National Parks and Wildlife Service

Conservation Objectives Series

Tralee Bay and Magharees Peninsula, West to Cloghane SAC 002070



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
002070	Tralee Bay and Magharees Peninsula, West to Cloghane SAC
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1150	Coastal lagoonsE
1160	Large shallow inlets and bays
1170	Reefs
1210	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks
1310	Salicornia and other annuals colonising mud and sand
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
1355	Otter Lutra lutra
1395	Petalwort Petalophyllum ralfsii
1410	Mediterranean salt meadows (Juncetalia maritimi)
2120	Shifting dunes along the shoreline with Of { { [] @ #### ^} ### (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)E
2170	Dunes with Uæ͡[#͡/]^} • ssp.æ*^} c^æ(Salix arenariae)
2190	Humid dune slacks
6410	<i>T [ð æ</i> meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)
91E0	Alluvial forests with Œ `• Æ / `@ [•æand Ø æð `• ♠ ∞ \• ₹ / (Alno-Padion, Alnion incanae, Salicion albae)E

Please note that this SAC overlaps with Magharee Islands SPA (004125), Dingle Peninsula SPA (004153) and Tralee Bay Complex SPA (004188). It adjoins Magharee Islands SAC (002261). 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 Doo	cuments		
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 :	A Survey of Intertidal Mudflats and Sandflats in Ireland		
Author :	Aquatic Services Unit		
Series :	Unpublished report to NPWS		
Year :	2007		
Title :	The Status of EU Protected Habitats and Species in Ireland		
Author :	NPWS		
Series :	Unpublished Report		
Year :	2008		
Title :	National Survey of Native Woodlands 2003-2008		
Author :	Perrin, P.M.; Martin, J.; Barron, S.; O'Neill, F.H.; McNutt, K.E.; Delaney, A.		
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 :	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 :	Tralee Bay and Magharees Peninsula, West to Cloghane SAC (site code: 2070) Conservation objectives supporting document- woodland habitats V1		
Author :	NPWS		
Series :	Conservation objectives supporting document		

Conservation objectives supporting document

Series :

Year :	2013
Title :	Tralee Bay and Magharees Peninsula, West to Cloghane SAC (site code: 2070) Conservation objectives supporting document- coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2014
Title :	Tralee Bay and Magharees Peninsula, West to Cloghane SAC (site code: 2070) Conservation objectives supporting document- marine habitats 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 :	1991	
Title :	The spatial organization of otters (Lutra lutra) in Shetland	
Author :	Kruuk, H.; Moorhouse, A.	
Series :	J. Zool, 224: 41-57	
Year :	1997	
Title :	The BioMar biotope viewer: a guide to marine habitats, fauna and flora in Britain and Ireland	
Author :	Picton, B.E.; Costello, M.J.	
Series :	Environmental Science Unit, Trinity College Dublin	
Year :	2006	
Title :	Otters - ecology, behaviour and conservation	
Author :	Kruuk, H.	
Series :	Oxford University Press	
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 :	Surveys of sensitive sublittoral benthic communities in Kenmare River SAC site code 002158, Tralee Bay & Magharee Islands West to Cloghane SAC site code 002070	
Author :	MERC	
Series :	Unpublished report for Marine Institute and NPWS	
Year :	2010	
Title :	Otter tracking study of Roaringwater Bay	
Author :	De Jongh, A.; O'Neill, L.	
Series :	Unpublished draft report to NPWS	
Year :	2010	
Title :	MI benthic surveys of Natura 2000 sites: Area 1	
Author :	ERM	
Series :	Unpublished report to the Marine Institute and NPWS	

Year :	2011
Title :	Reef investigations in Tralee Bay and Magherees Peninsula, West to Cloghane cSAC (site code: IE002070) and Magharee Islands cSAC (site code: IE2261), Co. Kerry
Author :	Aquafact
Series :	Unpublished report to the Marine Institute and NPWS
Year :	2011
Title :	Intertidal sediment sampling in the Tralee Bay and Magherees Peninsula, West to Cloghane SAC (002070) and in the Akeragh, Banna and Barrow Harbour SAC (000332) in October 2011
Author :	MERL
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.
Author : Series :	Campbell, C. Unpublished Ph.D. Thesis, Trinity College Dublin
Series :	Unpublished Ph.D. Thesis, Trinity College Dublin
Series : Year :	Unpublished Ph.D. Thesis, Trinity College Dublin 2013 Monitoring and assessment of Irish lagoons for the purposes of the EU Water Framework
Series : Year : Title :	Unpublished Ph.D. Thesis, Trinity College Dublin 2013 Monitoring and assessment of Irish lagoons for the purposes of the EU Water Framework Directive, 2009-2011. Parts 1 and 2
Series : Year : Title : Author :	Unpublished Ph.D. Thesis, Trinity College Dublin 2013 Monitoring and assessment of Irish lagoons for the purposes of the EU Water Framework Directive, 2009-2011. Parts 1 and 2 Roden, C.M; Oliver, G.A.
Series : Year : Title : Author : Series :	Unpublished Ph.D. Thesis, Trinity College Dublin 2013 Monitoring and assessment of Irish lagoons for the purposes of the EU Water Framework Directive, 2009-2011. Parts 1 and 2 Roden, C.M; Oliver, G.A. Unpublished report to the Environmental Protection Agency
Series : Year : Title : Author : Series : Year :	Unpublished Ph.D. Thesis, Trinity College Dublin 2013 Monitoring and assessment of Irish lagoons for the purposes of the EU Water Framework Directive, 2009-2011. Parts 1 and 2 Roden, C.M; Oliver, G.A. Unpublished report to the Environmental Protection Agency 2013

Spatial data sources

Jalial uala su			
Year :	2010		
Title :	EPA WFD transitional waterbody data		
GIS Operations :	Clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising		
Used For :	1130 (map 3)		
Year :	Interpolated 2014		
Title :	1996 BioMar survey; 2007, 2009, 2011 intertidal surveys; 2009, 2010 subtidal surveys; 2012 Ostrea survey		
GIS Operations :	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data. Expert opinion used as necessary to resolve any issues arising		
Used For :	1140, 1170, marine community types (maps 4, 7 and 8)		
Year :	Revision 2011		
Title :	Inventory of Irish Coastal Lagoons. Version 3		
GIS Operations :	Clipped to SAC boundary		
Used For :	1150 (map 5)		
Year :	2005		
Title :	OSi Discovery series vector data		
GIS Operations :	High Water Mark (HWM) polyline feature class converted into polygon feature class; clipped to SAC boundary. EPA WFD transitional waterbody data erased from extent. Expert opinion used as necessary to resolve any issues arising		
Used For :	1160 (map 6)		
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 8)		
Year :	Revision 2010		
Title :	Saltmarsh Monitoring Project 2007-2008. Version 1		
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with Coastal CO data investigated and resolved with expert opinion used		
Used For :	1330, 1410 (map 9)		
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 :	1210, 2120, 2130, 2170, 2190 (map 10)		
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 :	1210, 2120, 2130, 2170, 2190 (map 10)		
Year :	Revision 2013		
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 10)		

Year :	Revision 2010
Title :	National Survey of Native Woodlands 2003-2008. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	91E0 (map 11)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	Creation of an 80m buffer on the marine side of the high water mark (HWM); creation of a 10m buffer on the terrestrial side of the HWM; combination of 80m and 10m HWM buffer datasets; creation of a 10m buffer on the terrestrial side of the river banks data; creation of 20m buffer applied to canal centreline data. These datasets are combined with the derived EPA 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 12)
Year :	2010
Title :	EPA WFD Waterbodies data
GIS Operations :	Creation of a 20m buffer applied to river and stream centreline data; creation of 80m buffer on the aquatic side of lake data; creation of 10m buffer on the terrestrial side of lake data. These datasets are combined with the derived OSi data and Coastal Lagoon data for the 1355 CO. Overlapping regions investigated and resloved; resulting dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issues arising
Used For :	1355 (map 12)
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 side of lagoon data. These datasets are combined with the derived Osi data and EPA W Waterbodies data for the 1355 CO. Overlapping regions are investigated and resolved; dataset clipped to SAC boundary. Expert opinion used as necessary to resolve any issu	
Used For :	1355 (map 12)
Year :	2013
Title :	NPWS rare and threatened species database
GIS Operations :	Dataset created from spatial references in database records. Expert opinion used as necessary to resolve any issues arising
Used For :	1395 (map 13)

1130

Estuaries

To maintain the favourable conservation condition of Estuaries in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated as 306ha using OSi data and the defined Transitional Water Body area under the Water Framework Directive
Community extent	Hectares	Maintain the extent of the <i>Zostera</i> -dominated community complex and the <i>Mytilus</i> -dominated community, subject to natural processes. See map 8	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Zostera</i> density	Shoots/m ²	Conserve the high quality of the <i>Zostera</i> -dominated community complex, subject to natural processes	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Mytilus</i> <i>edulis</i> density	Individuals/m ²	Conserve the high quality of the <i>Mytilus edulis</i> - dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2010 (MERL, 2011) and an intertidal walkover in 2013. See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Mixed sediment with crustaceans, bivalves and polychaetes community complex; Intertidal reef community complex. See map 8	Based on intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011); a subtidal survey undertaken in 2009 (ERM, 2010) and and an intertidal walkover in 2013. See marine habitats supporting document for further details

1140

Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 4	Habitat area was estimated using OSi data as 1,685ha
Community extent	Hectares	Maintain the extent of <i>Mytilus</i> -dominated community and the <i>Zostera</i> -dominated and <i>Sabellaria</i> -dominated community complexes, subject to natural processes. See map 8	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Zostera</i> density	Shoots/m ²	Conserve the high quality of the <i>Zostera</i> -dominated community complex, subject to natural processes	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Mytilus</i> <i>edulis</i> density	Individuals/m ²	Conserve the high quality of the <i>Mytilus</i> -dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Sabellaria</i> density	Individuals/m ²	Conserve the high quality of the <i>Sabellaria</i> - dominated community complex, subject to natural processes	Estimated during an intertidal survey undertaken in 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Sand with <i>Nephtys cirrosa</i> community complex; <i>Ostrea edulis</i> -dominated community. See map 8	Based on intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013), survey of the oysters beds in 2012 (Marine Institute, unpublished data) and an intertidal walkover in 2013. See marine supporting document for further details

1150 Coastal lagoons

To restore the favourable conservation condition of Coastal lagoons in Tralee Bay and Magharees Peninsula, West to Cloghane 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. Favourable reference area- Lough Gill 129.0ha. See map 5	Areas calculated from spatial data derived from Oliver (2007). Site code IL029. NB there may be more, as yet unmapped, lagoons within this SAC. See lagoon supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5	Site IL029 in Oliver (2007). NB there may be more, as yet unmapped, lagoons within this SAC. See lagoon supporting document for further details
Salinity regime	Practical salinity units (psu)	Median annual salinity and temporal variation within natural ranges	Lough Gill has been classified as oligohaline. See lagoon supporting document for further details
Hydrological regime	Metres	Annual water level fluctuations and minima within natural ranges	Lough Gill is considered to be shallow. See lagoon supporting document for further details
Barrier: connectivity between lagoon and sea	Permeability	Appropriate hydrological connections between lagoons and sea, including where necessary, appropriate management	Lough Gill is a sedimentary lagoon with sluice and weir. See lagoon 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 lagoon supporting document for further details
Water quality: Molybdate Reactive Phosphorus (MRP)	mg/L	Annual median MRP within natural ranges 0.1mg/L	Target based on Roden and Oliver (2013). See lagoon 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 lagoon supporting document for further details
Depth of macrophyte colonisation	Metres	Macrophyte colonisation to maximum depth of lagoon	As Lough Gill is shallow, it is expected the macrophytes should extend to its deepest point. See lagoon 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 lagoon supporting document for further details
Typical animal species	Number	Maintain listed lagoon specialists, subject to natural variation	Invertebrate species listed in Oliver (2007). See lagoon 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 un-natural encroachment by reedbeds

1160

Large shallow inlets and bays

To maintain the favourable conservation condition of Large shallow inlets and bays in Tralee Bay and Magharees Peninsula, West to Cloghane 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 6	Habitat area was estimated as 10,130ha using OSi data and the Transitional Water Body area as defined under the Water Framework Directive
Community extent	Hectares	Maintain the extent of the <i>Mytilus</i> -dominated community and the <i>Zostera</i> -dominated and <i>Sabellaria</i> -dominated community complexes, subject to natural processes. See map 8	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011) and an intertidal walkover in 2013. The subtidal community was estimated during the sensitive sublittoral benthic communities survey carried out in 2009 (MERC, 2009). See marine supporting document for further details
Community structure: <i>Zostera</i> density	Shoots per m²	Conserve the high quality of the <i>Zostera</i> -dominated community complex, subject to natural processes	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. The subtidal community was estimated during the sensitive sublittoral benthic communities survey carried out in 2009 (MERC, 2009). See marine supporting document for further details
Community structure: <i>Mytilus</i> <i>edulis</i> density	Individuals/m ²	Conserve the high quality of the <i>Mytilus</i> -dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Sabellaria</i> density	Individuals/m ²	Conserve the high quality of the <i>Sabellaria</i> - dominated community complex, subject to natural processes	Estimated during an intertidal survey undertaken in 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Sand with <i>Nephtys cirrosa</i> community complex; Mixed sediment with crustaceans, bivalves and polychaetes community complex; <i>Ostrea edulis</i> -dominated community; Intertidal reef community complex; Subtidal reef community complex; <i>Laminaria</i> - dominated reef community complex. See map 8	Based on intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011) and intertidal walkover in 2013; subtidal surveys undertaken in 2009 (ERM, 2010) and 2010 (Aquafact, 2011); the BioMar survey in 1996 (Picton and Costello, 1997) and survey of the oysters beds in 2012 (Marine Institute, unpublished data). See marine supporting document for further details

1170 Reefs

To maintain the favourable conservation condition of Reefs in Tralee Bay and Magharees Peninsula, West to Cloghane 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 7	Habitat area estimated as 2,856ha from a 2009 intertidal survey (RPS, 2013) and a 2010 subtidal reef survey (Aquafact, 2011)
Distribution	Occurrence	The distribution of reefs is stable or increasing, subject to natural processes. See map 7	Based on the 1996 BioMar survey (Picton and Costello, 1997), a 2009 intertidal survey (RPS, 201 and a 2010 subtidal reef survey (Aquafact, 2011). See marine supporting document for further details
Community distribution	Hectares	Maintain the extent of the <i>Mytilus</i> -dominated community and the <i>Sabellaria</i> -dominated community complex, subject to natural processes. See map 8	Estimated during intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Mytilus</i> <i>edulis</i> density	Individuals/m ²	Conserve the high quality of the <i>Mytilus</i> -dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: <i>Sabellaria</i> density	Individuals/m ²	Conserve the high quality of the <i>Sabellaria</i> - dominated community complex, subject to natural processes	Estimated during an intertidal survey undertaken in 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure	Biological composition	Conserve the following community types in a natural condition: Intertidal reef community complex, Subtidal reef community complex; <i>Laminaria</i> - dominated reef community complex. See map 8	Based on information from the 1996 BioMar survey (Picton and Costello, 1997), 2009 intertidal survey (RPS, 2013) and subtidal surveys in 2009 (ERM, 2010) and 2010 (Aquafact, 2011). See marine supporting document for further details

1210 Annual vegetation of drift lines

To restore the favourable conservation condition of Annual vegetation of drift lines in Tralee Bay and Magharees Peninsula, West to Cloghane 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: Fermoyle (including Drom Hill) - 0.50ha; Castlegregory - 3.68ha; Derrymore Island - 1.89ha. See map 10	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 three sub-sites, giving a tota estimated area of 6.07ha. Habitat is very difficult to measure in view of its dynamic nature, which means that it can appear and disappear within a site from year to year. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 10	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	Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Accumulation of organic matter in tidal litter is essential for trapping sand and initiating dune formation. Rock armour has been erected at Fermoyle and along the west side of the spit at Derrymore Island. These physical barriers will effect sediment supply at these sites. 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). There are transitional communities between a range of sand dune habitats as well as saltmarsh habitats at Derrymore Island and Castlegregory. 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 with typical species: sea rocket (<i>Cakile maritima</i>), sea sandwort (<i>Honckenya peploides</i>), prickly saltwort (<i>Salsola kali</i>) and orache (<i>Atriplex</i> spp.)	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. See coastal habitats supporting document for further details

1220

Perennial vegetation of stony banks

To maintain the favourable conservation condition of Perennial vegetation of stony banks in Tralee Bay and Magharees Peninsula, West to Cloghane 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 at Magherabeg during the National Shingle Beach Survey (Moore and Wilson, 1999). A total area of 2.79ha of vegetated shingle was recorded at Derrymore Island (2.78ha) and Castlegregory (0.01ha) during the Coastal Monitoring Project (CMP) (Ryle et al., 2009). NB further unsurveyed areas maybe present within the SAC. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 10 for mapped locations	Distribution unknown at present, although the habitat has been recorded at Magherabeg by Moore and Wilson (1999) and at Castlegregory and Derrymore Island by Ryle et al. (2009). Habitat likely to be more widespread. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	North Kerry shingle beaches are mostly storm deposits of unvegetated shingle. Moore and Wilson (1999) noted the presence of rock armour at Magherabeg, which may be compromising the supply and natural circulation of sediment. 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). 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 typical vegetated shingle flora including the range of sub- communities within the different zones	Magherabeg supports good quality vegetated shingle flora. Based on data from Moore and Wilson (1999). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Moore and Wilson (1999). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. See coastal habitats supporting document for further details

1310

GU]Wcfb]Uand other annuals colonising mud and sand

To maintain the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in Tralee Bay and Magharees Peninsula, West to Cloghane 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	This SAC was not surveyed by the Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009). Current area unknown as it is not possible to identify this habitat from an examination of aerial photographs. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes	Current distribution unknown. <i>Salicornia</i> is an annual species, so its distribution can vary significantly from year to year. 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	Sediment supply is particularly important for this pioneer saltmarsh community, as the distribution of this habitat depends on accretion rates. 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	Creeks deliver sediment throughout saltmarsh system. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	This pioneer saltmarsh community requires regular tidal inundation. 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	See coastal habitats supporting document for furthe details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	See coastal habitats supporting document for details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	See coastal habitats supporting document for details
Vegetation composition: typical species and sub- communities	Percentage cover	Maintain the presence of species-poor communities listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	See coastal habitats supporting document for furthe details
Vegetation structure: negative indicator species - <i>Spartina</i> <i>anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>). No new sites for this species and an annual spread of less than 1% where it is already known to occur	Based on data from McCorry and Ryle (2009). Extensive areas of coastal mud within the SAC have been colonised by <i>Spartina</i> swards, especially at the back of Derrymore Island. See coastal habitats supporting document for further details

1330

Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

To maintain the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. See map 9	This SAC was not surveyed by the Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009) but areas of potential saltmarsh were identified by examining aerial photographs as well as from data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009). A total of 97.70ha of potential Atlantic salt meadows was identified. NB Further areas may be present within the SAC. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 9 for potential 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	See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% area outside creeks vegetated	See coastal habitats supporting document for further details
Vegetation composition: typical species and sub- communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in the SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - <i>Spartina</i> <i>anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1% where it is known to occur	Based on data from McCorry and Ryle (2009). Extensive areas of coastal mud within the SAC have been colonised by <i>Spartina</i> swards, especially at the back of Derrymore Island. See coastal habitats supporting document for further details

1410

Mediterranean salt meadows (Juncetalia maritimi)

To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. See map 9	This SAC was not surveyed by the Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009) but areas of potential saltmarsh were identified by examining aerial photographs as well as from data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009). A total of 36.32ha of potential Mediterranean salt meadows was identified. NB Further areas may be present within the SAC. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 9 for potential 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	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	See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation in the sward	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	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 the SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - <i>Spartina</i> <i>anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1% where it is already known to occur	Extensive areas of coastal mud within the SAC have been colonised by <i>Spartina</i> swards, especially at the back of Derrymore Island. See coastal habitats supporting document for further details

2120

Shifting dunes along the shoreline with 5 a a cd\ [UUFYbUF]U(white dunes)

To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Tralee Bay and Magharees Peninsula, West to Cloghane 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: Fermoyle (including Drom Hill) - 3.26ha; Castlegregory - 10.36ha; Derrymore Island - 0.97ha. See map 10	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 three sub-sites, giving a tot estimated area of 14.59ha. Habitat is very difficult t 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 10 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Areas of shifting dunes have been lost to erosion at the Fermoyle and Derrymore Island sub-sites. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	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. Rock and boulder armour have been installed in parts of the Fermoyle and Derrymore Island sub-sites. 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). There are transitional communities between a range of sand dune habitats as well as saltmarsh habitats at Derrymore Island and Castlegregory. See coastal habitats supporting document for further details
Vegetation composition: plant health of dune grasses	Percentage cover	95% of marram grass (<i>Ammophila arenaria</i>) and/or lyme-grass (<i>Leymus arenarius</i>) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Ryle et al. (2009) 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</i> <i>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

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 Tralee Bay and Magharees Peninsula, West to Cloghane 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: Fermoyle (including Drom Hill) - 10.00ha; Castlegregory - 253.30ha; Derrymore Island - 0.01ha. See map 10	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 three sub-sites, giving a tota estimated area of 263.31ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 10 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Physical barriers can lead to fossilisation or over- stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. Rock and boulder armour have been installed in parts of the Fermoyle and Derrymore Island sub-sites. 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). There are transitional communities between a range of sand dune habitats as well as saltmarsh habitats at Derrymore Island and Castlegregory. 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). 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). The Red Data Book species wild asparagus (<i>Asparagus officinalis</i> var. <i>prostratus</i>) and other rare species, including dodder (<i>Cuscuta</i> <i>epithymum</i>) and Autumn lady's tresses (<i>Spiranthes</i> <i>spiralis</i>), represent indicators of local distinctiveness. See coastal habitats supporting document for further details
Vegetation composition: negative indicator species (including <i>Hippophae</i> <i>rhamnoides</i>)	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (<i>Hippophae rhamnoides</i>) should be absent or effectively controlled. Bracken (<i>Pteridium aquilinum</i>) has been recorded at Fermoyle and substantial stands of sea-buckthorn (<i>Hippophae rhamnoides</i>) have been recorded at Castlegregory. 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). Gorse (<i>Ulex europaeus</i>) occurs at Derrymore Island. See coastal habitats supporting document for further details

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2170

Dunes with GU]I 'f YdYbg ssp.Uf[YbhYU(Salix arenariae)

To maintain the favourable conservation condition of Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) in Tralee Bay and Magharees Peninsula, West to Cloghane 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: Castlegregory - 41.36ha. See map 10	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat only recorded at Castlegregory sub-site, giving a total estimated area of 41.36ha. Habitat can be difficult to distinguish from humid dune slacks (2190). See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 10 for known distribution	Based on data from 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. Rock and boulder armour have been installed in parts of the Fermoyle and Derrymore Island sub-sites. 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). There are transitional communities between a range of sand dune habitats as well as saltmarsh habitats at Derrymore Island and Castlegregory. 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 Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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)	See coastal habitats supporting document for furthe 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	Cover of creeping willow (<i>Salix repens</i>) need 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 (including <i>Hippophae</i> <i>rhamnoides)</i> .	Percentage cover at a representative number 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. See coastal habitats supporting document for further details
Vegetation composition: scrub/trees	Percentage cover	For trees and scrub other than creeping willow (<i>Salix</i> <i>repens</i>), there should be no more than 5% cover or their presence should be under control	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details

2190 Humid dune slacks

To restore the favourable conservation condition of Humid dune slacks in Tralee Bay and Magharees Peninsula, West to Cloghane 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: Fermoyle - 0.42ha; Castlegregory - 21.82ha. See map 10	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 two sub-sites, giving a total estimated area of 22.24ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 10 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). There are extensive areas of relatively intact dune slacks within this SAC, which are thought to be among the best conserved in Ireland. The principal area is on the Magharees Peninsula, ir the vicinity of Castlegregory. 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. Rock and boulder armour have been installed in parts of the Fermoyle and Derrymore Island sub-sites. See coastal habitats supporting document for further details
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). There are transitional communities between a range of sand dune habitats as well as saltmarsh habitats at Derrymore Island and Castlegregory. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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). The slacks at Castlegregory provide habitat for the Habitats Directive Annex II bryophyte, petalwort (<i>Petalophyllum ralfsii</i>)- see the conservation objective for this species (1395) and chalk hook moss (<i>Drepanocladus sendtneri</i>). Ponds in the slacks also support natterjack toad (<i>Bufo (Epidalea) calamita</i>). See coastal habitats supporting documen for further details
Vegetation composition: cover of <i>Salix</i> <i>repens</i>	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (<i>Salix repens</i>)	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). Cover of <i>Salix</i> <i>repens</i> (creeping willow) 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

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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. Substantial stands of sea-buckthorn (<i>Hippophae rhamnoides</i>) have been recorded at Castlegregory. 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

6410 Ac`]b]U meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)

To maintain the favourable conservation condition of *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) in Tralee Bay and Magharees Peninsula, West to Cloghane 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	Full extent of this habitat in this site is currently unknown- see distribution below
Habitat distribution	Occurrence	No decline, subject to natural processes	Good examples of this habitat have been recorded at Cappaclough East on the southern margins of the SAC between Camp and Castlegregory (NPWS internal files). However, full distribution of this habitat in this SAC is currently unknown and other areas may occur
Vegetation structure: broadleaf herb: grass ratio	Percentage	Broadleaf herb component of vegetation between 40 and 90%	Attribute and target based on O'Neill et al. (in prep.)
Vegetation structure: sward height	Percentage	At least 30% of sward between 10cm and 80cm tall	Attribute and target based on O'Neill et al. (in prep.)
Vegetation composition: typical species	Number	At least seven positive indicator species present, including one "high quality" species as listed in O'Neill et al. (in prep.)	The species list for Cappaclough East includes compact rush (<i>Juncus conglomeratus</i>), which is a "high quality" positive indicator species. Other positive indicator species recorded include marsh horsetail (<i>Equisetum palustre</i>), marsh-bedstraw (<i>Galium palustre</i>), sharp-flowered rush (<i>Juncus acutiflorus</i>), meadowsweet (<i>Filipendula ulmaria</i>), water mint (<i>Mentha aquatica</i>) and devil's-bit scabious (<i>Succisa pratensis</i>) (NPWS internal files)
Vegetation composition: negative indicator species	Percentage	Negative indicator species collectively not more than 20% cover, with cover by an individual species less than 10%.	List of negative indicator species identified by O'Neil et al. (in prep.)
Vegetation composition: non- native species	Percentage	Non-native species cover not more than 1%	Attribute and target based on O'Neill et al. (in prep.)
Vegetation composition: moss species	Percentage	Hair mosses (<i>Polytrichum</i> spp.) not more than 25% cover	Attribute and target based on O'Neill et al. (in prep.)
Vegetation structure: woody species and bracken	Percentage	Cover of woody species and bracken (<i>Pteridium</i> <i>aquilinum</i>) not more than 5% cover	Attribute and target based on O'Neill et al. (in prep.)
Physical structure: bare soil	Percentage	Not more than 10% bare soil	Attribute and target based on O'Neill et al. (in prep.)

91E0 Alluvial forests with 5 `bi g'[`i l]bcgUand : fU]bi g`Yl Wrg]cf (Alno-Padion, Alnion incanae, Salicion albae)

To restore the favourable conservation condition of Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) in Tralee Bay and Magharees Peninsula, West to Cloghane 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, at least 3.69ha for sites surveyed. See map 11	Minimum area, based on two sites surveyed by Perrin et al. (2008)- site codes 1719 and 1724. NB further unsurveyed areas are also present within the SAC. See woodland habitats supporting document for further details
Habitat distribution	Occurrence	No decline. Surveyed locations shown on map 11	Distribution based on Perrin et al. (2008). NB Further unsurveyed areas are also present within the SAC. See woodland habitats supporting document for further details
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	The sizes of the existing woodlands need to be increased in order to reduce habitat fragmentation and benefit those species requiring "deep" woodland conditions (Peterken, 2002). Topographical and land-ownership constraints may restrict expansion
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer	Described in Perrin et al. (2008). See woodland habitats supporting document for further details
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	Described in Perrin et al. (2008). See woodland habitats supporting document for further details
Woodland structure: natural regeneration	Seedling:sapling:pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	Alder (<i>Alnus glutinosa</i>) regenerates poorly. Ash (<i>Fraxinus excelsior</i>) often regenerates in large numbers although few seedlings reach pole size. Grazing is a threat to regeneration in site 1724. See woodland habitats supporting document for further details
Hydrological regime: Flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	Periodic flooding is essential to maintain alluvial woodlands along river flood plains but not for woodland around springs/seepage areas
Woodland structure: dead wood	m ³ per hectare; number per hectare	At least 30m ³ /ha of fallen timber greater than 10cm diameter; 30snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder (<i>Alnus</i> <i>glutinosa</i>)	Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem
Woodland structure: veteran trees	Number per hectare	No decline	Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources
Woodland structure: indicators of local disctinctiveness	Occurrence	No decline	Includes ancient or long-established woodlands, archaeological and geological features as well as red-data and other rare or localised species
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%	Species reported in Perrin et al. (2008)
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Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including alder (<i>Alnus</i> <i>glutinosa</i>), willows (<i>Salix</i> spp.) and, locally, ash (<i>Fraxinus excelsior</i>)	Species reported in Perrin et al. (2008)
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	Sycamore (<i>Acer pseudoplatanus</i>) is reported from site 1719

1355

Otter Lutra lutra

To restore the favourable conservation condition of Otter in Tralee Bay and Magharees Peninsula, West to Cloghane 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 estimated at 75% (Bailey and Rochford, 2006). Current range in south west is estimated at 74.5% (Bailey and Rochford, 2006)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 82.3ha above high water mark (HWM); 50.4ha 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 702.2ha	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 19.5km	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 53.8ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase. For guidance, see map 12	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is importan that such commuting routes are not obstructed

1395

Petalwort Petalophyllum ralfsii

To restore the favourable conservation condition of Petalwort in Tralee Bay and Magharees Peninsula, West to Cloghane 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 of the three known sub-populations. See map 13	There are currently three known sub-populations: SW of Lough Naparka; Magherabeg; Kilshannig. The population at SW of Lough Naparka has not been seen since 1998. Data from NPWS surveys and Campbell (2013)
Population size	Number of individuals	No decline. Population at (a) SW Lough Naparka = 5 thalli; (b) Magherabeg = 10,290 thalli ; (c) Kilshannig = 3 thalli. Total = c.10,300 thalli	Counts of thalli: SW Lough Naparka, 5 thalli recorded by Neil Lockhart in 1998; Magherabeg, from mean of number of thalli in five 1 x 1m plots, from 3 counts from early March 2009 to late February 2011 (Campbell, 2013) = 5.5 thalli per m ² in 1870.5 m ² = 10,288 thalli (c.10,290 thalli); Kilshannig, 3 thalli recorded by Nick Hodgetts in 2003
Area of suitable habitat	Hectares	habitat at Magherabeg estimated at c.0.2ha. Area of suitable habitat SW Lough Naparka and Kilshannig currently unknown but thought to be	Main area of occupancy is at the northern end of the large dune slack at Magherabeg, measured by GPS = c.7480m ² . Only about 25% of this area is actually suitable habitat for <i>P. ralfsii</i> (= 1870m ²), the remainder being too permanently wet. Two outlying records from this slack were reported by Nick Hodgetts in 2003 giving an estimate of 0.5m ² , therefore the total area of suitable habitat at Magherabeg = c. 1870.5m ² . The extent of suitable habitat at SW of Lough Naparka and at Kilshannig has not been measured, but is known to be very small (c.0.25m ² each)
Hydrological conditions: soil moisture	Occurrence of damp soil conditions	conditions so that	<i>Petalophyllum ralfsii</i> grows in damp sand. Based on Campbell (2013). See also the conservation objecitve for Humid dune slacks (2190)
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	Petalophyllum ralfsii grows in compacted, sandy ground, maintained by grazing (rabbits and cattle) and some trampling (by walkers) and vehicles. Recorded at SW of Lough Naparka on sloping side o low sandy ridge, in a tightly grazed mossy turf with an open sunny aspect, in area over-stocked with cattle by Lockhart in 1998, but the area where <i>P.</i> <i>ralfsii</i> occurred was considered too dry and no longer suitable when the site was re-visited by Lockhart in 2006; at Magherabeg, Campbell (2013) recorded a mean height of vegetation of 3.2 cm, with bryophyte cover c. 34-75% and bare ground c. 1-25% (based on five 1 x 1m plots between 2009 and 2011); at Kilshannig, recorded at edge of slack in sand/humus soil by Hodgetts in 2003





Legend				
An Roinn Ealaíon, Oidhreachta agus Gaeltachta Department of Arts, Heritage and the Gaeltacht	MAP 3: TRALEE BAY AND MAGHAREES PENINSULA, WEST TO CLOGHANE SAC CONSERVATION OBJECTIVES ESTUARIES Map to be read in conjunction with the NPWS Conservation Objectives Document.	SITE CODE: SAC 002070; version 3. CO. KERRY 0 1 2 3 4 I I	5 km	The mapped boundaries are of an indicative and general nature only. Boundaries of designat Survey material by permission of the Government (Permit number EN 0059212). Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbl comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadu



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Legend	
Tralee Bay and Magharees Peninsula, West to Cloghane SAC 002070	
1140 Mudflats and sandflats not covered by sea water at low tide	
OSi Discovery Series County Boundaries	
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Legend	Lough Gill ILO29		
	arees Peninsula, West to Cloghane SAC 002070		
1150 *Coastal lagoons OSi Discovery Series			
	MAP 5:	SITE CODE:	
An Roinn Ealaíon, Oidhreachta agus Gaeltachta Department of Arts, Heritage and the Gaeltacht	TRALEE BAY AND MAGHAREES PENINSULA, WEST TO CLOGHANE SAC CONSERVATION OBJECTIVES COASTAL LAGOONS Map to be read in conjunction with the NPWS Conservation Objectives Document.	SAC 002070; version 3. CO. KERRY 0 1 2 3 4 5 km	The mapped boundaries are of an indicative and general nature only. Boundaries of designate Survey material by permission of the Government (Permit number EN 0059212). Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbr comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadu



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An Roinn Ealaíon, Oidhreachta agus Gaeltachta Department of Arts, Heritage and the Gaeltacht	MAP 6: TRALEE BAY AND MAGHAREES PENINSULA, WEST TO CLOGHANE SAC CONSERVATION OBJECTIVES LARGE SHALLOW INLETS AND BAYS Map to be read in conjunction with the NPWS Conservation Objectives Document.		The mapped boundaries are of an indicative and general Survey material by permission of the Government (Perm Níl sna teorainneacha ar na léarscáileanna ach nod gars comharthaithe. Macasamhail d'ábhar na Suirbhéarachta	



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Legend Tralee Bay and Magharees Peninsula, West to Cloghane SAC 002070	
1170 Reefs	
OSi Discovery Series County Boundaries	
An Roinn Ealaíon, Oidhreachta agus Gaeltachta Department of Arts, Heritage and the Gaeltacht Map to be read in conjunction with the NPWS Conservation Objectives Document.	



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An Roinn Ealaíon, Oidhreachta agus Gaeltachta Department of Arts, Heritage and the Gaeltacht	MAP 8: TRALEE BAY AND MAGHAREES PENINSULA, WEST TO CLOGHANE SAC CONSERVATION OBJECTIVES MARINE COMMUNITY TYPES	SITE CODE: SAC 002070; version 3. CO. KERRY 0 1 2 3 4 5 km	The mapped boundaries are of an indicative and general nature only. Boundarie Ordnance Survey of Ireland Licence No EN 0059214. © Ordnance Surv Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithn Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh EN 0059214. © Suirbhéara

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Legend Tralee Bay and Magharees Peninsula, West to Cloghane SAC 002070 OSi Discovery Series County Boundaries Saltmarsh Habitats Qualifying Interests Potential 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) Potential 1330 / 1410 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) Potential 1410 Mediterranean salt meadows (Juncetalia maritimi)	e) / Mediterranean salt meadows (Juncetalia maritir	ni)
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		MAP 10: TRALEE BAY AND MAGHAREES PENINSULA,		SAC	: 00207		CODE: sion 3. C	CO. KERI	RY	The mapped boundaries are of an indicative and general nature only. Boundaries of desig Survey material by permission of the Government (Permit number EN 0059212).
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		Map to be read in conjunction with the NPWS Conservation Objectives Document.								

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nd Magharees Peninsula, West to Cloghane SAC 002070 ort - *Petalophyllum ralfsii*

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