

National Parks and Wildlife Service

Conservation Objectives Series

West of Ardara/Maas Road SAC 000197



An Roinn
Ealaíon, Oidhreachta agus Gaeltachta

Department of
Arts, Heritage and the Gaeltacht



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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

Code	Description
000197	West of Ardara/Maas Road SAC
1013	Geyer's Whorl Snail <i>Vertigo geyeri</i>
1029	Freshwater Pearl Mussel <i>Margaritifera margaritifera</i>
1065	Marsh Fritillary <i>Euphydryas aurinia</i>
1106	Salmon <i>Salmo salar</i>
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1160	Large shallow inlets and bays
1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)
1355	Otter <i>Lutra lutra</i>
1365	Pæà[~ Seal <i>Phoca vitulina</i>
1395	Petalwort <i>Petalophyllum ralfsii</i>
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)
1833	Slender Naiad <i>Najas flexilis</i>
2120	Shifting dunes along the shoreline with <i>Cladonia</i> (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)E
2140	Decalcified fixed dunes with <i>Cladonia</i> E
2150	Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)E
2170	Dunes with <i>Ulex</i> ssp. <i>arenariae</i> (<i>Salicion arenariae</i>)
2190	Humid dune slacks
21A0	Machairs (* in Ireland)
3110	Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>)
4010	Northern Atlantic wet heaths with <i>Cladonia</i>
4030	European dry heaths
4060	Alpine and Boreal heaths
5130	<i>Festuca</i> formations on heaths or calcareous grasslands
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)
6410	<i>Festuca</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)
6510	Lowland hay meadows (<i>Cladonia</i> • <i>Ulex</i> • <i>Cladonia</i>)
7130	Blanket bogs (* if active bog)
7150	Depressions on peat substrates of the Rhynchosporion
7230	Alkaline fens

Please note that this SAC overlaps with Sheskinmore Lough SPA (004090), Inishkeel SPA (004116) and West Donegal Coast SPA (004150). It adjoins Lough Nillan Bog (Carrickatlieve) SAC (000165), Coolvoy Bog SAC (001107) and Lough Nillan Bog SPA (004110). See map 2. The conservation objectives for this site should be used in conjunction with those for the 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

NPWS Documents

Year :	1984
Title :	The vegetation of Irish lakes
Author :	Heuff, H.
Series :	Unpublished report to NPWS
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 :	1990
Title :	A survey to locate lowland blanket bogs of scientific interest in county Donegal and upland blanket bogs in counties Cavan, Leitrim and Roscommon
Author :	Douglas, C.; Dunnells, D.; Scally, L.; Wyse Jackson, M.
Series :	Unpublished report to NPWS
Year :	1996
Title :	Biomar survey of Irish machair sites
Author :	Crawford, I.; Bleasdale, A.; Conaghan, J.
Series :	Irish Wildlife Manual No. 3
Year :	2004
Title :	Harbour seal population assessment in the Republic of Ireland: August 2003
Author :	Cronin, M.; Duck, C.; O Cadhla, O.; Nairn, R.; Strong, D.; O'Keefe, C.
Series :	Irish Wildlife Manual No. 11
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 :	2006
Title :	Otter survey of Ireland 2004/2005
Author :	Bailey, M.; Rochford, J.
Series :	Irish Wildlife Manual No. 23
Year :	2007
Title :	Supporting documentation for the Habitats Directive Conservation Status Assessment - backing documents. Article 17 forms and supporting maps
Author :	NPWS
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 :	2009
Title :	Saltmarsh monitoring project 2007-2008
Author :	McCorry, M.; Ryle, T.
Series :	Unpublished report to NPWS

Year :	2012
Title :	Web surveys and habitat assessment for the Marsh Fritillary - north and west Ireland 2012
Author :	Woodrow, W.
Series :	Unpublished report to NPWS
Year :	2013
Title :	National otter survey of Ireland 2010/12
Author :	Reid, N.; Hayden, B.; Lundy, M.G.; Pietravalle, S.; McDonald, R.A.; Montgomery, W.I.
Series :	Irish Wildlife Manual No. 76
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 Manual No. 78
Year :	2013
Title :	A survey of the benthic macrophytes of three hard-water lakes: Lough Bunny, Lough Carra and Lough Owel
Author :	Roden, C.; Murphy, P.
Series :	Irish Wildlife Manual No. 70
Year :	2013
Title :	Monitoring survey of Annex I sand dune habitats in Ireland
Author :	Delaney, A.; Devaney, F.M; Martin, J.M.; Barron, S.J.
Series :	Irish Wildlife Manual No. 75
Year :	2013
Title :	The status of EU protected habitats and species in Ireland. Volume 2. Habitats assessments
Author :	NPWS
Series :	Conservation assessments
Year :	2013
Title :	The status of EU protected habitats and species in Ireland. Volume 3. Species assessments
Author :	NPWS
Series :	Conservation assessments
Year :	2013
Title :	An aerial survey of harbour seals in Ireland. Part 1: Lough Foyle to Galway Bay. August 2011
Author :	Duck, C.; Morris, C.
Series :	Unpublished report to NPWS
Year :	2015
Title :	Habitats Directive Annex I lake habitats: a working interpretation for the purposes of site-specific conservation objectives and Article 17 reporting
Author :	O Connor, Á.
Series :	Unpublished document by NPWS
Year :	2015
Title :	West of Ardara/Maas Road SAC (site code: 197) Conservation objectives supporting document- coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2015
Title :	West of Ardara/Maas Road SAC (site code: 197) Conservation objectives supporting document- marine habitats and species V1
Author :	NPWS
Series :	Conservation objectives supporting document

Year : 2015
Title : West of Ardara/Maas Road SAC (site code: 197) Conservation objectives supporting document- *Najas flexilis* V1
Author : NPWS
Series : Conservation objectives supporting document

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 : 1982
Title : Otter survey of Ireland
Author : Chapman, P.J.; Chapman, L.L.
Series : Unpublished report to Vincent Wildlife Trust

Year : 1982
Title : Eutrophication of waters. Monitoring assessment and control
Author : OECD
Series : OECD, Paris

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 : 1988
Title : The reproductive biology of freshwater mussels in Ireland, with observations on their distribution and demography
Author : Ross, E.D.
Series : Unpublished PhD Thesis, National University of Ireland, Galway

Year : 1988
Title : Aspects of the ecology of the freshwater pearl mussel *Margaritifera margaritifera* in north west Ireland, with special reference to life history strategy
Author : Ross, H.C.G.
Series : Unpublished MSc Thesis, The Queen's University of Belfast

Year : 1991
Title : The spatial organization of otters (*Lutra lutra*) in Shetland
Author : Kruuk, H.; Moorhouse, A.
Series : J. Zool, 224: 41-57

Year : 1996
Title : The current distribution and status of the freshwater pearl mussel *Margaritifera margaritifera* L. in northwest Ireland
Author : Beasley, C.R.; Roberts, D.
Series : Aquatic Conservation: Marine and Freshwater Ecosystems 6, 169– 177

Year : 1996
Title : The distribution and ecology of the freshwater pearl mussel, *Margaritifera margaritifera* L. 1758, in County Donegal, Ireland and implications for its conservation
Author : Beasley, C.R.
Series : Unpublished PhD Thesis, The Queen's University of Belfast

Year :	1997
Title :	The BioMar biotope viewer: a guide to marine habitats, fauna and flora in Britain and Ireland
Author :	Picton, B.E.; Costello, M.J.
Series :	Environmental Science Unit, Trinity College Dublin
Year :	2000
Title :	Colour in Irish lakes
Author :	Free, G.; Allott, N.; Mills, P.; Kennelly, C.; Day, S.
Series :	Verhandlungen Internationale Vereinigung für theoretische und angewandte Limnologie. 27: 2620-2623
Year :	2001
Title :	Aquatic plants in Britain and Ireland
Author :	Preston, C.D.; Croft, J.M.
Series :	Harley Books, Colchester
Year :	2002
Title :	Deterioration of Atlantic soft water macrophyte communities by acidification, eutrophication and alkalinisation
Author :	Arts, G.H.P.
Series :	Aquatic Botany, 73: 373-393
Year :	2005
Title :	<i>Margaritifera margaritifera</i> survey of the River Owenea in the vicinity of Glenties, County Donegal
Author :	Moorkens, E.
Series :	Unpublished report to Donegal County Council
Year :	2006
Title :	Otters - ecology, behaviour and conservation
Author :	Kruuk, H.
Series :	Oxford University Press
Year :	2006
Title :	The status of host fish populations and fish species richness in European freshwater pearl mussel (<i>Margaritifera margaritifera</i>) streams
Author :	Geist, J.; Porkka, M.; Kuehn, R.
Series :	Aquatic Conservation: Marine and Freshwater Ecosystems 16, 251?266
Year :	2006
Title :	The vegetation of Irish machair
Author :	Gaynor, K.
Series :	Biology and Environment: Proceedings of the Royal Irish Academy, vol 106B, No. 3: 311-321
Year :	2006
Title :	A reference-based typology and ecological assessment system for Irish lakes. Preliminary investigations. Final report. Project 2000-FS-1-M1 Ecological assessment of lakes pilot study to establish monitoring methodologies EU (WFD)
Author :	Free, G.; Little, R.; Tierney, D.; Donnelly, K.; Coroni, R.
Series :	EPA, Wexford
Year :	2006
Title :	Vegetation communities of British Lakes: a revised classification
Author :	Duigan, C.A.; Kovach, W.L.; Palmer, M.
Series :	Joint Nature Conservation Committee, Peterborough

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 PhD thesis, National University of Ireland, Dublin
Year :	2008
Title :	Water Quality in Ireland 2004-2006
Author :	Clabby, K.J.; Bradley, C.; Craig, M.; Daly, D.; Lucey, J.; McGarrigle, M.; O'Boyle, S.; Tierney, D.; Bowman, J.
Series :	EPA, Wexford
Year :	2009
Title :	The identification, characterization and conservation value of isoetid lakes in Ireland
Author :	Free G.; Bowman, J.; McGarrigle, M.; Little, R.; Coroni, R.; Donnelly, K.; Tierney, D.; Trodd, W.
Series :	Aquatic Conservation: Marine and Freshwater Ecosystems 19 (3): 264–273
Year :	2009
Title :	Report on a survey of the fresh water pearl mussel population of the lower Owenea River
Author :	Keys, A.
Series :	Unpublished report to the North Western Fisheries Board
Year :	2010
Title :	Otter tracking study of Roaringwater Bay
Author :	De Jongh, A.; O'Neill, L.
Series :	Unpublished draft report to NPWS
Year :	2010
Title :	Water quality in Ireland 2007-2009
Author :	McGarrigle, M., Lucey, J.; Ó Cinnéide, M.
Series :	EPA, Wexford
Year :	2012
Title :	Intertidal benthic survey of West of Ardara/Maas Road SAC
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS
Year :	2012
Title :	Subtidal benthic survey of West of Ardara/Maas Road SAC
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS
Year :	2013
Title :	Conservation of selected legally protected and Red Listed bryophytes in Ireland
Author :	Campbell, C.
Series :	Unpublished Ph.D. Thesis, Trinity College Dublin
Year :	2015
Title :	The status of Irish salmon stocks in 2014 with precautionary catch advice for 2015
Author :	Standing Scientific Committee on Salmon
Series :	Independent scientific report to Inland Fisheries Ireland

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 2015
Title :	1993-1996 BioMar survey; 20012 intertidal and subtidal surveys
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 6)
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. EPA WFD transitional waterbody data erased from extent. Expert opinion used as necessary to resolve any issues arising
Used For :	1160 (map 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 6)
Year :	Revision 2010
Title :	Saltmarsh Monitoring Project 2007-2008. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with Coastal CO data investigated and resolved with expert opinion used
Used For :	1330, 1410 (map 7)
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 :	2120, 2130, 2140, 2150, 2170, 2190, 21A0 (map 8)
Year :	2013
Title :	Sand Dune Monitoring Project 2011. 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 :	2120, 2130, 2140, 2150, 2170, 2190, 21A0 (map 8)
Year :	2008
Title :	OSi 1:5000 IG vector dataset
GIS Operations :	WaterPolygons feature class clipped to the SAC boundary. Expert opinion used to identify Annex I habitat and to resolve any issues arising
Used For :	3110 (map 9)
Year :	2012
Title :	The conservation status of juniper formations in Ireland
GIS Operations :	Juniper formations polygons clipped to SAC boundary
Used For :	5130 (map 9)

Year :	2015
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 :	1013, 1029, 1065, 1365, 1395 (maps 10, 11, 13 and 14)
Year :	Revision 2012
Title :	Margaritifera Sensitive Areas data
GIS Operations :	Relevant catchment boundaries identified. Expert opinion used as necessary to resolve any issues arising
Used For :	1029 (map 11)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	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 WDF Waterbodies 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
Used For :	1355 (map 12)
Year :	2010
Title :	EPA WFD Waterbodies data
GIS Operations :	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 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
Used For :	1355 (map 12)
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 13)
Year :	2013
Title :	Najas flexilis data
GIS Operations :	Lake habitat for species clipped to SAC boundary
Used For :	1833 (map 14)

1130 Estuaries

To maintain the favourable conservation condition of Estuaries in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

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 1,530ha using OSI data and the defined Transitional Water Body area under the Water Framework Directive
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand with amphipods, polychaetes and <i>Tellina tenuis</i> community complex; Estuarine sand with oligochaetes community complex. See map 6	Based on intertidal and subtidal surveys undertaken in 2012 MERC (2012) and BioMar surveys undertaken between 1993 and 1996 (Picton and Costello, 1997). See marine habitats supporting document for further information

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

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 West of Ardara/Maas Road 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 as 1,259ha using OSI data
Community distribution	Hectares	Conserve the following community type in a natural condition: Sand with amphipods, polychaetes and <i>Tellina tenuis</i> community complex. See map 6	Based on an intertidal survey undertaken in 2012 (MERC, 2012) and BioMar surveys undertaken between 1993 and 1996 (Picton and Costello, 1997). See marine supporting document for further information

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1160 Large shallow inlets and bays

To maintain the favourable conservation condition of Large shallow inlets and bays in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 5	Habitat area was estimated as 688ha using OSi data and the Transitional Water Body area as defined under the Water Framework Directive. See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand with amphipods, polychaetes and <i>Tellina tenuis</i> community complex; Reef community complex. See map 6	Based on intertidal and subtidal surveys undertaken in 2012 MERC (2012) and BioMar surveys undertaken between 1993 and 1996 (Picton and Costello, 1997). See marine supporting document for further information

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

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

To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in West of Ardara/Maas Road 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: Sheskinmore-Beagh - 13.48ha; Roshin Point - 1.69ha. See map 7	Based on data from Saltmarsh monitoring Project (SMP) (McCorry and Ryle, 2009). Two sub-sites that supported Atlantic salt meadows (ASM) were mapped (15.57ha). A further 16.84ha of potential habitat from two unsurveyed sub-sites at Letteramacaward and Loughros More Bay-Ardara were also mapped giving a total estimated area of 32.01ha. NB further unsurveyed areas maybe present within the 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 7 for known distribution	Based on data from McCorry and Ryle (2009). The saltmarsh in West of Ardara/Maas Road SAC is widely distributed, with the most important areas at Sheskinmore-Beagh. NB further unsurveyed areas maybe present within the SAC. 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 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 McCorry and Ryle (2009). At Sheskinmore, some sections of ASM display excellent examples of salt pan and natural creek drainage. At Roshin Point, although the ASM is not extensive, most of the habitat is in adequate condition. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Based on data from McCorry and Ryle (2009). 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 McCorry and Ryle (2009). At Sheskinmore, the ASM is part of a larger coastal ecosystem and there are natural transitions to other habitats including MSM and machair. There is evidence of zonation in the ASM throughout the site ranging from low to mid and upper ASM. At Roshin Point, the ASM forms part of a larger coastal ecosystem and there are natural transitions to other habitats along the isthmus and rock headland including fixed dune, machair, wet grassland and MSM. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009). At Sheskinmore, the level of grazing (cattle and sheep) in general was rarely excessive. At Roshin Point grazing intensity varies though most of the ASM is grazed moderately. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% area outside creeks vegetated	Based on data from McCorry and Ryle (2009). At Sheskinmore, trails associated with livestock were occasionally encountered. 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 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 - *Spartina anglica*

Hectares

There is currently no common cordgrass (*Spartina anglica*) in this SAC. This species should be prevented from establishing

Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1410 Mediterranean salt meadows (*Juncetalia maritimi*)

To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in West of Ardara/Maas Road 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: Sheskinmore-Beagh-28.67ha; Roshin Point - 4.34ha. See map 7	Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009). Two sub-sites that support Mediterranean salt meadow were mapped (33.01ha). A further 14.39ha of potential habitat from two unsurveyed sub-sites at Letteramacaward and Loughros More Bay-Ardara were also mapped giving a total estimated area of 47.41ha. NB further unsurveyed areas maybe present within the SAC. 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 McCorry and Ryle (2009). The saltmarsh at West of Ardara/Maas Road is widely distributed. The MSM at Sheskinmore accounts for more than 60% of the total saltmarsh area. NB further unsurveyed areas maybe present within the SAC. 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 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 McCorry and Ryle (2009). At Sheskinmore, the MSM is in good condition and exhibits many characteristic features of the habitat. At Roshin Point, the MSM has favourable habitat structure though one area has been significantly modified by peat cutting. 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 McCorry and Ryle (2009). At Sheskinmore, the MSM is extensive and highly diverse with a number of transitions evident throughout the site. At Roshin Point there is some transitional vegetation present where MSM is intermixed with modified blanket bog vegetation on deeper peat. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation in the sward	Based on data from McCorry and Ryle (2009). Trails were noted through the MSM by the SMP at Sheskinmore. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (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 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. This species should be prevented from establishing	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

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 West of Ardara/Maas Road 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: Sheskinmore - 9.15ha; Clooney - 2.73ha; Roshin Point - 0.39ha; Lettermacaward - 7.35ha. See map 8	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from four sub-sites, giving a total estimated area of 19.62ha. 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 data from Ryle et al. (2009) and Delaney et al. (2013). Shifting dunes were recorded from all four sub-sites. 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) and Delaney et al. (2013). 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. At Lettermacaward, the CMP noted good development of mobile dunes fronting a previously eroded fixed dune face. Accretion was also noted at Roshin Point and Sheskinmore at Trawmore and Ballinreavy Strand. At Clooney, the mobile dunes have eroded naturally but this has been exacerbated by pedestrian use of the top of the dunes. 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), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: plant health of dune grasses	Percentage cover	More than 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) and Delaney et al. (2013). 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) and Delaney et al. (2013). 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) and Delaney et al. (2013). 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. Both bracken (<i>Pteridium aquilinum</i>) and sea-buckthorn (<i>Hippophae rhamnoides</i>) were recorded from the Clooney sub-site. At Roshin Point, bracken was recorded. See coastal habitats supporting document for further details

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

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 West of Ardara/Maas Road 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: Sheskinmore - 251.68ha; Clooney - 41.29ha; Roshin Point - 3.59ha; Lettermacaward - 112.08ha. See map 8	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from four sub-sites, giving a total estimated area of 408.64ha. 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 data from Ryle et al. (2009) and Delaney et al. (2013). 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 Ryle et al. (2009) and Delaney et al. (2013). A range of coastal habitats occur in close proximity at all sub-sites. 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), Ryle et al. (2009) and Delaney et al. (2013). Petalwort (<i>Petalophyllum ralfsii</i>) has been recorded at both Lettermacaward and Sheskinmore sub-sites. See coastal habitats supporting document for further details and the conservation objective for petalwort (1395)
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). The fixed dunes at Clooney are lightly grazed by sheep, cattle, horses and rabbits. At Lettermacaward, the fixed dunes are grazed by sheep and rabbits and overgrazing has occurred in places. The fixed dunes at Roshin Point are lightly grazed by cattle which is having a positive influence. At Sheskinmore, the winter grazing regime as part of conservation management plan agreed between NPWS and local farmers, is having a positive influence on the fixed dunes. 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 range of sub-communities with typical species listed in Delaney et al. (2013)	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). At Clooney, the Red Data Book (Curtis and McGough, 1988) species hoary whitlow grass (<i>Draba incana</i>) was recorded in the fixed dunes. At Lettermacaward, the dunes are species-rich and the CMP noted an abundance of orchids such as pyramidal orchid (<i>Anacamptis pyramidalis</i>) and fragrant orchid (<i>Gymnadenia conopsea</i>). As mentioned above, petalwort (<i>Petalophyllum ralfsii</i>) also occurs. 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) and Delaney et al. (2013). 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. Both bracken (<i>Pteridium aquilinum</i>) and sea-buckthorn (<i>Hippophae rhamnoides</i>) were recorded from the Clooney sub-site. At Roshin Point, bracken was recorded. 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) and Delaney et al. (2013). At Clooney, sycamore (<i>Acer pseudoplatanus</i>), blackthorn (<i>Prunus spinosa</i>) and burnet rose (<i>Rosa pimpinellifolia</i>) were recorded in the fixed dunes. See coastal habitats supporting document for further details

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

2140 Decalcified fixed dunes with *Empetrum nigrum*

To maintain the favourable conservation condition of Decalcified fixed dunes with *Empetrum nigrum* in West of Ardara/Maas Road 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	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat only recorded at Sheskinmore (0.75ha) sub-site by CMP but was not recorded by SDM as it did not meet minimum mapping requirement. Current status of habitat in Ireland is unclear and is under review. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes	Based on data from Ryle et al. (2009) and Delaney et al. (2013). 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 Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: sward height	Centimeters	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). At Sheskinmore, all areas of dune heath, dune slack and dunes with <i>Salix repens</i> were noted to be lightly grazed. 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 range of sub-communities with typical species listed in Ryle et al. (2009)	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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) and Delaney et al. (2013). 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 Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details

2150 Atlantic decalcified fixed dunes (Calluno-Ulicetea)

To maintain the favourable conservation condition of Atlantic decalcified fixed dunes (Calluno-Ulicetea) in West of Ardara/Maas Road 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. See map 8	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat only recorded at Sheskinmore (40.35ha) sub-site by CMP. An area of 2.70ha was subsequently recorded by SDM, as well as in a mosaic with fixed dunes (of which 7.49ha is estimated to be 2150), giving a total estimated area of 10.20ha. Habitat is difficult to map as it occurs in mosaics. Current status of habitat in Ireland is unclear and is under review. 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 data from Ryle et al. (2009) and Delaney et al. (2013). 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 Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: sward height	Centimeters	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). At Sheskinmore all areas of dune heath, dune slack and dunes with <i>Salix repens</i> were noted to be lightly grazed. 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 range of sub-communities with typical species listed in Delaney et al. (2013)	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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) and Delaney et al. (2013). 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 Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)

To maintain the favourable conservation condition of Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) in West of Ardara/Maas Road 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-site mapped: Sheskinmore - 2.50ha. See map 8	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al. 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from one sub-site by SDM, giving a total estimated area of 2.50ha. NB additional unsurveyed areas maybe present. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 8 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). 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 Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% cover, subject to natural processes	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). At Sheskinmore, all areas of dune heath, dune slack and dunes with <i>Salix repens</i> were noted to be lightly grazed. 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 range of sub-communities with typical species listed in Delaney et al. (2013)	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: cover and height of <i>Salix repens</i>	Percentage cover; centimetres	Maintain more than 10% cover of creeping willow (<i>Salix repens</i>); vegetation height should be in the average range 5-20cm	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). Cover of creeping willow (<i>Salix repens</i>) should be maintained (e.g. through an appropriate grazing regime) to prevent the development of a coarse, rank vegetation cover. 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) and Delaney et al. (2013). 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	For trees and scrub other than creeping willow (<i>Salix repens</i>), there should be no more than 5% cover or their presence should be under control	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details

2190 Humid dune slacks

To maintain the favourable conservation condition of Humid dune slacks in West of Ardara/Maas Road 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-site mapped: Sheskinmore: 12.31ha. See map 8	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al. 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from one sub-site by SDM, giving a total estimated area of 12.31ha. 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 data from Ryle et al. (2009) and Delaney et al. (2013). Dune slacks were only recorded at Sheskinmore, in fixed dunes backing Trawmore Strand and along the east of the central headland at Magheramore. 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
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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), Ryle et al. (2009) and Delaney et al. (2013). At Sheskinmore the vast dune system supports a variety of habitats occurring in close association. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). At Sheskinmore, all areas of dune heath, dune slack and dunes with <i>Salix repens</i> were noted to be lightly grazed. 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 range of sub-communities with typical species listed in Delaney et al. (2013)	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). Some of the slacks at Sheskinmore are deep and contain marsh vegetation. See coastal habitats supporting document for further details
Vegetation composition: cover of <i>Salix repens</i>	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (<i>Salix repens</i>)	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Cover of creeping willow (<i>Salix repens</i>) needs to be maintained (e.g. through an appropriate grazing regime) to prevent the development of a coarse, rank vegetation cover. 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) and Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. 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) and Delaney et al. (2013). See coastal habitats supporting document for further details

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

21A0 Machairs (* in Ireland)

To restore the favourable conservation condition of Machairs in West of Ardara/Maas Road 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: Sheskinmore - 21.28ha; Clooney - 8.82ha; Roshin Point - 5.19ha; Lettermacaward - 53.29ha. See map 8	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from four sub-sites, giving a total estimated area of 88.58ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 8 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). 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) and Delaney et al. (2013). 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
Physical structure: hydrological and flooding regime	Presence/ absence of water abstraction or drainage works	Maintain natural hydrological regime	Based on data from Ryle et al. (2009), Delaney et al. (2013), Crawford et al. (1996) and Gaynor (2006). 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) and Delaney et al. (2013). A range of coastal habitats have been identified in this SAC. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of Machair habitat, subject to natural processes	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Petalwort (<i>Petalophyllum ralfsii</i>) was recorded at the Sheskinmore and Lettermacaward sub-sites. See coastal habitats supporting document for further details and the conservation objective for petalwort (1395)
Vegetation structure: sward height	Centimeters	Maintain structural variation within sward	Based on data from Ryle et al. (2009) and Delaney et al. (2013). At Clooney the machair is lightly grazed but undergrazed in places. The machair at Roshin Point is also lightly grazed by cattle. 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 range of sub-communities with typical species listed in Ryle et al. (2009)	Based on data from Ryle et al. (2009), Delaney et al. (2013) and Gaynor (2006). 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) and Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. 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) and Delaney et al. (2013). At Lettermacaward, some scrub encroachment was noted in the southeastern part of the intact machair. See coastal habitats supporting document for further details
Vegetation composition: bryophytes	Percentage cover	Should always be at least an occasional component of the vegetation	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)

To maintain the favourable conservation condition of Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) in West of Ardara/Maas Road 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	The selection of the SAC for habitat 3110 was based on the occurrence of numerous small to medium sized lakes surrounded by blanket bog. Little information is available on the biota of these lakes, however. The occurrence of <i>Najas flexilis</i> in Sheskinmore, Kiltooris and Clooney Loughs indicate that lake habitat 3130 is also present in the site, while dystrophic lakes and ponds (3160) have been recorded in the Lackaghatermon blanket bog (Douglas et al., 1990). Map 9 provides an indicative distribution of lake habitats 3110 and 3130 in the SAC. Two measures of extent should be used: 1. the area of the lake itself and; 2. the extent of the vegetation communities/zones that typify the habitat. Further information relating to all attributes is provided in the lake habitats supporting document for the purposes of site-specific conservation objectives and Article 17 reporting (O Connor, 2015)
Habitat distribution	Occurrence	No decline, subject to natural processes	The exact distribution of habitat 3110 in the site is unknown, but it is considered likely to be widespread (see indicative distribution in map 9)
Typical species	Occurrence	Typical species present, in good condition, and demonstrating typical abundances and distribution	For lists of typical plant species, see Article 17 habitat assessment for 3110 (NPWS, 2013) and the lake habitats supporting document (O Connor, 2015)
Vegetation composition: characteristic zonation	Occurrence	All characteristic zones should be present, correctly distributed and in good condition	The characteristic zonation of lake habitat 3140 has been described (Roden and Murphy, 2013; in prep.), however significant further work is necessary to describe the characteristic zonation and other spatial patterns in the remaining four lake habitats
Vegetation distribution: maximum depth	Metres	Maintain maximum depth of vegetation, subject to natural processes	The maximum depth of vegetation is likely to be specific to the lake shoreline in question. An indicative target of >6m has been developed for hard water lakes (3140) (see Roden and Murphy, 2013; in prep.). Indicative targets will be developed for the other lake habitats with time
Hydrological regime: water level fluctuations	Metres	Maintain appropriate natural hydrological regime necessary to support the habitat	Fluctuations in lake water level are typical in Ireland, but can be amplified by activities such as abstraction and drainage. Increased water level fluctuations can increase wave action, up-root vegetation, increase turbidity, alter the substratum and lead to release of nutrients from the sediment. The hydrological regime of the lakes must be maintained so that the area, distribution and depth of the lake habitat and its constituent/characteristic vegetation zones and communities are not reduced
Lake substratum quality	Various	Maintain appropriate substratum type, extent and chemistry to support the vegetation	Research is required to further characterise the substratum types (particle size and origin) and substratum quality (notably pH, calcium, iron and nutrient concentrations) favoured by each of the five Annex I lake habitats in Ireland. It is likely that the oligotrophic soft water habitat is associated with a range of nutrient-poor substrates, from stones, cobble and gravel, through sands, silt, clay and peat. Substratum particle size is likely to vary with depth and along the shoreline within a single lake

Water quality: transparency	Metres	Maintain appropriate Secchi transparency. There should be no decline in Secchi depth/transparency	Transparency relates to light penetration and, hence, to the depth of colonisation of vegetation. It can be affected by phytoplankton blooms, water colour and turbidity. A target has been set for hard water lakes (3140), however specific targets have yet to be established for the remaining lake habitats. Habitat 3110 is associated with very clear water. The OECD fixed boundary system set transparency targets for oligotrophic lakes of $\geq 6\text{m}$ annual mean Secchi disk depth, and $\geq 3\text{m}$ annual minimum Secchi disk depth. Free et al. (2009) found high isoetid abundance in lakes with Secchi depths of more than 3m
Water quality: nutrients	$\mu\text{g/l P}$; mg/l N	Maintain the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species	As a nutrient poor habitat, oligotrophic and Water Framework Directive 'high' status targets apply. Where a lake has nutrient concentrations that are lower than these targets, there should be no decline within class, i.e. no upward trend in nutrient concentrations. For the oligotrophic soft water lake habitat, annual average TP concentration should be $\leq 10\mu\text{g/l TP}$, average annual total ammonia concentration should be $\leq 0.040\text{mg/l N}$ and annual 95th percentile for total ammonia should be $\leq 0.090\text{mg/l N}$. See also The European Communities Environmental Objectives (Surface Waters) Regulations 2009
Water quality: phytoplankton biomass	$\mu\text{g/l Chlorophyll } a$	Maintain appropriate water quality to support the habitat, including high chlorophyll <i>a</i> status	Oligotrophic and Water Framework Directive 'high' status targets apply to the oligotrophic soft water habitat (3110). Where a lake has a chlorophyll <i>a</i> concentration that is lower than this target, there should be no decline within class, i.e. no upward trend in phytoplankton biomass. The average growing season (March-October) chlorophyll <i>a</i> concentration must be $< 5.8\mu\text{g/l}$. The annual average chlorophyll <i>a</i> concentration should be $< 2.5\mu\text{g/l}$ and the annual peak chlorophyll <i>a</i> concentration should be $\leq 8.0\mu\text{g/l}$. See also The European Communities Environmental Objectives (Surface Waters) Regulations 2009
Water quality: phytoplankton composition	EPA phytoplankton composition metric	Maintain appropriate water quality to support the habitat, including high phytoplankton composition status	The EPA has developed a phytoplankton composition metric for nutrient enrichment of Irish lakes. As for other water quality indicators, habitat 3110 requires WFD high status
Water quality: attached algal biomass	Algal cover and EPA phytobenthos metric	Maintain trace/ absent attached algal biomass ($< 5\%$ cover) and high phytobenthos status	Nutrient enrichment can favour epiphytic and epipelagic algae that can out-compete the submerged vegetation. The cover abundance of attached algae in the oligotrophic soft water habitat should, therefore, be trace/ absent ($< 5\%$ cover). EPA phytobenthos can be used as an indicator of changes in attached algal biomass. As for other water quality indicators, habitat 3110 requires high phytobenthos status
Water quality: macrophyte status	EPA macrophyte metric (The Free Index)	Maintain high macrophyte status	Nutrient enrichment can favour more competitive submerged macrophyte species that out-compete the typical and characteristic species for the lake habitat. The EPA monitors macrophyte status for Water Framework Directive purposes using the 'Free Index'. The target for the oligotrophic soft water lake habitat is high status or an Ecological Quality Ratio (EQR) for lake macrophytes of ≥ 0.90 , as defined in Schedule Five of the European Communities Environmental Objectives (Surface Waters) Regulations 2009

Acidification status	pH units; mg/l	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes	Acidification can impact on species abundance and composition in soft water lake habitats. In Europe, acidification of isoetid lakes can lead to loss of isoetids and dominance by submerged <i>Sphagnum</i> mosses and <i>Juncus bulbosus</i> (Arts, 2002). The specific requirements of lake habitat 3110, in terms of water and sediment pH, alkalinity and cation concentration, have not been determined. For oligotrophic soft water lakes (3110), and adopting a precautionary approach based on Arts (2002), minimum pH should not be <5.5 pH units. Maximum pH should be <9.0 pH units, in line with the surface water standards established for soft waters (where water hardness is ≤100mg/l CaCO ₃). See Schedule Five of the European Communities Environmental Objectives (Surface Waters) Regulations 2009
Water colour	mg/l PtCo	Maintain appropriate water colour to support the habitat	Increased water colour and turbidity decrease light penetration and can reduce the area of available habitat for lake macrophytes, particularly at the lower euphotic depths. The primary source of increased water colour in Ireland is disturbance to peatland. No habitat-specific or national standards for water colour currently exist. Studies have shown median colour concentrations in Irish lakes of 38mg/l PtCo (Free et al., 2000) and 33mg/l PtCo (Free et al., 2006). It is likely that the water colour in all Irish lake habitats would naturally be <50mg/l PtCo. Water colour can be very low (<20mg/l PtCo or even <10mg/l PtCo) in oligotrophic soft water lakes (3110), where the peatland in the lake's catchment is intact
Dissolved organic carbon (DOC)	mg/l	Maintain appropriate organic carbon levels to support the habitat	Dissolved (and particulate) organic carbon (OC) in the water column is linked to water colour and acidification (organic acids). Increasing DOC in water has been documented across the Northern Hemisphere, including afforested peatland catchments in Ireland. Damage and degradation of peatland, leading to decomposition of peat is likely to be the predominant source of OC in Ireland. OC in water promotes decomposition by fungi and bacteria that, in turn, releases dissolved nutrients. The increased biomass of decomposers can also impact directly on the characteristic lake communities through shading, competition, etc.
Turbidity	nephelometric turbidity units/ mg/l SS/ other appropriate unit	Maintain appropriate turbidity to support the habitat	Turbidity can significantly affect the quantity and quality of light reaching rooted and attached vegetation and can, therefore, impact on lake habitats. The settlement of higher loads of inorganic or organic material on lake vegetation communities may also have impacts on sensitive, delicate species. Turbidity can increase as a result of re-suspension of material within the lake, higher loads entering the lake, or eutrophication. Turbidity measurement and interpretation is challenging. As a result, it is likely to be difficult to set habitat-specific targets for turbidity in lakes
Fringing habitat: area	Hectares	Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3110	Most lake shorelines have fringing habitats of reedswamp, other swamp, fen, marsh or wet-woodland that intergrade with and support the structure and functions of the lake habitat. Equally, fringing habitats are dependent on the lake, particularly its water levels, and support wetland communities and species of conservation concern. Many of the fringing wetland habitats support higher invertebrate and plant species richness than the lake habitats themselves

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

4010 Northern Atlantic wet heaths with *Erica tetralix*

To restore the favourable conservation condition of Northern Atlantic wet heaths with *Erica tetralix* in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Stable or increasing, subject to natural processes	Northern Atlantic wet heaths with <i>Erica tetralix</i> has not been mapped in detail for this SAC and thus total area of the qualifying habitat is unknown. It occurs in mosaic with other habitats, including other heath habitats (4030), blanket bogs (7130), rocky outcrops and grasslands (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See note on area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat in NPWS (2013)
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	Further information on vegetation communities associated with this habitat is given in Perrin et al. (2014)
Vegetation composition: cross-leaved heath	Occurrence within 20m of a representative number of 2m x 2m monitoring stops	Presence of cross-leaved heath (<i>Erica tetralix</i>) near each monitoring stop	Attribute and target based on Perrin et al. (2014)
Vegetation composition: positive indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of positive indicator species at least 50%	Attribute and target based on Perrin et al. (2014) where the list of positive indicator species for this habitat is also given
Vegetation composition: lichens and bryophytes	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of <i>Cladonia</i> and <i>Sphagnum</i> species, <i>Racomitrium lanuginosum</i> and pleurocarpous mosses at least 10%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: ericoid species and crowberry	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of ericoid species and crowberry (<i>Empetrum nigrum</i>) at least 15%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: dwarf shrub species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of dwarf shrubs less than 75%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of negative indicator species less than 1%	Attribute and target based on Perrin et al. (2014) where the list of negative indicator species is also given
Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 20%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: bracken	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of bracken (<i>Pteridium aquilinum</i>) less than 10%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: soft rush	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of soft rush (<i>Juncus effusus</i>) less than 10%	Attribute and target based on Perrin et al. (2014)

Vegetation structure: <i>Sphagnum</i> condition	Condition at a representative number of 2m x 2m monitoring stops	Less than 10% of the <i>Sphagnum</i> cover is crushed, broken and/or pulled up	Attribute and target based on Perrin et al. (2014)
Vegetation structure: signs of browsing	Percentage of shoots browsed at a representative number of 2m x 2m monitoring stops	Less than 33% collectively of the last complete growing season's shoots of ericoids, crowberry (<i>Empetrum nigrum</i>) and bog-myrtle (<i>Myrica gale</i>) showing signs of browsing	Attribute and target based on Perrin et al. (2014)
Vegetation structure: burning	Occurrence in local vicinity of a representative number of 2m x 2m monitoring stops	No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning	Attribute and target based on Perrin et al. (2014) where the list of sensitive areas is also presented
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014)
Physical structure: drainage	Percentage cover in local vicinity of a representative number of monitoring stops	Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%	Attribute and target based on Perrin et al. (2014)
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat	This includes species listed in the Flora (Protection) Order 2015 and/or the red data book (Curtis and McGough, 1988)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

4030 European dry heaths

To restore the favourable conservation condition of European dry heaths in West of Ardara/Maas Road 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	European dry heaths has not been mapped in detail for this SAC and thus total area of the qualifying habitat is unknown. It occurs in mosaic with other habitats, including other heath habitats (4010, 4060), rocky outcrops and grasslands (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See note on area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat in NPWS (2013)
Vegetation community diversity	Number and variety	Maintain variety of vegetation communities, subject to natural processes	Further information on vegetation communities associated with this habitat is given in Perrin et al. (2014)
Vegetation composition: lichens and bryophytes	Number of species at a representative number of 2m x 2m monitoring stops	Number of bryophyte or non-crustose lichen species present at each monitoring stop is least three, excluding <i>Campylopus</i> and <i>Polytrichum</i> mosses	Attribute and target based on Perrin et al. (2014)
Vegetation composition: number of positive indicator species	Number of species at a representative number of 2m x 2m monitoring stops	Number of positive indicator species present at each monitoring stop is at least two	Attribute and target based on Perrin et al. (2014)
Vegetation composition: cover of positive indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of positive indicator species at least 50% for siliceous dry heath and 50-75% for calcareous dry heath	Attribute and target based on Perrin et al. (2014) where the list of positive indicator species for this habitat, which is composed of dwarf shrubs, is also given
Vegetation structure: dwarf shrub composition	Percentage cover at a representative number of 2m x 2m monitoring stops	Proportion of dwarf shrub cover composed collectively of bog-myrtle (<i>Myrica gale</i>), creeping willow (<i>Salix repens</i>) and western gorse (<i>Ulex gallii</i>) is less than 50%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of negative indicator species less than 1%	Attribute and target based on Perrin et al. (2014) where the list of negative indicator species is also given
Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 20%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: bracken	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of bracken (<i>Pteridium aquilinum</i>) less than 10%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: soft rush	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of soft rush (<i>Juncus effusus</i>) less than 10%	Attribute and target based on Perrin et al. (2014)

Vegetation structure: senescent ling	Percentage cover at a representative number of 2m x 2m monitoring stops	Senescent proportion of ling (<i>Calluna vulgaris</i>) cover less than 50%	Attribute and target based on Perrin et al. (2014)
Vegetation structure: signs of browsing	Percentage of shoots browsed at a representative number of 2m x 2m monitoring stops	Less than 33% collectively of the last complete growing season's shoots of ericoids showing signs of browsing	Attribute and target based on Perrin et al. (2014)
Vegetation structure: burning	Occurrence in local vicinity of a representative number of monitoring stops	No signs of burning in sensitive areas	Attribute and target based on Perrin et al. (2014) where the list of sensitive areas is also presented
Vegetation structure: growth phases of ling	Percentage cover in local vicinity of a representative number of monitoring stops	Outside sensitive areas, all growth phases of ling (<i>Calluna vulgaris</i>) should occur throughout, with at least 10% of cover in the mature phase	Attribute and target based on Perrin et al. (2014)
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014)
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat	This includes species listed in the Flora (Protection) Order 2015 and/or the red data book (Curtis and McGough, 1988)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

4060 Alpine and Boreal heaths

To restore the favourable conservation condition of Alpine and Boreal heaths in West of Ardara/Maas Road 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	Alpine and Boreal heaths has not been mapped in detail for this SAC and thus total area of the qualifying habitat is unknown. It occurs in mosaic with other habitats, including other heath habitats (4010, 4030), rocky outcrops and <i>Juniperus communis</i> formations on heaths or calcareous grasslands (5130) (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See note on area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat in NPWS (2013)
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	Further information on vegetation communities associated with this habitat is presented in Perrin et al. (2014)
Vegetation composition: lichens and bryophytes	Number of species at a representative number of 2m x 2m monitoring stops	Number of bryophyte or non-crustose lichen species present at each monitoring stop is least three	Attribute and target based on Perrin et al. (2014)
Vegetation composition: positive indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of positive indicator species at least 66%	Attribute and target based on Perrin et al. (2014) where the list of positive indicator species for this habitat is also given
Vegetation composition: dwarf-shrub species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of dwarf-shrub species at least 10%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of negative indicator species less than 10%	Attribute and target based on Perrin et al. (2014) where the list of negative indicator species for this habitat is also given
Vegetation composition: non-native species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014)
Vegetation structure: signs of grazing	Percentage of leaves browsed at a representative number of 2m x 2m monitoring stops	Less than 10% collectively of the live leaves of specific graminoids showing signs of grazing	Attribute and target based on Perrin et al. (2014)
Vegetation structure: signs of browsing	Percentage of shoots browsed at a representative number of 2m x 2m monitoring stops	Less than 33% collectively of the last complete growing season's shoots of ericoids and crowberry (<i>Empetrum nigrum</i>) showing signs of browsing	Attribute and target based on Perrin et al. (2014)
Vegetation structure: burning	Occurrence in local vicinity of a representative number of monitoring stops	No signs of burning within the habitat	Attribute and target based on Perrin et al. (2014)
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014)

Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat	This includes species listed in the Flora (Protection Order 2015 and/or the red data book (Curtis and McGough, 1988))
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Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

5130 Juniperus communis formations on heaths or calcareous grasslands

To maintain the favourable conservation condition of *Juniperus communis* formations on heaths or calcareous grasslands in West of Ardara/Maas Road 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	Total area of the qualifying habitat in the SAC is currently unknown. Cooper et al. (2012) record the habitat at Dawros Head (DL09), while Delaney et al. (2014) map it in mosaic with fixed dune (2130) habitat at Sheskinmore (see map 8). However, there are likely to be other formations present within the SAC. Juniper plants have been recorded elsewhere, but at least some populations will not be large enough to be classified as formations. See map 9 for location of sub-site (DL09) surveyed and mapped by Cooper et al. (2012), which is described as one of the largest known areas of the habitat in the country
Habitat distribution	Occurrence	No decline, subject to natural processes	See notes for area above
Juniper population size	Number per formation	At least 50 plants per formation	To classify as a juniper formation, at least 50 plants should be present (Cooper et al., 2012)
Vegetation composition: typical species	Number per formation	At least 50% of the listed positive indicator species for the relevant vegetation group present	Cooper et al. (2012) lists positive indicator species for five vegetation groups. The formation described by Cooper et al. (2012) (DL09) falls into vegetation group 4 (<i>Calluna vulgaris</i> / <i>Erica cinerea</i> group). See Cooper et al. (2012) for positive indicator species
Vegetation composition: negative indicator species	Occurrence per formation	Negative indicator species, particularly non-native invasive species, absent or under control	Negative indicator species listed by Cooper et al. (2012)
Vegetation structure: cone-bearing plants	Percentage per formation	At least 10% of juniper plants are bearing cones	Attribute and target based on Cooper et al. (2012)
Vegetation structure: seedling recruitment	Percentage per formation	At least 10% of juniper plants are seedlings	Attribute and target based on Cooper et al. (2012)
Vegetation structure: dead juniper	Percentage per formation	Mean percentage of each juniper plant dead less than 10%	Attribute and target based on Cooper et al. (2012)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

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

To maintain the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) in West of Ardara/Maas Road SAC, which defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	The full extent of this habitat has not been mapped in detail in the SAC and thus the total area of the qualifying habitat is unknown. O'Neill et al. (2013) recorded very small fragmented areas in association with other habitats in the SAC such as other grasslands, heath and sand dunes adjacent to Sheskinmore Lough and Lough Doo. It is likely to be found in other locations also (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See notes for area above
Vegetation composition: typical species	Number at a representative number of monitoring stops	At least seven positive indicator species present, including two "high quality" species	List of positive indicator species, including high quality species, identified by the Irish semi-natural grasslands survey (O'Neill et al., 2013). This document should be consulted for further details
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	List of negative indicator species identified by O'Neill et al. (2013)
Vegetation composition: non-native species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1%	Attribute and target based on O'Neill et al. (2013)
Vegetation composition: woody species and bracken	Percentage at a representative number of monitoring stops	Cover of woody species (except certain listed species) and bracken (<i>Pteridium aquilinum</i>) not more than 5% cover	Woody species that can occur above 5% cover include juniper (<i>Juniperus communis</i>) and burnet rose (<i>Rosa spinosissima</i>). However, cover of these species above 25% may indicate transition to another Annex I habitat such as or <i>Juniperus communis</i> formations (5130). Attribute and target based on O'Neill et al. (2013)
Vegetation structure: broadleaf herb: grass ratio	Percentage at a representative number of monitoring stops	Broadleaf herb component of vegetation between 40 and 90%	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: sward height	Percentage at a representative number of monitoring stops	At least 30% of sward between 5cm and 40cm tall	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: litter	Percentage at a representative number of monitoring stops	Litter cover not more than 25%	Attribute and target based on O'Neill et al. (2013)
Physical structure: bare soil	Percentage at a representative number of monitoring stops	Not more than 10% bare soil	Attribute and target based on O'Neill et al. (2013)
Physical structure: disturbance	Square metres	Area showing signs of serious grazing or other disturbance less than 20m ²	Attribute and target based on O'Neill et al. (2013)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)

To maintain the favourable conservation condition of *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) in West of Ardara/Maas Road 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	The full extent of this habitat has not been mapped in detail in the SAC and thus the total area of the qualifying habitat is unknown. O'Neill et al. (2013) recorded very small areas, adjacent to Sheskinmore Lough and Lough Doo, that graded into other grassland types as well as other habitats including heaths and sand dunes. It is likely to be found in other locations also (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See note for area above
Vegetation composition: typical species	Number at a representative number of monitoring stops	At least seven positive indicator species present, including one "high quality" species as listed in O'Neill et al. (2013)	List of positive indicator species, including high quality species, identified by O'Neill et al. (2013). Note that purple moor-grass (<i>Molinia caerulea</i>) is a positive indicator species, but not necessarily an essential component of the habitat
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	Attribute and target based on O'Neill et al. (2013)
Vegetation composition: non-native species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1%	Attribute and target based on O'Neill et al. (2013)
Vegetation composition: moss species	Percentage at a representative number of monitoring stops	Hair mosses (<i>Polytrichum</i> spp.) not more than 25% cover	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: woody species and bracken	Percentage at a representative number of monitoring stops	Cover of woody species and bracken (<i>Pteridium aquilinum</i>) not more than 5% cover	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: broadleaf herb: grass ratio	Percentage at a representative number of monitoring stops	Broadleaf herb component of vegetation between 40% and 90%	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: sward height	Percentage at a representative number of monitoring stops	At least 30% of sward between 10cm and 80cm tall	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: litter	Percentage at a representative number of monitoring stops	Litter cover not more than 25%	Attribute and target based on O'Neill et al. (2013)
Physical structure: bare ground	Percentage	Not more than 10% bare ground	Attribute and target based on O'Neill et al. (2010)
Physical structure: bare soil	Percentage at a representative number of monitoring stops	Not more than 10% bare soil	Attribute and target based on O'Neill et al. (2013)
Physical structure: disturbance	Square metres	Area showing signs of serious grazing or other disturbance less than 20m ²	Attribute and target based on O'Neill et al. (2013)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)

To maintain the favourable conservation condition of Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) in West of Ardara/Maas Road 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	Internal NPWS files note a small number of species-rich meadows that are cut for hay. However, further work is required to establish the nature and extent of the Annex I habitat in the SAC, including the requirement for management by mowing
Habitat distribution	Occurrence	No decline, subject to natural processes	Distribution of this habitat in this SAC is currently unknown. See note for area above
Vegetation composition: typical species	Number at a representative number of monitoring stops	At least seven positive indicator species present, including one "high quality" species as listed in O'Neill et al. (2013)	List of positive indicator species, including high quality species, identified by the Irish semi-natural grasslands survey (O'Neill et al., 2013). This document should be consulted for further details
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	List of negative indicator species identified by O'Neill et al. (2013)
Vegetation composition: non-native species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1%	Attribute and target based on O'Neill et al. (2013)
Vegetation composition: woody species and bracken	Percentage at a representative number of monitoring stops	Cover of woody species and bracken (<i>Pteridium aquilinum</i>) not more than 5%	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: broadleaf herb: grass ratio	Percentage at a representative number of monitoring stops	Broadleaf herb component of vegetation between 40 and 90%	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: sward height	Percentage at a representative number of monitoring stops	At least 50% of sward between 10cm and 50cm tall	Attribute and target based on O'Neill et al. (2013)
Vegetation structure: litter	Percentage at a representative number of monitoring stops	Litter cover not more than 25%	Attribute and target based on O'Neill et al. (2013)
Physical structure: bare soil	Percentage at a representative number of monitoring stops	Not more than 5% bare soil	Attribute and target based on O'Neill et al. (2013)
Physical structure: disturbance	Square metres	Area showing signs of serious grazing or other disturbance less than 20m ²	Attribute and target based on O'Neill et al. (2013)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

7130 Blanket bogs (* if active bog)

To restore the favourable conservation condition of Blanket bogs in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Stable or increasing, subject to natural processes	Blanket bogs has not been mapped in detail for this SAC and thus total area of the qualifying habitat is unknown. It occurs in mosaic with other habitats, including heath habitats (4010, 4030), saltmarshes (1330, 1410) and rocky outcrops (Douglas et al., 1990; NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See note on area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat in NPWS (2013)
Ecosystem function: peat formation	Active blanket bog as a proportion of the total area of Annex I blanket bog habitat	At least 99% of the total Annex I blanket bog area is active bog	Blanket bogs are considered active when "still supporting a significant area of vegetation that is normally peat forming" (EC, 2007)
Ecosystem function: hydrology	Flow direction, water levels, occurrence of drains and erosion gullies	Natural hydrology unaffected by drains and erosion	Drains and erosion gullies can affect the natural hydrological processes of blanket bog
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	Further information on vegetation communities associated with this habitat is presented in Perrin et al. (2014). Douglas et al. (1990) describes the habitat in this SAC
Vegetation composition: positive indicator species	Number of species at a representative number of 2m x 2m monitoring stops	Number of positive indicator species at each monitoring stop is at least seven	Attribute and target based on Perrin et al. (2014) where the list of positive indicator species for this habitat is also given
Vegetation composition: lichens and bryophytes	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of bryophytes or lichens, excluding <i>Sphagnum fallax</i> , at least 10%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: potential dominant species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of each of the potential dominant species less than 75%	Attribute and target based on Perrin et al. (2014) where potential dominant species are listed
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of negative indicator species less than 1%	Attribute and target based on Perrin et al. (2014) where the list of negative indicator species for this habitat is also given
Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: native trees and scrub	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%	Attribute and target based on Perrin et al. (2014)
Vegetation structure: <i>Sphagnum</i> condition	Condition at a representative number of 2m x 2m monitoring stops	Less than 10% of the <i>Sphagnum</i> cover is crushed, broken and/or pulled up	Attribute and target based on Perrin et al. (2014)
Vegetation structure: signs of browsing	Percentage of shoots browsed at a representative number of 2m x 2m monitoring stops	Last complete growing season's shoots of ericoids, crowberry (<i>Empetrum nigrum</i>) and bog-myrtle (<i>Myrica gale</i>) showing signs of browsing collectively less than 33%	Attribute and target based on Perrin et al. (2014)

Vegetation structure: burning	Occurrence in local vicinity of a representative number of monitoring stops	No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning	Attribute and target based on Perrin et al. (2014) where the list of sensitive areas is also presented
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014)
Physical structure: drainage	Occurrence in local vicinity of a representative number of monitoring stops	Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%	Attribute and target based on Perrin et al. (2014)
Physical structure: erosion	Occurrence in local vicinity of a representative number of monitoring stops	Less than 5% of the greater bog mosaic comprises erosion gullies and eroded areas	Attribute and target based on Perrin et al. (2014). The greater bog mosaic incorporates the blanket bog itself and associated vegetation types as well as non-vegetation cover types that appear to have been derived from former blanket bog including gravel, rock and running water
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat	This includes species listed in the Flora (Protection) Order 2015 and/or the red data book (Curtis and McGough, 1988)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

7150 Depressions on peat substrates of the Rhynchosporion

To maintain the favourable conservation condition of Depressions on peat substrates of the Rhynchosporion in West of Ardara/Maas Road 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	Depressions on peat substrates of the Rhynchosporion has not been mapped in detail for this SAC and thus total area of the qualifying habitat is unknown. It overlaps with blanket bogs (7130). Douglas et al. (1990) provides survey information on the blanket bog in this SAC
Habitat distribution	Occurrence	No decline, subject to natural processes	See note on area above
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Relevant nutrients and their natural ranges are yet to be defined. However, nitrogen deposition is noted as being relevant to this habitat in NPWS (2013)
Vegetation composition: positive indicator species	Number of species at a representative number of 2m x 2m monitoring stops	Number of positive indicator species at each monitoring stop is at least five	Attribute and target based on Perrin et al. (2014) where the list of positive indicator species for this habitat is also given
Vegetation composition: Rhynchospora spp.	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of white beaked sedge (<i>Rhynchospora alba</i>) and brown beaked sedge (<i>R. fusca</i>) at least 10%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: potential dominant species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of each of the potential dominant species less than 35%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Total cover of negative indicator species less than 1%	Attribute and target based on Perrin et al. (2014) where the list of negative indicator species for this habitat is also given
Vegetation composition: non-native species	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of non-native species less than 1%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: native trees and scrub	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%	Attribute and target based on Perrin et al. (2014)
Vegetation structure: <i>Sphagnum</i> condition	Condition of <i>Sphagnum</i> at a representative number of 2m x 2m monitoring stops	Less than 10% of the <i>Sphagnum</i> cover is crushed, broken and/or pulled up	Attribute and target based on Perrin et al. (2014)
Vegetation structure: signs of browsing	Percentage of shoots browsed at a representative number of 2m x 2m monitoring stops	Last complete growing season's shoots of ericoids, crowberry (<i>Empetrum nigrum</i>) and bog-myrtle (<i>Myrica gale</i>) showing signs of browsing collectively less than 33%	Attribute and target based on Perrin et al. (2014)
Vegetation structure: burning	Occurrence in local vicinity of a representative number of monitoring stops	No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning	Attribute and target based on Perrin et al. (2014) where the list of sensitive areas is also presented
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of 2m x 2m monitoring stops	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014)

Physical structure: drainage	Occurrence in local vicinity of a representative number of monitoring stops	Area showing signs of drainage from heavy trampling, tracking or ditches less than 10%	Attribute and target based on Perrin et al. (2014)
Physical structure: erosion	Occurrence in local vicinity of a representative number of monitoring stops	Less than 5% of the greater bog mosaic comprises erosion gullies and eroded areas	Attribute and target based on Perrin et al. (2014). The greater bog mosaic incorporates the blanket bog itself, associated vegetation types as well as non-vegetation cover types that appear to have been derived from former blanket bog including gravel, rock and running water
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat	This includes species listed in the Flora (Protection) Order 2015 and/or the red data book (Curtis and McGough, 1988)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

7230 Alkaline fens

To maintain the favourable conservation condition of Alkaline fens in West of Ardara/Maas Road 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	The full extent of this fen habitat within the SAC is currently unknown. The main area occurs in the vicinity of Sheskinmore Lough where it grades into other habitats such as Machairs (21A0). NB there may be other areas of Alkaline fen within the SAC (Internal NPWS files)
Habitat distribution	Occurrence	No decline, subject to natural processes	Full distribution of this habitat in this SAC is currently unknown- see note above
Hydrological regime	Metres	Appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	Maintenance of groundwater, surface water flows and water table levels within natural ranges is essential for this wetland habitat
Peat formation	Flood duration	Active peat formation, where appropriate	In order for peat to form, water levels need to be slightly below or above the soil surface for c.90% of the time (Jim Ryan, pers. comm.)
Water quality: nutrients	Water chemistry measures	Appropriate water quality to support the natural structure and functioning of the habitat	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus with the latter tending to be the limiting nutrient
Vegetation structure: typical species	Percentage	Maintain vegetation cover of typical species including brown mosses and vascular plants	Vascular plants listed for the fen at Sheskinmore include slender sedge (<i>Carex lasiocarpa</i>), long-stalked yellow sedge (<i>Carex lepidocarpa</i>), carnation sedge (<i>Carex panicea</i>), black bog rush (<i>Schoenus nigricans</i>), wild angelica (<i>Angelica sylvestris</i>), grass-of-Parnassus (<i>Parnassia palustris</i>), marsh helleborine (<i>Epipactis palustris</i>) and meadow thistle (<i>Cirsium dissectum</i>) (Internal NPWS files)
Vegetation composition: trees and shrubs	Percentage	Cover of scattered native trees and shrubs less than 10%	Scrub and trees will tend to invade if fen conditions become drier. Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., 2014)
Physical structure: disturbed bare ground	Percentage	Cover of disturbed bare ground less than 10%. Where tufa is present, disturbed bare ground less than 1%	While grazing may be appropriate in this habitat, excessive areas of disturbed bare ground may develop due to unsuitable grazing regimes. Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., 2014)
Physical structure: drainage	Percentage	Areas showing signs of drainage as a result of drainage ditches or heavy trampling less than 10%	Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., 2014)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1013 Geyer's Whorl Snail *Vertigo geyeri*

To maintain the favourable conservation condition of Geyer's Whorl Snail in West of Ardara/Maas Road 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 within the 1km square G6995. See map 10	From Moorkens and Killeen (2011) (site code VgCAM8)
Presence in suitable habitat	Occurrence	Snails (living or recently dead adults and/or juveniles) are present in all polygons of suitable habitat defined as at least sub-optimal from Moorkens and Killeen (2011) and in 60% of samples defined as optimal and 20% of samples defined as sub-optimal	See habitat area below for definitions of optimal and sub-optimal habitat
Habitat area	Hectares	Stable or increasing, subject to natural processes and at least 14ha. Suitable habitat is defined as areas of flushed fen with small sedges and saturated mosses	From Moorkens and Killeen (2011) Optimal habitat is defined as flushed fen sward with sedge and densely mossy areas 5-15cm tall, containing species such as small-fruited yellow-sedge (<i>Carex viridula</i>) and other short sedges, common butterwort (<i>Pinguicula vulgaris</i>), grass-of-Parnassus (<i>Parnassia palustris</i>), marsh horsetail (<i>Equisetum palustre</i>), jointed rush (<i>Juncus articulatus</i>), marsh helleborine (<i>Epipactis palustris</i>), common cottongrass (<i>Eriophorum angustifolium</i>) and the mosses <i>Drepanocladus revolvens</i> , <i>Campylium stellatum</i> , with scattered tussocks of black bog-rush (<i>Schoenus nigricans</i>) no greater than 50cm tall. During sampling the water table should be between 0-5cm of the soil surface, but not above ground level. Sub-optimal habitat is defined as above but either vegetation height is less than 5cm or greater than 15cm, or the water table is below 5cm or ground is flooded at the time of sampling
Habitat quality: optimal habitat	Percentage area	At least 15% of the suitable habitat should be classed as optimal	From Moorkens and Killeen (2011). Optimal habitat defined above
Habitat quality: soil wetness	Percentage of monitoring transect; Percentage of a representative number of monitoring stops	75% of transect should be classified as optimal wetness or 75% of a representative number of sampling stops in areas of optimal habitat should be classified as optimal wetness as defined by (Moorkens and Killeen 2011)	Transect established as part of condition assessment monitoring at Sheskinmore Nature Reserve (Moorkens and Killeen, 2011)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1029 Freshwater Pearl Mussel *Margaritifera margaritifera*

To restore the favourable conservation condition of Freshwater Pearl Mussel in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Kilometres	Maintain at 24.6km. See map 11	The conservation objective applies to the Owenea freshwater pearl mussel population. The species is widespread in the Owenea River, stretching from the townland of Mully in the east, to Owenea Bridge in the west. Its distribution was first mapped by H. Ross (1988), and local constrictions in distribution were noted by Beasley (1996) and Moorkens (2007). Mussels were found in the Stracashel tributary in 2012, however further survey is required to map the species' distribution in that river. Maps may change as better data become available. The target is for the species to be sufficiently widespread to maintain itself on a long-term basis as a viable component of the Owenea system. See also the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009, DEHLG (2010), Moorkens (2007), Beasley (1996), H. Ross (1988) and E. Ross (1988)
Population size	Number of adult mussels	Restore Owenea population to at least 10,000 adult mussels	The Owenea population was estimated as less than 10,000 in 2009 (DEHLG, 2010). NPWS (2013) estimated that it had reduced to c.8,200 in 2012, based on a 3% per year decline. Confidence in these estimates is low, however, given that there has been no full baseline survey of the Owenea system. A steady decline in the Owenea population has been noted since H. Ross (1988) estimated the Owenea had c. 200,000 mussels in the 1980s. Beasley (1996) noted a significant overall decline in density in the 12 years after H. Ross' survey. Moorkens (2007) noted further declines in adult numbers. The target is for the species to be sufficiently abundant to maintain itself on a long-term basis as a viable component of the Owenea system
Population structure: recruitment	Percentage per size class	Restore to at least 20% of population no more than 65mm in length; and at least 5% of population no more than 30mm in length	Mussels of no more than 65mm are considered 'young mussels' and may be found buried in the substratum and/or beneath adult mussels. Mussels of no more than 30mm are 'juvenile mussels' and are always buried in the substratum. See also the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009. In 2009, no juvenile or young mussels were found in the Owenea and the smallest mussel was 120mm (Moorkens, 2009; DEHLG, 2010). These results contrast with those of H. Ross (1988), who found mussels ranged from 7-98 years with a significant proportion aged 10-20 years. The target is for sufficient juvenile recruitment to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system
Population structure: adult mortality	Percentage	No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution	5% is considered the cut-off between the combined errors associated with natural fluctuations and sampling methods and evidence of true population decline. 1% of dead shells is considered to be indicative of natural losses. The Owenea failed the target for dead shells in 2009 (DEHLG, 2010). Moorkens (2009) reported a 16% decline in numbers at a site when compared to 2005 data. The target is for sufficient survival of adults to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system

Habitat extent	Kilometres	Restore suitable habitat in more than 19.0 km in the Owenea and more than 0.9 km in the Stracashel (see map 11) and any additional stretches necessary for salmonid spawning	The species' habitat covers much of the Owenea River and some of the Stracashel. It is a combination of 1) the area adult and juvenile mussels can occupy; 2) the area of spawning and nursery habitat host fish can occupy. Fish nursery and mussel habitat typically overlap. Fish spawning habitat is generally adjacent to mussel habitat, but may lie upstream of mussel distribution. Only spawning areas that can regularly contribute juvenile fish to areas occupied by adult mussels should be considered. Suitability of mussel and fish habitat is determined by flow and substratum conditions. It is sensitive to hydromorphological changes, sedimentation and nutrient enrichment. Pressures from throughout the catchment contribute to such impacts. The Owenea habitat is unsuitable for adult survival and juvenile recruitment (DEHLG, 2010). The target is for sufficient habitat in favourable condition to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system
Water quality: macroinvertebrate and phytobenthos (diatoms)	Ecological quality ratio (EQR)	Restore water quality-macroinvertebrates: EQR greater than 0.90; phytobenthos: EQR greater than 0.93	These EQRs correspond to high ecological status for these two Water Framework Directive biological quality elements. They represent high water quality with very low nutrient concentrations (oligotrophic conditions). The habitat in the Owenea River and the Stracashel tributary failed the macroinvertebrate standard during 2009 sampling for the Sub-basin Management Plans (DEHLG 2010). The Owenea habitat passed the phytobenthos standard in 2009 (DEHLG 2010). Diatoms were not sampled in the Stracashel tributary. See also the European Communities Environmental Objectives (Surface Waters) Regulations 2009. The target is for sufficient habitat in favourable condition to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system
Substratum quality: filamentous algae (macroalgae); macrophytes (rooted higher plants)	Percentage	Restore substratum quality- filamentous algae: absent or trace (less than 5%); macrophytes: absent or trace (less than 5%)	The habitat in the Owenea and Stracashel failed the filamentous algal target during 2009 sampling for the Sub-basin Management Plans, having high algal cover abundance (up to a maximum of 70%) at most sites (DEHLG, 2010). Macrophyte cover was low in 2009, however evidence suggested recent removal of rooted plants by decay and flood events. Moorkens (2007) recorded high macrophyte cover in mussel habitat. Recruitment of juvenile mussels is being prevented by the poor quality of the river substrate. The target is for sufficient habitat in favourable condition to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system
Substratum quality: sediment	Occurrence	Restore substratum quality- stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment	The habitat for the species in the Owenea River and Stracashel tributary is currently unsuitable for the recruitment of juveniles owing to sedimentation of the substratum. Significant sedimentation has been recorded during all recent mussel monitoring surveys (Moorkens, 2007, 2009; DEHLG, 2010). Recruitment of juvenile mussels is being prevented by the poor quality of the river substrate. The target is for sufficient habitat in favourable condition to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system

Substratum quality: oxygen availability	Redox potential	Restore to no more than 20% decline from water column to 5cm depth in substrate	Differences in redox potential between the water column and the substrate correlate with differences in oxygen levels. Juvenile mussels require full oxygenation while buried in gravel. In suitable habitat, there should be very little loss of redox potential between the water column and underlying gravels. In 2009, the average redox potential loss in the Owenea in 2009 was 39.15% at 5cm depth (Moorkens, 2009; DEHLG, 2010). The target is for sufficient habitat in favourable condition to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system
Hydrological regime: flow variability	Metres per second	Restore appropriate hydrological regimes	The availability of suitable freshwater pearl mussel habitat is largely determined by flow (catchment geology being the other important factor). In order to restore the habitat for the species, flow variability over the annual cycle must be such that: 1) high flows can wash fine sediments from the substratum; 2) high flows are not artificially increased so as to cause excessive scour of mussel habitat; 3) low flows do not exacerbate the deposition of fines or growth of algae/macrophytes and 4) low flows do not cause stress to mussels in terms of exposure, water temperatures, food availability or aspects of the reproductive cycle. The target is for sufficient habitat in favourable condition to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system
Host fish	Number	Maintain sufficient juvenile salmonids to host glochidial larvae	Salmonid fish are host to the larval form of the freshwater pearl mussel and, thus, are essential to the completion of the life cycle. 0+ and 1+ fish are typically used, both because of habitat overlaps and the development of immunity with age in fish. Fish presence is considered sufficient, as higher fish density and biomass is indicative of enriched conditions in mussel rivers. Geist et al. (2006) found that higher densities of host fish coincided with eutrophication, poor substrate quality for pearl mussels and a lack of pearl mussel recruitment, while significantly lower densities and biomass of host fish were associated with high numbers of juvenile mussels. No fish stocking should occur within the mussel habitat, nor any works that may change the salmonid balance or residency time. Good numbers of juvenile fish were present and glochidial encystment was recorded on Atlantic salmon, but not on brown trout, in 2009 (Johnston and Associates, 2009; DEHLG, 2010)
Fringing habitat	Hectares	Maintain the area and condition of fringing habitats necessary to support the population	Riparian habitats, including those along lake fringes, even where they do not form part of a natural floodplain, are an integral part of the structure and functioning of river systems. Fringing habitats assist in the settlement of fine suspended material, protect banks from erosion and contribute to nutrient cycling, as well as contributing to the aquatic food web (e.g. allochthonous matter such as leaf fall) and providing habitat (refuge and resources) for certain life-stages of fish, birds and aquatic invertebrates. Shade may also be important in suppressing algal and macrophyte growth in enriched rivers and moderating temperatures. Equally, fringing habitats are dependent on rivers/lakes, particularly their water levels, and support wetland communities and species of conservation concern. The target is for sufficient habitat in favourable condition to allow the species to maintain itself on a long-term basis as a viable component of the Owenea system

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1065 Marsh Fritillary *Euphydryas aurinia*

To maintain the favourable conservation condition of Marsh Fritillary in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: occupied 1km squares	Number	A minimum of three occupied 1km squares (see map 14), with a record of adults and/or webs in each of these squares at least one year in six	The mapped distribution 1995-2014 shows records from five of the six hectads that overlap this SAC (B70, B80, G69, G79, G89). There have been confirmed records since 2010 from three 1km squares in the SAC, G8393, G6895 and G6995 but there are considered to be other occupied and undocumented sites
Proof of breeding: larval webs	Number at a representative number of sub-sites	Proof of breeding, confirmed by detection of webs. Number of webs at Sheskinmore should exceed 50 in at least one year in six	A web count at Sheskinmore in 2012 was 46 (Woodrow, 2012). This is taken as a baseline for this sub-site but will need to be revised when a longer time series of monitoring data is available. There is no survey data for other sites within the SAC
Potential habitat: area	Hectares	Area of potential habitat stable or increasing, subject to natural processes	Potential habitat for marsh fritillary is defined as areas of vegetation where devil's-bit scabious (<i>Succisa pratensis</i>) is present, with mean height less than 50cm and with less than 10% cover of scrub more than 1m tall (Woodrow, 2012). There is no figure available for the total area of suitable habitat in the SAC
Good quality habitat: area	Hectares	Area of good quality habitat stable or increasing, subject to natural processes. At least 8.3ha at Sheskinmore	A 2012 survey found 8.3ha of suitable habitat in two areas within Sheskinmore Nature Reserve (Woodrow, 2012). There is no figure available for the total area of suitable habitat in good condition in the SAC. Good condition habitat is defined as that with more than 20% frequency of moderate to high density of the foodplant devil's-bit scabious (<i>Succisa pratensis</i>) (three plants per m ²) growing in 12-25cm high sward. There should be less than 10% cover of tall scrub (more than 0.5m tall) over a site. Negative habitat quality indicators include average sward height of less than 12cm or more than 25cm; more than 10% scrub; and low density of devil's-bit scabious (<i>Succisa pratensis</i>)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1106 Salmon *Salmo salar*

To maintain the favourable conservation condition of Atlantic Salmon in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: extent of anadromy	Percentage of river accessible	100% of river channels down to second order accessible from estuary	Artificial barriers block salmons' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. There are a number of natural barriers to salmon migration on the Gweebarra river
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded	A conservation limit is defined by the North Atlantic Salmon Conservation Organisation (NASCO) as "the spawning stock level that produces long-term average maximum sustainable yield as derived from the adult to adult stock and recruitment relationship". The target is based on the Standing Scientific Committee of the National Salmon Commission's annual model output of CL attainment levels. See SSC (2015). Stock estimates are either derived from direct counts of adults (rod catch, fish counter) or indirectly by fry abundance counts. The Owenea/Stracashel and Owentocker rivers are currently exceeding their CLs
Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 minutes sampling	Target is threshold value for rivers currently exceeding their conservation limit (CL)
Out-migrating smolt abundance	Number	No significant decline	Smolt abundance can be negatively affected by a number of impacts such as estuarine pollution, predation and sea lice (<i>Lepeophtheirus salmonis</i>)
Number and distribution of redds	Number and occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes	Salmon spawn in clean gravels. The habitat for salmon is good in the Gweebarra and Owenea catchments and habitat improvement works have been undertaken in both catchments under the Northern Rivers Project
Water quality	EPA Q value	At least Q4 at all sites sampled by EPA	Q values based on triennial water quality surveys carried out by the Environmental Protection Agency (EPA)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1355 Otter *Lutra lutra*

To maintain the favourable conservation condition of Otter in West of Ardara/Maas Road 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 is estimated at 93.6% (Reid et al., 2013)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 323.4ha	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 694.5ha	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 92.7km	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 212.9ha	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; Reid et al., 2013) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase. For guidance, see map 12	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 : West of Ardara/Maas Road SAC [000197]**1365 Harbour Seal *Phoca vitulina***

To maintain the favourable conservation condition of Harbour Seal in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

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 13	See marine supporting document for further details
Breeding behaviour	Breeding sites	Conserve the breeding sites in a natural condition. See map 13	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 13	Attribute and target based on background knowledge of Irish populations, review of data from Lyons (2004), Cronin et al. (2004), Duck and Morris (2013) 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. See map 13	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

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]

1395 Petalwort *Petalophyllum ralfsii*

To maintain the favourable conservation condition of Petalwort in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

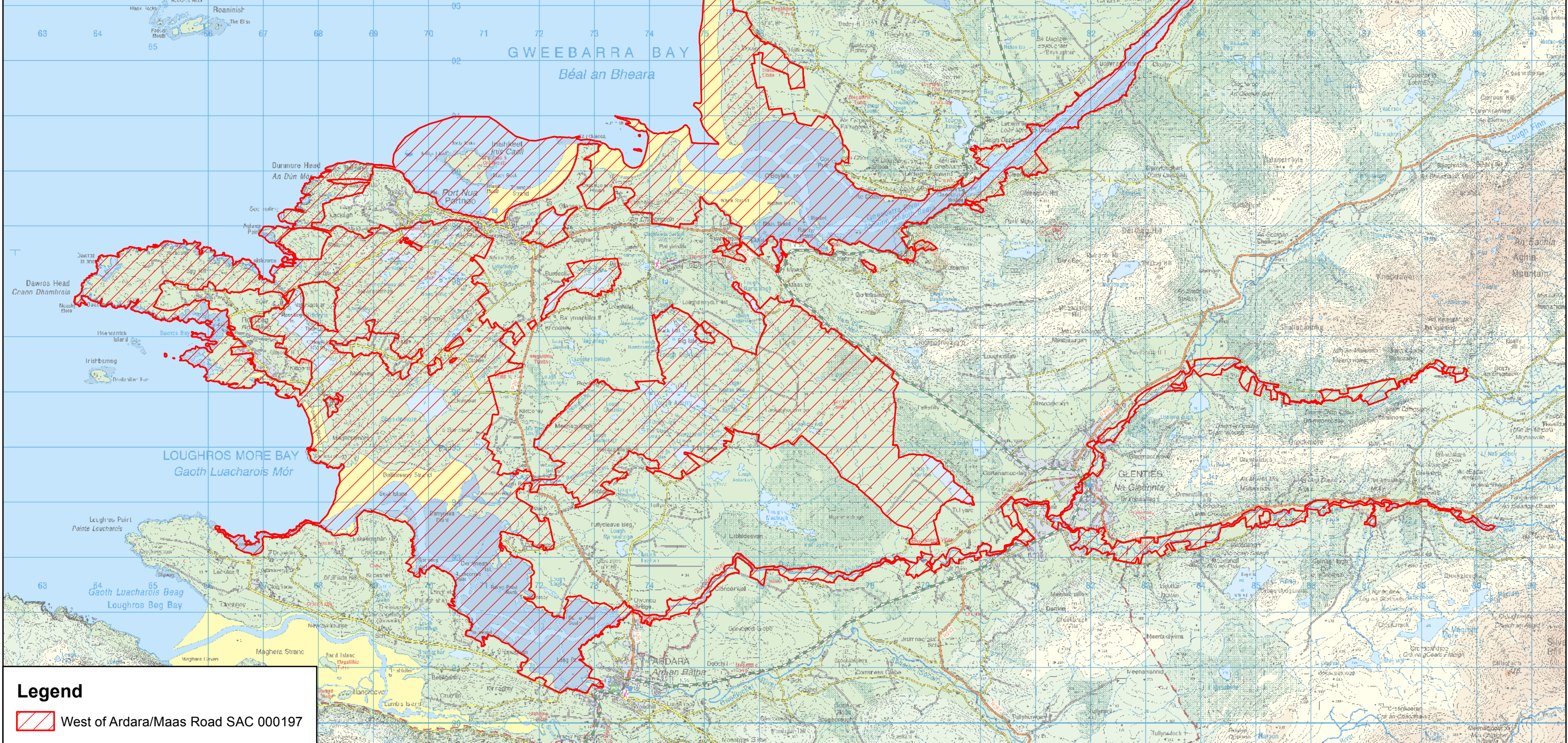
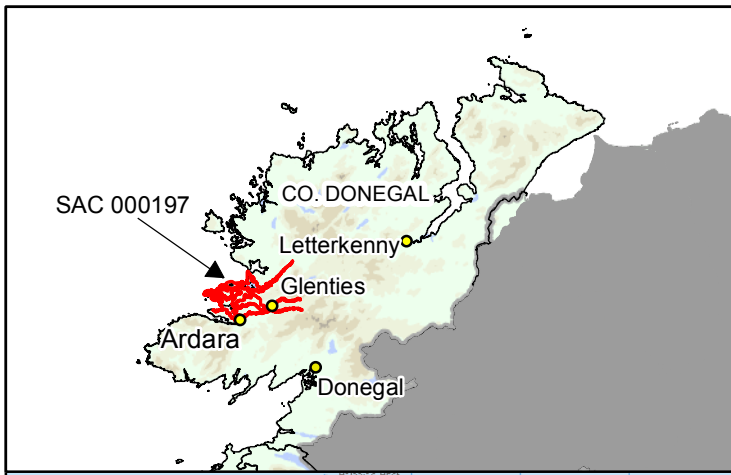
Attribute	Measure	Target	Notes
Distribution of populations	Number and geographical spread of populations	No decline. There are two known populations within the SAC. See map 10	There are currently two known sub-populations: (5a) Dooley Point, near the northern end of the machair and low ridge (bank between old fields) in wide, shallow dune-slack area supporting short grassland; and (5b) Sheskinmore, along the edge of a sandy bank in short turf with high bryophyte cover above a limestone outcrop. Data from NPWS surveys and Campbell (2013)
Population size	Number of individuals	No decline. Population at (5a) Dooley Point = c.4 thalli; (5b) Sheskinmore = c.105 thalli; Total = c.110 thalli	Counts of thalli: for Dooley Point, from mean number of thalli recorded by Holyoak 1999 and 2002 (4 and 3 thalli respectively) = 3.5 thalli; for Sheskinmore, from mean of number of thalli in two 1 x 1m plots, from three counts from early April 2009 to April 2011 (Campbell, 2013): 7.5 thalli per m ² in 14 m ² = 105 thalli
Area of suitable habitat	Hectares	No decline. Area of suitable habitat at Dooley Point currently unknown, but thought to be very small, c.0.00005ha. Area of suitable habitat at Sheskinmore estimated at c.0.001375ha. Total = 0.0015ha	The extent of suitable habitat at Dooley Point has not been measured by GPS, but is known to be very small (ca. 0.5m ²). The extent of suitable habitat at Sheskinmore, measured by GPS co-ordinates, is c.14m ² (Campbell, 2013)
Hydrological conditions: soil moisture	Occurrence of damp soil conditions	Maintain hydrological conditions so that substrate is kept moist and damp throughout the year, but not subject to prolonged inundation by flooding in winter	<i>Petalophyllum ralfsii</i> grows in damp sand. Based on Campbell (2013)
Vegetation: open structure	Height and percentage cover of vegetation	Maintain open, low vegetation, with a high percentage cover of bryophytes (small acrocarps and liverwort turf) and bare ground	<i>Petalophyllum ralfsii</i> grows in compacted, sandy ground, maintained by rabbit (<i>Oryctolagus cuniculus</i>) and cattle grazing and trampling (by walkers). Recorded at Dooley Point on small, mainly bare patch of humic sand exposed on low ridge (Holyoak, 2002); at Sheskinmore, Campbell (2013) recorded a mean height of vegetation of 5.3cm, with bryophyte cover c.26-75% and bare ground c.3-10% (based on two 1 x 1m plots between 2009 and 2011). See also the conservation objectives for fixed coastal dunes (2130) and machairs (21A0)

Conservation Objectives for : West of Ardara/Maas Road SAC [000197]


1833 Slender Naiad *Najas flexilis*


To maintain the favourable conservation condition of Slender Naiad in West of Ardara/Maas Road SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population extent	Hectares; distribution	No change to the spatial extent of <i>Najas flexilis</i> within each lake, subject to natural processes. See map 14 for known locations	See <i>Najas flexilis</i> supporting document for further details
Population depth	Metres	No change to the depth range of <i>Najas flexilis</i> within each lake, subject to natural processes	See <i>Najas flexilis</i> supporting document for further details
Population viability	Plant traits	No decline in plant fitness, subject to natural processes	See <i>Najas flexilis</i> supporting document for further details
Population abundance	Square metres	No change to the cover abundance of <i>Najas flexilis</i> , subject to natural processes	See <i>Najas flexilis</i> supporting document for further details
Species distribution	Occurrence	No decline, subject to natural processes	See <i>Najas flexilis</i> supporting document for further details
Habitat extent	Hectares	No decline, subject to natural processes	See <i>Najas flexilis</i> supporting document for further details
Hydrological regime: water level fluctuations	Metres	Maintain appropriate natural hydrological regime necessary to support the habitat for the species	See <i>Najas flexilis</i> supporting document for further details
Lake substratum quality	Various	Maintain appropriate substratum type, extent and chemistry to support the populations of the species	See <i>Najas flexilis</i> supporting document for further details
Water quality	Various	Maintain appropriate water quality to support the populations of the species	See <i>Najas flexilis</i> supporting document for further details
Acidification status	pH units; mg/l	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the populations of <i>Najas flexilis</i> , subject to natural processes	See <i>Najas flexilis</i> supporting document for further details
Water colour	mg/L PtCo	Maintain appropriate water colour to support the populations of <i>Najas flexilis</i>	See <i>Najas flexilis</i> supporting document for further details
Associated species	Species composition and abundance	Maintain appropriate associated species and vegetation communities to support the populations of <i>Najas flexilis</i>	See <i>Najas flexilis</i> supporting document for further details
Fringing habitat: area and condition	Hectares	Maintain the area and condition of fringing habitats necessary to support the populations of <i>Najas flexilis</i>	See <i>Najas flexilis</i> supporting document for further details



Legend

 West of Ardara/Maas Road SAC 000197

 **An Roinn Ealaíon, Oidhreachta agus Gaeltachta**
 Department of Arts, Heritage and the Gaeltacht

MAP 1:
WEST OF ADARA/MAAS ROAD SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

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

SITE CODE:
SAC 000197; version 3. CO. DONEGAL

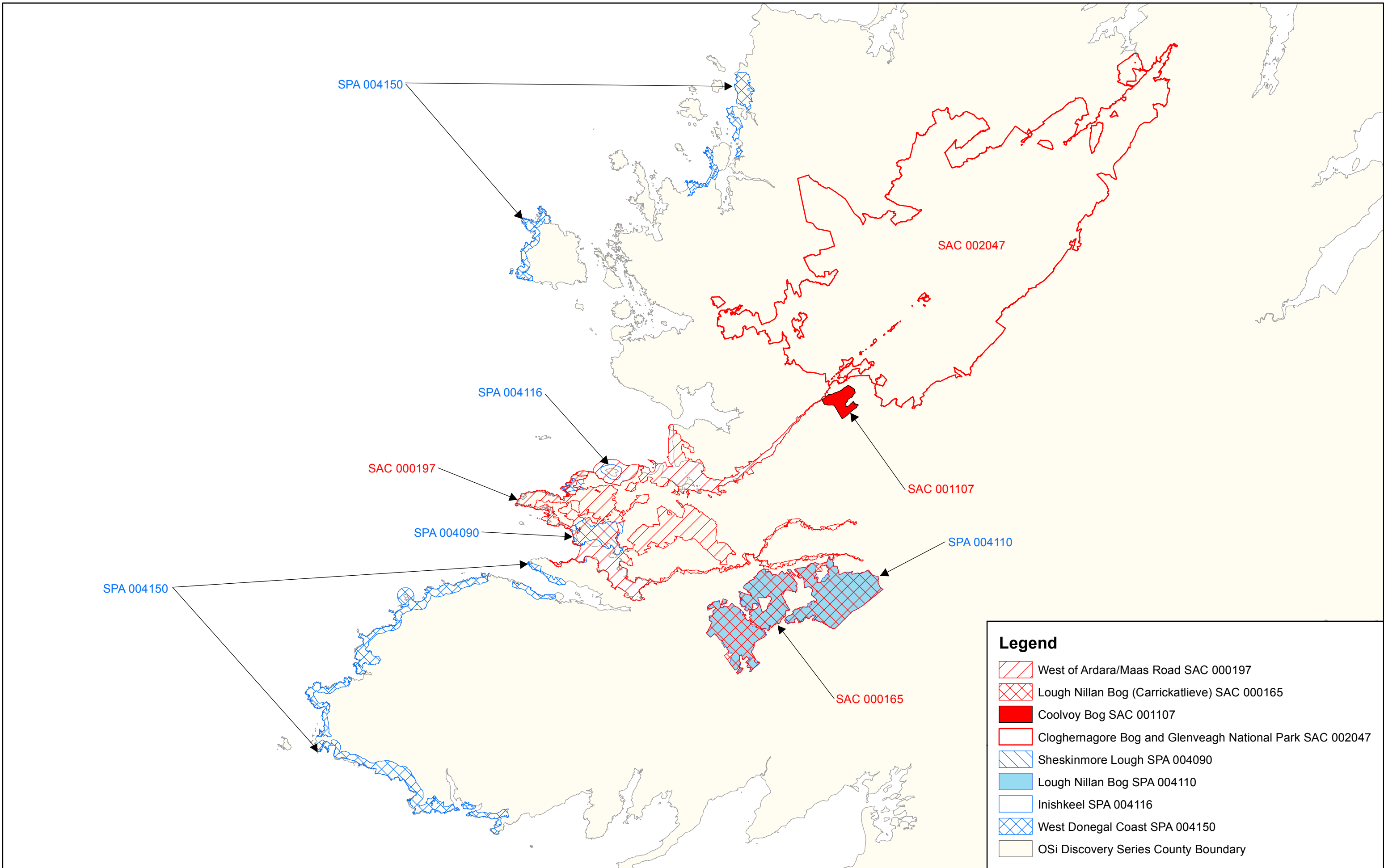
0 1 2 3 4 km

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáilleana ach nod garshuíomhach ginearálta. Féadfar athbheithniú na déanamh ar theorainneacha na gceantar comharthaite. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059214. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann.

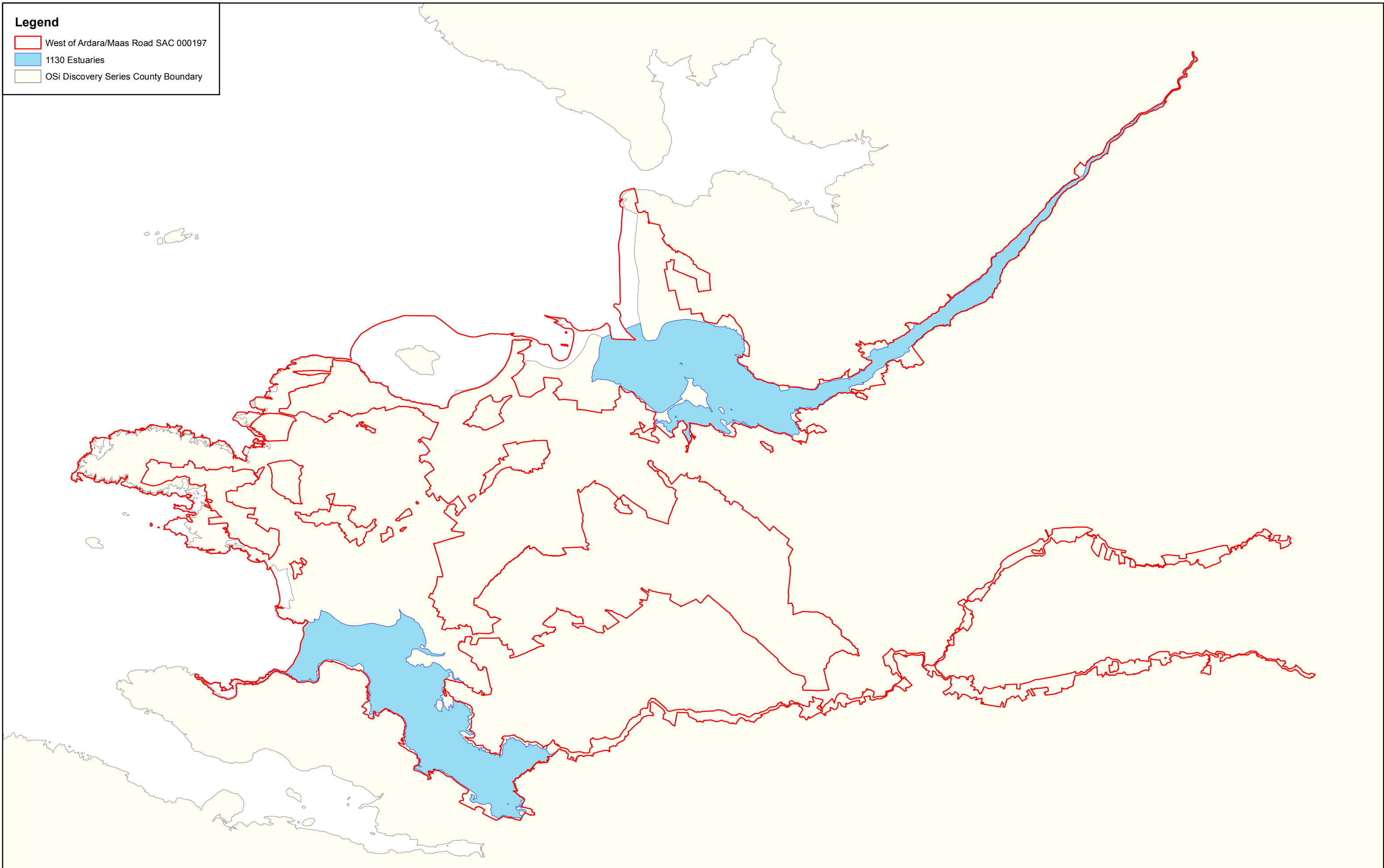


Map Version 1
Date: May 2015






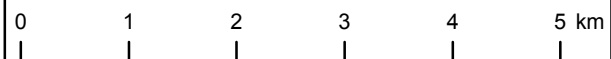
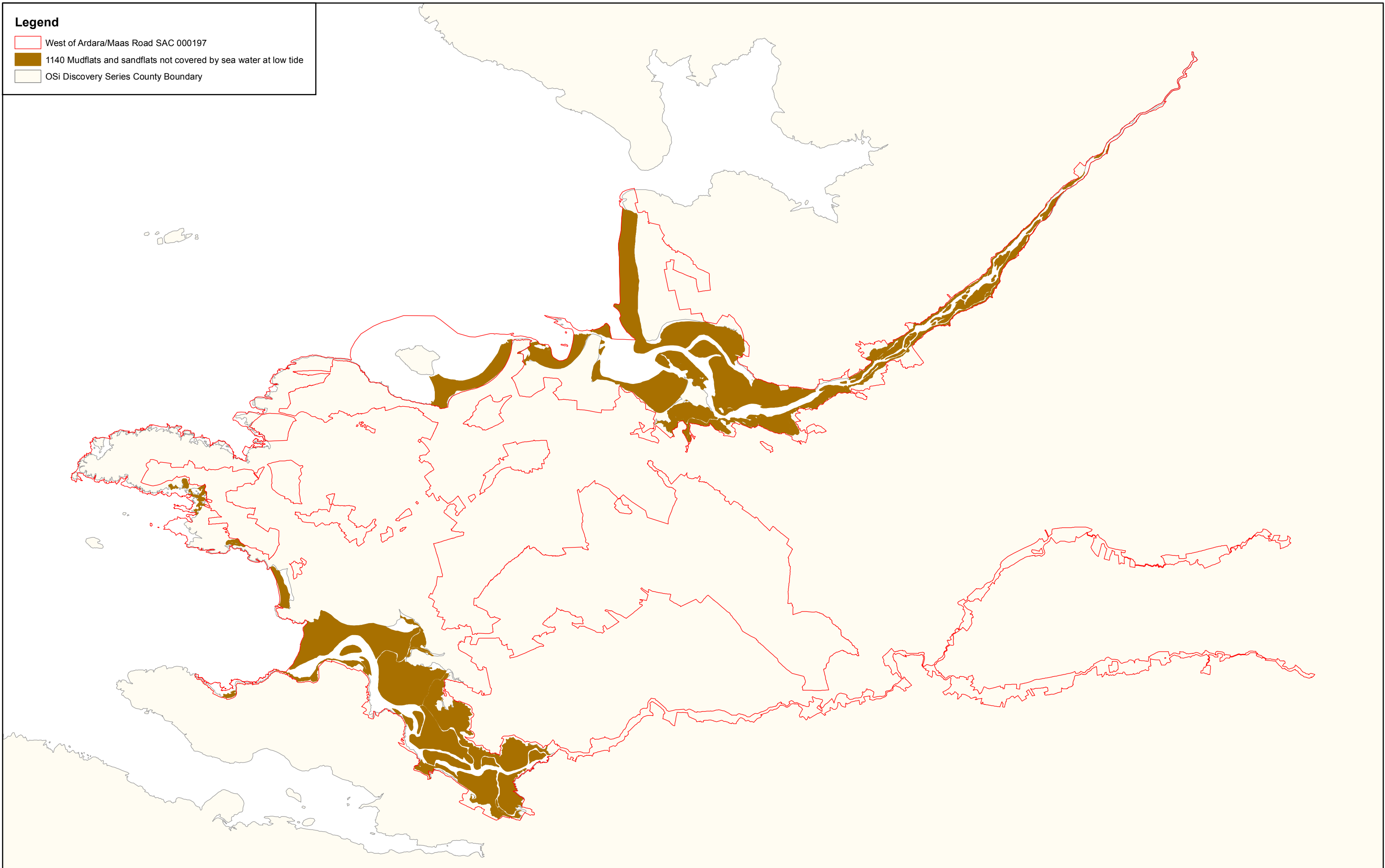
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- West of Ardara/Maas Road SAC 000197
- 1130 Estuaries
- OSi Discovery Series County Boundary

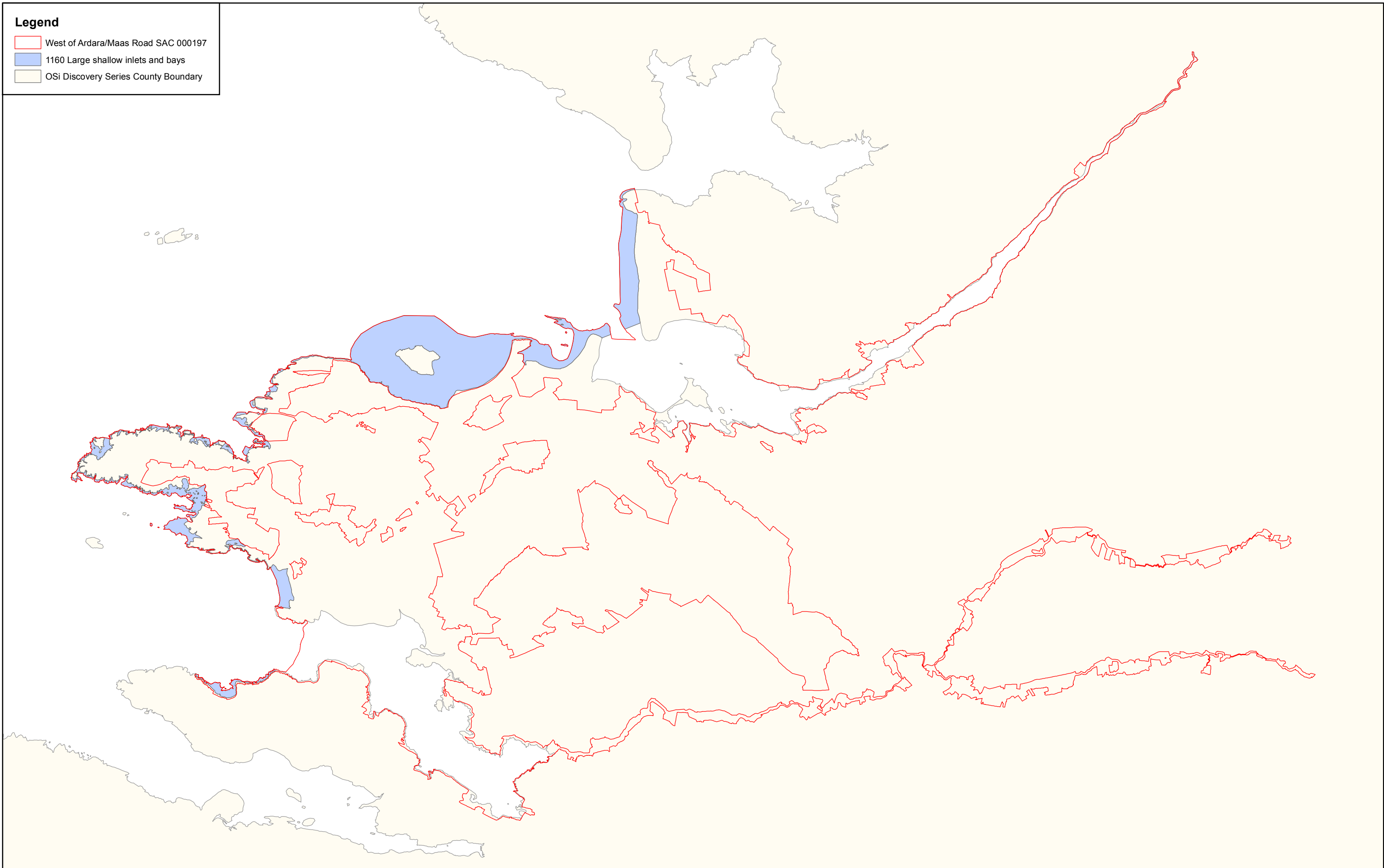


Legend






-  West of Ardara/Maas Road SAC 000197
-  1140 Mudflats and sandflats not covered by sea water at low tide
-  OSi Discovery Series County Boundary

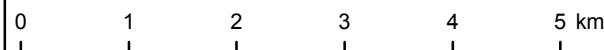
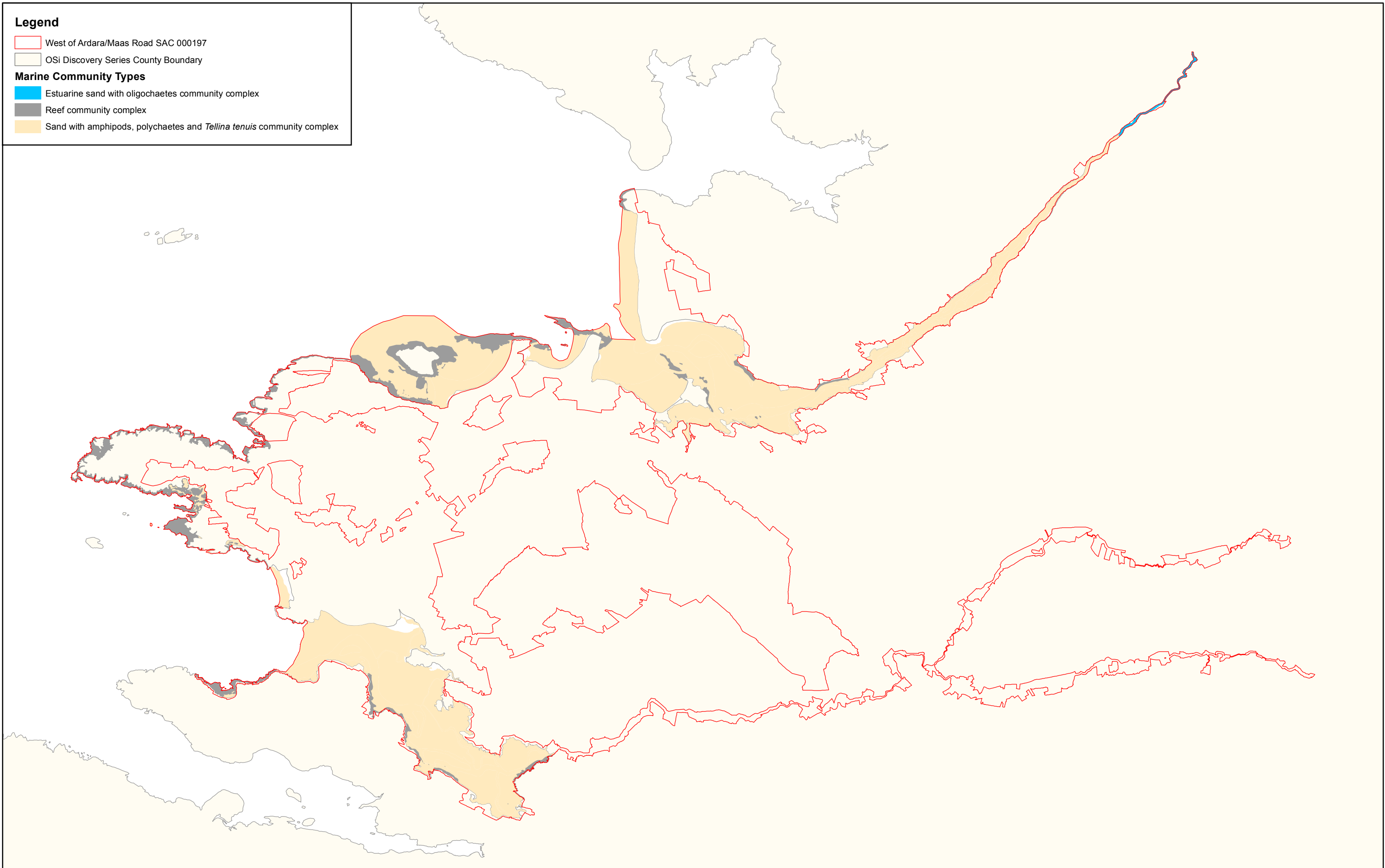


- Legend**
- West of Ardara/Maas Road SAC 000197
 - 1160 Large shallow inlets and bays
 - OSi Discovery Series County Boundary



Legend

-  West of Ardara/Maas Road SAC 000197
-  OSi Discovery Series County Boundary
- Marine Community Types**
-  Estuarine sand with oligochaetes community complex
-  Reef community complex
-  Sand with amphipods, polychaetes and *Tellina tenuis* community complex

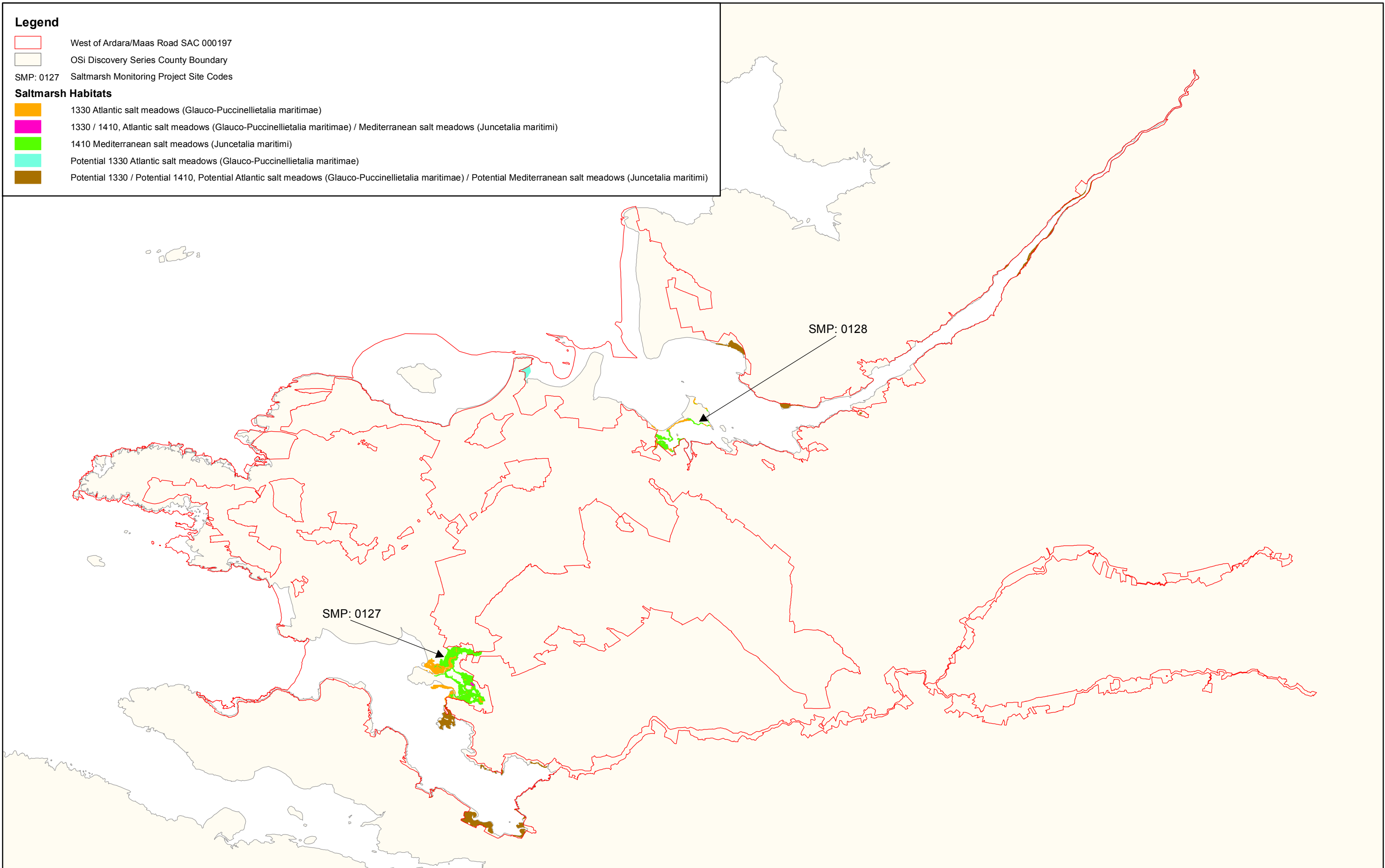


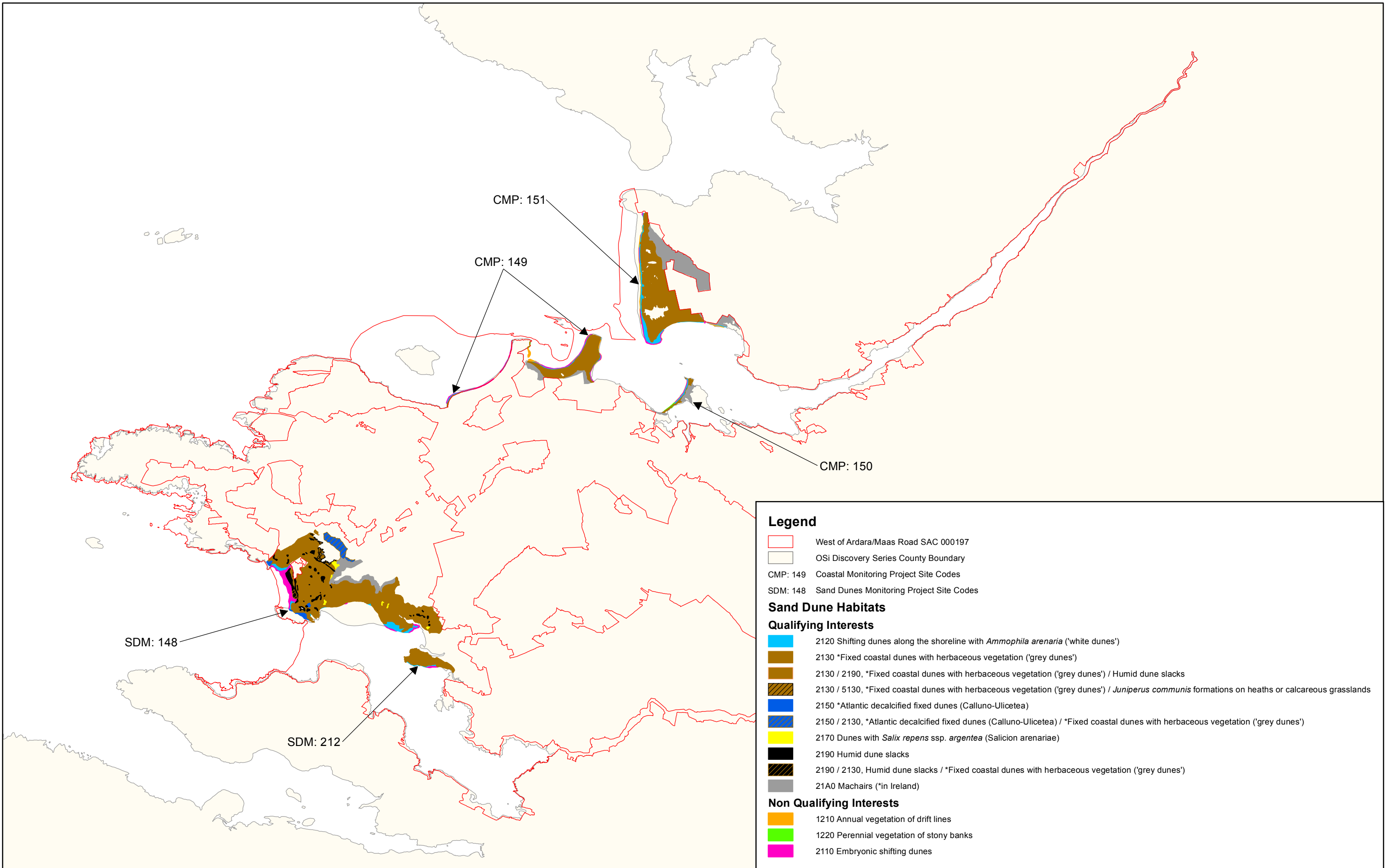
Legend

- West of Ardara/Maas Road SAC 000197
- OSi Discovery Series County Boundary
- SMP: 0127 Saltmarsh Monitoring Project Site Codes

Saltmarsh Habitats

- 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- 1330 / 1410, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) / Mediterranean salt meadows (*Juncetalia maritimi*)
- 1410 Mediterranean salt meadows (*Juncetalia maritimi*)
- Potential 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Potential 1330 / Potential 1410, Potential Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) / Potential Mediterranean salt meadows (*Juncetalia maritimi*)





Legend

- West of Adara/Maas Road SAC 000197
- OSi Discovery Series County Boundary
- CMP: 149 Coastal Monitoring Project Site Codes
- SDM: 148 Sand Dunes 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')
- 2130 / 2190, *Fixed coastal dunes with herbaceous vegetation ('grey dunes') / Humid dune slacks
- 2130 / 5130, *Fixed coastal dunes with herbaceous vegetation ('grey dunes') / *Juniperus communis* formations on heaths or calcareous grasslands
- 2150 *Atlantic decalcified fixed dunes (Calluno-Ulicetea)
- 2150 / 2130, *Atlantic decalcified fixed dunes (Calluno-Ulicetea) / *Fixed coastal dunes with herbaceous vegetation ('grey dunes')
- 2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)
- 2190 Humid dune slacks
- 2190 / 2130, Humid dune slacks / *Fixed coastal dunes with herbaceous vegetation ('grey dunes')
- 21A0 Machairs (*in Ireland)

Non Qualifying Interests

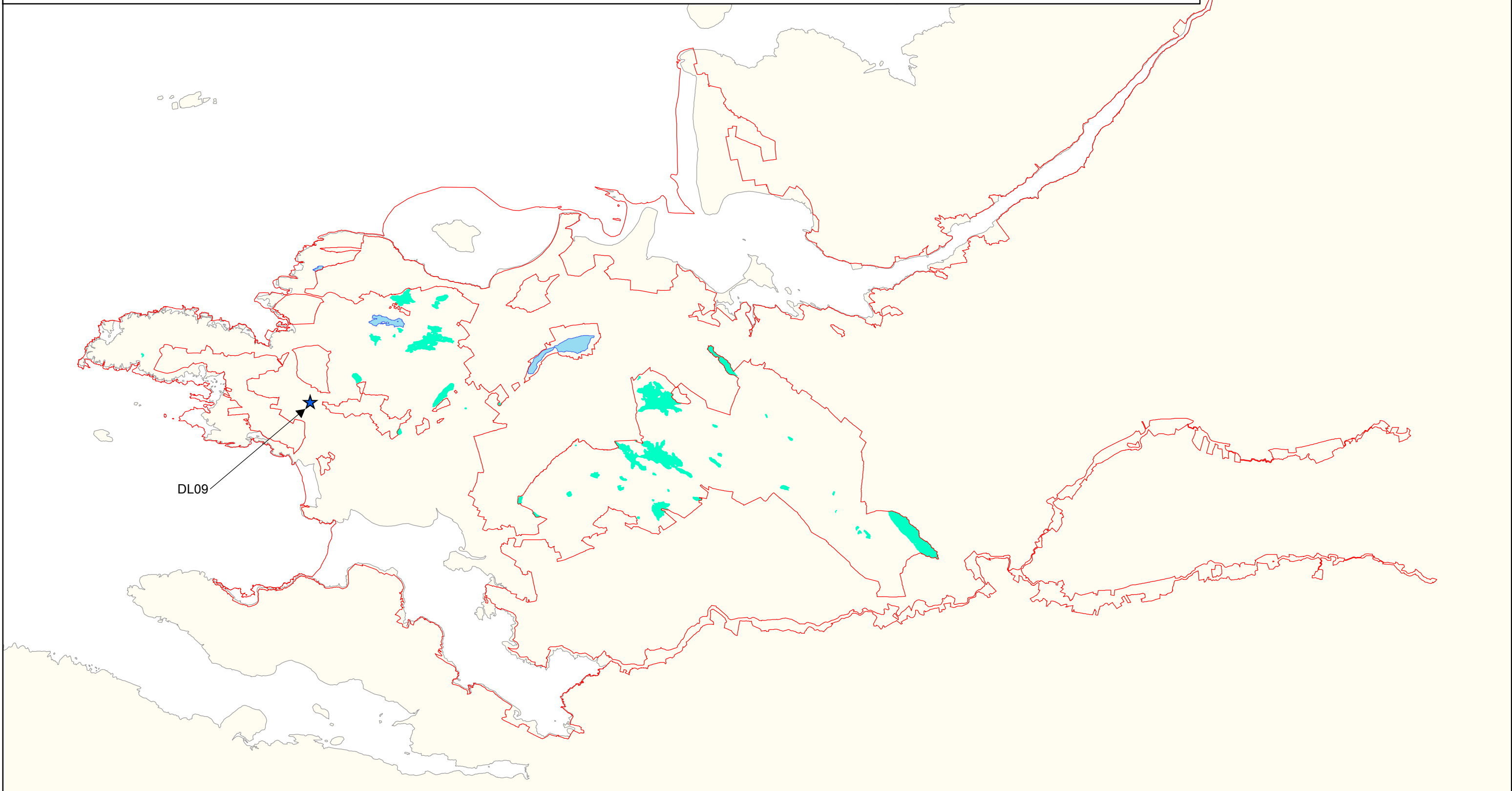
- 1210 Annual vegetation of drift lines
- 1220 Perennial vegetation of stony banks
- 2110 Embryonic shifting dunes

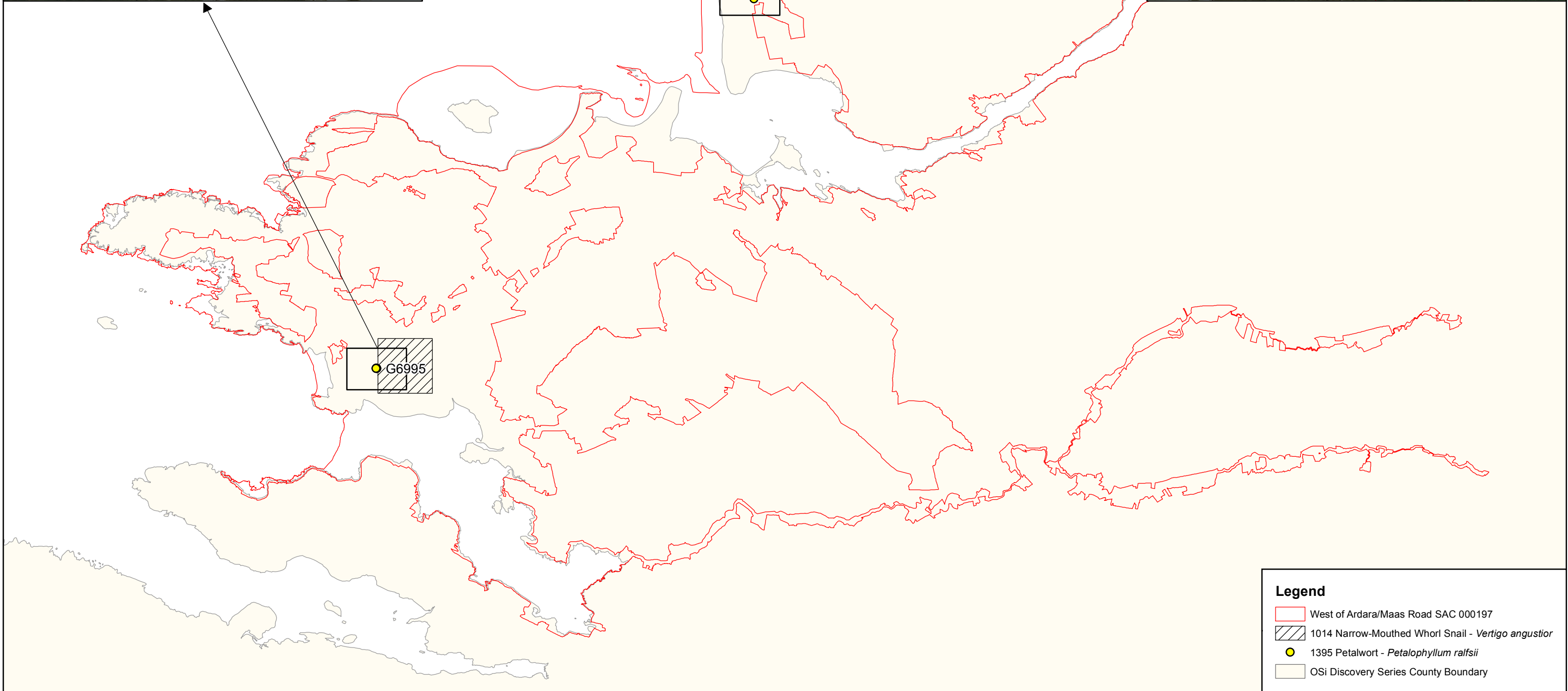
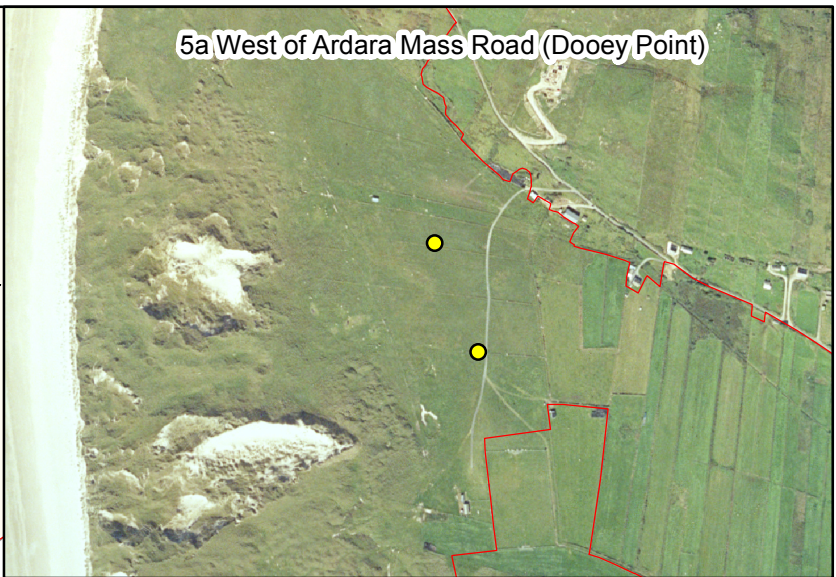
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- West of Ardara/Maas Road SAC 000197
- OSi Discovery Series County Boundary
- ★ 5130 *Juniperus communis* formations on heaths or calcareous grasslands Survey Sites

Lake Habitats

- Potential 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorarae*)
- Potential 3110 / Potential 3130, Potential Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorarae*) / Potential Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorarae* and/or *Isoeto-Nanojuncetea*



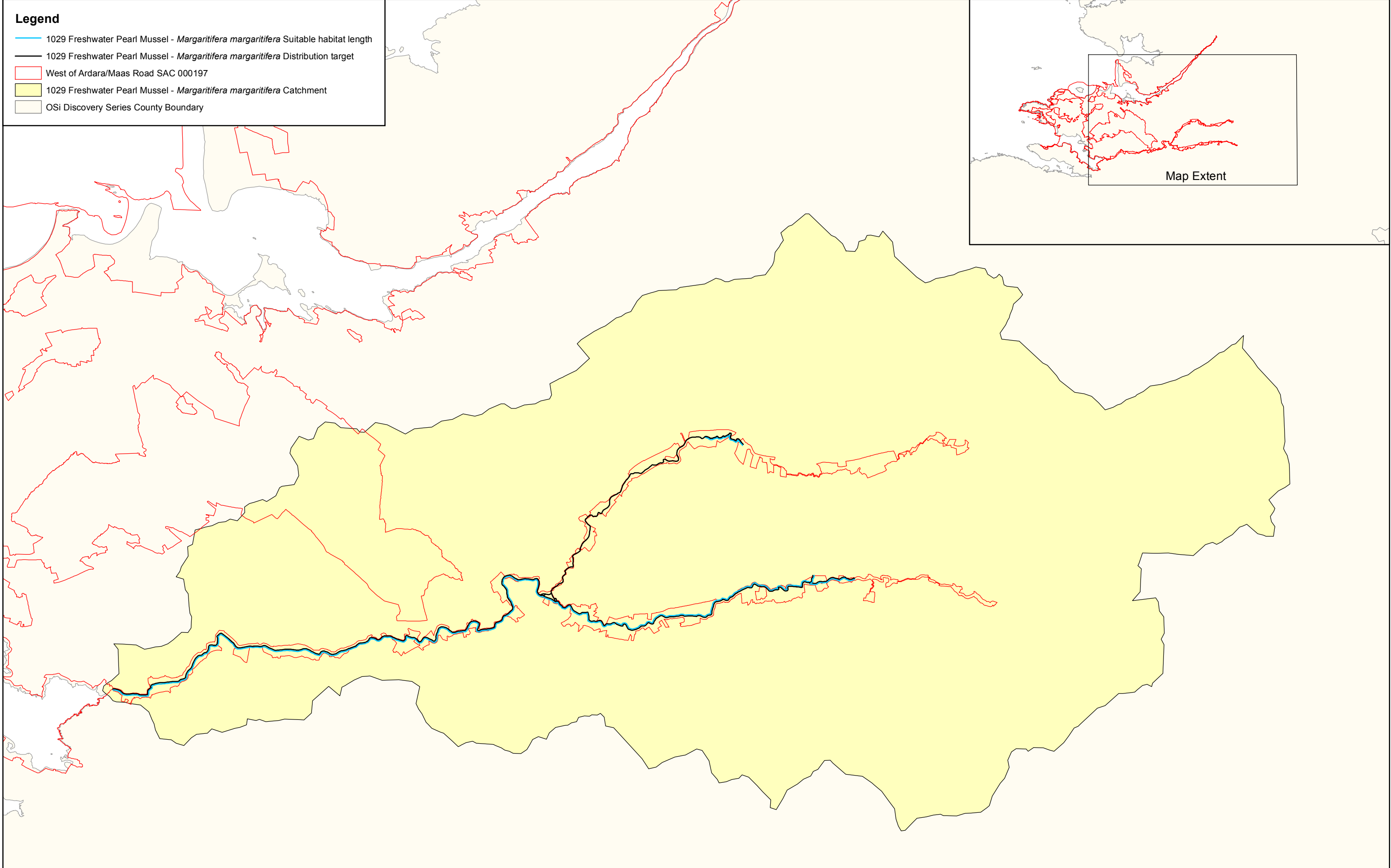
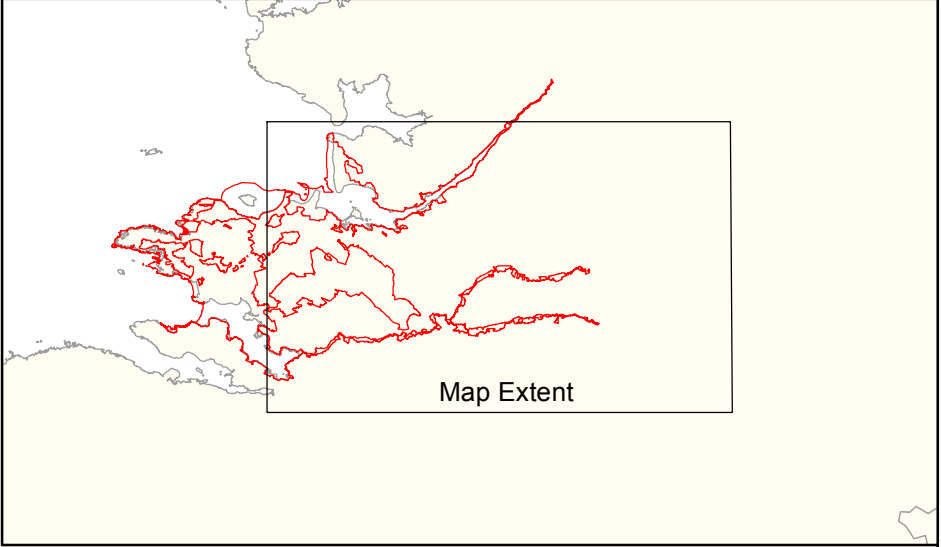


Legend




- West of Ardara/Maas Road SAC 000197
- 1014 Narrow-Mouthed Whorl Snail - *Vertigo angustior*
- 1395 Petalwort - *Petalophyllum raifsii*
- OSi Discovery Series County Boundary

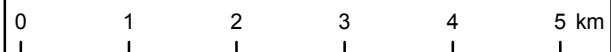
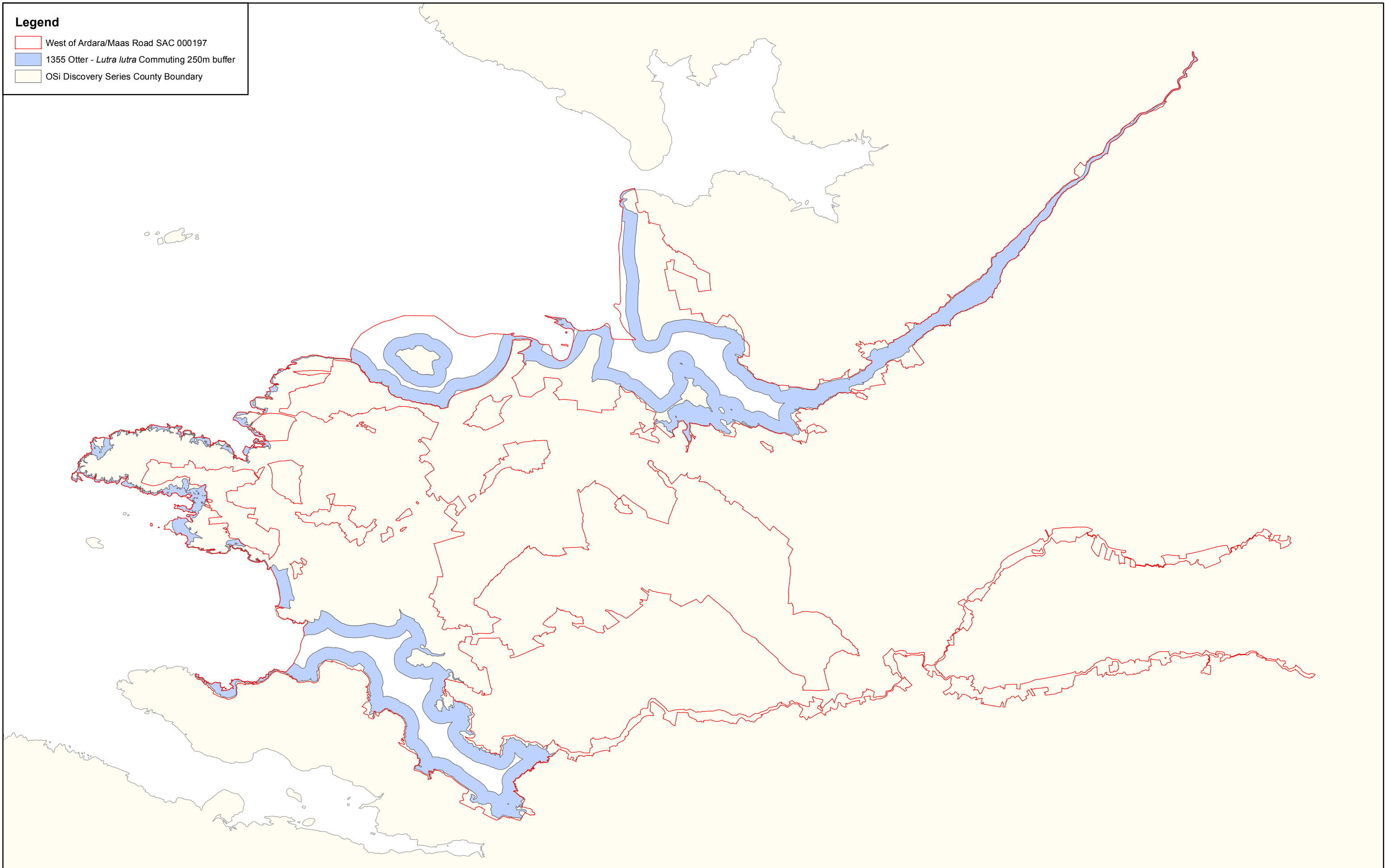
Legend

- 1029 Freshwater Pearl Mussel - *Margaritifera margaritifera* Suitable habitat length
- 1029 Freshwater Pearl Mussel - *Margaritifera margaritifera* Distribution target
- West of Ardara/Maas Road SAC 000197
- 1029 Freshwater Pearl Mussel - *Margaritifera margaritifera* Catchment
- OSi Discovery Series County Boundary









Legend

-  West of Ardara/Maas Road SAC 000197
-  1355 Otter - *Lutra lutra* Commuting 250m buffer
-  OSi Discovery Series County Boundary



Legend

-  West of Ardara/Maas Road SAC 000197
-  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 Boundary



Legend

- West of Ardara/Maas Road SAC 000197
- 1065 Marsh Fritillary - *Euphydryas aurinia*
- 1833 Slender Naiad - *Najas flexilis*
- OSi Discovery Series County Boundary

