NPWS

West of Ardara/Maas Road SAC
(site code: 197)

Conservation objectives supporting document -
Marine Habitats and Species

Version 1

July 2015

Introduction

West of Ardara/Maas Road SAC is designated for the marine Annex I qualifying interests of Large shallow inlets and bays, Mudflats and sandflats not covered by seawater at low tide and Estuaries (Figures 1, 2 and 3) and for the Annex II species *Phoca vitulina* (harbour seal, also known as common seal).

The Annex I habitats Large shallow inlets and bays and Estuaries are large physiographic feature that may wholly or partly incorporate other Annex I habitats including mudflats and sandflats within their areas.

BioMar surveys of this site were carried out between 1993 and 1996 (Picton and Costello, 1997) and intertidal and subtidal surveys were undertaken in 2012 (MERC, 2012a and MERC, 2012b). In addition to the records compiled from historical Wildlife Service visits to the region (Summers et al, 1980; Warner, 1983; Harrington, 1990; Lyons, 2004) more detailed investigations of harbour seal population status and seasonal habitat use within this SAC were conducted during a survey in August 2003 (Cronin et al, 2004) and again in August 2011 (Duck & Morris, 2013). All associated distribution data have been included in this document. These data were used to determine the physical and biological nature of this SAC.

Aspects of the biology and ecology of the 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 West Ardara/Maas Road SAC, three community types are recorded. The Annex I habitats in which they are recorded is presented in table 1, a description of each community type is given below.

	Habitats		
	Large shallow inlets and bays (1160)	Estuaries (1130)	Mudflats and sandflats not covered by seawater at low tide (1140)
Sand with amphipods, polychaetes and *Tellina tenuis* community complex	✓	✓	✓
Estuarine sand with oligochaetes community complex		✓	
Reef community complex	✓		

Table 1 The community types recorded in West Ardara/Maas Road SAC and their occurrence the Annex I habitats for which the site is designated.

Estimated areas of each community type within the 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 West of Ardara/Maas Road 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 AMPHIPODS, POLYCHAETES AND *TELLINA TENUIS* COMMUNITY COMPLEX

This community complex occurs extensively throughout the site from the intertidal to the shallow subtidal (Figure 4). Subtidally it is recorded from water depths generally less than 5m; however to the west of Inishkeel it occurs in water depths of up to 15m.

The sediment is that of mobile sand, with the fine sand fraction accounting for >60% of the sediment.

The community is distinguished by the amphipods *Haustorius arenarius, Eurydice pulchra, Bathyporeia pelagica* and *Bathyporeia pilosa*, the polychaetes *Nephtys cirrosa, Pygospio elegans* and *Capitella* sp., and the bivalves *Tellina tenuis* and *Cerastoderma edule* (Table 2). *N. cirrosa, B. pelagica, T. tenuis* and *H. arenarius* are locally dominant in the subtidal but are also recorded intertidally while *B. pilosa*, *E. pulchra* and *P. elegans* are confined to the intertidal.

A variant of this community occurs to the east of Inishkeel and at Portroo in water depths of 5m to 7m. The sediment here is that of fine sand and its distinguishing species are the polychaetes *Sigalion mathildae*, *Magelona johnstoni, Spiophanes bombyx, Magelona filiformis* and *Chaetozone christiei*, the bivalve *Tellina fabula*, the amphipod *Nototropis swammerdamei*, the cumacean *Cumopsis fagei* and Ophiuroidea spp.

Another variant of this community occurs in the inner reaches of the inlet to the west of Ardara, at the discharges of the Owentocker and Owenea Rivers and in the channel of the Gweebarra River at Kincrum and Cleengort. It is recorded in more estuarine conditions in mixed sediments. The faunal community is dominated by the polychaetes *Hediste diversicolor, Pygospio elegans* and Nereididae spp., the amphipod *Corophium volutator* and the oligochaetes *Baltidrilus costatus* and *Tubificoides benedii*. The brown algae *Ascophyllum nodosum* and *Fucus vesiculosus* occur attached to cobbles and boulders.

Distinguishing species of Sand with amphipods, polychaetes and *Tellina tenuis* community complex	
Haustorius arenarius	*Eurydice pulchra*
Nephtys cirrosa	*Cerastoderma edule*
Bathyporeia pilosa	*Peringia ulvae*
Bathyporeia pelagica	*Capitella* sp.
Pygospio elegans	

Table 2 Distinguishing species of Sand with amphipods, polychaetes and *Tellina tenuis* community complex

Peat exposures occur on the upper shore of the mid to lower Gweebarra estuary within this community complex. These exposures did not contain piddocks (boring bivalves) beds when surveyed but had a well-developed gallery of burrows from a former piddock population. The relict burrows provide a potential micro-habitat for species such as small crabs and anemones.

ESTUARINE SAND WITH OLIGOCHAETES COMMUNITY COMPLEX

This community occurs in the inner reaches of the Gweebarra Estuary to Doocharry (Figure 4). The area is subtidal and the channel is bordered by riparian plant communities. The sediment is that of fine sand.

The fauna of this community complex is distinguished by the oligochaete *Tubificoides pseudogaster* and the larvae of the insect family Chironomidae (Table 3). Other fauna occurring in this community include the oligochaetes *Psammoryctides barbatus* and Enchytraeidae spp., and unidentified nematodes.

Distinguishing species Estuarine sand with oligochaetes community complex	
Tubificoides pseudogaster	Chironomidae spp.

Table 3 Distinguishing species of Estuarine sand with oligochaetes community complex.

REEF COMMUNITY COMPLEX

The reef complex is most prevalent from Auninish to Dawros Bay in the western extremes of the site (Figure 4). It is largely intertidal but extends to depths of approximately 15m in the vicinity of Dawros Head.

The species associated with this reef community are the brown algae *Pelvetia canaliculata*, *Ascophyllum nodosum* and *Fucus vesiculosus*, the gastropods *Littorina* sp. and *Patella vulgata*, and barnacle species. Subtidally, kelp stands are likely to occur with an understorey of brown and red algae.

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 West of Ardara/Maas Road 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. Comparatively limited information is available from the latter period in the annual cycle spanning the months of October to May. In acknowledging the limited understanding of aquatic habitat use by the species within the SAC, 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 locations 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 breeding locations selected by harbour seals in West of Ardara/Maas Road SAC is comparatively limited. Sites used during the breeding season may be widely dispersed within Gweebarra Bay including various intertidal sandbanks, skerries and around O'Boyle's Island, Herring Island and Illannahorna, while some occurrence in Loughros More Bay is also described. Known and suitable locations for the species in West of Ardara/Maas Road SAC during the breeding season are indicated in figure 5.

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 takes place predominantly during the months of August to September. A combined total of 59 harbour seals were recorded ashore within West of Ardara/Maas Road SAC during a national aerial survey for the species in August 2003. A repeat aerial survey in August 2011 recorded 102 harbour seals within the SAC. Sites used during the moulting season may be widely dispersed within Gweebarra Bay including various intertidal sandbanks, skerries and around O'Boyle's Island, Herring Island and Illannahorna, while some occurrence in Loughros More Bay is also described. Suitable habitat for the species along with known moult haul-out locations in West of Ardara/Maas Road SAC are indicated in figure 6.

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 West of Ardara/Maas Road SAC outside the breeding season or moulting season is more limited than during other times of the year but the species is known to maintain its presence in Gweebarra Bay and Loughros More Bay. Known and suitable locations for resting by the species are indicated in figure 7.

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 Large shallow inlets and bays in West of Ardara/Maas Road 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 habitat Mudflats and sandflats not covered by seawater at low tide. Targets for this habitat 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	Conserve the following community types in a natural condition: Sand with amphipods, polychaetes and *Tellina tenuis* community complex; Reef 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 4.
- The estimated area of these communities given below is based on spatial interpolation and therefore should be considered indicative:

- Sand with amphipods, polychaetes and *Tellina tenuis* community complex – 459ha
- Reef community complex - 217ha

- 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 West of Ardara/Maas Road 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 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	Conserve the following community types a natural condition: Sand with amphipods, polychaetes and *Tellina tenuis* community complex and Estuarine sand with oligochaetes 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 area of these community types within the Estuaries habitat given below is based on spatial interpolation and therefore should be considered indicative:
  - Sand with amphipods, polychaetes and *Tellina tenuis* community complex - 1455ha
  - Estuarine sand with oligochaetes community complex - 8ha

- 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 Mudflats and sandflats not covered by seawater at low tide in West of Ardara/Maas Road 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	Conserve the following community type in a natural condition: Sand with amphipods, polychaetes and *Tellina tenuis* community complex.

- A semi-quantitative description of the community has been provided in Section 1.
- An interpolation of its likely distribution is provided in figure 4.
- The estimated area of this community given below is based on spatial interpolation and therefore should be considered indicative:
    - Sand with amphipods, polychaetes and *Tellina tenuis* community complex - 1259ha
- 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.

Annex II species

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

Objective **To maintain the favourable conservation condition of harbour seal in West of Ardara/Maas Road 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 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.

- 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.

- 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 Large shallow inlets and bays in West of Ardara/Maas Road SAC

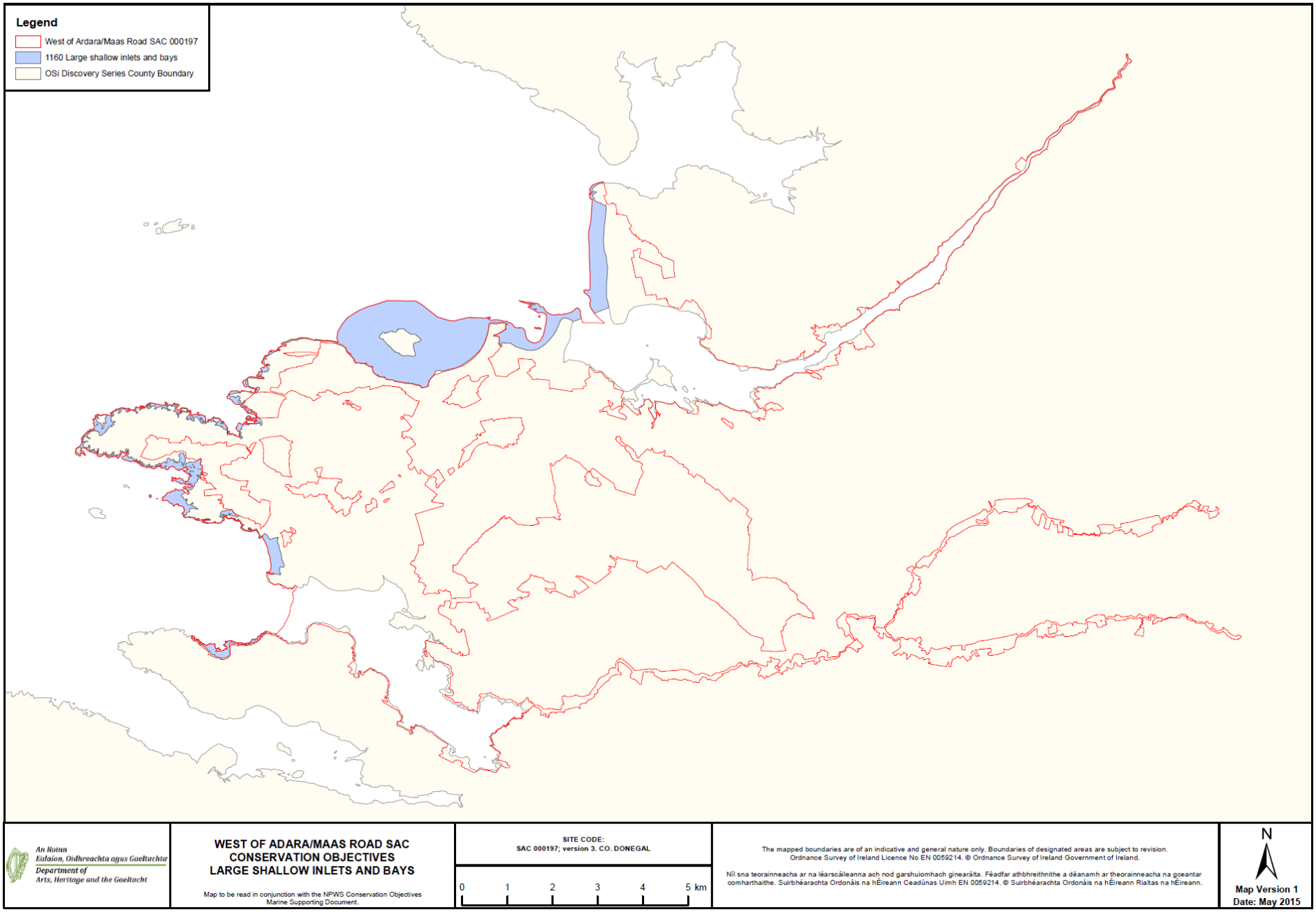

Figure 2. Extent of Estuaries in West of Ardara/Maas Road SAC

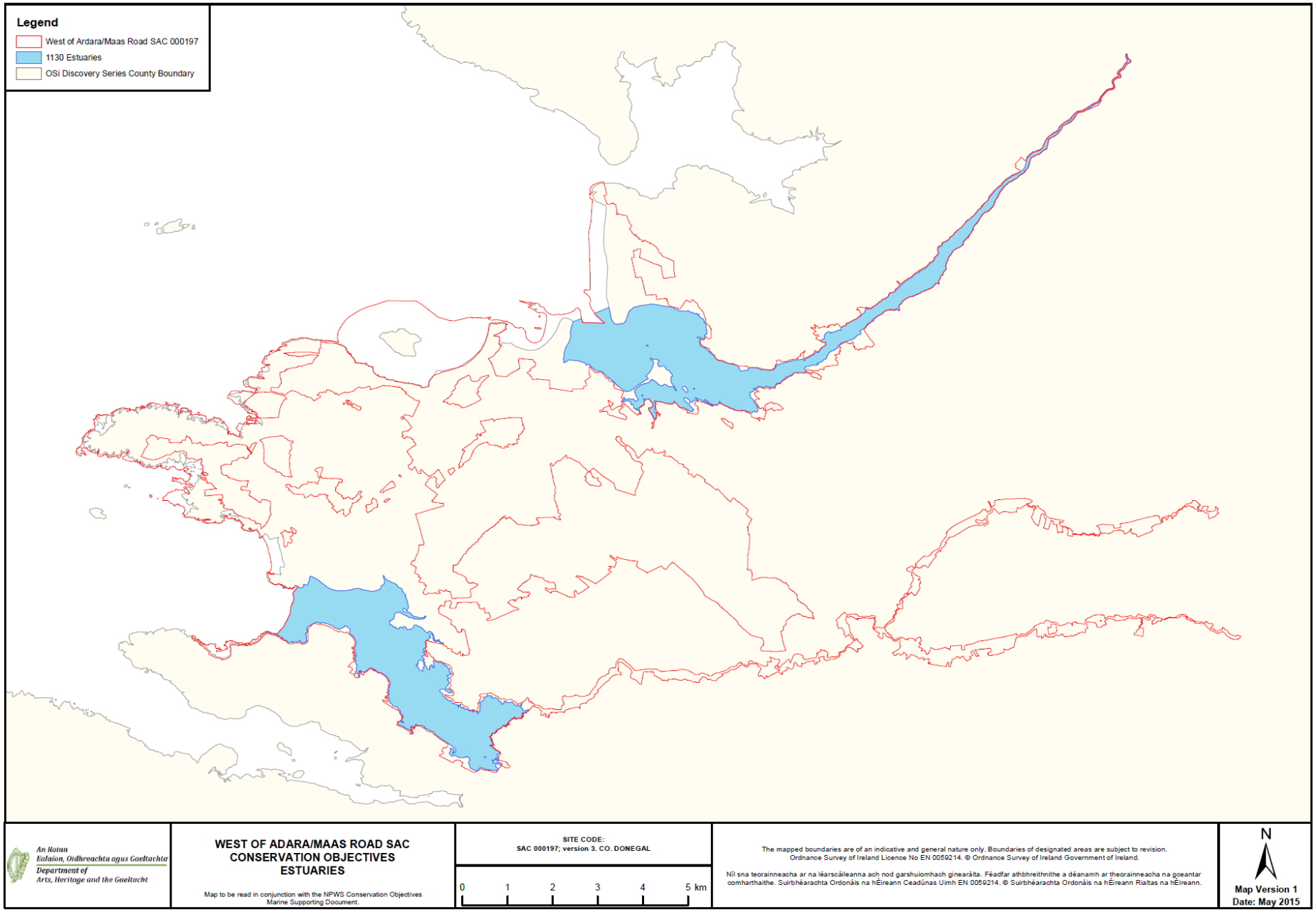

Figure 3. Extent of Mudflats and sandflats not covered by seawater at low tide in West of Ardara/Maas Road SAC

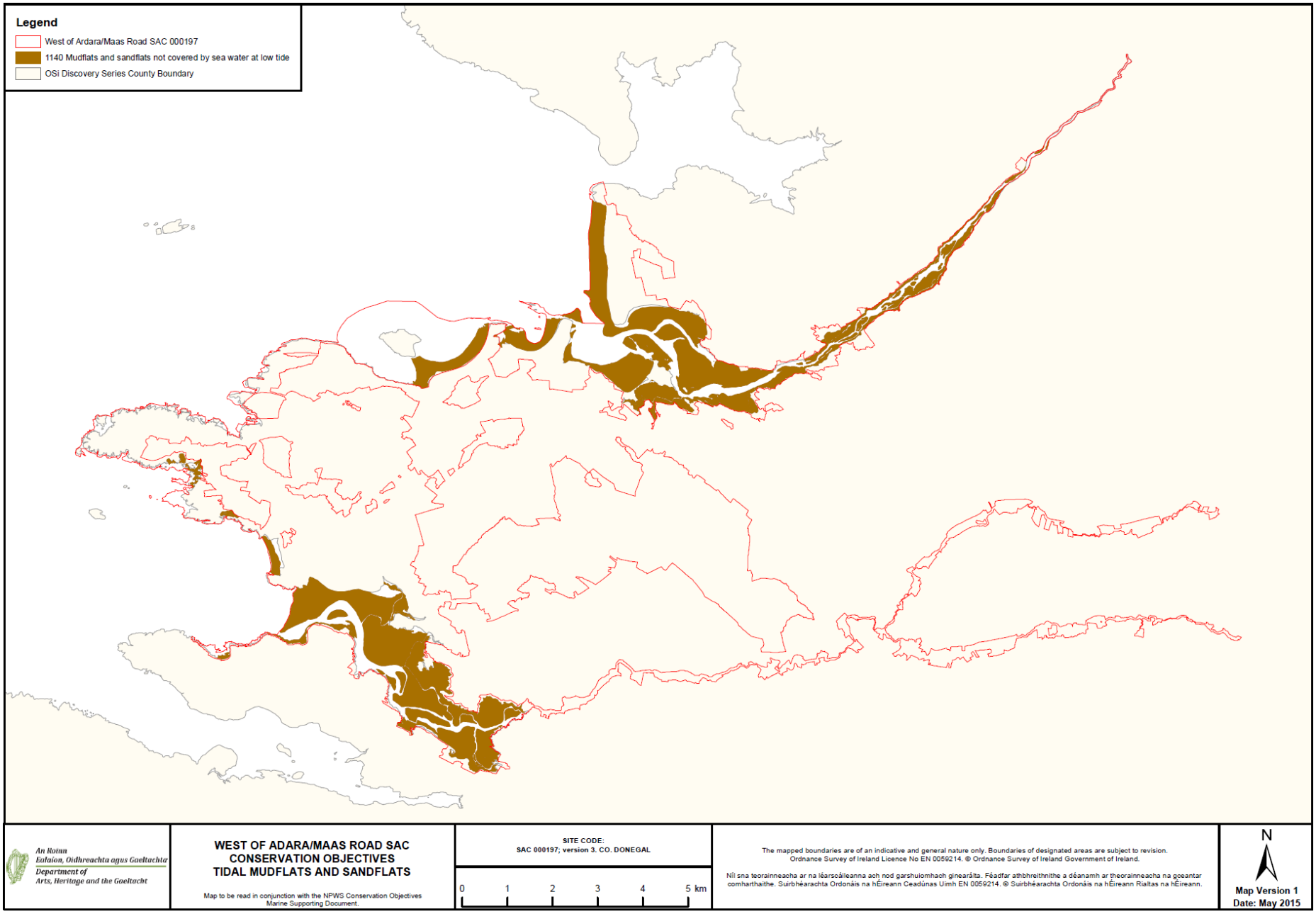

Figure 4. Distribution of community types in West of Ardara/Maas Road SAC

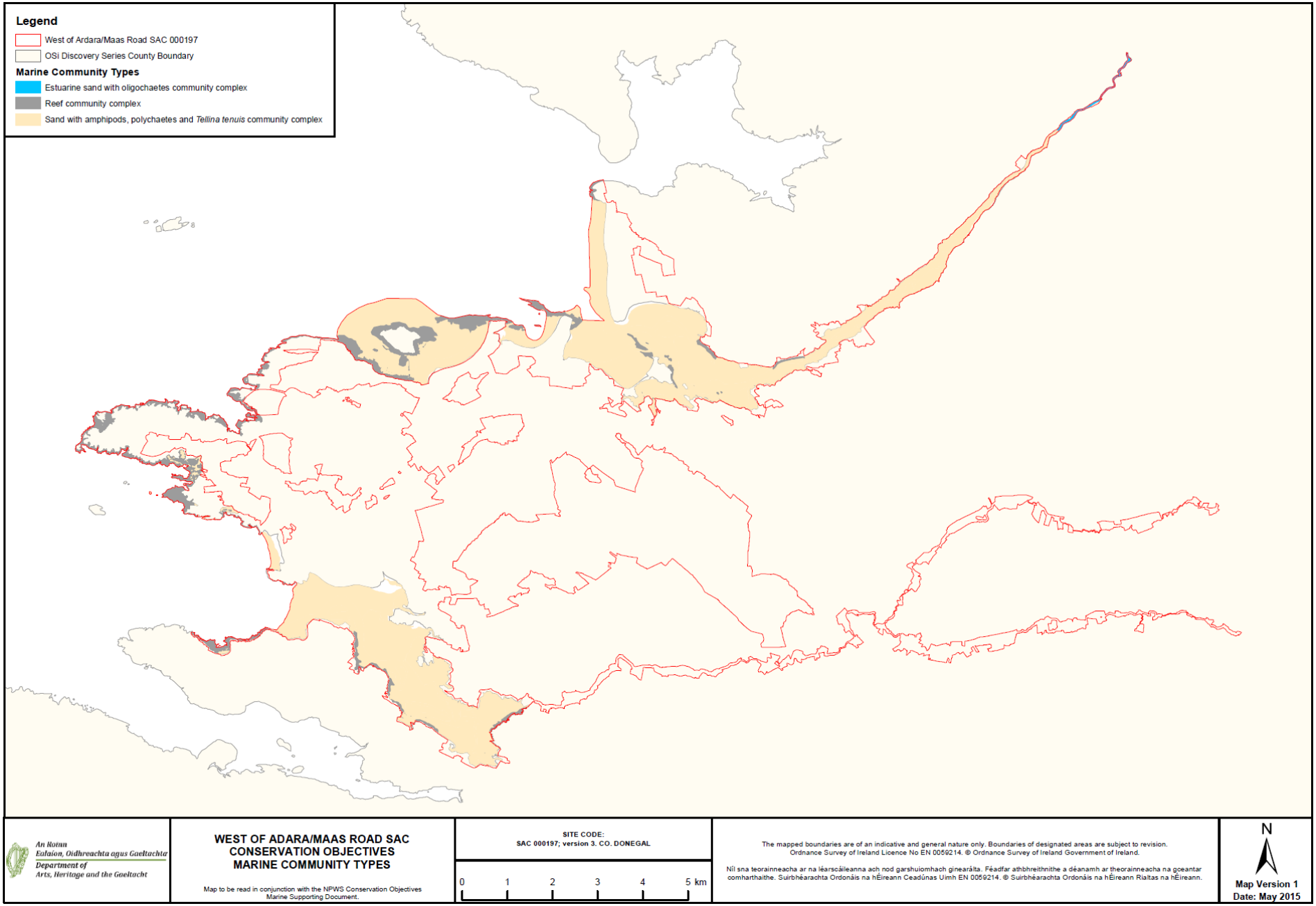

Figure 5. *Phoca vitulina* - Known breeding sites in West of Ardara/Maas Road SAC

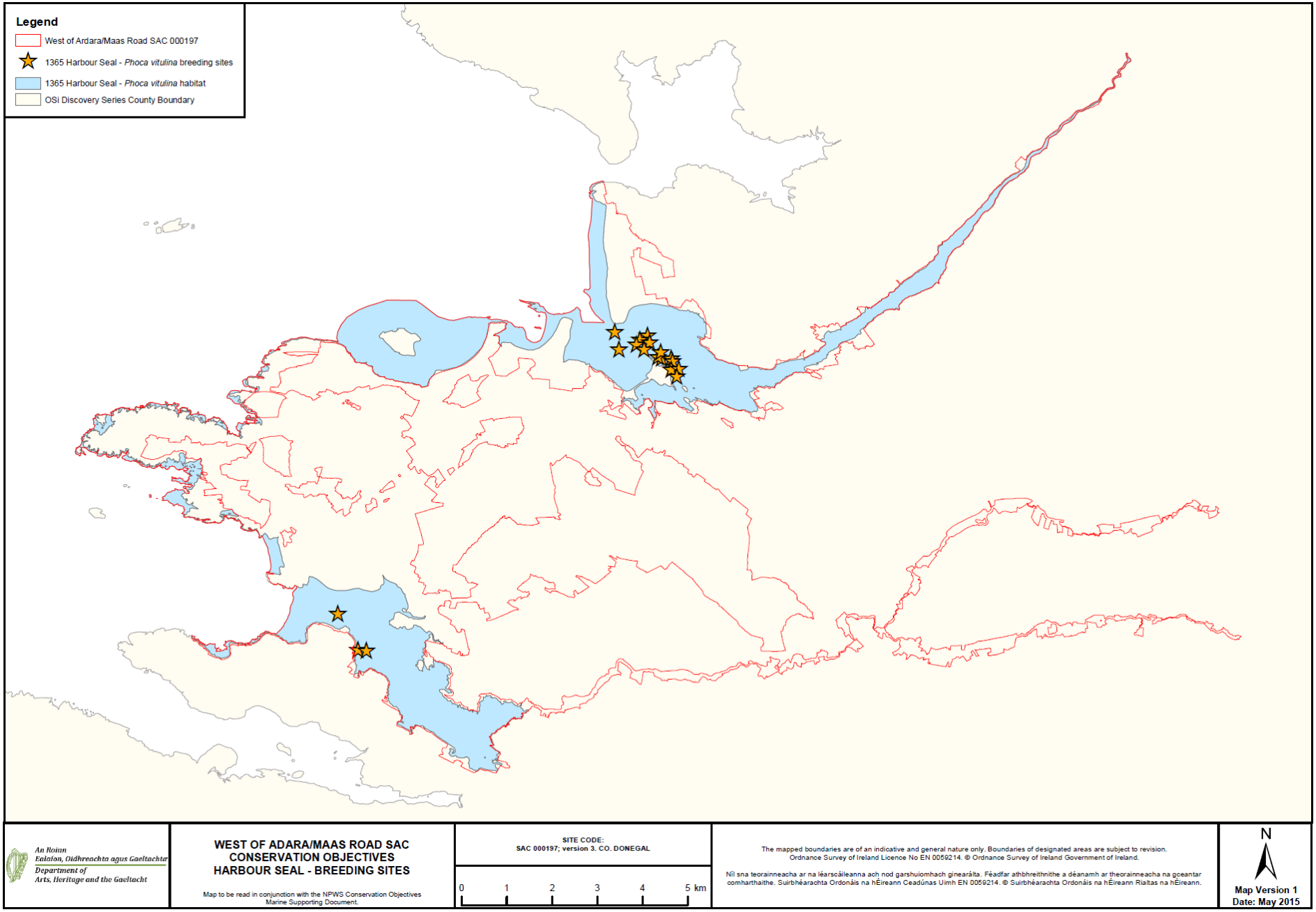

Figure 6. *Phoca vitulina* - Known moult haul out sites in West of Ardara/Maas Road SAC

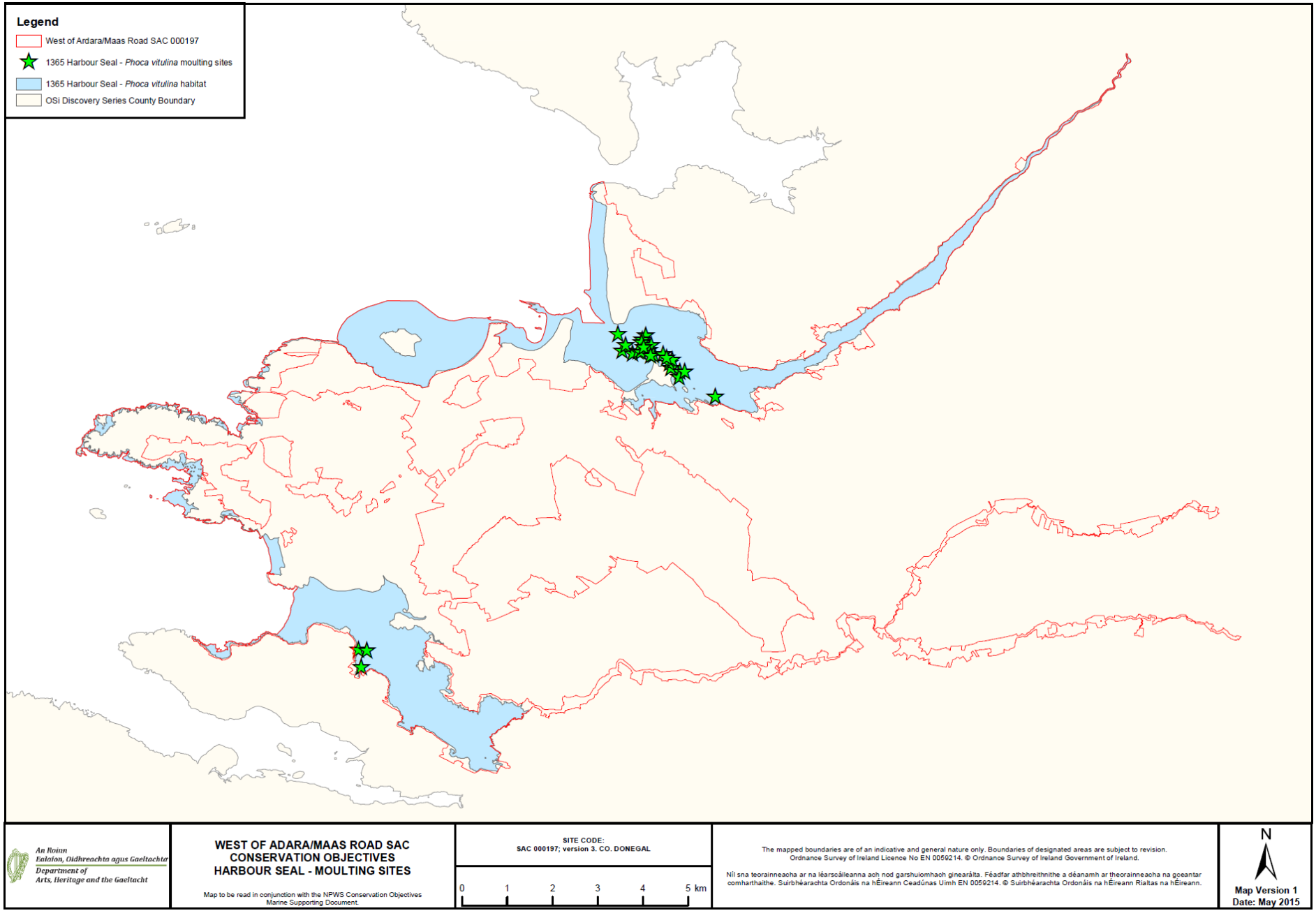

Figure 7. *Phoca vitulina* - Known resting haul-out sites (non-breeding) in West of Ardara/Maas Road SAC