

National Parks and Wildlife Service

Conservation Objectives Series

Gweedore Bay and Islands SAC 001141



*An Roinn
Ealaíon, Oidhreachta agus Gaeltachta*

*Department of
Arts, Heritage and the Gaeltacht*



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Introduction

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

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

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

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

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Notes/Guidelines:

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

Qualifying Interests

* indicates a priority habitat under the Habitats Directive

001141 Gweedore Bay and Islands SAC	
1150	Coastal lagoonsE
1170	Reefs
1220	Perennial vegetation of stony banks
1355	Otter <i>Lutra lutra</i>
1395	Petalwort <i>Petalophyllum ralfsii</i>
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)
1833	Slender Naiad <i>Najas flexilis</i>
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with <i>Cladonia</i> (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)E
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2150	Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)E
2170	Dunes with <i>Salicornia</i> ssp. <i>arenaria</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>)
4030	European dry heaths
4060	Alpine and Boreal heaths
5130	<i>Cladonia</i> formations on heaths or calcareous grasslands

Please note that this SAC overlaps with West Donegal Coast SPA (004150) and West Donegal Islands SPA (004230). It adjoins Rutland Island and Sound SAC (002283). See map 2. The conservation objectives for this site should be used in conjunction with those for overlapping and adjacent sites as appropriate.

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	1996
Title :	Biomar survey of Irish machair sites
Author :	Crawford, I.; Bleasdale, A.; Conaghan, J.
Series :	Irish Wildlife Manual No. 3
Year :	1999
Title :	National Shingle Beach Survey of Ireland 1999
Author :	Moore, D.; Wilson, F.
Series :	Unpublished Report to NPWS
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 :	2007
Title :	Inventory of Irish coastal lagoons (version 2)
Author :	Oliver, G.
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 :	The Conservation Status of Juniper Formations in Ireland
Author :	Cooper, F.; Stone, R.E.; McEvoy, P.; Wilkins, T.; Reid, N.
Series :	Irish Wildlife Manual No. 63
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 :	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 : 2014
Title : Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland, Version 2.0
Author : Perrin, P.M.; Barron, S.J.; Roche, J.R.; O'Hanrahan, B.
Series : Irish Wildlife Manual No. 79

Year : 2015
Title : Gweedore Bay and Islands SAC (site code: 1141) Conservation objectives supporting document- coastal habitats V1
Author : NPWS
Series : Conservation objectives supporting document

Year : 2015
Title : Gweedore Bay and Islands SAC (site code: 1141) Conservation objectives supporting document- coastal lagoons V1
Author : NPWS
Series : Conservation objectives supporting document

Year : 2015
Title : Gweedore Bay and Islands SAC (site code: 1141) Conservation objectives supporting document- marine habitat V1
Author : NPWS
Series : Conservation objectives supporting document

Year : 2015
Title : Gweedore Bay and Islands SAC (site code: 1141) Conservation objectives supporting document- *Najas flexilis* V1
Author : NPWS
Series : Conservation objectives supporting document

Other References

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

Year : 1988
Title : The Irish red data book 1. Vascular plants
Author : Curtis, T.G.F; McGough, H.N.
Series : Wildlife Service, Dublin

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

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 :	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 :	2006
Title :	Otters - ecology, behaviour and conservation
Author :	Kruuk, H.
Series :	Oxford University Press
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 :	2008
Title :	The phytosociology and conservation value of Irish sand dunes
Author :	Gaynor, K.
Series :	Unpublished PhD thesis, National University of Ireland, Dublin
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 :	2010
Title :	Otter tracking study of Roaringwater Bay
Author :	De Jongh, A.; O'Neill, L.
Series :	Unpublished draft report to NPWS
Year :	2011
Title :	Reef investigations in Gweedore Bay and Islands cSAC (site code:IE001141)
Author :	Aquafact
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 : 2013
Title : Monitoring and assessment of Irish lagoons for the purposes of the EU Water Framework Directive, 2009-2011. Parts 1 and 2
Author : Roden, C.M; Oliver, G.A.
Series : Unpublished report to the Environmental Protection Agency

Year : in prep.
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, A.
Series : Unpublished report to NPWS

Year : in prep.
Title : Monitoring of hard-water lakes in Ireland using charophytes and other macrophytes
Author : Roden, C.; Murphy, P.
Series : Unpublished report to NPWS

Spatial data sources

Year :	Revision 2011
Title :	Inventory of Irish Coastal Lagoons. Version 3
GIS Operations :	Clipped to SAC boundary
Used For :	1150 (map 3)
Year :	Interpolated 2014
Title :	Subtidal survey 2010
GIS Operations :	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data. Expert opinion used as necessary to resolve any issues arising
Used For :	1170, marine community types (maps 4 and 5)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	High water mark (HWM) and low water mark (LWM) polyline feature classes converted into polygon feature classes and combined; EU Annex I Saltmarsh and Coastal data erased out if present
Used For :	Marine community types base data (map 5)
Year :	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 :	1410 (map 6)
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 :	1220, 2110, 2120, 2130, 2140, 2150, 2170, 2190, 21A0 (map 7)
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 :	2110, 2120, 2130, 2140, 2150, 2170, 2190, 21A0 (map 7)
Year :	Revision 2012
Title :	National Shingle Beach Survey
GIS Operations :	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1220 (map 7)
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 8)
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 :	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 WFD Waterbodies data and Coastal Lagoon data for the 1355 CO. Overlapping regions investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising. Creation of 250m buffer on marine side of HWM to highlight potential commuting points
Used For :	1355 (map 10)
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 and Coastal Lagoon data for the 1355 CO. Overlapping regions investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1355 (map 10)
Year :	Revision 2011
Title :	Inventory of Irish Coastal Lagoons. Version 3
GIS Operations :	Creation of 80m buffer on the aquatic side of lagoon data; creation of 10m buffer on the terrestrial side of lagoon data. These datasets are combined with the derived OSi data and EPA WFD Waterbodies data for the 1355 CO. Overlapping regions are investigated and resolved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1355 (map 10)
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 :	1395 (map 11)
Year :	2013
Title :	<i>Najas flexilis</i> data
GIS Operations :	Lake habitat for species clipped to SAC boundary
Used For :	1833 (map 12)

1150 Coastal lagoons

To restore the favourable conservation condition of Coastal lagoons in Gweedore Bay and Islands SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable, subject to slight natural variation. Favourable reference area 10.0ha for mapped lagoons. See map 3	Areas calculated from spatial data derived from Oliver (2007). Site codes IL082 (Kincas Lough) and IL083 (Moorlagh). See lagoons supporting document for further details. NB there may be additional, unsurveyed lagoons within the SAC
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3 for mapped lagoons	Sites IL082 and IL083 in Oliver, 2007. See lagoons supporting document for further details. NB there may be additional, unsurveyed lagoons within the SAC
Salinity regime	Practical salinity units (psu)	Median annual salinity and temporal variation within natural ranges	Kincas Lough and Moorlagh are recorded as euhaline to oligohaline lagoons. See lagoons supporting document for further details
Hydrological regime	Metres	Annual water level fluctuations and minima within natural ranges	Maximum depth of Kincas Lough is recorded as 5m and Moorlagh is less than 1m. See lagoons supporting document for further details
Barrier: connectivity between lagoon and sea	Permeability	Appropriate hydrological connections between lagoons and sea, including where necessary, appropriate management	Kincas Lough and Moorlagh are described as rock/peat lagoons. See lagoons supporting document for further details
Water quality: Chlorophyll <i>a</i>	µg/L	Annual median chlorophyll <i>a</i> within natural ranges and less than 5µg/L	Target based on Roden and Oliver (2013). See lagoons supporting document for further details
Water quality: Molybdate Reactive Phosphorus (MRP)	mg/L	Annual median MRP within natural ranges and less than 0.1mg/L	Target based on Roden and Oliver (2013). See lagoons supporting document for further details
Water quality: Dissolved Inorganic Nitrogen (DIN)	mg/L	Annual median DIN within natural ranges and less than 0.15mg/L	Target based on Roden and Oliver (2013). See lagoons supporting document for further details
Depth of macrophyte colonisation	Metres	Macrophyte colonisation to at least 2m depth	Where a lagoon is less than 2m deep, it is expected that macrophyte colonisation would extend to the full depth. See lagoons supporting document for further details
Typical plant species	Number and m ²	Maintain number and extent of listed lagoonal specialists, subject to natural variation	Species listed in Oliver, 2007. See lagoons supporting document for further details
Typical animal species	Number	Maintain listed lagoon specialists, subject to natural variation	Species listed in Oliver, 2007. See lagoons supporting document for further details
Negative indicator species	Number and % cover	Negative indicator species absent or under control	Low salinity, shallow water and elevated nutrient levels increase the threat of unnatural encroachment by reedbeds. See lagoons supporting document for further details

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

1170 Reefs

To maintain the favourable conservation condition of Reefs in Gweedore Bay and Islands 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 for mapped area	Habitat area estimated as 369ha from a 2010 subtidal reef survey (Aquafact, 2011) and intertidal observations made in 2012
Distribution	Occurrence	The distribution of reefs remains stable, subject to natural processes. See map 4 for mapped distribution	Based on information from a 2010 subtidal reef survey (Aquafact, 2011) and intertidal observations made in 2012
Community structure	Biological composition	Conserve the following community types in a natural condition: Reef community complex; <i>Laminaria</i> -dominated community complex. See map 5	Reef mapping based on information from a 2010 subtidal reef survey (Aquafact, 2011) and intertidal observations made in 2012. See marine supporting document for further details

1220 Perennial vegetation of stony banks

To maintain the favourable conservation condition of Perennial vegetation of stony banks in Gweedore Bay and Islands SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession	Current area unknown. It was recorded as being present, but extent was not mapped, from two sub-sites during the National Shingle Beach Survey (NSBS) (Moore and Wilson, 1999): Coastline from Port ui Chuirean to Bunaninver, and Port bun an Inbhir. A small area of this habitat was also recorded on Gola Island by the Coastal Monitoring Project (CMP) (Ryle et al., 2009). NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 7 for surveyed locations	Distribution unknown at present, although the habitat has been recorded at Port ui Chuirean to Bunaninver and Port bun an Inbhir by Moore and Wilson (1999) and at Gola Island by Ryle et al. (2009). Donegal is noted for its raised beaches and habitat is likely to be more widespread. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Moore and Wilson (1999) noted the presence of rock armour at the coastline from Port Ui Chuirean to Bunaninver sub-site, which may be compromising the supply and natural circulation of sediment. Shingle features are relatively stable in the long term. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Moore and Wilson (1999). Lichens are present at both subsites visited by the NSBS, indicating a degree of stability. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain the typical vegetated shingle flora including the range of sub-communities within the different zones	Based on data from Moore and Wilson (1999). Both sub-sites support good quality vegetated shingle flora. See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Moore and Wilson (1999) and Ryle et al. (2009). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. No negative indicator species were recorded at the sub-sites by the NSBS or CMP. See coastal habitats supporting document for further details

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

1410 Mediterranean salt meadows (*Juncetalia maritimi*)

To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in Gweedore Bay and Islands 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: Keadew - 0.09ha. See map 6	Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009). One sub-site that supports Mediterranean Salt Meadows was mapped (0.09ha) and additional areas of potential MSM habitat (9.66ha) were identified from an examination of aerial photographs, giving a total estimated area of 9.75ha. 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 mapped distribution	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	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). 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 Keadew, embryonic dunes, fixed dunes and blanket bog were recorded on the upper boundary of the saltmarsh. 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). The overall grazing intensity of the saltmarsh at Keadew is low. 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). Trails from pedestrian and vehicular traffic criss-cross the saltmarsh habitat particularly at the western end of the sub-site. 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	Common cordgrass (<i>Spartina anglica</i>) has not been recorded in this SAC and its establishment should be prevented	Based on data from McCorry and Ryle (2009). <i>Spartina</i> swards were not recorded in this SAC by SMP. See coastal habitats supporting document for further details

2110 Embryonic shifting dunes

To maintain the favourable conservation condition of Embryonic shifting dunes in Gweedore Bay and Islands 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: Keadew - 0.46ha; Cruit Lower - 1.29ha; Kincaslough - 0.14ha; Carnboy - 1.39ha; Derrybeg - 0.69ha. See map 7	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 mapped at five sub-sites to give a total estimated area of 3.97ha. 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, subject to natural processes. See map 7 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Shifting dunes were recorded at all sub-sites except for Gola Island and Lunniagh. 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. Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. At Derrybeg, rock armour has been placed on the edge of a walkway and pier in the north west of the site. 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 foredune grasses	Percentage cover	More than 95% of sand couch grass (<i>Elytrigia juncea</i>) and/or lyme grass (<i>Leymus arenarius</i>) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities with typical species: sand couch grass (<i>Elytrigia juncea</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-native species) 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

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

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 Gweedore Bay and Islands 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: Keadew - 0.73ha; Cruit Lower - 1.88ha; Kincaslough - 1.59ha; Carnboy - 2.41ha; Derrybeg - 3.96ha; Gola Island - 0.54ha; Lunniagh - 3.68ha. See map 7	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 mapped at seven sub-sites to give a total estimated area of 14.79ha. 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 7 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Shifting dunes were recorded at all sub-sites. The shifting dunes at Keadew are undergoing natural erosion. The shifting dunes at Cruit Lower are functioning well with sand accretion noted. At Kincaslough the shifting dunes are eroding at the western side of the sub-site while at the eastern end of the beach they are functioning well. At Carnboy this habitat had been eroded in the past but was rebuilding at time of CMP survey. At Derrybeg the shifting dunes have eroded behind the rock armour. At Lunniagh, dune accretion is occurring on the north side of the river and dunes measure up to 50m wide in places. 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 Derrybeg, rock armour has been placed on the edge of a walkway and pier in the north west of the site. Sand extraction occurs at Lunniagh. 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. See coastal habitats supporting document for further details
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Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

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 Gweedore Bay and Islands 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: Keadew -14.74ha; Cruit Lower - 30.55ha; Kincaslough - 79.90ha; Carnboy - 56.83ha; Derrybeg - 30.74ha; Gola Island - 3.38ha; Lunniagh - 186.32ha. See map 7	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 mapped at all seven sub-sites to give a total estimated area of 402.46ha. 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 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
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). At Keadew, Derrybeg and Lunniagh, the sand dune habitats occur alongside saltmarsh habitats. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
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). Overgrazing was noted at Lunniagh, while fixed dune was undergrazed or lightly grazed in parts at Keadew, Cruit Lower, Carnboy, Derrybeg and Gola Island. 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). An abundance of orchid species was noted at Kincaslough including frog orchid (<i>Coeloglossum viride</i>), common twayblade (<i>Listera ovata</i>), pyramidal orchid (<i>Anacamptis pyramidalis</i>) and fragrant orchid (<i>Gymnadenia conopsea</i>) and are indicators of local distinctiveness. 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. This species is known to occur at Cruit Lower and bracken (<i>Pteridium aquilinum</i>) at Derrybeg. 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). Burnet rose (<i>Rosa pimpinellifolia</i>) was recorded at Derrybeg. See coastal habitats supporting document for further details
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2140 Decalcified fixed dunes with *Empetrum nigrum*

To maintain the favourable conservation condition of Decalcified fixed dunes with *Empetrum nigrum* in Gweedore Bay and Islands 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: Keadew - 0.47ha. See map 7	Current area unknown. 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 at one sub-site, giving a total estimated area of 0.47ha. However, habitat is difficult to map as it occurs in a mosaic with fixed dunes. Likely to be more widespread. 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	Exact distribution unknown. Based on data from Ryle et al. (2009) and Delaney et al. (2013). This habitat was recorded at two sub-sites: Keadew and Cruit lower, but was only mapped at the Keadew sub-site. 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
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). At Keadew the coastal heath occurs in close association with fixed dune habitat. 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 Keadew and Cruit Lower, the dunes are undergrazed. 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. This species is known to occur at Cruit Lower. 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 Gweedore Bay and Islands 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: Cruit Lower - 3.57ha. See map 7	Current area unknown. 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 at one sub-site, giving a total estimated area of 3.57ha. Habitat is difficult to map as it occurs in a mosaic with fixed dunes. Likely to be more widespread. 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 mapped distribution	Exact distribution unknown. Based on data from Ryle et al., (2009) and Delaney et al. (2013). This habitat was recorded at one sub-site: Cruit Lower. 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
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% 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 Cruit Lower, both the fixed dune and machair are ungrazed resulting in a tall sward with low species diversity. 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. This species is known to occur at Cruit Lower. 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

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 Gweedore Bay and Islands 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: Cruit Lower - 0.94ha; Kincaslough - 0.03ha. See map 7	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 at two sub-sites, giving a total estimated area of 0.97ha. Habitat is difficult to map as it can be confused with humid dune slacks. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 7 for mapped 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	Water table levels; groundwater fluctuations	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 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 Cruit Lower the fixed dunes are ungrazed. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in 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 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 at a representative sample of monitoring stops	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. This species is known to occur at Cruit Lower. 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
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2190 Humid dune slacks

To maintain the favourable conservation condition of Humid dune slacks in Gweedore Bay and Islands SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Keadew - 0.01ha; Cruit Lower - 0.34ha; Carnboy - 0.38ha; Kincaulough - 1.09ha; Derrybeg - 0.19ha; Lunniagh - 5.68ha. See map 7	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 mapped at six sub-sites to give a total estimated area of 7.69ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 7 for mapped 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	Water table levels; groundwater fluctuations	Maintain natural hydrological regime	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). It appears that there has been some drying out of some of the slacks at Cruit Island, which may be due to anthropogenic activities. 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 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). At Lunniagh, dune slacks are affected by overgrazing and poaching was noted. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	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 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). Butterfly orchid (<i>Platanthera</i> spp.) was noted at Kincaulough. Petalwort (<i>Petalophyllum ralfsii</i>), a species on Annex II of the Habitats Directive, is recorded from the dune slacks in this SAC. See the conservation objective for <i>Petalophyllum ralfsii</i> (1395) and the 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 controlled (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. This species is known to occur at Cruit Lower. 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). Bunet rose (<i>Rosa pimpinellifolia</i>) was recorded at Derrybeg. See coastal habitats supporting document for further details

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

21A0 Machairs (* in Ireland)

To restore the favourable conservation condition of Machairs in Gweedore Bay and Islands SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Keadew - 28.31ha; Cruit Lower - 9.65ha; Derrybeg - 92.13ha; Lunniagh - 39.69ha. See map 7	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 mapped at four sub-sites, giving a total estimated area of 169.78ha. 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	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Machair was recorded at all sub-sites except Gola Island, Carnboy and Kincaslough. 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	Water table levels; groundwater fluctuations	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). 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). See coastal habitats supporting document for further details
Vegetation structure: sward height	Centimeters	Maintain structural variation within sward	Based on data from Ryle et al., (2009) and Delaney et al. (2013). Overgrazing was noted at Lunniagh, while fixed dune and machair habitats were undergrazed or lightly grazed in parts at Keadew, Cruit Lower and Derrybeg. 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 Ryle et al., (2009) and Delaney et al. (2013). Petalwort (<i>Petalophyllum ralfsii</i>), a species listed on Annex II of the Habitats Directive, was recorded in machair habitat in this SAC. See the conservation objective for <i>Petalophyllum ralfsii</i> (1395) and the 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. This species is known to occur at Cruit Lower and bracken (<i>Pteridium aquilinum</i>) has been recorded at Derrybeg. 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

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 Gweedore Bay and Islands 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 data for Mullaghderg Loughs. Re-examination of these data and the occurrence of <i>Najas flexilis</i> in Mullaghderg East and West suggest, however, that their vegetation is more closely aligned to habitat 3130. It is possible that habitat 3110 occurs elsewhere within the SAC. It may occur in the small lake in Derrybeg townland (see map 8), but this requires field confirmation. The habitat is highly unlikely to occur in lakes influenced by calcareous sand or by the sea, both of which are prevalent 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. For further information on all attributes see the lake habitats supporting document for the purposes of site-specific conservation objectives and Article 17 reporting (O Connor, in prep.)
Habitat distribution	Occurrence	No decline, subject to natural processes	As noted above, it is unlikely that the habitat occurs in the SAC. If the habitat is found, further information on the attribute for distribution can be found in O Connor (in prep.)
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 for the purposes of site-specific conservation objectives and Article 17 reporting (O Connor, in prep.)
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 other 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 >6 m 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 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 isoeitid 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 (WFD) '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 $\leq 0.090\text{mg/l N}$. For further information see 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 WFD '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 $< 8.0\ \mu\text{g/l}$. For further information see 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 epipelic 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 WFD 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. Maximum pH should be <9.0, in line with the surface water standards established for soft waters (where water hardness is ≤100 mg/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 38 mg/l PtCo (Free, et al., 2000) and 33 mg/l PtCo (Free et al. 2006). It is likely that the water colour in all Irish lake habitats would naturally be <50 mg/l PtCo. Water colour can be very low (<20 mg/l PtCo or even <10 mg/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 factors such as shading and competition
Turbidity	nephelometric turbidity units/ mg/l SS/ other appropriate units	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 : Gweedore Bay and Islands SAC [001141]

4030 European dry heaths

To maintain the favourable conservation condition of European dry heaths in Gweedore Bay and Islands 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 this habitat has not been calculated although it is known to be distributed throughout the SAC, usually occurring in mosaic with other habitats such as exposed rock, other heath types and fixed dune habitats (NPWS internal files)
Habitat distribution	Occurrence	No decline from current habitat distribution, subject to natural processes	See note above. The heath in this SAC is widely distributed and is a good example of a maritime variant in the western part of its Irish and European range (NPWS internal files)
Ecosystem function: soil nutrient status	Soil pH and nutrient levels at a representative number of monitoring stops	Maintain soil nutrient status within natural range	Changes to soil nutrient status can occur from high stock densities or supplementary feeding above appropriate levels
Vegetation composition: positive indicator species	Number and percentage cover at a representative number of monitoring stops	At least two positive indicator species, as listed in Perrin et al. (2014), with combined cover of at least 50%	Attribute and target based on Perrin et al. (2014). Bell heather (<i>Erica cinerea</i>), cross-leaved heath (<i>Erica tetralix</i>) and ling (<i>Calluna vulgaris</i>) are listed for the heath in this SAC (NPWS internal files)
Vegetation composition: bryophyte and non-crustose lichen species	Number at a representative number of monitoring stops	At least three bryophyte or non-crustose lichen species present, excluding <i>Campylopus</i> and <i>Polytrichum</i> moss species	Percentage cover at a representative number of monitoring stops
Vegetation composition: rare/scarce species	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 1999 and/or the red data book (Curtis and McGough, 1988)
Vegetation structure: dwarf shrub species	Percentage cover at a representative number of monitoring stops	Cover of bog myrtle (<i>Myrica gale</i>), creeping willow (<i>Salix repens</i>) and Western gorse (<i>Ulex gallii</i>) collectively less than 50%	Attribute and target based on Perrin et al. (2014)
Vegetation composition: negative indicator weed species	Percentage cover at a representative number of monitoring stops	Cover of negative indicator weedy species collectively less than 1%	Attribute and target based on Perrin et al. (2014), where weed species are also listed
Vegetation composition: non-native species	Percentage cover at a representative number of monitoring stops and in local vicinity	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	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	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	Cover of soft rush (<i>Juncus effusus</i>) less than 10%	Attribute and target based on Perrin et al. (2014). Dense areas of soft rush can indicate disturbance
Vegetation structure: senescent ling	Percentage cover at a representative number of monitoring stops	Senescent proportion of ling (<i>Calluna vulgaris</i>) cover less than 50%	Percentage cover at a representative number of monitoring stops

Vegetation structure: growth phases of ling	Percentage cover in local vicinity	Outside boundaries of sensitive areas, all growth phases of ling (<i>Calluna vulgaris</i>) should occur throughout, with at least 10% of cover in mature phase	Attribute and target based on Perrin et al. (2014), where sensitive areas and growth phases are defined
Vegetation structure: signs of browsing	Percentage at a representative number of monitoring stops	Last complete growing season's shoots of ericoids showing signs of browsing collectively less than 33%	Attribute and target based on Perrin et al. (2014)
Vegetation structure: burning	Occurrence in local vicinity	No signs of burning within sensitive areas	Attribute and target based on Perrin et al. (2014) where sensitive areas are also defined
Physical structure: disturbed bare ground	Percentage cover at a representative number of monitoring stops and in local vicinity	Cover of disturbed bare ground less than 10%	Attribute and target based on Perrin et al. (2014)

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

4060 Alpine and Boreal heaths

To maintain the favourable conservation condition of Alpine and Boreal heaths in Gweedore Bay and Islands 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 this habitat has not been calculated. It occurs in mosaic with other habitats such as exposed rock, other heath types and fixed dune habitats (NPWS internal files)
Habitat distribution	Occurrence	No decline, subject to natural processes	See notes for area above
Ecosystem function: soil nutrient status	Soil pH and nutrient levels at a representative number of monitoring stops	Maintain soil chemical status within natural range	Changes to soil nutrient status can occur from high stock densities or supplementary feeding above appropriate levels
Vegetation composition: lichens and bryophytes	Number at a representative number of monitoring stops	Number of bryophyte or non-crustose lichen species present at each monitoring stop is least three	Based on Perrin et al. (2014). Alpine and boreal heaths are not necessarily rich in lichen and bryophyte species, but a minimum number should still be present
Vegetation composition: positive indicator species	Percentage cover at a representative number of monitoring stops	Cover of positive indicator species at least 66%	Based on Perrin et al. (2014). A positive species criterion is set to ensure that vegetation remains representative of this habitat and is not degrading or succeeding to a different habitat. Bearberry (<i>Actostaphylos uva-ursi</i>), Crowberry (<i>Empetrum nigrum</i>), bell heather (<i>Erica cinerea</i>) and ling (<i>Calluna vulgaris</i>) are recorded from this SAC (NPWS internal files)
Vegetation composition: dwarf-shrub species	Percentage cover at a representative number of monitoring stops	Cover of dwarf-shrub species at least 10%	Based on Perrin et al. (2014)
Vegetation composition: negative indicator species	Percentage cover at a representative number of monitoring stops	Total cover of negative indicator species less than 10%	Based on Perrin et al. (2014) where negative species are listed
Vegetation composition: non-native species	Percentage cover at a representative number of monitoring stops	Cover of non-native species less than 1%	Based on Perrin et al. (2014). Non-native species can be invasive and have deleterious effects on native vegetation
Vegetation structure: signs of grazing	Percentage at a representative number of monitoring stops	Less than 10% collectively of live leaves of specific graminoids showing signs of grazing	Based on Perrin et al. (2014). High levels of grazing of these species would indicate undesirable levels of livestock/other grazers
Vegetation structure: signs of browsing	Percentage at a representative number of 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	Based on Perrin et al. (2014). High levels of browsing of these dwarf shrubs would indicate undesirable levels of livestock/other grazers
Vegetation structure: burning	Occurrence in local vicinity	No signs of burning within the habitat	Based on Perrin et al. (2014)
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of disturbed bare ground less than 10%	Based on Perrin et al. (2014). Disturbance can include hoof marks, wallows, human foot prints, vehicle and machinery tracks. Excessive disturbance can result in loss of characteristic species and presage erosion

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

5130 Juniperus communis formations on heaths or calcareous grasslands

To restore the favourable conservation condition of *Juniperus communis* formations on heaths or calcareous grasslands in Gweedore Bay and Islands 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 this habitat has not been calculated although it is known to be distributed throughout the SAC, usually occurring in mosaic with other habitats such as exposed rock, other heath types and fixed dune habitats (NPWS internal files). Cooper et al. (2012) surveyed and mapped four sub-sites containing juniper formations that occur completely or partially within the SAC. See map 9. Further areas of the habitat are likely to be present
Habitat distribution	Occurrence	No decline. See map 9 for surveyed locations	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
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 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)

1355 Otter *Lutra lutra*

To maintain the favourable conservation condition of Otter in Gweedore Bay and Islands 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 154ha above high water mark (HWM); 40ha along river banks/ around lakes and ponds	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above HWM and along river banks) identified as critical for otters (NPWS, 2007)
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 1,192ha	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 12.1km	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 82ha	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 10	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]

1395 *Petalwort* *Petalophyllum ralfsii*

To maintain the favourable conservation condition of *Petalwort* in Gweedore Bay and Islands SAC, which is defined by the following list of attributes and targets:

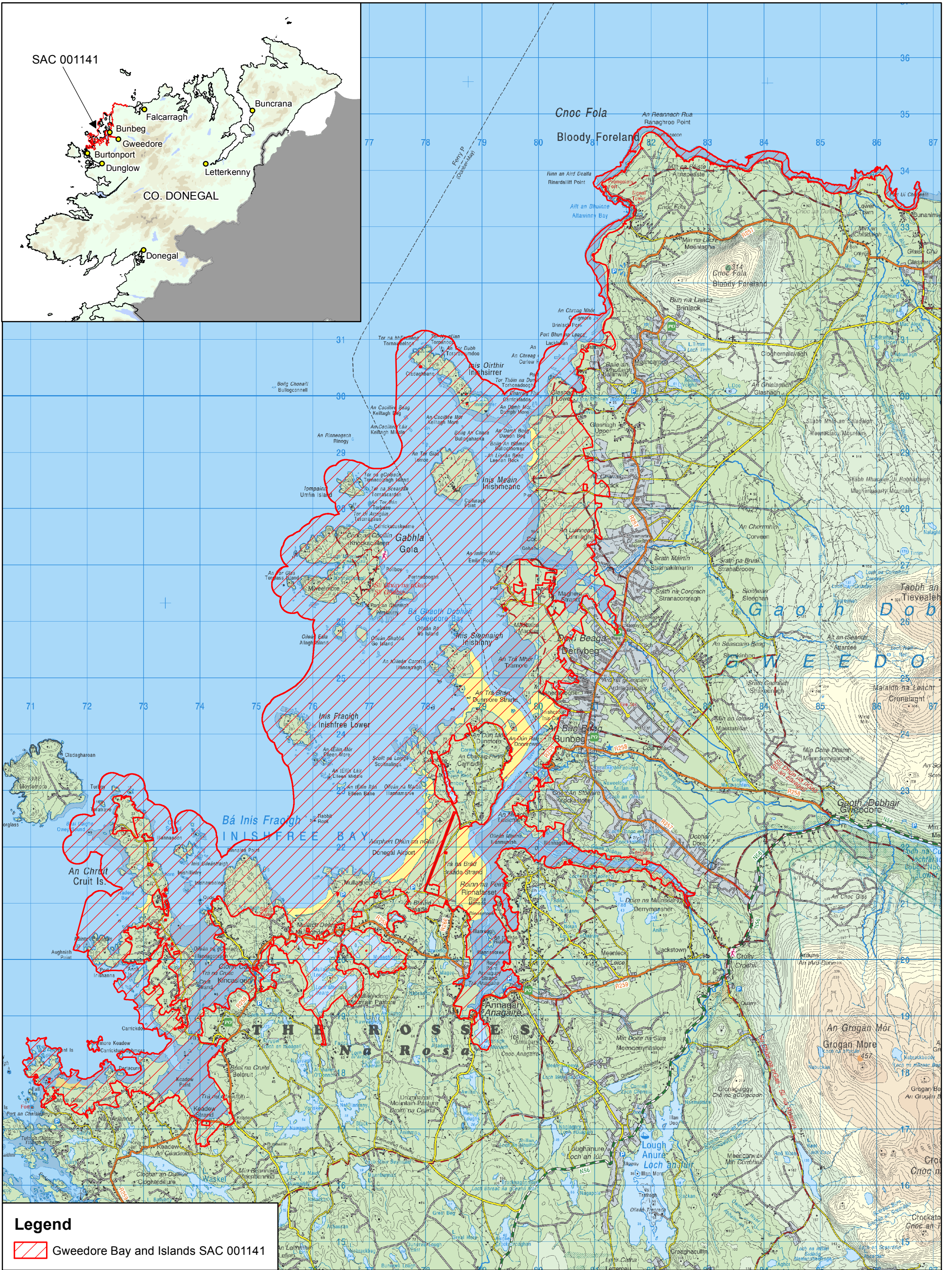
Attribute	Measure	Target	Notes
Distribution of populations	Number and geographical spread of populations	No decline. See map 11 for known locations	There are currently three known populations: (4a) Damph Beg, in slack area and on gravelly sand of small low bank above track into small disused sand-quarry, above edge of dune slack; (4b) Derrybeg, on low NW-facing part of bank just above edge of dune slack and (4c) Keadew Point, at three locations. The population at Damph Beg has not been seen since 2002. Data from NPWS surveys and Campbell (2013)
Population size	Number of individuals	No decline. Population at (4a) Damph Beg: c.10 thalli; (4b) Derrybeg: c.8 thalli; (4c) Keadew Point: c.88 thalli. Total: c.100 thalli	Counts of thalli: for Damph Beg, from mean number of thalli recorded by Holyoak in 1999 and 2002 (24 and 7 thalli) and Lockhart in 2006 (0 thalli) = 10.33; for Derrybeg, from mean number of thalli recorded by Holyoak in 2002 (3 thalli) and Lockhart in 2006 (12 thalli) = 7.5 thalli; for Keadew Point, from mean of number of thalli in two 1 x 1m plots, from three counts between early April 2009 and April 2011 (Campbell, 2013) = 4.2 thalli per m ² in 21m ² = c.88 thalli
Area of suitable habitat	Hectares	No decline. Area of suitable habitat at Damph Beg and Derrybeg currently unknown, but thought to be very small, c.0.5m ² each. Area of suitable habitat at Keadew Point estimated at c.21m ² . Total = c.0.002ha	The extents of suitable habitat at Damph Beg and at Derrybeg has not been measured by GPS, but are known to be very small (c.0.5m ² each). Main area of occupancy at Keadew Point is on a layer of humus-rich sand c.1cm thick overlying pure sand on a rocky outcrop above the shoreline, measured by GPS co-ordinates = 24.3m ² (Campbell, 2013). Only about 80% of this area is actually suitable habitat for <i>Petalophyllum ralfsii</i> (c.19m ²). Two outlying records (1m ² each) from Keadew Point were also reported by Lockhart in 1998 and Holyoak in 2002 giving a total of c.21m ² for Keadew Point
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 sheep grazing and some trampling (by walkers). Recorded at Damph Beg with low moss and patchy low phanaerogams (Holyoak, 2002), not refound there by Lockhart in 2006 who reported that the prospects for survival are reasonable, but small available niche is vulnerable; recorded at Derrybeg on wet humic sand with very low, patchy moss-rich grassland (2.4cm high) (by Holyoak in 2002); at Keadew Point, Campbell (2013) recorded a mean height of vegetation of 6cm, with bryophyte cover c.34-75% and bare ground c.4-25% (based on two 1 x 1m plots from 2009 and 2011)

Conservation Objectives for : Gweedore Bay and Islands SAC [001141]


1833 Slender Naiad *Najas flexilis*

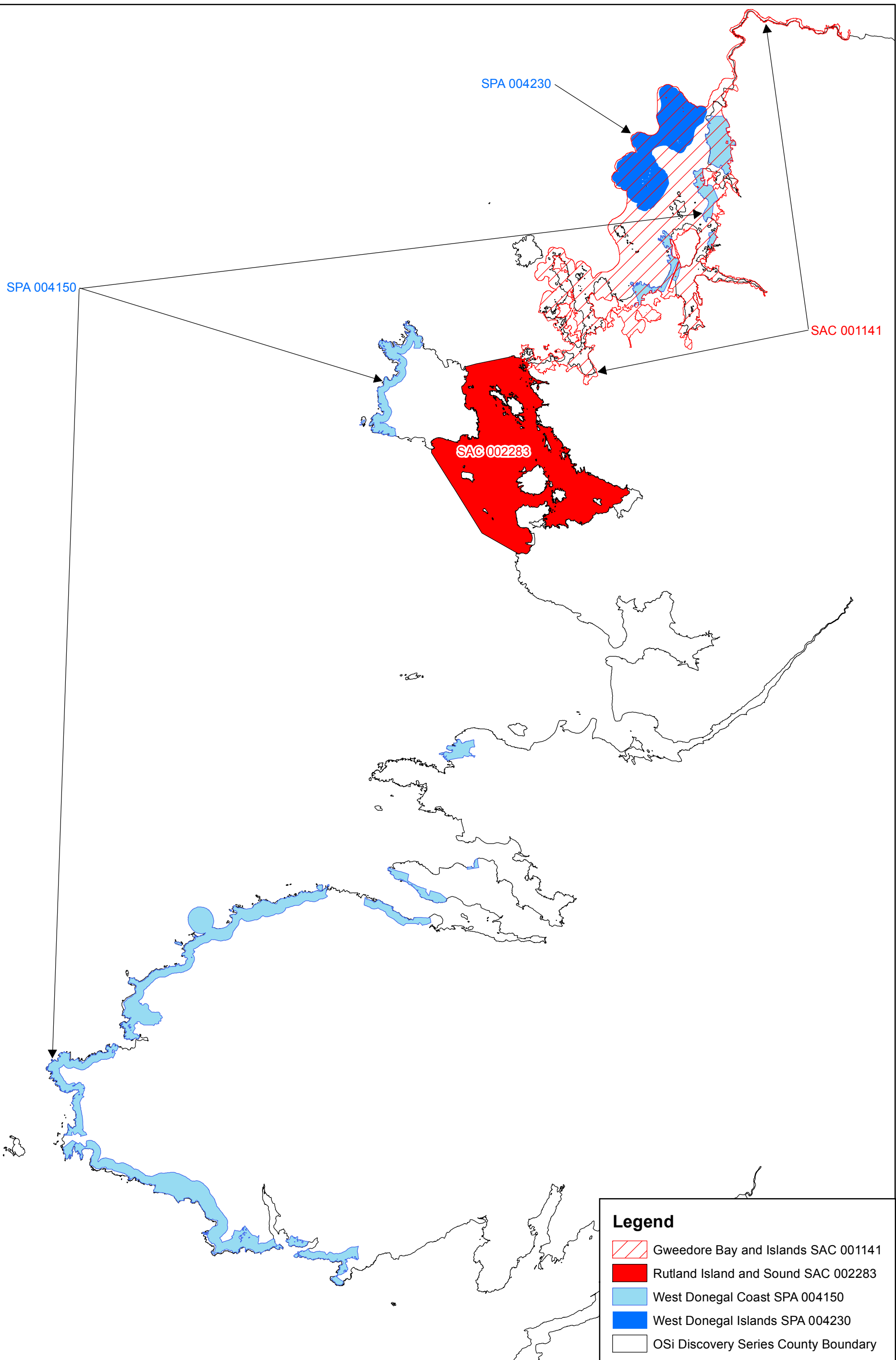
To maintain the favourable conservation condition of Slender Naiad in Gweedore Bay and Islands SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population extent	Hectares and distribution	No change to the spatial extent of <i>Najas flexilis</i> within each lake, subject to natural processes. See map 12 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

 Gweedore Bay and Islands SAC 001141








SPA 004150

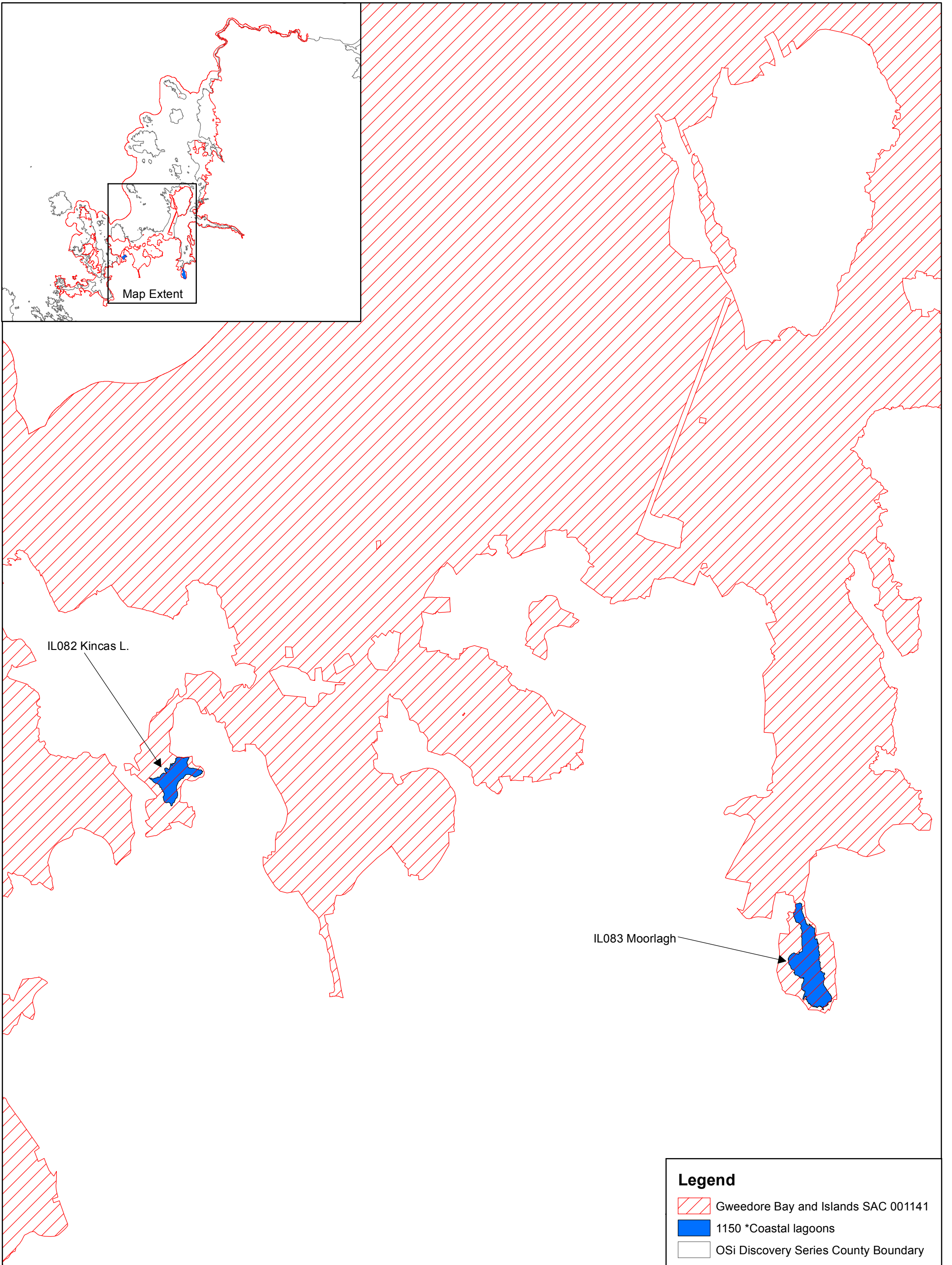
SPA 004230

SAC 001141




SAC 002283

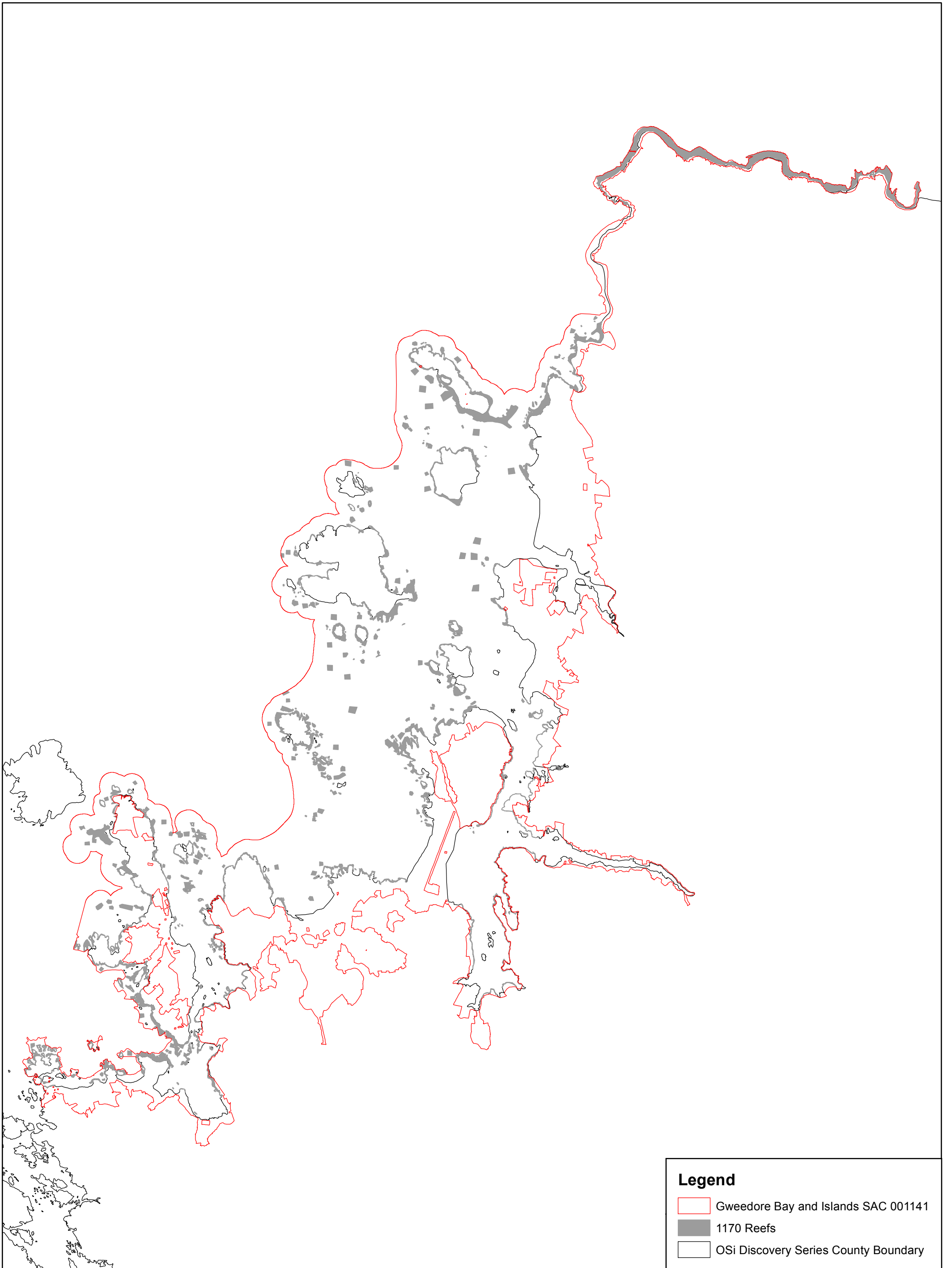
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-  Gweedore Bay and Islands SAC 001141
-  Rutland Island and Sound SAC 002283
-  West Donegal Coast SPA 004150
-  West Donegal Islands SPA 004230
-  OSi Discovery Series County Boundary



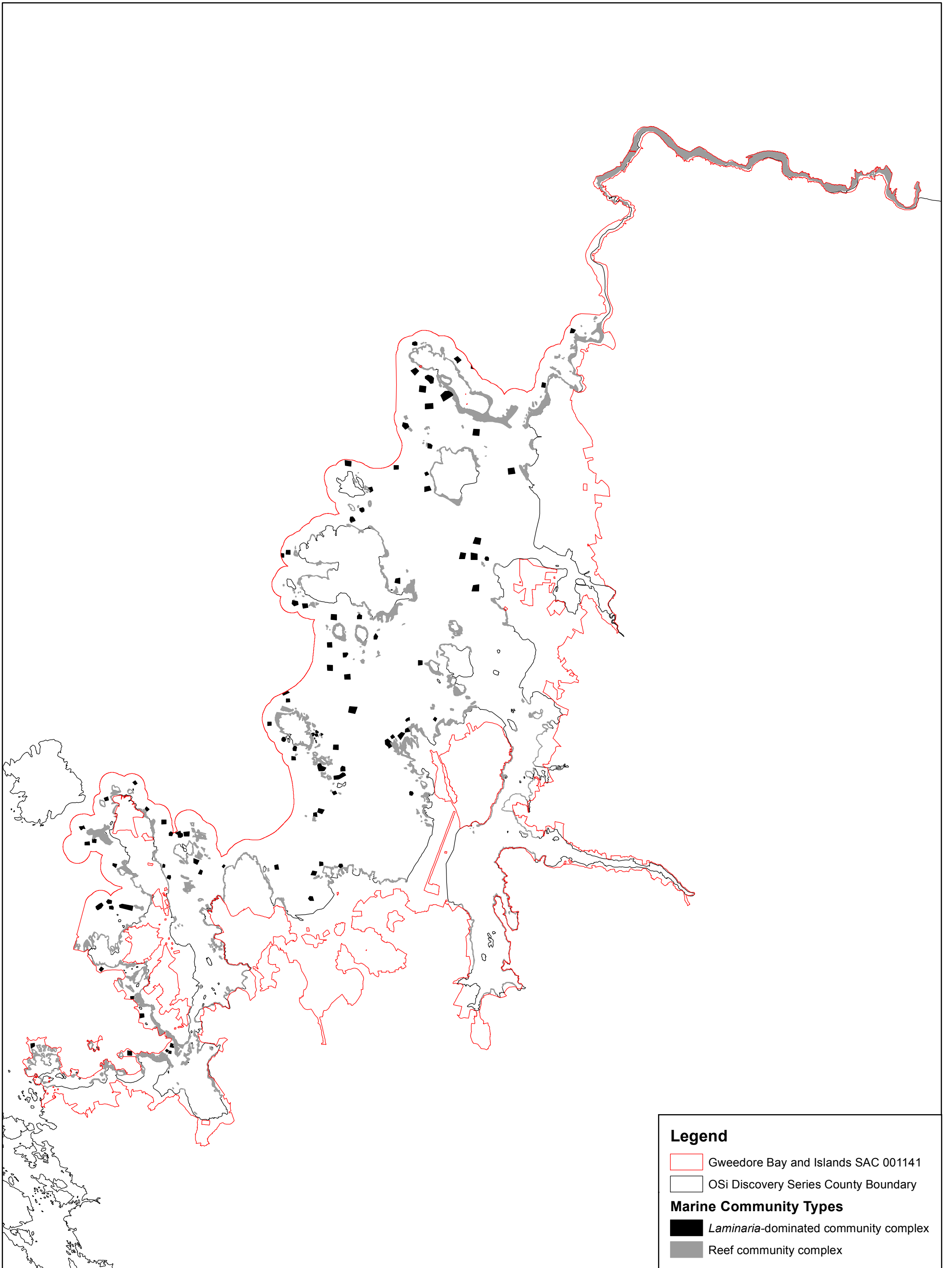
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-  Gweedore Bay and Islands SAC 001141
-  1150 *Coastal lagoons
-  OSi Discovery Series County Boundary



Legend

- Gweedore Bay and Islands SAC 001141
- 1170 Reefs
- OSi Discovery Series County Boundary

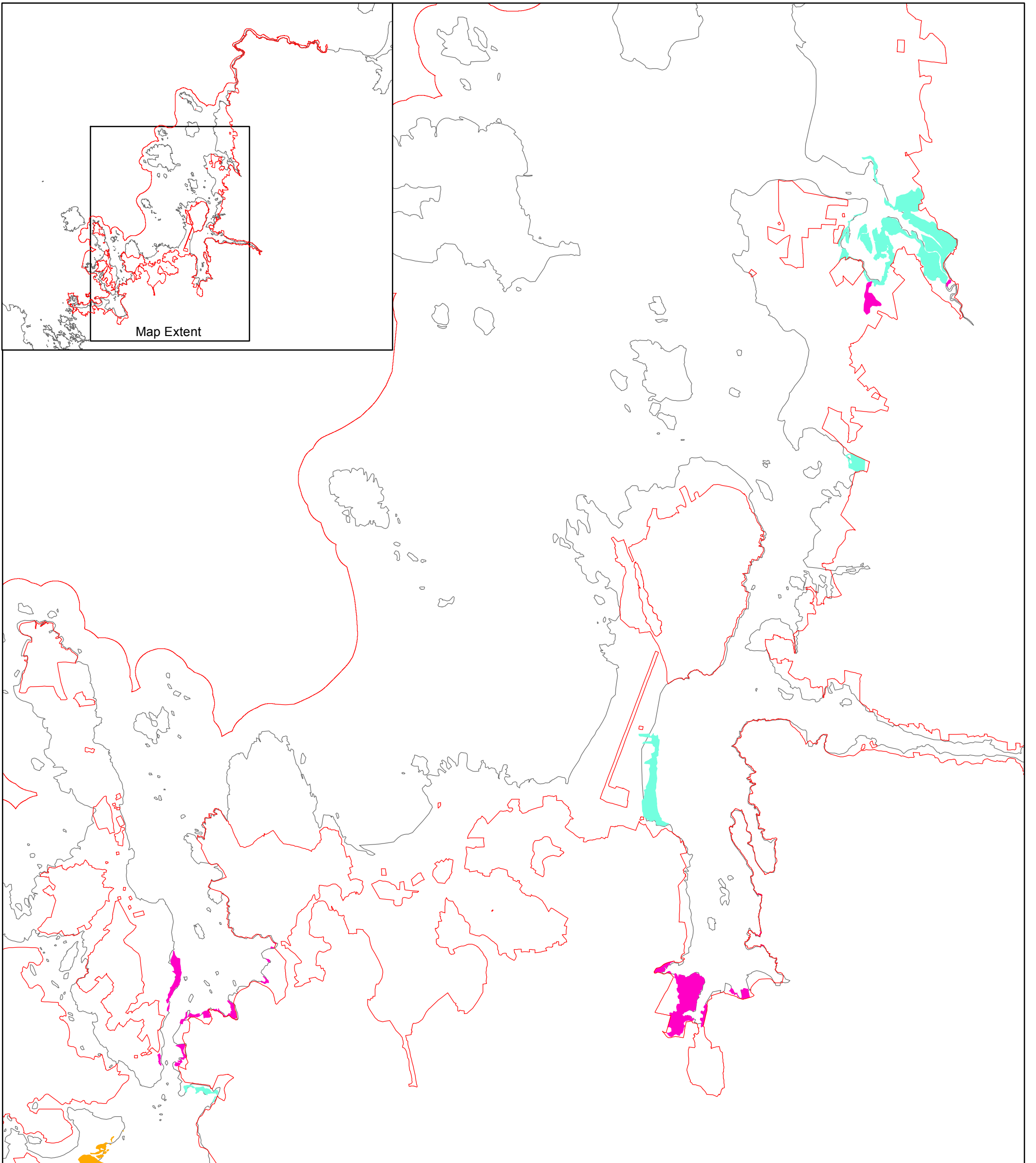


Legend

- Gweedore Bay and Islands SAC 001141
- OSi Discovery Series County Boundary

Marine Community Types

- Laminaria*-dominated community complex
- Reef community complex



SMP: 0129

Legend

- Gweedore Bay and Islands SAC 001141
- OSi Discovery Series County Boundary
- SMP: 0129 Saltmarsh Monitoring Project Site Codes

Saltmarsh Habitats

Qualifying Interests

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

Non Qualifying Interests

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

Legend

- Gweedore Bay and Islands SAC 001141
- OSi Discovery Series County Boundary
- ★ National Shingle Beach Survey sub-sites
- CMP: 153 Coastal Monitoring Project Site Codes
- SDM: 155 Sand Dunes Monitoring Project Site Codes

Sand Dune Habitats

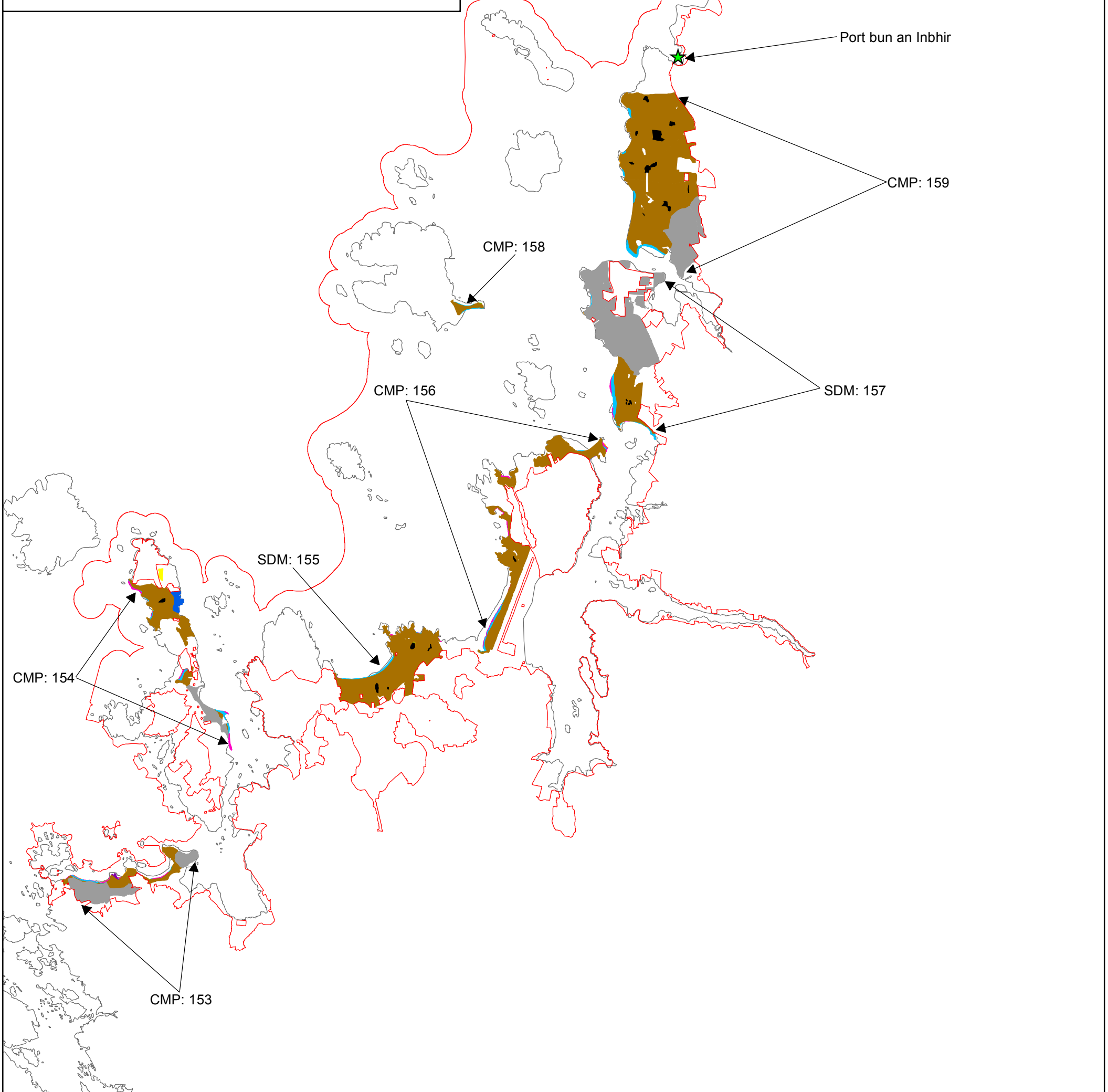
Qualifying Interests

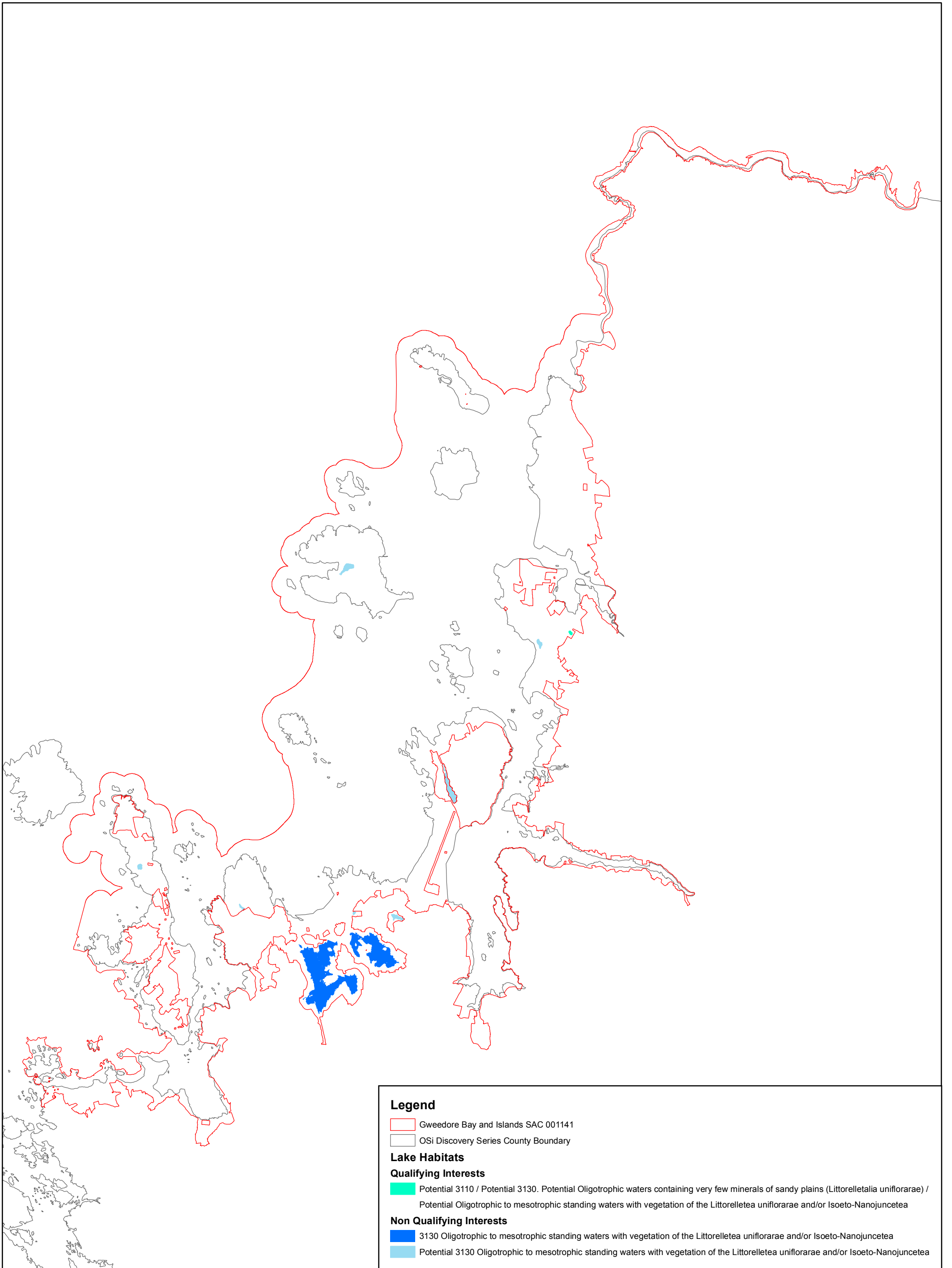
- 1220 Perennial vegetation of stony banks
- 2110 Embryonic shifting dunes
- 2120 Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')
- 2130 *Fixed coastal dunes with herbaceous vegetation ('grey dunes')
- 2140 *Decalcified fixed dunes with *Empetrum nigrum*
- 2150 *Atlantic decalcified fixed dunes (Calluno-Ulicetea)
- 2170 Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae)
- 2190 Humid dune slacks
- 21A0 *Machairs

Non Qualifying Interests

- 1210 Annual vegetation of drift lines

Coastline from Port ui Chuirean to Bunaninver





Legend

- Gweedore Bay and Islands SAC 001141
- OSi Discovery Series County Boundary

Lake Habitats

Qualifying Interests

- Potential 3110 / Potential 3130. Potential Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorarum*) / Potential Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletalia uniflorarum* and/or *Isoetes-Nanojuncetea*

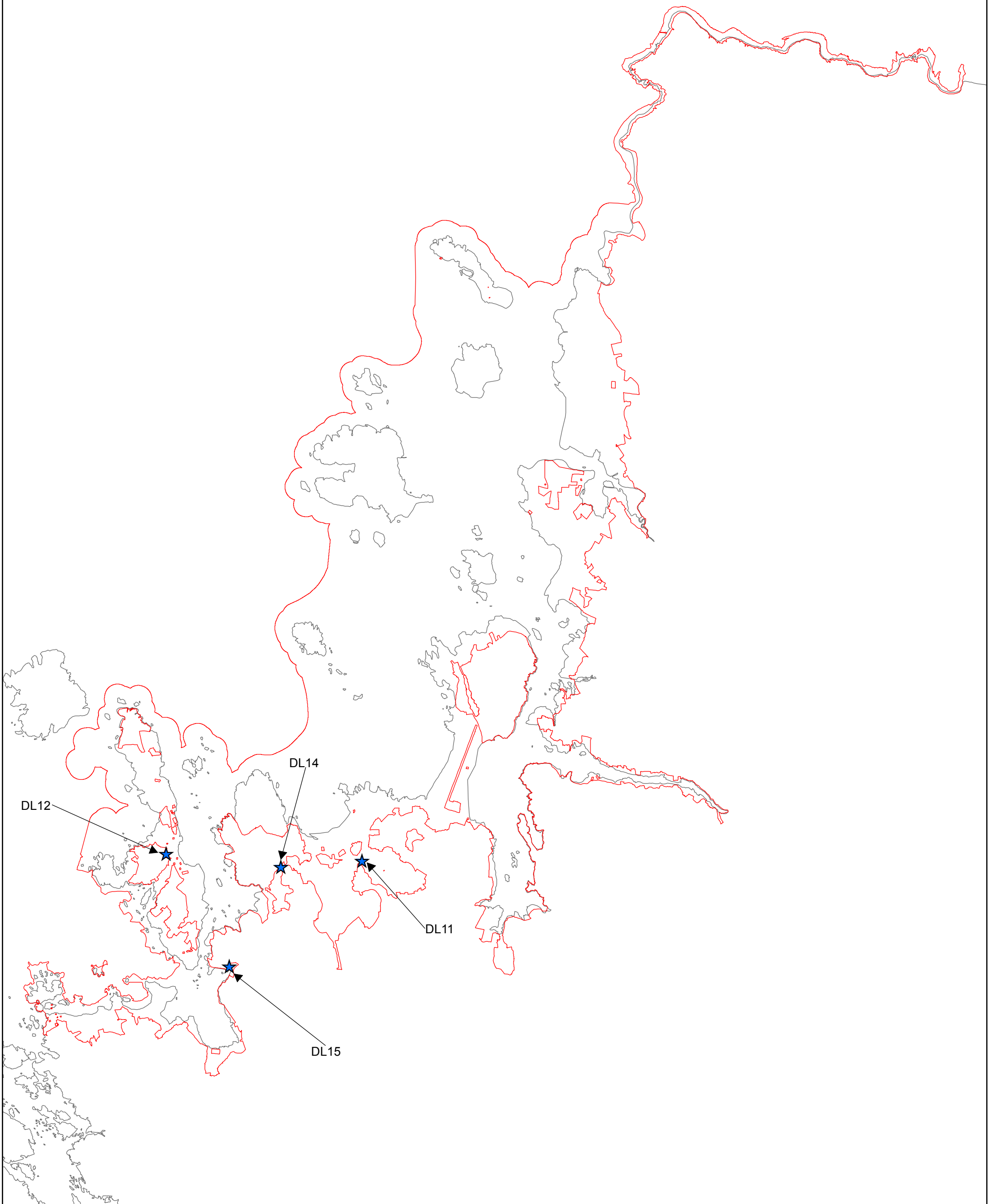
Non Qualifying Interests

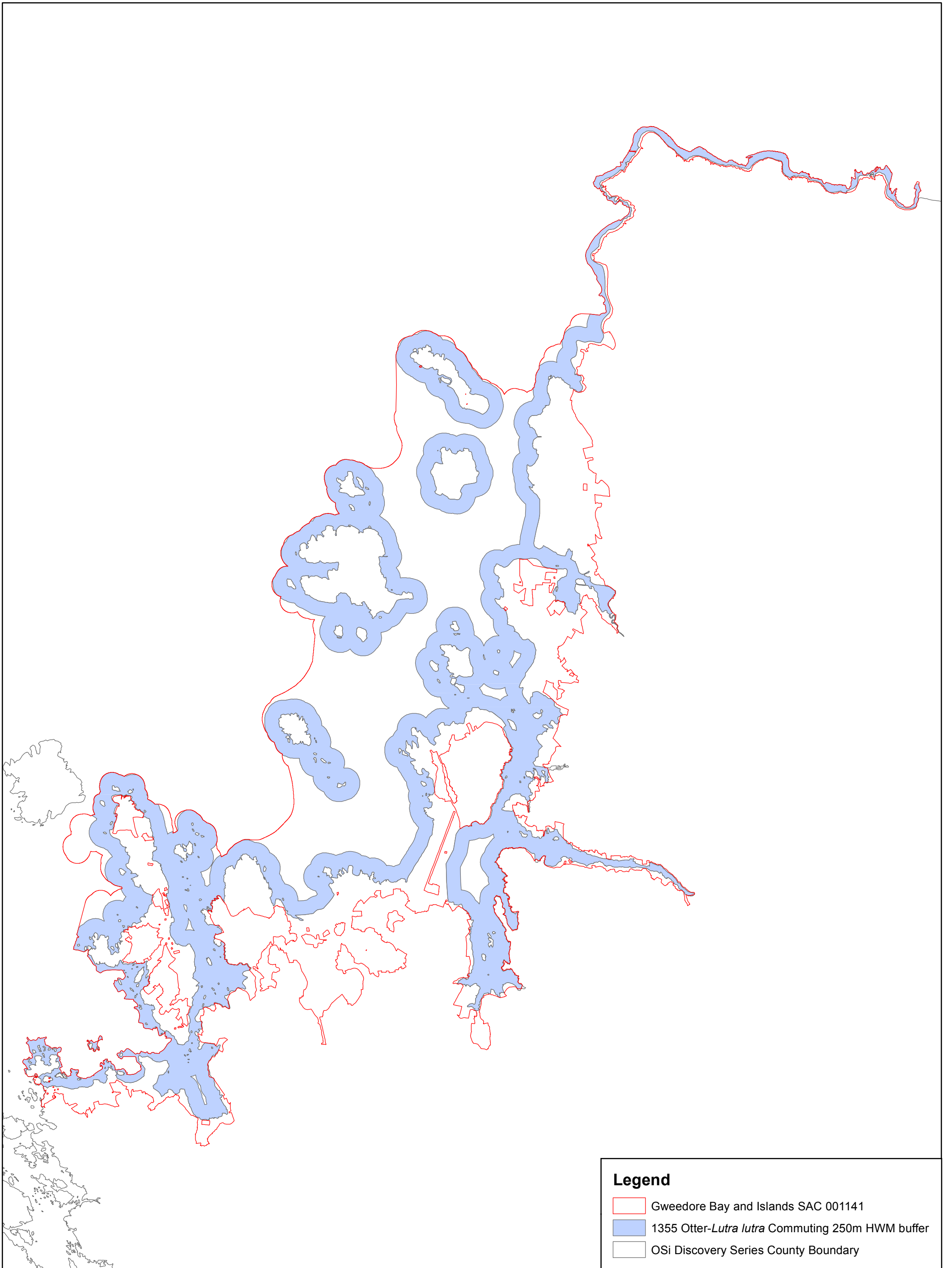
- 3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletalia uniflorarum* and/or *Isoetes-Nanojuncetea*
- Potential 3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletalia uniflorarum* and/or *Isoetes-Nanojuncetea*



Legend

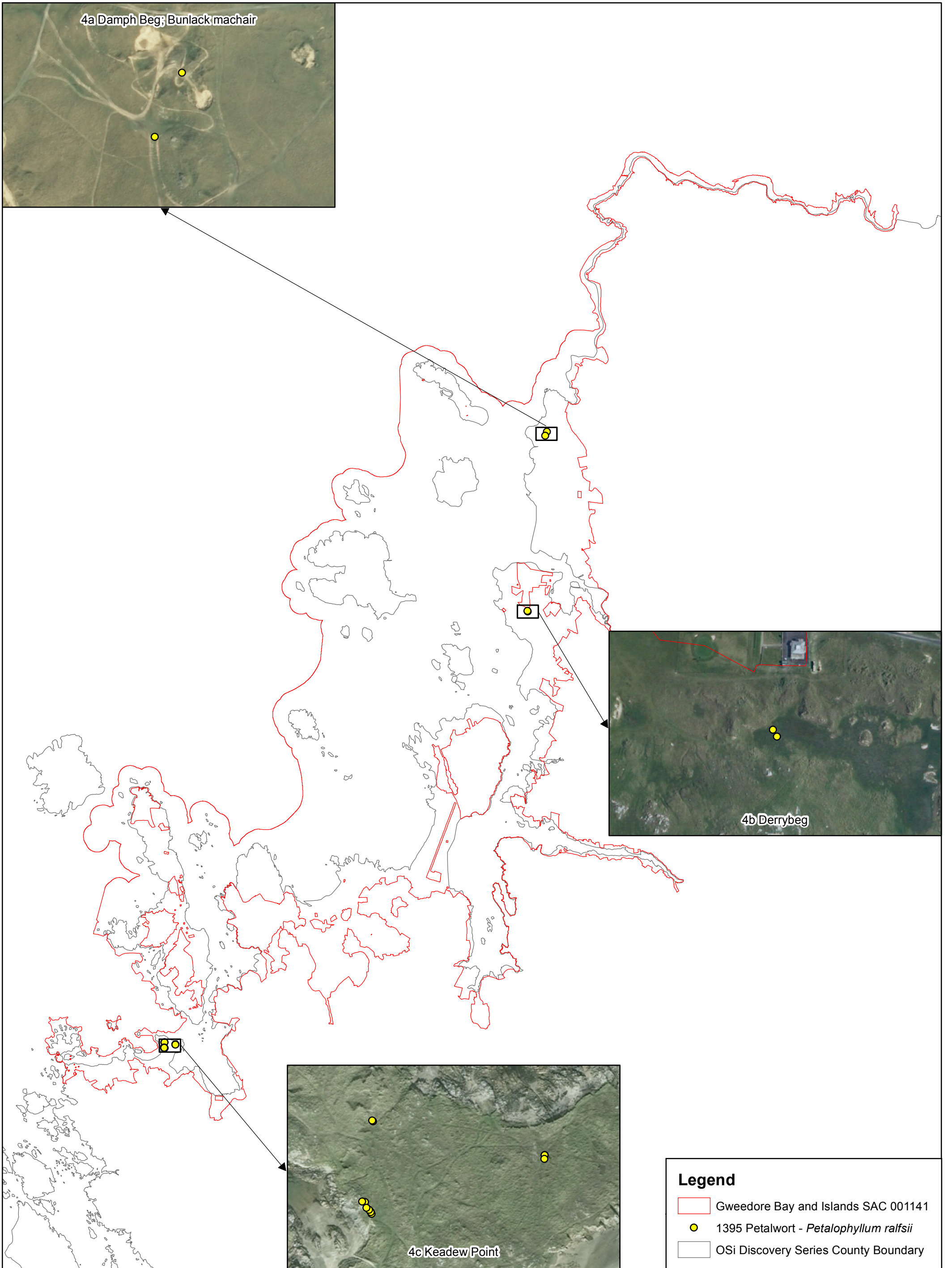
- Gweedore Bay and Islands SAC 001141
- ★ 5130 *Juniperus communis* formations on heaths or calcareous grasslands Survey Sites
- OSi Discovery Series County Boundary





Legend

- Gweedore Bay and Islands SAC 001141
- 1355 Otter-*Lutra lutra* Commuting 250m HWM buffer
- OSi Discovery Series County Boundary



4a Damph Beg; Bunlack machair

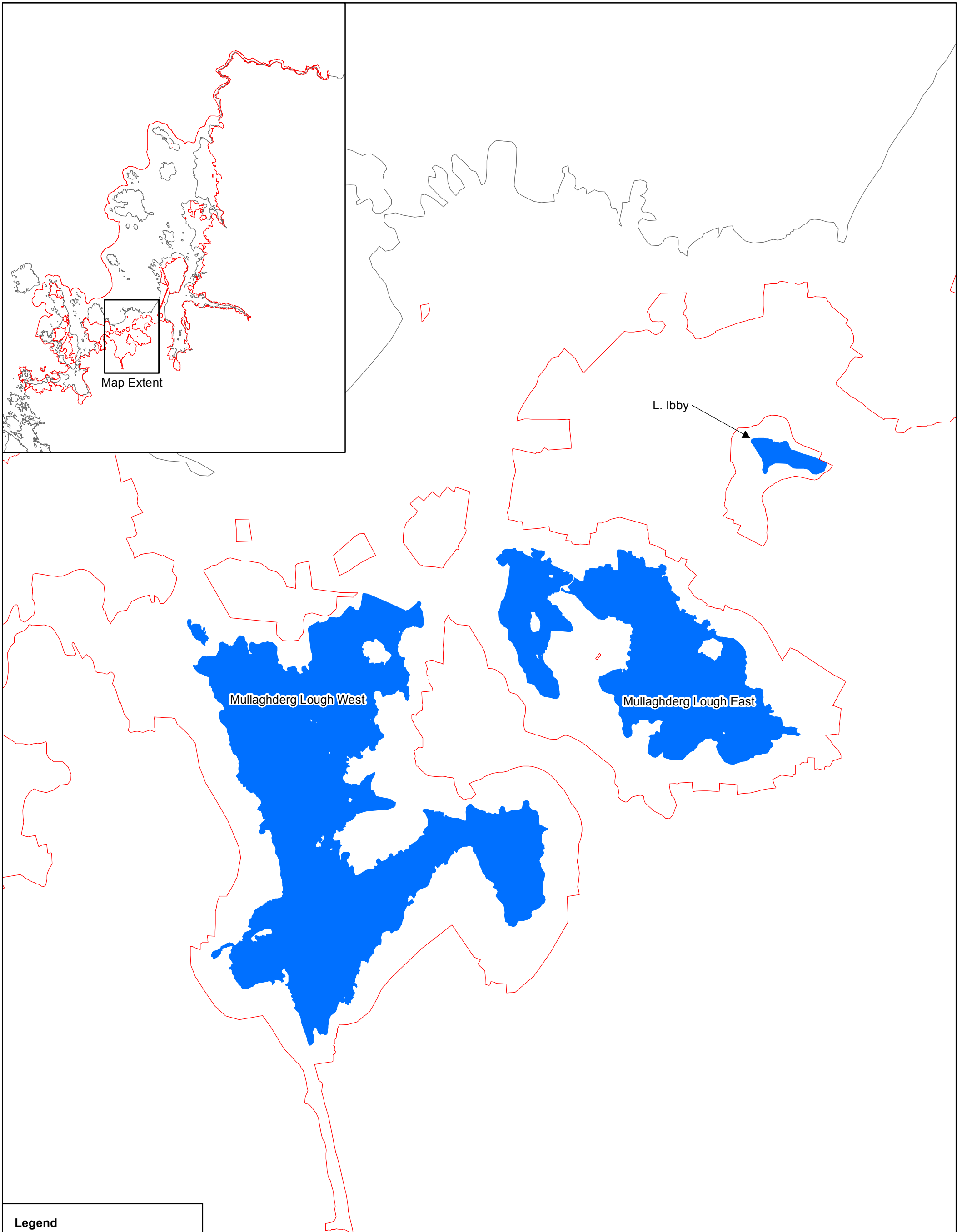
4b Derrybeg

4c Keadew Point

Legend

- Gweedore Bay and Islands SAC 001141
- 1395 Petalwort - *Petalophyllum ralfsii*
- OSi Discovery Series County Boundary





Map Extent

L. Ibby

Mullaghderg Lough West

Mullaghderg Lough East

- Legend**
- Gweedore Bay and Islands SAC 001141
 - 1833 Slender Naiad - *Najas flexilis*
 - OSi Discovery Series County Boundary