfied with the conclusions drawn from the evidence base. There were however some minor questions over statements on the condition of the area and on impacts. Firstly, it was noted that the mariculture leases had been considered in terms of potential impact in three areas on harbour seals. However, the reviewers noted that there is a body of research showing the impacts of mariculture on benthic communities so this should be noted in relation to the sandbank and reef habitats.

Related to this was the importance of providing evidence for assumptions on condition. Page 12 of the Site Selection Document states "*it is not considered that sustainable fishing by creels will result in significant impacts with respect to the reef features within the Sound of Barra*". It is important to state what evidence underpins this assumption.

SNH have agreed to amend the Site Selection Document accordingly based on the comments above.

Conclusion

- The evidence presented by SNH is of sufficient quality and quantity to provide scientifically robust support for the site recommendation.

- The reviewers are satisfied that SNH have collected data of sufficient quantity and quality to demonstrate that the site contains a significant extent of Annex 1 habitat and Annex 2 species harbour seal.

- The reviewers concluded that SNH had used the evidence appropriately in setting the site boundary.

- The reviewers were able to easily access all data upon request and are pleased to note that further effort is being put into formatting the video archives to further increase accessibility.

- The reviewers provided some recommendations which although not affecting the site selection itself would increase the clarity and usefulness of the Site Selection Document. These are provided below for information and SNH have agreed to amend the document accordingly.

    - There should be a simple statement added to clarify the role of modelled data in estimating the UK proportion of Annex 1 habitat and area of habitat type on site compared to other sites. The use of modelled data is standard practice and is supported in documents such as the UK Guidance on Defining Boundaries for Marine SACs for Annex 1 Habitat Sites.

    - All statements concerning evidence need to be backed up. It is not sufficient to simply state that “it is not considered that” without explaining whether there is evidence underpinning this assumption.

ANNEX 1 – Statements on maerl habitat species diversity provided by SNH

1) p20 (Section 3.1.1), 7th para – One sample contained infauna which was abundant and species rich with a composition distinct from that of all other samples (my assessment indicates that this sample is SA42 as the only infaunal sample listed in Table 3.1.1 with the SS.SMp.Mrl.Pcal biotope).

2)P22 (Section 3.1.2), Table3.1.1 - SA42 (assigned biotope SS.SMp.Mrl.Pcal) contained 55 species and an abundance of 257.

3)P46 (Section 3.4.1), 1st para – Station V32 was a repeat survey from 2001. In 2006 the station was a maerl bed with profuse cover of foliose and filamentous red algae (although there is no infaunal sample associated with this site to distinguish whether it supports a diverse group of species within the maerl bed).

4)P66 (Section 4.2.1), Figure 4.2.3 and associated text on p65-66 – Reference to biotopes assigned to live and non-living maerl and that these substrates were well developed in the eastern parts of the sound.

5)P88 (Section 4.3.2), Class 8 and p89 (Figure 4.3.3) – Although not directly supporting the statement this information provides an explanation as to the difficulty of classifying the acoustic signal from the maerl biotopes. Figure 4.3.3 (p89) represents how much maerl biotope was possible to map from the 2006 data on the basis of the integrated biotope classification and ground-truth data points.

6)P96 (Section 5.1), 1st para and p97 (Section 5.1, Figure 5.1.2) – The figure shows minimum live maerl abundance estimated from drop-down video footage. The report states that the shallower beds between Fuday and Lingay support maerlinfauna “of a distinct community composition and included a large number of species.”

7)P159 (Section 7.2, Appendix 2), SS.SMp.Mrl.Pcal and SS.SMp.Mrl.Pcal.R – 25 stations were assigned with these biotopes (although we only have information about infaunal diversity at one of these stations).

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