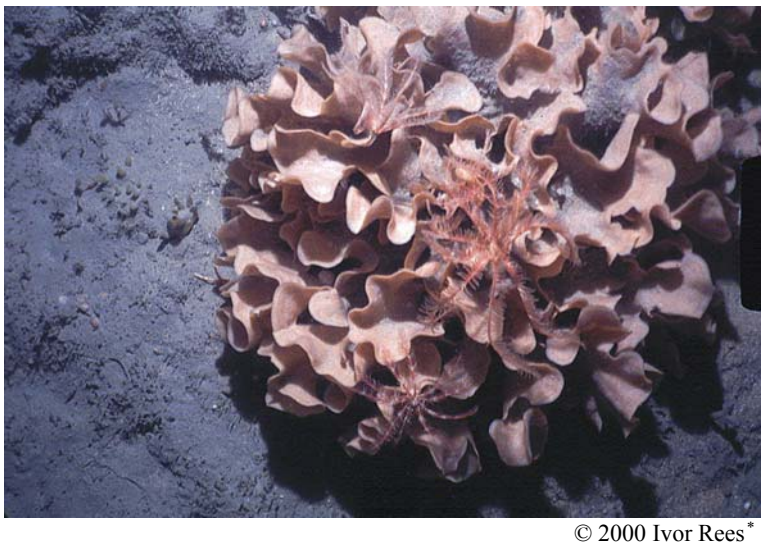
Offshore Special Area of Conservation: Haig Fras

SAC Selection Assessment



Version 4.0 (1st July 2008)

* Cover photo illustrates *Pentapora foliacea* (now *Pentapora fascialis*) and crinoids at the base of Haig Fras (Image © 2000 Ivor Rees)

Introduction

This document provides detailed information about the Haig Fras site and evaluates its interest features according to the Habitats Directive selection criteria and guiding principles.

The advice contained within this document is produced to fulfil requirements of JNCC under Part 2 of the Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007, relating to the conservation of natural habitat types and habitats of species through identification of Special Areas of Conservation (SACs) in UK offshore waters. Under these Regulations, JNCC has an obligation to provide certain advice to Defra to enable the Secretary of State to fulfil his obligations under the Regulations, and to Competent Authorities to enable them to fulfil their obligations under the Regulations.

This document includes information required under Regulation 7 of the Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 to enable the Secretary of State to transmit to the European Commission the list of sites eligible for designation as Special Areas of Conservation (SACs). JNCC have been asked by Defra to provide this information to Government.

Sites eligible for designation as offshore marine SACs are selected on the basis of the criteria set out in Annex III (Stage 1) to the Habitats Directive and relevant scientific information. Sites are considered only if they host a Habitats Directive Annex I habitat or Annex II species. Moreover, sites for Annex II species must contain a clearly identifiable area representing physical and biological factors essential to these species' life and reproduction to be eligible. Socio-economic factors are not taken into account in the identification of sites to be proposed to the European Commission[1].

In addition to information on the Annex I habitats and/or Annex II species hosted within the site, this document contains i) a chart of the site, ii) its name, location and extent, and iii) the data resulting from application of the criteria specified in Annex III (Stage 1) to the Habitats Directive. This is in line with legal requirements outlined under Regulation 7. JNCC has adhered to the format established by the Commission for providing site information. This format is set out in the 'Natura 2000 Standard data form' (CEC, 1995) (prepared by the European Topic Centre for Biodiversity and Nature Conservation on behalf of the European Commission to collect standardised information on SACs throughout Europe).

[1] Following European Court of Justice 'First Corporate Shipping' judgement C-371/98 (7 November 2000)

Document version control

Version and issue date	Amendments made	Issued to and date
HaigFras_SelectionAssessment_4.0.doc (1st July 2008)	- Post consultation modifications, including site boundary amendment	Secretary of State (July 2008)
HaigFras_SelectionAssessment_3.1.doc (13th November 2007)	- Draft SAC changed to possible SAC	Public consultation (December 2007)
HaigFras_SelectionAssessment_3.0.doc (25th May 2007)	- New introductory text, revised site summary and map layout, heading & text amendments - Additional guiding principles for site selection incorporated under Global Assessment - Conservation Objectives and Advice on Operations moved to separate document	JNCC Committee (June 07) and UK Marine Biodiversity Policy Steering Group (September 07)
HaigFrasDossier_2.0_Draft.doc (26th August 2006)	- Draft Conservation Objectives and (revised) Advice on Operations added. - Map layout revised	Defra, Devolved Administrations, and other Govt. departments (25th September 2006)
HF_ProformaForSubmissionToJNCC.doc (15th December 2004)		Defra (15th December 2004)
Haig Fras Proforma: JNCC 04 P23 (December 2004)		JNCC Committee (December 2004)

Further information

This document is available as a pdf file on JNCC's website for download if required (www.jncc.gov.uk)

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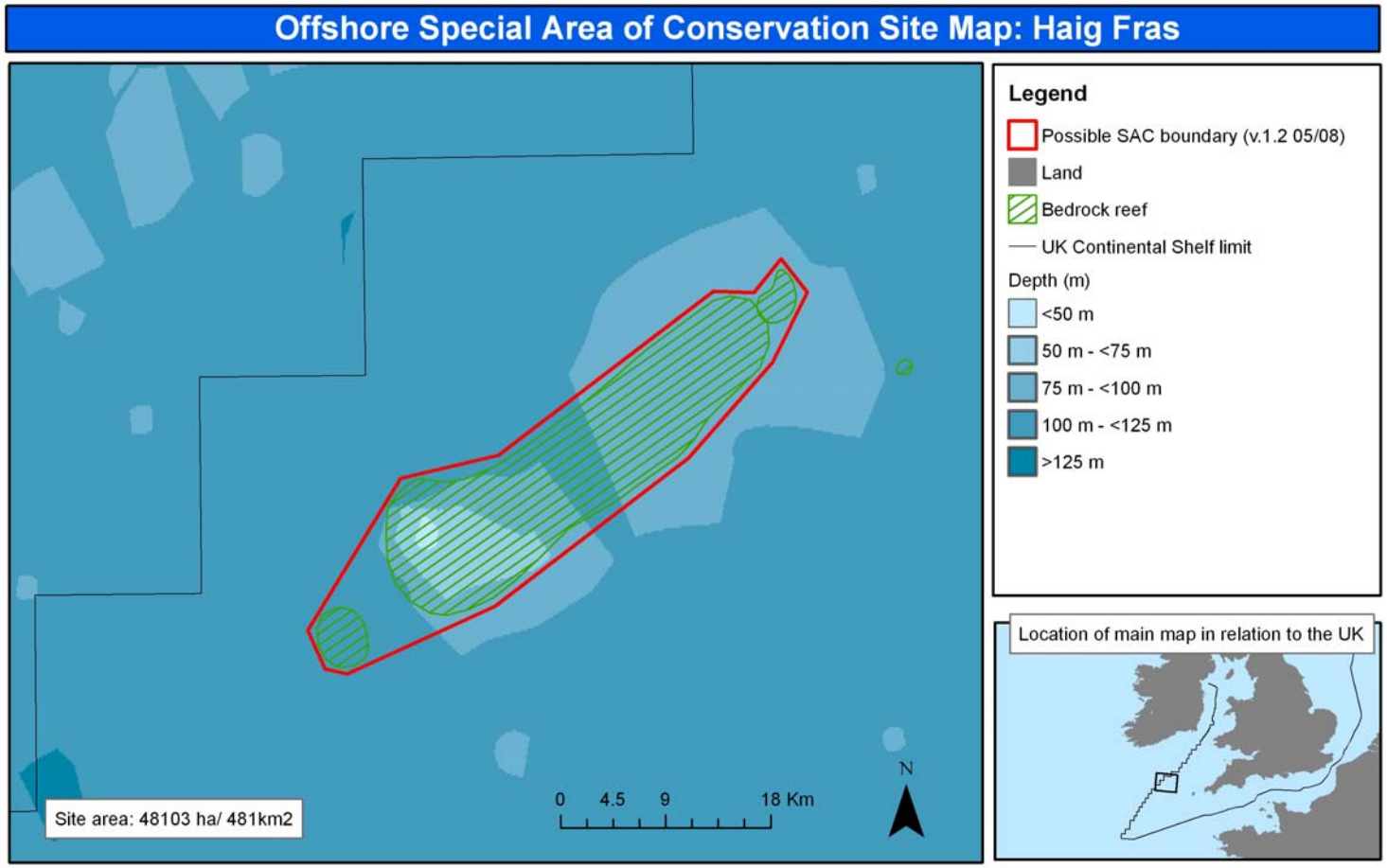
Haig Fras: SAC Selection Assessment

1. Site name Haig Fras	**2. Site centre location** 50º15'1″, -7º-46'-48″ (Datum: WGS 1984)
3. Site surface area 48,103 ha/ 481km^2 (Datum: WGS 1984 UTM Zone 29 North, calculated in ArcGIS)	**4. Biogeographic region** Atlantic

5. Interest feature(s) under the EU Habitats Directive

1170 Reefs

6. Map of site



Boundary coordinates:
1) 50°25'3", -7°29'49" 2) 50°23'29", -7°27'58" 3) 50°20'16", -7°30'36" 4) 50°15'57", -7°36'47" 5) 50°9'13", -7°50'55"
6) 50°6'12", -8°1'35" 7) 50°6'26", -8°3'10" 8) 50°8'14", -8°4'23" 9) 50°15'13", -7°57'34" 10) 50°16'12", -7°50'29"
11) 50°23'36", -7°34'45" 12) 50°23'31", -7°31'50"

Map version number 1.5 (23/05/08)

7. Site summary

Haig Fras is an isolated, fully submarine bedrock outcrop located in the Celtic Sea, 95 km north west of the Isles of Scilly. It is the only substantial area of rocky reef in the Celtic Sea beyond the coastal margin. It supports a variety of fauna ranging from jewel anemones and Devonshire cup coral near the peak of the outcrop to encrusting sponges, crinoids and ross coral towards the base of the rock (where boulders surround its edge) (Rees, 2000). The rock is granite, mostly smooth with occasional fissures. The rocky outcrop is approximately 45 km long and in one area rises to a peak which lies just 38 m beneath the sea surface (Rees, 2000). The surrounding seabed is approximately 100m deep.

This site is situated within the Western English Channel and Celtic Sea Regional Sea (JNCC, 2004a; Defra 2004). Listed below are existing SACs within the Western English Channel and Celtic Sea Regional Sea which contain Reefs as a qualifying Annex I habitat. The type of Reefs present are summarised.

SAC	Notable characteristics of Reef interest feature (JNCC, 2007)
Isles of Scilly complex	Hard bedrock reef, both infralitttoral and circalittoral, in some cases extending well beyond 50 m depth. Exposure levels vary at this site: some reefs and very exposed, others sheltered. The surrounding waters are full salinity and the feature is subject to minimal coastal influence (Natural England, pers. comm. 2007). The topographic complexity of the reefs is low. The south-westerly position of the islands leads to a range of warm-water species being present, including sunset cup-coral *Leptopsammia pruvoti*, pink sea-fans *Eunicella verrucosa*, and Weymouth carpet-coral *Hoplangia durotrix*.
Lundy	A granite and slate reef system, exposed to a wide range of wave action and tidal stream strength. Combined with significant topographical variation, this has resulted in a diverse complex of biological communities. The full salinity reefs are both infralittoral and circalittoral (>50m depth), and are highly influenced by coastal processes (Natural England, pers. comm. 2007). Several communities at their northern limit of distribution occur here. Fragile long-lived species, such as the soft coral *Parerythropodium coralloides*, sea-fan *Eunicella verrucosa* and erect branching sponges, are present, as are all five British species of cup-coral.
Plymouth Sound & Estuaries	Intertidal and subtidal low energy reefs, including some composed of limestone. This relatively soft rock is extensively bored by the bivalve *Hiatella arctica* and the spionid worms *Polydora* spp., and harbours a rich fauna. In the sublittoral this steep-sided reef is dominated by a dense hydroid and bryozoan turf with anemones and ascidians. The sublittoral is of particular importance for its kelp- and animal-dominated habitats. Abundant populations of the slow-growing, long-lived, nationally important pink sea-fan *Eunicella verrucosa* also occur at this site. The reef feature is in full salinity and subject to strong coastal influence (Natural England, pers. comm. 2007).
Fal and Helford	The hard bedrock reefs at this site are of low to medium topographic complexity and exist as patches of sublittoral rock (an uncommon habitat within marine inlets) (Natural England, pers. comm. 2007). They are subject to strong coastal influence, with parts of the reef

	experiencing reduced/variable salinity. The energy levels at this site are moderate. Within the marine inlets, deep sheltered bedrock reef is dominated by sponge and seasquirt communities. On the exposed open coast, dense kelp forests occur in shallower water, along with aggregations of jewel anemones, and Devonshire cup corals. In some deeper locations, pink seafans occur. The maximum depth of reef systems in the Fal and Helford is around 30 m bcd.

In character, Haig Fras is probably most similar to Lundy SAC as both are granite outcrops with similar species occurring in the (deep) circalittoral. However, due to the isolation of Haig Fras from the coast, and consequently lower nutrient and sediment input, the faunal communities are thought to be less species diverse compared to those on Lundy. However, species present at Lundy have been very well studied over a number of years, unlike those at Haig Fras, so one would expect there to be many more species recorded at Lundy compared to Haig Fras.

8. Site boundary

The proposed boundary for Haig Fras has been defined using JNCC's marine SAC boundary definition guidelines (JNCC, 2004b)[2] and information provided during public consultation on this site in 2007-2008. The proposed boundary is a simple polygon enclosing the minimum area necessary to ensure protection of the Annex I habitat. Coordinate points have been positioned as close to the edge of the interest feature as possible, rather than being located at the nearest whole degree or minute point. The proposed boundary includes a margin to allow for mobile gear on the seabed being at some distance from the location of a vessel at the sea surface. The maximum depth of water around the feature is 110 m; therefore, assuming a ratio of 3:1 fishing warp length to depth, the proposed boundary is defined to include a margin of 330 m from the bedrock reef. The habitat feature is drawn from interpolated data from British Geological Survey (Graham *et al.*, 2001) and the presence of reef was confirmed by survey conducted by Rees in 2000 over a portion of the feature.

Note that the boundary proposed is for the SAC. Any future management measures which may be required under the Offshore Marine Conservation (Natural Habitats, & c.) Regulations will be determined by Competent Authorities in consultation with JNCC, and may have different boundaries to the SAC site boundary.

9. Assessment of interest feature(s) against selection criteria

9.1 Reefs

Annex III selection criteria (Stage 1A):

a) Representativity

Haig Fras is located in the 'Western English Channel and Celtic Sea' Regional Sea, and represents deep circalittoral reef with low topographic complexity in a fully saline environment. This reef is the only substantial non-coastal area of hard bedrock reef known to occur in this Regional Sea. Energy levels are moderate at this site. The faunal communities are representative of species colonising aphotic,

[2] These were agreed by the Joint Nature Conservation Committee and modified subsequent to public consultation in 2003

hard marine substrata. Four distinct faunal biotopes were observed by Rees (2000): i) a biotope dominated by jewel anemone *Corynactis viridis* on rock, ii) a biotope dominated by Devonshire cup coral *Caryophyllia smithii* on rock, iii) a biotope characterised by cup sponges and erect branching sponges on rock and iv) a complex community with red encrusting sponge, Devonshire cup coral *Caryophyllia smithii* and featherstars on boulders; the bryozoan *Pentapora foliacea* (now *Pentapora fascialis*[3]), squat lobster *Munida* sp. and brittlestars are also common. Many of the species identified by Rees (2000) are invertebrate specialists of hard marine substrates. The grade for the feature is A (excellent representativity).

b) Area of habitat

The reef feature is approximately 35,650 hectares in area (flat mapped extent) (Graham *et al*., 2001) making Haig Fras the most extensive bedrock reef in the 'Western English Channel and Celtic Sea' Regional Sea. An estimate of the entire Annex I reef resource (bedrock, cobble and biogenic reef) in UK waters is 5,723,600 hectares (UK Favourable Conservation Status Reporting 2007). This total extent figure gives the following thresholds for the grades of this criterion (CEC, 1995):

A – extents between 5,723,600 and 858,540 ha (15-100% of total resource)
B – extents between 858,540 and 114,472 ha (2-15% of total resource)
C – extents less than 114,472 ha (0-2% of total resource)

This site's feature therefore falls within the '0-2%' bracket for Area of Habitat and is graded C.

c) Conservation of structure and functions

Degree of conservation of structure:
Available evidence indicates that the biological structure of the reef is likely to have been affected by demersal fishing activity, particularly static gear types such as gillnets and tangle nets (CNPMEM, 2008; MFA, 2008; NFFO, 2008) However, as the interest feature at Haig Fras is largely intact (Rees, 2000), the grading is II: structure well conserved

Degree of conservation of functions:
The prospects of this feature to maintain its structure in the future (taking into account unfavourable influences and reasonable conservation effort) are good, since the basic physical structure is resilient to mechanical impacts and the reef is isolated from terrestrial sources of pollution. A mechanism is available through the European Commission's Common Fisheries Policy regulations to modify fishing activity in the area if this is deemed to be necessary. The laying of submarine cables and pipelines in and adjacent to SACs also requires regulatory consent. The grading is I: excellent prospects.

Restoration possibilities:
Restoration of the biological communities at Haig Fras would be possible accepting that restoration methods in the offshore area focus on the removal of impacts, which should allow recovery where the habitat has not been removed. It

[3] The most recent nomenclature according to Hayward & Ryland (1999)

is likely that a similar community to that present now would develop if activities causing damage were removed. The grade is II: restoration possible with average effort.

Overall grade: Due to the second sub-criterion of this criterion being graded I: excellent prospects, the overall grading is A: excellent conservation (regardless of the other two sub-criteria).

d) Global assessment

The suggested grades for Stage 1A criteria a)-c) are A, C and A respectively. Given these gradings, and that the feature is unique in the south west area of UK offshore waters, the Global Assessment grade is A ('excellent conservation value').

Summary of scores for Stage 1a criteria

Area of Habitat	Representativity (a)	Relative surface (b)	Structure and function (c)	Global assessment (d)
Haig Fras	A	C	A	A

10. Sites to which this site is related

None

11. Supporting scientific documentation

Jones *et al.*, (1988) and Smith *et al.*, (1965) provide background information on the geology of Haig Fras. Survey of the feature by towed sledge provides biological information and is documented in Rees (2000).

12. Site overview and conservation interest

The granite exposure known as Haig Fras measures about 45 km by 15 km and protrudes above the surrounding sediment as a rock platform. The main shoal pinnacle arises to within 38 m of the sea surface and measures less than 1 km across. Survey undertaken by Rees in 2000 over the platform area as well as the shoal showed that distinct biotopes were associated with both the rock habitat and the sediment 'pockets' which occur on the platform area. Around the base of the shoal, boulders and cobbles partially embedded in sediment provide a complex habitat.

On the uppermost parts of the Haig Fras shoal, the exposed bedrock is dominated by the jewel anemone *Corynactis viridis*. This region also supports encrusting sponges and bryozoans, as well as mobile fauna such as the sea urchin *Echinus esculentus* and gastropod mollusc *Calliostoma* spp. (see Plate 1). At the shallowest depth surveyed (c. 52 m), small patches of encrusting pink coralline algae were observed, indicating that the peak of the shoal protrudes into the photic zone (Rees, 2000). At depths of between 60 m and 70 m, the shoal bedrock is slightly covered in silt and is not widely colonised except by cup corals *Caryophyllia smithii* (which are abundant) and a few mobile species such as the urchin *Echinus esculentus*, *Calliostoma* spp. and crinoids (*Antedon* spp.) (see Plate 2). High numbers of cup corals were also seen on parts of the rock platform away from the shoal (Rees, 2000). At the base of the shoal, the rock was covered with a thin layer

of fine calcareous sand and mud and supported cup sponges, erect branching sponges, *Caryophyllia smithii* (although in lower numbers than shallower parts of the shoal) and crinoids (Rees, 2000). The boulders and cobbles around the base of the shoal supported encrusting sponge, *Caryophyllia smithii* and crinoids in low numbers; brittlestars, squat lobster (*Munida* spp.) and the ross coral *Pentapora foliacea* (now *Pentapora fascialis*) were also present (see Plate 3) (Rees, 2000).

Plate 1: *Corynactis* (jewel anemone) dominated zone with *Echinus esculentus* (sea urchin) in upper part of Haig Fras (Image © 2000 Ivor Rees)

Plate 2: *Caryophyllia smithii* (Devonshire cup coral) dominated zone at mid-depths on Haig Fras (Image © 2000 Ivor Rees)

Plate 3: Ross coral *Pentapora foliacea* (now *Pentapora fascialis*) and crinoids at the base of Haig Fras (Image © 2000 Ivor Rees)

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