

National Parks and Wildlife Service

Conservation Objectives Series

Horn Head and Rinclevan SAC 000147



An Roinn
Ealaíon, Oidhreachta agus Gaeltachta

Department of
Arts, Heritage and the Gaeltacht



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Citation:

**NPWS (2014) Conservation Objectives: Horn Head and Rinclevan SAC 000147.
Version 1. National Parks and Wildlife Service, Department of Arts, Heritage
and the Gaeltacht.**

Series Editor: Rebecca Jeffrey

ISSN 2009-4086

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

000147	Horn Head and Rinclevan SAC
1013	Geyer's Whorl Snail <i>Vertigo geyeri</i>
1364	Grey seal <i>Halichoerus grypus</i>
1395	Petalwort <i>Petalophyllum ralfsii</i>
1833	Slender Naiad <i>Najas flexilis</i>
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)*
2170	Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salix arenariae</i>)
2190	Humid dune slacks
21A0	Machairs (* in Ireland)

Please note that this SAC overlaps with Horn Head to Fanad Head SPA (004194) and adjoins Ballyness Bay SAC (001090). 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 :	2004
Title :	Harbour seal population assessment in the Republic of Ireland: August 2003
Author :	Cronin, M.; Duck, C.; O Cadhla, O.; Nairn, R.; Strong, D.; O'Keeffe, C.
Series :	Irish Wildlife Manual No. 11
Year :	2004
Title :	Summary of National Parks and Wildlife Service surveys for common (harbour) seals (<i>Phoca vitulina</i>) and grey seals (<i>Halichoerus grypus</i>), 1978 to 2003
Author :	Lyons, D.O.
Series :	Irish Wildlife Manual No. 13
Year :	2004
Title :	Aerial surveying of grey seal breeding colonies on the Blasket Islands, Co. Kerry, the Inishkea Group, Co. Mayo and the Donegal coast during the 2003 breeding season
Author :	Cronin, M.; Ó Cadhla, O.
Series :	Unpublished report to NPWS
Year :	2007
Title :	Grey seal moult population survey in the Republic of Ireland, 2007
Author :	O Cadhla, O.; Strong, D.
Series :	Unpublished report to NPWS
Year :	2008
Title :	An assessment of the breeding population of grey seals in the Republic of Ireland, 2005
Author :	O Cadhla, O.; Strong, D.; O'Keeffe, C.; Coleman, M.; Cronin, M.; Duck, C.; Murray, T.; Dower, P.; Nairn, R.; Murphy, P.; Smiddy, P.; Saich, C.; Lyons, D.O.; Hiby, L.
Series :	Irish Wildlife Manual No. 34
Year :	2009
Title :	Coastal Monitoring Project 2004-2006
Author :	Ryle, T.; Murray, A.; Connolly, K.; Swann, M.
Series :	Unpublished report to NPWS
Year :	2011
Title :	Monitoring and condition assessment of populations of <i>Vertigo geyeri</i> , <i>Vertigo angustior</i> and <i>Vertigo moulinsiana</i> in Ireland
Author :	Moorkens, E.; Killeen, I.
Series :	Irish Wildlife Manual No. 55
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 :	An aerial survey of harbour seals in Ireland. Part 1: Lough Foyle to Galway Bay. August 2011
Author :	Duck, C; Morris, C.
Series :	Unpublished report to NPWS

Year : 2014
Title : Horn Head and Rinclevan SAC (site code: 147) Conservation objectives supporting document-coastal habitats V1
Author : NPWS
Series : Conservation objectives supporting document

Year : 2014
Title : Horn Head and Rinclevan SAC (site code: 147) Conservation objectives supporting document-marine species V1
Author : NPWS
Series : Conservation objectives supporting document

Year : 2014
Title : Horn Head and Rinclevan SAC (site code: 147) Conservation objectives supporting document-*Najas flexilis* V1
Author : NPWS
Series : Conservation objectives supporting document

Other References

Year : 1983
Title : The grey seal (*Halichoerus grypus*) in Ireland
Author : Summers, C.F.
Series : Unpublished Report to the Minister for Fisheries, Forestry and Wildlife

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 : 2007
Title : Aerial surveying of grey seal breeding colonies on the Blasket Islands, Co. Kerry, the Inishkeas group, Co. Mayo and the Donegal coast, Ireland
Author : Cronin, M.A.; Duck, C.D.; O Cadhla, O.
Series : J. Nat. Conserv. 15(2): 77-83

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 : 2013
Title : Conservation of selected legally protected and Red Listed bryophytes in Ireland
Author : Campbell, C.
Series : Unpublished Ph.D. Thesis, Trinity College Dublin

Spatial data sources

Year :	2009
Title :	Coastal Monitoring Project 2004-2006. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with Saltmarsh CO data investigated and resolved with expert opinion used
Used For :	2110, 2120, 2130, 2170, 2190, 21A0 (map 3)
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, 2170, 2190, 21A0 (map 3)
Year :	2014
Title :	NPWS rare and threatened species database
GIS Operations :	Dataset created from spatial references in database records. Expert opinion used as necessary to resolve any issues arising
Used For :	1013, 1364, 1395 (maps 4 and 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. Expert opinion used as necessary to resolve any issues arising
Used For :	1364 (map 5)
Year :	2013
Title :	<i>Najas flexilis</i> data
GIS Operations :	Lake habitat for species clipped to SAC boundary
Used For :	1833 (map 6)

2110 Embryonic shifting dunes

To maintain the favourable conservation condition of Embryonic shifting dunes in Horn Head and Rinclevan 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: Dunfanaghy - 0.39ha. See map 3	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat is very difficult to measure in view of its dynamic nature. Recorded at one sub-site, giving a total estimated area of 0.39ha
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Embryo dunes were absent from Rinclevan 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). Dunes are naturally dynamic systems that require continuous supply and circulation of sand. At Dunfanaghy, there is a rock armour wall which protects the golf course at the most easterly end of the beach. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Ryle et al. (2009) and Delaney et al. (2013). A range of coastal habitats occur at both sub-sites. The sand dune habitats grade into saltmarsh at Dunfanaghy. 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 at a representative number of monitoring stops	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 : Horn Head and Rinclevan SAC [000147]

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 Horn Head and Rinclevan 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: Rinclevan - 4.08ha; Dunfanaghy - 1.09ha. See map 3	Habitat was mapped during the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013) at two sub-sites to give a total estimated area of 5.18ha. 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 3 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Shifting dunes were recorded from both sub-sites. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Marram grass (<i>Ammophila arenaria</i>) reproduces vegetatively and requires constant accretion of fresh sand to maintain active growth encouraging further accretion. At Rinclevan there was no substantial accreting of fore dune development. At Dunfanaghy there is good development of fore dunes, however in some areas they are discontinuous as a result of trampling and overuse which has led to erosion. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). A range of coastal habitats occur at both Rinclevan and Dunfanaghy. The sand dune habitats grade into a small area of saltmarsh at Dunfanaghy. 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 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. At Rinclevan, sea-buckthorn (<i>Hippophae rhamnoides</i>) was recorded while bracken (<i>Pteridium aquilinum</i>) was noted at Dunfanaghy by the Ryle et al. (2009). See coastal habitats supporting document for further details

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

To maintain the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Horn Head and Rinclevan 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: Rinclevan-277.75ha; Dunfanaghy - 14.58ha. See map 3	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from two sub-sites, giving a total estimated area of 292.33ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 3 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. At Dunfanaghy there is a rock armour wall which protects a golf course. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Ryle et al. (2009) and Delaney et al. (2013). A range of coastal habitats occur at both Rinclevan and Dunfanaghy. At Dunfanaghy, the sand dune habitats grade into a small area of saltmarsh. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). Petalwort (<i>Petalophyllum ralfsii</i>), a species that favours open conditions, is a qualifying interest for the SAC. See the conservation objective for this species (1395) as well as the 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). At Rinclevan the fixed dunes are overgrazed by both sheep and cattle. A sizable portion of the northern half of the dunes are owned by NPWS and the maintenance of a controlled grazing regime in this area is part of a management plan for the dunes. At Dunfanaghy the fixed 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 Ryle et al. (2009), Delaney et al. (2013) and Gaynor (2008). At Rinclevan, petalwort (<i>Petalophyllum ralfsii</i>) is recorded at the southern end of the dune system (see also the conservation objective for this species (1395). Lesser meadow rue (<i>Thalictrum minus</i>) was recorded in the fixed dunes at Rinclevan. 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. At Rinclevan, a large stand of sea-buckthorn (<i>Hippophae rhamnoides</i>) was recorded in the eastern end of the site. At Dunfanaghy, Ryle et al. (2009) estimated that 70% of the fixed dune habitat was covered in bracken (<i>Pteridium aquilinum</i>). See coastal habitats supporting document for further details

Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control	Based on data from Ryle et al. (2009) and Delaney et al. (2013). At Dunfanaghy, Ryle et al. (2009) noted the presence of scattered hawthorn (<i>Crataegus monogyna</i>) and willow (<i>Salix</i> sp.) bushes in the dunes, as well as bramble (<i>Rubus fruticosus</i>). See coastal habitats supporting document for further details
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Conservation Objectives for : Horn Head and Rinclevan SAC [000147]

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

To restore the favourable conservation condition of Dunes with *Salix repens ssp. argentea* (*Salicion arenariae*) in Horn Head and Rinclevan 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: Rinclevan - 9.04ha. See map 3	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from one sub-site, giving a total estimated area of 9.04ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3 for known distribution	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% cover, subject to natural processes	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). 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). 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>) is maintained through an appropriate grazing regime, which prevents 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 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. At Rinclevan, a large stand of Sea-buckthorn (<i>Hippophae rhamnoides</i>) was recorded in the eastern end of the site. 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

Conservation Objectives for : Horn Head and Rinclevan SAC [000147]

2190 Humid dune slacks

To maintain the favourable conservation condition of Humid dune slacks in Horn Head and Rinclevan 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: Rinclevan - 42.57ha See map 3	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was mapped at one sub-site, giving a total estimated area of 42.57ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details.
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation, resulting in increased rates of erosion. See coastal habitats supporting document for further details
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). At Rinclevan, the dune slack site area in the southern half of the dunes is one of the largest slack systems in the country and it is mostly intact and undamaged. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Ryle et al. (2009) and Delaney et al. (2013). A range of coastal habitats occur at both Rinclevan and Dunfanaghy. 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 Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: cover of <i>Salix repens</i>	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (<i>Salix repens</i>)	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Cover of creeping willow (<i>Salix repens</i>) needs to be controlled (e.g. through an appropriate grazing regime) to prevent the development of a coarse, rank vegetation cover. Creeping willow (<i>Salix repens</i>) occurs constantly within the dune slack habitat at Rinclevan. 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. At Rinclevan, a large stand of sea-buckthorn (<i>Hippophae rhamnoides</i>) was recorded in the eastern end of the site. 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
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Conservation Objectives for : Horn Head and Rinclevan SAC [000147]

21A0 Machairs (* in Ireland)

To restore the favourable conservation condition of Machairs in Horn Head and Rinclevan 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: Rinclevan - 41.32ha. See map 3	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was recorded from one sub-site, giving a total estimated area of 41.32ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 3	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). 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 Ryle et al. (2009), Delaney et al. (2013), Crawford et al. (1996) and Gaynor (2006). See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Ryle et al. (2009) and Delaney et al. (2013). A range of coastal habitats occur at Dunfanghy and Rinclevan. 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). The machair at Rinclevan is overgrazed by sheep at Pollaguill Bay. 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). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Ryle et al. (2009) and Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. See coastal habitats supporting document for further details
Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details.
Vegetation composition: bryophytes	Percentage cover	Should always be at least an occasional component of the vegetation	Based on data from Ryle et al. (2009) and Delaney et al. (2013). See coastal habitats supporting document for further details

Conservation Objectives for : Horn Head and Rinclevan SAC [000147]

1013 Marsh Snail *Vertigo geyeri*

To maintain the favourable conservation condition of Geyer's Whorl Snail in Horn Head and Rinclevan SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: occupied sites	Number	No decline. There is one known site for this species in this SAC, which overlaps three 1km squares C0038, C0039 and B9938. See map 4	The site comprises suitable habitat on the south side of the valley of the Polaguill Burn and specifically runnels and small streams which drain the south side of the valley. From Moorkens and Killeen (2011) (site code VgCAM14)
Distribution in habitat patches	Occurrence	Adults or sub-adult snails present in at least two samples (out of a minimum of four) taken from discrete areas of suitable habitat	From Moorkens and Killeen (2011)
Presence on transect	Occurrence	Adult or sub-adult snails are present in at least two of the four samples taken from optimal or sub-optimal habitat on the transect	Transect established as part of condition assessment monitoring at this site (Moorkens and Killeen, 2011). See habitat extent attribute below for definition of optimal and sub-optimal habitat
Transect habitat quality	Metres	18m of habitat along the transect is classed as optimal or sub-optimal and there are five zones of habitat along the transect classed as optimal or sub-optimal	From Moorkens and Killeen (2011). See habitat extent attribute below for definition of optimal and sub-optimal habitat
Transect optimal wetness	Metres	Soils, at time of sampling, are damp (optimal wetness) and covered with a layer of humid thatch for 18m of the transect	From Moorkens and Killeen (2011)
Habitat extent	Hectares	At least 4ha of optimal habitat with a further 6ha supporting some sub-optimal habitat	Optimal habitat is defined as flushed fen grassland with sward lawns 10-30cm tall, (or on the transect, runnels), stony ground with tufa, containing species such as yellow sedge (<i>Carex viridula</i>), marsh horsetail (<i>Equisetum palustre</i>), jointed rush (<i>Juncus articulatus</i>), common butterwort (<i>Pinguicula vulgaris</i>), black bog-rush (<i>Schoenus nigricans</i>) and the mosses <i>Drepanocladus revolvens</i> and <i>Campyllum stellatum</i> . The water table should be between 0 and 5cm of the soil surface, but not above ground level. Sub-optimal grassland is defined as having same vegetation composition as above or including purple moorgrass (<i>Molinia caerulea</i>) and rushes (<i>Juncus</i> spp.), but either vegetation height is less than 5cm or greater than 30cm; or the water table is below 5cm or ground is flooded; or there are extensive areas of bare ground. From Moorkens and Killeen (2011)

Conservation Objectives for : Horn Head and Rinclevan SAC [000147]

1364 Grey seal *Halichoerus grypus*

To maintain the favourable conservation condition of Grey Seal in Horn Head and Rinclevan SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use	See marine supporting document for further details
Breeding behaviour	Breeding sites	Conserve the breeding sites in a natural condition. See map 5 for known sites	Attribute and target based on background knowledge of Irish breeding populations, a preliminary survey in 2003 (Cronin and Ó Cadhla, 2004; Cronin et al., 2007), comprehensive breeding surveys in 2005 (Ó Cadhla et al., 2008) and unpublished NPWS records including those reported by Summers (1983) and Lyons (2004). See marine supporting document for further details
Moulting behaviour	Moult haul-out sites	Conserve the moult haul-out sites in a natural condition	Attribute and target based on background knowledge of Irish populations, on review of data from Lyons (2004), a national moult survey (Ó Cadhla and Strong, 2007) and unpublished NPWS records. See marine supporting document for further details
Resting behaviour	Resting haul-out sites	Conserve the resting haul-out sites in a natural condition. See map 5 for known sites	Attribute and target based on review of data from Lyons (2004), Cronin et al. (2004), Duck and Morris (2013) and unpublished NPWS records. See marine supporting document for further details
Population composition	Number of cohorts	The grey seal population occurring within this site should contain adult, juvenile and pup cohorts annually	Attribute and target based on review data from Lyons (2004), Ó Cadhla et al. (2007), Ó Cadhla and Strong (2007) and unpublished NPWS records. See marine supporting document for further details
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the grey seal population at the site	See marine supporting document for further details

Conservation Objectives for : Horn Head and Rinclevan SAC [000147]

1395 Petalwort *Petalophyllum ralfsii*

To maintain the favourable conservation condition of Petalwort in Horn Head and Rinclevan 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 4 for recorded location	The population occurs in carpet of low mosses on thin, damp sandy soil overlying more or less horizontal rock on top of low rocky knoll above sand beach and near dunes at Tramore/Black Burrow/SW of Dunfanaghy. Data from 2002 NPWS survey
Population size	Number of individuals	No decline. The population is estimated at a minimum of 3 thalli	Three thalli were counted in 2002
Area of suitable habitat	Hectares	No decline. Area of suitable habitat at Tramore/Black Burrow/SW of Dunfanaghy is estimated at c.0.000006ha	The area of occupancy is estimated to be 0.06 m ² . Therefore the area of suitable habitat is estimated 0.000006ha
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>), sheep and cattle grazing. At time of survey in 2002, the estimated vegetation height was less than 3cm

Conservation Objectives for : Horn Head and Rinclevan SAC [000147]

1833 Slender Naiad *Najas flexilis*

To maintain the favourable conservation condition of Slender Naiad in Horn Head and Rinclevan SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population extent	Hectares; distribution	No change to the spatial extent of <i>Najas flexilis</i> within the lake, subject to natural processes. See map 6 for known location	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 the 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 population of the species	See <i>Najas flexilis</i> supporting document for further details
Water quality	Various	Maintain appropriate water quality to support the population 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 population 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 population 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 population 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 population of <i>Najas flexilis</i>	See <i>Najas flexilis</i> supporting document for further details