

NPWS (2011)

Carnsore Point SAC (site code: 2269)

**Conservation objectives supporting document-
marine habitats**

Version 1

July 2011

Introduction

Carnsore Point SAC is designated for the Annex I qualifying interests of Reefs and Mudflats and sandflats not covered by seawater at low tide (figures 1 & 2).

Intertidal and subtidal habitat surveys of Carnsore Point SAC were 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

REEFS

Within Carnsore Point SAC, reef habitat is recorded intertidally on Burrow Beach and from Carnsore Point to north of Greenore Point. Subtidally, reef is present throughout the site from low water to depths of approximately 40m. It occurs to the south of Carnsore Point and Burrow Beach extending several kilometres to the southern boundary of the SAC and it extends approximately two kilometres east from Churchtown Beach and Greenore Point (figure 1).

Intertidally, the reef largely consists of boulders; however, sloping bedrock is recorded around Greenore Point, St Helens Harbour and Carnsore Point. The majority of subtidal reef at this site occurs as a mosaic of boulders on bedrock. However, a large area of flat or sloping bedrock is recorded east of Greenore Point with smaller areas closer to shore at Carnsore Point and around Crossfintan Point. Boulder-fields are present at the southern extreme of the site and also in a smaller area offshore to the east of Crossfintan Point.

The exposure regime of intertidal reef is largely moderately exposed; although sheltered intertidal reef also occurs north of Carnsore Point to Crossfintan Point. Subtidally, moderately exposed reef is recorded close to shore from Crossfintan Point to Greenore Point. The remainder of the subtidal reef is described as exposed.

Ecologically, the reef within Carnsore Point SAC can be categorised into three main groups: sheltered to moderately exposed intertidal reef community complex; exposed subtidal reef dominated by a faunal community complex; and *Laminaria* dominated community complex.

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 Carnsore Point 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.

SHELTERED TO MODERATELY EXPOSED INTERTIDAL REEF COMMUNITY COMPLEX

Intertidal reef occurs as boulders and sloping bedrock. The reef biota is largely composed of a variety of lichen species on the upper shore and of combinations of fucoids elsewhere on the shore (table 1). In sheltered areas, the red algae *Porphyra purpurea* and the freshwater tolerant genus *Ulva* sp. occur, while on moderately exposed reef, encrusting barnacles are found.

Species associated with the Sheltered to moderately exposed intertidal community complex	
<i>Fucus vesiculosus</i>	<i>Pelvetia canaliculata</i>
<i>Fucus serratus</i>	<i>Ulva</i> sp.
<i>Fucus spiralis</i>	<i>Porphyra purpurea</i>
<i>Ascophyllum nodosum</i>	Encrusting barnacle spp.
<i>Verrucaria maura</i>	Grey lichen species indet.
Yellow lichen species indet.	

Table 1 Species associated with the Sheltered to moderately exposed intertidal community complex.

EXPOSED SUBTIDAL REEF DOMINATED BY A FAUNAL COMMUNITY COMPLEX

This community complex is present to the south and west of Carnsore Point and to the east of Crossfintan Point (figure 3). It occurs to the south of Carnsore Point, off Churchtown and Greenore Point at depths greater than 10m. A small area is recorded at the low water mark at Burrow Strand. The reef occurs in the form of exposed bedrock and also boulders but more typically it is present as a mosaic of bedrock outcrops and extensive boulder fields.

This reef is dominated by faunal communities with the most conspicuous species generally consisting of sponges, echinoderms, anemones and erect bryozoans (table 2). In depths of between 11m to 30m, the reef is occasionally dominated by ascidians. Usually it is the ascidian species *Polyclinum aurantium* that is most abundant with the bryozoan *Flustra foliacea* and the ascidian *Stolonica socilais* also present. Elsewhere within the site *Distomus variolosus* has been recorded as the most abundant ascidian.

Species associated with Exposed subtidal reef dominated by a faunal community complex	
<i>Alcyonium</i> sp.	<i>Ophiothrix</i> sp.
<i>Cliona</i> sp.	<i>Marthasterias</i> sp.
<i>Polyclinum aurantium</i>	<i>Anemonia viridis</i>
<i>Flustra foliacea</i>	<i>Sagartia</i> sp.
<i>Flustra</i> sp.	<i>Asterina</i> sp.
<i>Stolonica socilais</i>	<i>Stichastrella</i> sp.
<i>Asterias</i> sp.	<i>Actinothoe sphyrodeta</i>
<i>Urticina</i> sp.	<i>Halichondria</i> sp.
<i>Ophiocoma</i> sp.	<i>Echius</i> sp.
<i>Nemertesia</i> sp.	<i>Scyliorhinus canicula</i>
Encrusting fauna	<i>Labrus mixtus</i>

Table 2 Species associated with Exposed subtidal reef dominated by a faunal community complex.

LAMINARIA DOMINATED COMMUNITY COMPLEX

Assemblages of *Laminaria* are among the most ecologically dynamic and biologically diverse of communities worldwide. Kelp species are the most common prominent constituents of the temperate lower intertidal and subtidal rocky shore. They are considered to be an important genus with a diverse community of fauna and other algae associated with them.

In Carnsore Point SAC, an extensive area of the *Laminaria* dominated community complex is recorded from south of Carnsore Point between the lower shore and approximately 10m depth. Along the eastern coastline the community is present at Churchtown and Greenore Point (figure 3). It occurs on mosaic type reefs of boulders and bedrock between the low water mark and 10m depth, and extends to approximately 20m off Churchtown. Although this community complex is primarily present in exposed conditions, it occurs on the moderately exposed sites close to shore between Carna and Greenore Point.

Two species of kelp have been identified from this habitat, *Laminaria digitata* and *Laminaria hyperborea*. Other algal species associated with the community complex includes *Saccharina latissima*, *Chorda filum*, *Halidrys siliquosa*, *Dilsea carnosa* and *Sargassum muticum*. The fauna generally associated with this reef type include hydroids, sponges and bryozoans as well as the anemone *Anemonia viridis*, the crab *Necora puber* and the Ballan Wrasse *Labrus bergytta* (table 3). On occasion, this reef type is dominated by a single species or species type. The bivalve *Mytilus edulis* dominate this substrate around Barrels Rocks, whilst north east of Terchen the bivalve *Musculus discors* is abundant. South-east of Splagh rock the ascidians *Stolonica socialis* and *Polyclinum aurantium* are prominent.

Species associated with the <i>Laminaria</i> dominated community complex	
<i>Laminaria digitata</i>	<i>Mytilus edulis</i>
<i>Laminaria hyperborea</i>	<i>Musculus discors</i>
<i>Saccharina latissima</i>	<i>Polyclinum aurantium</i>
<i>Chorda filum</i>	<i>Stolonica socialis</i>
<i>Halidrys siliquosa</i>	Bryozoan spp.
<i>Dilsea carnosa</i>	<i>Anemonia viridis</i>
Hydroid spp.	<i>Labrus bergytta</i>
Sponge spp.	<i>Necora puber</i>

Table 3 Species associated with *Laminaria* dominated community complex.

MUDFLATS AND SANDFLATS NOT COVERED BY SEAWATER AT LOW TIDE

This Annex I habitat occurs intertidally between the Mean Low Water Mark (MLWM) and the Mean High Water Mark (HMWM), with the lower shore extent being defined by the Ordnance Survey Mean Low Water boundary. Within Carnsore Point SAC, intertidal substrates exist largely as clean sand beaches periodically interspersed with the intertidal reef habitats along the coast from Greenore Point Beach to Burrow Beach (figure 2).

INTERTIDAL SAND DOMINATED BY POLYCHAETES AND CRUSTACEA COMMUNITY COMPLEX

This Annex I habitat is represented by a single community complex that occurs intertidally from Carnsore Point north to Greenore Point Beach (figure 3).

The sediment here is a mixture of sand (medium sand ranges from 0.1 to 31.2%, fine sand from 0.6 to 34.7%, very fine sand from 2.0 to 74.2%), coarse sand from 0.0 to 44.7%, very coarse sand from 0 to 30.8% and coarse sediment (gravel ranges from 0.0 to 35.5%),

This complex is dominated by the spionid polychaetes *Scolelepis squamata* and *Malacoceros fuliginosus*, the polychaete *Capitella* spp. and the intertidal amphipod *Haustorius arenarius* (table 4). Faunal distributions within this community complex are patchy, high abundances of *Malacoceros fuliginosus* and *Capitella* spp. are found at St. Helens Harbour and the western boundary of the SAC whilst on the beach between Carnsore Point and Crossfintan Point there are increased incidences of the amphipod *Bathyporeia pilosa*, which accounts for 82% of individuals recorded here. The fauna recorded here are typical of intertidal clean sands.

Distinguishing species of Intertidal sand dominated by polychaetes and crustacea community complex	
<i>Scolelepis squamata</i>	<i>Malacoceros fuliginosus</i>
<i>Haustorius arenaria</i>	<i>Bathyporeia pilosa</i>
<i>Capitella</i> sp. agg.	

Table 4 Distinguishing species of Intertidal sand dominated by polychaetes and crustacean community complex

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 Arts, Heritage and the Gaeltacht 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 Reefs in Carnsore Point, which is defined by the following list of attributes and targets

Target 1	The distribution of reefs occurring in the site should remain stable, subject to natural processes
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- The likely distribution of reef habitat in this SAC is indicated (figure 1).
- 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
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- 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: Sheltered to moderately exposed intertidal reef community complex; and Exposed subtidal reef dominated by a faunal community complex
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- 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 Reefs habitat given below are based on spatial interpolation and therefore should be regarded as indicative:
Sheltered to moderately exposed intertidal reef community complex 24ha
Exposed subtidal reef dominated by a faunal community complex 1,382ha
- 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 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.

Target 4	The extent of <i>Laminaria</i> dominated community complex should be conserved, subject to natural processes.
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- *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 complex should be avoided.
- An interpolation of the likely distribution of the *Laminaria* dominated community complex is provided in figure 3. The estimated area is 442ha

Target 5	The biology of the <i>Laminaria</i> dominated community complex should be conserved, subject to natural processes.
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- It is important to ensure the quality as well as the extent of the *Laminaria* dominated community complex is protected.
- Any significant anthropogenic disturbance to the flora and fauna associated with the *Laminaria* dominated community complex should be avoided.

Objective To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide, 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
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- 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 community should be conserved in a natural condition: Intertidal sand dominated by polychaetes and crustacea community complex.
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- A semi-quantitative description of this community has been provided in Section 1.
- An interpolation of its likely distribution is provided in figure 3.
 - The estimated area of the community given below is based on spatial interpolation and therefore should be regarded as indicative:
 - Intertidal sand dominated by polychaetes and crustacea community complex 32ha
- Significant continuous or ongoing disturbance of community should not exceed an approximate area of 15% of the interpolated area of the 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.

Figure 1. Extent of Reefs in Carnsore Point SAC

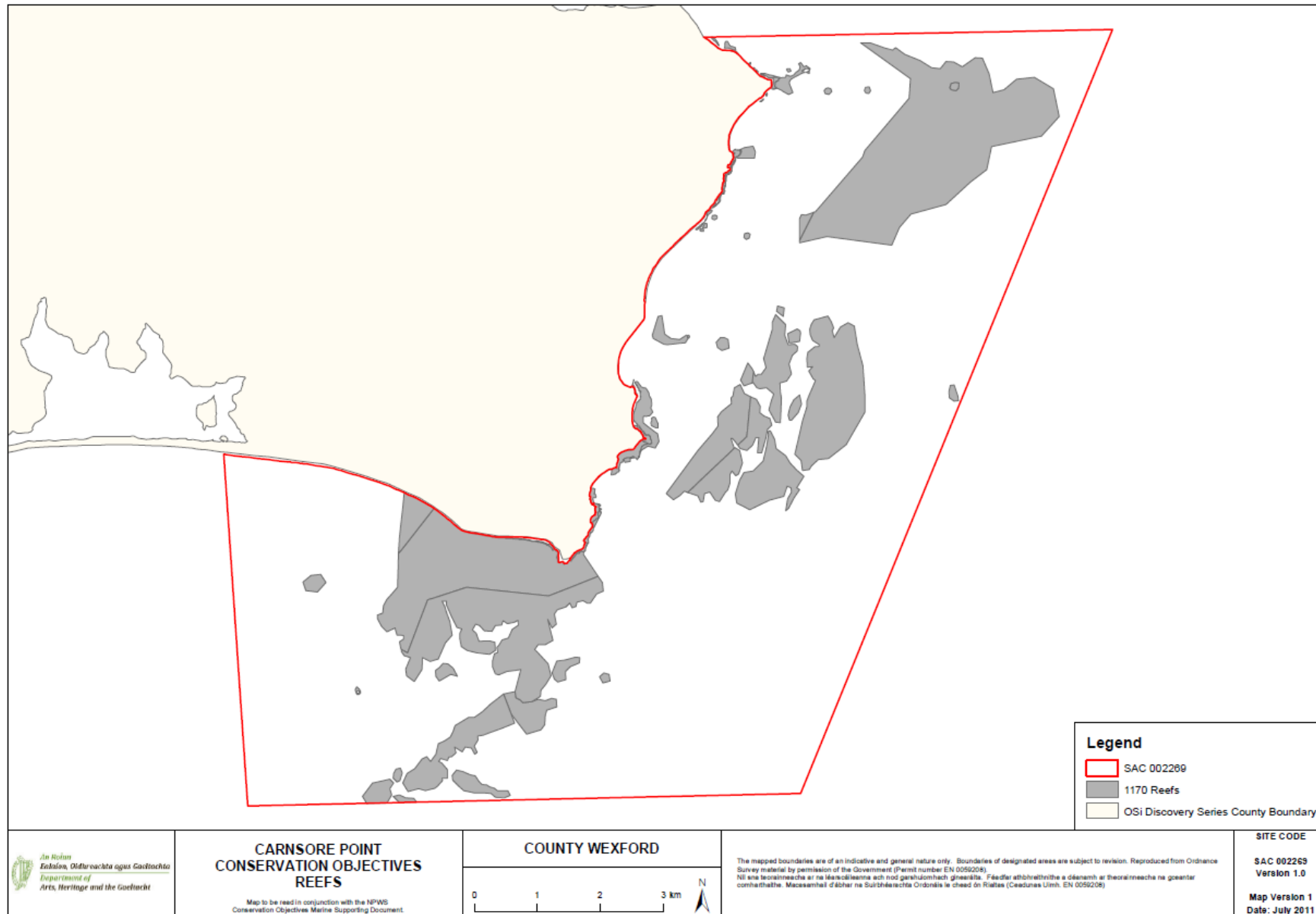


Figure 2. Extent of Mudflat and sandflat not covered by seawater at low tide in Carnsore Point SAC

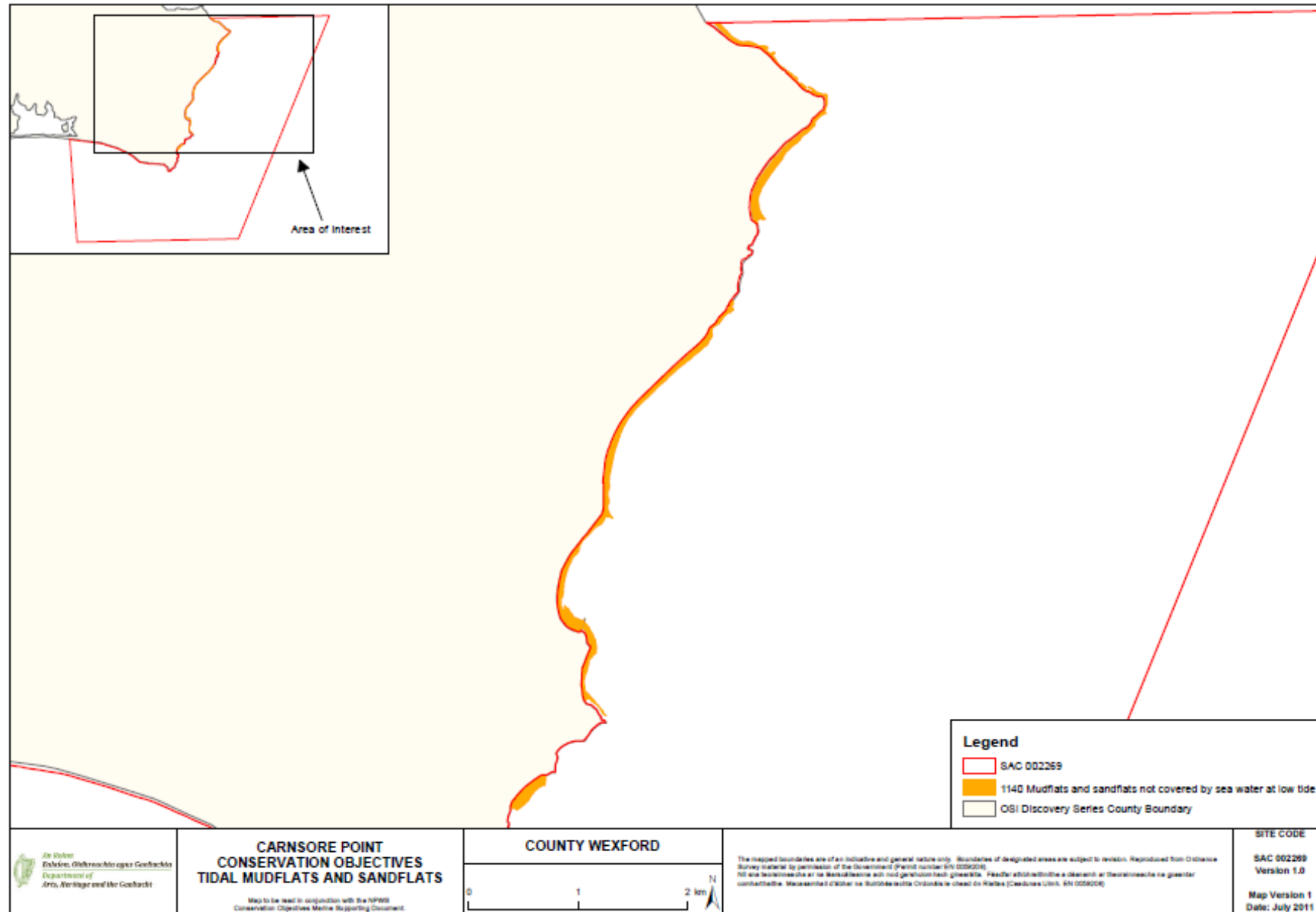


Figure 3. Distribution of communities in Carnsore Point SAC

