

NPWS

**Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
(site code: 627)**

**Conservation objectives supporting document -
Marine habitats and species**

**Version 1
July 2013**

Introduction

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC is designated for the marine Annex I qualifying interests of Estuaries and Mudflats and sandflats not covered by seawater at low tide (Figures 1 and 2) and the Annex II species *Phoca vitulina* (harbour seal, also known as common seal). The Annex I habitat estuaries is a large physiographic feature that may wholly or partly incorporate other Annex I habitats including mudflats and sandflats within its area.

Intertidal surveys were undertaken at this site in 2007 and 2010 (ASU, 2007; ASU, 2012) and an intertidal walkover in 2013, a subtidal survey was undertaken in 2010 (Aquafact, 2011). These data were used to determine the physical and biological nature of this SAC and overlapping Special Protection Areas (SPAs) of Drumcliff Bay SPA (site code 4013) and Cummeen Strand SPA (site code 4035).

Records of harbour seal in the site have been compiled from historical Wildlife Service site visits and regional surveys (Summers *et al.*, 1980; Warner, 1983; Harrington, 1990; Lyons, 2004).

Aspects of the biology and ecology of Annex I habitats 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 Cummeen Strand/Drumcliff Bay, nine community types are recorded. The Annex I habitats in which they are recorded and their occurrence in the overlapping SPAs is presented in table 1, a description of each community type is given below.

Community Type	SAC Annex I Habitats		SPA
	Estuaries (1130)	Mudflats and sandflats not covered by seawater at low tide (1140)	
Intertidal fine sand with <i>Peringia ulvae</i> and <i>Pygospio elegans</i> community complex	✓	✓	✓
Estuarine mixed sediment to sandy mud with <i>Hediste diversicolor</i> and oligochaetes community complex	✓	✓	✓
Fine sand with crustaceans and <i>Scolelepis (Scolelepis) squamata</i> community complex		✓	✓
<i>Zostera</i> -dominated community	✓	✓	
Mytilidae-dominated community complex	✓	✓	✓
Fine sand with <i>Angulus</i> spp. and <i>Nephtys</i> spp. community complex	✓	✓	✓
Sand to mixed sediment with amphipods community	✓		✓
Intertidal reef community	✓		✓
Subtidal reef community			✓

Table 1 The community types recorded in Cummeen Strand/Drumcliff Bay and their occurrence in the Annex I habitats and the SPAs.

Estimated areas of each community type per Annex I habitat, based on interpolation, are given in the objective targets 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 Cummeen Strand/Drumcliff Bay 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.

INTERTIDAL FINE SAND WITH *PERINGIA ULVAE* AND *PYGOSPIO ELEGANS* COMMUNITY COMPLEX

This intertidal complex is recorded extensively in Sligo Harbour, from Coney Island to Finisklin on the southern shore and from Rosses Point Village to Ballincar and at Cartron on the northern shore. It occurs in the inner reaches of Drumcliff Bay from Ballygilgan Strand in the north to just west of Ballinphunta in the south (Figure 3).

The sediment of this community complex is largely that of fine sand, with fine and very fine sand accounting for 70% to 97% of the sediment here. While the silt-clay fraction is generally <10%, localised areas of more muddy sediment do occur; these are recorded in Drumcliff Bay at the eastern extremes, at Carney and east of Finned and in Sligo Harbour at its inner reaches near Finisklin. At Cartron and Cregg on the northern shore of Sligo Harbour the sediment may be described as muddy sand with silt-clay accounting for 77% to 84% of the sediment here.

The distinguishing species of this community include the gastropod *Peringia ulvae*, the polychaetes *Pygospio elegans* and *Eteone longa*, the bivalve *Cerastoderma edule* and the oligochaete *Tubificoides benedii* (Table 2). The polychaete *Arenicola marina* occurs here in densities of 2 to 3 m⁻², with the polychaete *Lanice conchilega* being recorded on the lower shore. The green algae *Ulva* sp. is locally abundant within this complex.

Species associated with the Intertidal fine sand with <i>Peringia ulvae</i> and <i>Pygospio elegans</i> community complex	
<i>Peringia ulvae</i>	<i>Tubificoides benedii</i>
<i>Pygospio elegans</i>	<i>Lanice conchilega</i>
<i>Eteone longa</i>	<i>Arenicola marina</i>
<i>Cerastoderma edule</i>	<i>Ulva</i> sp.

Table 2 Species associated with the Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex.

ESTUARINE MIXED SEDIMENT TO MUDDY SAND WITH *HEDISTE DIVERSICOLOR* AND OLIGOCHAETES COMMUNITY COMPLEX

This community complex is recorded within Sligo Harbour from the mouth of the Garvogue River along the eastern shore to Ballincar and on the shore at the village of Rosses Point; it is also recorded at Drumcliff (Figure 3). It occurs from the intertidal to a depth of approximately 3m.

The sediment here is variable ranging from gravelly mud to muddy sand. This is reflected in the range of the sediment fractions, with gravel ranging from 0% to 38%, fine to very fine sand from 24% to 69% and silt-clay from 13% to 57%.

This complex is distinguished by the polychaete *Hediste diversicolor* and the oligochaetes *Heterochaeta costata*, *Tubificoides benedii* and *Tubificoides pseudogaster* (Table 3).

Species associated with the Estuarine mixed sediment to muddy sand with <i>Hediste diversicolor</i> and oligochaetes community complex	
<i>Tubificoides benedii</i>	<i>Heterochaeta costata</i>
<i>Hediste diversicolor</i>	<i>Tubificoides pseudogaster</i>

Table 3 Species associated with the Estuarine mixed sediment to muddy sand with *Hediste diversicolor* and oligochaetes community complex.

FINE SAND WITH CRUSTACEANS AND *SCOLELEPIS* (*SCOLELEPIS*) SQUAMATA COMMUNITY COMPLEX

This community complex occurs in the north-western margins of the site from Ballyconnell Point to Raghly, on the leeward side of the spit at Rosses Point, at Bomore Strand and on the north shore of Coney Island (Figure 3). It largely occurs in the intertidal to shallow subtidal (<1m BCD).

The sediment here is largely that of clean fine sand (fine sand fraction generally >70%) with silt-clay accounting for less than 1.5% of the sediment fractions.

The distinguishing species of this community are the crustaceans *Eurydice pulchra*, *Bathyporeia pelagica* and *Haustorius arenarius* and the polychaete *Scoelepis* (*Scoelepis*) *squamata* (Table 4).

Species associated with the Fine sand with crustaceans and <i>Scoelepis</i> (<i>Scoelepis</i>) <i>squamata</i> community complex	
<i>Eurydice pulchra</i>	<i>Haustorius arenarius</i>
<i>Bathyporeia pelagica</i>	<i>Scoelepis</i> (<i>Scoelepis</i>) <i>squamata</i>

Table 4 Species associated with the Fine sand with crustaceans and *Scoelepis* (*Scoelepis*) *squamata* community complex.

ZOSTERA-DOMINATED COMMUNITY

Within Drumcliff Bay a seagrass community, dominated by *Zostera noltii*, is recorded in the south-eastern extreme of the bay at Doonierin (Figure 3).

Within this community the percentage cover of *Z. noltii* ranges from 90% to 100% to 10% to 20% at the margins of the beds.

The underlying substrate is that of fine sand, with the fine sand and very fine sand fractions accounting for 91% of the sediment.

The distinguishing species of this community are the seagrass *Zostera noltii*, the gastropod *Peringia ulvae*, the oligochaete *Tubificoides benedii*, the bivalves *Cerastoderma edule* and *Macoma balthica* and the polychaetes *Heteromastus* sp., *Arenicola marina* and *Pygospio elegans* (Table 5).

Species associated with the <i>Zostera</i> -dominated community	
<i>Zostera noltii</i>	<i>Heteromastus</i> sp.
<i>Peringia ulvae</i>	<i>Arenicola marina</i>
<i>Tubificoides benedii</i>	<i>Pygospio elegans</i>
<i>Cerastoderma edule</i>	<i>Macoma balthica</i>

Table 5 Species associated with the *Zostera*-dominated community.

MYTILIDAE-DOMINATED COMMUNITY COMPLEX

A community complex dominated by bivalves of the family Mytilidae occurs intertidally and subtidally within this site. Mid-shore on Cummeen Strand from Finisklin to Cummeen a large bed of *Mytilus edulis* occurs, while subtidally a small bed of unidentified Mytilidae are recorded south of Finned Point in a depth of 2.5m (Figure 3).

The underlying sediment of this community is fine sand.

Intertidally the barnacles *Elminius modestus* and *Semibalanus balanoides* along with the brown algae *Fucus serratus* occur within this complex, while subtidally the polychaetes *Scoloplos (Scoloplos) armiger*, *Pygospio elegans* and unidentified Capitellidae, the amphipod *Gammarus locusta*, the oligochaete *Tubificoides pseudogaster* and the pycnogonid *Anoplodactylus petiolatus* are recorded (Table 6).

Species associated with the Mytilidae-dominated community complex	
<i>Mytilus edulis</i>	<i>Fucus serratus</i>
Mytilidae	<i>Anoplodactylus petiolatus</i>
<i>Elminius modestus</i>	<i>Pygospio elegans</i>
<i>Semibalanus balanoides</i>	Capitellidae
<i>Scoloplos (Scoloplos) armiger</i>	<i>Tubificoides pseudogaster</i>
<i>Gammarus locusta</i>	

Table 6 Species associated with the Mytilidae-dominated community complex.

FINE SAND WITH *ANGULUS* SPP. AND *NEPHTYS* SPP. COMMUNITY COMPLEX

This community complex occurs extensively within the site. In Drumcliff Bay it is recorded from the inner reaches at Drumcliff to Raghly Point and south to Deadman's Point and from Raghly north to Horse Island. It occurs in the subtidal channels along the north shore of Sligo Harbour and between Strandhill and Coney Island, along the western shore of Coney Island and on the beach at Strandhill (Figure 3).

The sediment is largely that of fine sand; although ranging from 36.4% to 93.3%, over most of this complex the proportion of this fraction is >80%. Amounts of silt-clay and gravel are negligible (<3%).

The distinguishing fauna of this community complex include the bivalves *Angulus tenuis* and *Angulus fabula* and the polychaetes *Nephtys* sp., *Nephtys cirrosa* and *Scoloplos (Scoloplos) armiger*. The polychaete *Arenicola marina* is recorded here in densities of between 1 and 6 individual per m² (Table 7). Localised occurrences of the green algae *Ulva* sp. also occur here.

Species associated with the Fine sand with <i>Angulus</i> spp. and <i>Nephtys</i> spp. community complex	
<i>Angulus tenuis</i>	<i>Scoloplos (Scoloplos) armiger</i>
<i>Angulus fabula</i>	<i>Arenicola marina</i>
<i>Nephtys</i> sp.	<i>Ulva</i> sp.
<i>Nephtys cirrosa</i>	

Table 7 Species associated with the Fine sand with *Angulus* spp and *Nephtys* spp community complex.

SAND TO MIXED SEDIMENT WITH AMPHIPODS COMMUNITY

This subtidal community is recorded along the northern shore of Sligo Harbour at Ballyweelin in depths of <1m (Figure 3).

The sediment here varies from mixed sediment to sand, with gravel and very coarse sand ranging from 0.8% to 51% and 2.4% to 10.2% respectively. Medium sand ranges from 9.8% to 26.8% and fine sand 15.4% to 60.2%. The fines fraction is negligible (<4%).

The distinguishing species reflect the variable sediment type; infaunal species are recorded with epifaunal and more mobile species. The amphipods *Monocorophium sextonae* and *Crassikorophium crassicornis*, unidentified mytilidae bivalves, the polychaetes *Polydora* sp., *Scoloplos (Scoloplos) armiger*, *Capitella* sp., *Phyllodoce mucosa*, *Platynereis dumerilii*, unidentified phyllodocids, the bivalve *Parvicardium pinnulatum* and unidentified nemerteans are all recorded here. The tube dwelling polychaete *Spirobranchus* sp., the amphipods *Gammaropsis* sp. and *Abludomelita obtusata*, unidentified nematodes and the barnacles *Balanus crenatus* and *Elminius modestus* also occur within this community (Table 8).

Species associated with the Sand to mixed sediment with amphipods community	
<i>Monocorophium sextonae</i>	Phyllodocidae sp.
<i>Crassikorophium crassicornis</i>	<i>Platynereis dumerilii</i>
Mytilidae	<i>Phyllodoce mucosa</i>
<i>Polydora</i> sp.	<i>Spirobranchus</i> sp.
<i>Scoloplos (Scoloplos) armiger</i>	<i>Gammaropsis</i> sp.
<i>Capitella</i> sp.	<i>Abludomelita obtusata</i>
Nemertea	Nematoda
<i>Parvicardium pinnulatum</i>	<i>Balanus crenatus</i>
<i>Phyllodoce mucosa</i>	<i>Elminius modestus</i>

Table 8 Species associated with the Mytilidae-dominated community complex.

INTERTIDAL REEF COMMUNITY

Intertidal reef occurs throughout the site (Figure 3); the substrate type is variable from cobbles, cobbles and boulders to bedrock and also a mosaic of bedrock, boulders and cobbles. The conspicuous species are fucoids, unidentified barnacles, *Littorina littorea* and *Patella vulgata*. Occasionally the green algae *Ulva* sp. occurs. In the very exposed reef along the shore north of Ballyconnell, coralline algae is common in the rock pools, here the brown algae *Himanthalia elongata* also occurs. Within the rock pools at Deadman's Point the invasive algae *Sargassum muticum* was observed.

SUBTIDAL REEF COMMUNITY

The most extensive area of subtidal reef occurs off Ballyconnell Point (Figure 3). Here the substrate is that of vertical limestone cliff and horizontal limestone pavement with terraces. Foliose red algae are abundant on narrow ledges while the anemones *Corynactis viridis* and *Caryophyllia smithii* and the hydroid *Tubularia indivisa* are abundant on vertical surfaces. The pavement areas are barren and scoured with echinoderms *Antedon bifida* and *Holothuria forskali* and small hydroids being recorded here (Picton & Costello, 1997). Elsewhere, the subtidal reef at this site is undescribed

Annex II marine mammals

PHOCA VITULINA (HARBOUR 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 into continental shelf waters. When hauling out ashore harbour seals tend to prefer comparatively sheltered locations where exposure to wind, wave action and precipitation, for example, are minimised. Thus, in Ireland the species is more commonly found ashore in sheltered bays, inlets and enclosed estuaries.

Harbour seals in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC occupy both aquatic habitats and intertidal shorelines that become exposed during the tidal cycle. The species is present at the site throughout the year during all aspects of its annual life cycle which includes breeding (May to July approx.), moulting (August to September approx.) and non-breeding foraging and resting phases (October to April). Comparatively limited information is available for this site from the moult period in the annual cycle spanning the months of August and September. 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 harbour seals.

Harbour seals are vulnerable to disturbance during periods in which time is spent ashore or in shallow waters 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 May to July. Pups are born on land, usually on sheltered shorelines, islets or skerries and uninhabited islands removed from the risk of predation and human interference. While there may be outliers in any year specific established locations tend to be used annually for breeding-associated behaviour by adult males, adult females and their newborn pups. Such habitats are critical to the maintenance of the species within any site. Pups are able to swim soon after birth and may be observed accompanying their mother close to shore in the early days or weeks of life. They are nursed for a period of several weeks by the mother prior to weaning and abandonment. During this period adult females mate with adult males, an activity that takes place in the water. Current information on locations selected by harbour seals in Cummeen Strand/Drumcliff Bay SAC during the breeding season is comparatively limited. Known and suitable habitats for the species in the SAC during the breeding season are indicated in figure 4. Current sites are broadly within the following areas: sandbank areas south of Lissadell Strand and Ballygilgan Strand.

The necessity for individual seals to undergo an annual moult (i.e. hair shedding and replacement), which generally results in seals spending more time ashore during a relatively

discrete season, provides an opportunity to record the minimum number of harbour seals occurring in a given area (i.e. minimum population estimate). Moulting is considered an intensive, energetically-demanding process which incurs further vulnerability for individuals during this period. Terrestrial or intertidal locations where seals can be found ashore are known as haul-out sites. The harbour seal moult season takes place predominantly during the months of August to September. While there is anecdotal information indicating harbour seal use of sites within the SAC during the moulting period, this information has not been verified. It is nevertheless likely that many areas within the site that are utilised at other times of the year are also used as haul-out sites by harbour seals during the moult season.

Harbour seal is a successful aquatic predator that feeds on a wide variety of fish, cephalopod and crustacean species. For individual harbour 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. Outside the breeding and moulting seasons (i.e. from October to April) the location and composition of haul-out groups and individual seals may be different to those normally observed during breeding or moulting. Current information on resting locations selected by harbour seals in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC outside the breeding season is comparatively limited. Known and suitable habitats for resting by the species are indicated in figure 5. Current sites are broadly in the following areas: sandbanks to the north of Rosses Point, south of Ballygilgan Strand and Lissadell Strand.

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 Mudflats and sandflats not covered by seawater at low tide in Cummeen Strand/Drumcliff Bay (Sligo Bay) 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 target refers to activities or operations that propose to permanently remove habitat from a 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 Maintain the extent of the *Zostera*-dominated community and Mytilidae-dominated community complex, subject to natural processes.

- A *Zostera*-dominated community and Mytilidae-dominated community complex are considered to be keystone communities that are of considerable importance to the overall ecology and biodiversity of a habitat by virtue of its physical complexity, e.g. the former community serves as important nursery grounds for commercial and non-commercial species while the latter provides an important food source for a number of bird species and also a diversity of niches that results in increased numbers of species.
- Any significant anthropogenic disturbance to the extent of this community should be avoided.

- An interpolation of the likely distribution of these community types are provided in figure 3. The areas given below are based on spatial interpolation and therefore should be considered indicative:
 - *Zostera*-dominated community - 11ha
 - Mytilidae-dominated community complex- 18ha

Target 3 Conserve the high quality of the *Zostera*-dominated community, subject to natural processes.

- It is important to ensure the quality as well as the extent of *Zostera*-dominated communities is conserved. For example, percent coverage can provide an indication of the habitat quality as well as giving information on the habitat complexity and refuge capability; all important components in maintaining the structural and functional integrity of the habitat.

Target 4 Conserve the high quality of the Mytilidae-dominated community complex, subject to natural processes.

- Every effort should be made to avoid any death to living Mytilids.
- Any significant anthropogenic disturbance to the quality (e.g. living individual/m²) of the community should be avoided.

Target 5 Conserve the following community types in a natural condition: Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex; Estuarine mixed sediment to sandy mud with *Hediste diversicolor* and oligochaetes community complex; Fine sand with crustaceans and *Scolelepis (Scolelepis) squamata* community complex; Fine sand with *Angulus* spp. and *Nephtys* spp. community complex.

- A semi-quantitative description of these community types has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 3.
- The estimated areas of these community types within the Mudflats and sandflats not covered by seawater at low tide habitat given below are based on spatial interpolation and therefore should be considered indicative:
 - Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex - 1423ha
 - Estuarine mixed sediment to sandy mud with *Hediste diversicolor* and oligochaetes community complex - 102ha
 - Fine sand with crustaceans and *Scolelepis (Scolelepis) squamata* community complex - 90ha
 - Fine sand with *Angulus* spp. and *Nephtys* spp. community complex - 644ha

- 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 Estuaries in the Cummeen Strand/Drumcliff Bay (Sligo Bay) 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.
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- This habitat also encompasses the Annex I habitat of mudflats and sandflats not covered by seawater at low tide. In such areas, the specific targets for that Annex I habitat will address requirements within the Annex I habitat estuaries.
- This target refers to activities or operations that propose to permanently remove habitat from a 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	Maintain the extent of the <i>Zostera</i> -dominated community and Mytilidae-dominated community complex, subject to natural processes.
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- A *Zostera*-dominated community and Mytilidae-dominated community complex are considered to be keystone communities that are of considerable importance to the overall ecology and biodiversity of a habitat by virtue of its physical complexity, e.g. the former community serves as important nursery grounds for commercial and non-commercial species while the latter provides an important food source for a number of bird species and also a diversity of niches the results in increased numbers of species.
- Any significant anthropogenic disturbance to the extent of this community should be avoided.

- An interpolation of the likely distribution of these community types are provided in figure 3. The areas given below are based on spatial interpolation and therefore should be considered indicative:
 - *Zostera*-dominated community - 11ha
 - Mytilidae-dominated community complex- 18ha

Target 3 Conserve the high quality of the *Zostera*-dominated community, subject to natural processes.

- It is important to ensure the quality as well as the extent of *Zostera*-dominated communities is conserved. For example, percent coverage can provide an indication of the habitat quality as well as giving information on the habitat complexity and refuge capability; all important components in maintaining the structural and functional integrity of the habitat.

Target 4 Conserve the high quality of the Mytilidae-dominated community complex, subject to natural processes.

- Every effort should be made to avoid any death to living Mytilids.
- Any significant anthropogenic disturbance to the quality (e.g. living individual/m²) of the community should be avoided.

Target 5 Conserve the following community types a natural condition: Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex; Estuarine mixed sediment to sandy mud with *Hediste diversicolor* and oligochaetes community complex; Fine sand with *Angulus* spp. and *Nephtys* spp. community complex and Sand to mixed sediment with amphipods community; Intertidal reef community.

- A semi-quantitative description of these community types has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 3.
- The estimated area of these community types within the Estuaries habitat given below is based on spatial interpolation and therefore should be considered indicative:
 - Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex - 796ha
 - Estuarine mixed sediment to sandy mud with *Hediste diversicolor* and oligochaetes community complex - 136ha
 - Fine sand with *Angulus* spp. and *Nephtys* spp. community complex - 258ha
 - Sand to mixed sediment with amphipods community - 22ha
 - Intertidal reef community - 13ha

- Significant continuous or ongoing disturbance of communities should not exceed an approximate area of 15% of the interpolated area, 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 harbour seal in Cummeen Strand/Drumcliff Bay (Sligo Bay) 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.
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- This target may be considered relevant to proposed activities or operations that will result in the permanent exclusion of harbour 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.
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- This target is relevant to proposed activities or operations that will result in significant interference with or disturbance of (a) breeding behaviour by harbour 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.
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- This target is relevant to proposed activities or operations that will result in significant interference with or disturbance of (a) moulting behaviour by

harbour 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 harbour 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 harbour 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 harbour 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 harbour 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 harbour seal population at the site.

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Figure 1. Extent of Estuaries in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

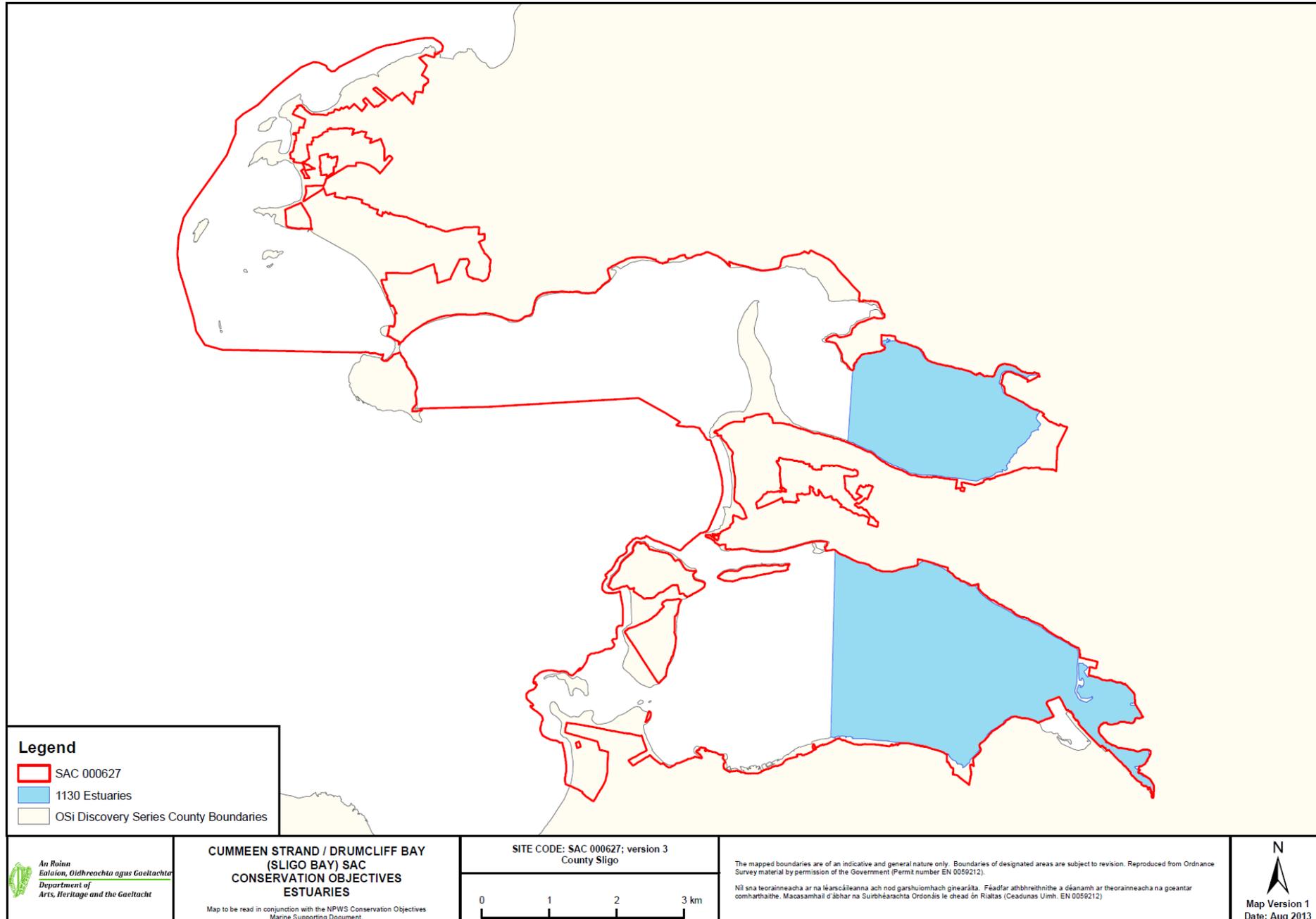


Figure 2. Extent of Mudflats and sandflats not covered by seawater at low tide in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

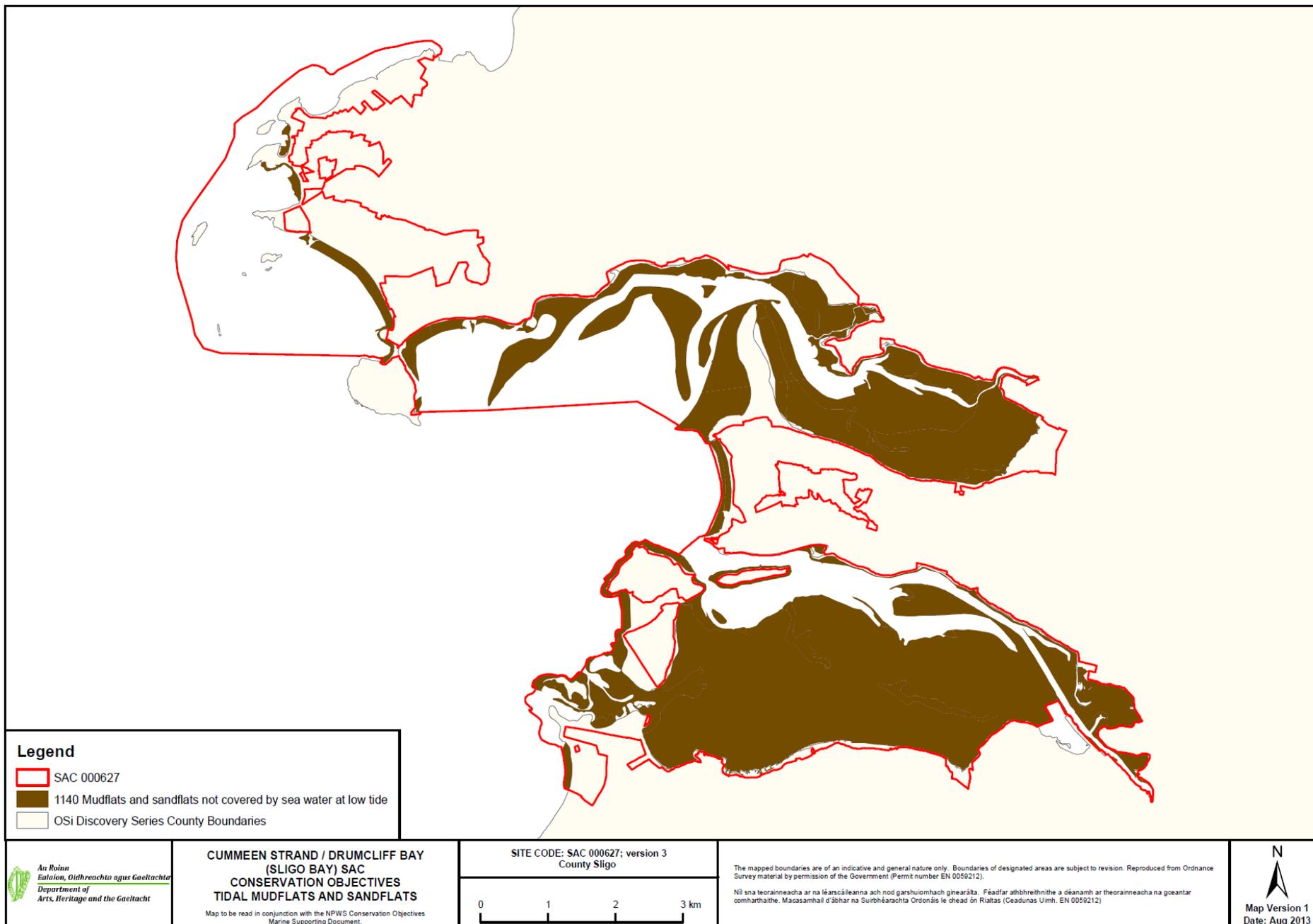


Figure 3. Distribution of community types in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

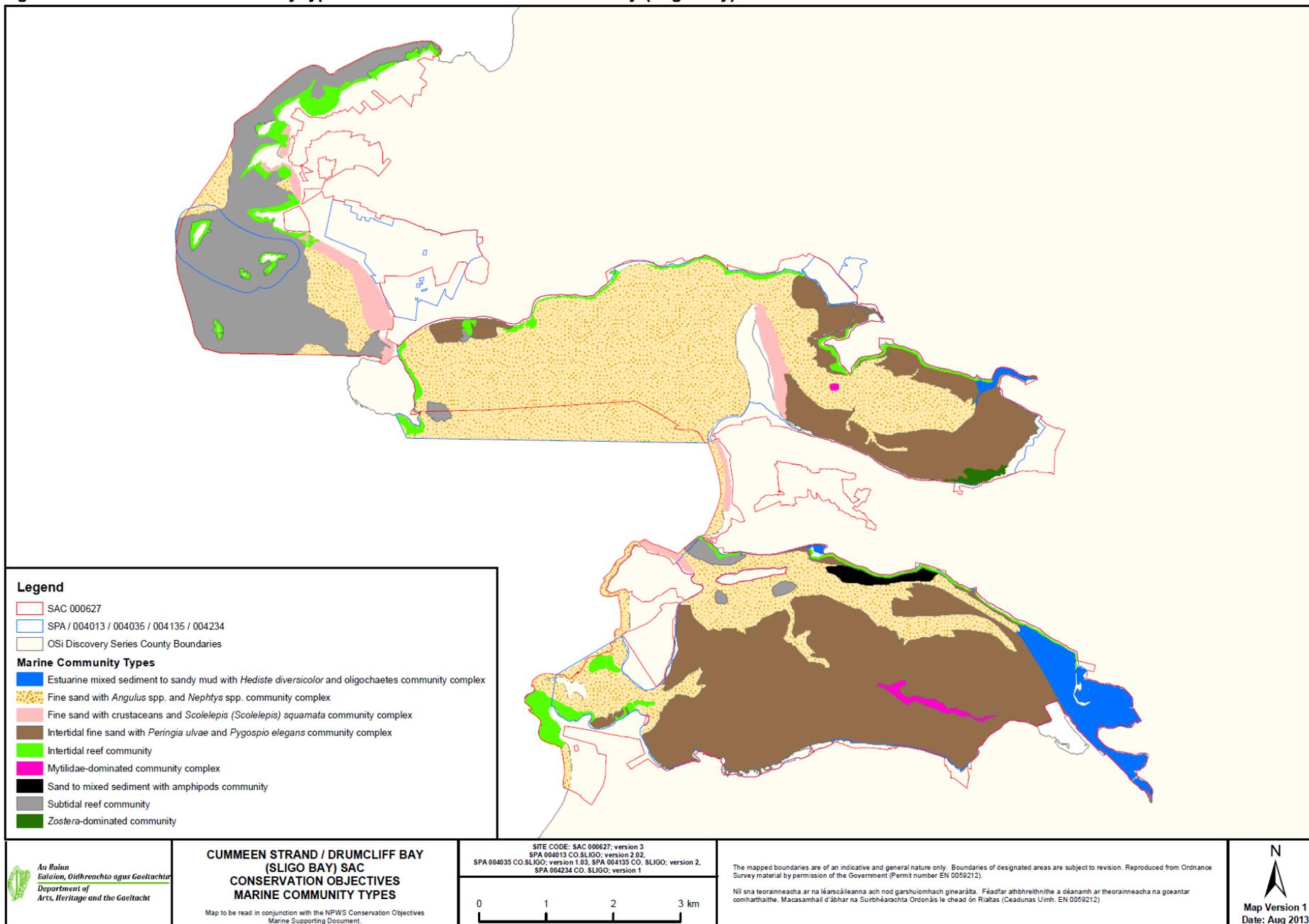


Figure 4. *Phoca vitulina* - Known breeding sites in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

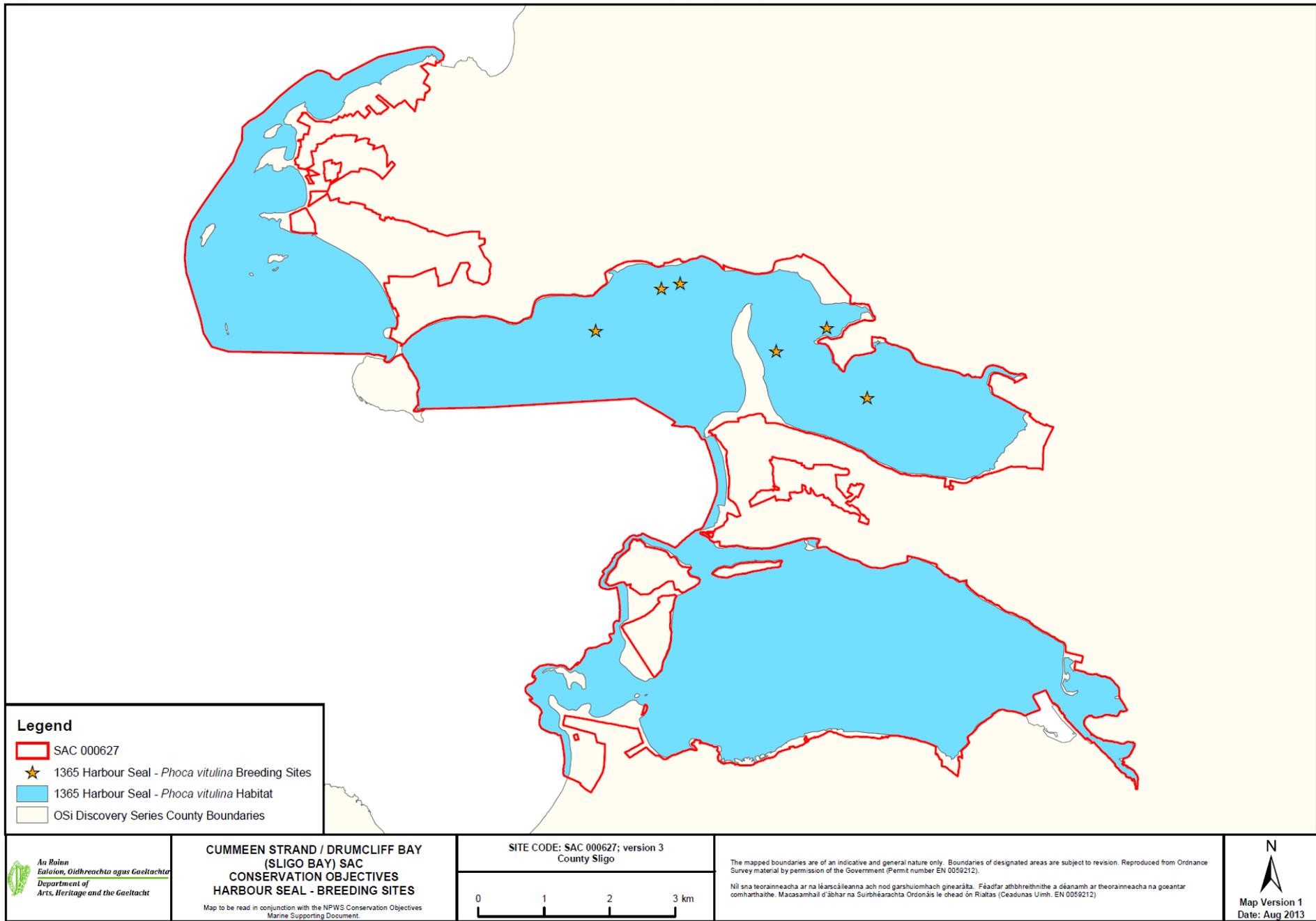


Figure 5. *Phoca vitulina* - Known resting haul-out sites (non-breeding) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

