NPWS (2012)

Slyne Head Islands SAC (site code: 328)

Conservation objectives supporting document - Marine Habitats and Species

Version 1

July 2012

Introduction

Slyne Head Islands SAC is designated for the Annex I qualifying interest of Reefs (Figure 1) and the Annex II species *Halichoerus grypus* (grey seal).

A subtidal reef survey was undertaken in 2010 (Aquafact, 2011) and this data was used to determine the physical and biological nature of this SAC. In addition to the records compiled from historical Wildlife Service site visits (Summers, 1983; Lyons, 2004) and a 2003 summer survey (Cronin *et al.*, 2004), more detailed investigations of grey seal population status and seasonal habitat use within the site were conducted in 2004 (Ó Cadhla *et al.*, 2005) and early 2005 (Ó Cadhla *et al.*, 2006). A comprehensive survey of the grey seal breeding population was subsequently carried out in 2005 (Ó Cadhla *et al.,* 2008) and a follow-up moult season survey was conducted in 2007 (Ó Cadhla & Strong, 2007) in order to investigate pup production, habitat use and population composition within the site.

Aspects of the biology and ecology of Annex I habitat and Annex II species 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

Principal Benthic Communities

Within the Reefs habitat of Slyne Head Islands SAC three community types were recorded; they are presented in table 1 and a description of each community type is given below.

Community Type	Reefs (1170)
Exposed intertidal reef community complex	✓
Laminaria-dominated community	✓
Exposed subtidal reef with echinoderms and encrusting algae community	✓

Table 1 The Reefs community types recorded in Slyne Head Islands SAC.

Estimated area of each community type within the Annex I habitat, based on interpolation, is given in the objective target in Section 2.

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 Slyne Head Islands SAC 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.

EXPOSED INTERTIDAL REEF COMMUNITY COMPLEX

This intertidal reef community occurs on exposed to moderately exposed shores throughout the site from Inishdugga in the north to Illaunamid in the southwest and also the rocks of Carrigeenboy, Carricknagurage, Clarke's Rock and Carrickarone (Figure 2).

The substrate of this community complex is bedrock, with some vertical faces and rock pools.

The species associated with this community include the crustacean *Semibalanus balanoides*, the gastropods *Patella vulgata*, *Littorina littorea* and *Nucella lapillus*, the bivalve *Mytilus edulis*, the sponge *Halichondria panicea* and the brown alga *Fucus spiralis* and are recorded throughout the community complex. Other species which occur here are the crustacean *Chthamalus* spp., the lichens *Verrucaria maura*, *Ramalina siliquosa* and *Caloplaca* sp., the brown algae *Pelvetia canaliculata*, *Fucus serratus*, *Ascophyllum nodosum*, *Desmarestia aculeata*, *Fucus vesiculosus* and *Himanthalia* sp., spirorbid polychaetes, the green algae

Blidingia sp. and *Cladophora* sp., and the red algae *Vertebrata lanosa* and *Gastroclonium ovatum*. The green alga *Ulva* sp. occurs throughout the community but has an uneven distribution. On the very low shore at the water line the kelp species *Laminaria digitata* and *Saccharina latissima* are recorded (Table 2).

A variant of this community occurs on moderately exposed shores in the north of the site; here the lichens *Verrucaria maura* and *Ramalina siliquosa*, the brown algae *Fucus vesiculosus* and *Ascophyllum nodosum* dominate. In the rock pools, red encrusting calcareous algae, the actinarians *Anemonia viridis*, *Actinia equina* and *Sagartia troglodytes* and the red alga *Corallina officinalis* occur. In larger rock pools the green alga *Ulva* sp. is recorded.

Species associated with the Exposed intertidal reef community complex	
Semibalanus balanoides	Spirorbid polychaetes
Patella vulgata	*Ramalina siliquosa*
Littorina littorea	*Caloplaca sp.*
Nucella lapillus	*Cladophora* sp.
Mytilus edulis	*Gastroclonium ovatum*
Halichondria panicea	*Haliclona* sp.
Fucus spiralis	*Ulva* sp
Chthamalus spp.	*Laminaria digitata*
Verrucaria maura	*Saccharina latissima*
Pelvetia canaliculata	*Vertebrata lanosa*
Fucus serratus	*Anemonia viridis*
Ascophyllum nodosum	*Actinia equina*
Desmarestia aculeata	*Sagartia troglodytes*
Fucus vesiculosus	*Corallina officinalis*
Himanthalia sp.	

Table 2 Species associated with the Exposed intertidal reef community complex.

LAMINARIA-DOMINATED COMMUNITY

This reef community occurs extensively throughout the site from Inishdugga in the northeast to Illaunamid in the southwest in depths of between 0m and 25m depth (Figure 2).

In shallow water (0m to 10m) the substrate is predominantly that of flat or sloping bedrock; in deeper water (10m-20m) the substrate is a mosaic of cobble, boulder and bedrock.

The biota is dominated by the kelp species *Laminaria hyperborea*; the associated flora includes the red algae *Delesseria sanguinea* and *Dilsea carnosa*, other unidentified foliose red algae and encrusting calcareous red algae. The associated fauna includes the echinoderms *Echinus esculentus* and *Holothuria forskali* and the sponge *Cliona celata*. The cnidarian *Alcyonium* sp., the echinoderm *Luidia* sp. and encrusting sponges also occur within this community. In areas where the bedrock occurs as vertical faces, bryozoans and sponges, including the rare species *Plakortis simplex* are recorded (Table 3). The brown algae *Dictyota dichotoma* is abundant in the deeper parts (20m to 25m) of the community while the brown algae *Desmarestia* sp. and the red alga *Drachiella spectabilis* also occur here.

Species associated with the *Laminaria*-dominated community	
Laminaria hyperborea	*Echinus esculentus*
Foliose red algae	*Holothuria forskali*
Delesseria sanguinea	*Cliona celata*
Dilsea carnosa	*Plakortis simplex*
Dictyota dichotoma	Bryozoans
Encrusting calcareous red algae	

Table 3 Species associated with the *Laminaria*-dominated community.

EXPOSED SUBTIDAL REEF WITH ECHINODERMS AND ENCRUSTING ALGAE COMMUNITY

This community occurs extensively at the north-western boundary of the site and also around Slyne Head from the Maddens Rocks to Mullannamona at the south-eastern extreme of the site. It is recorded in water depths of between 13m and 44m (Figure 2). The substrate is primarily a mosaic of cobble, boulder and bedrock.

The species associated with this community include the echinoderms *Holothuria forskali* and *Echinus esculentus*, encrusting calcareous red algae and the cnidarians *Alcyonium glomeratum* and *Eunicella verrucosa*, the bryozoan *Pentapora fascialis* and the ascidian *Diazona violacea* (Table 3).

Other species recorded here are the sponges *Cliona celata*, *Axinella infundibuliformis*, *Phakellia ventilabrum*, *Pachymatisma johnstonia*, *Polymastia penicillus, Tethya* sp, *Bubaris vermiculata* and *Lissodendoryx* sp., and also encrusting forms, encrusting bryozoans, the hydroid *Tamarisca tamarisca*, the brachiopod *Terebratulina retusa*,, the cnidarians *Caryophyllia smithii*, and the asteroids *Henricia* sp. and *Stichastrella* sp., and the ascidian *Botryllus* sp. and the rare nudibranch *Aldisa zetlandica*.

Species associated with the Exposed subtidal reef with echinoderms and encrusting algae community	
Holothuria forskali	*Diazona violacea*
Echinus esculentus	*Cliona celata*
Encrusting calcareous red algae	*Axinella infundibuliformis*
Alcyonium glomeratum	*Phakellia ventilabrum*
Eunicella verrucosa	*Caryophyllia smithii*
Pentapora fascialis	*Henricia* sp.

Table 3 Species associated with the Exposed subtidal reef with echinoderms and encrusting algae community.

Annex II Marine mammals

HALICHOERUS GRYPUS (GREY SEAL)

This marine mammal species occurs in estuarine, coastal and offshore waters but also utilises a range of intertidal and terrestrial habitats for important life history functions such as breeding, moulting, resting and social activity. Its aquatic range for foraging and inter-site movement extends predominantly into continental shelf and slope waters. Grey seal occupies both aquatic and terrestrial habitats in Slyne Head Islands SAC, including intertidal shorelines and skerries that become exposed during the tidal cycle. It is present at the site throughout the year during all aspects of its annual life cycle which includes breeding (August to December approx.), moulting (December to April approx.) and non-breeding, foraging and resting phases. In acknowledging the limited understanding of aquatic habitat use by the species within the site, it should be noted that all suitable aquatic habitat is considered relevant to the species range and ecological requirements at the site and is therefore of potential use by grey seals.

Grey seals are vulnerable to disturbance during periods in which time is spent ashore by individuals or groups of animals. This occurs immediately prior to and during the annual breeding season, which takes place predominantly during the months of August to December. Pups are born on land, usually on remote beaches and uninhabited islands or in sheltered caves. While there may be outliers in any year, specific established sites are used annually for breeding-associated behaviour by adult females, adult males, newborn pups and weaned pups. Such habitats are critical to the maintenance of the species within any site since pups are nursed there for a period of several weeks by the mother prior to weaning and abandonment. During this period, adult females also mate with adult males at or adjacent to breeding sites. In addition to delivering information on breeding dynamics, pup production (i.e. the number of pups born each year) can be measured or estimated in order to deliver an assessment of population size. However the relationship between pup production and total population size is not well known. An estimated 68 pups were born in Slyne Head Islands SAC in 2005. The corresponding minimum population estimate for the site numbered 238-306 grey seals of all ages. Known and suitable habitats for the species in Slyne Head Islands SAC during the breeding season are indicated in figure 3. Current breeding sites in Slyne Head Islands SAC are broadly as follows: Illaunamid, Ferroon Rocks and Chapel Island.

Grey seal also occurs at the site during the annual moult (i.e. hair shedding and replacement), a protracted period during which individual animals spend significant periods of days or weeks on the shore. Moulting is considered an intensive, energetically-demanding process that all seals must undergo, incurring further vulnerability for individuals during this period. Terrestrial or intertidal sites where seals can be found ashore are known as haul-out sites. Moult locations may be preferentially selected by the species. Those currently described in Ireland are remote from human habitation and interference, being on uninhabited islands or remote beaches, with specific established sites used annually by moulting adult females, adult males

and juveniles. In Ireland the moulting phase in the annual life cycle occurs predominantly during the months of December to April. A minimum estimate of 162 grey seals was recorded at the site during the moult season in 2007. Known moult haul-out locations at the site are indicated in figure 4, broadly consisting of Illaunamid, Ferroon Rocks, Chapel Island and Maddens Rocks.

Grey seal is a successful aquatic predator that feeds on a wide variety of fish and cephalopod species. For individual grey seals of all ages, intervals between foraging trips in coastal or offshore waters are spent resting ashore at terrestrial or intertidal haul-out sites, or in the water. Resting locations selected by grey seals may be more variable and dispersed than those used during the breeding or moulting seasons. While outliers may occur for very small numbers of animals, there is nevertheless a tendency for recurrent selection by grey seal of particular habitats and sites for terrestrial/intertidal resting behaviour (e.g. low-lying rocks and skerries). Known and suitable habitats for resting by the species are indicated in figure 5. Current sites described in Slyne Head Islands SAC are broadly as follows: Carrickarone, Barnacarrick, Blind Sound, Illaunamid and nearby Carricklea, Chapel Island and Maddens Rocks.

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. General guidance on the completion of such assessments has been prepared and is available at 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) and their low resilience 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 Slyne Head Islands SAC, which is defined by the following list of attributes and targets**

Target 1	The distribution of reefs is stable or increasing, subject to natural processes.

- The likely distribution of reef habitat in this SAC is indicated in 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.

- The area of this habitat represents the minimum estimated area of reef at this site and underestimates the actual area due to the many areas of sheer and steeply sloping rock within the reef habitat.
- 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	Conserve the following community types in a natural condition: Exposed intertidal reef community complex, *Laminaria*-dominated community and Exposed subtidal reef with echinoderms and encrusting algae community

- A semi-quantitative description of the communities has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 2.
- The estimated areas of the communities within the Reefs habitat given below are based on spatial interpolation and therefore should be considered indicative. In addition, as this habitat contains significant areas of sheer and steeply sloping rock, the mapped community extents will be underestimated:
  - Exposed intertidal reef community complex – 121ha
  - *Laminaria*-dominated community – 765ha
  - Exposed subtidal reef with echinoderms and encrusting algae community - 531ha
- 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.

Objective **To maintain the favourable conservation condition of grey seal in Slyne Head Islands SAC which is defined by the following list of attributes and targets**

Target 1	Species range within the site should not be restricted by artificial barriers to site use.

- This target may be considered relevant to proposed activities or operations that will result in the permanent exclusion of grey seal from part of its range within the site, or will permanently prevent access for the species to suitable habitat therein.
- It does not refer to short-term or temporary restriction of access or range.
- Early consultation or scoping with the Department in advance of formal application is advisable for proposals that are likely to result in permanent exclusion.

Target 2	Conserve the breeding sites in a natural condition.

- This target is relevant to proposed activities or operations that will result in significant interference with or disturbance of (a) breeding behaviour by grey seal within the site and/or (b) aquatic/terrestrial/intertidal habitat used during the annual breeding season.
- Operations or activities that cause displacement of individuals from a breeding site or alteration of natural breeding behaviour, and that may result in higher mortality or reduced reproductive success, would be regarded as significant and should therefore be avoided.

Target 3	Conserve the moult haul-out sites in a natural condition.

- This target is relevant to proposed activities or operations that will result in significant interference with or disturbance of (a) moulting behaviour by grey seal within the site and/or (b) aquatic/terrestrial/intertidal habitat used during the annual moult.
- Operations or activities that cause displacement of individuals from a moult haul-out site or alteration of natural moulting behaviour to an extent that may ultimately interfere with key ecological functions would be regarded as significant and should therefore be avoided.

Target 4	Conserve the resting haul-out sites in a natural condition.

- This target is relevant to proposed activities or operations that will result in significant interference with or disturbance of (a) resting behaviour by grey seal within the site and/or (b) aquatic/terrestrial/intertidal habitat used for resting.
- Operations or activities that cause displacement of individuals from a resting haul-out site to an extent that may ultimately interfere with key ecological functions would be regarded as significant and should therefore be avoided.

Target 5	Human activities should occur at levels that do not adversely affect the grey seal population at the site.

- Proposed activities or operations should not introduce man-made energy (e.g. aerial or underwater noise, light or thermal energy) at levels that could result in a significant negative impact on individuals and/or the population of grey seal within the site. This refers to both the aquatic and terrestrial/intertidal habitats used by the species in addition to important natural behaviours during the species annual cycle.
- This target also relates to proposed activities or operations that may result in the deterioration of key resources (e.g. water quality, feeding, etc) upon which grey seals depend. In the absence of complete knowledge on the species' ecological requirements in this site, such considerations should be assessed where appropriate on a case-by-case basis.
- Proposed activities or operations should not cause death or injury to individuals to an extent that may ultimately affect the grey seal population at the site.

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Figure 1. Extent of Reefs in Slyne Head Islands SAC

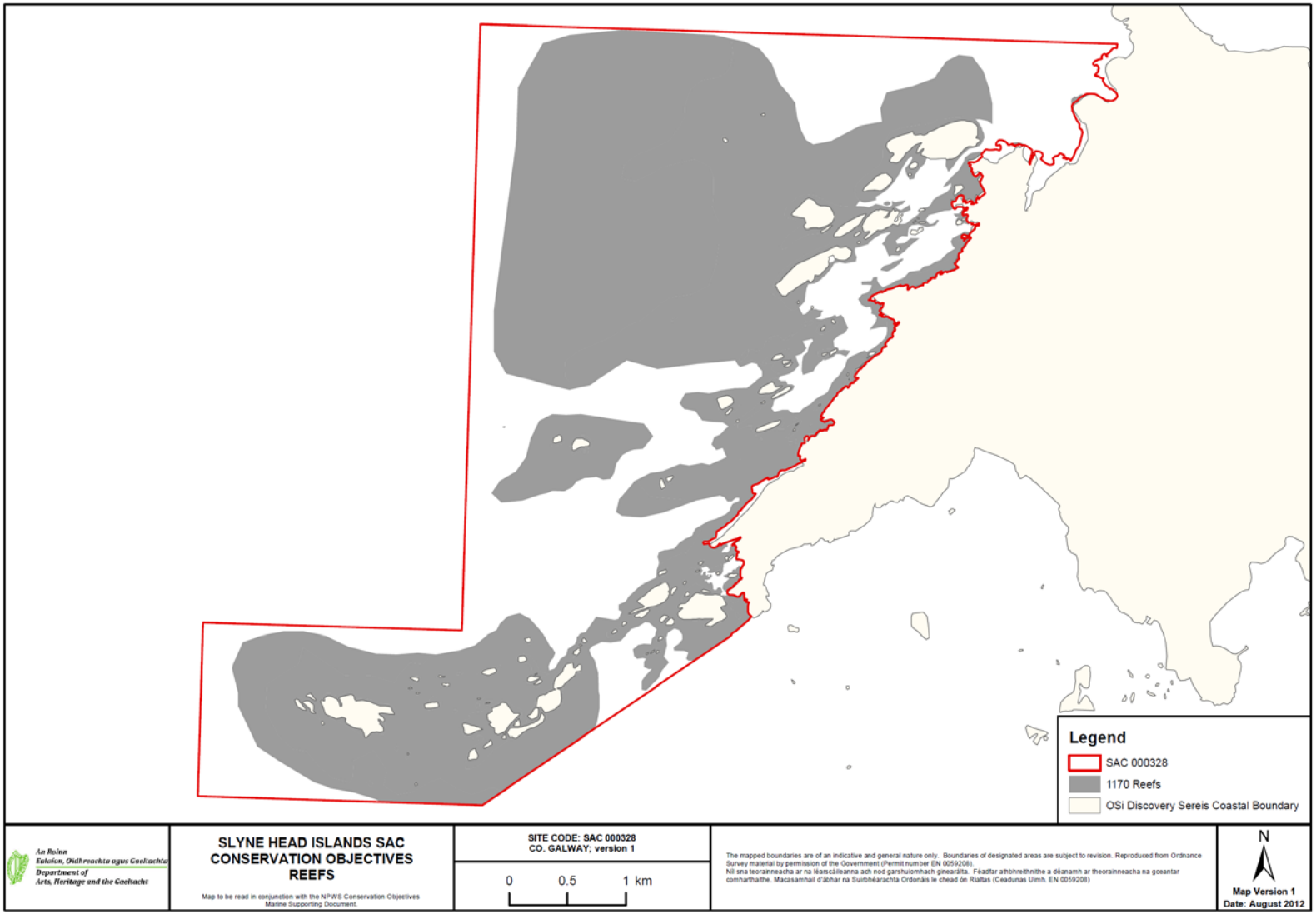

Figure 2. Distribution of Reefs community types in Slyne Head Islands SAC

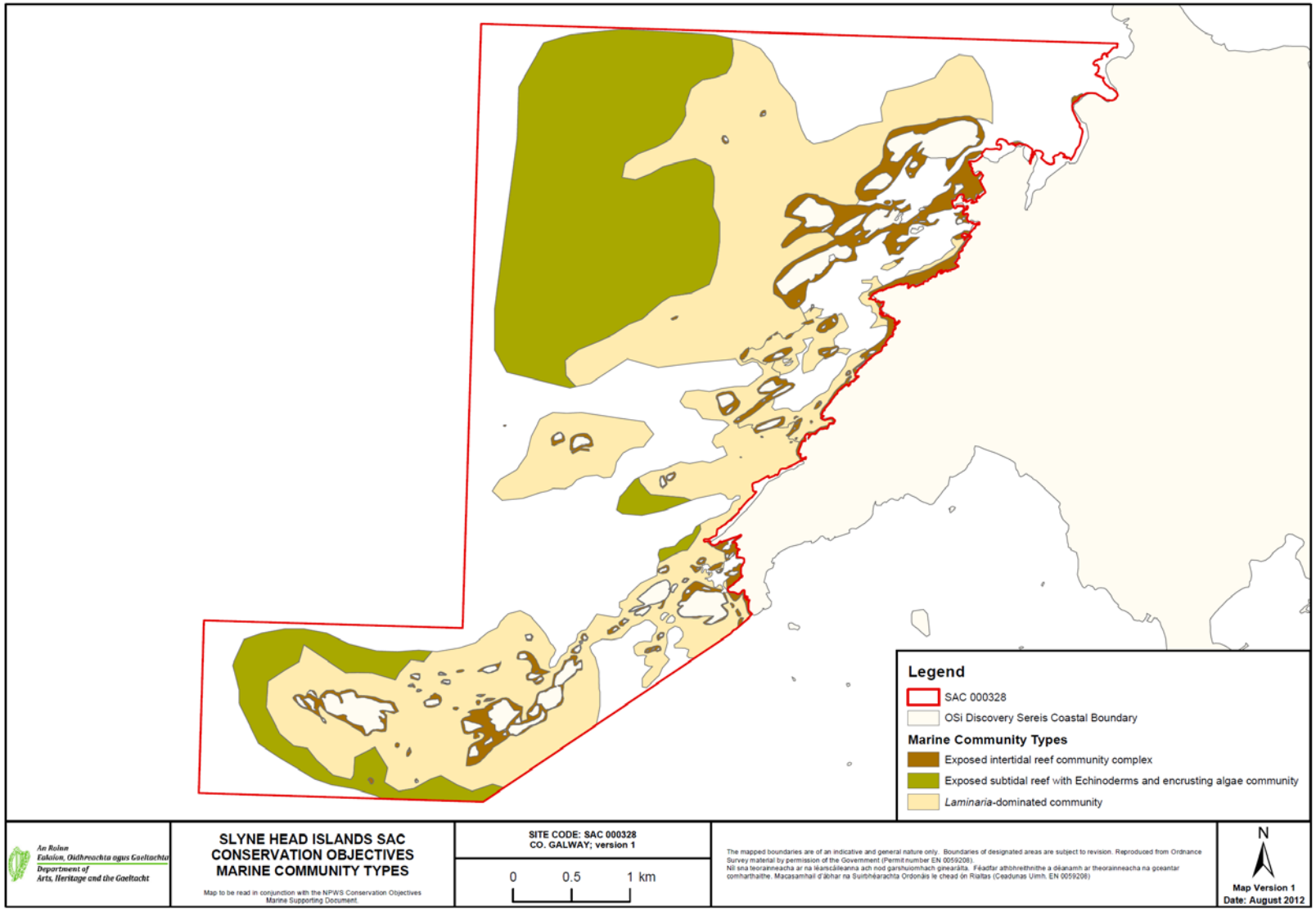

Figure 3. *Halichoerus grypus* - Known breeding sites in Slyne Head Islands SAC

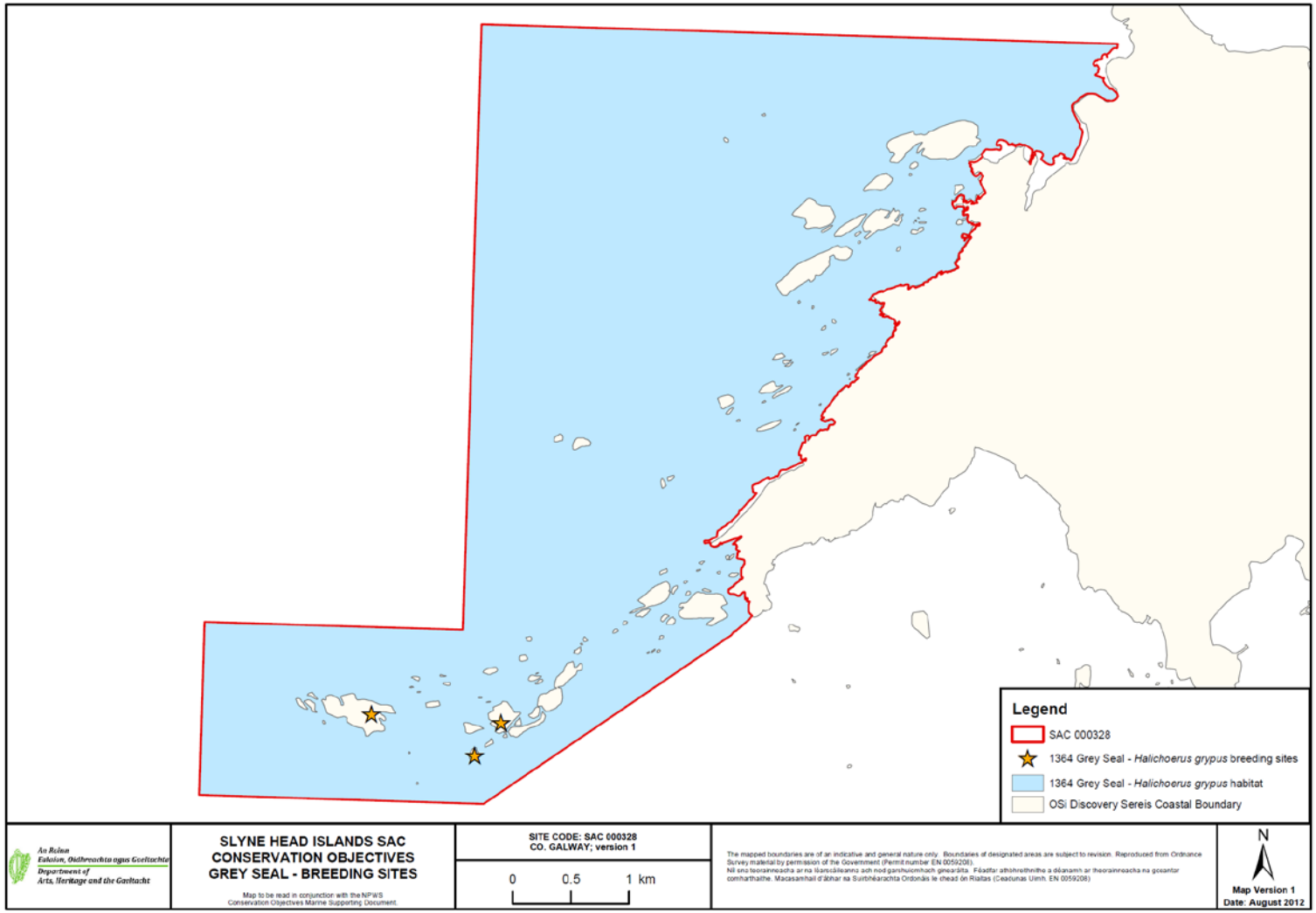

Figure 4. *Halichoerus grypus* - Known moult haul out sites in Slyne Head Islands SAC

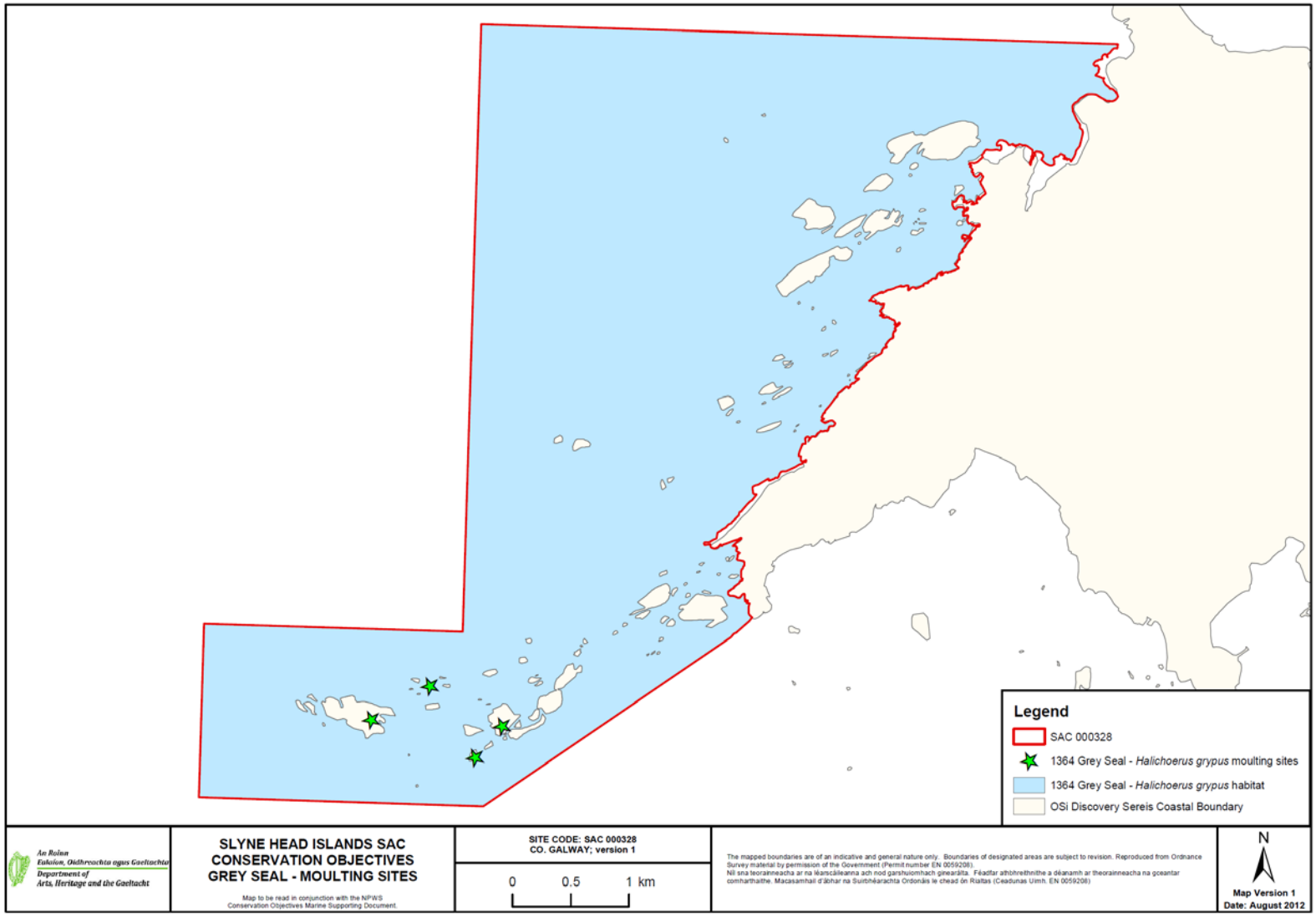

Figure 5. *Halichoerus grypus* - Known resting haul-out sites (non-breeding) in Slyne Head Islands SAC