NPWS (2011)

Hook Head SAC (site code: 0764)

Conservation objectives supporting document-marine habitats

Version 1

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Introduction

Hook Head SAC is designated for the marine Annex I qualifying interests of Large shallow inlets and bays and Reefs (figures 1 & 2).

A subtidal habitat survey of Hook Head SAC was undertaken in 2010 to investigate the physical and biological structure of this site. Aspects of the biology and ecology of Annex I habitats are provided in Section 1. The corresponding site-specific conservation objectives will facilitate Ireland delivering on its surveillance and reporting obligations under the EU Habitats Directive (92/43/EC).

Ireland also has an obligation to ensure that consent decisions concerning operations/activities planned for Natura 2000 sites are informed by an appropriate assessment where the likelihood of such operations or activities having a significant effect on the site cannot be excluded. Further ancillary information concerning the practical application of the site-specific objectives and targets in the completion of such assessments is provided in Section 2.

Section 1

LARGE SHALLOW INLETS AND BAYS

Part of Hook Head SAC encompasses the westerly reaches of Ballyteigue Bay (figure 1). This large, open, south-westerly facing bay it is bound to the east by Forlorn Point and the Saltee Islands and is exposed to prevailing winds and swells from the southwest and moderate to locally strong tidal streams. These hydrographic conditions are reflected in the substrate which is generally coarse and dominated by hard ground.

This Annex I habitat, Large shallow inlets and bays, also contains communities of the Annex I Reefs habitat; these will be dealt with separately. Sand with *Chaetozone christiei* and *Tellina* sp. community and Coarse sediment with *Pisidia longicornis* and epibenthic fauna community complex are recorded within the Annex I habitat of Large shallow inlets and bays (figure 3). These community types are described below.

The development of a community complex target arises when an area possesses similar abiotic features but records a number of biological communities that are not regarded as being sufficiently stable and/or distinct temporally or spatially to become the focus of conservation efforts. In this case, examination of the available data from Hook Head identified a number of biological communities whose species composition overlapped significantly. Such biological communities are grouped together into what experts consider are sufficiently stable units (i.e. a complex) for conservation targets.

Sand with *Chaetozone christiei* and *Tellina* sp. community

This community is recorded between Baginbun Head and Ingard Point and extends eastward to the boundary of the site. It occurs in depths of between 3m and 15m (figure 3).

The substrate here is sand with medium sand ranging from 26.1 to 72.1%; fine sand from 9.9 to 32.4% and very fine sand from 16.2 to 32.8%.

The polychaete *Chaetozone christiei* and the bivalve *Tellina* sp. occur in high abundance here, with the cumacean *Iphinoe trispinosa* and the amphipods *Periculodes longimanus* and *Bathyporeia tenuipes* all recorded in moderate abundances (table 1).

Distinguishing species of the Sand with *Chaetozone christiei* and *Tellina* sp. community	
Chaetozone christiei	*Tellina* sp.
Perioculodes longimanus	*Iphinoe trispinosa*
Bathyporeia tenuipes	

Table 1 Distinguishing species of the Sand with *Chaetozone christiei* and *Tellina* sp. community.

COARSE SEDIMENT WITH *PISIDIA LONGICORNIS* AND EPIBENTHIC FAUNA COMMUNITY COMPLEX

This community complex occurs to the south of Baginburn Head and extends eastward to the boundary of the site and in the outer reaches of Bannow Bay from Ingrad Point in the west to Clammers Point in the east (figure 3).

The substrate here is coarse sediment composed of cobbles and stones and occurs in depths of between 20 to 30m. The fauna of this complex consists of mobile and epifaunal species with the long-clawed porcelain crab *Pisidia longicornis* and the polychaetes *Pomatoceros triqueter* and *Pholoe baltica* (sensu Patersen) common here. In the outer reaches of Bannow Bay in shallow water (9m) the aorid amphipods, mytilid bivalves and *Pomatoceros* sp. are common.

The distinguishing species of this complex are typical of that of coarse sediment (table 2).

Distinguishing species of the Coarse sediment with *Pisidia longicornis* and epibenthic fauna community complex	
Pisidia longicornis	*Pomatoceros triqueter*
Pholoe baltica (sensu Petersen)	*Ophiocomina nigra*
Asterias rubens	Aoridae
Mytilidae	*Pomatoceros* sp.
Balanus sp.	*Harmothoe* sp.
Tectura virginea	*Hiatella arctica*
Apseudes talpa	*Anthura gracilis*
Lepidonotus squamatus	*Nereimyra punctata*

Table 2 Distinguishing species of the Coarse sediment with *Pisidia longicornis* and epibenthic fauna community complex.

Small patches of intertidal sediment are present on the Hook Head Peninsula at Woarway Bay and Sandeel Bay and around Baginbun Point and on the eastern margin of the site at Clammers Point. The sediment here is largely of barren coarse sand with talitrid amphipods present on decomposing seaweed on the upper strandline.

An additional coarse sediment community is present in deep water (>30m) to the south boundary of the site. This is beyond the Annex I habitat extent. The ophiuroid *Ophiocomina nigra* and the asteroid *Asterias rubens* dominate the community here. The asteroid *Luidia* sp., the echinoid *Echinus* sp. and the anthozoans *Sagartia* sp. and *Urticina* sp. are also prevalent.

REEFS

Extensive areas of reef occur within this SAC (see figure 2). Intertidally they generally occur as vertical rock faces or inclined bedrock with large boulders whilst to the west of Hook Head at Doonoge Point the reef forms a series of gullies. Subtidally, the reefs are aligned in a north-east/south-west orientation. They are largely cobbles and boulders on bedrock with some smaller areas of cobble/boulder fields recorded towards the north-east of the site. Three community types/complexes can be distinguished for this habitat: Exposed to moderately exposed intertidal reef community complex; Echinoderm and sponge dominated community complex; and *Laminaria* dominated community.

Exposed to moderately exposed intertidal reef community complex

This reef community extends largely uninterrupted from Doonoge Point to the west of Hood Head to Ingard Point to the east. It also occurs on northern margin of the site at Clammers Point (figure 3).

The substrate is that of bedrock in a series of gullies to the west of Hook Head to vertical rock faces and bedrock and large boulders on the eastern side of this peninsula and at Clammers Point.

The exposure regime is largely exposed to moderately exposed. The fauna is typically that of a high energy site consisting mainly of barnacle and mussel communities (table 3).

Species associated with the Exposed to moderately exposed intertidal reef community complex	
Barnacle species	Mytilid spp.

Table 3 Species associated with the Exposed to moderately exposed intertidal reef community complex.

Echinoderm and sponge dominated community complex

This reef community complex occurs from Hook Head to south east of Baginbun Head and extends to the boundaries of the site. It occurs in depths of 13m to 40m (figure 3). The substrate varies from cobble and boulder fields to a mosaic of cobble/boulder field with bedrock. The exposure regime of this community is recorded as exposed.

The most abundant and conspicuous fauna found on this reef type are echinoderms, including the urchin *Echinus* sp., the ophiuroids *Ophiocoma nigra* and *Ophiothrix* sp., and the starfish *Asterias rubens*, *Marthasterias gracilis*, and *Luidia* sp. (table 4). Encrusting sponges are also evident on this substrate namely *Alcyonium* sp. and *Cliona* sp.; *Tethys* sp. and *Polymastia* sp. have also been recorded here.

Hydroids (including *Nemertesia* sp.), bryozoans (including *Pentapora foliacea*), anemones (*Sagartia* sp., *Urticina* sp. and *Anemonia viridis*) as well as the serpulid polychaete *Pomatoceros* sp. are common. The crabs *Cancer pagurus*, *Maja squinado* and the squat lobster *Munidia* sp. are also present here as are the fish *Goviusculus* and *Scyliorhinus canicula*.

In the shallower areas the flora is represented by a variety of algal species including the green species *Desmarestia* sp.; the brown species *Dictyota dichotoma* and *Saccharina latissima*; red algae *Dilsea carnosa*,

Phyllophora sp., *Cryptopleura* sp. and *Delesseria sanguinea* and also unidentified encrusting calcareous species.

Species associated with the Echinoderm and sponge dominated community complex	
Echinus sp.	*Ophiocoma nigra*
Ophiothrix sp.	*Asterias rubens*
Marthasterias gracilis	*Luidia* sp.
Alcyonium sp.	*Cliona* sp.
Tethys sp.	*Polymastia* sp.
Nemertesia sp.	*Pentapora foliacea*
Sagartia sp.	*Urticina* sp.
Anemonia viridis	*Pomatoceros* sp.
Desmarestia sp.	*Dictyota dichotoma*
Saccharina latissima	*Dilsea carnosa*
Phyllophora sp.	*Cryptopleura* sp.
Delesseria sanguinea	encrusting calcareous species
Antedon sp.	*Stichastrella* sp.
Crossaster sp.	

Table 4 Species associated with the Echinoderm and sponge dominated community complex.

Laminaria dominated community

The *Laminaria* dominated community is an exposed reef community located from the northern part of Doornoge Bay west of Hook Head to Baginbun Head due east of this headland (figure 3).

This community is physically composed of bedrock and boulders and occurs in water of less than 15m depth.

This reef community has a diverse association of algae, invertebrates and fish species. The kelp species *Laminaria digitata* and *L. hypoborea* along with the red algae *Dilsea carnosa* are the more common algal species found here (table 5). Other algal species recorded here include *Saccharina latissima* and *Saccorhiza polyschides*, *Cryptopleura* sp., *Palmaria palmata*, *Membranoptera* sp. and *Phycodrys rubens* and *Desmarestia* sp. Unidentified calcareous algae were also recorded. The faunal species of hydroids (including *Obelia* sp.) and the serpulid polychaete *Pomatoceros* sp. are common here. Other faunal species which are conspicuous here include bryozoans (including *Membranipora* sp.), encrusting sponges, *Alcyonium* sp. and *Cliona* sp., the echinoderms *Echinus esculentus* and *Leptasterias* sp., the anemone *Anemonia viridis*, as well as cirripeds. The fish species *Gobiusculus* sp. was also recorded.

Species associated with the *Laminaria* dominated community	
Laminaria digitata	Hydroids
Laminaria hypoborea	*Dilsea carnosa*
Pomatoceros sp.	*Obelia* sp.

Table 5 Species associated with the *Laminaria* dominated community.

Section 2: Appropriate Assessment Notes

Many operations/activities of a particular nature and/or size require the preparation of an environmental impact statement of the likely effects of their planned development. While smaller operations/activities (i.e., sub threshold developments) are not required to prepare such statements, an appropriate assessment and Natura Impact Statement is required to inform the decision-making process in or adjacent to Natura 2000 sites. The purpose of such an assessment is to record in a transparent and reasoned manner the likely effects on a Natura 2000 site of a proposed development. The Department of the Environment, Heritage and Local Government has prepared general guidance on the completion of such assessments (www.npws.ie).

Annex I Habitats

It is worth considering at the outset that in relation to Annex I habitat structure and function, the extent and quality of all habitats varies considerably in space and time and marine habitats are particularly prone to such variation. Habitats which are varying naturally, i.e., biotic and/or abiotic variables are changing within an envelope of natural variation, must be considered to have favourable conservation condition. Anthropogenic disturbance may be considered significant when it causes a change in biotic and/or abiotic variables in excess of what could reasonably be envisaged under natural processes. The capacity of the habitat to recover from this change is obviously an important consideration (i.e., habitat resilience) thereafter.

This Department has adopted a prioritized approach to conservation of structure and function in marine Annex I habitats.

1. Those communities that are key contributors to overall biodiversity at a site by virtue of their structure and/or function (keystone communities) should be afforded the highest degree of protection and any significant anthropogenic disturbance should be avoided.
2. In relation to the remaining constituent communities that are structurally important (e.g., broad sedimentary communities) within an Annex I marine habitat, there are two considerations.
    2.1. Significant anthropogenic disturbance may occur with such intensity and/or frequency as to effectively represent a continuous or ongoing source of disturbance over time and space (e.g., effluent discharge within a given area). Drawing from the principle outlined in the European Commission's Article 17 reporting framework that disturbance of greater than 25% of the area of an Annex I habitat represents unfavourable conservation status, this Department takes the view that licensing of activities likely to cause continuous disturbance of each community type should not exceed an approximate area of 15%. Thereafter, an increasingly cautious approach is advocated. Prior to any further licensing of this category of activities, an inter-Departmental management review (considering *inter alia* robustness of available scientific knowledge, future site requirements, etc) of the site is recommended.
    2.2. Some activities may cause significant disturbance but may not necessarily represent a continuous or ongoing source of disturbance over time and space. This may arise for intermittent or episodic activities for which the receiving environment would have some resilience and may be expected to recover within a reasonable timeframe relative to the six-year reporting cycle (as required under Article 17 of the Directive). This Department is satisfied that such activities could be assessed in a context-specific manner giving due consideration to the proposed nature and scale of activities

during the reporting cycle and the particular resilience of the receiving habitat in combination with other activities within the designated site.

The following technical clarification is provided in relation to specific conservation objectives and targets for Annex I habitats to facilitate the appropriate assessment process:

Objective **To maintain the favourable conservation condition of Large shallow inlets and bays in Hook Head SAC, which is defined by the following list of attributes and targets**

Target 1	The permanent habitat area is stable or increasing, subject to natural processes.

- This habitat also encompasses the Annex I habitats of Reefs and Vegetated sea cliffs; however, targets for these habitats should be addressed in their own right.
- This target refers to activities or operations that propose to permanently remove habitat from the site, thereby reducing the permanent amount of habitat area. It does not refer to long or short term disturbance of the biology of a site.
- Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 2	The following communities should be maintained in a natural condition: Sand with *Chaetozone christiei* and *Tellina* sp. community; and Coarse sediment with *Pisidia longicornis* and epibenthic fauna community complex.

- A semi-quantitative description of the communities has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 3.
- The estimated areas of the communities (within the Annex 1 habitat of Large shallow inlet and bay) given below are based on spatial interpolation and therefore should be considered indicative:

  Sand with *Chaetozone christiei* and *Tellina* sp. community 575ha

  Coarse sediment with *Pisidia longicornis* and epibenthic fauna community complex 1,576ha.
- Significant continuous or ongoing disturbance of communities should not exceed an approximate area of 15% of the interpolated area of each community type, at which point an inter-Departmental management review is recommended prior to further licensing of such activities.
- Proposed activities or operations that cause significant disturbance to communities but may not necessarily represent a continuous or ongoing source of disturbance over time and space may be assessed in a context-specific manner giving due consideration to the proposed nature and scale of activities during the reporting cycle and the particular resilience of the receiving habitat in combination with other activities within the designated site.

Objective **To maintain the favourable conservation condition of Reefs in Hook Head SAC, which is defined by the following list of attributes and targets**

Target 1	The distribution of reefs should remain stable, subject to natural processes

- The likely distribution of reef habitat in this SAC is indicated (figure 2).
- This target refers to activities or operations that propose to permanently remove reef habitat, thus reducing the range over which this habitat occurs within the site. It does not refer to long or short term disturbance of the biology of reef habitats.
- Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 2	The permanent area is stable, subject to natural processes

- This target refers to activities or operations that propose to permanently remove habitat from the site, thereby reducing the permanent amount of habitat area. It does not refer to long or short term disturbance of the biology of a site.
- Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 3	The following reef community complexes should be maintained in a natural condition: Exposed to moderately exposed intertidal reef community complex; and Echinoderm and sponge dominated community complex

- A semi-quantitative description of these community complexes has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 4.
- The estimated area of the community complexes within the Reefs habitat given below is based on spatial interpolation and therefore should regarded as indicative:

  Exposed to moderately exposed intertidal reef community complex 115ha

  Echinoderm and sponge dominated community complex 7,667ha
- This target relates to the structure and function of the reef and therefore it is of relevance to those activities that may cause disturbance to the ecology of the habitat.
- Significant continuous or ongoing disturbance of these community complexes should not exceed an approximate area of 15% of the interpolated area of each of the community complexes, at which point an inter-Departmental management review is recommended prior to further licensing of such activities.
- Proposed activities or operations that cause significant disturbance to the community complexes but may not necessarily represent a continuous or ongoing source of disturbance over time and space may be assessed in a context-specific manner giving due consideration to the proposed nature and scale of activities during the reporting cycle and the particular resilience of the receiving habitat in combination with other activities within the designated site.

Target 4	The extent of *Laminaria* dominated community should be conserved, subject to natural processes.

- *Laminaria* dominated communities are considered to be keystone communities that are of considerable importance to the overall ecology and biodiversity of a habitat by virtue of their physical complexity.
- Any significant anthropogenic disturbance to the extent of the *Laminaria* dominated community should be avoided.
- An interpolation of the likely distribution of the *Laminaria* dominated community is provided in figure 4. The estimated area is 2,752ha

Target 5	The biology of the *Laminaria* dominated community should be conserved, subject to natural processes.

- It is important to ensure the quality as well as the extent of the *Laminaria* dominated community is protected.
- Any significant anthropogenic disturbance to the flora and fauna associated with the *Laminaria* dominated community should be avoided.

Figure 1. Extent of Large shallow inlets and bays in Hook Head SAC

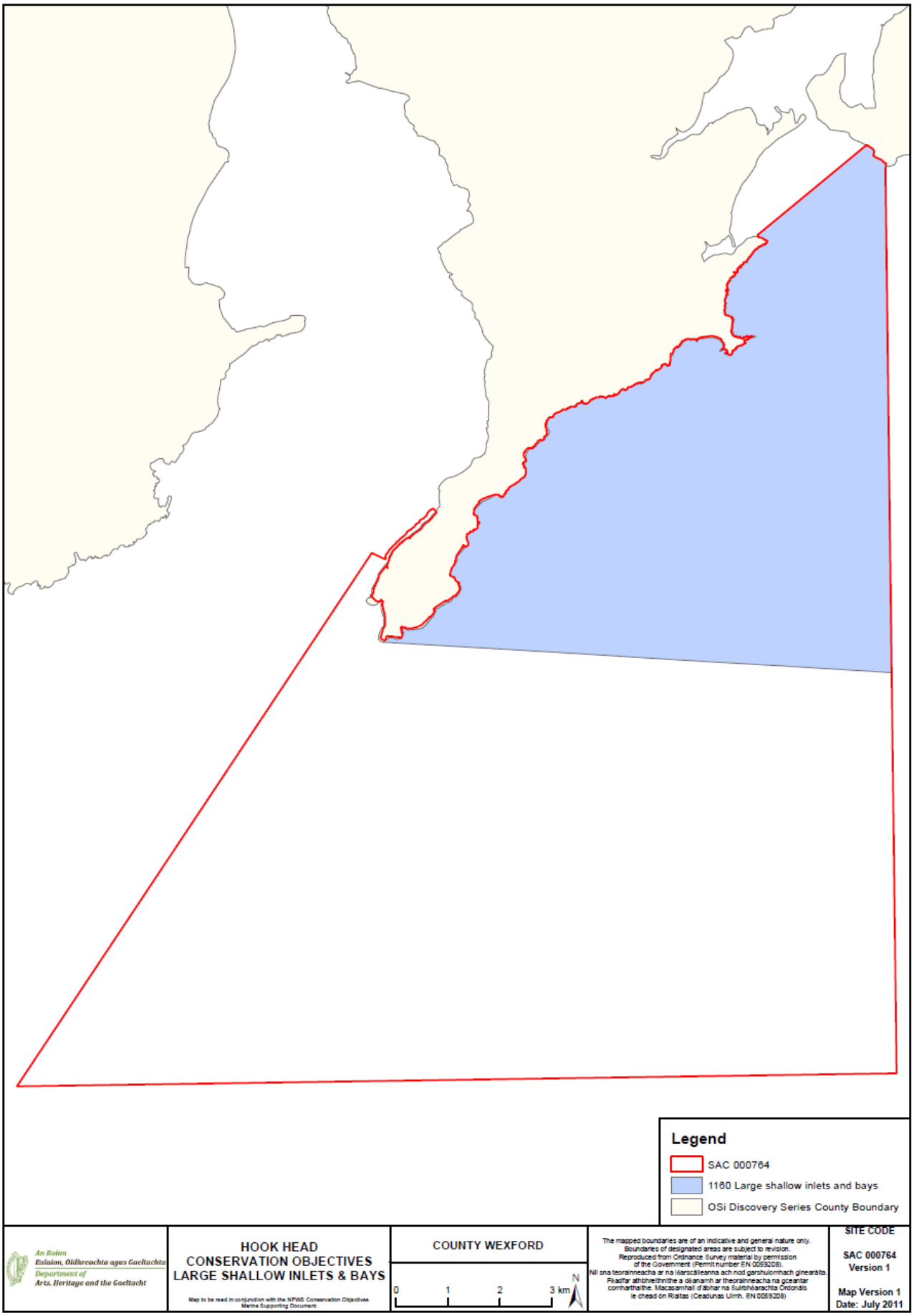

Figure 2. Extent of Reefs in Hook Head SAC

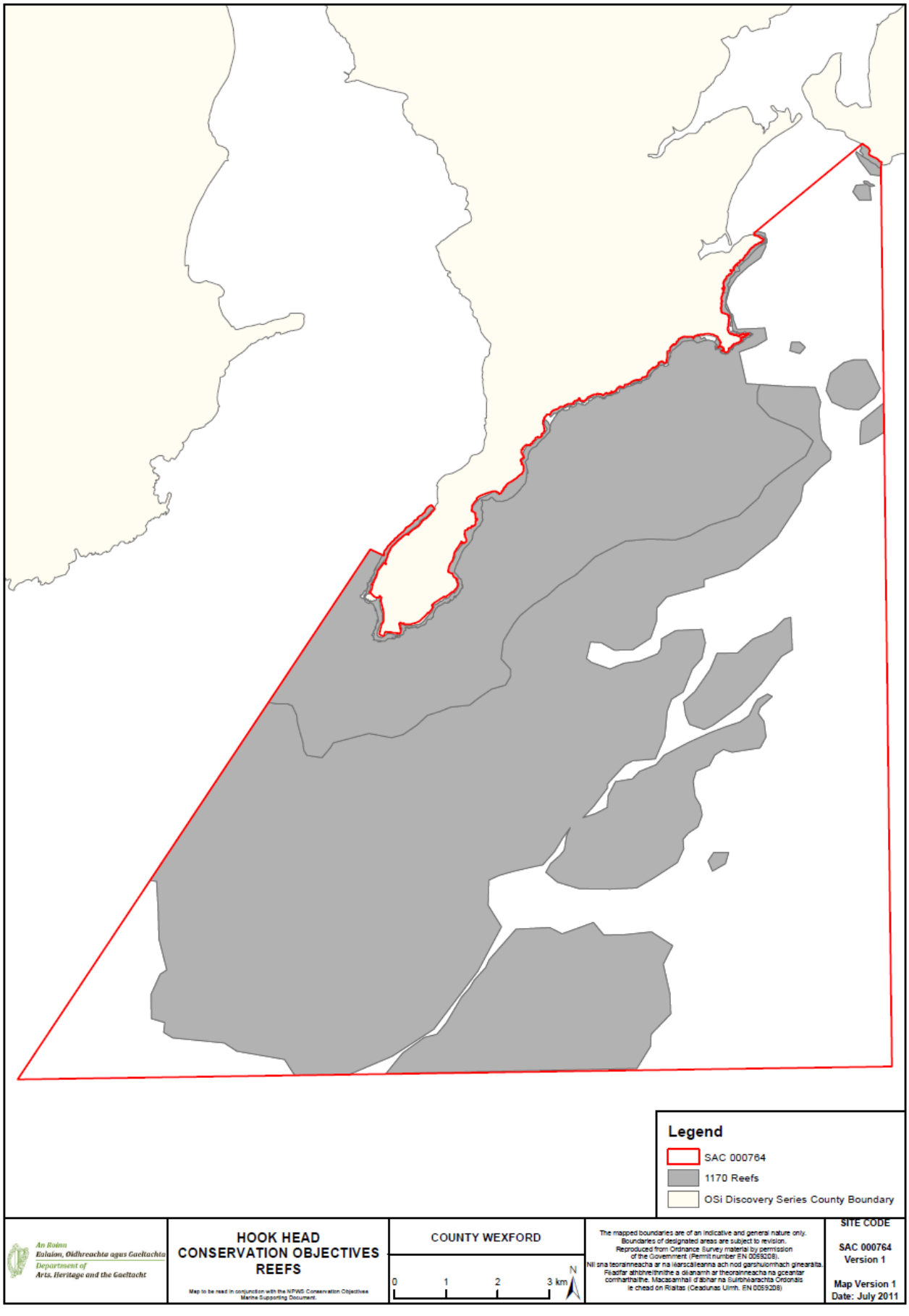

Figure 3 Distribution of communities in Hook Head SAC