

# National Parks and Wildlife Service

---

## *Conservation Objectives Series*

---

Kenmare River SAC 002158



*An Roinn  
Ealaíon, Oidhreachta agus Gaeltachta*  

---

*Department of  
Arts, Heritage and the Gaeltacht*



**National Parks and Wildlife Service,  
Department of Arts, Heritage and the Gaeltacht,  
7 Ely Place, Dublin 2, Ireland.  
Web: [www.npws.ie](http://www.npws.ie)  
E-mail: [nature.conservation@ahg.gov.ie](mailto:nature.conservation@ahg.gov.ie)**

**Citation:**

**NPWS (2013) Conservation Objectives: Kenmare River SAC 002158. Version 1.  
National Parks and Wildlife Service, Department of Arts, Heritage and the  
Gaeltacht.**

**Series Editor: Rebecca Jeffrey  
ISSN 2009-4086**

## 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

002158	Kenmare River SAC
1014	Marsh Snail <i>Vertigo angustior</i>
1160	Large shallow inlets and bays
1170	Reefs
1220	Perennial vegetation of stony banks
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts
1303	Lesser Horseshoe Bat <i>Rhinolophus hipposideros</i>
1330	Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> )
1355	Otter <i>Lutra lutra</i>
1365	Harbour seal <i>Phoca vitulina</i>
1410	Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )
2120	Shifting dunes along the shoreline with <i>Cladonia</i> (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)
4030	European dry heaths
6130	Calaminarian grasslands of the <i>Violetalia calaminariae</i>
8330	Submerged or partially submerged sea caves

Please note that this SAC overlaps with Iveragh Peninsula SPA (004154), Beara Peninsula SPA (004155) and Deenish Island and Scariff Island SPA (004175). It also adjoins Old Domestic Building, Dromore Wood SAC (000353), Cleanderry Wood SAC (001043), Cloonee and Inchiquin Loughs, Uragh Wood SAC (001342), Mucksna Wood SAC (001371), Glanmore Bog SAC (001879) and Drongawn Lough SAC (002187). See map 2. These conservation objectives should be used in conjunction with those for overlapping and adjacent sites as appropriate.



## Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: [www.npws.ie/Publications](http://www.npws.ie/Publications)

<b>Year :</b>	1980
<b>Title :</b>	An assessment of the status of the common seal <i>Phoca vitulina vitulina</i> in Ireland
<b>Author :</b>	Summers, C.F.; Warner, P.J.; Nairn, R.G.W.; Curry, M.G.; Flynn, J.
<b>Series :</b>	Biological Conservation 17: 115-123
<b>Year :</b>	1982
<b>Title :</b>	Otter survey of Ireland
<b>Author :</b>	Chapman, P.J.; Chapman, L.L.
<b>Series :</b>	Unpublished Report to Vincent Wildlife Trust
<b>Year :</b>	1983
<b>Title :</b>	An assessment of the breeding populations of common seals ( <i>Phoca vitulina vitulina</i> L.) in the Republic of Ireland during 1979
<b>Author :</b>	Warner, P.J.
<b>Series :</b>	Irish Naturalists' Journal 21: 24-26
<b>Year :</b>	1991
<b>Title :</b>	The spatial organization of otters ( <i>Lutra lutra</i> ) in Shetland
<b>Author :</b>	Kruuk, H.; Moorhouse, A.
<b>Series :</b>	J. Zool, 224: 41-57
<b>Year :</b>	1997
<b>Title :</b>	The BioMar biotope viewer: a guide to marine habitats, fauna and flora in Britain and Ireland
<b>Author :</b>	Picton, B.E.; Costello, M.J.
<b>Series :</b>	Environmental Science Unit, Trinity College Dublin
<b>Year :</b>	2000
<b>Title :</b>	Appendix 2. Notes on the status and ecology of <i>Ditrichum cornubicum</i>
<b>Author :</b>	Holyoak, D.T.; Clements, R.; Coleman, M.R.J.; MacPherson, K.S.
<b>Series :</b>	English Nature Research Reports No. 328: 40 - 50
<b>Year :</b>	2001
<b>Title :</b>	Heavy metal concentrations in the soil substrates associated with rare bryophytes at former metalliferous mining sites in East Cornwall
<b>Author :</b>	Walsh, L.
<b>Series :</b>	Unpublished BSc. thesis, University of Hertfordshire
<b>Year :</b>	2003
<b>Title :</b>	Broadscale mapping of candidate marine Special Area of Conservation. Kenmare River, Co. Cork and Co. Kerry cSAC
<b>Author :</b>	Aquafact
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2006
<b>Title :</b>	Otters - ecology, behaviour and conservation
<b>Author :</b>	Kruuk, H.
<b>Series :</b>	Oxford University Press
<b>Year :</b>	2006
<b>Title :</b>	The status of the harbour seal <i>Phoca vitulina</i> L. in inner Bantry Bay, Co. Cork and inner Kenmare River, Co. Kerry, 1964 - 2004
<b>Author :</b>	Heardman, C.; O'Donnell, D.; McMahon, D.
<b>Series :</b>	Irish Naturalist's Journal 28(5): 181-191

<b>Year :</b>	2006
<b>Title :</b>	Risk assessment for marine mammal and seabird populations in south-western Irish waters (R.A.M.S.S.I.)
<b>Author :</b>	Roycroft, D.; Cronin, M.; Mackey, M.; Ingram, S.N.; O Cadhla, O.
<b>Series :</b>	Coastal & Marine Resource Centre, University College Cork
<b>Year :</b>	2007
<b>Title :</b>	The abundance, habitat use and haul-out behaviour of harbour seals ( <i>Phoca vitulina vitulina</i> ) in southwest Ireland
<b>Author :</b>	Cronin, M.A.
<b>Series :</b>	Unpublished PhD thesis, University College Cork
<b>Year :</b>	2007
<b>Title :</b>	An assessment of harbour seal population size and distribution in the Republic of Ireland during the 2003 moult season
<b>Author :</b>	Cronin, M.; Duck, C.; O Cadhla, O.; Nairn, R.; Strong, D.; O'Keeffe, C.
<b>Series :</b>	Journal of Zoology, London, 273(2); 131-139
<b>Year :</b>	2007
<b>Title :</b>	Protecting and managing underground sites for bats
<b>Author :</b>	Mitchell-Jones, A.J.; Bihari, Z.; Masing, M.; Rodrigues, L.
<b>Series :</b>	EUROBATS Publication Series No. 2
<b>Year :</b>	2008
<b>Title :</b>	The phytosociology and conservation value of Irish sand dunes
<b>Author :</b>	Gaynor, K.
<b>Series :</b>	Unpublished PhD thesis, National University of Ireland, Dublin
<b>Year :</b>	2008
<b>Title :</b>	The foraging ecology of the harbour seal ( <i>Phoca vitulina vitulina</i> ) in Ireland
<b>Author :</b>	Cronin, M.A.; Kavanagh, A.; Rogan, E.
<b>Series :</b>	Report to the Marine Institute
<b>Year :</b>	2008
<b>Title :</b>	The Lesser horseshoe bat conservation handbook
<b>Author :</b>	Schofield, H.W.
<b>Series :</b>	The Vincent Wildlife Trust
<b>Year :</b>	2009
<b>Title :</b>	Using mobile phone telemetry to investigate the haul-out behaviour of harbour seals ( <i>Phoca vitulina vitulina</i> ).
<b>Author :</b>	Cronin, M.; Zuur, A.F.; Rogan, E.
<b>Series :</b>	Endangered Species Research, 10: 255-267
<b>Year :</b>	2009
<b>Title :</b>	Natura 2000 sub-tidal benthic surveys: area 1
<b>Author :</b>	ERM
<b>Series :</b>	Unpublished report on behalf of the Marine Institute
<b>Year :</b>	2009
<b>Title :</b>	Surveys of sensitive sublittoral benthic communities in Kenmare River SAC site code 002158, Tralee Bay & Magharee Islands West to Cloghane SAC site code 002070
<b>Author :</b>	MERC
<b>Series :</b>	Unpublished report for Marine Institute and NPWS
<b>Year :</b>	2009
<b>Title :</b>	Notes on some rare and newly recorded bryophytes of metalliferous mine sites in Ireland
<b>Author :</b>	Holyoak, D.T.; Lockhart, N.
<b>Series :</b>	Journal of Bryology 31: 267 - 282

<b>Year :</b>	2009
<b>Title :</b>	Assessing the Conservation Status of the Kerry Lily ( <i>Simethis planifolia</i> Gren. and Godr.) in Ireland
<b>Author :</b>	Lupton, D.
<b>Series :</b>	Heritage Council
<b>Year :</b>	2010
<b>Title :</b>	Otter tracking study of Roaringwater Bay
<b>Author :</b>	De Jongh, A.; O'Neill, L.
<b>Series :</b>	Unpublished Draft Report to NPWS
<b>Year :</b>	2011
<b>Title :</b>	A survey of bryophytes and metallophyte vegetation of metalliferous mine spoil in Ireland
<b>Author :</b>	Holyoak, D.T.; Lockhart, N.
<b>Series :</b>	Journal of the Mining Heritage Trust of Ireland 11: 3 - 16
<b>Year :</b>	2013
<b>Title :</b>	Conservation of selected legally protected and Red Listed bryophytes in Ireland
<b>Author :</b>	Campbell, C.
<b>Series :</b>	Unpublished Ph.D. Thesis, Trinity College Dublin
<b>Year :</b>	1988
<b>Title :</b>	The Irish Red Data Book - 1 Vascular Plants
<b>Author :</b>	Curtis, T.G.F.; McGough, H.N.
<b>Series :</b>	Red List, Stationery Office, Dublin
<b>Year :</b>	1990
<b>Title :</b>	1989 survey of breeding herds of common seal <i>Phoca vitulina</i> with reference to previous surveys
<b>Author :</b>	Harrington, R.
<b>Series :</b>	Unpublished report to Wildlife Service
<b>Year :</b>	1999
<b>Title :</b>	National Shingle Beach Survey of Ireland 1999
<b>Author :</b>	Moore, D.; Wilson, F.
<b>Series :</b>	Unpublished Report to NPWS
<b>Year :</b>	2004
<b>Title :</b>	Harbour seal population assessment in the Republic of Ireland: August 2003
<b>Author :</b>	Cronin, M.; Duck, C.; O'Cadhlá, O.; Nairn, R.; Strong, D.; O'Keeffe, C.
<b>Series :</b>	Irish Wildlife Manual No. 11
<b>Year :</b>	2004
<b>Title :</b>	Summary of National Parks & Wildlife Service surveys for common (harbour) seals ( <i>Phoca vitulina</i> ) and grey seals ( <i>Halichoerus grypus</i> ), 1978 to 2003
<b>Author :</b>	Lyons, D.O.
<b>Series :</b>	Irish Wildlife Manual No.13
<b>Year :</b>	2006
<b>Title :</b>	Otter Survey of Ireland 2004/2005
<b>Author :</b>	Bailey, M.; Rochford, J.
<b>Series :</b>	Irish Wildlife Manual No. 23
<b>Year :</b>	2006
<b>Title :</b>	Bat mitigation guidelines for Ireland
<b>Author :</b>	Kelleher, C.; Marnell, F.
<b>Series :</b>	Irish Wildlife Manual No. 25

<b>Year :</b>	2007
<b>Title :</b>	Supporting documentation for the Habitats Directive Conservation Status Assessment - backing documents. Article 17 forms and supporting maps
<b>Author :</b>	NPWS
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2007
<b>Title :</b>	Interpretation Manual of European Union Habitats- EUR 27
<b>Author :</b>	DG Environment- European Commission
<b>Series :</b>	European Commission
<b>Year :</b>	2009
<b>Title :</b>	Bryophytes and metallophyte vegetation on metalliferous mine-waste in Ireland
<b>Author :</b>	Holyoak, D. T
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2009
<b>Title :</b>	Saltmarsh Monitoring Project 2007 - 2008
<b>Author :</b>	McCorry, M.; Ryle, T.
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2009
<b>Title :</b>	Coastal Monitoring Project 2004-2006
<b>Author :</b>	Ryle, T.; Murray, A.; Connolly, C.; Swann, M.
<b>Series :</b>	Unpublished Report to NPWS
<b>Year :</b>	2010
<b>Title :</b>	Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 1.0.
<b>Author :</b>	Perrin, P.M.; Barron, S.J.; Roche, J.R.; O'Hanrahan, B.
<b>Series :</b>	Irish Wildlife Manual No. 48
<b>Year :</b>	2010
<b>Title :</b>	Harbour seal population monitoring 2009-2012: Report no. 1. Report on a pilot monitoring study carried out in southern and western Ireland, 2009
<b>Author :</b>	NPWS
<b>Series :</b>	Unpublished Report to NPWS
<b>Year :</b>	2011
<b>Title :</b>	National survey and assessment of the conservation status of Irish sea cliffs
<b>Author :</b>	Barron, S.J.; Delaney, A.; Perrin, P.M.; Martin, J.; O'Neill, F.
<b>Series :</b>	Irish Wildlife Manual No. 53
<b>Year :</b>	2011
<b>Title :</b>	Monitoring and condition assessment of populations of <i>Vertigo geyeri</i> , <i>Vertigo angustior</i> and <i>Vertigo moulinsiana</i> in Ireland
<b>Author :</b>	Moorkens, E.A.; Killeen, I.J.
<b>Series :</b>	Irish Wildlife Manual No. 55
<b>Year :</b>	2011
<b>Title :</b>	Harbour seal pilot monitoring project, 2010
<b>Author :</b>	NPWS
<b>Series :</b>	Unpublished Report to NPWS
<b>Year :</b>	2012
<b>Title :</b>	The Conservation Status of Juniper Formations in Ireland
<b>Author :</b>	Cooper, F.; Stone, R.E.; McEvoy, P.; Wilkins, T.; Reid, N.
<b>Series :</b>	Irish Wildlife Manual No. 63

<b>Year :</b>	2012
<b>Title :</b>	Harbour seal pilot monitoring project, 2011
<b>Author :</b>	NPWS
<b>Series :</b>	Unpublished Report to NPWS
<b>Year :</b>	2013
<b>Title :</b>	Kenmare River SAC (site code 2158) Conservation objectives supporting document- coastal habitats V1
<b>Author :</b>	NPWS
<b>Series :</b>	Unpublished report to NPWS
<b>Year :</b>	2013
<b>Title :</b>	Kenmare River SAC (site code 2158) Conservation objectives supporting document- marine habitats and species V1
<b>Author :</b>	NPWS
<b>Series :</b>	Unpublished report to NPWS

## Spatial data sources

<b>Year :</b>	2005
<b>Title :</b>	OSi Discovery series vector data
<b>GIS Operations :</b>	High Water Mark (HWM) polyline feature class converted into polygon feature class; clipped to SAC boundary. EPA WFD transitional waterbody data erased from extent. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	1160 (map 3)
<b>Year :</b>	Interpolated 2012
<b>Title :</b>	BioMar survey, 1995; acoustic mapping survey, 2002; intertidal and subtidal surveys, 2009
<b>GIS Operations :</b>	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
<b>Used For :</b>	1170, Marine community types (maps 4 and 6)
<b>Year :</b>	Revision 2012
<b>Title :</b>	National Shingle Beach Survey
<b>GIS Operations :</b>	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	1220 (map 5)
<b>Year :</b>	2011
<b>Title :</b>	National Survey and assessment of the conservation status of Irish sea cliffs
<b>GIS Operations :</b>	Clipped to SAC boundary
<b>Used For :</b>	1230 (map 5)
<b>Year :</b>	2012
<b>Title :</b>	Bryophytes and Metallophyte Vegetation on Metalliferous Mine-waste in Ireland
<b>GIS Operations :</b>	Site(s) identified; clipped to SAC boundary
<b>Used For :</b>	6130 (map 5)
<b>Year :</b>	Derived 2012
<b>Title :</b>	Coast of Ireland Oblique Imagery Survey 2003
<b>GIS Operations :</b>	Point dataset created from visual inspection of survey
<b>Used For :</b>	8330 (map 5)
<b>Year :</b>	2005
<b>Title :</b>	OSi Discovery series vector data
<b>GIS Operations :</b>	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
<b>Used For :</b>	Marine community types base data (map 6)
<b>Year :</b>	Revision 2010
<b>Title :</b>	Saltmarsh Monitoring Project 2007-2008. Version 1
<b>GIS Operations :</b>	QIs selected; clipped to SAC boundary; overlapping regions with Coastal CO data investigated and resolved with expert opinion used
<b>Used For :</b>	1330, 1410 (map 7)
<b>Year :</b>	2009
<b>Title :</b>	Coastal Monitoring Project 2004-2006. Version 1
<b>GIS Operations :</b>	QIs selected; clipped to SAC boundary; overlapping regions with Saltmarsh CO data investigated and resolved with expert opinion used
<b>Used For :</b>	2120, 2130 (map 8)
<b>Year :</b>	2013
<b>Title :</b>	NPWS rare and threatened species database
<b>GIS Operations :</b>	Dataset created from spatial references in database records. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	1014, 1365 (maps 8 and 11)

<b>Year :</b>	2012
<b>Title :</b>	NPWS lesser horseshoe bat database
<b>GIS Operations :</b>	Roosts identified
<b>Used For :</b>	1303 (map 9)
<b>Year :</b>	2007
<b>Title :</b>	Forest Inventory and Planning System (FIPS)
<b>GIS Operations :</b>	Dataset clipped to 2.5km buffer centred on roost location
<b>Used For :</b>	1303 (map 9)
<b>Year :</b>	2005
<b>Title :</b>	OSi Discovery series vector data
<b>GIS Operations :</b>	Creation of an 80m buffer on the marine side of the high water mark (HWM); creation of a 10m buffer on the terrestrial side of the HWM; combination of 80m and 10m HWM buffer datasets; creation of a 10m buffer on the terrestrial side of the river banks data; creation of 20m buffer applied to canal centreline data. These datasets are combined with the derived EPA WFD Waterbodies data and Coastal Lagoon data for the 1355 CO. Overlapping regions investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising. Creation of 250m buffer on marine side of HWM to highlight potential commuting points
<b>Used For :</b>	1355 (map 10)
<b>Year :</b>	2010
<b>Title :</b>	EPA WFD Waterbodies data
<b>GIS Operations :</b>	Creation of a 20m buffer applied to river and stream centreline data; creation of 80m buffer on the aquatic side of lake data; creation of 10m buffer on the terrestrial side of lake data. These datasets are combined with the derived OSi data and Coastal Lagoon data for the 1355 CO. Overlapping regions investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
<b>Used For :</b>	1355 (no map)
<b>Year :</b>	2005
<b>Title :</b>	OSi Discovery series vector data
<b>GIS Operations :</b>	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
<b>Used For :</b>	1365 (map 11)

**1160 Large shallow inlets and bays**

**To maintain the favourable conservation condition of Large shallow inlets and bays in Kenmare River 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 39322ha using OSI data and the Transitional Water Body area as defined under the Water Framework Directive
Community extent	Hectares	Maintain the extent of the <i>Zostera</i> - and Maërl-dominated communities and the <i>Pachycerianthus multiplicatus</i> community subject to natural processes. See map 6	Based on the BioMar survey in 1995 (Picton and Costello, 1997), broadscale mapping survey in 2002 (Aquafact, 2003) and a dive survey undertaken in 2009 (MERC, 2009). See marine supporting document for further details
Community structure: <i>Zostera</i> density	Shoots per m <sup>2</sup>	Conserve the high quality of the <i>Zostera</i> -dominated community, subject to natural processes	Described from 2009 diver observation and underwater viewer (MERC, 2009). See marine supporting document for further details
Community structure	Biological composition	Conserve the high quality of the <i>Pachycerianthus multiplicatus</i> community, subject to natural processes	Estimated from a dive survey undertaken in 2009 (MERC, 2009). See marine supporting document for further details
Community structure	Biological composition	Conserve the high quality of the Maërl-dominated community, subject to natural processes	Based on broadscale mapping survey in 2002 (Aquafact, 2003) and 2009 diver observation and underwater viewer (MERC, 2009). See marine supporting document for further details
Community distribution	Hectares	Conserve the following communities in a natural condition: Intertidal mobile sand community complex; Muddy fine sands dominated by polychaetes and <i>Amphiura filiformis</i> community complex; Fine to medium sand with crustaceans and polychaetes community complex; Coarse sediment dominated by polychaetes community complex; Shingle; Intertidal reef community complex; Subtidal reef with echinoderms and faunal turf community complex and <i>Laminaria</i> -dominated community complex. See map 6	Based on the BioMar survey in 1995 (Picton and Costello, 1997), broadscale mapping survey in 2002 (Aquafact, 2003) and intertidal and subtidal surveys in 2009 (ERM, 2009). See marine supporting document for further information



**1170 Reefs**

**To maintain the favourable conservation condition of Reefs in Kenmare River SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Distribution	Occurrence	The distribution of reefs remains stable, subject to natural processes. See map 4	Likely distribution was established by the 1995 BioMar survey (Picton and Costello, 1997); broadscale mapping survey in 2002 (Aquafact, 2003) and 2009 subtidal reef survey and intertidal survey (ERM, 2009)
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 4	Habitat area estimated as 9196ha from the 1995 BioMar survey (Picton and Costello, 1997); 2002 broadscale mapping survey (Aquafact, 2003) and 2009 subtidal reef survey and intertidal survey (ERM, 2009)
Community structure	Biological composition	Conserve the following community types in a natural condition: Intertidal reef community complex; Subtidal reef with echinoderms and faunal turf community complex; and <i>Laminaria</i> -dominated community complex. See map 6	The likely area of reef communities was derived from the 1995 BioMar survey (Picton and Costello, 1997); 2002 broadscale mapping survey (Aquafact, 2003) and 2009 subtidal reef survey and intertidal survey (ERM, 2009). See marine supporting document for further details

**1220 Perennial vegetation of stony banks**

**To maintain the favourable conservation condition of Perennial vegetation of stony banks in Kenmare River 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	Current area unknown. It was recorded as being present but extent was not mapped from two sub-sites during the National Shingle Beach Survey (Moore and Wilson, 1999): Rossdohan Island and Pallas Harbour. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 5 for mapped locations	Full distribution unmapped at present, although the habitat has been recorded at Rossdohan Island and Pallas Harbour by Moore and Wilson (1999). Habitat likely to be more widespread. 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	The shingle beaches within this SAC appear to be functioning naturally, with no artificial restrictions to beach dynamics (Moore and Wilson, 1999). Shingle features are relatively stable in the long term. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Moore and Wilson (1999). At the Rossdohan Island sub-site the vegetated shingle is associated with intertidal shingle and rocky shore as well as saltmarsh. The vegetated shingle at the Pallas Harbour sub-site is also associated with intertidal shingle and rocky shore. Lichens are present at both sub-sites, indicating a degree of stability. 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 the typical vegetated shingle flora including the range of sub-communities within the different zones	Both Rossdohan Island and Pallas Harbour support good quality vegetated shingle flora. Based on data from Moore and Wilson (1999). 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 Moore and Wilson (1999). Negative indicators include non-native species indicative of changes in nutrient status and species not considered characteristic of the habitat. See coastal habitats supporting document for further details

## Conservation Objectives for : Kenmare River SAC [002158]

### 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts

**To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in Kenmare River SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Habitat length	Kilometres	Area stable, subject to natural processes, including erosion. For sub-sites mapped: Lamb's Head - 4.4km; Coomatloukane East - 0.5km; Coomatloukane West - 0.5km; Reenearagh - 0.5km; Dog's Bay to Kilcatherine Point - 17.3km; Cod's Head - 25.1km; Garnish Point and Crow Head - 13.4km; Dursey Island - 10.5km. See map 5	Based on data from the Irish Sea Cliff Survey (ISCS) (Barron et al., 2011). Eight sub-sites were identified using a combination of aerial photos and the DCENR helicopter viewer. The length of each cliff was measured (in some cases the cliff was measured in sections) to give a total estimated area of 72.2km within the SAC. An additional 3.8km of 'undocumented sites' were also identified. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5	Cliffs are known to occur along the coastline from Lambs Head in Co. Kerry to Dursey Island in Co. Cork. Both hard and soft cliffs have been noted in this SAC (Browne, 2005; Barron et al., 2011). However, it is estimated that over 90% of the cliffs are of the hard type. See coastal habitats supporting document for further details
Physical structure: functionality and hydrological regime	Occurrence of artificial barriers	No alteration to natural functioning of geomorphological and hydrological processes due to artificial structures	Based on data from ISCS (Barron et al., 2011). Maintaining natural geomorphological processes including natural erosion is important for the health of a vegetated sea cliff. Hydrological processes maintain flushes and in some cases tufa formations that can be associated with sea cliffs. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession	Based on data from ISCS (Barron et al., 2011). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from ISCS (Barron et al., 2011). 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 the Irish Sea Cliff Survey (Barron et al., 2011)	See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from the ISCS (Barron et al., 2011). See coastal habitats supporting document for further details
Vegetation composition: bracken and woody species	Percentage	Cover of bracken ( <i>Pteridium aquilinum</i> ) on grassland and/or heath less than 10%. Cover of woody species on grassland and/or heath less than 20%	Based on data from the ISCS (Barron et al., 2011). See coastal habitats supporting document for further details

**1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)**

**To maintain the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Kenmare River 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 Dereen House - 0.26ha; Dinish - 0.07ha; Tahilla - 0.01ha; West Cove - 0.08ha. See map 7	Based on data from Saltmarsh monitoring Project (SMP) (McCorry and Ryle, 2009). Four sub-sites that supported Atlantic salt meadow were mapped (0.42ha) and additional areas of potential saltmarsh (2.23ha) were identified from an examination of aerial photographs, giving a total estimated area of 2.65ha. NB Further unsurveyed areas may be present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 7 for known distribution	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% area outside creeks vegetated	Based on data from SMP (McCorry and Ryle, 2009). 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 SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - <i>Spartina anglica</i>	Hectares	There is currently no common cordgrass ( <i>Spartina anglica</i> ) in this SAC. Prevent establishment of cordgrass	Based on data from SMP (McCorry and Ryle, 2009). As common cordgrass ( <i>Spartina anglica</i> ) has never been recorded from this area, the target is to ensure that the site remains free of this highly invasive species. See coastal habitats supporting document for further details

## Conservation Objectives for : Kenmare River SAC [002158]

### 1410 Mediterranean salt meadows (*Juncetalia maritimi*)

**To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in Kenmare River 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: Dereen House - 8.93ha; Dinish - 0.04ha; Tahilla - 0.27ha; West Cove - 1.54ha. See map 7	Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009). Four sub-sites that supported Mediterranean salt meadow were mapped (10.77ha) and additional areas of potential saltmarsh (7.13ha) were identified from an examination of aerial photographs, giving a total estimated area of 17.90ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 7 for known distribution	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from the SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Mediterranean salt meadows is found high up in the saltmarsh but requires occasional tidal inundation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation in the sward	Based on data from SMP (McCorry and Ryle, 2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from SMP (McCorry and Ryle (2009). 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 characteristic species listed in SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - <i>Spartina anglica</i>	Hectares	There is currently no common cordgrass ( <i>Spartina anglica</i> ) in this SAC. Prevent establishment of cordgrass	Based on data from SMP (McCorry and Ryle, 2009). As common cordgrass ( <i>Spartina anglica</i> ) has never been recorded from this area, the target is to ensure that the site remains free of this highly invasive species. See coastal habitats supporting document for further details

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

**To maintain the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Kenmare River 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. Total area mapped: Derrynane-1.67ha. See map 8	Habitat was mapped from a single site (Derrynane) during the Coastal Monitoring Project (Ryle et al., 2009). Habitat is very difficult to measure in view of its dynamic nature. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 8 for known distribution	Based on CMP (Ryle et al. 2009). 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	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 thus encouraging further accretion. 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). 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 CMP (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 CMP (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 CMP (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. See coastal habitats supporting document for further details

## Conservation Objectives for : Kenmare River SAC [002158]

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

**To maintain the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Kenmare River 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. Total area mapped: Derrynane-20.41ha. See map 8	Habitat was mapped from a single site (Derrynane) during the Coastal Monitoring Project (Ryle et al. 2009). See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 8 for known distribution	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	Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. 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 CMP (Ryle et al., 2009). 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). 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). 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. Habitat supports a population of the Annex II species <i>Vertigo angustior</i> (code 1014)- see also conservation objective for this species
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 CMP (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. 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 CMP (Ryle et al., 2009). Ash ( <i>Fraxinus excelsior</i> ) and gorse ( <i>Ulex europaeus</i> ) have been recorded at Derrynane. See coastal habitats supporting document for further details

## Conservation Objectives for : Kenmare River SAC [002158]

### 4030 European dry heaths

**To maintain the favourable conservation condition of European dry heaths in Kenmare River 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	As there has been no comprehensive mapping, the area is estimated only. It is thought to cover c. 200ha in the Derrynane locality with another 100ha or more elsewhere, often in association with other habitats such as coastal grassland, wet heath and bog and exposed rock including sea cliffs. Based on internal NPWS files and on the supporting document for coastal habitats (NPWS, 2013). See also the conservation objective for vegetated sea cliffs (code: 1230)
Habitat distribution	Occurrence	No decline from current habitat distribution, subject to natural processes	Dry heath occurs on shallow peat from sea level to the upland fringes of Kenmare Bay on both the Iveragh and Beara peninsulas. Much of the dry heath in this SAC corresponds to Annex I sub-type - heaths rich in gorse ( <i>Ulex gallii</i> ) of the Atlantic margins (EC, 2007). Its localities include Derrynane, Lamb's Head, Abbey Island, Garnish Point and Crow Head, Castlecove to Sneem area, Ross Island, Ardgroom, Kilcatherine, Cod's Head, Dursey Island and many other locations around Kenmare Bay
Physical structure: free-draining, acid, low nutrient soil; rock outcrops	Occurrence	No significant change in soil nutrient status, subject to natural processes. No increase or decrease in area of natural rock outcrop	Changes to soil nutrient status can result from fertilisation, high stock densities or supplementary feeding. Outwintering of cattle may also impact on physical structure and vegetation. Quarrying would impact through removal of rock structures. Based on internal NPWS files and on Commonage Framework Plans (KE10, KE19, KE23) for 2000 and 2007
Vegetation structure: dwarf shrub indicator species	Percentage cover	Cover of characteristic dwarf shrub indicator species, typically heather ( <i>Calluna vulgaris</i> ), bell heather ( <i>Erica cinerea</i> ) and Western gorse ( <i>Ulex gallii</i> ) at least 25%	Attribute and target based on Perrin et al. (2010). Site data based on internal NPWS files. Other sub-shrubs present are gorse ( <i>Ulex europaeus</i> ), bilberry ( <i>Vaccinium myrtillus</i> ), cross-leaved heath ( <i>Erica tetralix</i> ), creeping willow ( <i>Salix repens</i> ) while juniper ( <i>Juniperus communis</i> ) and burnet rose ( <i>Rosa pimpinellifolia</i> ) occur locally
Vegetation structure: senescent <i>Calluna vulgaris</i>	Percentage cover	Cover of senescent heather ( <i>Calluna vulgaris</i> ), less than 50%	Attribute and target based on dry heath habitat condition assessment methodology outlined in Perrin et al. (2010)
Vegetation structure: browsing	Percentage cover	Long shoots of bilberry ( <i>Vaccinium myrtillus</i> ) with signs of browsing collectively less than 33%	Attribute and target based on dry heath habitat condition assessment methodology outlined in Perrin et al. (2010)
Vegetation structure: native trees and shrubs	Percentage cover	Cover of scattered native trees and shrubs less than 20%	Attribute and target based on dry heath habitat condition assessment methodology outlined in Perrin et al. (2010). Encroaching willow ( <i>Salix</i> spp.) and bramble ( <i>Rubus fruticosus</i> ) are recorded in this site (internal NPWS files)
Vegetation composition: positive indicator species	Number	At least 2 positive indicator species e.g. bell heather ( <i>Erica cinerea</i> ) and Western gorse ( <i>Ulex gallii</i> ), with combined cover of at least 60%	Dry heath is characterised by a mosaic of dwarf shrubs, chiefly heather, bell heather and Western gorse and open areas with a characteristic composition of grasses, herbs, bryophytes and lichens. Attribute and target based on dry heath habitat condition assessment methodology outlined in Perrin et al. (2010)
Vegetation composition: bryophyte and non-crustose lichen species	Number	At least 2 bryophyte or non-crustose lichen species present	Attribute and target based on dry heath habitat condition assessment methodology outlined in Perrin et al. (2010)



Vegetation composition: bracken ( <i>Pteridium aquilinum</i> )	Percentage cover	Cover of bracken ( <i>Pteridium aquilinum</i> ) less than 10%	Attribute and target based on dry heath habitat condition assessment methodology of Perrin et al. (2010). Inadequate grazing is reported as damaging the condition of dry heath at some locations in this site
Vegetation composition: weedy negative indicator species	Percentage cover	Cover of agricultural weed species (negative indicator species) less than 1%	Attribute and target based on dry heath habitat condition assessment methodology outlined in Perrin et al. (2010)
Vegetation composition: non-native species	Percentage cover	Cover of non-native species less than 1%	Attribute and target based on dry heath habitat condition assessment methodology of Perrin et al. (2010). Rhododendron ( <i>Rhododendron ponticum</i> ) is recorded in this site (internal NPWS files)
Vegetation composition: rare/scarce heath species	Location, area and number	No decline in distribution or population sizes of rare/scarce species, including protected species Kerry lily ( <i>Simethis planifolia</i> ) and betony ( <i>Stachys officinalis</i> ) and uncommon species juniper ( <i>Juniperus communis</i> )	Excessive grazing and competition from invasive species are listed as the principal threats to the status of these species. Based on survey data in internal NPWS files, Lupton (2009) and Cooper et al. (2012)
Vegetation structure: disturbed bare ground	Percentage cover	Cover of disturbed bare peat less than 5%	Attribute and target based on Perrin et al. (2010). Excessive grazing and/or trampling by domestic stock is reported to be impacting on the condition of dry heath at some localities in this SAC
Vegetation structure: burning	Occurrence	No signs of burning within sensitive areas	Perrin et al. (2010) define sensitive areas. Excessive burning is reported as impacting on vegetation composition and structure of dry heath at some localities in this SAC

**6130 Calaminarian grasslands of the *Violetalia calaminariae***

**To maintain the favourable conservation condition of Calaminarian grasslands of the *Violetalia calaminariae* in Kenmare River SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Habitat area	Hectares	No decline, subject to natural processes	The area of this habitat at Allihies is estimated to be 3.1ha (Holyoak, 2009; Holyoak and Lockhart, 2011). NB Further unsurveyed areas may be present within this SAC
Distribution	Occurrence	No decline, subject to natural processes. See map 5 for recorded location	Calaminarian grassland occurs at the disused copper mine at Mountain Mine, Allihies (in Cloan Townland) (Holyoak, 2009; Holyoak and Lockhart, 2011). NB Further unsurveyed areas may be present within this SAC
Physical structure: bare ground	Percentage cover	Maintain adequate open ground	Calaminarian grassland is well developed and varied, but mainly as patches of small extent scattered among rocky heathland and less toxic spoil. The extent of bare soil and rock within eight (50 x 20cm) quadrats (in 2008) (Holyoak, 2009) ranged between 20% and 80%
Soil toxicity: copper content	µg Cu/g dry weight soil	Maintain high copper levels in soil	Total copper content in soils from four measurements at Allihies in 2009 ranged from 1585 µg/g to 9877 µg/g dry weight (Campbell, 2013). Mine spoil with similar vegetation from Cornwall had available copper of 151–3220 µg/g dry weight (Holyoak et al., 2000; Walsh, 2001)
Vegetation structure: height and cover	Centimetres; percentage cover	Maintain low and open cover	Herbaceous vegetation height is short (0-3cm) and cover is low (30-40%). Bryophyte cover is high (40%-80%)
Vegetation composition: metallophyte bryophytes	Number	Maintain diversity and populations of metallophyte bryophytes	Allihies is the most important known site in Ireland for metallophyte bryophytes, with populations of rare species including <i>Cephaloziella integerrima</i> , <i>C. massalongi</i> , <i>C. nicholsonii</i> , <i>Ditrichum lineare</i> , <i>D. cornubicum</i> , <i>Pohlia andalusica</i> and <i>Scopelophila cataractae</i> . One of only three sites globally with extant <i>Ditrichum cornubicum</i> (Holyoak and Lockhart, 2009)

## Conservation Objectives for : Kenmare River SAC [002158]

### 8330 Submerged or partially submerged sea caves

**To maintain the favourable conservation condition of Submerged or partially submerged sea caves in Kenmare River SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Distribution	Occurrence	The distribution of sea caves is stable, subject to natural processes. See map 5 for known caves	Sea cave distribution at this site was derived from the 1995 BioMar survey (Picton and Costello, 1997) and from an oblique aerial survey. The aerial survey only detects the presence of sea caves visible intertidally in the flight path. See marine supporting document for further details
Community structure	Biological composition	Human activities should occur at levels that do not adversely affect the ecology of sea caves at this site	See marine supporting document for further details

## Conservation Objectives for : Kenmare River SAC [002158]

### 1014 Marsh Snail *Vertigo angustior*

**To maintain the favourable conservation condition of Narrow-mouthed Whorl Snail in Kenmare River 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 site for this species in this SAC. See map 8	From Moorkens and Killeen (2011)
Presence	Occurrence	Adult or sub-adult snails are present in at least 3 places 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 note below for definition of optimal and sub-optimal habitat
Abundance	Number per sample	At least 2 samples on the transect have more than 10 <i>V. angustior</i> individuals (minimum 5 samples)	From Moorkens and Killeen (2011)
Transect habitat quality	Metres	At least 20m of habitat along the transect is classed as optimal or sub-optimal	From Moorkens and Killeen (2011). See habitat extent note 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 at least 20m along the transect	From Moorkens and Killeen (2011)
Habitat extent	Hectares	1.5ha of sub-optimal with optimal areas	Optimal habitat is defined as fixed dune, species-rich grassland dominated by red fescue ( <i>Festuca rubra</i> ) with sparse marram ( <i>Ammophila arenaria</i> ), lady's bedstraw ( <i>Galium verum</i> ), eyebright ( <i>Euphrasia</i> sp.), bird's-foot-trefoil ( <i>Lotus corniculatus</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 is defined as for optimal habitat, but either vegetation height is less than 10cm or between 30 and 50cm; or the soil is dry and sandy, or the thatch is wetter with a denser structure. From Moorkens and Killeen (2011). See also the conservation objective for fixed coastal dunes (code: 2130)

## Conservation Objectives for : Kenmare River SAC [002158]

### 1303 Lesser Horseshoe Bat *Rhinolophus hipposideros*

**To maintain the favourable conservation condition of Lesser Horseshoe Bat in Kenmare River SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Population per roost	Number	Minimum number for the winter roost at Dunkerron souterrain is 138; Minimum of 100 for summer roost (Foley's cottage, Killaha). See map 9	A figure of 100 bats for summer roosts and 50 for winter roosts was set as a minimum qualifying standard (MQS) when SACs were being selected for lesser horseshoe bats. Qualified means have been calculated from 2006-2012 roost count data, whereby the year with the highest maximum count and the year with the lowest maximum count were removed and the mean of the remaining years was calculated. This mean is set as the target except where it falls below the MQS, then the MQS is used
Winter roosts	Condition	No decline	This SAC has been selected for lesser horseshoe bats because of the presence of one internationally important winter roost: Dunkerron souterrain. Damage or disturbance to the roost or to the habitat immediately surrounding the roost will lead to a decline in its condition (Mitchell Jones et al., 2007)
Summer roosts	Condition	No decline	This SAC has been selected for lesser horseshoe bats because of the presence of one internationally important summer roost: Foley's cottage, Killaha. Damage or disturbance to the roost or to the habitat immediately surrounding the roost will lead to a decline in its condition (Kelleher and Marnell, 2006)
Number of auxillary roosts	Number and condition	No decline	Lesser horseshoe bat populations will use a variety of roosts besides the main summer maternity roost and winter hibernation roost. Such additional roosts within the SAC may be important as night/satellite roosts. A database of all known lesser horseshoe roosts is available on the National Biodiversity Data Centre website. NB Further unrecorded roosts may also be present within this SAC
Extent of potential foraging habitat	Hectares	No significant decline	Lesser horseshoe bats normally forage in woodlands/scrub within 2.5km of their roosts (Schofield, 2008). See map 9 which shows 2.5km zone around the above named roosts and identifies potential foraging grounds
Linear features: length	Metres	No significant loss, within 2.5km of qualifying roosts. See map 9	This species follows commuting routes from its roost to its foraging grounds. Lesser horseshoe bats will not cross open ground. Consequently, linear features such as hedgerows, treelines and stone walls provide vital connectivity for this species within 2.5km around each roost (Schofield, 2008)
Light pollution	Lux	No significant increase in artificial light intensity adjacent to named roosts or along commuting routes within 2.5km of those roosts. See map 9	Lesser horseshoe bats are very sensitive to light pollution and will avoid brightly lit areas. Inappropriate lighting around roosts may cause abandonment; lighting along commuting routes may cause preferred foraging areas to be abandoned increasing energetic cost for bats (Schofield, 2008)

**Conservation Objectives for : Kenmare River SAC [002158]****1355 Otter *Lutra lutra***

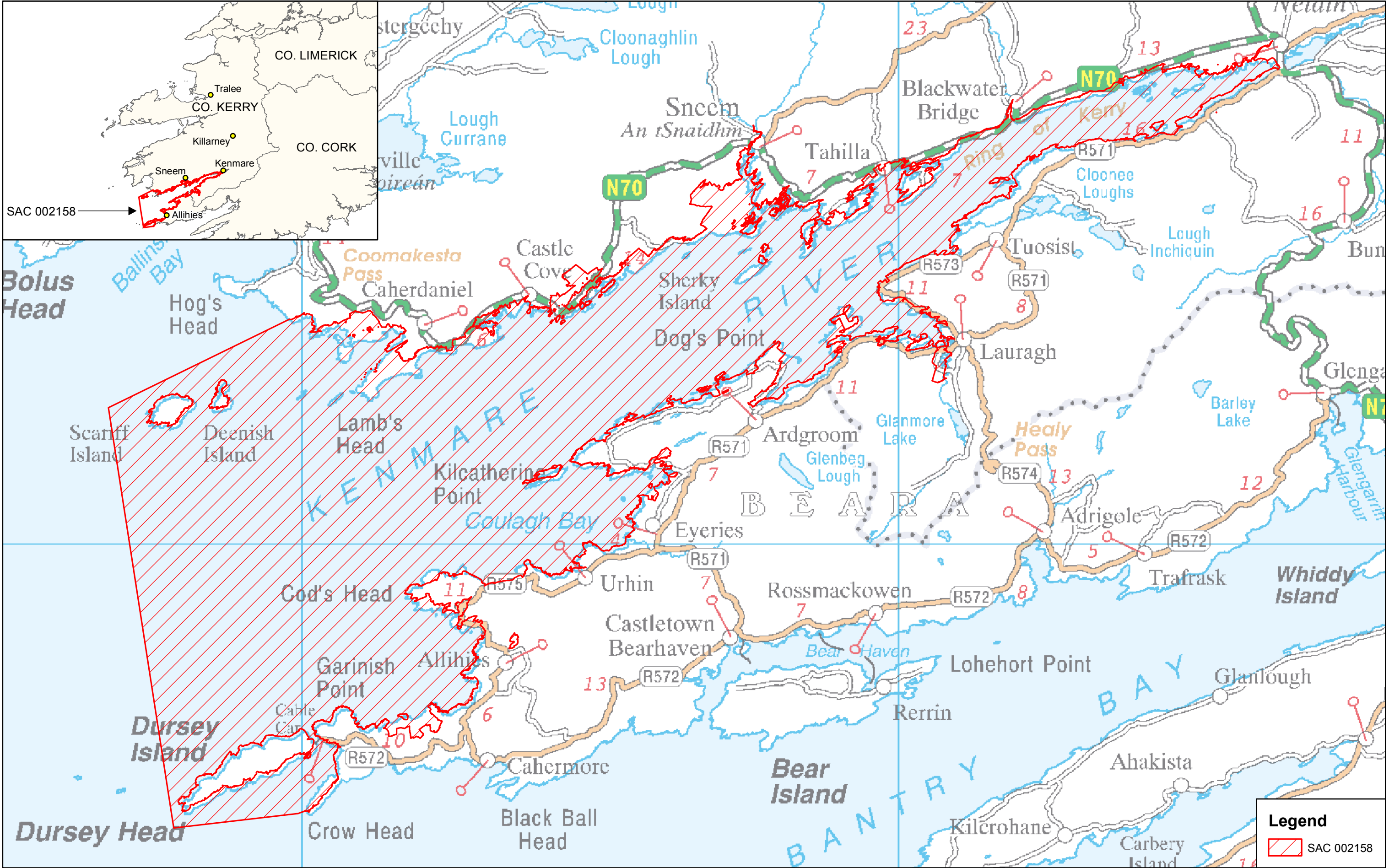
**To restore the favourable conservation condition of Otter in Kenmare River SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. FCS target, based on 1980/81 survey findings, is 88% in SACs. Current range in south-west estimated at 74.5% (Bailey and Rochford, 2006)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 268ha above high water mark (HWM); 40ha along river banks/ around ponds	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above HWM and along river banks) identified as critical for otters (NPWS, 2007)
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 2748ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (HWM) (NPWS, 2007; Kruuk, 2006)
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 18.9km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake/lagoon) habitat	Hectares	No significant decline. Area mapped and calculated as 25.1ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase. For guidance, see map 10	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed

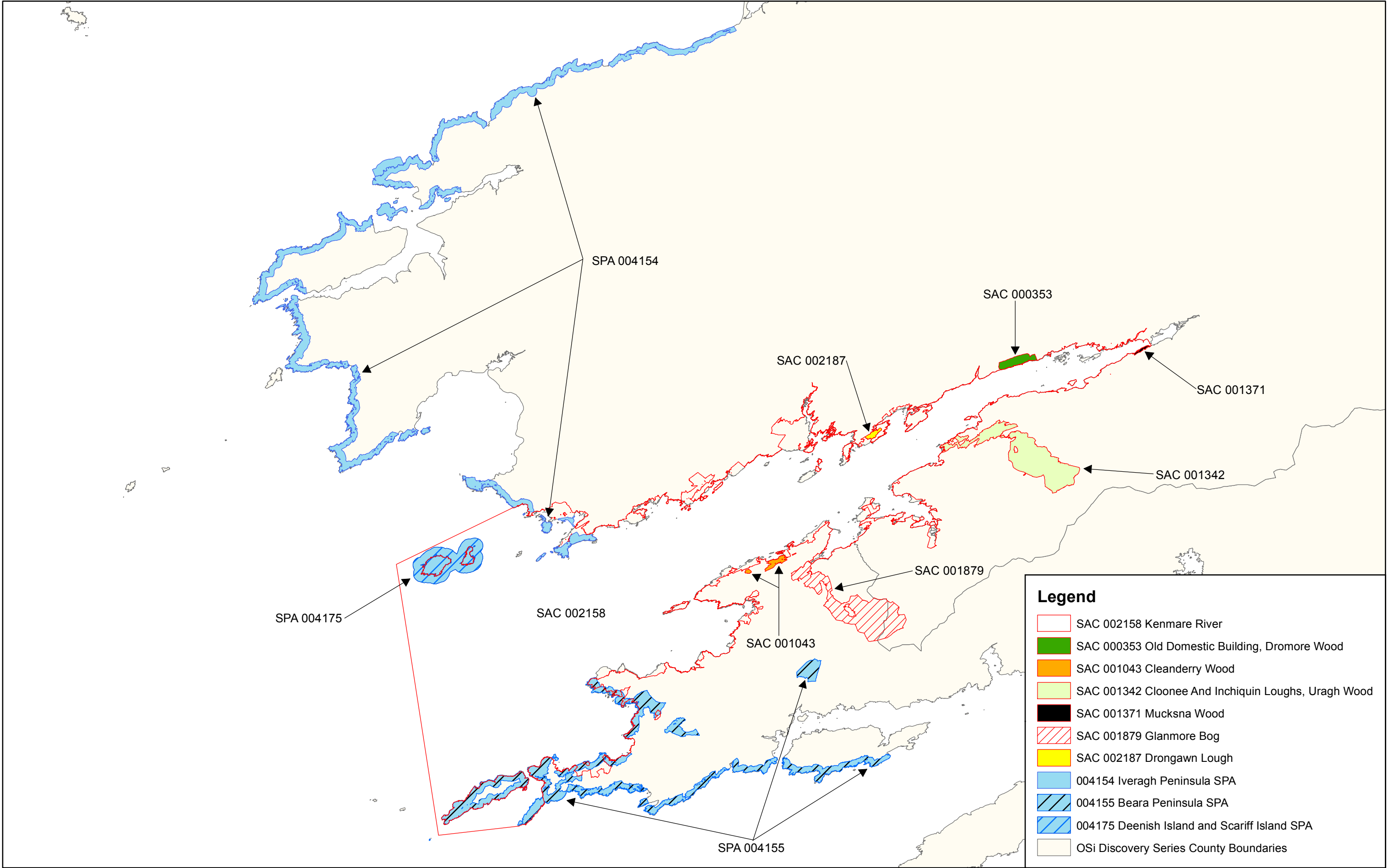
**Conservation Objectives for : Kenmare River SAC [002158]****1365 Harbour seal *Phoca vitulina***

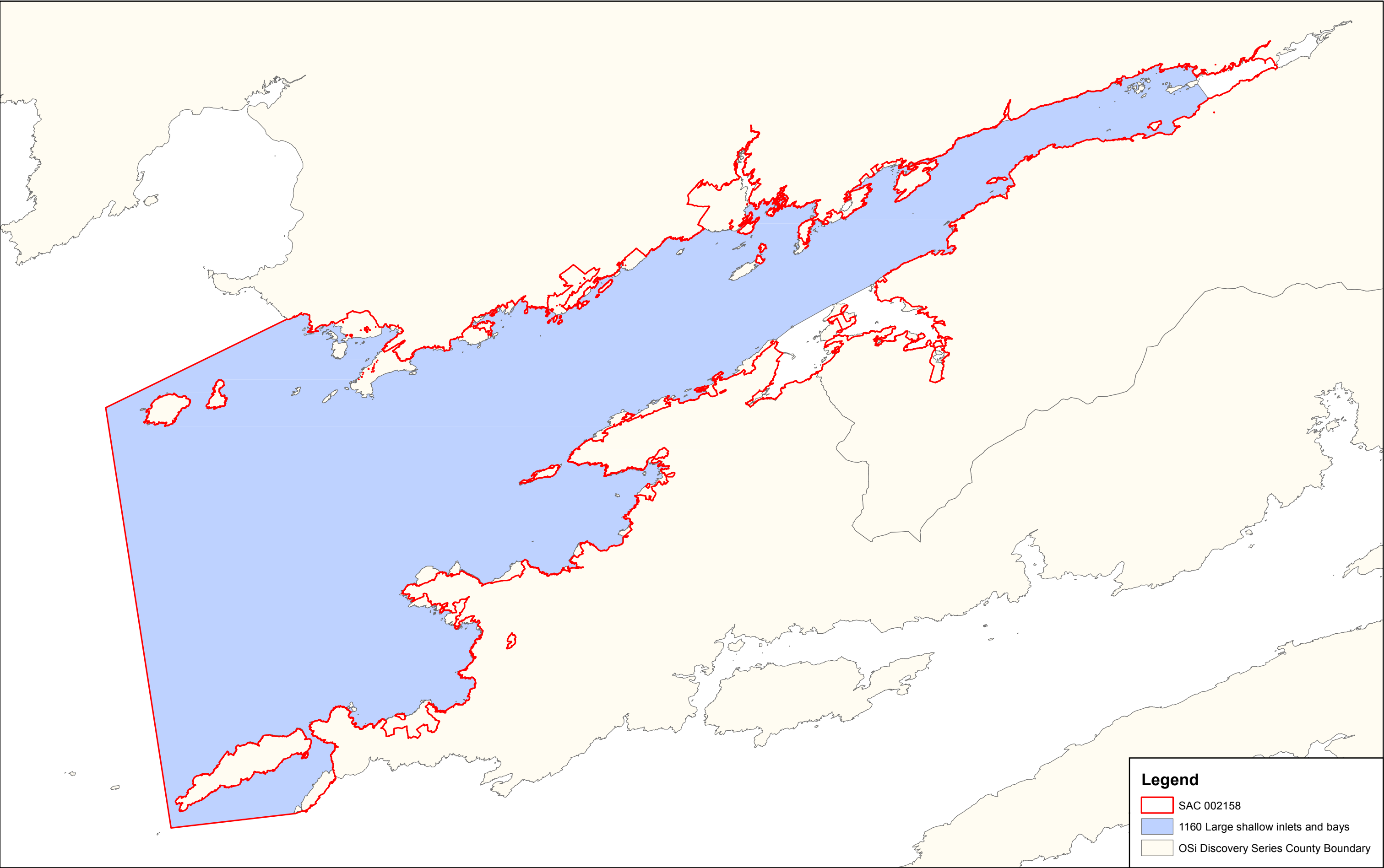
**To maintain the favourable conservation condition of Harbour Seal in Kenmare River SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Access to suitable habitat	Number of artificial barriers	Species range is not restricted by artificial barriers to site use. See map 11	See marine supporting document for further details
Breeding behaviour	Breeding sites	Conserve the breeding sites in a natural condition. See map 11	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); Heardman et al. (2006); Roycroft et al. (2006); Cronin (2007) and unpublished National Parks and Wildlife Service 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 11	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004); Cronin et al. (2004); Heardman et al. (2006); Roycroft et al. (2006); Cronin (2007); Cronin et al. (2007) and unpublished National Parks and Wildlife Service records. See marine supporting document for further details
Resting behaviour	Resting haul-out sites	Conserve the resting haul-out sites in a natural condition. See map 11	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004); Heardman et al. (2006); Roycroft et al. (2006); Cronin (2007); Cronin et al. (2008) and unpublished National Parks and Wildlife Service 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

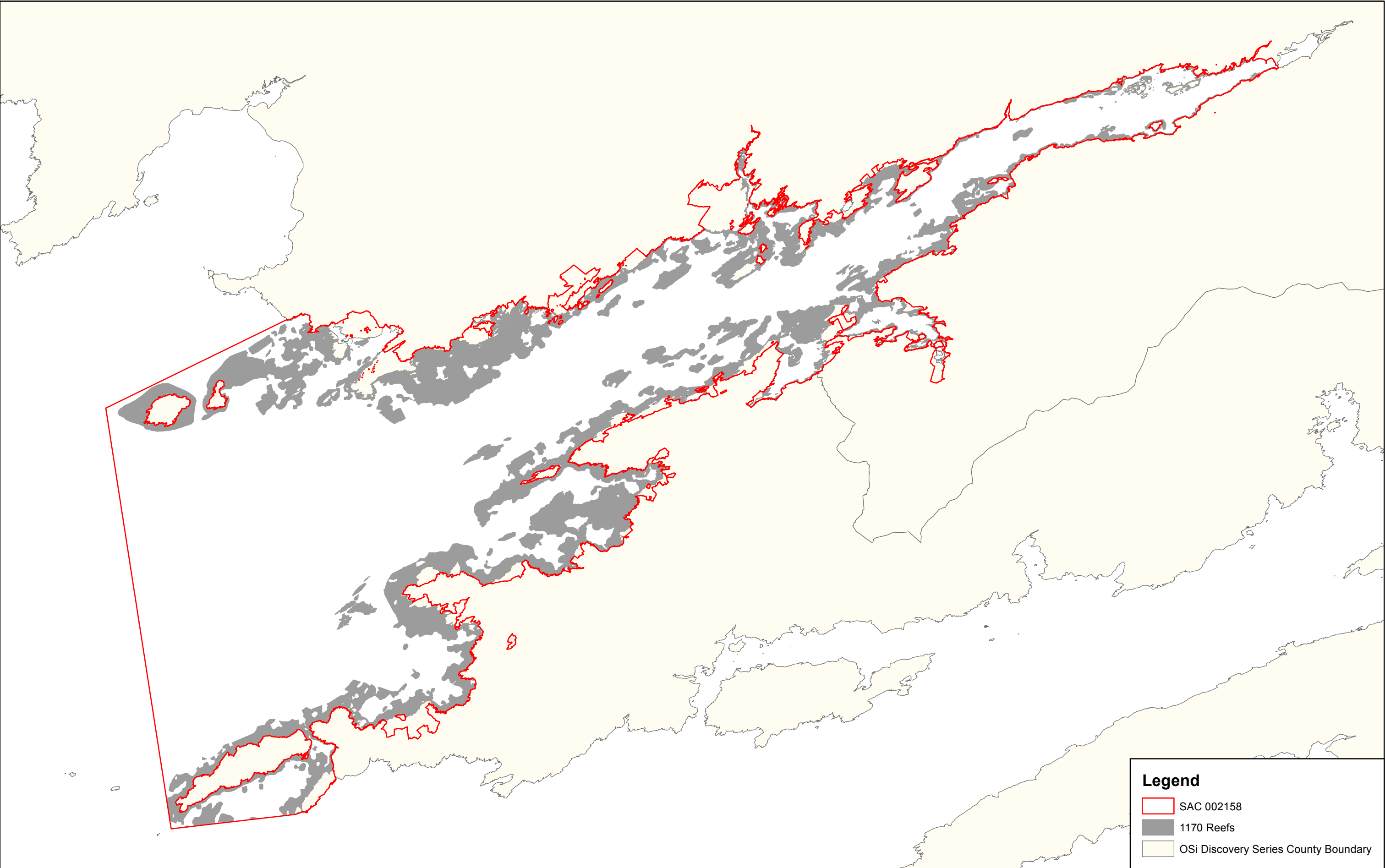








- Legend**
- SAC 002158
  - 1160 Large shallow inlets and bays
  - OSi Discovery Series County Boundary

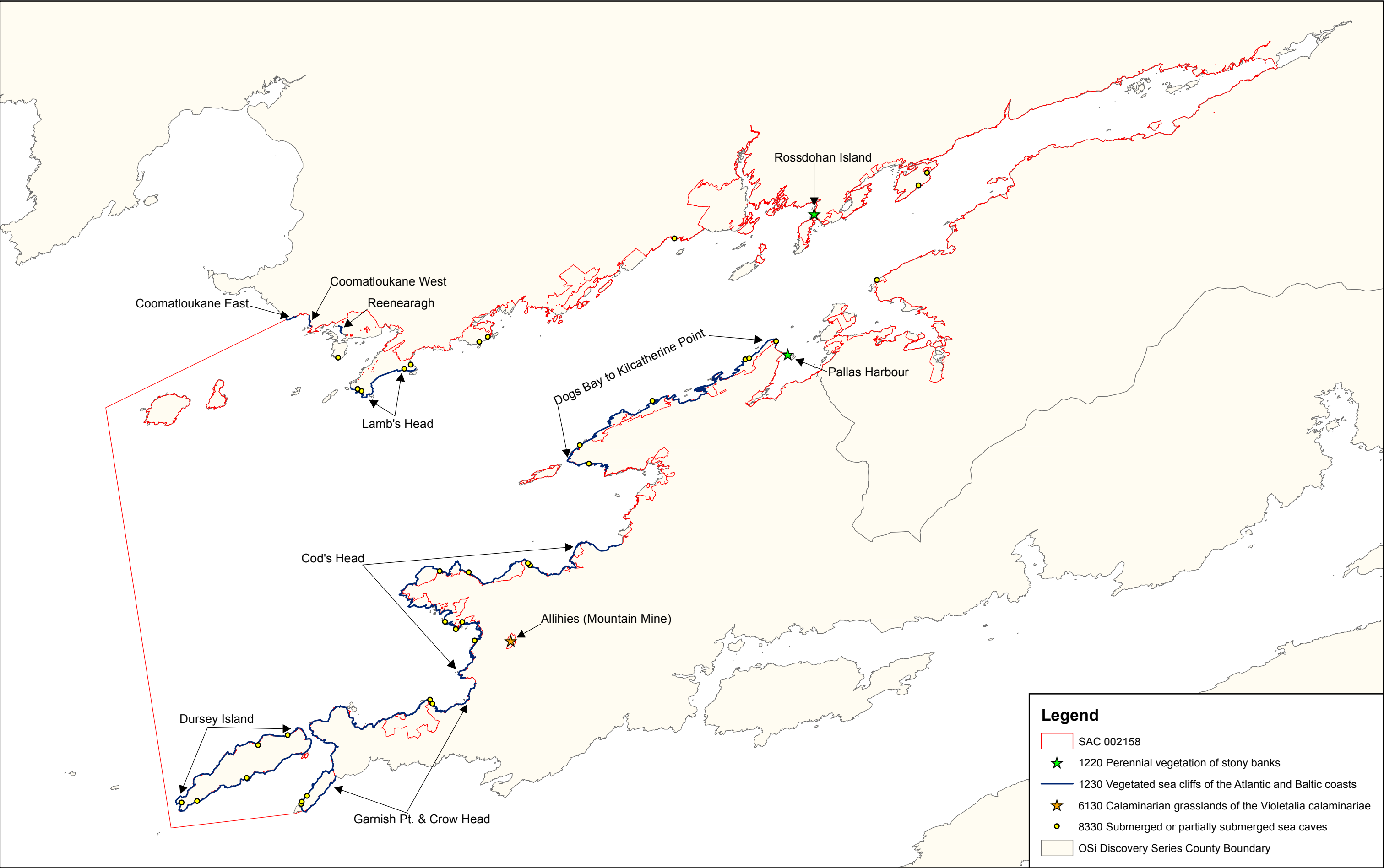


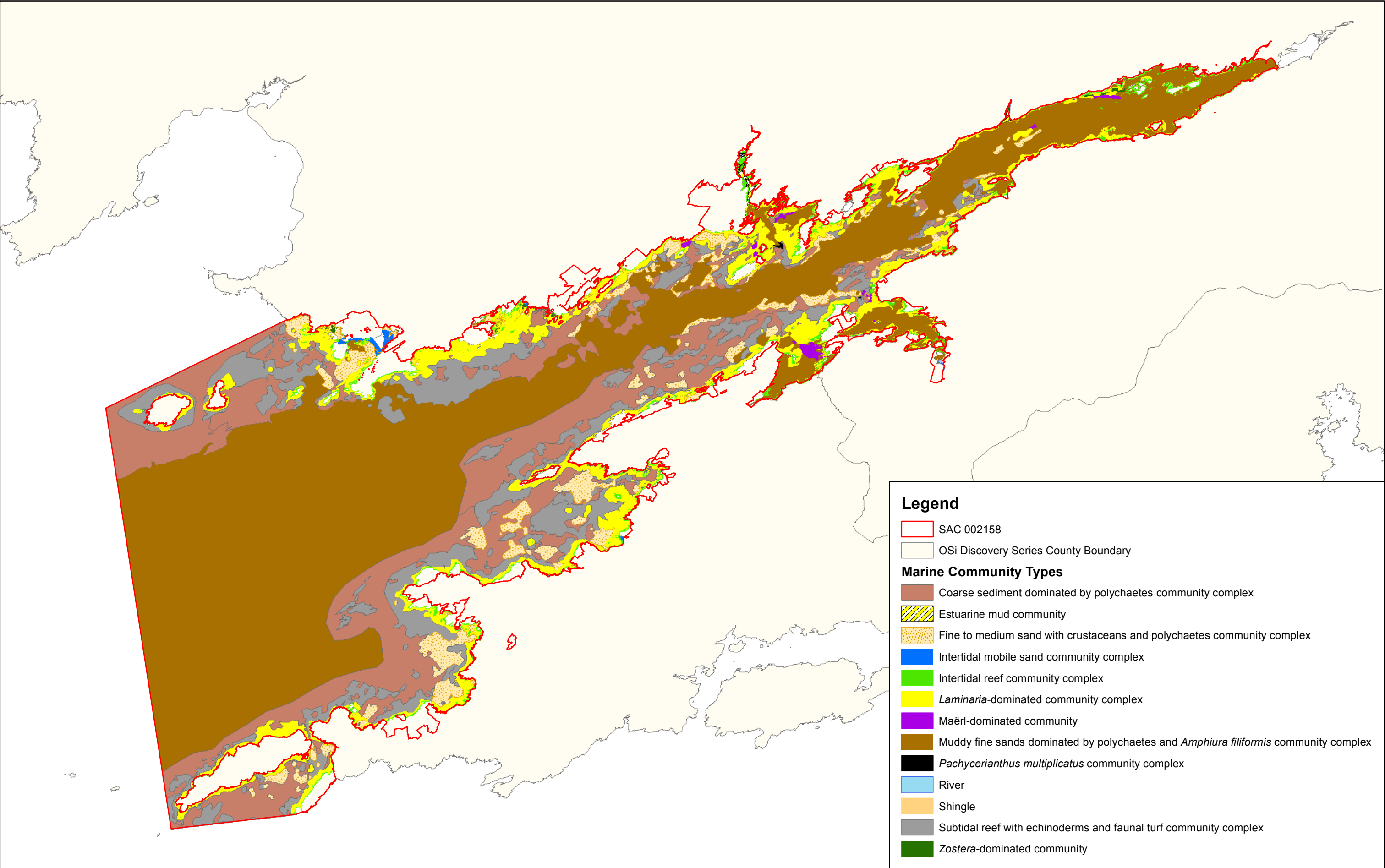
**Legend**

SAC 002158

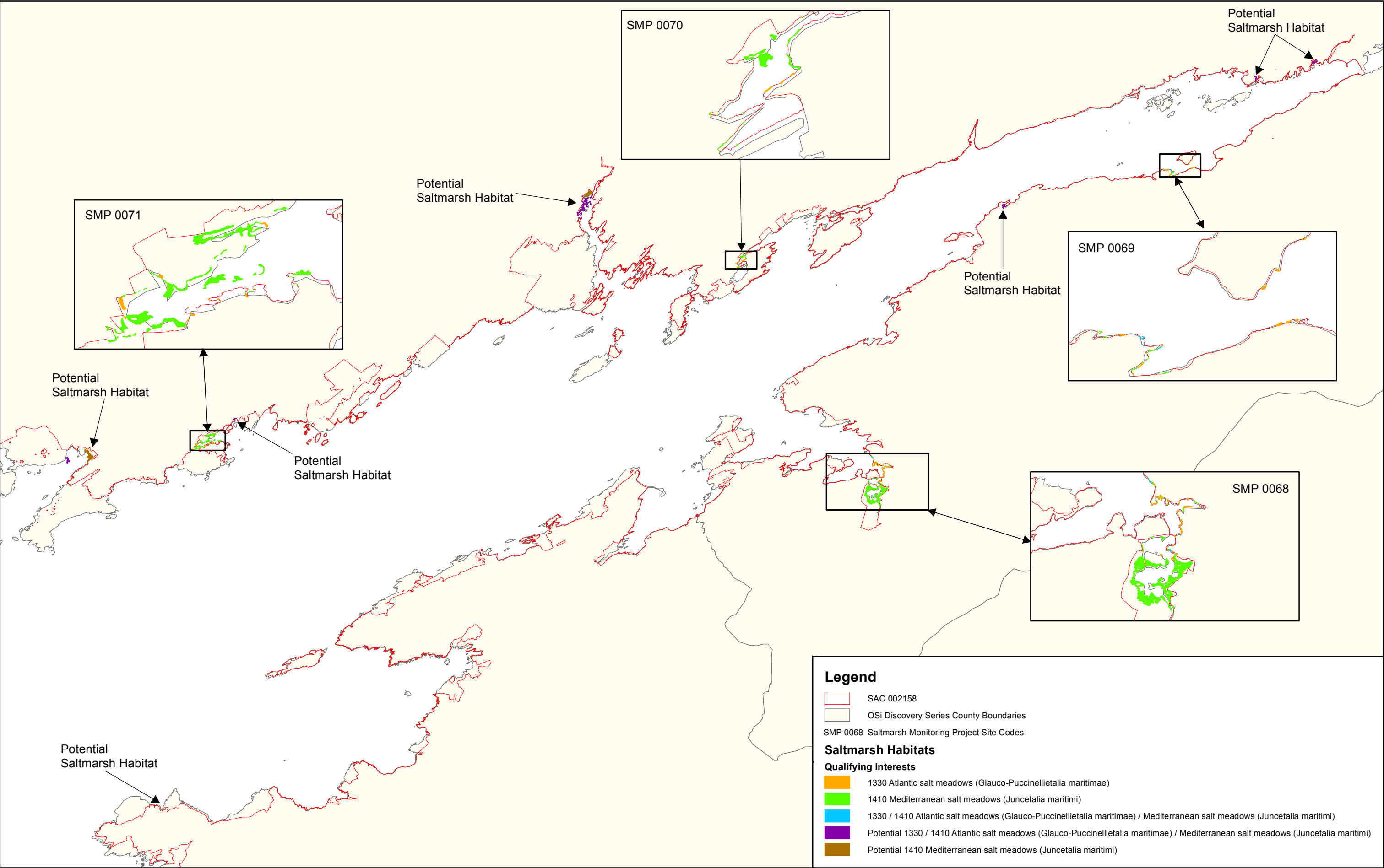
1170 Reefs

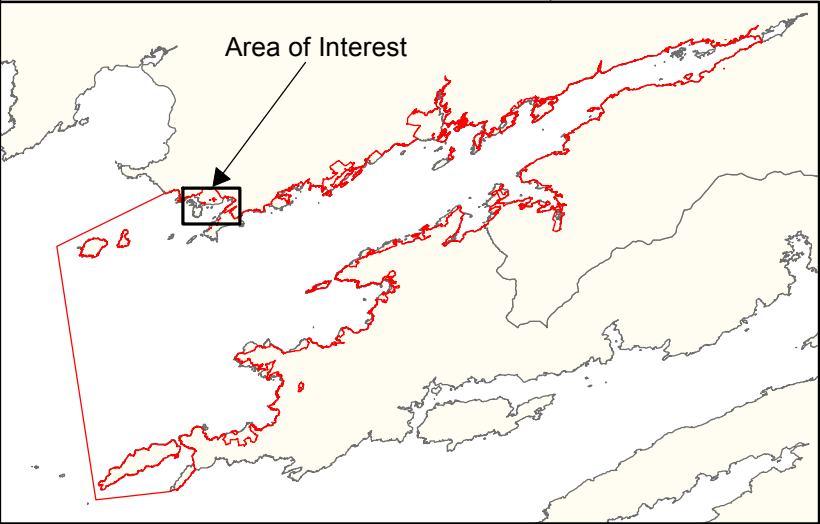
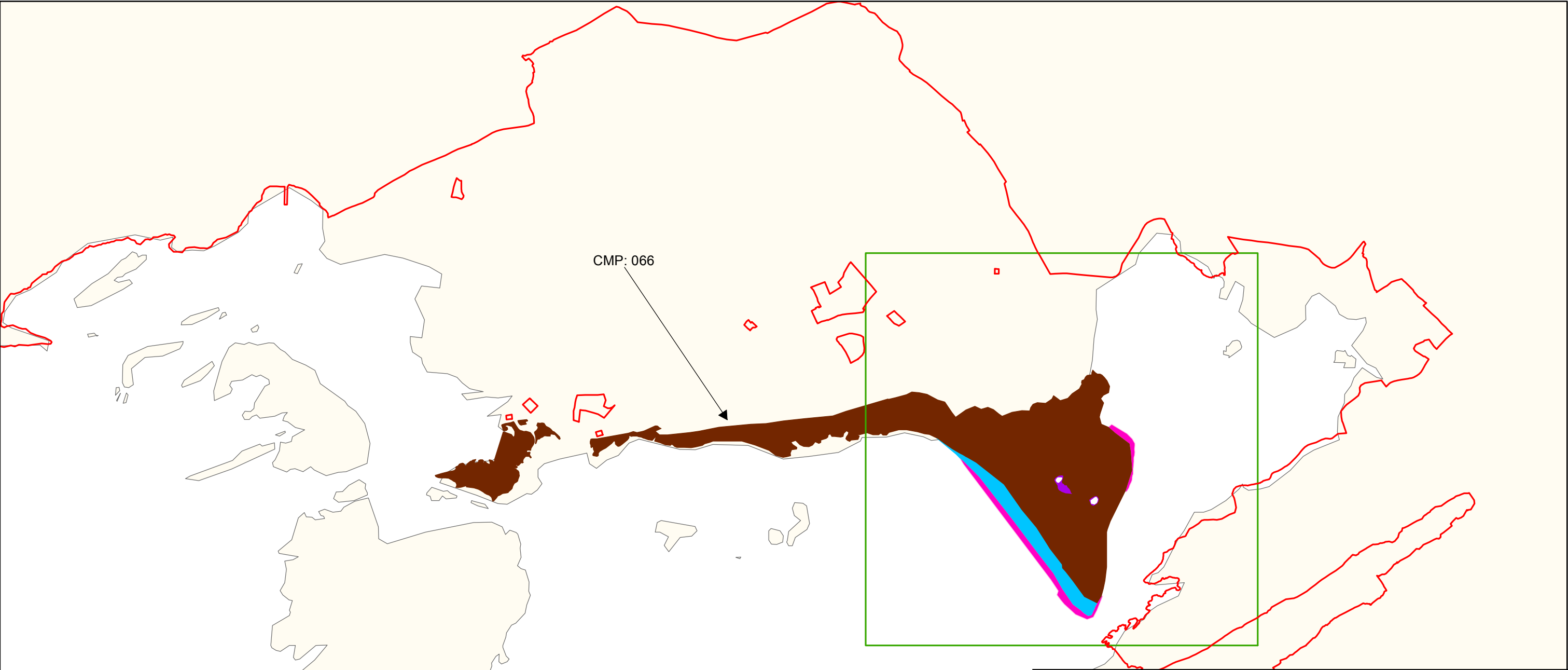
OSi Discovery Series County Boundary











**Legend**

SAC 002158

1014 Narrow-Mouthed Whorl Snail - *Vertigo angustior*

OSi Discovery Series County Boundary

CMP: 066 Coastal Monitoring Project Site Codes

**Sand Dune habitats**

**Qualifying Interests**

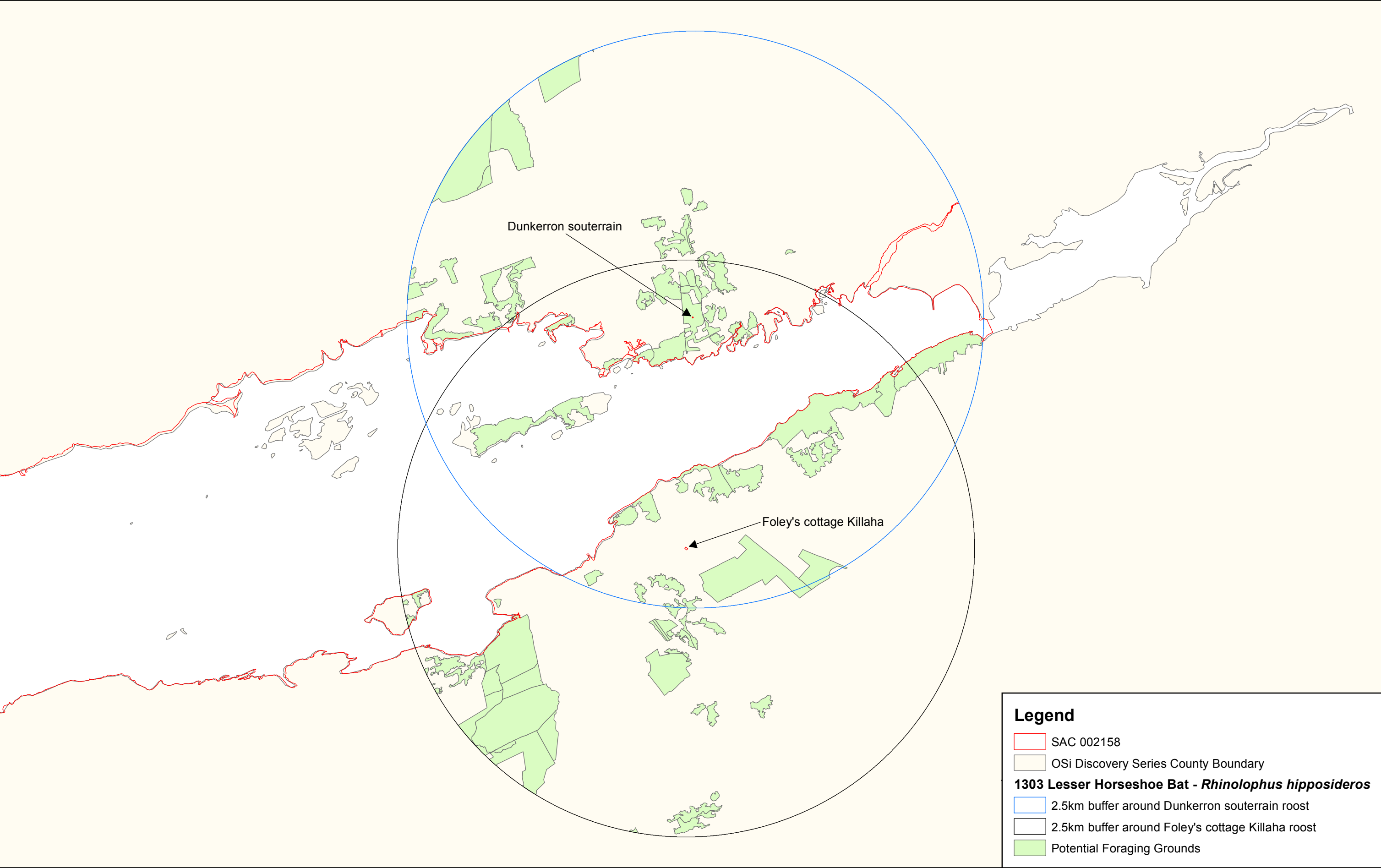
2120 Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')

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

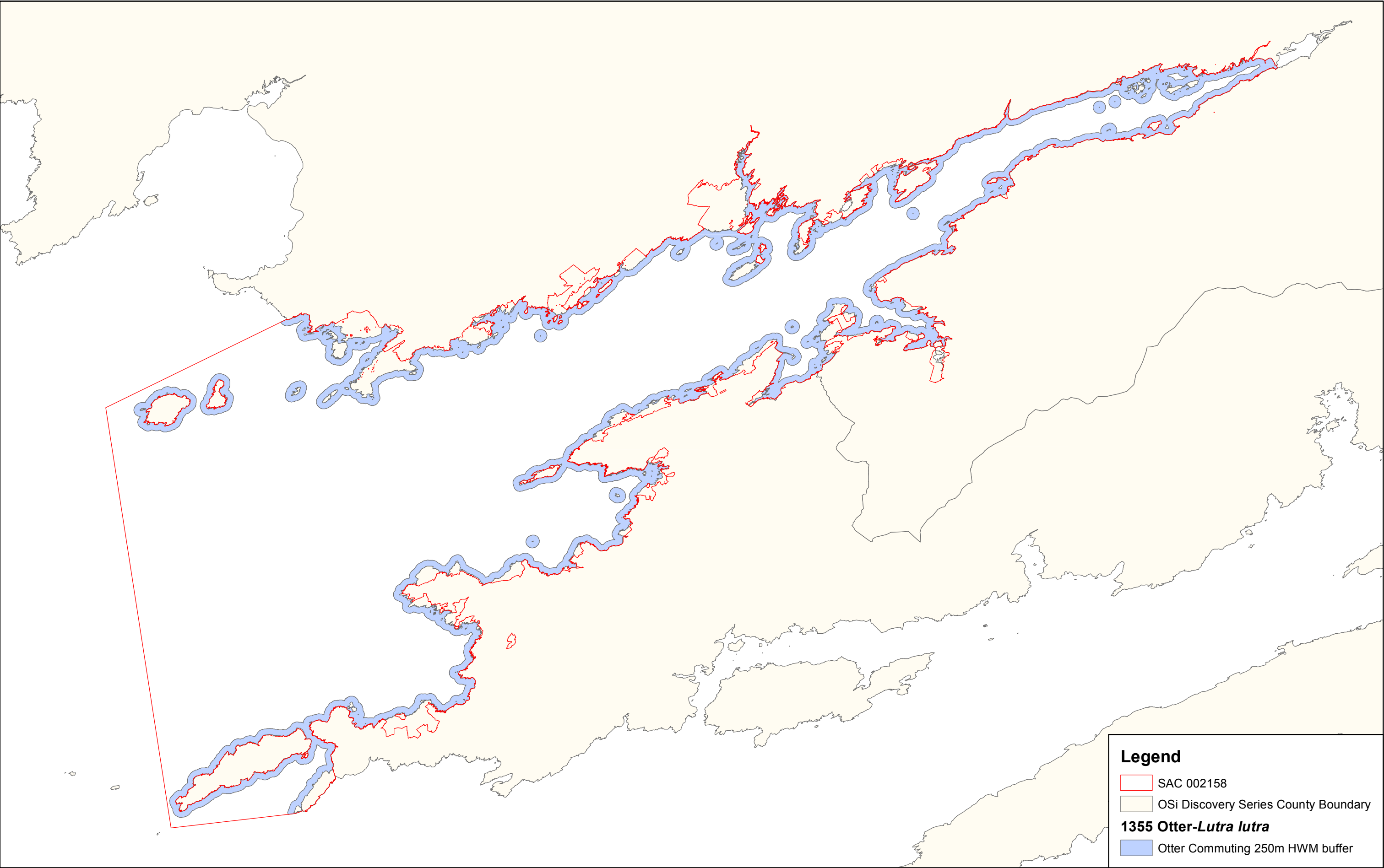
**Non-Qualifying Interests**

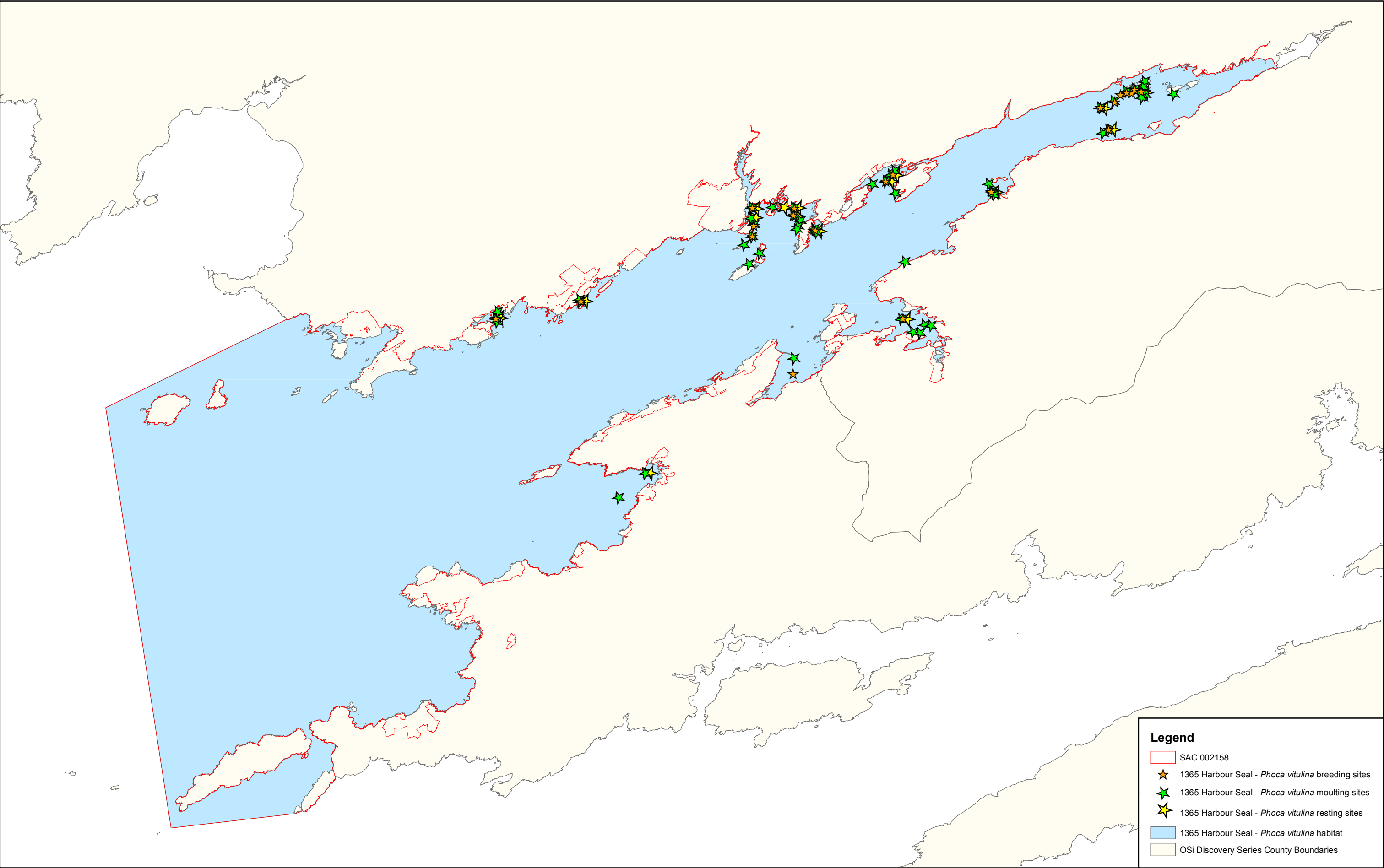
2110 Embryonic shifting dunes

2190 Humid dune slacks









**Legend**

- SAC 002158
- ★ 1365 Harbour Seal - *Phoca vitulina* breeding sites
- ★ 1365 Harbour Seal - *Phoca vitulina* moulting sites
- ★ 1365 Harbour Seal - *Phoca vitulina* resting sites
- 1365 Harbour Seal - *Phoca vitulina* habitat
- OSi Discovery Series County Boundaries