

National Parks and Wildlife Service

Conservation Objectives Series

Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
000627



NPWS

An tSeirbhís Páircenna
Náisiúnta agus Fiadhúilra
National Parks and Wildlife
Service

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Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

* indicates a priority habitat under the Habitats Directive

000627	Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
1014	Narrow-mouthed Whorl Snail <i>Vertigo angustior</i>
1095	Sea Lamprey <i>Petromyzon marinus</i>
1099	River Lamprey <i>Lampetra fluviatilis</i>
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1365	Harbour Seal <i>Phoca vitulina</i>
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)*
5130	<i>Juniperus communis</i> formations on heaths or calcareous grasslands
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)
7220	Petrifying springs with tufa formation (Cratoneurion)*

Please note that this SAC overlaps with Drumcliff Bay SPA (004013), Cummeen Strand SPA (004035), Ardboline Island and Horse Island SPA (004135) and Ballintemple and Ballygilgan SPA (004234). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping sites as appropriate. IMPORTANT: This 'Version 2' document includes 1 additional QI (6210). The conservation objectives for pre-existing QIs have not been updated.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	1990
Title :	1989 survey of breeding herds of common seal (<i>Phoca vitulina</i>) with reference to previous surveys
Author :	Harrington, R.
Series :	Unpublished report to Wildlife Service
Year :	2004
Title :	Summary of National Parks and Wildlife Service surveys for common (harbour) seals (<i>Phoca vitulina</i>) and grey seals (<i>Halichoerus grypus</i>), 1978 to 2003
Author :	Lyons, D.O.
Series :	Irish Wildlife Manual No. 13
Year :	2007
Title :	A survey of intertidal mudflats and sandflats in Ireland
Author :	Aquatic Services Unit
Series :	Unpublished report to NPWS
Year :	2009
Title :	Coastal Monitoring Project 2004-2006
Author :	Ryle, T.; Murray, A.; Connolly, K.; Swann, M.
Series :	Unpublished report to NPWS
Year :	2011
Title :	Monitoring and condition assessment of populations of <i>Vertigo geyeri</i> , <i>Vertigo angustior</i> and <i>Vertigo moulinsiana</i> in Ireland
Author :	Moorkens, E.; Killeen, I.
Series :	Irish Wildlife Manuals, No. 55
Year :	2012
Title :	The conservation status of juniper formations in Ireland
Author :	Cooper, F.; Stone, R.E.; McEvoy, P.; Wilkins, T.; Reid, N.
Series :	Irish Wildlife Manuals, No. 63
Year :	2013
Title :	Conservation status assessment for petrifying springs
Author :	Lyons, M.D.; Kelly, D.L.
Series :	Unpublished report to NPWS
Year :	2013
Title :	Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC (site code 627) Conservation objectives supporting document- coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2013
Title :	Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC (site code 627) Conservation objectives supporting document- marine habitats and species V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2013
Title :	Irish semi-natural grasslands survey 2007-2012
Author :	O'Neill, F.H.; Martin, J.R.; Devaney, F.M.; Perrin, P.M.
Series :	Irish Wildlife Manuals, No. 78

Year : 2018
Title : The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats
Author : Martin, J.R.; O'Neill, F.H.; Daly, O.H.
Series : Irish Wildlife Manuals, No. 102

Other References

Year : 1980
Title : An assessment of the status of the common seal (*Phoca vitulina vitulina*) in Ireland
Author : Summers, C.F.; Warner, P.J.; Nairn, R.G.W.; Curry, M.G.; Flynn, J.
Series : Biological Conservation 17: 115-123

Year : 1983
Title : An assessment of the breeding populations of common seals (*Phoca vitulina vitulina* L.) in the Republic of Ireland during 1979
Author : Warner, P.J.
Series : Irish Naturalists' Journal 21: 24-26

Year : 2007
Title : Interpretation manual of European Union habitats- EUR 27
Author : European Commission- DG Environment
Series : Reference document

Year : 2008
Title : The phytosociology and conservation value of Irish sand dunes
Author : Gaynor, K.
Series : Unpublished Ph.D. Thesis, National University of Ireland, Dublin

Year : 2011
Title : Subtidal benthic investigations: Cummeen Strand/Drumcliff Bay cSAC (site code IE000627) Co. Sligo
Author : Aquafact
Series : Unpublished report to the Marine Institute and NPWS

Year : 2012
Title : A survey of mudflats and sandflats in Ireland
Author : Aquatic Services Unit
Series : Unpublished report to the Marine Institute and NPWS

Spatial data sources

Year :	2010
Title :	EPA WFD transitional waterbody data
GIS Operations :	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1130 (map 3)
Year :	Interpolated 2013
Title :	Intertidal surveys, 2007 and 2010; subtidal survey, 2010
GIS Operations :	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data. Expert opinion used as necessary to resolve any issues arising
Used For :	1140, marine community types (maps 4 and 5)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	High water mark (HWM) and low water mark (LWM) polyline feature classes converted into polygon feature classes and combined; EU Annex I Saltmarsh and Coastal data erased out if present
Used For :	Marine community types base data (map 5)
Year :	2009
Title :	Coastal Monitoring Project 2004-2006. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with Saltmarsh CO data investigated and resolved with expert opinion used
Used For :	2110, 2120, 2130 (map 6)
Year :	Derived 2013
Title :	Internal NPWS files
GIS Operations :	Dataset created from spatial reference contained in files
Used For :	7220 (map 7)
Year :	2012
Title :	The conservation status of juniper formations in Ireland
GIS Operations :	Juniper survey centroids clipped to SAC boundary
Used For :	5130 (map 7)
Year :	2013
Title :	NPWS rare and threatened species database
GIS Operations :	Dataset created from spatial references in database records. Expert opinion used as necessary to resolve any issues arising
Used For :	1014, 1365 (maps 7 and 8)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	High Water Mark (HWM) polyline feature class converted into polygon feature class; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1365 (map 8)

1130 Estuaries

To maintain the favourable conservation condition of Estuaries in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated as 1258ha using OSI data and the defined Transitional Water Body area under the Water Framework Directive
Community extent	Hectares	Maintain the extent of the <i>Zostera</i> -dominated community and the Mytilidae-dominated community complex, subject to natural processes. See map 5	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012) and subtidal survey in 2010 (Aquafact, 2011). See marine supporting document for further information
Community structure: <i>Zostera</i> density	Shoots/m ²	Conserve the high quality of the <i>Zostera</i> -dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012). See marine supporting document for further details
Community structure: <i>Mytilus edulis</i> density	Individuals/m ²	Conserve the high quality of the Mytilidae-dominated community complex, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012) and subtidal survey in 2010 (Aquafact, 2011). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: 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 <i>Angulus</i> spp. and <i>Nephtys</i> spp. community complex; Sand to mixed sediment with amphipods community; Intertidal reef community. See map 5	Based on intertidal and subtidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012; Aquafact, 2011) and an intertidal walkover undertaken in 2013. See marine supporting document for further information

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

1140 Mudflats and sandflats not covered by seawater at low tide

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:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 4	Habitat area was estimated using OSi data as 2288ha
Community extent	Hectares	Maintain the extent of the <i>Zostera</i> -dominated community and the Mytilidae-dominated community complex, subject to natural processes. See map 5	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012). See marine supporting document for further information
Community structure: <i>Zostera</i> density	Shoots/m ²	Conserve the high quality of the <i>Zostera</i> -dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012). See marine supporting document for further details
Community structure: <i>Mytilus edulis</i> density	Individuals/m ²	Conserve the high quality of the Mytilidae-dominated community complex, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: 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>Scololepis (Scololepis) squamata</i> community complex; Fine sand with <i>Angulus</i> spp. and <i>Nephtys</i> spp. community complex. See map 5	Based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012). See marine supporting document for further information

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

2110 Embryonic shifting dunes

To maintain the favourable conservation condition of Embryonic shifting dunes in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Coney Island - 0.67ha, Rosses Point - 32.27ha, Strandhill - 0.18ha, Yellow Strand - 0.83ha. See map 6	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009). Habitat is very difficult to measure in view of its dynamic nature. It was recorded at four sub-sites, giving an estimated total area of 33.95ha. NB further unsurveyed areas maybe present within this SAC. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 6 for known distribution	Based on data from Ryle et al. (2009). Additional dune habitats noted to occur at Lissadell Strand and on Maguin's Island. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from Ryle et al. (2009). Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. There are coastal protection works at both Strandhill and Rosses Point. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Ryle et al. (2009). At Rosses Point, saltmarsh habitats occur in association with sand dune habitats. See coastal habitats supporting document for further details
Vegetation composition: plant health of foredune grasses	Percentage cover	More than 95% of sand couch (<i>Elytrigia juncea</i>) and/or lyme-grass (<i>Leymus arenarius</i>) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Ryle et al. (2009). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities with typical species: sand couch (<i>Elytrigia juncea</i>) and/or lyme-grass (<i>Leymus arenarius</i>)	Based on data from Ryle et al. (2009). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-native species) to represent less than 5% cover	Based on data from Ryle et al. (2009). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. This species has not been recorded from this SAC. See coastal habitats supporting document for further details

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Coney Island - 0.46ha, Rosses Point - 0.17ha, Strandhill - 0.10ha, Yellow Strand - 0.47ha. See map 6	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009). Habitat is very difficult to measure in view of its dynamic nature. It was recorded at four sub-sites, giving an estimated total area of 1.20ha. NB further unsurveyed areas maybe present within this SAC. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on data from Ryle et al. (2009). Additional dune habitats noted to occur at Lissadell Strand and on Maguin's Island. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from Ryle et al. (2009). Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Marram grass (<i>Ammophila arenaria</i>) reproduces vegetatively and requires constant accretion of fresh sand to maintain active growth encouraging further accretion. There are hard coastal protection works at both Strandhill and Rosses Point. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Gaynor (2008) and Ryle et al. (2009). At Rosses Point, saltmarsh habitats occur in association with sand dune habitats. See coastal habitats supporting document for further details
Vegetation composition: plant health of dune grasses	Percentage cover	95% of marram grass (<i>Ammophila arenaria</i>) and/or lyme-grass (<i>Leymus arenarius</i>) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Ryle et al. (2009). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities dominated by marram grass (<i>Ammophila arenaria</i>) and/or lyme-grass (<i>Leymus arenarius</i>)	Based on data from Ryle et al. (2009). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Ryle et al. (2009). Negative indicators include non-native species; species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. This species has not been recorded from this SAC. See coastal habitats supporting document for further details

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*

To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Coney Island - 15.06ha; Rosses Point - 21.89ha; Strandhill - 40.14ha; Yellow Strand - 19.16ha. See map 6	Based on data from Coastal Monitoring Project (CMP) (Ryle et al., 2009). Habitat was recorded at four sub-sites, giving an estimated total area of 96.26ha. NB further unsurveyed areas maybe present within this SAC. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on data from Ryle et al. (2009). Additional dune habitats noted to occur at Lissadell Strand and on Maguin's Island. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from Ryle et al. (2009). Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. There are coastal protection works at both Strandhill and Rosses Point. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Gaynor (2008) and Ryle et al. (2009). At Rosses Point, saltmarsh habitats occur in association with sand dune habitats. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes	Based on data from Gaynor (2008) and Ryle et al. (2009). At both Yellow Strand and Coney Island, overgrazing and rabbit burrowing have contributed to creating large areas of bare sand. See coastal habitats supporting document for further details
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008) and Ryle et al. (2009). Vegetation is quite rank in places at Strandhill and Rosses Point due to undergrazing, while at Coney Island and Yellow Strand, overgrazing is an issue. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in Ryle et al. (2009)	Based on data from Gaynor (2008) and Ryle et al. (2009). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species (including <i>Hippophae rhamnoides</i>)	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Ryle et al. (2009). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. This species has not been recorded from this SAC. The main negative indicators recorded are creeping thistle (<i>Cirsium arvense</i>), spear thistle (<i>C. vulgare</i>), ragwort (<i>Senecio jacobaea</i>) and perennial rye grass (<i>Lolium perenne</i>) (Ryle et al., 2009). See coastal habitats supporting document for further details

Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control	Based on data from Ryle et al. (2009). At Strandhill, pine trees planted at low density occur within the fixed dune habitat. Isolated individual sycamore (<i>Acer pseudoplatanus</i>) trees are present in the northern part of the fixed dunes at Rosses Point. See coastal habitats supporting document for further details
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Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

5130 *Juniperus communis* formations on heaths or calcareous grasslands

To restore the favourable conservation condition of *Juniperus communis* formations on heaths or calcareous grasslands in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Formation area	Hectares	Area stable or increasing, subject to natural processes	Four areas of juniper vegetation were identified within the SAC (three at Rosses Point and one at Knocklane- SO01, SO04, SO08, SO16) by a national juniper survey (Cooper et al., 2012), although not all are classified as formations (see below). NB Further unsurveyed areas maybe present within the SAC
Habitat distribution	Occurrence	No decline. Known locations shown on map 7	Map shows sites identified in Cooper et al. (2012)- SO01, SO04, SO08, SO16. NB Further unsurveyed areas maybe present within the SAC
Juniper population size	Number	At least 50 plants per population	To classify as a juniper formation, at least 50 plants should be present (Cooper et al., 2012). Further work is required to confirm which sites, identified by Cooper et al. (2012) at Rosses Point, should be classified as formations. These three sites probably form a single breeding population (J. Cross, pers. comm.). The Knocklane population (SO04) is not currently classified as a formation (Cooper et al., 2012)
Formation structure: cover and height	Percentage and metres	Well-developed structure with an open to closed cover of juniper up to or exceeding 0.45m in height with associated species	The populations in the SAC are composed mainly of low-growing (0.2-0.7m high) plants of sub-species <i>nana</i> (Cooper et al., 2012)
Formation structure: community diversity and extent	Hectares	Appropriate community diversity and extent	See Cooper et al. (2012) for further details
Formation structure: cone-bearing plants	Percentage	At least 10% of plants bearing cones	Target based on Cooper et al. (2012). 55% of the SO01 population was bearing cones at time of survey (Cooper et al., 2012)
Formation structure: seedling recruitment	Percentage	At least 10% of juniper plants within the formation are seedlings	Target based on Cooper et al. (2012). 21% of the SO01 population were seedlings according to Cooper et al. (2012)
Formation structure: amount of each plant dead	Mean percentage	Mean percentage of each juniper plant dead not more than 10%	Target based on Cooper et al. (2012)
Vegetation composition: typical species	Occurrence	A variety of typical native species with a minimum of 10 species present (excluding negative indicator species)	According to Cooper et al. (2012), juniper stands within the SAC fall into either vegetation group 4 (<i>Calluna vulgaris-Erica cinerea</i> group) or 5 (<i>Galium verum-Pilosella officinarum</i> group). See Cooper et al. (2012) for typical species
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	Non-native cotoneaster (<i>Cotoneaster integrifolius</i>) was recorded at Rosses Point by Cooper et al. (2012)

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)

To restore the Favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	Areas of species-rich calcareous grassland have been mapped at Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC by two NPWS funded grassland surveys (O'Neill et al., 2013; Martin et al., 2018). The total known area is 2.69ha (see map 9). It is important to note that further unsurveyed areas of the habitat may be present within the SAC
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 9	The distribution is based on the results of two NPWS funded grassland surveys (O'Neill et al., 2013; Martin et al., 2018). See map 9. It is important to note that further unsurveyed areas may be present within the SAC
Vegetation composition: positive indicator species	Number at a representative number of 2m x 2m monitoring stops; within 20m surrounding area of monitoring stops	At least seven positive indicator species present in monitoring stop or, if five to six present in stop, additional species within 20m of stop; this includes at least two 'high quality' positive indicator species present in stop or within 20m of stop	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018), where the lists of positive indicator species, including high quality indicators, are also presented. A small number of additional positive indicators for upland examples of this habitat are also provided (Martin et al., 2018). These documents should be consulted for further details. The calcareous grassland at this site has been noted to be particularly species-rich, with over 50 species in some 2m x 2m plots (O'Neill et al., 2013)
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Negative indicator species collectively not more than 20% cover, with cover of an individual species not more than 10%	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018), where the list of negative indicator species is presented
Vegetation composition: non-native species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species not more than 1%	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018). The invasive species, <i>Cotoneaster</i> sp., was recorded at the site in 2017 during the Grassland Monitoring Survey (Martin et al., 2018)
Vegetation composition: woody species and bracken	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of woody species (except certain listed species) and bracken (<i>Pteridium aquilinum</i>) not more than 5%	Woody species that can occur above 5% cover are Juniper (<i>Juniperus communis</i>), Burnet Rose (<i>Rosa spinosissima</i>), Mountain Avens (<i>Dryas octopetala</i>) and Hoary Rock-rose (<i>Helianthemum oelandicum</i>). However, cover of these species above 25% may indicate transition to another Annex I habitat such as Alpine and Boreal heaths (4060) or <i>Juniperus communis</i> formations (5130). Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018)
Vegetation structure: broadleaf herb:grass ratio	Percentage at a representative number of 2m x 2m monitoring stops	Broadleaf herb component of vegetation between 40% and 90%	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018). Broadleaf herb component of vegetation between 30% and 40% may be allowed to pass on expert judgement (Martin et al., 2018)
Vegetation structure: sward height	Percentage at a representative number of 2m x 2m monitoring stops	At least 30% of sward between 5cm and 40cm tall	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018)
Vegetation structure: litter	Percentage cover at a representative number of 2m x 2m monitoring stops	Litter cover not more than 25%	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018)

Physical structure: bare soil	Percentage cover at a representative number of 2m x 2m monitoring stops	Not more than 10% bare soil	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018)
Physical structure: grazing or disturbance	Area in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or disturbance less than 20m ²	Attribute and target based on O'Neill et al. (2013) and Martin et al. (2018)

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

7220 Petrifying springs with tufa formation (Cratoneurion)*

To maintain the favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Square metres	Area stable or increasing, subject to natural processes	The area of this habitat at Ballincar is recorded as 150m ² along c.200m of cliff (internal NPWS files). NB further areas of the habitat may occur within this SAC
Habitat distribution	Occurrence	No decline. See map 7 for recorded location	This habitat occurs along a seepage line in low (generally less than 10m in height) clay sea cliffs near Ballincar (internal NPWS files). Lyons and Kelly (2013) recognise three main subtypes of spring. This site falls into the coastal springs subtype (the other two being woodland springs and inland non-wooded springs) NB further areas of the habitat may occur within this SAC
Hydrological regime: height of water table; water flow	Metres; metres per second	Maintain appropriate hydrological regimes	The hydrological regime is currently unknown at this site. Petrifying springs rely on permanent irrigation, usually from upwelling groundwater sources or seepage sources. This site appears to be fed from water seeping through clay sea cliffs (internal NPWS files)
Water quality	Water chemistry measures	Maintain oligotrophic and calcareous conditions	Water chemistry is currently unknown for this site. Characteristically, petrifying spring water has high values for pH, alkalinity and dissolved calcium and is oligotrophic (Lyons and Kelly, 2013)
Vegetation composition: typical species	Occurrence	Maintain typical species	The bryophytes <i>Palustriella commutata</i> (<i>Cratoneuron commutatum</i>) and <i>Eucladium verticillatum</i> are diagnostic of this habitat (EC, 2007). Both are found at the location described above (internal NPWS files). Other bryophyte species listed here are <i>Didymodon tophaceus</i> and <i>Trichostomium crispulum</i> (internal NPWS files)

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

1014 Narrow-mouthed Whorl Snail *Vertigo angustior*

To maintain the favourable conservation condition of Narrow-mouthed Whorl Snail in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: occupied sites	Number	No decline. There is one known location for this species in this SAC (which overlaps two 1km squares). See map 7	From Moorkens and Killeen (2011) (site code Va CAM21)
Presence on transect	Occurrence	Adult or sub-adult snails are present in four of the grassland zones on the transect where optimal or sub-optimal habitat occurs (minimum 5 samples)	Transect established as part of condition assessment monitoring at this site (Moorkens and Killeen, 2011). See habitat extent target below for definition of optimal and sub-optimal habitat
Presence	Occurrence	Adult or sub-adult snails are present in at least 6 other places at the site with a wide geographical spread (minimum of 8 sites or 75% of sites sampled)	From Moorkens and Killeen (2011)
Transect habitat quality	Metres	At least 75m of habitat along the transect is classed as optimal and 150m of habitat along the transect is classed as sub-optimal or optimal	From Moorkens and Killeen (2011). See habitat extent target below for definition of optimal and sub-optimal habitat
Transect optimal wetness	Metres	Soils, at time of sampling, are damp (optimal wetness) and covered with a layer of humid thatch for more than 130m along the transect	From Moorkens and Killeen (2011)
Habitat extent	Hectares	12-15ha of the site optimal and a further 11-14ha sub-optimal. Optimal habitat is defined as fixed dune, species-rich grassland dominated by red fescue (<i>Festuca rubra</i>), with sparse marram grass (<i>Ammophila arenaria</i>), lady's bedstraw (<i>Galium verum</i>), eyebright (<i>Euphrasia</i> sp.), mouse-ear-hawkweed (<i>Pilosella officinarum</i>) and other low growing herbs. Vegetation height 10-30cm. Habitat growing on damp, friable soil covered with a layer of humid, open structured thatch. Sub-optimal habitat is defined as for optimal but either vegetation height is less than 10cm or between 30 and 50cm; or the vegetation contains mounds of moss or willow (<i>Salix</i> spp.) scrub; or the soil is dry and sandy; or the thatch is wetter with a denser structure	From Moorkens and Killeen (2011)

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]**1095 Sea Lamprey *Petromyzon marinus***

To restore the favourable conservation condition of Sea Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: extent of anadromy	% of estuary accessible	No barriers for migratory life stages of lamprey moving from freshwater to marine habitats and vice versa	This SAC only covers marine/estuarine habitat and it is not anticipated that it contains suitable spawning or nursery habitat. Migrating adult lamprey pass through the site en route to/from the Garavogue River, which flows out of Lough Gill. Lough Gill SAC (site code: 1976), which is adjacent to this SAC, encompasses the freshwater elements of sea lamprey habitat. Potential barriers for migrating lamprey include anthropogenic physical barriers and chemical barriers e.g. oxygen depletion or discharge of noxious pollutants

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]**1099 River Lamprey *Lampetra fluviatilis***

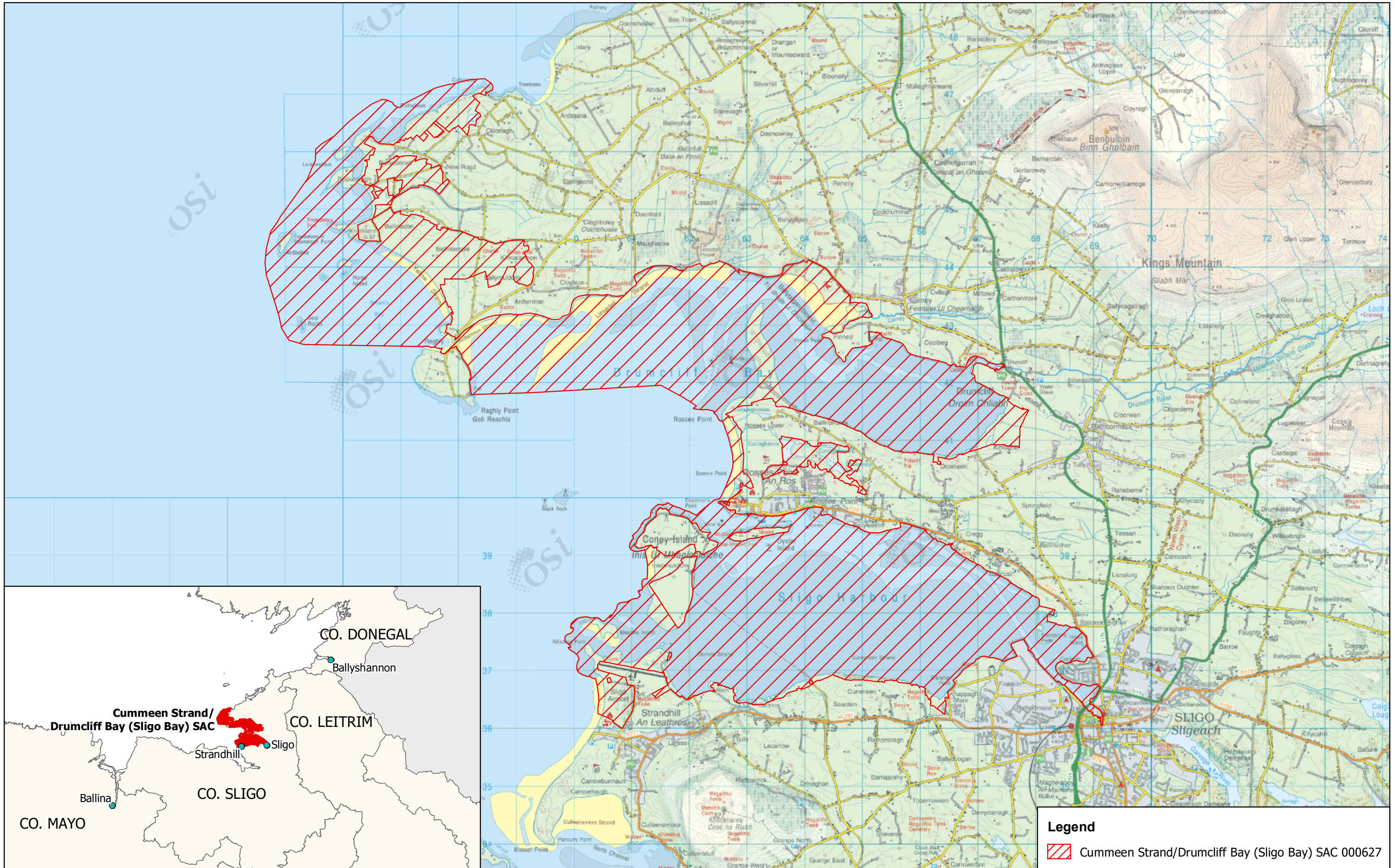
To maintain the favourable conservation condition of River Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: extent of anadromy	% of estuary accessible	No barriers for migratory life stages of lamprey moving from freshwater to marine habitats and vice versa	This SAC only covers marine/estuarine habitat and it is not anticipated that it contains suitable spawning or nursery habitat. Migrating adult lamprey pass through the site en route to/from the Garavogue River, which flows out of Lough Gill. Lough Gill SAC (site code: 1976), which is adjacent to this SAC, encompasses the freshwater elements of river lamprey habitat. Potential barriers for migrating lamprey include anthropogenic physical barriers and chemical barriers e.g. oxygen depletion or discharge of noxious pollutants

Conservation Objectives for : Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]**1365 Harbour Seal *Phoca vitulina***

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:

Attribute	Measure	Target	Notes
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use. See map 8	See marine supporting document for further details
Breeding behaviour	Breeding sites	Conserve the breeding sites in a natural condition. See map 8	Attribute and target based on background knowledge of Irish breeding populations, review of data summarised by Summers et al. (1980), Warner (1983), Harrington (1990), Lyons (2004), and unpublished NPWS records. See marine supporting document for further details
Moulting behaviour	Moult haul-out sites	Conserve the moult haul-out sites in a natural condition. See map 8	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004), Cronin et al. (2004), and unpublished NPWS records. See marine supporting document for further details
Resting behaviour	Resting haul-out sites	Conserve the resting haul-out sites in a natural condition	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004) and unpublished NPWS records. See marine supporting document for further details
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the harbour seal population at the site	See marine supporting document for further details




Legend
 Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627




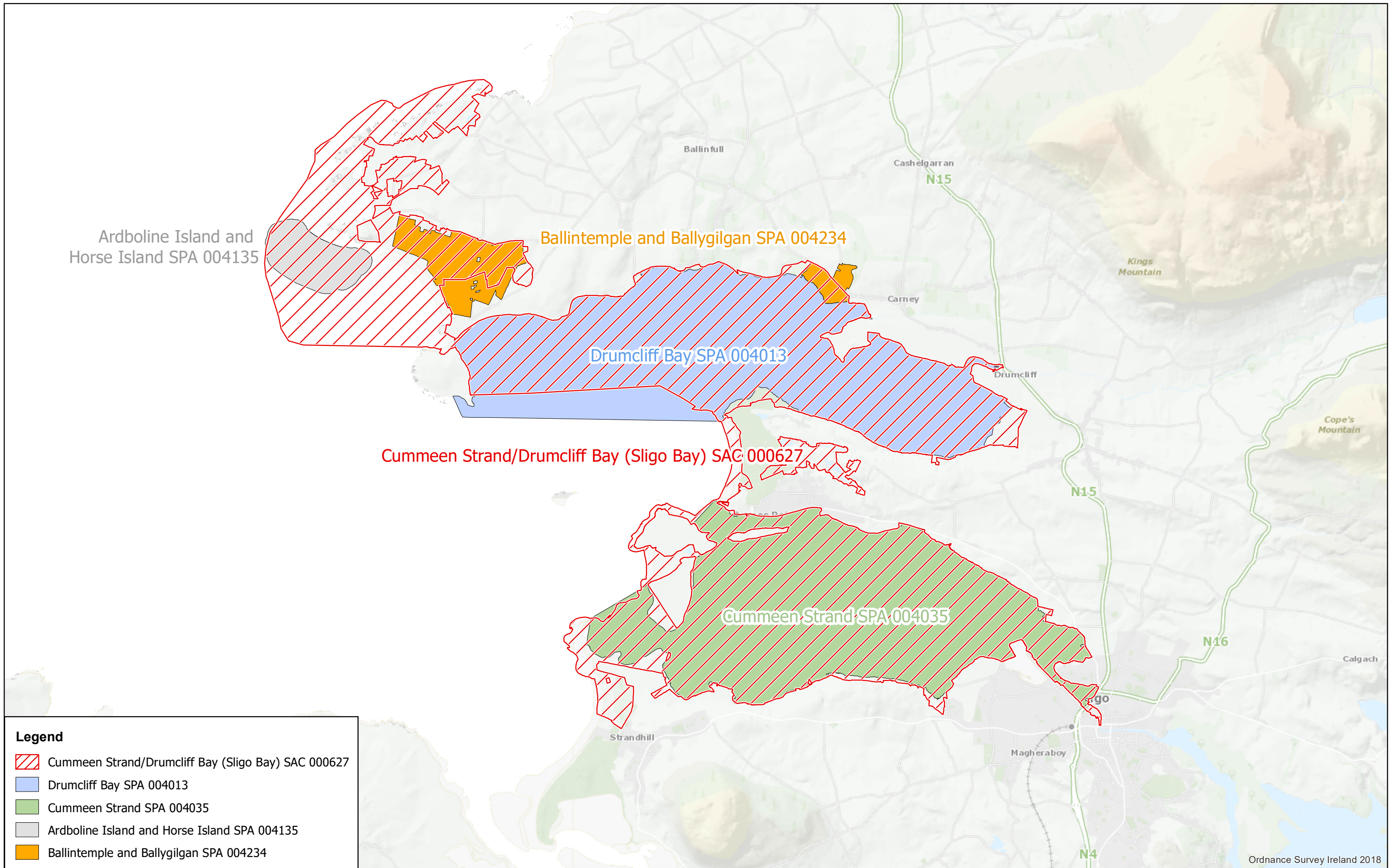
MAP 1:
CUMMEEN STRAND/DRUMCLIFF BAY (SLIGO BAY) SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION
 Map to be read in conjunction with the NPWS Conservation Objectives Document

SITE CODE:
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CO. SLIGO



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 Map version 2
 Date: March 2024



Legend

- Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627
- Drumcliff Bay SPA 004013
- Cummeen Strand SPA 004035
- Ardboline Island and Horse Island SPA 004135
- Ballintemple and Ballygilgan SPA 004234



**MAP 2:
CUMMEEN STRAND/DRUMCLIFF BAY
(SLIGO BAY) SAC
CONSERVATION OBJECTIVES
OVERLAPPING SITES**

Map to be read in conjunction with the NPWS Conservation Objectives Document

**SITE CODE:
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CO. SLIGO**

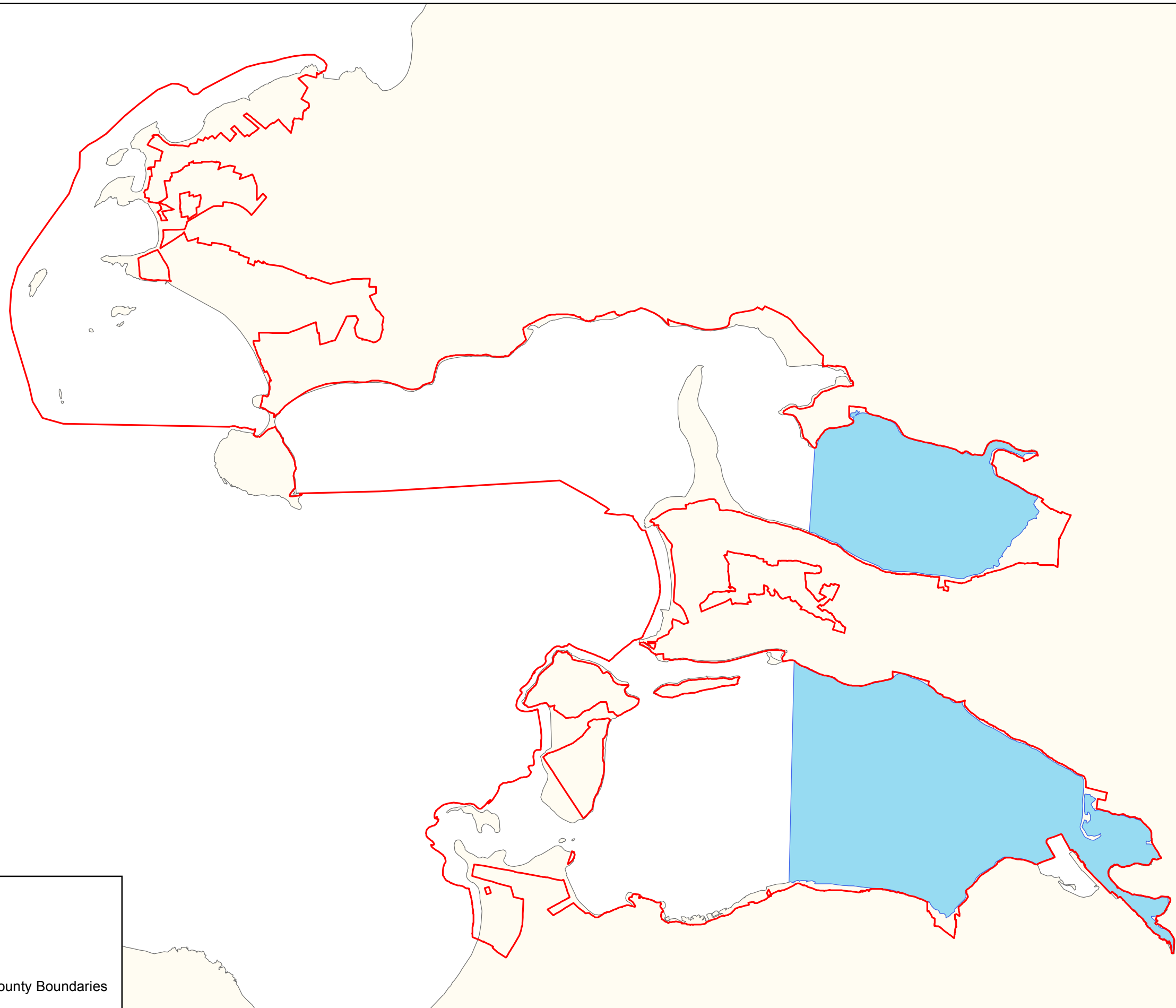
0 0.5 1 2 Kilometres

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Map version 2
Date: March 2024

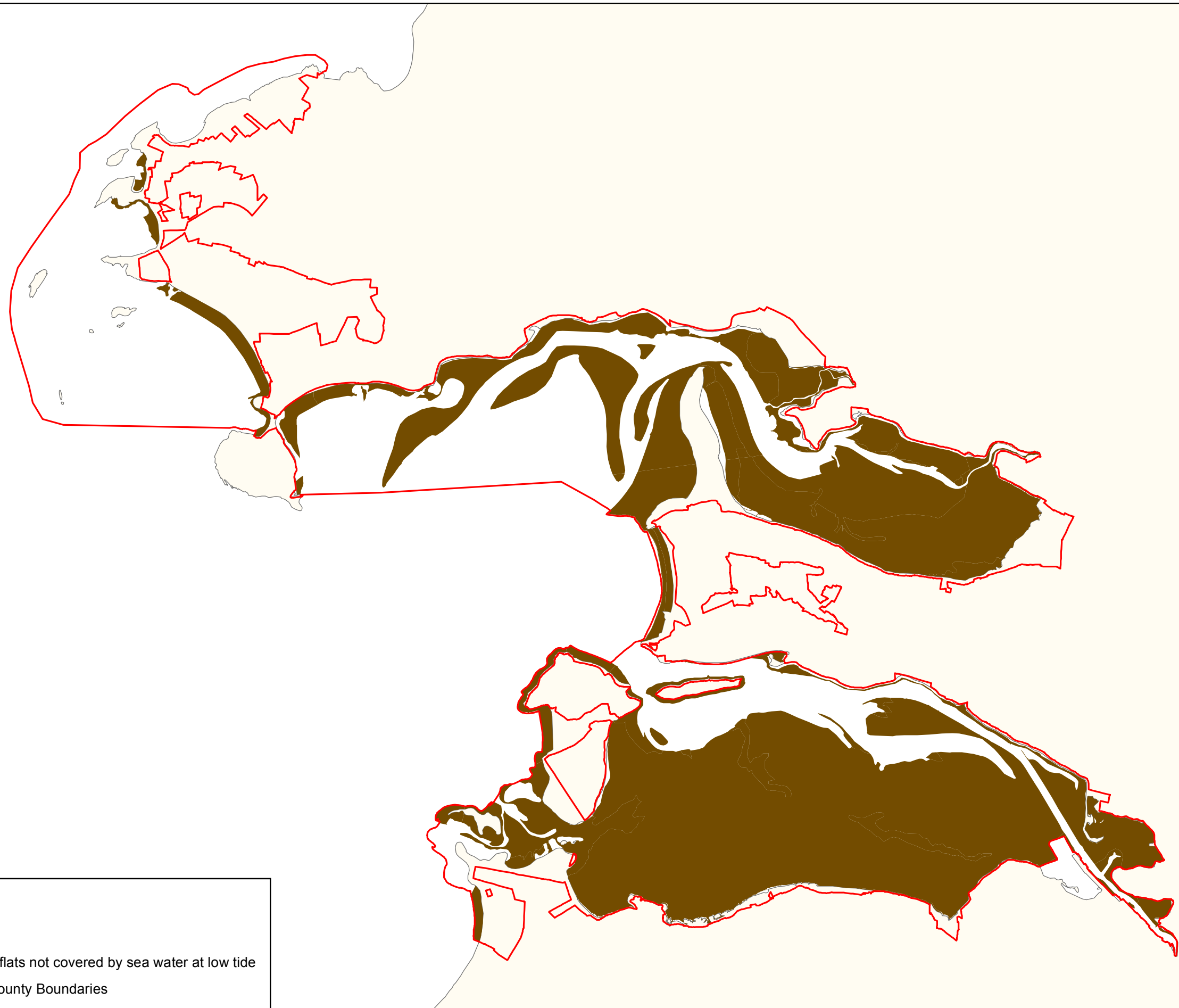
Ordnance Survey Ireland 2018



Legend

- SAC 000627
- 1130 Estuaries
- OSi Discovery Series County Boundaries

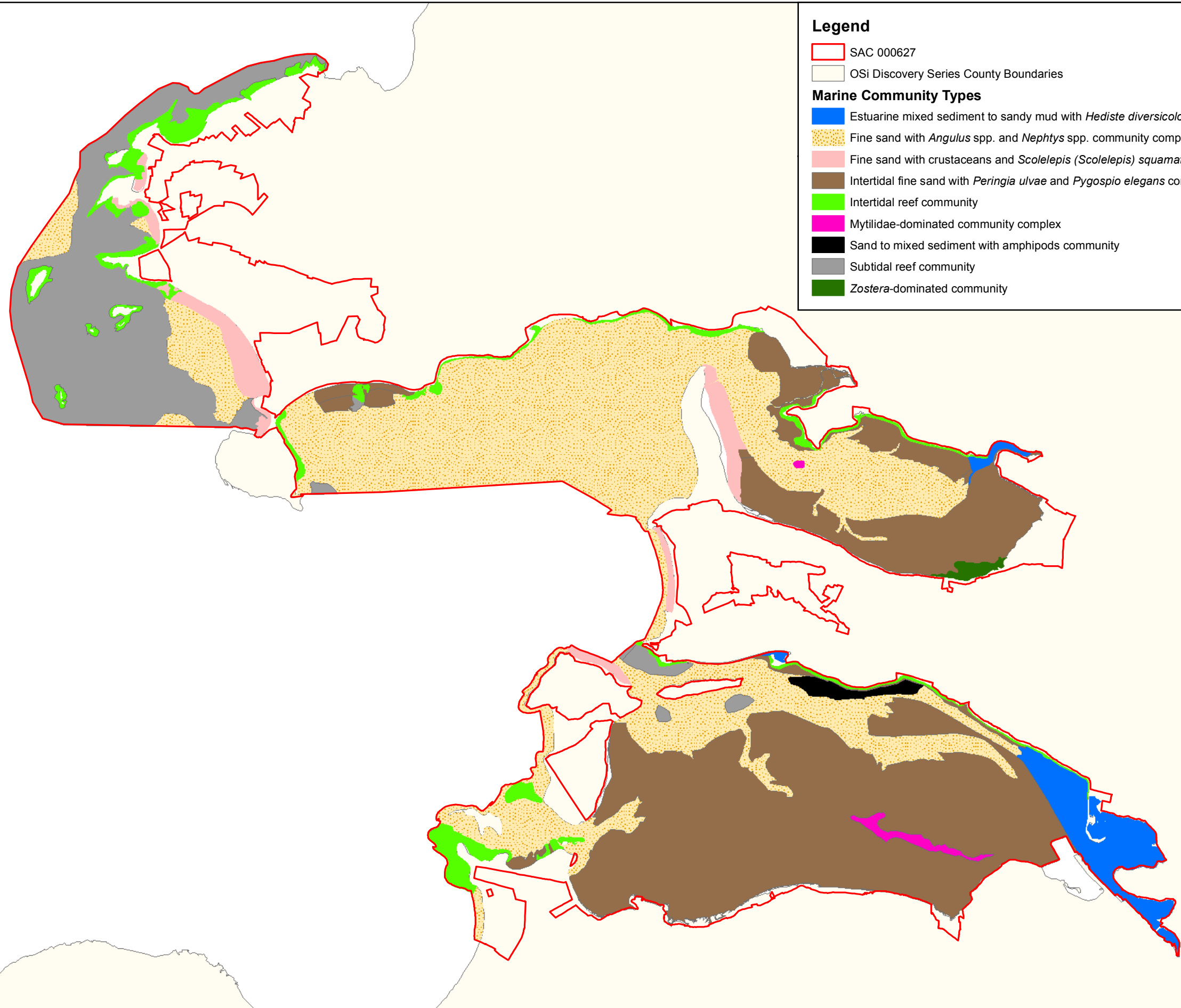




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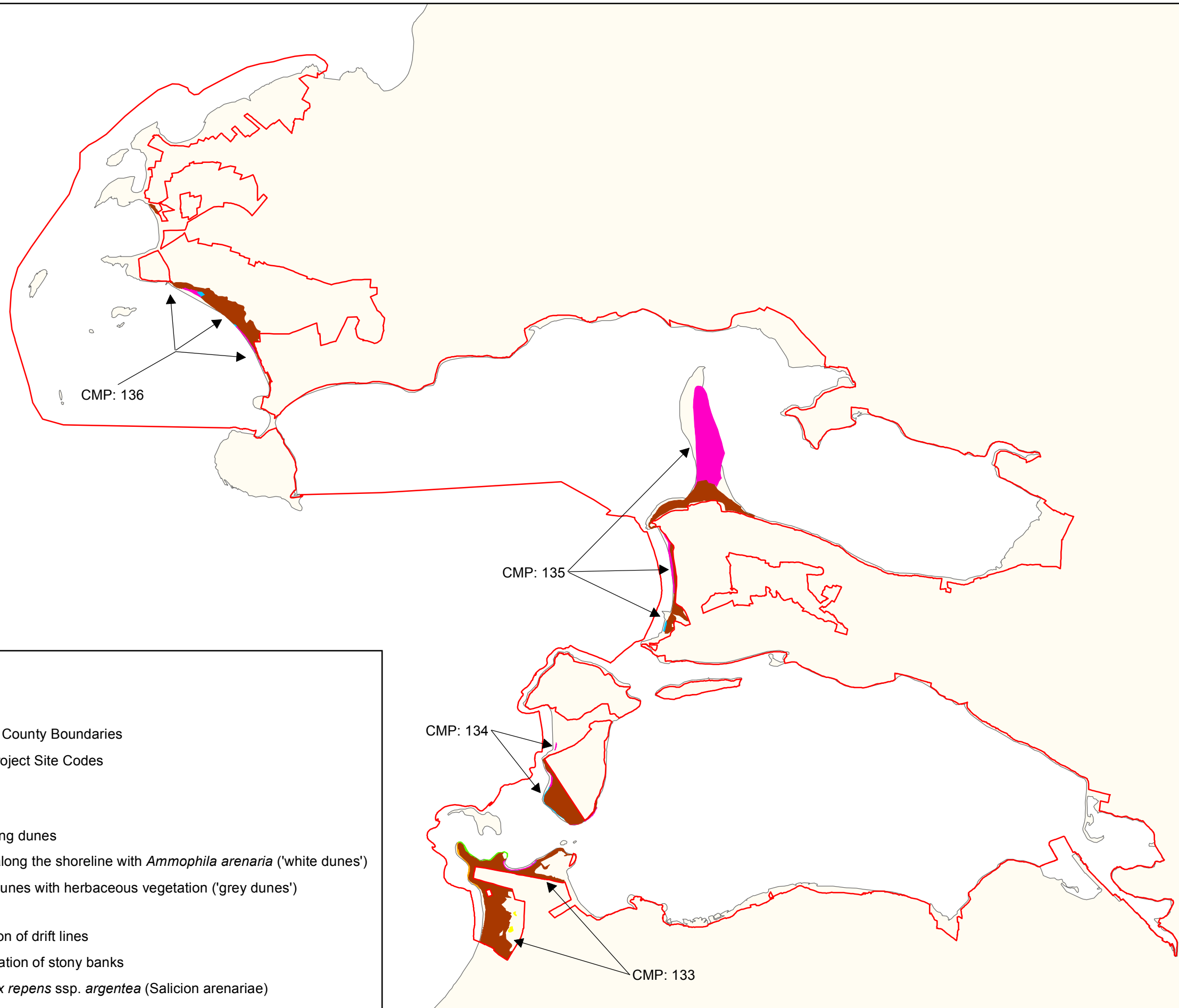
- SAC 000627
- 1140 Mudflats and sandflats not covered by sea water at low tide
- OSi Discovery Series County Boundaries





Legend

- SAC 000627
- OSi Discovery Series County Boundaries
- Marine Community Types**
- Estuarine mixed sediment to sandy mud with *Hediste diversicolor* and oligochaetes community complex
- Fine sand with *Angulus* spp. and *Nephtys* spp. community complex
- Fine sand with crustaceans and *Scolelepis (Scolelepis) squamata* community complex
- Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex
- Intertidal reef community
- Mytilidae-dominated community complex
- Sand to mixed sediment with amphipods community
- Subtidal reef community
- Zostera*-dominated community



Legend

- SAC 000627
- OSi Discovery Series County Boundaries

CMP:135 Coastal Monitoring Project Site Codes

Sand Dune Habitats

Qualifying Interests

- 2110 Embryonic shifting dunes
- 2120 Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')
- 2130 *Fixed coastal dunes with herbaceous vegetation ('grey dunes')

Non-Qualifying Interests

- 1210 Annual vegetation of drift lines
- 1220 Perennial vegetation of stony banks
- 2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)

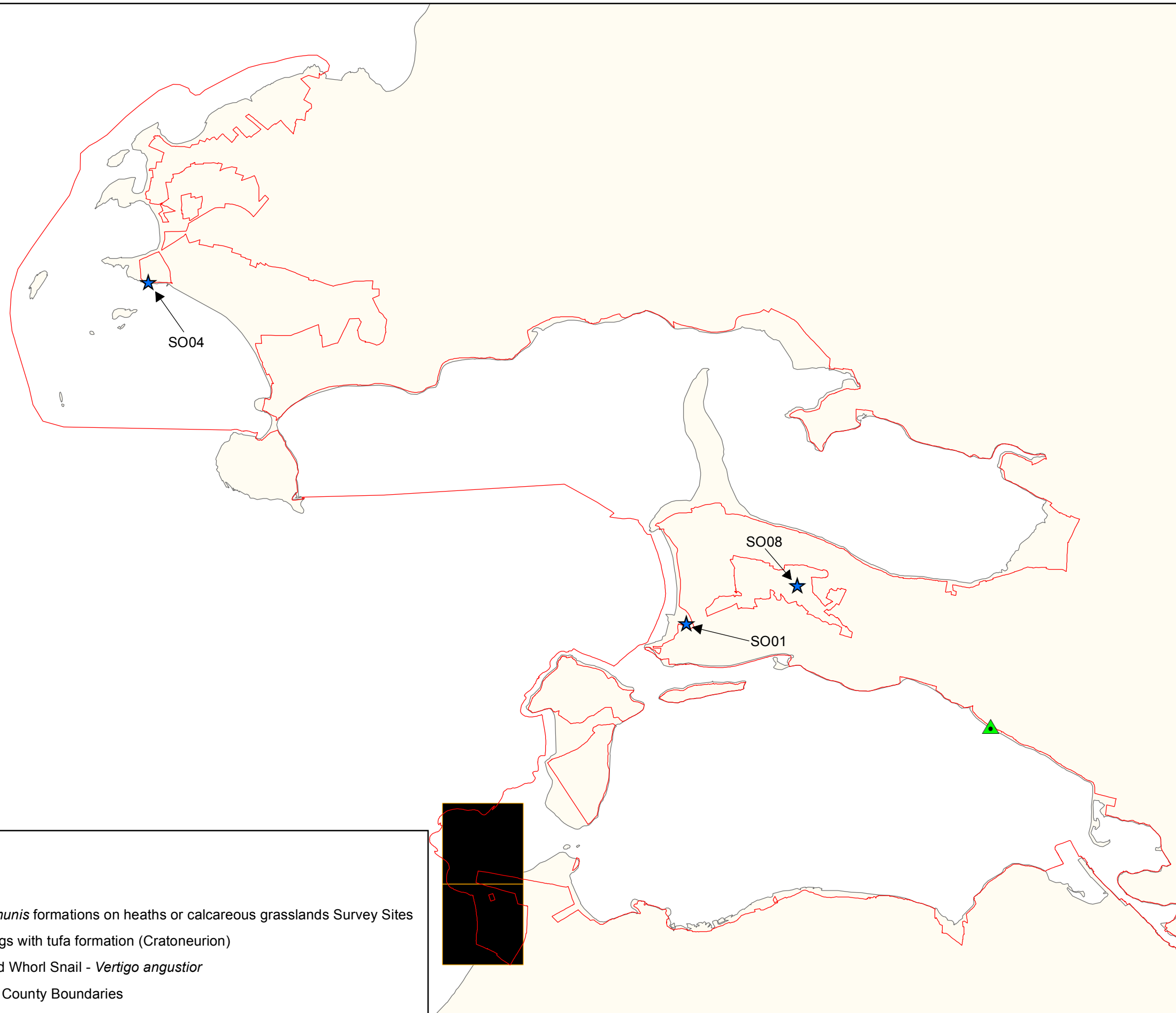
MAP 6:
CUMMEEN STRAND / DRUMCLIFF BAY
(SLIGO BAY) SAC
CONSERVATION OBJECTIVES
SAND DUNE HABITATS

SITE CODE: SAC 000627; version 3
County Sligo



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Legend

- SAC 000627
- ★ 5130 *Juniperus communis* formations on heaths or calcareous grasslands Survey Sites
- ▲ 7220 *Petrifying springs with tufa formation (Cratoneurion)
- 1014 Narrow-Mouthed Whorl Snail - *Vertigo angustior*
- OSi Discovery Series County Boundaries

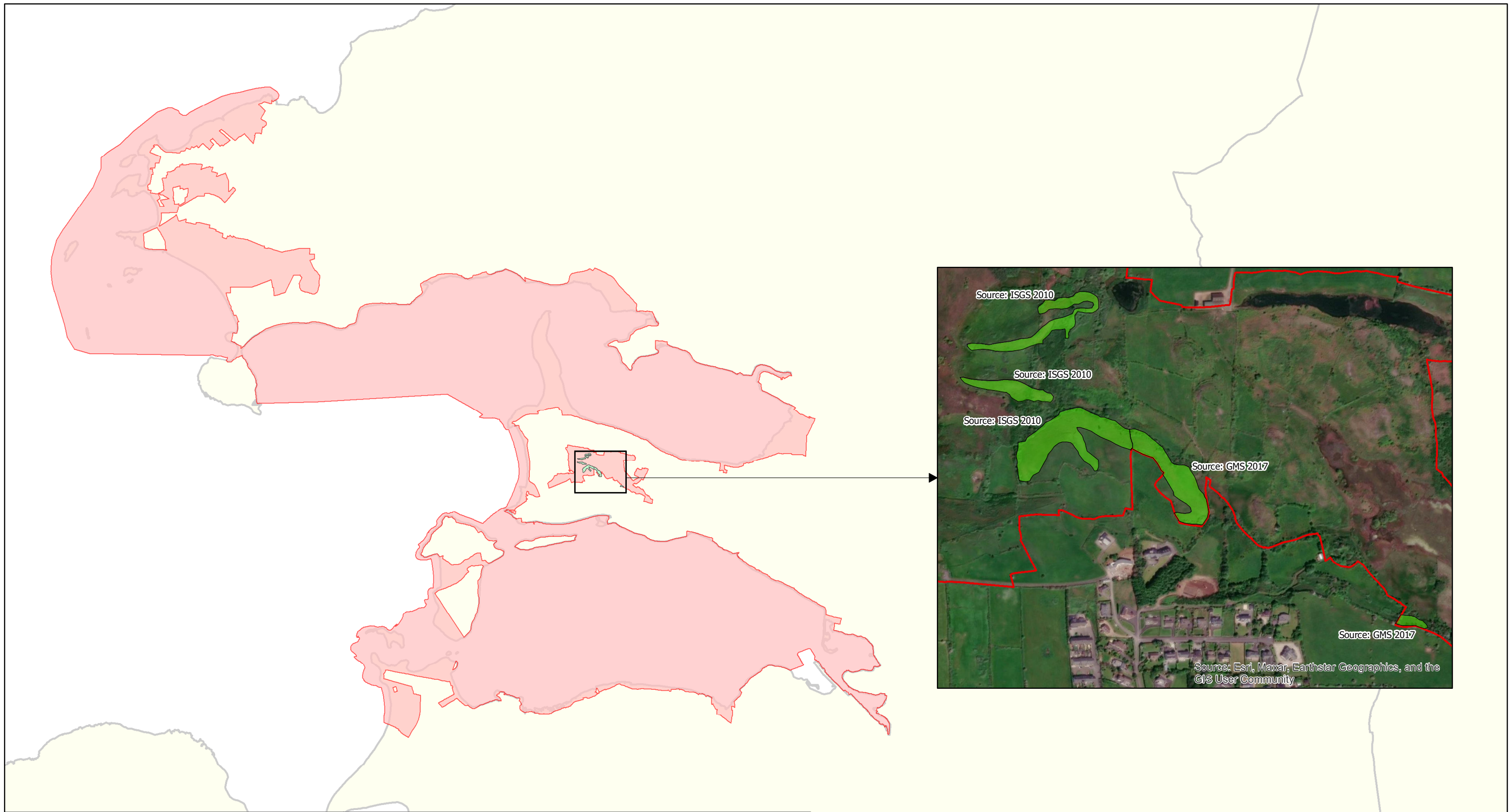




Legend

- SAC 000627
- ★ 1365 Harbour Seal - *Phoca vitulina* Breeding Sites
- ★ 1365 Harbour Seal - *Phoca vitulina* Resting Sites
- 1365 Harbour Seal - *Phoca vitulina* Habitat
- OSi Discovery Series County Boundaries





Legend

- 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) (Irish Semi-natural Grasslands Survey (ISGS) 2007-2012 / Grasslands Monitoring Survey (GMS) 2015-2017 Site No. 1529)
- Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627
- OSI Discovery Series County Boundaries



**MAP 9:
CUMMEEN STRAND/DRUMCLIFF BAY
(SLIGO BAY) SAC
CONSERVATION OBJECTIVES
GRASSLAND HABITATS**

Map to be read in conjunction with the NPWS Conservation Objectives Document

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Map version 1
Date: March 2024