Armagh City, Banbridge and Craigavon Borough Council

Local Development Plan 2035

September 2026

Draft Habitats Regulations Assessment (HRA) in relation to Regulation 43 and Regulation 64B of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), for the Armagh City, Banbridge and Craigavon LDP 2035 [draft] Plan Strategy.

Annex A
Conservation Objectives and Site Condition data

Index

Lough Neagh & Lough Beg Ramsar Site 1
Lough Neagh and Lough Beg SPA 11
Montiaghs Moss SAC 31
Peatlands Park SAC 47
Belfast Lough Open Water SPA 82
Belfast Lough Ramsar Site 95
Belfast Lough SPA 102
Carlingford Lough Proposed Marine Extension pSPA 123
Carlingford Lough Ramsar Site 142
Carlingford Lough SPA 148
Derryleckagh Proposed Ramsar Site 166
Derryleckagh SAC 177
Dundrum Bay Proposed Ramsar Site .....N/A
East Coast (NI) Marine pSPA 206
Eastern Mournes SAC 222
Murlough SAC 269
Rea's Wood and Farr's Bay SAC 325
Rostrevor Wood SAC 346
Slieve Beagh-Mullaghfad-Lisnaskea SPA 366
Slieve Gullion SAC 378
Carlingford Lough SPA (ROI) 399
Carlingford Shore SAC (ROI) 408
Dundalk Bay SAC (ROI) 419
Dundalk Bay SPA (ROI) 461
Slieve Beagh SPA (ROI) 502
Condition Information **511**

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK

Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:
Designated: 05 January 1976 / Updated: May 2005

3. Country:
UK (Northern Ireland)

4. Name of the Ramsar site:
Lough Neagh and Lough Beg

5. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □

b) digital (electronic) format (optional): Yes

6. Geographical coordinates (latitude/longitude)**:**
54 34 11 N 06 24 34 W

7. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Belfast

Lough Neagh is situated in the centre of Northern Ireland. It is the largest freshwater lake in the United Kingdom, covering an area of 383 square km, with a longest length of 30.5 km and narrowest width of 12.1 km across the middle.

Administrative region: Antrim; Armagh; Ballymena; Cookstown; Craigavon; Down; Dungannon; Lisburn; Londonderry; Magherafelt; Tyrone

8. Elevation (average and/or max. & min.) (metres)**:**
Min. No information available
Max. No information available
Mean No information available

9. Area (hectares)**:** 50165.84

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Lough Neagh is situated in the centre of Northern Ireland. It is the largest freshwater lake in the United Kingdom covering an area of 383 km2 with a longest length of 30.5 km and narrowest width of 12.1 km across the middle. The lake is very shallow for its size, with a mean depth of 8.9 metres. At its deepest point it extends down to 34 metres. The 125 km shoreline is mostly exposed with wave-beaten rocks and stones but there are also some sheltered, sandy bays with better-developed marginal vegetation including some reedbeds.

This site also contains a smaller lake, Lough Beg (1,125 ha) to the north, as well as a small satellite lake, Portmore Lough (286 ha) which is situated to the east of Lough Neagh. Lough Beg (meaning 'little lough') is essentially a widening of the Lower Bann River just downstream from where it leaves Lough Neagh. Lough Beg is very shallow, with a mean depth of 1-2 metres and a surface area of km2. About 200 hectares of the west shore is unimproved wet grassland that is largely inundated with floodwater each winter.

Rivers flowing into Lough Neagh drain about 43% of Northern Ireland, plus part of County Monaghan in the Republic of Ireland.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2, 3, 4, 5, 6

12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

A particularly good representative example of natural or near-natural wetlands, common to more than one biogeographic region. The site is the largest freshwater lake in the United Kingdom. Lough Neagh a relatively shallow body of water supporting beds of submerged aquatic vegetation fringed by associated species-rich damp grassland, reedbeds, islands, fens, marginal swampy woodland and pasture. Other interesting vegetation types include those associated with pockets of cut-over bog, basalt rock outcrops and boulders, and the mobile sandy shore.

Ramsar criterion 2

Supports an appreciable assemblage of rare, vulnerable or endangered species or sub-species of plant or animal or an appreciable number of individuals of any one of these species. The site supports over 40 rare or local vascular plants which have been recorded for the site since 1970; the most notable are eight-stamened waterwort *Elatine hydropiper*, marsh pea *Lathyrus palustris*, Irish lady's tresses *Spiranthes romanzoffiana*, alder buckthorn *Frangula alnus*, narrow small-reed *Calamagrostis stricta* and holy grass *Hierochloe odorata*. The Lough and its margin are also home to a large number of rare or local invertebrates, including two aquatic and two terrestrial molluscs, a freshwater shrimp *Mysis relicta*, eight beetles, five hoverflies, seven moths and two butterflies. Of the rare beetles recorded two, *Stenus palposus* and *Dyschirius obscurus*, have their only known Irish location around the Lough. The Lough also supports twelve species of dragonfly.

Ramsar criterion 3

This site is of special value for maintaining the genetic and ecological diversity of a region becuse of the quality and peculiarities of its flora and fauna. The site regularly supports substantial numbers of individuals from particular groups of waterfowl which are indicative of wetland values, productivity and diversity. In addition, this site is of special value for maintaining the genetic and ecological diversity of Northern Ireland because of the quality and peculiarities of its flora and fauna. A large

number of plants and animal species are confined or almost confined to this area within Northern Ireland.

Ramsar criterion 4

This site is of special value as the habitat of plants or animals at a critical stage of their biological cycles. The site supports an important assemblage of breeding birds including the following species with which occur in nationally important numbers: great crested grebe *Podiceps cristatus*, gadwall *Anas strepera*, pochard *Aythya ferina*, tufted duck *Aythya fuligula*, snipe *Gallinago gallinago* and redshank *Tringa totanus*. Other important breeding wetland species include shelduck *Tadorna tadorna*, teal *Anas crecca*, shoveler *Anas clypeata*, lapwing *Vanellus vanellus* and curlew *Numenius.arquata*.

Ramsar criterion 7

The site supports a population of pollan *Coregonus autumnalis*, one of the few locations in Ireland and one of the two known locations in the UK (the other is Lower Lough Erne). It is one of the most important species in Ireland in terms of faunal biodiversity since it occurs nowhere else in Europe, and the Irish populations are all well outside the typical range – the Arctic Ocean drainages of Siberia, Alaska and north-western Canada, where it is known as the Arctic cisco.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
86639 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in spring/autumn:

Tundra swan , *Cygnus columbianus bewickii*, NW Europe	26 individuals, representing an average of 1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Common goldeneye , *Bucephala clangula clangula*, NW & C Europe	6645 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3)
Common pochard , *Aythya ferina*, NE & NW Europe	20279 individuals, representing an average of 5.7% of the population (5 year peak mean 1998/9-2002/3)
Greater scaup , *Aythya marila marila*, W Europe	3377 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)
Tufted duck , *Aythya fuligula*, NW Europe	17807 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)
Whooper swan , *Cygnus cygnus*, Iceland/UK/Ireland	1523 individuals, representing an average of 7.2% of the population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under

criterion 6.

Species with peak counts in spring/autumn:

Great cormorant , *Phalacrocorax carbo carbo*, NW Europe	1628 individuals, representing an average of 1.3% of the population (5 year peak mean 1998/9-2002/3)
Mute swan , *Cygnus olor*, Britain	1874 individuals, representing an average of 4.9% of the population (5 year peak mean 1998/9-2002/3)

More contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey Alerts report, which is updated annually. See http://www.bto.org/survey/webs/webs-alerts-index.htm.

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

14. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	sand, clay, peat, basalt
Geomorphology and landscape	lowland, floodplain
Nutrient status	highly eutrophic
pH	no information
Salinity	fresh
Soil	no information
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Aldergrove, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/aldergrove.html) Max. daily temperature: 12.5° C Min. daily temperature: 5.8° C Days of air frost: 39.1 Rainfall: 862.4 mm Hrs. of sunshine: 1313.7

General description of the Physical Features:

No information available

15. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Lough Neagh is situated in the centre of Northern Ireland. It is the largest freshwater lake in the British Isles and is very shallow for its size.

Six major rivers flow into the Lough while the Lower Bann River provides the exit, carrying water from the north end of the Lough at Toome to the sea on the north coast of Northern Ireland.

The rivers flowing into Lough Neagh drain about 43% of Northern Ireland, plus part of County Monaghan in the Republic of Ireland. There is no incursion of seawater into Lough Neagh.

Lough Beg and Portmore Lough are two smaller lakes associated with Lough Neagh. Lough Beg (1,125 ha) lies to the north of Lough Neagh at the start of the Lower Bann River and Portmore Lough (286 ha) flows into the south-east of Lough Neagh.

16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Flood water storage / desynchronisation of flood peaks

17. Wetland types

Inland wetland

Code	Name	% Area
O	Freshwater lakes: permanent	77.6
U	Peatlands (including peat bogs swamps, fens)	4
W	Shrub-dominated wetlands	2.1
Xp	Forested peatland	0.3
Other	Other	16

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Most of the shoreline and shallow margin of the Lough is exposed to wave action and has a rocky or sandy character. The submerged and floating aquatic vegetation is confirmed to sheltered bays and inlets and includes very extensive stands of fennel-leaved pondweed *Potamogeton pectinatus* and slender-leaved pondweed *P. filiformis* intermixed with smaller quantities of additional species.

Swamp vegetation generally consists of a mosaic of small stands of common spike-rush *Eleocharis palustris*, reedmace *Typha latifolia*, branched bur-reed *Sparganium erectum*, flowering rush *Butomus umbellatus*, bulrush *Scirpus lacustris* and bottle sedge *Carex rostrata*. Locally, large stands of common reed *Phragmites australis* have developed.

The tall fen occurring along the water's edge mostly consists of a thin, generally species-poor band of reed canary-grass *Phalaris arundinacea*, hemlock water dropwort *Oenanthe crocata*, yellow loosestrife *Lysimachia vulgaris* and purple loosestrife *Lythrum salicaria*, but in places there are a number of more uncommon plant species.

Some of the Lough shore is fringed by a fragmented, swampy woodland of alder *Alnus glutinosa* and willow *Salix* spp. related to successive lowerings of water-levels. This woodland is among the best of its type in Northern Ireland. It is extensive and locally contains a diversity of plants including many notable species.

The remainder of the shore is mostly covered by a variety of grassland types ranging from improved and reseeded grassland to species-rich hay meadows, with the most characteristic type being wet marshy grassland with soft rush *Juncus effusus* and brown sedge *Carex disticha* as the most prominent species.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Elatine hydropiper, Spiranthes romanzoffiana, Calamagrostis stricta, Hierochloe odorata, Mentha pulegium, Lathyrus palustris, Frangula alnus, Carex elongata

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Black-headed gull , *Larus ridibundus*, N & C Europe	3269 apparently occupied nests, representing an average of 6% of the all-Ireland population (Seabird 2000 Census)
Common tern , *Sterna hirundo hirundo*, N & E Europe	93 apparently occupied nests, representing an average of 3% of the all-Ireland population (Seabird 2000 Census)
Lesser black-backed gull , *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa	451 apparently occupied nests, representing an average of 8.6% of the all-Ireland population (Seabird 2000 Census)

Species with peak counts in spring/autumn:

Common coot , *Fulica atra atra*, NW Europe	5680 individuals, representing an average of 22.7% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Gadwall , *Anas strepera strepera*, NW Europe	126 individuals, representing an average of 21% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Great crested grebe , *Podiceps cristatus cristatus*, NW Europe	1227 individuals, representing an average of 35% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Lesser black-backed gull , *Larus fuscus graellsii*,	1174 individuals, representing an average of 1.6% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Mallard , *Anas platyrhynchos platyrhynchos*, NW Europe	5136 individuals, representing an average of 10.2% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Red-breasted merganser , *Mergus serrator*, NW & C Europe	25 individuals, representing an average of 1.2% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Common shelduck , *Tadorna tadorna*, NW Europe	138 individuals, representing an average of 1.9% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Eurasian teal , *Anas crecca*, NW Europe	1878 individuals, representing an average of 2.8% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Eurasian wigeon , *Anas penelope*, NW Europe	3012 individuals, representing an average of 2.4% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	8249 individuals, representing an average of 4.1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Little grebe , *Tachybaptus ruficollis ruficollis*, Europe to E Urals, NW Africa	355 individuals, representing an average of 7.1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Mew gull , *Larus canus canus*, Europe to N Africa	765 individuals, representing an average of 1.1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Northern lapwing , *Vanellus vanellus*, Europe - breeding	10968 individuals, representing an average of 4.3% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Species Information

Assemblage.

During the breeding season the site supports a diverse assemblage of waterfowl, including: *Larus ridibundus, Podiceps cristatus, Anas strepera, Tringa totanus, Gallinago gallinago, Aythya fuligula, Aythya ferina, Anas clypeata, Larus fuscus* and *Larus canus*.

Pollan *Coregonus autumnalis*

21. Social and cultural values:

e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Conservation education
Current scientific research
Fisheries production
Livestock grazing
Non-consumptive recreation
Sport fishing
Sport hunting
Tourism
Traditional cultural
Transportation/navigation

22. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation	+	
Local authority, municipality etc.	+	
Private	+	
Public/communal	+	

23. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Tourism	+	
Recreation	+	
Research	+	
Fishing: commercial	+	
Fishing: recreational/sport	+	
Rough or shifting grazing	+	
Hunting: recreational/sport	+	
Sewage treatment/disposal	+	

Flood control	+	
Mineral exploration	+	
Domestic water supply	+	
Non-urbanised settlements		+

24. Factors adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Eutrophication	2	The Lough drains some 40% of Northern Ireland and has been subject to severe eutrophication as a result of increased nutrient inputs from agricultural run-off and general domestic sewage from catchment housing and other developments.	+		+
Pollution - fertilisers	2	The Lough drains some 40% of Northern Ireland and has been subject to severe eutrophication as a result of increased nutrient inputs from agricultural run-off and general domestic sewage from catchment housing and other developments.	+		+

For category 2 factors only.
What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Eutrophication - Phosphate-stripping at appropriate sewage treatment works had begun to address the issue of eutrophication, but the nutrient problem has now been demonstrated to be predominantly due to non-point, agricultural, sources. Water Catchment Management Plan will be developed in context of the Water Framework Directive.

Pollution - fertilisers - Phosphate-stripping at appropriate sewage treatment works had begun to address the issue of eutrophication, but the nutrient problem has now been demonstrated to be predominantly due to non-point, agricultural, sources. Water Catchment Management Plan will be developed in context of the Water Framework Directive.

Is the site subject to adverse ecological change? YES

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
SSSI / ASSI	+	
NNR	+	
SPA	+	
Land owned by a NGO for nature conservation	+	
Site management statement/plan implemented	+	
SAC	+	

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

27. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.

Numbers of migratory birds and wildfowl and waders are monitored annually as part of the national Irish Wetland Birds Survey (I-WEBS) organised by the IWC Birdwatch Ireland, the National Parks and Wildlife Service (Ireland) and the Wildfowl and Wetlands Trust.

Miscellaneous.

The University of Ulster has a freshwater research laboratory on the shores of Lough Neagh.

28. Current conservation education:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The Lough Neagh Discovery Centre is located on the southern shores of Lough Neagh and is run by Craigavon Borough Council. School groups and other incidental visitors are also catered for at the nearby Environment and Heritage Service Warden's office/information centre.

29. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

There is regular use of parts of the site for informal recreation.

30. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

31. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

32. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **13** above), list full reference citation for the scheme.

Site-relevant references

Cranswick, PA, Waters, RJ, Musgrove, AJ & Pollitt, MS (1997) *The Wetland Bird Survey 1995–96: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. www.wwt.org.uk/publications/default.asp?PubID=14

Smart, M (1989) *Ramsar Advisory Missions: Report No. 10: Lough Neagh / Lough Beg, Northern Ireland, UK (1989)*. Ramsar Convention Bureau, Gland. www.ramsar.org/ram_rpt_10e.htm

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm

Way, LS, Grice, P, MacKay, A, Galbraith, CA, Stroud, DA & Pienkowski, MW (1993) *Ireland's Internationally Important Bird Sites: a review of sites for the EC Special Protection Area network*. Joint Nature Conservation Committee, Peterborough, for Department of the Environment (Northern Ireland), Belfast, and Irish Wildlife Service, Dublin

Wolfe-Murphy, SA, Lawrie, EW, Smith, SJ & Gibson, CE (1993) *Northern Ireland Lakes Survey*. Unpublished report to Northern Ireland Department of Environment, Countryside and Wildlife, Belfast

---

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

LOUGH NEAGH AND LOUGH BEG-

SPECIAL PROTECTION AREA (SPA)

UK9020091

CONSERVATION OBJECTIVES

Document Details

Title	*Lough Neagh and Lough Beg SPA Conservation Objectives*
Prepared By	*Ian Enlander*
Approved By	*Mark Wright*
Date Effective From	*01/04/2015*
Version Number	*V4*
Next Review Date	January 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	01/04/1996	Internal working document	IE	
V1.1	August 2013	Review	IE	
V2.0	February 2015	Draft	IE	Complete review

Site relationship

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

This SPA partially overlaps with Reas Wood and Farrs Bay SAC

The SPA also overlaps with part of the Lough Neagh and Lough Beg Ramsar site.

See also Boundary Rationale

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site"**.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4 GENERAL INFORMATION

COUNTY: Antrim, Down, Armagh, Tyrone and Londonderry

G.R. J030 700 AREA: 41188 ha.

5 SUMMARY SITE DESCRIPTION

Lough Neagh is a large, shallow, eutrophic lake contained within Counties Antrim, Down, Londonderry and Tyrone. Lough Neagh is the largest freshwater lake in the UK and is one of the top ten sites in the UK for wintering waterfowl (based on annual mean numbers). The SPA also includes the smaller lakes, Lough Beg and Portmore Lough. The main habitats within the SPA are open water with beds of submerged aquatic vegetation, species-rich wet grassland, reedbed, islands, swamp, fen and carr woodland. The SPA supports internationally important numbers of wintering waterfowl and is internationally important for a number of wildfowl species including Whooper Swan, Bewick's Swan, Pochard, Tufted Duck, Scaup and Goldeneye. It is also internationally important for breeding Common Tern.

5.1 BOUNDARY RATIONALE

The boundary takes in the main waterbodies, including Portmore Lough and Lough Beg, together with all adjoining natural and semi-natural habitat of conservation significance. All islands within Lough Neagh are also included. Adjoining agriculturally improved areas utilised by swans have not been included but their importance must not be underestimated.

6 SPA SELECTION FEATURES

Feature Type (i.e. habitat or species)	Feature	Population[1]	Population at time of designation (ASSI)	Population at time of designation (SPA)	SPA Review population	Common Standards Monitoring baseline
Species	Common Tern breeding population [a]	137 individuals (Seabird 2000 data)		200 pairs	185	118
Species	Great Crested Grebe breeding population [a]	500 pairs (Data source unknown)		New feature	500	
Species	Great Crested Grebe passage population [b]	2440 (1995 max count)		New feature	2440	438
Species	Whooper Swan wintering population [a]	1031	1152	923	1031	283
Species	Bewick's Swan wintering population [a]	136	314	251	136	23
Species	Golden Plover wintering population[b]	5334	3625	Not listed	5298	1626
Species	Great Crested Grebe wintering population [a]	1431	1173	741	1821	110
Species	Pochard wintering population [a]	26441	31508	32165	26341	19588
Species	Tufted Duck wintering population [a]	22454	19372	23476	22372	17972
Species	Scaup wintering population [a]	3698	1584	2557	3798	1215
Species	Goldeneye wintering population [a]	10781	11521	12479	10776	6700
Assemblage species	Little Grebe wintering population	465	395	390	465	290
Assemblage species	Cormorant wintering population	718	815	781	728	445
Assemblage species	Greylag Goose wintering population	156	120	129	176	7
Assemblage species	Shelduck wintering population	180	142	165	159	107
Assemblage species	Wigeon wintering population	3117	2607	3447	3117	2607
Assemblage species	Gadwall wintering population	166	120	114	166	88
Assemblage species	Teal wintering population	1597	2288	1868	1596	1154
Assemblage	Mallard wintering	5422	5330	4982	5256	3591

species	population					
Assemblage species	Shoveler wintering population	163	169	173	148	43
Assemblage species	Coot wintering population	7018	5979	6676	6993	3062
Assemblage species	Lapwing wintering population	6946	3042	Not listed	6899	2822
Waterfowl assemblage	Waterfowl Assemblage wintering population[a] (Component species: Whooper Swan, Bewick's Swan, Golden Plover, Great Crested Grebe (wintering) Pochard, Tufted Duck, Scaup, Goldeneye, Little Grebe, Cormorant, Greylag Goose, Shelduck, Wigeon, Gadwall, Teal, Mallard, Shoveler, Coot, Lapwing)	81827	87049	79915	99221	62352
Habitat[2]	Habitat extent					
Habitat[2]	Roost site locations					

Table 1. List of SPA selection features.

[1] Designation population given as 1995/96 five year running mean of maximum annual WeBS counts (except where stated). Note that for some of the selection features these differ from the figures given in the SPA citation, but have been used as they are considered to be more relevant to future monitoring

[2] Habitat is not a selection feature but is a factor and is more easily treated as if it were a feature. Habitat extent is also used for breeding birds reported as an area. Extent of swamp/tall fen will be used for breeding waterfowl

Notes on SPA features – may not be applicable to all SPAs

The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.

[a] – species cited in current SPA citation and listed on current N2K dataform

[b] – species selected post SPA designation through UK SPA Review 2001

[c] – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

6.1 ADDITIONAL ASSI SELECTION FEATURES

Feature Type (i.e. habitat, species or earth science)	Feature	Size/ extent/ pop.
Habitat	Purple Moor-grass and rush pastures (Lough Beg and Lough Neagh ASSI)	
Habitat	Wet woodlands (Lough Neagh ASSI)	
Habitat	Reed beds and swamps (Lough Neagh ASSI)	
Habitat	Fens (Lough Neagh ASSI)	
Species	Higher Plant Assemblage (Lough Beg and Lough Neagh ASSI)	
Species	Breeding waterbird assemblage (Lough Beg and Lough Neagh ASSI)	
Species	Breeding bird assemblage (wet woodland)	
Species	Breeding wader assemblage	

Species	Little Grebe wintering population	
Species	Cormorant wintering population	
Species	Greylag Goose wintering population	
Species	Shelduck wintering population	
Species	Wigeon wintering population	
Species	Gadwall wintering population	
Species	Teal wintering population	
Species	Mallard wintering population	
Species	Shoveler wintering population	
Species	Coot wintering population	
Species	Lapwing wintering population	
Species	Mute Swan wintering population	
Species	Freshwater and Estuarine fish (Lough Neagh ASSI)	
Species	Invertebrate assemblage (Lough Neagh ASSI)	
Earth Science	Coastal processes - refers to near-shore sand complexes (Lough Neagh ASSI)	

Table 2. List of ASSI features, additional to those that form all or part of SPA selection features. These will be referred to in ANNEX II.

7 CONSERVATION OBJECTIVES

The Conservation Objectives for this site are:

To maintain each feature in favourable condition.

For each feature there are a number of component objectives which are outlined in the tables below. Component objectives for Additional ASSI Selection Features are not yet complete. For each feature there are a series of attributes and measures which form the basis of Condition Assessment. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

8 LOUGH NEAGH AND LOUGH BEG SPA CONDITION ASSESSMENT 2014

Species	Year 1	Year 2	Year 3	Year 4	Year 5	CSM	5 yr mean	% CSM	Status
Common Tern (B)	94	79	118	96	98	59	97.00	**164.41**	Favourable
Golden Plover	6475	3129	7097	4047	1539	1626	4457.40	**274.13**	Favourable
Bewick's Swan	0	0	0	0	0	23	0.00	**0.00**	Unfavourable
Whooper Swan	515	535	637	388	248	283	464.60	**164.17**	Favourable
Goldeneye	2993	4626	3684	3003	3437	6700	3548.60	**52.96**	Unfavourable
Great Crested Grebe (W)	236	1181	733	947	1030	110	825.40	**750.36**	Favourable
Great Crested Grebe (P)	634	676	nc	561	941	438	703.00	**160.50**	Favourable
Pochard	8878	8902	5770	9183	5027	19588	7552.00	**38.55**	Unfavourable
Scaup	4348	5587	6335	2989	2257	1215	4303.20	**354.17**	Favourable
Shelduck	131	87	193	188	126	107	145.00	**135.51**	Favourable
Tufted Duck	6336	5845	4995	9167	7669	17972	6802.40	**37.85**	Unfavourable
Waterbird assemblage	47771	48575	43168	43462	35837	75215	43762.60	**58.18**	Unfavourable

9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species
Fledging success sufficient to maintain or enhance population
To maintain or enhance the range of habitats utilised by the qualifying species
To ensure that the integrity of the site is maintained;
To ensure there is no significant disturbance of the species and
To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

5.1 SPA SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Common Tern breeding population	As above
Common Tern breeding population	Fledging success sufficient to maintain or enhance population
Great Crested Grebe breeding population	As above
Great Crested Grebe breeding population	Fledging success sufficient to maintain or enhance population
Great Crested Grebe passage population	As above
Whooper Swan wintering population	As above
Bewick's Swan wintering population	As above
Golden Plover wintering population	As above
Great Crested Grebe wintering population	As above
Pochard wintering population	As above
Tufted Duck wintering population	As above
Scaup wintering population	As above
Goldeneye wintering population	As above
Little Grebe wintering population	As above
Cormorant wintering population	As above
Greylag Goose wintering population	As above
Shelduck wintering population	As above
Wigeon wintering population	As above
Gadwall wintering population	As above
Teal wintering population	As above
Mallard wintering population	As above
Shoveler wintering population	As above
Coot wintering population	As above
Lapwing wintering population	As above
Waterfowl Assemblage wintering population	No significant decrease in population against national trends

Feature	Component Objective
Waterfowl Assemblage wintering population	Maintain species diversity contributing to the Waterfowl Assemblage
Habitat	To maintain or enhance the area of natural and semi-natural habitats used or potentially usable by Feature bird species subject to natural processes
Habitat	Maintain the extent of main habitat components subject to natural processes
Habitat	Maintain or enhance sites utilised as roosts

Table 3. List of SPA Selection Feature Component Objectives

Tern nesting localities current and historical (TO BE FINALISED)

Torpedo platform, Antrim Bay

Table 4. Tern nesting locations within the SPA

9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Purple Moor-grass and rush pastures	
Wet woodlands	
Reed beds and swamps	
Fens	
Higher Plant Assemblage	
Breeding Birds	
Freshwater and Estuarine fish	
Invertebrate assemblage	
Coastal processes – refers to near-shore sand complexes	

Table 5. List of Additional ASSI Selection Feature Objectives

10 MANAGEMENT CONSIDERATIONS

See also Views About Management for relevant ASSIs

Owner/Occupier's – As of October 1995 there were 463 individual landowners within Lough Neagh SPA. These include the Shaftesbury Estate of Lough Neagh, the National Trust, Armagh, Banbridge and Craigavon Council and the Department of Agriculture and Rural Development for Northern Ireland (DANI). There are five National Nature Reserves (NNRs) within the SPA; Lough Neagh Islands, Rea's Wood, Farr's Bay, Oxford Island and Randalstown Forest with a proposed sixth at Blacker's Rock. There are also an additional four management agreements in place for four small landholdings within the SPA.

11. MAIN THREATS, PRESSURES, ACTIVITES WITH IMPACTS ON THE SITE OR SITE FEATURES

Notifiable Operations **-** Carrying out <u>any</u> of the Notifiable Operations listed in the schedule could affect the site. The list below is not exhaustive, but deals with the most <u>likely</u> factors that are either affecting Lough Neagh SPA, or could affect it in the future. Although, features 1, 2, 3, 4 etc, are the qualifying SPA features, factors affecting ASSI features are also considered.

<u>Site/feature management issues</u>

No	Issue	Threat/comments	Local considerations	Action
1	Adjoining habitat	Particularly important for swans and geese as well as providing high tide roost locations. Significant changes in land management and disturbance are key considerations. Such areas	Imminent road development through Toome swanfields the effects of which will require monitoring.	Assess planning applications. Identify key areas and promote site management schemes. Review use of Wildfowl Refuges. Consider the collective impact.

No	Issue	Threat/comments	Local considerations	Action
		lie without the site making effective management of developments other than those for which planning permission is required, difficult.		
6	Boating activity – commercial	Disturbance and potential for impact from commercial vessels.	No evidence of a significant impact on the selection features of Lough Neagh	Formal consultation likely relating to new schemes. Consider the collective impact.
7	Boating activity – recreational	Disturbance and potential for impact especially from jet skis. Generally relevant to particularly sensitive areas within site.	A major concern during the breeding season, particularly around the Torpedo platform at Six Mile Water.	Liaise with appropriate authority with codes of good practice, zoning and use of by-laws as necessary. Consider the collective impact.
8	Coastal (shoreline) protection schemes	Where there is no history of this, it impacts on natural beach systems with loss of habitat.	There is ad hoc dumping around the shoreline, in places this is in response to erosion.	Liaise with Planning Service and other parties with an involvement in coastal management.
9	Cull of fledglings/ young	Licensed selective culling of species impacting on 'more desirable' species. Licensed by NIEA.	Culling of larger gull species is undertaken to reduce impact on breeding wildfowl and terns.	NIEA to review all licenses. Consider the collective impact.
11	Drainage	Potential impact on water flooding regime. Potentially significant in relation to adjoining habitat if it leads to reduction in traditional areas of flooding.	Routine watercourse maintenance programme by Rivers Agency is referred to NIEA for comment.	Identify key areas and promote site management schemes to protect and enhance site features. Consider the collective impact.
13	Enhanced bird competition	Activities onsite or offsite that influences or results in a shift in balance of species utilising a site.	General issue of gulls during breeding season. Historical high numbers of Black-headed Gull may have been related to access to feeding on a dump site (Denny's), now closed.	Liaise with Planning Service. Review wider countryside changes.
14	Fishing – commercial or recreational	Minimal disturbance consideration but may represent 'competition' for piscivorous birds. Represents a net loss to the system in terms of biomass.	Important long-established commercial eel, coarse fish and salmonid fishery. Concern regarding diving duck taken as by-catch in nets either accidentally or deliberately.	Liaise with DARD and fishing authorities as required. Liaise with commercial fishing interests and angling clubs as required. Netting of diving duck as a Wildlife Order offence – action is dependant on evidence.
16	Habitat extent – open water	Loss likely to be limited but expansion of commercial port facilities can impact on key localities.	Not a concern.	Assess planning applications. Consider the collective impact.
18	Habitat quality – open water	Alteration of habitat quality through diminution of water quality or invasive species.	Water quality is a concern with progressive eutrophication. Longer	Assess planning applications. Deal with invasive alien species by preventing their spread or reducing their

No	Issue	Threat/comments	Local considerations	Action
			term improvement in water quality will reduce productivity and may affect waterfowl populations.	impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
19	Habitat extent and quality-breeding	Alteration of habitat area or quality through inappropriate use or absence of site management.	Terns mainly breed on Torpedo Platform, Six Mile Water, but also on some islands.	Assess needs of breeding species. Liaise with owner or appropriate authority to adjust or introduce site management.
21	Introduced species	Range of threats from loss of habitat, feeding competition, disease, hosting species presenting a threat outside of the site.	Roach and Ruddy Duck are present, Zebra Mussel must be considered a real threat.	Liaise with appropriate authority. Consider feasibility of elimination. Participate in national/international initiatives.
22	Power cables	Specifically a problem in relation to swans and geese. Threat is through impact. Need to consider flight lines, as well as feeding and loafing areas, which ideally should be avoided.	Generally lines in the area are well marked. Assess all new proposals and existing network in relation to swan usage..	Liaise with NIE. Minimum need is for line marking based on best current practice. Consider the collective impact.
23	Predation.	Mainly of concern on bird breeding sites.	Impact from large gulls is deemed to be a problem. Care to be taken as breeding Lesser Black-backed Gull are notable.	Must be dealt with as part of wider countryside management considerations. Carry out appropriate site management.
24	Recreational activities.	Disturbance is the main consideration. Breeding birds, especially seabirds, are vulnerable to disturbance as absence of adults can often result in predation or chilling of young with a reduction/loss in fledging success.	Breeding birds are particularly vulnerable to disturbance. Cumulative disturbance impacts (e.g. boating, sand dredgers, wildfowlers, walkers, dogs etc) may also be a significant factor for wintering bird populations	Liaise with local authorities and other managing parties.
25	Research activities.	Census and ringing activities especially have the potential to impact on bird populations, particularly at breeding sites.	Routine winter WEBS counts.	Census and ringing activities to be undertaken by competent individuals, appropriately trained. In case of ringers, appropriate license must be held.
26	Sand dredging - commercial	Issue presently limited to Lough Neagh and subject to current (2015) detailed evaluation	Restricted in area but possibly impacting the more diverse invertebrate assemblages. Possibly a limited disturbance issue.	Liaise with commercial operators, Planning Service and other regulatory authorities.
28	System dynamics	Cuts across many other issues. Dynamic systems, especially coastal, can be affected by many factors	Historical lowering of the lough level reduced considerably the area subject to flooding but	Human induced change should be minimised. Assess planning applications and liaise with other relevant

No	Issue	Threat/comments	Local considerations	Action
		especially engineered structures and significant changes in dominant wind direction or storm frequency. Many systems may indeed still be undergoing responses to historical developments e.g. partial reclamation, seawall construction. Changes may include alteration in sediment grade, shifts in patterns of erosion and deposition etc. Consequences for habitat and species utilisation of the site can be profound.	also would have had implications for shore and nearshore morphology particularly the dynamics of sand bar and river mouth shoal complexes. Ongoing sand exploitation could alter lough bed substrate and influence near shore sediment mobility.	authorities. Ad hoc dumping and removal of natural materials should be managed. Major natural shifts in system behaviour may be identified through analysis of aerial photographs and site monitoring. Major and consistent changes to patterns of habitat distribution and bird utilisation of the site should be noted.
29	Water abstraction	Potential impact on water flooding regime. Potentially significant in relation to adjoining habitat if it leads to reduction in traditional areas of flooding.	Lough Neagh is a major source of drinking water with ongoing abstraction together with proposals for increased volumes taken.	Liaise with Water Service and Rivers Agency.
30	Water level control	Impacts on natural fluctuation of water body. Potentially significant in relation to adjoining habitat if it leads to reduction in traditional areas of flooding.	Lough water level essentially controlled by sluice gates at Toome.	Liaise with Rivers Agency.
31	Wildfowling	Has direct effect through bag sizes/bag species and wider disturbance issue. Issue of regulated (through recognised shooting clubs) and ad hoc shooters. Lead shot on grazing lands.	Generally a good relationship with main gun clubs. Overall perception is that lough is heavily shot.	Liaise with relevant shooting bodies to define areas for wildfowling, the development of Wildfowlers Codes of Good Practice and encourage bag returns. Support pressure to stop use of lead shot. Review use of Wildfowl Refuges. Consider the collective impact.

Table 3. List of site/feature management issues

12 MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook (To be written).

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial photographs to determine site morphological changes. Methodology for this is being developed.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – to ensure compliance with the SPA/ASSI schedule and identify likely processes of change (e.g. dumping, infilling, gross pollution). This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (species, assemblage, habitat, etc). This will detect if the features are in favourable condition or not. See Annexes I and II for SPA and Additional ASSI Features respectively.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

12.2 ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, world. Refer to BTO ALERT limits etc. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline (e.g. eutrophication) is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere e.g. breeding terns. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.
3. For passage/wintering species assess breeding information. No site action if site decline is due to breeding ground failure, unless breeding ground failure is related to poor adult condition resulting from factors affecting wintering / passage birds.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance e.g. mudflats reduced by encroaching mussel beds.
6. Assess prey availability. Issues to consider are both within site e.g. water quality, broad site management, and without site e.g. climatically driven factors.
7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.
8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for breeding seabird and wader sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

13 SELECTION FEATURE POPULATION TRENDS

A summary statement of site population trends, together with wider geographical trends. Date of completion is given as well as information sources used. Site trends are reported as % increase/decline from designation population (1995/96) using running 5 year means of annual maximum count (WEBS data). For breeding populations the best available data is used. Other trends are generally limited to terms such as 'consistent increase/decline', 'variable with overall increase/decline', 'no discernable trend'.

SPECIES	SITE TREND	NI TREND	IRISH TREND	UK TREND	COMMENTS
Common Tern (breeding)	insufficient data	Data unavailable	34% decline between surveys in 1969-70 and 1985-87 (per SPA review)	11% increase between surveys in 1969-70 and 1985-87 (per SPA review)	
Great Crested Grebe	insufficient data	Data unavailable	I-WeBS data unavailable	No discernible trend (1994-99 Breeding	

SPECIES	SITE TREND	NI TREND	IRISH TREND	UK TREND	COMMENTS
(breeding)				Bird Survey)	
Great Crested Grebe (passage)	insufficient data	Data unavailable	I-WeBS data unavailable	Data unavailable	
Whooper Swan (wintering)	-10% (1999/2000)	Variable with overall decline 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Variable with overall increase 1990/91-1999/2000 (WeBS)	
Bewick's Swan (wintering)	-41% (1999/2000)	Consistent Decline 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	No discernible trend 1990/91-1999/2000 (WeBS)	
Golden Plover (wintering)	+6% (1999/2000)	Data unavailable	I-WeBS data unavailable	Data unavailable	
Great Crested Grebe (wintering)	-11% (1999-2000)	Variable with overall increase 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	No discernible trend 1990/91-1999/2000 (WeBS)	
Pochard (wintering)	-5% (1999-2000)	Variable with overall decline 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	No discernible trend 1990/91-1999/2000 (WeBS)	
Tufted Duck (wintering)	Stable (1999-2000)	No discernible trend 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	No discernible trend 1990/91-1999/2000 (WeBS)	
Scaup (wintering)	+9% (1999-2000)	Data unavailable	I-WeBS data unavailable	Data unavailable	
Goldeneye (wintering)	-29% (1999-2000)	Consistent decline 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	No discernible trend 1990/91-1999/2000 (WeBS)	
Little Grebe (wintering)	-10% (1999-2000)	No discernible trend 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Consistent increase 1990/91-1999/2000 (WeBS)	
Cormorant (wintering)	+89% (1999-2000)	Consistent increase 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Variable with overall increase 1990/91-1999/2000 (WeBS)	
Greylag Goose (wintering)	+114% (1999-2000)	Data unavailable	I-WeBS data unavailable	Data unavailable	
Shelduck (wintering)	+15% (1999-2000)	Consistent increase 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Variable with overall decline 1990/91-1999/2000 (WeBS)	
Wigeon (wintering)	+8% (1999-2000)	No discernible trend 1990/91-	I-WeBS data unavailable	Variable with overall increase 1990/91-1999/2000	

SPECIES	SITE TREND	NI TREND	IRISH TREND	UK TREND	COMMENTS
		1999/2000 (WeBS)		(WeBS)	
Gadwall (wintering)	-21% (1999-2000)	Variable with overall decline 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Consistent increase 1990/91-1999/2000 (WeBS)	
Teal (wintering)	+6% (1999-2000)	No discernible trend 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Variable with overall increase 1990/91-1999/2000 (WeBS)	
Mallard (wintering)	+1% (1999-2000)	No discernible trend 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Consistent decline 1990/91-1999/2000 (WeBS)	
Shoveler (wintering)	-31% (1999-2000)	No discernible trend 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Variable with overall increase 1990/91-1999/2000 (WeBS)	
Coot (wintering)	+1% (1999-2000)	Variable with overall increase 1990/91-1999/2000 (WeBS)	I-WeBS data unavailable	Variable with overall increase 1990/91-1999/2000 (WeBS)	
Lapwing (wintering)	+11% (1999-2000)	Data unavailable	I-WeBS data unavailable	Data unavailable	
Wintering Waterfowl Assemblage (Component species: Little Grebe, Great Crested Grebe, Bewick's Swan, Whooper Swan, Greylag Goose, Shelduck, Wigeon, Gadwall, Teal, Mallard, Shoveler, Pochard, Tufted Duck, Scaup, Goldeneye, Coot, Golden Plover, Lapwing)	-3% (1999-2000)	N/a	I-WeBS data unavailable	N/a	

ANNEX I

Feature (SPA) – Breeding seabirds - waterbirds

* = primary attribute. One failure among primary attribute = unfavourable condition
= Optional factors – these can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
*Common Tern breeding population	Apparently occupied nests	No significant decrease in Common Tern breeding population against national trends	Requirement that annual data is collected , then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Common Tern fledging success	Annual survey (as per Gilbert *et al*. 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined
*Great Crested Grebe breeding population	Annual count of breeding pairs Calculate new five year running mean. Plot running five-year means.	No significant decrease in Great Crested Grebe breeding population against national trends	Requirement that annual data is collected , then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population.
# Great Crested Grebe fledging success	Annual survey (as per Gilbert *et al*. 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined

Non-avian factors

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures or breeding sites, where this would lead to different usage by notified species.

Feature (SPA) – Passage and Wintering waterfowl

Attribute	Measure	Targets	Comments
* Great Crested Grebe passage population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Whooper Swan wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Bewick's Swan wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Golden Plover wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Attribute	Measure	Targets	Comments
* Great Crested Grebe wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
* Pochard wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Tufted Duck wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Scaup wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Goldeneye wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Little Grebe wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Cormorant wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Greylag Goose wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Attribute	Measure	Targets	Comments
# Shelduck wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Wigeon wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Gadwall wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Teal wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Mallard wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Shoveler wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Coot wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Golden Plover wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Attribute	Measure	Targets	Comments
# Lapwing wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Waterfowl assemblage wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Waterfowl assemblage wintering population	Bird numbers	Maintain species diversity contributing to the Waterfowl Assemblage	

Non-avian factors

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures where this would lead to different usage by notified species.
# Roost sites	Location of roost sites	Maintain all locations of roost sites.	Map roost site locations. Visit once every reporting cycle to ensure sites are available.

ANNEX II

Feature (ASSI)

Attribute	Measure	Targets	Comments
Purple Moor-grass and rush pastures (Lough Beg and Lough Neagh ASSI)			
Wet woodlands (Lough Neagh ASSI)			
Reed beds and swamps (Lough Neagh ASSI)			
Fens (Lough Neagh ASSI)			
Higher Plant Assemblage (Lough Beg and Lough Neagh ASSI)			
Breeding Birds (Lough Beg and Lough Neagh ASSI)			
Freshwater and Estuarine fish (Lough Neagh ASSI)			
Invertebrate assemblage (Lough Neagh ASSI)			
Coastal processes - refers to near-shore sand complexes (Lough Neagh ASSI)			

MONTIAGHS MOSS SAC
UK0030214

CONSERVATION OBJECTIVES

Document Details

Title	*Montiaghs Moss SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*01/04/2015*
Version Number	*V2*
Next Review Date	Nov 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	January 2015	Complete review	RMK

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: ANTRIM

GRID REFERENCE: IJ 091654

AREA: 151.28 ha

5. SUMMARY SITE DESCRIPTION

Montiaghs Moss is a cutover lowland raised bog, consisting of an intricate mosaic of peat ramparts, trenches, pools and drains, interspersed with grassland, alder and willow carr and tall hedgerows. These habitats support a wide range of plants and animals, including many rarities.

The area is particularly notable as one of the longest established colonies of the Marsh Fritillary butterfly *Euphydryas aurinia* in NI. The species was first recorded in 1983 and has been recorded annually since 1990 (except for 1997). It is believed that the colony here represents a metapopulation, with a comparatively large core permanent population. 89 webs were counted in 1999.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The boundary is very complex, and reflects the small-scale pattern of past hand-cutting, with piece-meal reclamation interspersed throughout the area. Around the edges of the site some of the deeper peats have been reclaimed for intensive agriculture, and these have been excluded. In the longer-term, restoring semi-

natural vegetation to these areas (which form part of the wider hydrological unit) would be beneficial.

The boundary includes the core peatland area, with all associated semi-natural vegetation (acid grassland, heath, birch and willow scrub, hay meadows, etc), but excludes improved agricultural land. Many of the rare plants occur within the drains, so a significant part of the network of drains has also been included. Pale Moss to the north was excluded, as it was deemed to be too far away from the core area to justify inclusion (several intervening fields to the north of the road have been reclaimed), in addition to parts of it becoming rank and invaded by scrub.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ pop~
Species	Marsh Fritillary Butterfly *Euphydryas aurinia*	B	89 webs recorded in Aug/Sept 1999
Habitat	Transition mires and quaking bogs	D	1.51
Habitat	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caenuleae)	D	4.54
Habitat	Northern Atlantic wet heaths with Erica tetralix	D	25

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Montiaghs Moss SAC.

6.1 ASSI SELECTION FEATURES

Montiaghs Moss ASSI

Feature Type	Feature	Size/ extent/ pop~
Species	Marsh Fritillary *Euphydryas aurinia*	
Species	Higher Plant Assemblage	6 A, B, C D species
Species	Dragonfly Assemblage	13 breeding species
Species	Invertebrate Assemblage (Coleoptera and Heteroptera)	

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The ***Conservation Objective*** for this site is:

To maintain (or restore where appropriate) the Marsh Fritillary Butterfly ***Euphydryas aurinia to favourable condition.***

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objective
Marsh Fritillary Butterfly *Euphydryas aurinia*	B	To maintain (and if feasible enhance) population numbers and distribution.
		To maintain (and if feasible enhance) the extent and quality of suitable Marsh Fritillary breeding habitat, particularly suitable rosettes of the larval food plant *Succisa pratensis*

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Marsh Fritillary *Euphydryas aurinia*	See SAC Selection Feature Objective Requirements table.
Higher Plant Assemblage	To maintain (and if feasible enhance) the populations of notable species, including their abundance and distribution: i.e. *Spiranthes romanzoffiana, Hydocharis morsus-ranae, Lemna gibba, Spirodela polyrhiza, Thalictrum flavum* and *Cicuta virosa*.
Dragonfly Assemblage	To maintain (and if feasible enhance) the diversity of the Dragonfly populations, including their abundance and distribution (13 species recorded).
Invertebrate Assemblage	To maintain (and if feasible enhance) the diversity of the Coleoptera and Heteroptera populations, including their abundance and distribution.

10. MANAGEMENT CONSIDERATIONS

Ownership

Montiaghs Moss has been an ASSI since 1997. Given the fact that most of the land is unsuitable for normal agricultural activities, yet requires positive management to maintain the interest features, NIEA has pursued an active policy of acquisition since then. Currently, NIEA owns land within the ASSI.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Montiaghs Moss, or could affect it in the future. Although Marsh Fritillary Butterfly *Euphydryas aurinia* is the qualifying SAC feature, factors affecting ASSI features are also considered.

NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.

Grazing

Due to the topography, with frequent ditches and old peat cuttings, most of the area is dangerous for livestock. Many farmers are understandably reluctant to graze. As a result, there is a trend towards increasing rankness and scrub encroachment. NIEA is actively encouraging grazing on its own land, where this is feasible. Ponies and hardy varieties of cattle are preferable, in that they tend to consume rough and unpalatable material (such as *Molinia*) that more selective grazers avoid. Sheep should generally be avoided, as they graze selectively on *Succisa pratensis*. The optimum time for *Molinia* control is generally May, when the young growth is present and is marginally more palatable.

Undergrazing is the more likely threat to the interest features; however, it should be noted that the peat soils are fragile and liable to poaching, so over-grazing should also be avoided. It should be noted that Marsh Fritillary larvae generally require large rosettes of *Succisa*. These are normally only present in ungrazed or very lightly grazed situations, yet if such conditions persist, *Succisa* will eventually be eliminated by coarse grasses and scrub. Therefore, a balance between grazed and ungrazed areas should be maintained.

Woodland and Scrub Management – Encroachment, Control and Removal

Scrub is an essential element in the system, providing shelter from wind and elevated positions for resting. The spread of scrub may be partly the result of natural seral succession, as a result of the build-up of vegetation litter; however, it may also be the result of under-grazing, or long-term hydrological deterioration.

In practical terms, the spread of scrub will lead to the loss of suitable Marsh Fritillary breeding habitat. Until further research indicates what the most appropriate balance should be between scrub and grassland areas, it may be assumed that the current extent of scrub is favourable. Therefore, clearance of well-established stands of woodland and scrub should generally be avoided. However, where recent scrub encroachment has extended into *Succisa* grassland and where there is good reason to believe that good-quality marshy grassland can be restored, control should be initiated. In the absence of grazing, or where the

scrub has become too tall for grazing to eliminate, control by either hand or mechanical methods is the only feasible option.

Turbary

The area has been extensively cut for turf in the past. Much of the cutting was by hand, using the "puddling" method (i.e. excavating wet peat from open water pools). A limited amount of machine cutting has been undertaken recently.

Currently, there is little active cutting, resulting in the gradual terrestrialisation of open water pools. Although this is probably not a direct factor in the breeding success of the Marsh Fritillary, many of the other interest features depend upon the presence of a range of different pool types, and the loss of this pioneer stage would render the site unfavourable. It is recommended that some existing vegetated pools are re-excavated to provide open-water sites for colonisation by fen vegetation. Since it is unlikely that the work could be carried out by hand, mechanical digger is recommended.

There may also be opportunities to dig open water pools within some of the more extensive stands of monodominant *Molinia*. This would require careful planning to avoid areas that are currently used or that could potentially be used by Marsh Fritillary. However, creating more open water would assist in fire management and would benefit other invertebrates.

Burning

The area has been burnt in the past on a fairly regular basis, often as a precursor to peat cutting. Even since the ASSI has been declared, several large fires have been started. Although burning may control *Molinia* spread and scrub encroachment to a certain degree, indiscriminate and uncontrolled burning destroys both Marsh Fritillary habitat and larvae. As indicated above, additional areas of open water could help to control fires.

Drainage

There are several large drains around the edge of the area, and running through the centre (Navvies Drain). It is not thought that these are having a serious effect on the site, as ultimately water levels appear to be controlled by Lough Neagh. However, it would be useful if this could be confirmed by a hydrological survey. This survey could also assist in developing a plan for the manipulation of water levels within NIEA land – such action might be necessary to enhance wetland habitats, if these are shown to be drying out.

In addition, the future clearance of ditches should ideally take place in liaison with the relevant statutory bodies to ensure that the main features of nature conservation interest are taken into consideration and to prevent detrimental effects upon the whole site.

Eutrophication/Water Quality

The area outside the ASSI is generally in intensive agriculture. Therefore, the area is potentially at risk from eutrophication caused by agricultural run-off from within the catchment. Changes in the vegetation – e.g. increase in nutrient indicators - should be picked up by regular monitoring exercises.

ACTION: Farmers of the immediate catchment should be approached with details of the NI Countryside Management Scheme in the hope that they adopt nutrient management plans and good practice in slurry disposal.

Dumping

Both fly-tipping and more extensive infilling have taken place on the site from many of the roads that cross the ASSI. This has caused the loss of semi-natural habitat. Although the ASSI declaration has stopped infilling, fly-tipping is still a problem. This activity is unsightly and also has the potential for nutrient enrichment, depending upon the type of waste. Gates and fences have been used by NIEA to control the problem within its own property.

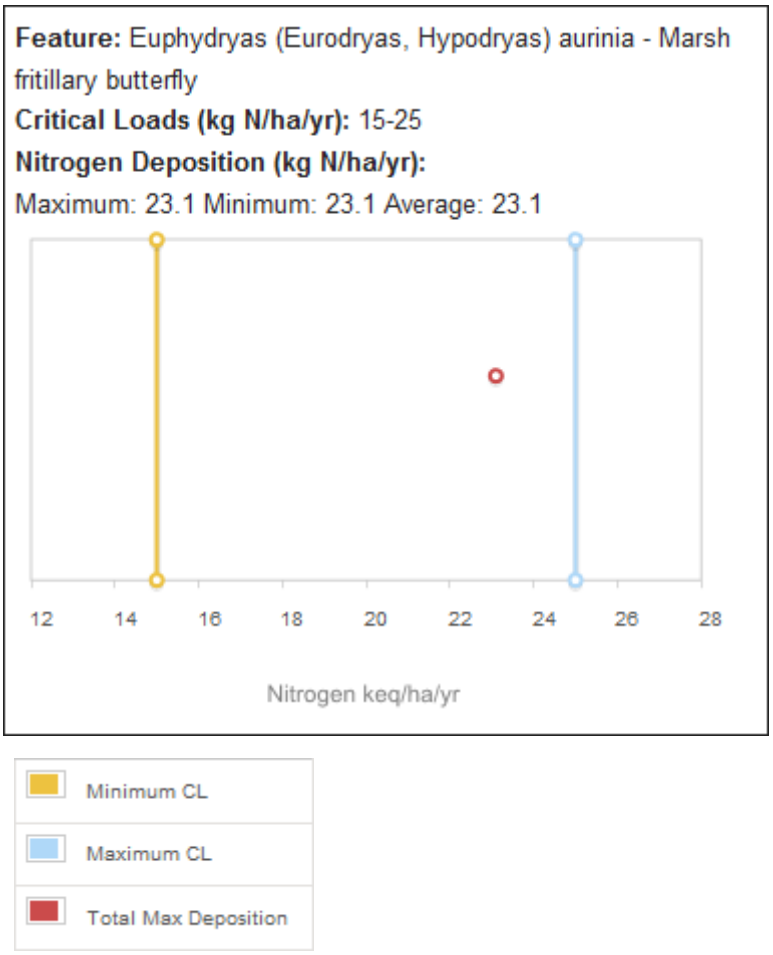
ACTION: Continue to monitor fly-tipping and initiate appropriate control measures (fencing, etc) as necessary.

Other activities (Agricultural reclamation/Cultivation/Application of fertiliser/Additions of manure/slurry/Supplementary feeding

Much of the site is unsuitable for normal agriculture without infilling and subsequent re-seeding. As a result, these activities are unlikely to take place and should be controlled by the ASSI declaration; there should be no reclamation or cultivation of land within the ASSI.

Nitrogen Deposition

Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for habitats and species present on Montiaghs Moss SAC.



N.B. There is insufficient knowledge to make a judgment of the impact of excess nitrogen deposition on the Marsh Fritillary butterfly. If the habitat on which the species depends on this site (Moist and wet oligotrophic grasslands: *Molinia caerulea* meadows) exceeds the critical Nitrogen load, then there would be cause for concern.

(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use

Any changes in local land-use e.g. drainage, road improvements, afforestation, agricultural intensification and development, may be detrimental to the SAC.

Action: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change
Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.
ACTION: When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat).

These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. *Monitor the integrity of the site (SIM or Compliance Monitoring)*
Check particularly for unauthorised burning (which has taken place in the recent past), and fly-tipping, which is an ongoing problem. Drains to be checked for signs of pollution. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does <u>not by itself</u> provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan - Lowland Heathland.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan - Fens.

Department of the Environment for Northern Ireland (2005). Northern Ireland Species Action Plan – Marsh Fritillary *Euphydryas aurinia*

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

ANNEX I

Feature 1 (SAC) – Marsh Fritillary Butterfly *Eurodryas aurinia* (Status B)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
* Population Size	Number of larval webs present in at least one year in six	At least 80 larval webs should be present in at least one year in six (unless unfavourable meteorological conditions during the flight period occur more often)	Larval webs are a much more reliable measure of the "health" of the colony than flying adults Note: Figure for Wales is 200 webs per hectare

* Habitat Extent	Extent of suitable marshy grassland	Maintain the extent of suitable marshy grassland at 42 ha[1] [1] Estimated extent of acid marshy grassland is 18.0 ha, with an additional c. 24 ha occurring as part of a mosaic with other habitats – i.e. 42 ha in total	Definition of suitable marshy grassland - Stands of grassland where *Succisa pratensis* is present and scrub (>1 metre tall) covers no more than 10% of area Note: Figure for Wales is 10 hectares of suitable marshy grassland.

	Extent of good marsh fritillary breeding habitat	Maintain the extent of good marsh fritillary breeding habitat at 4.5 ha[2] [2] Estimated extent of fen meadow is 4.54 ha – this may not *necessarily* represent "good marsh fritillary breeding habitat" – some may be rank. On the other hand, some of the acid marshy grassland may be good habitat	Definition of good marsh fritillary breeding habitat - *Molinia*-dominated grassland where the vegetation height is within the range of 10 to 20 cm, and where *Succisa pratensis* is present within a 1 m radius of any point Note: Figure for Wales is 4 hectares of good marsh fritillary breeding habitat
* Habitat Mosaic	Extent of other semi-natural habitats	Maintain the extent of other semi-natural habitats which contribute to marsh fritillary breeding success (e.g. woodland and scrub (26.1 ha), wet heath, etc.) – No loss in extent of other semi-natural habitats	The comparatively large extent of the site, with the mosaic of different habitats is believed to contribute to the success of the colony on the site

PEATLANDS PARK SAC

UK0030236

CONSERVATION OBJECTIVES

Document Details

Title	*Peatlands Park SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*01/04/2015*
Version Number	*V2*
Next Review Date	Nov 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	Jan 2015	Complete review	RMK

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: ARMAGH

GRID REFERENCE: IH 908609

AREA: 207.5 ha

5. SUMMARY SITE DESCRIPTION

Peatlands Park represents a large area of cutover bog and woodland, remnant of an extensive lowland raised bog complex, lying just south of Washing Bay in the south-western corner of Lough Neagh. It is located between the M1 motorway and the village of Maghery. Peatlands Park is a complex site with a wide range of habitats and associated flora and fauna that includes a number of rare and notable species. The site consists of a number of low wooded drumlins covered by mature Oak Woodland interspersed by a series of flat plains covered by both intact and cutover raised bog and bog woodland. Derryadd Lough situated in the south-eastern corner of the site, adds additional interest with its marginal swamp and poor acid fen.

The drumlins are comprised of glacial drift overlying Lough Neagh Clays and the woodlands they support are mildly acidic in type. The wet bog woodlands have developed in the inter-drumlin hollows and are dominated by Birch and Willow. The peatland consists of an extensive lowland raised bog that has been largely cutover. Remaining peat depths average around 5 m. and the vegetation is highly variable, reflecting the degree of wetness in the cuttings. Although most of the peatland has been cutover, relict areas of intact bog with deeper peat still occur. The range of habitats displayed throughout Peatlands Park supports a rich flora and fauna, including a number of rare species.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The boundary of Peatlands Park SAC /ASSI has been demarcated to include all areas of degraded raised bog still capable of regeneration, intact lowland raised bog, bog woodland, old sessile Oak woods and the wetland habitats and waters associated with Derryadd Lough. The boundary around much of the ASSI defines the edge of semi-natural habitat associated with the degraded bog, that is largely surrounded by improved agricultural land. However, extensive areas of cut-over bog and scrub woodland directly adjacent to the site have been excluded due to the very degraded state of the habitat and as some of these areas of peatland are still being actively harvested for peat.

The Northern Ireland Environment Agency (DOE) owns the vast majority of the ASSI, which is incorporated within a unique Country Park called Peatlands Park (the Park). In addition, in 1980, part of the Park was also declared as a NNR, known as Mullenakill and Annagarriff NNR. These adjacent reserves illustrate aspects of bog development and native woodland. Both the Park boundary and the NNR boundary are rather complex and due to the wilderness nature of the area, mapping has not been particularly accurate. In 2000, Keith Stanfield, the warden for the area commissioned a mapping exercise to establish the existing Park boundary in relation to NIEA ownership details etc. This boundary exercise clearly showed that there were many discrepancies between the existing Park boundary and the NIEA ownership boundary.

The boundary of the ASSI is not surprisingly rather complex given the history of the area. It endeavours to encompass all lands of special scientific interest, the boundary of which is generally marked by a physical feature on the ground such as a ditch, bank, track, road verge, hedge or fence. In many instances, the area of scientific interest, i.e. the ASSI boundary coincides with the existing boundary of the Park (as recently mapped), especially where it is clearly defined as a fence-line, hedge or ditch. This is the case around much of Derryadd Lough, for example. In other areas, the ASSI boundary extends beyond the boundary of the Park incorporating small pockets of land of scientific interest within private ownership. In addition, the ASSI boundary generally extends beyond the boundary of the NNR. However, there are also instances where the ASSI boundary excludes parts of the NNR and quite extensive areas of the Park. This is particularly apparent to the southwest of the site, where the buildings associated with the Park, an orchard and blocks of severely degraded heath and bog have been excluded from the ASSI.

After many discussions with Keith Stanfield, the warden for the area, it was decided that the ASSI boundary had to be drawn using the best information available at the time. The ASSI/SAC boundary was therefore drawn using the most up to date maps and aerial photographs that were available at the time of ASSI designation in June 2000.

Around the periphery of ASSI, many of the boundaries are stock proof. However, there are also many ASSI boundaries, which exclude lands within the Park, i.e. where the areas of scientific interest adjoin areas of managed parkland and orchards etc. These boundaries may be marked by a path or a ditch and are generally not stock proof.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ population
Habitat	Degraded raised bog	B	117.2 ha
Habitat	Bog Woodland	B	6.1 ha
Habitat	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	C	42.5 ha
Habitat	Active raised bog	C	21.8 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Peatlands Park SAC.

6.1 ASSI SELECTION FEATURES

Peatlands Park ASSI

Feature Type	Feature	Size/ extent/ population
Habitat	Lowland Raised Bog	139 ha
Habitat	Wet Woodland	6.1 ha
Habitat	Oakwood	42.5 ha
Habitat	Fen	
Species	Higher plant assemblage: Bog Rosemary *Andromeda polifolia*, Alder Buckthorn *Frangula alnus*, Oblong-leaved Sundew *Drosera intermedia*, Cowbane *Cicuta virosa,* Marsh Clubmoss *Lycopodium inundata*, *Calliergon cordifolia*, *Sphagnum fimbriatum* and S. *squarrosum*	
Species	Invertebrate assemblage including water beetles, dragonflies, butterflies and moths. Named species of note are *Acilius canaliculatus*, *Laccornis oblongus*, Wood Ant *Formica aquilonia*, Large Heath *Coenonympha tullia*, Marsh Fritillary *Eurodryas aurinia*, Green Hairstreak *Callophrys rubi*, Forester *Adscita statices*, Narrow-bordered Bee Hawk *Hemaris tityus*, Bordered Grey *Selidosema brunnearia* and the Dark Tussock *Dicallomera fascelina*.	

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The *Conservation Objective* for this site is:

To maintain (or restore where appropriate) the

- *Degraded Raised Bog*
- *Bog Woodland*
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
- *Active Raised Bog*

to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objectives
Degraded raised bog still capable of natural regeneration	B	No loss in extent of degraded raised bog to agricultural reclamation, scrub encroachment, development, or further peat cutting.
		Expand the extent of actively regenerating cutover bog vegetation into areas of degraded (non-active) areas of cutover bog.
		Ensure that the hydrology of the cutover raised bog is favourable for active bog regeneration.
		Maintain and enhance the quality of actively regenerating cutover bog community types (*Sphagnum* moss, *Eriophorum* spp. and ericoid cover) including the presence of notable species.
		Maintain the diversity and quality of other habitats of conservation interest.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for further raised bog regeneration.
Bog Woodland	B	Maintain and where appropriate expand the existing area of bog woodland.
		Maintain and enhance bog woodland species diversity and structural diversity.
		Maintain the diversity and quality of habitats associated with the bog woodland, e.g. fen, swamp, especially where these exhibit natural transition to swamp woodland.
		Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.

Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	C	Maintain and where appropriate expand the existing area of oak woodland.
		Maintain and enhance Oak woodland species diversity and structuraldiversity.
		Maintain the diversity and quality of habitats associated with the Oak woodland, e.g. fen, swamp, grasslands, scrub, especially where these exhibit natural transition to Oak woodland
		Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.
Active raised bog	C	Maintain the extent of intact raised bog and actively regenerating raised bog vegetation.
		Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species.
		Seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog.
		Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog.
		Maintain the hydrology of the raised bog peat mass.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Lowland Raised Bog	See SAC Selection Feature Objective Requirements table.
Wet Woodland	See SAC Selection Feature Objective Requirements table.
Oakwood	See SAC Selection Feature Objective Requirements table.
Fen	Maintain and expand the extent of existing fen.
	Maintain and enhance fen species diversity.
	Maintain and enhance woodland structure
	Maintain the diversity and quality of habitats associated with the fen
Rare plant assemblages	Map location of rare species.
	Maintain abundance and distribution and if feasible enhance population.
	Establish the status of these species and if appropriate draw up further conservation priorities for this species.
Notable invertebrate assemblage	Map location of rare species.
	Maintain abundance and distribution and if feasible enhance population.
	Establish the status of these species and if appropriate draw up further conservation priorities for this species.

10. MANAGEMENT CONSIDERATIONS

Ownership

The Northern Ireland Environment Agency owns the majority of Peatlands Park ASSI/SAC, including the turbary rights. Hence, the management of much of the area should be relatively straightforward. The remainder of the site is privately owned with approximately 4 individuals owning various sections of the ASSI.

There are a number of difficulties in reaching agreement over the exact boundary along some sections of Peatlands Park which have been ongoing for a number of years. These issues have still to be resolved. Apart from the boundary, there does not appear to be any other major management issues on the bog at the present time, although some issues need to be addressed on the periphery of the bog.

Adjoining Land Use

The main adjoining land-use outside the ASSI is improved agricultural land with areas of rough pasture and old cutover bog along the northern and western edges of the site.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Peatlands Park, or could affect it in the future. Although Degraded Raised Bog, Bog Wood, Old Sessile Oak Woods and Active Raised Bog are the qualifying SAC features, factors affecting ASSI features are also considered.

NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.

Invasion by Exotics

Exotic species are widespread particularly in wooded areas. They vary in the degree of impact they have and the threat they pose. Very invasive species such as Sycamore *Acer pseudoplatanus*, Dogwood *Cornus sanguinea* and Rhododendron *Rhododendron ponticum* are seen as posing a current threat. Other are not seen as a immediate threat due to their limited occurrence they include Horse Chestnut *Aesculus hippocastanum*, Sweet Chestnut *Castanea sativa*, Solomon's-seal *Polygonatum multiflorum* and Conifers or slow rate of spread Beech *Fagus sylvatic*a.

ACTION: The very invasive species require management to control their spread, which in most cases will require the current seed source to be removed from site. Ensure that there is a management programme to monitor and remove invasive species and their seed source from the SAC.

Scrub Encroachment

There are some pockets of trees and scrub associated with cutover bog at Peatlands Park. Any further scrub encroachment into the actively regenerating cutover areas, or onto the intact surface is undesirable.

ACTION: Monitor further scrub encroachment (where it occurs) and take remedial action if required.

Drainage and Peat Cutting

Peat cutting and internal drainage in the past had a profound detrimental effect on the hydrology of the peatland by lowering the water table and causing drying of the surface peat. Recent proactive management in cutover areas has been undertaken to address this drainage problem, by lowering the surface layer to the current water table, to encourage active bog regeneration. The intact raised bog elements, adjacent to active cutting outside the SAC, remain at threat from localised drying out.

ACTION: Assess the effect of drains on intact raised bogs. Where peat cutting in adjacent areas outside the SAC boundary is identified as having a detrimental effect on the bog, this will have to be addressed.

Fly-tipping

Although fly-tipping does not occur within the site, it does occur around the periphery where it can be severe.

ACTION: Remove all evidence of fly-tipping as soon as possible to discourage the problem. If fly-tipping continues it may be necessary to erect gates, fences and "no dumping" signs around the sites periphery.

Burning

This indiscriminate method of removing the thatch vegetation from the peat surface before cutting is carried out in the cutover bog adjacent to the site has taken place. Uncontrolled burns have frequently spread into the site resulting in damage to both the peatland surface/vegetation and associated invertebrates. In some cases the uncontrolled fires can be long lived and so burn deep into the peat core.

ACTION: No burning within the SAC. Develop a fire prevention management plan for the site.

Nitrogen Deposition

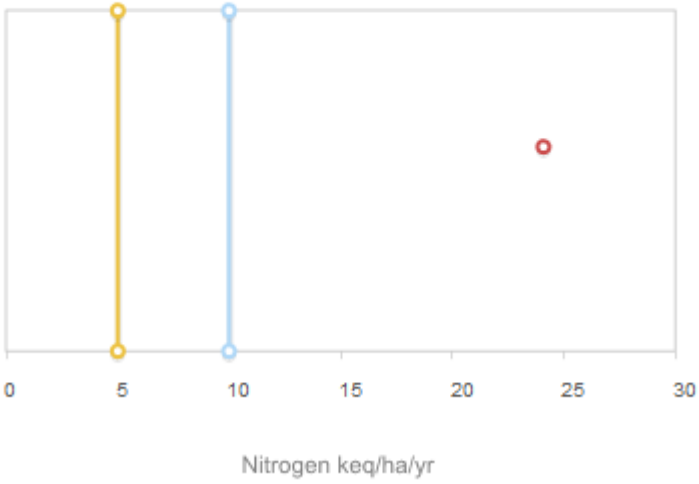
Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Peatlands Park SAC.

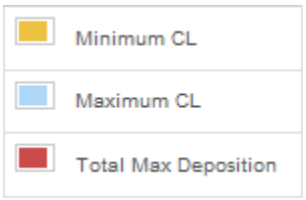
Feature: Active raised bogs

Critical Loads (kg N/ha/yr): 5-10

Nitrogen Deposition (kg N/ha/yr):

Maximum: 24.1 Minimum: 19 Average: 20.5



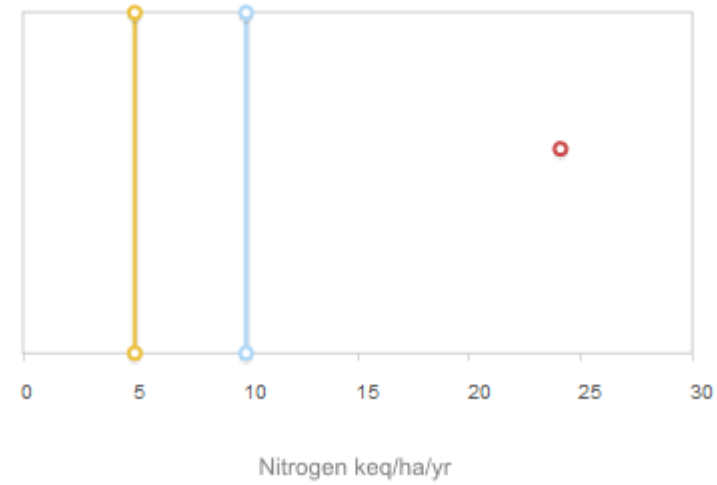


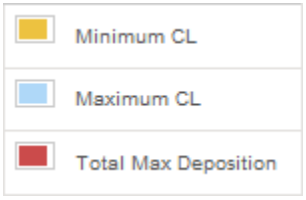
Feature: Degraded raised bogs still capable of natural regeneration

Critical Loads (kg N/ha/yr): 5-10

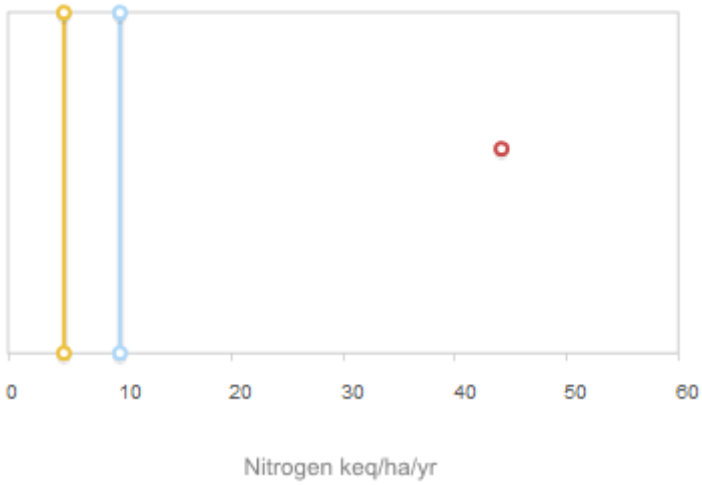
Nitrogen Deposition (kg N/ha/yr):

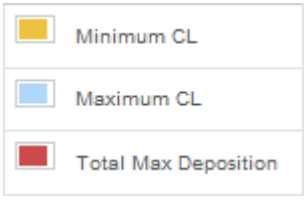
Maximum: 24.1 Minimum: 19 Average: 20.5

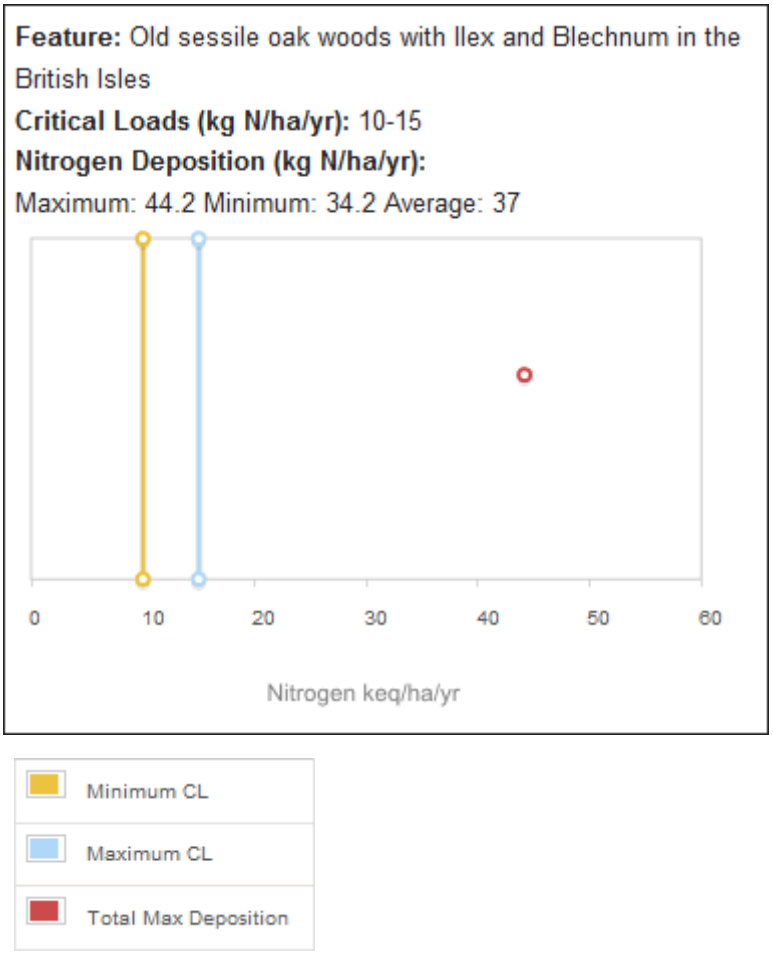




Feature: Bog woodland
Critical Loads (kg N/ha/yr): 5-10
Nitrogen Deposition (kg N/ha/yr):
Maximum: 44.2 Minimum: 34.2 Average: 37







(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes in surrounding land use

Activities occurring outside of Peatland Park SAC (e.g. agricultural intensification, drainage works, development) may be detrimental to the site through remote affects – e.g. lowering of the water table in adjacent areas.

ACTION: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs) through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change

Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.

ACTION:When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place on using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the bog and associated habitats through desiccation).

These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. *Monitor the integrity of the site (SIM or Compliance Monitoring)* – Complete boundary survey. Ensure that there has been no peat cutting, dumping or burning carried out within the SAC boundary. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment) –
Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex 1.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does <u>not by itself</u> provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Cruickshank, M. M. & Tomlinson, R. W. (1988). *Northern Ireland Peatland Survey*. Department of the Environment for Northern Ireland (Countryside and Wildlife Branch). Belfast.

Department of the Environment for Northern Ireland (1993a). Conserving Peatland in Northern Ireland – A Statement of Policy.

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan - Lowland Raised Bog.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Wet Woodland.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan - Oakwood.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Fens.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

ANNEX 1

Feature 1 (SAC) – Degraded bog capable of natural regeneration (Status B)

Attribute	Measure	Targets/Limits	Comments
* Extent	Area of cutover bog 117.2ha	Maintain the current extent of cutover bog at a minimum of 117ha and where appropriate, extend areas outside the current SAC boundary. NB The extent of cutover bog includes both degraded bog capable of natural regeneration and some areas of actively regenerating cutover bog. However, the target is to extend the area of regenerating cutover into all areas of degraded bog still capable of regeneration. **Re-instate a cover of suitable plant species, as guided by species growing in adjacent intact areas, over the cutover bog.** Approximately 80% of the degraded bog should be active to achieve favourable condition. The active raised bog communities include predominantly M18 *Sphagnum papillosum* raised and blanket mire with M1 *Sphagnum auriculatum*, M2 *Sphagnum cuspidatum/recurvum* and M3 *Eriophorum angustifolium* bog pool communities.	The degraded bog area should be monitored using a combination of aerial photographs and SIM. There should be no loss in extent of degraded cutover bog to agricultural improvement, or scrub encroachment. Similarly, there should be no loss in actively regenerating bog to scrub encroachment or further peat cutting.

* Active peat formation	*Sphagnum* Cover (% and DAFOR)	Ombrotrophic *Sphagnum* moss species should have a minimum cover of 33% over the cutover bog surface. At least 50% of the cutover area should have a *Sphagnum* moss cover of at least 33%. Species present should include a mixture of thin species :- *S. capillifolium* and *S. tenellum*, thick hummock forming species:- *S. papillosum* and *S. magellanicum* and in deeper pools and ditches, aquatic species:- S. cuspidatum and S. auriculatum.	A constant *Sphagnum* moss cover is indicative of active peat formation and is dependent on the maintenance of a high water table. *Sphagnum* moss is therefore used to measure the hydrology of the actively regenerating cutover bog. A cover of 33% over 50% of the area has been adjusted from the intact lowland raised bog figures to allow for pockets within the cutover that cannot feasibly be restored to active bog. The mixture of *Sphagnum* species present will reflect the topography of the peat as a consequence of peat cutting. The hummocks and lawns will be found beside ditches cut for drainage and the ditch itself will act as the pool, as modified by rewetting.
* Vegetation Composition	*Eriophorum* spp. Cover (%)	The Cotton grasses *Eriophorum angustifolium* and *E. vaginatum* should account for the greater proportion of cutover bog that is not vegetated by *Sphagnum* bog mosses. *Rhynchospora alba* may also be prominent, but it should not persistently dominate over *Eriophorum* spp.	A mono-dominant sward of *Eriophorum angustifolium* may colonise bare peat where the water table is at or above the surface of the cutover bog. Providing the water table is maintained at or near the surface, a more diverse actively regenerating bog vegetation should develop in due course.

* Vegetation Composition	*Ericaceous* Cover (DAFOR)	*Calluna vulgaris* and *Erica tetralix* should be at least Frequent over a minimum of two thirds of the cutover raised bog surface.	Ideally the regenerating bog vegetation should be composed of a mix of *Sphagnum* species amongst Cotton grasses and ericaceous plants.
Vegetation Composition	Presence of rare or scarce species specific to the site.	Two or more of the named species at least present along the length of the W-walk. *Drosera anglica*, *Vaccinium oxycoccus, Andromeda polifolia, Lycopodium inundatum.*	If these species are not recorded on any one visit, it does not automatically make the SAC unfavourable.
* Structure	Bare Peat/ Open water (%)	Bare peat/open water either unvegetated or vegetated with uncharacteristic species should occupy less than 10% of the area of degraded bog still capable of natural regeneration.	Condition is unfavourable if there are still large areas of bare peat or open water either unvegetated or vegetated with uncharacteristic species such as *Juncus effusus*, *Typha latifolia* or *Phragmites australis.* Such species display evidence of eutrophication.

* Structure	Scrub/tree encroachment on any active peat surface. (DAFOR)	Scrub/tree encroachment should be no more than Rare on the cutover bog surface.	Scrub encroachment should be checked using a combination of aerial photographs and SIM. If scrub/tree species are more than Rare on any active cutover peat surface, scrub control should be carried out. Where invasive scrub species including Birch and Rhododendron are prominent along the ramparts, these species should be actively removed to prevent seeds blowing into the actively regenerating peatland areas.

* = primary attribute. One failure among primary attribute = unfavourable condition

ANNEX 1

Feature 2 (SAC) – Bog woodland (Status B)

Attributes	Measures	Targets	Comments
* Area	Extent	No loss – maintain bog wood at 6.1ha	Loss due to natural processes (e.g. wind-throw during extreme storm) is acceptable
* Natural processes and structural development	Structural Variation	Canopy cover 60% +	At least the current level of structural diversity should be maintained. Again, if natural processes result in target values falling outside the specified limits, this is likely to be acceptable.
		Shrub cover 10-80%	
		Field cover 5%+	
		Herb cover 25%+	
		Moss cover 75%+	
	Age-class variation	Young Trees (5- 10cm diameter) at least frequent in 30% of Plots	Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-classes present, including young and particularly over-mature trees.
		Mature Trees (10 - 30cm diameter) at least frequent in 50% of Plots	

		Over-mature Trees (>30cm diameter) at least present in 5% of Plots	Note that definition of young, mature and over-mature differs from drier woodland types, reflecting the fact that Birch will generally be the dominant species
	Presence of standing and fallen dead wood	Standing dead wood at least frequent	
		Fallen dead wood at least frequent	
	Presence of Epiphytes	Epiphytes and Climbers frequent in 10%+ of plots	
		Epiphytic bryophytes and lichens at least frequent in 90%+ of plots	
* Regeneration potential	Regeneration of native species	Saplings at least occasional in 10% of Plots	The general aim is for the successful establishment of young stems (i.e.

		Seedlings at least occasional in 10% of Plots	seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to maintain canopy density over a 10 year period. Regeneration is likely to be very variable and we cannot say what is an appropriate level. Assessment of this attribute will be further defined by condition assessment monitoring.
* Composition	Cover of native versus non-native species (all layers)	Non–Native Invasive Canopy Species no more than present in <5% of Plots	At least the current level of site-native species maintained. In addition, at least 90% of cover in any one layer of site-native or acceptable naturalised species. Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.
		Non–Native Invasive Shrub Species no more than present in <5% of Plots	
		Non–Native Invasive Ground Species no more than present in <10% of Plots	

	Frequency of W2 & W4 community character species. (Positive Indicators)	At least two of the following at least frequent and two occasional*: Betula pubescens, Salix cinerea, Filipendula ulmaria, Viola palustris, Phragmites australis, Molinia caerulea, Carex laevigata, Brachythecium rutabulum, Sphagnum squarrosum, S. recurvum, S. fimbriatum, S. palustris.*	PROVISIONAL LIST To be further defined by field trials.
	Rare Species specific to site. IF PRESENT		Note: Rare Plant Assemblage is an ASSI selection feature; woodland plants will be monitored as part of this. Mapped locations of rare species will be inspected for presence or absence.
	Negative Indicators - Cover of *Pteridium*	No more than present in <15% of Plots	
	Negative Indicators - Cover of broad-leaved grasses	No more than present in <15% of Plots	
Management /Disturbance	% occurrence of poaching	No more than present in <10% of Plots	
	% occurrence of frequent recent (1-2 years) Goat Damage	No more than present in <10% of Plots	
	% occurrence of damage to seedling/saplings	No more than present in <10% of Plots	

	% occurrence of felling/coppicing	None	Felling non-native species as part of management for conservation is acceptable.

* = primary attribute. One failure among primary attribute = unfavourable condition

ANNEX 1

Feature (SAC 3) - Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (Status C)

Attributes	Measures	Targets	Comments
* Area	Extent	No loss – maintain oakwood at 42.5ha	Loss due to natural processes (e.g. windthrow during extreme storm) is acceptable
* Natural processes and structural development	Structural Variation	Canopy cover 70% +	At least the current level of structural diversity should be maintained. Again, if natural processes result in target values falling outside the specified limits, this is likely to be acceptable.
		Shrub cover 35 -80%	
		Field cover 20-60 %	
		Herb cover 50%+	
		Moss cover 20%+	
	Age-class variation	Young Trees (5- 20cm diameter) at least frequent in 75% of Plots	Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-classes present, including young and particularly over-mature trees.
		Mature Trees (20 - 75cm diameter) at least frequent in 90% of Plots	

		Over-mature Trees (>75cm diameter) at least present in 25% of Plots	
	Presence of standing and fallen dead wood	Standing dead wood at least frequent	
		Fallen dead wood at least frequent	
	Presence of Epiphytes	Epiphytes and Climbers frequent in 90%+ of plots	
		Epiphytic bryophytes and lichens at least frequent in 90%+ of plots	
* Regeneration potential	Regeneration of Oak	Oak seedlings at least occasional in canopy gaps	The general aim is for the successful establishment of young stems (i.e. seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to maintain canopy density over a 10 year period. Regeneration of Oak in particular is likely to
		Oak saplings at least occasional in canopy gaps	
	Regeneration of other native species	Other saplings at least occasional in 50% of Plots	

		Other seedlings at least occasional in 50% of Plots	be slow and sporadic; in some stands, there may currently not be sufficient and/or extensive enough gaps for oak to regenerate. This does not necessarily indicate unfavourable condition.
* Composition	Cover of native versus non-native species (all layers)	Dominance of Oak in canopy to be 60%+	At least the current level of site-native species maintained. In addition, at least 90% of cover in any one layer of site-native or acceptable naturalised species. Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.
		Non–Native Invasive Canopy Species no more than present in <10% of Plots	
		Non–Native Invasive Shrub Species no more than present in <10% of Plots	
		Non–Native Invasive Ground Species no more than present in <10% of Plots	
	Frequency of W11 & W17 community character species (Positive Indicators)	At least four of the following at least frequent and four occasional: *Dryopteris aemula, D. dilatata, Blechnum spicant Calluna vulgaris, Lonicera periclymenum, Luzula pilosa, L. sylvatica, Oxalis acetosella, Potentilla erecta, Hyacinthoides non-scripta, Vaccinium myrtillus, Viola riviniana, Mnium hornum, Dicranum majus, Dicranum scoparium, Hylocomium splendens, Plagiothecium undulatum, Rhytiadelphus loreus*	PROVISIONAL LIST To be further defined by field trials.

	Rare Species specific to site. IF PRESENT		Note: Rare Plant Assemblage is an ASSI selection feature; woodland plants will be monitored as part of this. Mapped locations of rare species will be inspected for presence or absence.
	Negative Indicators - Cover of *Pteridium*	No more than present in <15% of Plots	
	Negative Indicators - Cover of broad-leaved grasses	No more than present in <15% of Plots	
Management /Disturbance	% occurrence of poaching	No more than present in <10% of Plots	
	% occurrence of frequent recent (1-2 years) Goat Damage	No more than present in <10% of Plots	
	% occurrence of damage to seedling/saplings	No more than present in <10% of Plots	
	% occurrence of felling/coppicing	None	Felling non-native species as part of management for conservation is acceptable.

* = primary attribute. One failure among primary attribute = unfavourable condition

Annex 1

Feature 4 (SAC) – Active raised bog (Status C)

Attribute	Measure	Targets/Limits	Comments
* Extent	Area of intact surface 21.8ha	Maintain the current extent of the intact bog surface at 22 ha. The active raised bog communities include predominantly M18 *Sphagnum papillosum* raised and blanket mire with M1 *Sphagnum auriculatum*, M2 *Sphagnum cuspidatum/recurvum* and M3 *Eriophorum angustifolium* bog pool communities.	The intact surface should be monitored using a combination of aerial photographs and SIM. Any loss of the current intact area is unacceptable.
* Extent	Area of actively regenerating cutover bog (ha)	Maintain the current extent of actively regenerating cutover bog. This area should be extended where possible. The active raised bog communities include predominantly M18 *Sphagnum papillosum* raised and blanket mire with M1 *Sphagnum auriculatum*, M2 *Sphagnum cuspidatum/recurvum* and M3 *Eriophorum angustifolium* bog pool communities.	There should be no loss in extent of actively regenerating bog to scrub encroachment or further peat cutting.

* Active peat formation	*Sphagnum* Cover/Abundance (% and DAFOR)	Ombrotrophic *Sphagnum* moss species should have a minimum cover of 33% over the intact lowland raised bog surface. This minimum cover of 33% should be maintained over at least two thirds of area. Species present should include a mixture of both thin species :- *S. capillifolium* and *S. tenellum* and the thick hummock forming species:- *S. papillosum* and *S. magellanicum* at least Occasional over the surface.	A constant *Sphagnum* moss cover is indicative of active peat formation and is dependent on the maintenance of a high water table. *Sphagnum* moss is therefore used to measure the hydrological integrity of the intact bog surface.
* Vegetation Composition	Ericaceous Cover (%)	Ericoid cover should be maintained between 40% and 60% of the intact bog surface and should show no evidence of grazing or recent burning. *Erica tetralix* should be at least present over a minimum of two thirds of the intact lowland raised bog surface.	A mono-dominant sward of *Calluna vulgaris* may suggest that the surface of the intact bog is drying out – i.e. the water table is too far below the surface of the bog.
* Vegetation Composition	Graminoid Cover (%)	Graminoid cover should be maintained between 10 and 40 %.	
* Vegetation Composition	*Rhynchospora alba* Abundance (DAFOR)	*Rhynchospora alba* should be no more than Rare away from pool systems.	*Rhynchospora alba* only occurs as a natural component of the bog vegetation around pool systems. A high frequency of this species over the intact surface of the bog may be a consequence of excessive burning.

Vegetation Composition	Presence of rare or scarce species specific to the site.	Two or more of the named species at least present along the length of the W-walk. *Drosera anglica*, *Vaccinium oxycoccus, Andromeda polifolia.*	If these species are not recorded on any one visit, it does not automatically make the SAC unfavourable.
* Structure	Bare Peat (%)	Peat cutting or drainage should not damage the intact surface of the active raised bog. Bare peat should occupy < 5% of the total area of the active raised bog.	
* Structure	Scrub/tree encroachment on any active peat surface	Scrub/tree encroachment should be no more than Rare on the intact raised bog surface, or in the actively regenerating cutover areas.	Scrub encroachment should be checked using a combination of aerial photographs and SIM. If scrub/tree species are more than rare on any active peat surface, scrub control should be carried out. Particular attention should be paid to exotic species should be monitored closely.

* = primary attribute. One failure among primary attribute = unfavourable condition

BELFAST LOUGH OPEN WATER-SPECIAL PROTECTION AREA (SPA)

UK9020290

CONSERVATION OBJECTIVES

Including conservation objectives for Inner Belfast Lough ASSI and Outer Belfast Lough ASSI

Document Details

Title	Belfast Lough Open Water SPA Conservation Objectives
Prepared By	*Ian Enlander*
Approved By	*Mark Wright*
Date Effective From	*01/04/2015*
Version Number	*V2*
Next Review Date	January 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	29/09/2009	Internal working document	IE	
V1.1	August 2013	Review	IE	
V2.0	February 2015	Draft	IE	Complete review

Site relationship

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

This SPA adjoins Belfast Lough SPA. It is also contiguous with Outer Ards SPA and the proposed East Coast Marine SPA.

The SPA also adjoins Belfast Lough Ramsar site.

See also Boundary Rationale

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site"**.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4 GENERAL INFORMATION

COUNTY: Antrim and Down

G.R. J407 838 AREA: 5592.99 ha

NB – UK marine SPA programme has identified an important area for non-breeding Red-throated Diver in the Belfast Lough area. This area partly overlaps with the existing Belfast Lough Open Water SPA but also falls within the unclassified marine area eastwards of the existing Open Water SPA.

In addition a marine extension to the Copeland Islands SPA will be defined to reflect usage of the marine area by rafting Manx Shearwater.

The extent of the marine areas for non-breeding Red-throated Diver and Manx Shearwater rafting is will be available from NIEA.

These boundaries will be further revised once JNCC report on marine usage by tern species from existing SPA's designated for breeding terns is received.

THE AREA IS ALSO UTILISED BY FORAGING COMMON TERN DURING TRHE BREEDING SEASON, BIRDS ORIGINATING FROM THE BELFAST HARBOUR COLONY.

Conservation objectives will be revised as these issue progress

5 SUMMARY SITE DESCRIPTION

Belfast Lough is a large intertidal sea lough situated at the mouth of the River Lagan on the east coast of Northern Ireland. The inner part of the lough comprises a series of mudflats and lagoons. The outer lough is restricted to mainly rocky shores with some small sandy bays.

The Belfast Lough open water area comprises the marine area below the mean low water mark. Seawards it extends to a notional boundary between the eastern limits on the north and south shores of the Outer Belfast Lough Area of Special Scientific Interest at Kilroot and Horse Rock respectively. The boundary towards the head of the lough is a notional line between Greencastle on northern shore and Holywood Bank on the southern shore.

Water depths within the site are generally between 1m and 10m. Shallow waters, less than 5m in depth, dominate the area with deeper waters confined to the central area of the lough, east of a line between Greenisland and Cultra.

5.1 BOUNDARY RATIONALE

The SPA comprises the marine area of Belfast Lough. The landward boundary conjoins that of Belfast Lough SPA and Ramsar site. The outer boundary is a notional line taken between the eastern limits of Belfast Lough SPA that is from Kilroot on the northern shore to Horse Rock near Grey Point on the southern. The open water supports the main part of the internationally important wintering population of Great Crested Grebe. While the main roosting area for this species is in the Inner Lough area, the entire site is of importance for feeding and loafing activities. In addition these waters host nationally important wintering populations of a number of other species.

6 SPA SELECTION FEATURES

Feature Type	Feature	Population (5 year average 1995-2000)	Population at time of designation (ASSI)	Population at time of designation (SPA)	SPA Review population	Common Standards Monitoring baseline
Species	Great Crested Grebe wintering population [a]	1646	N/A	**1677 individuals – wintering**		
Habitat[1]	Habitat extent					
Roosting /loafing sites[1]	locations of sites					

Table 1. List of SPA selection features.

[1] Habitat and roost sites are not a selection feature but are a factor and more easily treated as if they were a feature.

Notes on SPA features – may not be applicable to all SPAs

The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.

[a] – species cited in current SPA citation and listed on current N2K dataform

[b] – species selected post SPA designation through UK SPA Review 2001

[c] – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

6.1. ADDITIONAL ASSI SELECTION FEATURES

Note that as the site is entirely below the low water mark, none falls within the adjoining Inner Belfast Lough ASSI or Outer Belfast Lough ASSI. However the following populations are cited as of nationally importance and, through common practice, are assessed as part of both the Inner and Outer Belfast Lough ASSI's.

Marine populations of national importance

In addition, the site supports nationally important numbers of (all data are 5 year averages of individuals for period 1996/97 – 2000/01) Cormorant *Phalacrocorax carbo* (407, 8.7 % of the Irish wintering population), Shelduck *Tadorna tadorna* (405, 5.8%), Scaup *Aythya marila* (233, 7.8%), Eider *Somateria mollissima* (1116, 55.8%), Goldeneye *Bucephala clangula* (287, 14.4%) and Red-breasted Merganser *Mergus serrato* (170, 8.5%). While utilising the open marine area, these species are treated as ASSI features against the Inner and Outer Belfast Lough ASSI area.

7. CONSERVATION OBJECTIVES

The Conservation Objectives for this site are:

To maintain each feature in favourable condition.

For each feature there are a number of component objectives which are outlined in the tables below. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

8. BELFAST LOUGH OPEN WATER SPA CONDITION ASSESSMENT 2014

Species	2007/08	2008/09	2009/10	2010/11	2011/12	CSM	5 yr mean	% CSM	Status
Great Crested Grebe	2148	1055	1174	325	780	1015	1096.4	**108.02**	Favourable

9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species
To maintain or enhance the range of habitats utilised by the qualifying species
To ensure that the integrity of the site is maintained;
To ensure there is no significant disturbance of the species and
To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

SPA SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Great Crested Grebe wintering population	No significant decrease in population against national trends
Habitat extent	Maintain the extent of main habitat components subject to natural processes
Roosting/loafing sites	Maintain all locations of sites.

Table 4. SPA Component objectives

9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

See Conservation Objectives for Belfast Lough SPA for ASSI (Inner and Outer Belfast Lough ASSIs) selection feature objectives. These may be relevant to the present site.

10. MANAGEMENT CONSIDERATIONS

Owner/Occupier's – (to be used to identify any key management considerations arising from ownership e.g. owners/organisations having an obvious bearing on conservation matters or from management agreements).

Key landowners, leasees and other users within the SPA, relevant to the site management, include Crown Estate Commissioners, local Councils (Belfast, Ards, Antrim and Newtownabbey, Mid and East Antrim), Belfast Harbour Commissioners, Department of Agriculture and Rural Development Fisheries Division and shellfish operators, together with the many commercial shipping operators. There may be conflicts of interest between the requirements of individual/organisations, both within and adjacent to the SPA, and the site management needs.

Consideration must also be given to all land and sea based activities which have a bearing on site quality. This includes activities influencing water quality, ecological communities and disturbance.

Adjacent commercial operations which may impact upon the SPA include BP Oil, AES (Kilroot Power Station) and Dargan Road Landfill site Kilroot Power Station located adjacent to Belfast Lough Open Water SPA is a Part A Process under the Industrial Pollution Control Order. Additionally sewage discharge points from Duncrue Street and Kinnegar Sewage Treatment Works may impact upon the site. A range of smaller established discharge points are present elsewhere around the site boundary together with the major discharge point at Brigg's Rocks (Groomsport) and the sewage sludge disposal site NE of the Copeland Islands.

11. MAIN THREATS, PRESSURES, ACTIVITES WITH IMPACTS ON THE SITE OR SITE FEATURES

The list below is not exhaustive, but deals with the most <u>likely</u> factors that are either affecting Belfast Lough SPA, or could affect it in the future. Factors affecting the features within the adjoining ASSI are also considered.

Generic site/feature issues

No	Issue	Threat/comments	Local considerations	Action
2	Aquaculture	Disturbance is a minor consideration unless carried out deliberately to minimise losses to shell-feeding waterfowl. Alteration of natural littoral and sub-littoral communities through seeding, tray/trestle cultivation, dredging/control of pest species. Naturalisation of introduced species – both the shellfish themselves and associated species e.g. algae and disease vectors.	Much of Inner Belfast Lough has active licences for shellfish production.	Liaise with DARD Fisheries Division. Assess all license applications individually. Current extent of licences may significantly alter seabed conditions. Consider the collective impact.
6	Boating activity – commercial	Disturbance and potential for impact from high-speed liners.	Major shipping channel. This is a long-established activity	Formal consultation likely relating to new schemes. onsider the collective impact.
7	Boating activity – recreational	Disturbance and potential for impact especially from jet skis. Generally relevant to particularly sensitive areas within site.	Sailing clubs at Carrickfergus, Whiteabbey, Holywood and Cultra. Additional slipways and quays.	Liaise with appropriate authority with codes of good practice, zoning and use of by-laws as necessary. Consider the

				collective impact.
12	Dredging	Generally only an issue in relation to commercial shipping channels. Issues include disturbance, remobilisation of contaminated sediment and spoil dumping zones.	Ongoing capital dredging programme maintains shipping channel. Established ongoing maintenance programme.	Liaise with port authority and Environmental Protection as required with regard to water quality issues and pollution incidents.
14	Fishing – commercial or recreational	Minimal disturbance consideration but may represent 'competition' for piscivorous birds. Represents a net loss to the system in terms of biomass.	Most commercial activity related to aquaculture. Recreational fishing not deemed to be a problem.	Liaise with DARD and fishing authority as required. Liaise with angling clubs as required.
15	Habitat extent – inter-tidal	Loss of habitats through development, changes in coastal processes. Loss of inter-tidal habitat may impact on system ecology and hence the selection feature.	There has been extensive loss of inter-tidal habitat historically. Inner lough mudflats particularly vulnerable.	Assess planning applications. Monitor using aerial photography.
16	Habitat extent – open water	Loss likely to be limited but expansion of commercial port facilities can impact on key localities.	Ongoing and further planned harbour developments will reduce open water area. Probably insignificant.	Assess planning applications. Consider the collective impact.
17	Habitat quality – inter-tidal	Alteration of habitat quality through diminution of water quality, invasive species or changes in coastal processes.	Historically impacted by industrial and sewerage effluent.	Assess planning applications. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
18	Habitat quality – open water	Alteration of habitat quality through diminution of water quality or invasive species.	Historically impacted by industrial and sewerage effluent. Vulnerable to pollution incidents from both industry and shipping.	Assess planning applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
20	Roosting and loafing areas	An essential component of sites hosting waterfowl. Inappropriate development of or change in use of critical areas may adversely impact on the sites carrying capacity.	Localities should be mapped.	Assess planning applications. Identify key areas and promote site management schemes. Review use of Wildfowl Refuges. Consider the collective impact.
21	Introduced species	Range of threats from loss of habitat, feeding competition, disease, hosting species presenting a threat outside of the site.	Not evident but given nature of the site, could be an issue through commercial shipping and aquaculture.	Liaise with appropriate authority. Consider feasibility of elimination. Participate in national/international initiatives.
24	Recreational activities.	Disturbance is the main consideration	Open water has been heavily used for recreational activities over long timescale.	Liaise with local authorities and other managing parties.

			Cumulative disturbance impacts (e.g. boating, wildfowlers, walkers, dogs etc) may be a significant factor for wintering bird populations	
25	Research activities.	To date targeted work has been land-based e.g. population census. A range of marine based activities are ongoing in relation to water quality, commercial shellfish and benthic communities.		All research activities to be undertaken by competent individuals, appropriately trained. If not directed at waterfowl, the latter must be considered. Liaise with relevant research bodies
28	System dynamics	Cuts across many other issues. Dynamic systems, especially coastal, can be affected by many factors especially engineered structures and significant changes in dominant wind direction or storm frequency. Many systems may indeed still be undergoing responses to historical developments e.g. partial reclamation, seawall construction. Changes may include alteration in sediment grade, shifts in patterns of erosion and deposition etc. Consequences for habitat and species utilisation of the site can be profound.	Main considerations are historical reclamation, especially along the north shore and Sydenham areas, together with widespread coastal engineering works and ongoing development within the Belfast harbour area. Sediment responses may be expected. Changes in water quality have led to an expansion of mussel beds, in turn altering system behaviour. Expanding aquaculture represents an alteration to substrate. System changes in relation to past high speed ferries have been suggested.	Human induced change should be minimised. Assess planning applications and liaise with other relevant authorities. Ad hoc dumping and removal of natural materials should be managed. Major natural shifts in system behaviour may be identified through analysis of aerial photographs and site monitoring. Major and consistent changes to patterns of habitat distribution and bird utilisation of the site should be noted.

Table 3. List of site/feature management issues

12. MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook (To be written).

Maintain the integrity of the site. Undertake Site Integrity Monitoring (SIM) at least annually to ensure compliance with the SPA objectives. The most likely processes of change (e.g. dumping, infilling, gross pollution) will either be picked up by Site Integrity Monitoring, or will be comparatively slow (e.g. change in habitat such as growth of mussel beds). More detailed monitoring of site features should therefore be carried out by Site Condition Assessment on a less frequent basis (every 6 years initially to pick up long-term or more subtle changes). A baseline survey will be necessary to establish the full extent of the communities present together with the current condition of the features, against which all further condition assessments will be compared.

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial

photographs to determine site morphological changes. Methodology for this is being developed.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that no sand extraction or dumping has been carried out within the SAC boundary. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (dune, saltmarsh, species). This will detect if the features are in favourable condition or not. See Annexes I and II for SAC and Additional ASSI Features respectively.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

12.2. ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, world. Refer to BTO ALERT limits etc. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline (e.g. eutrophication) is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere e.g. breeding terns. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.

3. For passage/wintering species assess breeding information. No site action if site decline is due to breeding ground failure, unless breeding ground failure is related to poor adult condition resulting from factors affecting wintering / passage birds.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance e.g. mudflats reduced by encroaching mussel beds.
6. Assess prey availability. Issues to consider are both within site e.g. water quality, broad site management, and without site e.g. climatically driven factors.
7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.
8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for breeding seabird and wader sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

13. SELECTION FEATURE POPULATION TRENDS

Site trends are reported using running 5 year means of annual maximum count (WeBS data). Long term trends in index values have been used to assess changes in overall wintering populations for Northern Ireland and UK (WeBS data). Caution is always necessary in the interpretation and application of waterbird counts given the limitations of these data. The reduced number of both sites and birds in Northern Ireland, result in a greater degree of fluctuation. Trends for Ireland are based on five years of data 1994-1999 (I-WeBS data). Consequently short-term fluctuations apparent in the data series may reflect changes in between year productivity, or other short term phenomena, rather than being indicative of a real change in a population.

SPECIES	SITE TREND	NI TREND	ROI TREND	UK TREND	COMMENTS
Great Crested Grebe	Stable	Increasing	Moderate Fluctuation	Increasing-Stable	Stable circa 1990 in UK.

ANNEX I

Feature (SPA) – Wintering waterfowl

* = primary attribute. One failure among primary attribute = unfavourable condition
= Optional factors – these can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
*Great Crested Grebe wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Non-avian factors

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used or potentially usable by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Roosting/loafing sites	Location of roosting/loafing sites	Maintain all locations of sites.	Map site locations.

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK

Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:
Designated: 05 August 1998 / update 12 May 2005

3. Country:
UK (Northern Ireland)

4. Name of the Ramsar site:
Belfast Lough

5. Map of site included:
Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □

b) digital (electronic) format (optional): Yes

6. Geographical coordinates (latitude/longitude)**:**
54 38 00 N 05 54 00 W

7. General location:
Include in which part of the country and which large administrative region(s), and the location of the nearest large town.
Nearest town/city: Belfast

Belfast Lough is a large intertidal sea lough situated at the mouth of the River Lagan on the east coast of Northern Ireland.

Administrative region: Antrim; Down

8. Elevation (average and/or max. & min.) (metres)**:**
Min. 0
Max. 10
Mean 0

9. Area (hectares)**:** 432.14

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The inner part of the lough comprises areas of intertidal foreshore, comprising of mudflats and lagoons, and land, both land-claimed and being land-claimed, which form important feeding/roosting sites for significant numbers of wintering waders and wildfowl. The outer lough is restricted to mainly rocky shores with some small sandy bays and beach-head saltmarsh.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

6

Secretariat comment: The RIS provides information requiring the application of Criterion 4. This needs to be included in the next update.

12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations:

Species with peak counts in spring/autumn:

Common redshank , *Tringa totanus totanus*,	1897 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)

Species/populations identified as internationally important subsequent to designation

Species with peak counts in spring/autumn:

Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	521 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

14. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	igneous, sedimentary, sandstone, slate/shale
Geomorphology and landscape	intertidal sediments (including sandflat/mudflat), estuary, lagoon, intertidal rock
Nutrient status	eutrophic
pH	no information
Salinity	brackish / mixosaline
Soil	no information
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Aldergrove, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/aldergrove.html) Max. daily temperature: 12.5° C Min. daily temperature: 5.8° C Days of air frost: 39.1 Rainfall: 862.4 mm Hrs. of sunshine: 1313.7

General description of the Physical Features:

Belfast Lough is a large, open sea lough located on the north-eastern coast of Northern Ireland. The inner part of the lough includes areas of intertidal foreshore, mainly mudflats and lagoons. In the outer lough the site includes mainly rocky shores with some small sandy bays and beach-head saltmarsh.

15. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Belfast Lough is a large, open sea lough located on the north-eastern coast of Northern Ireland. The inner part of the lough includes areas of intertidal foreshore, mainly mudflats and lagoons. In the outer lough the site includes mainly rocky shores with some small sandy bays and beach-head saltmarsh.

16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

No special values known

17. Wetland types

Marine/coastal wetland

Code	Name	% Area
D	Rocky shores	34.7
G	Tidal flats	60.2
J	Coastal brackish / saline lagoons	5.1

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

The Ramsar site includes areas of intertidal foreshore, comprising of mudflats and lagoons, and land, both land-claimed and being land-claimed, which form important feeding/roosting sites for significant numbers of wintering waders and wildfowl.

Semi-natural vegetation is confined to a narrow shoreline strip which is fragmented, particularly along the inner reaches of the lough. The sheltered bays and inlets of the south-eastern shore contain pockets of beach-head saltmarsh. Shores with harder rocks support vegetation typical of maritime cliff ledges

giving way to maritime grassland. Notable plant species found include spring squill *Scilla verna* and Ray's knotgrass *Polygonum oxyspermum*.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

None reported

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species with peak counts in spring/autumn:

Great cormorant , *Phalacrocorax carbo carbo*, NW Europe	279 individuals, representing an average of 5.5% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Common eider , *Somateria mollissima mollissima*, NW Europe	867 individuals, representing an average of 43.3% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Eurasian oystercatcher , *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering	4648 individuals, representing an average of 9.2% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Ruff , *Philomachus pugnax*, Europe/W Africa	3 individuals, representing an average of 15% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Red-throated diver , *Gavia stellata*, NW Europe	27 individuals, representing an average of 2.7% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Great crested grebe , *Podiceps cristatus cristatus*, NW Europe	1550 individuals, representing an average of 44.2% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Common shelduck , *Tadorna tadorna*, NW Europe	251 individuals, representing an average of 3.5% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Greater scaup , *Aythya marila marila*, W Europe	340 individuals, representing an average of 11.3% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Common goldeneye , *Bucephala clangula clangula*, NW & C Europe	184 individuals, representing an average of 1.6% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Red-breasted merganser , *Mergus serrator*, NW & C Europe	155 individuals, representing an average of 7.7% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa	133 individuals, representing an average of 1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Red knot , *Calidris canutus islandica*, W & Southern Africa (wintering)	386 individuals, representing an average of 1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Ruddy turnstone , *Arenaria interpres interpres*, NE Canada, Greenland/W Europe & NW Africa	385 individuals, representing an average of 1.7% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Mew gull , *Larus canus canus*, Europe to N Africa	1167 individuals, representing an average of 1.7% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Species Information

None reported

21. Social and cultural values:

e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Environmental education/ interpretation
Non-consumptive recreation
Tourism
Transportation/navigation

22. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	
National/Crown Estate	+	
Other	+	

23. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	
Fishing: commercial	+	
Gathering of shellfish	+	
Bait collection	+	
Industrial water supply	+	
Industry		+
Sewage treatment/disposal	+	
Harbour/port		+
Transport route		+
Urban development		+
Non-urbanised settlements		+

24. Factors adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
Special Protection Area (SPA)	+	
Management agreement	+	
Site management statement/plan implemented	+	

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

27. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.

Numbers of migratory birds and wildfowl and waders are monitored annually as part of the national Irish Wetland Birds Survey (I-WEBS) organised by the IWC Birdwatch Ireland, the National Parks and Wildlife Service (Ireland) and the Wildfowl and Wetlands Trust.

28. Current conservation education:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The Royal Society for the Protection of Birds presence on the site is centred around a brackish lagoon with well developed educational facilities including observation hides and a large observation room and a warden for the site.

29. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

None reported

30. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

31. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

32. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **13** above), list full reference citation for the scheme.

Site-relevant references

Barne, JH, Robson, CF, Kaznowska, SS, Doody, JP, Davidson, NC & Buck, AL (eds.) (1997) *Coasts and seas of the United Kingdom. Region 17. Northern Ireland*. Joint Nature Conservation Committee, Peterborough. (Coastal Directories Series.)

Buck, AL & Donaghy, A (eds.) (1996) *An inventory of UK estuaries. Volume 7. Northern Ireland*. Joint Nature Conservation Committee, Peterborough

Cranswick, PA, Waters, RJ, Musgrove, AJ & Pollitt, MS (1997) *The Wetland Bird Survey 1995–96: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge

Crowe, O (2005) *Ireland's wetlands and their waterbirds: status and distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow

Musgrove, AJ, Langston, RHW, Baker, H & Ward, RM (eds.) (2003) *Estuarine waterbirds at low tide. The WeBS Low Tide Counts 1992–93 to 1998–99*. WSG/BTO/WWT/RSPB/JNCC, Thetford (International Wader Studies, No. 16)

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. www.wwt.org.uk/publications/default.asp?PubID=14

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm

Way, LS, Grice, P, MacKay, A, Galbraith, CA, Stroud, DA & Pienkowski, MW (1993) *Ireland's Internationally Important Bird Sites: a review of sites for the EC Special Protection Area network*. Joint Nature Conservation Committee, Peterborough, for Department of the Environment (Northern Ireland), Belfast, and Irish Wildlife Service, Dublin

Weighell, AJ, Donnelly, AP & Calder, K (eds.) (2000) *Directory of the Celtic coasts and seas*. Joint Nature Conservation Committee, Peterborough

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

BELFAST LOUGH - SPECIAL PROTECTION AREA (SPA)

UK9020101

CONSERVATION OBJECTIVES

Including conservation objectives for Inner Belfast Lough ASSI and Outer Belfast Lough ASSI

Document Details

Title	Belfast Lough SPA Conservation Objectives
Prepared By	*Ian Enlander*
Approved By	*Mark Wright*
Date Effective From	*01/04/2015*
Version Number	*V3*
Next Review Date	January 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	05/08/1998	Internal working document	IE	
V1.1	August 2013	Review	IE	
V2.0	February 2015	Draft	IE	Complete review

Site relationship

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

This SPA adjoins Belfast Lough Open Water SPA. It is also contiguous with Outer Ards SPA and the proposed East Coast Marine SPA.

See also Boundary Rationale

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site"**.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4 GENERAL INFORMATION

COUNTY: Antrim and Down

G.R. J353 783 AREA: 432.14 ha.

Inner Belfast Lough ASSI

Outer Belfast Lough ASSI

5 SUMMARY SITE DESCRIPTION

The site comprises the sea lough of Belfast Lough. A range of inter-tidal habitats are present including extensive mud and sand flats, mussel beds, boulder shores and rock platforms. Adjoining habitat includes beaches and limited maritime heath and grasslands notably on the outer southern shore.

5.1 BOUNDARY RATIONALE

The SPA comprises most of Inner and all of Outer Belfast Lough ASSI and is coincident with the Ramsar boundary. All inter-tidal habitat is included together with any adjoining natural or semi-natural habitat. The outer boundary on the northern shore is the limit of wide sediment dominated shore (east of Kilroot the inter-tidal zone is generally narrow and typically boulder dominated). On the southern shore, it is the general limit of rock platform interspersed with mud and sand dominated embayments (east of Horse Rock typically alternates between broad sand beaches with intervening rock shores). Also included is the important brackish lagoon at the Harbour Estate (D2), together with the tidal channel at Dargan Road. All these areas are utilised by Redshank. Roost sites occurring outside the extent of natural or semi-natural habitat have not been included but their importance must not be underestimated. The boundary differs from the Inner Belfast Lough ASSI with the following areas within the ASSI excluded from the SPA

- Victoria Park – formerly tidal but now of limited importance
- Reduced section of Dargan Channel – limited to inter-tidal area only, excluding developed land.
- Inter-tidal area on lands north of Herdman Channel – developed for industry
- Inter-tidal area on lands north of Musgrave Channel – developed for industry
- Former lagoon, D3, in Belfast Harbour Estate - infilled

6 SPA SELECTION FEATURES

Feature Type	Feature	Population (5 year average 1995-2000)	Population at time of designation (ASSI)	Population at time of designation (SPA)	SPA Review population	Common Standards Monitoring baseline
Species	Redshank wintering population [a]	2266		2466	2466	2010 (1993/4-1997/98)
Species	Great Crested Grebe wintering population [a]	1646		Not listed	1385	1015 (1993/4-1997/98)
Habitat[1]	Habitat extent					
Habitat[1]	Roost site locations					

Table 1. List of SPA selection features.

[1] Habitat is not a selection feature but is a factor and is more easily treated as if it were a feature. Feature species are fully dependant on such habitats

NB Great Crested Grebe population now attributed to Belfast Lough Open Water SPA

Notes on SPA features – may not be applicable to all SPAs
The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.
[a] – species cited in current SPA citation and listed on current N2K dataform
[b] – species selected post SPA designation through UK SPA Review 2001
[c] – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

6.1. ADDITIONAL ASSI SELECTION FEATURES

Feature Type (i.e. habitat, species or earth science)	Feature	Size/ extent/ pop	Population at time of designation (ASSI)	Common Standards Monitoring baseline
Habitat	Maritime cliffs and slope (Outer Belfast Lough ASSI)			
Species	Invertebrate assemblage			
Species	Turnstone wintering population		614	503 (1989/90-1995/96)
Species	Cormorant wintering population			276 (1989/90-1995/96)
Species	Shelduck wintering population		589	278 (1989/90-1995/96)
Species	Mallard wintering population			321 (1989/90-1995/96)
Species	Scaup wintering population			29 (1989/90-1995/96)
Species	Eider wintering population			391 (1989/90-1995/96)
Species	Goldeneye wintering population			231 (1989/90-1995/96)
Species	Red-breasted Merganser wintering population			136 (1989/90-1995/96)
Species	Oystercatcher wintering population		6584	4782 (1989/90-1995/96)
Species	Ringed Plover wintering population			93 (1989/90-1995/96)
Species	Lapwing wintering population			1770 (1989/90-1995/96)
Species	Knot wintering population			56 (1989/90-1995/96)
Species	Dunlin wintering population		1440	742 (1989/90-1995/96)
Species	Black-tailed Godwit wintering population		433	135 (1989/90-1995/96)
Species	Curlew wintering population		1271	871 (1989/90-1995/96)
Earth Science	Cultra – Craigavad Carboniferous stratigraphy (Outer Belfast Lough ASSI)			
Earth Science	Grey Point - Horse Rock Lower Palaeozoic stratigraphy (Outer Belfast Lough ASSI)			

Earth Science	Cultra Permian stratigraphy (Outer Belfast Lough ASSI)			

Table 2. List of ASSI features, additional to those that form all or part of SPA selection features. These will be referred to in ANNEX II.

7 CONSERVATION OBJECTIVES

The Conservation Objective for this site is:

To maintain each feature in favourable condition.

For each SPA feature there are a number of component objectives which are outlined in the tables below. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

8 BELFAST LOUGH SPA CONDITION ASSESSMENT 2014

Species	2007/08	2008/09	2009/10	2010/11	2011/12	CSM	5 yr mean	% CSM	Status
Redshank	1163	1381	1837	1331	771	2010	1296.6	**64.51**	Unfavourable

Species	2007/08	2008/09	2009/10	2010/11	2011/12	CSM	5 yr mean	% CSM	Status
Great Crested Grebe	2148	1055	1174	325	780	1015	1096.4	**108.02**	Favourable

9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species
To maintain or enhance the range of habitats utilised by the qualifying species
To ensure that the integrity of the site is maintained;
To ensure there is no significant disturbance of the species and
To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

Feature	Component Objective
Redshank wintering population	As above
Great Crested Grebe wintering population	As above
Habitat extent	To maintain or enhance the area of natural and semi-natural habitats used or potentially usable by Feature bird species (X ha intertidal area), subject to natural processes
Habitat extent	Maintain the extent of main habitat components subject to natural processes
Roost sites	Maintain or enhance sites utilised as roosts

Table 3. SPA Component objectives

9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Maritime cliffs and slope (Outer Belfast Lough ASSI)	To maintain or extend, as appropriate, the area of the coastal habitat mosaic subject to natural processes
Invertebrate assemblage	To be finalised
Turnstone wintering population	As for SPA selection feature objectives
Cormorant wintering population	As for SPA selection feature objectives
Shelduck wintering population	As for SPA selection feature objectives
Mallard wintering population	As for SPA selection feature objectives
Scaup wintering population	As for SPA selection feature objectives
Eider wintering population	As for SPA selection feature objectives
Goldeneye wintering population	As for SPA selection feature objectives
Red-breasted Merganser wintering population	As for SPA selection feature objectives
Oystercatcher wintering population	As for SPA selection feature objectives
Ringed Plover wintering population	As for SPA selection feature objectives
Lapwing wintering population	As for SPA selection feature objectives
Knot wintering population	As for SPA selection feature objectives
Dunlin wintering population	As for SPA selection feature objectives
Black-tailed Godwit wintering population	As for SPA selection feature objectives
Curlew wintering population	As for SPA selection feature objectives
Cultra - Craigavad Carboniferous stratigraphy	Maintain the extent of exposures and access to them subject to natural processes
Grey Point - Horse Rock Lower Palaeozoic stratigraphy	Maintain the extent of exposures and access to them subject to natural processes
Cultra Permian stratigraphy	Maintain the extent of exposures and access to them subject to natural processes

Table 4. ASSI Component objectives

10 MANAGEMENT CONSIDERATIONS

See also Views About Management for relevant ASSIs

Owner/Occupier's – (to be used to identify any key management considerations arising from ownership e.g. owners/organisations having an obvious bearing on conservation matters or from management agreements).

Key landowners and leasees within the SPA, relevant to the site management, include Crown Estate Commissioners, Belfast Harbour Commissioners, NIEA, the following council areas (Belfast, Ards, Antrim and Newtownabbey, Mid and East Antrim), Belfast City Airport, RSPB and Private Individuals. There may be conflicts of interest between the requirements of individual/organisations, both within and adjacent to the SPA, and the site management needs.

Positive management within the site include the creation of two new lagoons north east of the Dargan Road Tip by Belfast Council. Additionally NIEA lease D2 from Belfast Harbour Commissioners which is managed by RSPB. RSPB are also involved in the management of Whitehouse Pools which are owned by Antrim and Newtownabbey Council.

Adjacent commercial operations which may impact upon the SPA include BP Oil, AES (Kilroot Power Station) and Dargan Road Refuse Tip. Kilroot Power Station located adjacent to Belfast Lough SPA is a Part A Process under the Industrial Pollution Control Order. Additionally sewage discharge points from Duncrue Street and Kinnegar Sewage Treatment Works may impact upon the site.

11. MAIN THREATS, PRESSURES, ACTIVITES WITH IMPACTS ON THE SITE OR SITE FEATURES

Notifiable Operations **-** Carrying out <u>any</u> of the Notifiable Operations listed in the schedule could affect the site. The list below is not exhaustive, but deals with the most <u>likely</u> factors that are either affecting Belfast Lough SPA, or could affect it in the future. Although, features 1, 2, 3, 4 etc, are the qualifying SPA features, factors affecting ASSI features are also considered.

Generic site/feature issues – includes activities relating to both Belfast Lough and Belfast Lough Open Water SPAs

Issue	Threat/comments	Local considerations	Action
Adjoining habitat	Particularly important for swans and geese as well as providing high tide roost locations. Significant changes in land management and disturbance are key considerations. Such areas lie without the site making effective management of developments other than those for which planning permission is required, difficult.	Most adjoining habitat utilised by birds other than as roost sites, comprises managed amenity grass. This provides important additional feeding opportunities for selected wader species but would not merit any formal designation.	Assess importance of adjoining and distant playing grounds, fields and other feeding areas. Assess impacts from development.
Aquaculture	Disturbance is a minor consideration unless carried out deliberately to minimise losses to shell-feeding waterfowl. Alteration of natural littoral and sub-littoral communities through seeding, tray/trestle cultivation, dredging/control of pest species. Naturalisation of introduced species – both the shellfish themselves and associated species e.g. algae and disease vectors.	Much of Inner Belfast Lough has active licences for shellfish production.	Liaise with DARD Fisheries Division. Assess all license applications individually. Current extent of licences may significantly alter seabed conditions. Consider the collective impact.
Bait digging – commercial or 'recreational' and shellfish gathering.	Disturbance and impact on sediment and invertebrate fauna – may be positive through making deeper prey items available on surface. Shellfish gathering represents a net loss to the system in terms of biomass. Generally unregulated.	Appears to be organised on a commercial basis and is widespread.	Monitor scale of activity. Consider the collective impact.
Boating activity – commercial	Disturbance and potential for impact from high-speed liners.	Major shipping channel plus cross-lough activity imminent. The former is long-established.	Formal consultation likely relating to new schemes. Need to assess new trans-lough impact. Consider the collective impact.
Boating activity – recreational	Disturbance and potential for impact especially from jet skis. Generally relevant to particularly sensitive areas within site.	Sailing clubs at Carrickfergus, Whiteabbey, Holywood and Cultra. Additional slipways and quays.	Liaise with appropriate authority with codes of good practice, zoning and use of by-laws as necessary. Consider the collective impact.
Coastal protection schemes	Where there is no history of this, it impacts on natural beach systems with loss of habitat.	Much of north and inner shores are heavily engineered. Balance in natural rock outcrop. No ongoing coastal erosion problems noted.	Liaise with Planning Service and other parties with an involvement in coastal management.
Dredging	Generally only an issue in relation to commercial shipping	Major capital dredging programme	Liaise with port authority and Environmental

	channels. Issues include disturbance, remobilisation of contaminated sediment and spoil dumping zones.	ongoing. Established ongoing maintenance programme.	Protection as required with regard to water quality issues and pollution incidents.
Fishing – commercial or recreational	Minimal disturbance consideration but may represent 'competition' for piscivorous birds. Represents a net loss to the system in terms of biomass.	Most commercial activity related to aquaculture. Recreational fishing not deemed to be a problem.	Liaise with DARD and fishing authority as required. Liaise with angling clubs as required.
Habitat extent – inter-tidal	Loss of habitats through development, changes in coastal processes. Loss of inter-tidal habitat is a critical issue as this is the feeding zone for the majority (numbers and species) of birds.	There has been extensive loss of inter-tidal habitat historically. Inner lough mudflats particularly vulnerable.	Assess planning applications. Monitor using aerial photography.
Habitat extent – open water	Loss likely to be limited but expansion of commercial port facilities can impact on key localities.	Ongoing and further planned harbour developments will reduce open water area. Probably insignificant.	Assess planning applications. Consider the collective impact.
Habitat quality – inter-tidal	Alteration of habitat quality through diminution of water quality, invasive species or changes in coastal processes.	Historically impacted by industrial and sewerage effluent.	Assess planning applications. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
Habitat quality – open water	Alteration of habitat quality through diminution of water quality or invasive species.	Historically impacted by industrial and sewerage effluent. Vulnerable to pollution incidents from both industry and shipping.	Assess planning applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
High tide roosts	An essential component of sites hosting waders. Development of adjoining ground or actual traditional roost localities may adversely impact on the sites carrying capacity. Many such sites lie without the site making effective management of developments, other than those for which planning permission is required, difficult.	Localities should be mapped. Loss of wader roost sites within the Inner Lough has been notable.	Assess planning applications. Identify key areas and promote site management schemes. Review use of Wildfowl Refuges. Consider the collective impact.
Introduced species	Range of threats from loss of habitat, feeding competition, disease, hosting species presenting a threat outside of the site.	Not evident but given nature of the site, could be an issue through commercial shipping and aquaculture.	Liaise with appropriate authority. Consider feasibility of elimination. Participate in national/international initiatives.
Recreational activities.	Disturbance is the main consideration although vehicle access may also lead to beach compaction and impacts on beachhead habitats.	Shoreline has been heavily used for recreational activities over long timescale. Cumulative disturbance impacts (e.g.	Liaise with local authorities and other managing parties.

		boating, wildfowlers, walkers, dogs etc) may be a significant factor for wintering bird populations impacting on both feeding (inter-tidal) and roosting birds	
Research activities.	Census and ringing activities especially have the potential to impact on bird populations, particularly at breeding sites.	Past cannon netting has occurred with ongoing high and low tide WEBS counts.	Census and ringing activities to be undertaken by competent individuals, appropriately trained. In case of ringers, appropriate license must be held.
System dynamics	Cuts across many other issues. Dynamic systems, especially coastal, can be affected by many factors especially engineered structures and significant changes in dominant wind direction or storm frequency. Many systems may indeed still be undergoing responses to historical developments e.g. partial reclamation, seawall construction. Changes may include alteration in sediment grade, shifts in patterns of erosion and deposition etc. Consequences for habitat and species utilisation of the site can be profound.	Main considerations are historical reclamation, especially along the north shore and Sydenham areas, together with widespread coastal engineering works and ongoing development within the Belfast harbour area. Sediment responses may be expected. Changes in water quality have led to an expansion of mussel beds, in turn altering system behaviour. Expanding aquaculture represents an alteration to substrate.	Human induced change should be minimised. Assess planning applications and liaise with other relevant authorities. Ad hoc dumping and removal of natural materials should be managed. Major natural shifts in system behaviour may be identified through analysis of aerial photographs and site monitoring. Major and consistent changes to patterns of habitat distribution and bird utilisation of the site should be noted.
Wildfowling	Has direct effect through bag sizes/bag species and wider disturbance issue. Issue of regulated (through recognised shooting clubs) and ad hoc shooters. Lead shot on grazing lands.	Very limited shooting occurs off the north foreshore dump – presumably ad hoc.	Liaise with Belfast Council who control access to dump, if this is felt to be a problem.

Table 5. List of site/feature management issues

12. MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook (To be written).

Maintain the integrity of the site. Undertake Site Integrity Monitoring (SIM) at least annually to ensure compliance with the SPA/ASSI schedule. The most likely processes of change (e.g. dumping, infilling, gross pollution) will either be picked up by Site Integrity Monitoring, or will be comparatively slow (e.g. change in habitat such as growth of mussel beds). More detailed monitoring of site features should therefore be carried out by Site Condition Assessment on a less frequent basis (every 6 years initially to pick up long-term or more subtle changes). A baseline survey will be necessary to establish the full extent of the communities present together with the current condition of the features, against which all further condition assessments will be compared.

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial photographs to determine site morphological changes. Methodology for this is being developed.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that no sand extraction or dumping has been carried out within the SAC boundary. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (dune, saltmarsh, species). This will detect if the features are in favourable condition or not. See Annexes I and II for SAC and Additional ASSI Features respectively.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

12.2. ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, world. Refer to BTO ALERT limits etc. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline (e.g. eutrophication) is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere e.g. breeding terns. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.
3. For passage/wintering species assess breeding information. No site action if site decline is due to breeding ground failure, unless breeding ground failure is related to poor adult condition resulting from factors affecting wintering / passage birds.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance e.g. mudflats reduced by encroaching mussel beds.
6. Assess prey availability. Issues to consider are both within site e.g. water quality, broad site management, and without site e.g. climatically driven factors.
7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.
8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for breeding seabird and wader sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

13. SELECTION FEATURE POPULATION TRENDS

Site trends are reported using running 5 year means of annual maximum count (WeBS data). Long term trends in index values have been used to assess changes in overall wintering

populations for Northern Ireland and UK (WeBS data). Caution is always necessary in the interpretation and application of waterbird counts given the limitations of these data. The reduced number of both sites and birds in Northern Ireland, result in a greater degree of fluctuation. Trends for Republic Ireland are based on five years of data 1994-1999 (I-WeBS data). Consequently short-term fluctuations apparent in the data series may reflect changes in between year productivity, or other short term phenomena, rather than being indicative of a real change in a population.

Updated information on site, regional, national and international population trends for feature species will be contained in the most recent SPA site condition assessment report.

SPECIES	SITE TREND	NI TREND	ROI TREND	UK TREND	COMMENTS
Redshank	Stable	Fluctuating-Incr	Stable	Stable-Fluctuating	
Great Crested Grebe	Stable	Increasing	Moderate Fluctuatio	Increasing-Stable	Stable circa 1990 in UK.

References (to be completed)

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds). 2001.*The UK SPA network: its scope and content* JNCC, Peterborough.

Way, L.S., Grice, P., MacKay, A., Galbraith, C.A., Stroud, D.A. & Pienkowski, M.W. 1993. Ireland's internationally important bird sites: a review of sites for the EC Special Protection Area network. JNCC, Peterborough, 231 pp.

The Wetland Bird Survey: Wildfowl and Wader Counts. BTO/WWT/RSPB/JNCC. Various years.

Wildfowl and Wader Counts, WWT and BTO. Various years.

ANNEX I

Feature (SPA) – Wintering waterfowl

* = primary attribute. One failure among primary attribute = unfavourable condition
= Optional factors – these can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
*Redshank wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Great Crested Grebe wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Non-avian factors

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Habitat extent	Extent of other habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures where this would lead to different usage by notified species.
# Roost sites	Location of roost sites	Maintain all locations of roost sites.	Map roost site locations. Visit once every reporting cycle to ensure sites are available

ANNEX II

Feature (ASSI)

* = primary attribute. One failure among primary attribute = unfavourable condition
= Optional factors – these can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
Maritime cliffs and slopes			
*Morphological naturalness (extent, mobility and physical structure)	Ensure that any loss in extent and change in system dynamics is only due to natural processes	No human induced developments impacting on the natural system or constraining it. Maintain the range of physical conditions arising from variation in geology and geomorphology, profile, stability, degree of maritime exposure, drainage, aspect, geographical location and history of management.	Impossible to precisely measure extent of each NVC type, many are represented. The detailed fluxes between communities which is likely to happen is beyond the scope of condition assessment.
Sward Structure:	Litter in a more or less continuous layer, distributed either in patches or in one larger area. This dense thatch-like material. Estimate % in 2x2.	<10%	Outside target indicates insufficient grazing. (See comments on grazing below)
Sward Structure:	Bare ground or sand **not rock** extent, noticeable without disturbing the vegetation.	<5%	Bare patches are the natural result of localised herbivore activity especially rabbit burrows. Such areas provide niche for more ruderal species.
Sward Composition:	Grass:Herb ratio	40 - 90% herbs	
*Vegetation –maritime rock crevice and cliff ledge communities.	At least 4 of the species below recorded as occasional: **Armeria maritima, Silene vulgaris maritima, Festuca rubra**,	Maintain maritime rock- crevice and cliff- ledge communities – i.e. MC1c	Individual sites will exhibit different patterns and range of of vegetation types depending on site characteristics Surveys may be needed to establish the full range for

(Where present on a site)	Spergularia rupicola, S. maritima, Daucus carota, **Plantago coronopus, P. maritima**, Sedum anglicum and **orange Xanthoria lichens**	and MC5c.	each site.
*Vegetation composition sea-bird cliff communities. (Where present on a site)	At least 3 of the species below recorded as occasional: Festuca rubra, Matricaria maritima, Beta vulgaris maritima, Atriplex prostrata, Stellaria media, Rumex acetosa, Holcus lanatus and Atriplex hastata	Maintain range of sea-bird cliff communities - i.e. MC6 and MC7.	Individual sites will exhibit different patterns and range of vegetation types depending on site characteristics. Surveys may be needed to establish the full range for each site.
*Vegetation composition maritime grassland communities. (Where present on a site)	At least 6 of the species below recorded as occasional: Alchemilla spp, Carex flacca, Small sedge spp, Campanula rotundifolia, Primula vulgaris, Euphrasia vulgaris, Thymus polytrichus, Galium verum, Ranunculus bulbosus, Linum catharticum, Koeleria macrantha, Lotus corniculatus, Polygala sp, Potentilla erecta, Succisa pratensis, Pilosella officinalis, Veronica officinalis.	Maintain range of maritime grassland communities – i.e. MC8, MC9a, MC9c, MC9d, MC9e (including non-maritime forms of these).	Individual sites will exhibit different patterns and range of vegetation types depending on site size, history, substrate and patterns of human use. Surveys may be needed to establish the full range for each site.
*Vegetation composition-maritime heath communities. (Where present on a site)	At least 3 of the species below recorded as occasional: Festuca ovina, Plantago maritima, Lotus corniculatus, Scilla verna, Calluna vulgaris, Thymus praecox, Potentilla erecta. Record species composition at selected sample points across site.	Maintain range of maritime heath communities – i.e. H7a and b and H10d	Maritime heaths can show some affinities with lowland heaths in relation to quality. Reference should be made to the appropriate guidance for dry heaths, taking into account the maritime influence and the effects of exposure and slat deposition as factors affecting growth rates and succession in.
*Vegetation of soft cliffs and other communities. (Where present on a site)	Ensure that the general distribution of communities is broadly maintained	Maintain range of transitions and other communities – the area is notable for the significant range of NVC communities.	Aerial photographs will pick up spread of scrub and bracken. The NVC survey is unlikely to be repeated but revisit of condition assessment points will pick up changes. This is probably a site where more detailed work should also be carried out.
Vegetation Structure	Sward height 4 – 12 cm during summer	Maintain short sward in areas of	It is clear from discussion with the site manager for

	(July/August) over 65% of the area	species-rich vegetation * This to be assessed in conjunction with other short, species-rich grassland communities, including SD8	Killard, that over the past number of years due to a variety of mitigating circumstances including the Foot and Mouth outbreak of 2001, that the winter grazing hasn't been as consistent as usual. This has already been rectified and the 2003/04 winter grazing of the site is already complete at the time of writing (Jan 04).
Vegetation negative indicators	Ensure that the more species-rich elements of the cliff vegetation are maintained Aerial photography to record maximum extent of scrub, bracken, etc.	No further increase in bracken, scrub, rank grasses, ruderal species (Thistles, Nettle etc).	Changes in the extent and cover of invasive species usually indicate a change in conditions on a site, often as a result of anthropogenic activities which may promote rapid expansion or increase in cover. These are often initiated by changes in management. Some tall ruderal communities may be present naturally on a cliff site.
Invertebrates			
Invertebrate assemblage	To be finalised	To be finalised	To be finalised
Ornithological			
Turnstone wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Cormorant wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Shelduck wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Mallard wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Scaup wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Eider wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Goldeneye wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Red-breasted Merganser wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Oystercatcher wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Ringed Plover wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Lapwing wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Knot wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Dunlin wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Black-tailed Godwit wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Curlew wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Earth Science			

Cultra - Craigavad Carboniferous stratigraphy		Maintain the extent of exposures and access to them subject to natural processes	
Grey Point - Horse Rock Lower Palaeozoic stratigraphy		Maintain the extent of exposures and access to them subject to natural processes	
Cultra Permian stratigraphy		Maintain the extent of exposures and access to them subject to natural processes	

CARLINGFORD LOUGH - SPECIAL PROTECTION AREA (SPA)

UK9020160

CONSERVATION OBJECTIVES

Including conservation objectives for Carlingford Lough ASSI

Document Details

Title	Carlingford Lough SPA Conservation Objectives
Prepared By	*Ian Enlander*
Approved By	*Mark Wright*
Date Effective From	
Version Number	*V3*
Next Review Date	January 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	09/03/1998	Internal working document	IE	
V1.1	August 2013	Review	IE	
V2.0	February 2015	Draft	IE	Complete review
V2.1	April 2015	Draft	IE	Marine extension

Site relationship

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

This SPA also includes the Carlingford Lough SPA marine extension defined for foraging Sandwich and Common Tern originating from the tern colony within the site.

The SPA also includes the Carlingford Lough Ramsar site.

See also Boundary Rationale

The SPA is also close to, or adjoins, European designations in the Republic of Ireland. These are Carlingford Lough SPA and Carlingford Lough SAC. Dundalk Bay SPA and Dundalk Bay SAC are also close to the SPA.

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site"**.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4 GENERAL INFORMATION

COUNTY: Down

Area:	114.05km^2	**Geographic co-ordinates (land area):**	54 03 00 N 06 07 00 W
		Geographic co-ordinates (marine area):	54 03 42N 05 55 24W

5 SUMMARY SITE DESCRIPTION

Carlingford Lough ASSI extends from Cranfield Point to the limit of main inter-tidal mudflats upstream towards Newry. The SPA extends from Soldiers Point to Killowen Point. The offshore islands at Blockhouse, Green Island and off Greencastle Point fall within both designations. Habitat is almost exclusively inter-tidal with the exception of the islands mentioned and coastal saltmarsh and wet grasslands in Mill Bay. The site also

includes areas of open water within the lough itself (seaward of Killowen Point, limited to approximately the mid-lough line) and coastal waters northwards to the Bloody Bridge area on the Mournes Coast.

Within Carlingford Lough the seabed is dominated by muds and gravelly muddy sands in shallow waters, grading into cobbles and boulderfields towards the mouth of the Lough which is a topographically and hydrodynamically complex area.

Bedrock outcrops, boulders and cobbles characterise the seabed immediately offshore of the mouth of Carlingford Lough, with such reef extending up to 4km offshore of the Lough mouth. Extensive fringing bedrock and stony reef is found along much of the coastline adjacent to Kilkeel and Ardglass, with gravels, sands and mixed coarse sediments found further offshore, towards the offshore limit of the SPA. This region includes a notable area of gravels known as the "herring gravels", which is an important site for herring (*Clupea harengus*) spawning. The seabed slopes to approximately 25m depth at the Irish Sea offshore boundary of the SPA.

5.1 BOUNDARY RATIONALE

The ASSI includes the main inter-tidal habitats that support nationally significant wintering waterfowl populations together with other interest features. The SPA is limited to those areas regularly used by Light-bellied Brent Geese together with the tern nesting sites (those islands both currently used, used in the past, with the potential for use or in close proximity to any of these). Roost sites occurring outside the extent of natural or semi-natural habitat have not been included but their importance must not be underestimated.

The marine area has been defined on the basis of predictive modelling work undertaken by JNCC at a UK level. This uses a range of parameters to identify the extent of the marine area associated with tern colonies and used by those birds for foraging activity. The actual presence of terns actively foraging in the marine area was then validated by land- and boat-based observations.

The terrestrial section of the SPA includes all lands and intertidal areas as shown on the designation map. It also includes the offshore islands of Green Island and Blockhouse, together with their associated islets.

The marine section of the site includes areas of open water within the lough itself and in the area of the lough mouth seawards to the limits of territorial waters as well as coastal waters northwards to the Bloody Bridge area on the Mournes Coast. The landward boundary for this area is the MEAN LOW WATER MARK.

The Ramsar boundary is coincident with the terrestrial component of the SPA.

6 SPA SELECTION FEATURES

Feature Type	Feature	Population (5 year mean 1995-2000) except where stated	Population at time of designation (ASSI)	Population at time of designation (SPA)	SPA Review population	Common Standards Monitoring baseline
Species	Sandwich Tern [a]	575 pairs 5 year mean (2010–2014)		575	575	270 (1994-1998)
Species	Common Tern [b]	339 pairs 5 year mean (2010–2014)	218	339	339	250 (1994-1998
Species	Light-bellied Brent Goose [a]	435 5yr peak mean 2007/08 – 2011/12	225	319	319	89 (1993/94-1997/98)
Habitat[1]	Habitat extent					
Habitat[1]	Roost site locations					

Table 1. List of SPA selection features.

[1] Habitat is not a selection feature but is a factor and is more easily treated as if it were a feature. Habitat extent is also used for breeding birds reported as an area.

Notes on SPA features – may not be applicable to all SPAs

The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.

[a] – species cited in current SPA citation and listed on current N2K dataform

[b] – species selected post SPA designation through UK SPA Review 2001

[c] – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

6.1 ADDITIONAL ASSI SELECTION FEATURES

Feature Type (i.e. habitat, species or earth science)	Feature	Size/ extent / pop.	Population at time of designation (ASSI)	Common Standards Monitoring baseline
Habitat	Intertidal mudflats			
Habitat	Coastal saltmarsh			
Species	Great Crested Grebe		200	33 (1990/91-1995/96)
Species	Shelduck		233	165 (1990/91-1995/96)
Species	Scaup		342	197 (1990/91-1995/96)
Species	Red-breasted Merganser		36	9 (1990/91-1995/96)
Species	Oystercatcher		850	373 (1990/91-1995/96)
Species	Dunlin		1602	200 (1990/91-1995/96)
Species	Redshank		617	557 (1990/91-

				1995/96)
Species	Invertebrate assemblage			
Earth Science	Pleistocene			
Earth Science	Carboniferous Stratigraphy			

Table 2. List of ASSI features, additional to those that form all or part of SPA selection features. These will be referred to in ANNEX II.

7. CONSERVATION OBJECTIVES

The Conservation Objectives for this site are:

To maintain each feature in favourable condition.

For each feature there are a number of component objectives which are outlined in the tables below. Component objectives for Additional ASSI Selection Features are not yet complete. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

8 CARLINGFORD LOUGH SPA CONDITION ASSESSMENT 2014

Species	Year 1	Year 2	Year 3	Year 4	Year 5	CSM	5 yr mean	% CSM	Status
Light-bellied Brent Goose	538	508	542	483	626	189	539.40	**285.40**	Favourable
Common Tern (B)	0	10	?	84	130	250	56.00	**22.40**	Unfavourable
Sandwich Tern (B)	290	0	0	0	78	270	73.60	**27.26**	Unfavourable

9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species
Fledging success sufficient to maintain or enhance population
To maintain or enhance the range of habitats utilised by the qualifying species
To ensure that the integrity of the site is maintained;
To ensure there is no significant disturbance of the species and
To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

Feature	Component Objective
Sandwich Tern breeding population	As above
Sandwich Tern breeding population	Fledging success sufficient to maintain or enhance population
Common Tern breeding	As above

population	
Common Tern breeding population	Fledging success sufficient to maintain or enhance population
Light-bellied Brent Goose wintering population	As above
Habitat Extent	To maintain or enhance the area of natural and semi-natural habitats used or potentially usable by Feature bird species (780 ha intertidal area), (breeding areas 0.62 ha) subject to natural processes
Habitat Extent	Maintain the extent of main habitat components subject to natural processes
Roost sites	Maintain or enhance sites utilised as roosts

Table 3. SPA Component objectives

Tern nesting localities current and historical (TO BE FINALISED)

Green Island
Greencastle Point

Table 4. Tern nesting locations within the SPA

9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Intertidal mud/sand	
Coastal saltmarsh	
Great Crested Grebe	As for SPA selection feature objectives
Shelduck	As for SPA selection feature objectives
Scaup	As for SPA selection feature objectives
Red-breasted Merganser	As for SPA selection feature objectives
Oystercatcher	As for SPA selection feature objectives
Dunlin	As for SPA selection feature objectives
Redshank	As for SPA selection feature objectives
Pleistocene	
Carboniferous Stratigraphy	

Table 4. ASSI Component objectives

10. MANAGEMENT CONSIDERATIONS

See also Views About Management for relevant ASSI

Owner/Occupier's – (to be used to identify any key management considerations arising from ownership e.g. owners/organisations having an obvious bearing on conservation matters or from management agreements).

Approximately 35 individuals/organisations own land within the SPA. Major landowners and leasees within the SPA, relevant to the site management, include Mourne Ltd, Crown Estate Commissioners, National Trust and Private Individuals. The National Trust own areas of offshore islands. The RSPB are responsible for management of the tern colony. The terns at time of writing solely use Green Island which has a well-documented history of erosion and is subject to over-washing by storm waves. Stabilisation works may be required in the future.

A more immediate management issue is the threat posed by large species of gull (particularly Greater Black-backed Gull) roosting and breeding on the island. This results in disturbance to the nesting terns and predation of eggs and young. This is being

addressed through selective destruction of gull nests and eggs and broadcasting gull alarm calls.

There may be conflicts of interest between the requirements of individual/organisations, both within and adjacent to the SPA, and the site management needs.

Responsibility for the marine area (sea bed) falls principally to Crown Estate Commissioners. A range of other bodies have a role for navigation, fishing, and health and safety issues.

Adjacent commercial operations which may impact upon the SPA include the ports at Warrenpoint and Greenore. Future expansion of port facilities and the proposed ferry from Greencastle, may lead to loss of the intertidal area within the SPA and result in disturbance to the qualifying bird populations.

The Carlingford Lough marine extension includes waters adjoining the commercial fishing ports at Kilkeel and Annalong. Current activities at these ports will not be affected by the enlarged site while any future development plans, as for any proposals with the potential to impact on the site interests, will be assessed against the site Conservation Objectives.

An assessment of the site boundary against commercial fisheries activity suggests that there is little activity within the site. Given that these sites are already important and of sufficient quality to support the birds, it may be reasonable to assume that current fishing in many of these areas is largely compatible with the birds' interest. However in cases where a type and level of fishing activity might impact upon the birds, a review may be needed so that authorities can establish the extent to which the fishing activities do influence the birds' interests. A fuller assessment of the distribution of fishing activities and the relationship between commercial stocks and site feature prey requirements will be undertaken.

There are no management agreements within the SPA.

11. MAIN THREATS, PRESSURES, ACTIVITES WITH IMPACTS ON THE SITE OR SITE FEATURES

Notifiable Operations **-** Carrying out <u>any</u> of the Notifiable Operations listed in the schedule could affect the site. The list below is not exhaustive, but deals with the most <u>likely</u> factors that are either affecting Carlingford Lough SPA, or could affect it in the future. Although, features 1, 2, 3, 4 etc, are the qualifying SPA features, factors affecting ASSI features are also considered.

Generic site/feature issues

Issue	Threat/comments	Local considerations	Action
Adjoining habitat	Particularly important for swans and geese as well as providing high tide roost locations. Significant changes in land management and disturbance are key considerations. Such areas may lie without the site making effective management of developments other than those for which planning permission is	Appears to be of minimal consequence other than for high tide roosts.	Assess planning applications. Identify key areas and promote site management schemes. Review use of Wildfowl Refuges. Consider the collective impact.

	required, difficult.		
Aquaculture	Disturbance is usually a minor consideration unless carried out deliberately to minimise losses to shell-feeding waterfowl. Alteration and loss of natural littoral and sub-littoral communities through seeding, tray/trestle cultivation, dredging/control of pest species. Naturalisation of introduced species – both the shellfish themselves and associated species e.g. algae and disease vectors.	Existing licences widespread both within and outside SPA.	Liaise with DARD Fisheries Division. Assess all license applications individually. Consider the collective impact.
Bait digging – commercial or 'recreational' and shellfish gathering.	Disturbance and impact on sediment and invertebrate fauna – may be positive through making deeper prey items available on surface. Shellfish gathering represents a net loss to the system in terms of biomass. Generally unregulated.	Degree unknown	Monitor scale of activity. Consider the collective impact.
Beach sand and gravel extraction.	Disturbance issue together with loss of biologically active upper sediments. Most beach systems are sedimentalogically closed thus material removed may not be renewed making the activity unsustainable. May lead to changed sediment character of beach ultimately impacting on birds.	Degree unknown. Offshore gravel islands are subject to erosion and so no sand or gravel extraction should be permitted that could impact on these.	'Permitted' extraction of beach sand and gravel should be halted through management agreements. Ad hoc removal should be addressed in conjunction with local authorities and through marine regulations.
Boating activity – commercial	Disturbance and potential for impact from high-speed shipping.	Active ports at Greenore and Warrenpoint with proposed ferry operating from Greencastle. Disturbance and enhanced wash impact on islands especially are the main consideration.	Formal consultation likely relating to new schemes through planning and marine regulation. Consider the collective impact.
Boating activity – recreational	Disturbance and potential for impact especially from jet skies. Generally relevant to particularly sensitive areas within site.	Current level of activity is unknown – main concern is of disturbance at tern colonies.	Liaise with appropriate authority with codes of good practice, zoning and use of by-laws as necessary. Consider the collective impact.
Coastal protection schemes	Where there is no history of this, it impacts on natural beach systems with loss of habitat.	Mainly natural coastal transitions except around Greencastle. Proposed ferry development may bring need for additional works.	Liaise with planning and marine licensing authorities together with other parties with an involvement in coastal management.
Cull of fledglings/ young	Licensed selective culling of species impacting on 'more desirable' species. Licensed by NIEA.	No activity at present – may be required as part of the management of the tern colonies.	Consider the collective impact.
Dredging	Generally only an issue in relation to commercial shipping channels. Issues include disturbance,	Current position unknown. Main channel activity presumably is	Liaise with port authority and licensing bodies as required with regard to water quality issues and

	remobilisation of contaminated sediment and spoil dumping zones.	long-established. Dredging to accommodate the proposed ferry is close to the semi-stable tern islands and must be assessed very carefully.	pollution incidents.
Fishing – commercial or recreational	Minimal disturbance consideration but may represent 'competition' for piscivorous birds. Represents a net loss to the system in terms of biomass.	Most commercial activity related to aquaculture. Current position unclear but there is little or no overlap between commercial stock and tern prey species. Recreational fishing not deemed to be a problem.	Liaise with DARD and fishing authority as required. Liaise with angling clubs as required.
Habitat extent – inter-tidal	Loss of habitats through development, changes in coastal processes. Loss of inter-tidal habitat is a critical issue as this is the feeding zone for the majority (numbers and species) of birds.	Limited development pressure except from ferry proposal.	Assess planning and marine licensing applications. Monitor using aerial photography.
Habitat extent – open water	Loss likely to be limited but expansion of commercial port facilities can impact on key localities.	Limited development pressure except from ferry proposal.	Assess planning and marine licensing applications. Consider the collective impact.
Habitat quality – inter-tidal	Alteration of habitat quality through diminution of water quality, invasive species or changes in coastal processes.	Main concern relates to Spartina.	Assess planning and marine licensing applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
Habitat quality – open water	Alteration of habitat quality through diminution of water quality or invasive species.	Commercial activity is centred on Warrenpoint and Greenore. No obvious impacts on SPA.	Assess planning and marine licensing applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
Habitat extent and quality-breeding	Alteration of habitat area or quality through inappropriate use or absence of site management.	Historical tern colonies impacted by erosion. May require stabilisation and periodic 'rebuilding'.	Assess needs of breeding species. Liaise with RSPB and other owners or appropriate authority to adjust or introduce site management if necessary.
Introduced species	Range of threats from loss of habitat, feeding competition, disease, hosting species presenting a threat outside of the site.	Issues relate to aquaculture and Spartina. Spartina is the main issue with spread resulting in loss of more significant inter-tidal and saltmarsh habitats.	Liaise with appropriate authority. Consider feasibility of elimination. Participate in national/international initiatives.
Marine renewable energy developments	Potential for disturbance and direct impact to terns in flight and actively feeding (diving)	No site related proposals at time of writing. Potential for impact from schemes elsewhere	Assess planning and marine licensing applications. To be addressed through HRA process.

Predation.	Mainly of concern on bird breeding sites.	Need to assess large gull impact on tern colony. See culling issue above.	Liaise with RSPB. Carry out appropriate site management.
Recreational activities.	Disturbance is the main consideration. Apart from disturbance of birds themselves, breeding birds, especially seabirds, are vulnerable to disturbance as absence of adults can often result in predation or chilling of eggs/young with a reduction/loss in productivity success.	Greencastle area is an important tourism/recreational destination but terns seem unaffected. Issue as it relates to Brent is unknown. Shoreline has been heavily used for recreational activities over long timescale. Cumulative disturbance impacts (e.g. boating, wildfowlers, walkers, dogs etc) may be a significant factor for wintering bird populations impacting on both feeding (inter-tidal) and roosting birds	Liaise with local authorities and other managing parties.
Research activities.	Census and ringing activities especially have the potential to impact on bird populations, particularly at breeding sites.	Routine winter WEBS counts and summer breeding census of terns nests are undertaken.	Census and ringing activities to be undertaken by competent individuals, appropriately trained. In case of ringers, appropriate license must be held.
Seaweed harvesting	Either cutting living weed or gathering storm debris. The former, depending on scale and frequency, may fundamentally impact on shore communities and their ability to support waterfowl. The latter, represents a net loss to the system in terms of habitat and biomass.	Current position unclear	'Permitted' harvesting may be undertaken and should be reviewed with regard to location, scale and assessed for impacts.
Sand dredging - commercial	Not actively pursued in the NI marine environment but pressures to seek alternative sources to terrestrial/freshwater sites may make this potentially viable.	Potential to impact seabed habitat of importance to seabird prey species.	Liaise with commercial operators, planning and other regulatory authorities.
System dynamics	Cuts across many other issues. Dynamic systems, especially coastal, can be affected by many factors especially engineered structures and significant changes in dominant wind direction or storm frequency. Many systems may indeed still be undergoing responses to historical developments e.g. partial reclamation, seawall construction. Changes may include alteration in sediment grade, shifts in patterns of erosion and deposition etc. Consequences for habitat and species utilisation of the site can be profound.	Coastal engineering at Greencastle, Cranfield area and along the coastline northwards to the boundary limits. Expanding aquaculture represents an alteration to substrate.	Human induced change should be minimised. Assess planning applications and liaise with other relevant authorities. Ad hoc dumping and removal of natural materials should be managed. Major natural shifts in system behaviour may be identified through analysis of aerial photographs and site monitoring. Major and consistent changes to patterns of habitat distribution and bird utilisation of the site should be noted. Green Island, one of the Tern nesting sites, is subject to erosion. Action to stabilise may be necessary in the future.
Wildfowling	Has direct effect through bag	Extent of activity is	Liaise with relevant shooting bodies

	sizes/bag species and wider disturbance issue. Issue of regulated (through recognised shooting clubs) and ad hoc shooters. Lead shot on grazing lands.	unclear.	(BASC especially) to define areas for wildfowling, the development of Wildfowlers Codes of Good Practice and encourage bag returns. Support pressure to stop use of lead shot. Review use of Wildfowl Refuges. Consider the collective impact.

Table 5. List of site/feature management issues

12. MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook (To be written).

Maintain the integrity of the site. Undertake Site Integrity Monitoring (SIM) at least annually to ensure compliance with the SPA/ASSI schedule. The most likely processes of change (e.g. dumping, infilling, gross pollution) will either be picked up by Site Integrity Monitoring, or will be comparatively slow (e.g. change in habitat such as growth of mussel beds). More detailed monitoring of site features should therefore be carried out by Site Condition Assessment on a less frequent basis (every 6 years initially to pick up long-term or more subtle changes). A baseline survey will be necessary to establish the full extent of the communities present together with the current condition of the features, against which all further condition assessments will be compared.

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial photographs to determine site morphological changes. Methodology for this is being developed.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that no sand extraction or dumping has been carried out within the SAC boundary. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (dune, saltmarsh, species). This will detect if the features are in favourable condition or not. See Annexes I and II for SAC and Additional ASSI Features respectively.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

12.2. ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, world. Refer to BTO ALERT limits etc. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline (e.g. eutrophication) is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere e.g. breeding terns. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.
3. For passage/wintering species assess breeding information. No site action if site decline is due to breeding ground failure, unless breeding ground failure is related to poor adult condition resulting from factors affecting wintering / passage birds.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance e.g. mudflats reduced by encroaching mussel beds.
6. Assess prey availability. Issues to consider are both within site e.g. water quality, broad site management, and without site e.g. climatically driven factors.
7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.

8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for breeding seabird and wader sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

13. SELECTION FEATURE POPULATION TRENDS

Site trends are reported using running 5 year means of annual maximum count (WeBS data). Long term trends in index values have been used to assess changes in overall wintering populations for Northern Ireland and UK (WeBS data). Caution is always necessary in the interpretation and application of waterbird counts given the limitations of these data. The reduced number of both sites and birds in Northern Ireland, result in a greater degree of fluctuation. Trends for Ireland are based on five years of data 1994-1999 (I-WeBS data). Consequently short-term fluctuations apparent in the data series may reflect changes in between year productivity, or other short term phenomena, rather than being indicative of a real change in a population.

SPECIES	SITE TREND	NI TREND	ROI TREND	UK TREND	COMMENTS
Sandwich Tern	-	-	-	-	Not known, to be compiled.
Common Tern	-	-	-	-	Not known, to be compiled.
Light-bellied Brent Goose	Fluctuating	Fluctuating	Slight Fluctuation	-	

ANNEX I

Feature (SPA) – Breeding Seabirds

= primary attribute. One failure among primary attribute = unfavourable condition
= optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
* Sandwich Tern breeding population	Apparently occupied nests	No significant decrease in Sandwich Tern breeding population against national trends	Requirement that annual data is collected, then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Sandwich Tern fledging success	Annual survey (as per Gilbert *et al*. 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined
* Common Tern breeding population	Apparently occupied nests	No significant decrease in Common Tern breeding population against national trends	Requirement that annual data is collected , then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Common Tern fledging success	Annual survey (as per Gilbert *et al*. 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined

Non-Avian Factors – habitat

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures or breeding sites, where this would lead to different usage by notified species.

Feature (SPA) – Wintering Waterfowl

Attribute	Measure	Targets	Comments
* Light-bellied Brent Goose wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Non-Avian Factors – habitat

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural	Maintain the area of natural and semi-natural	Monitor once every reporting cycle by aerial photography.

	and semi-natural habitat	habitats used by notified species, within the SPA, subject to natural processes.	
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures where this would lead to different usage by notified species.
# Roost sites	Location of roost sites	Maintain all locations of roost sites.	Map roost site locations. Visit once every reporting cycle to ensure sites are available

ANNEX II

Feature (ASSI)

* = primary attribute. One failure among primary attribute = unfavourable condition
= optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
Intertidal mud/sand			
Coastal saltmarsh			
Great Crested Grebe	Bird numbers	No significant decrease in population against national trends, caused by on-site factors	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Shelduck	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Scaup	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Red-breasted Merganser	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Oystercatcher	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Dunlin	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Redshank	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Pleistocene			
Carboniferous Stratigraphy			

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date

Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK

Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:
Designated: 09 March 1998 / updated 12 May 2005

3. Country:
UK (Northern Ireland)

4. Name of the Ramsar site:
Carlingford Lough

5. Map of site included:
Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □

b) digital (electronic) format (optional): Yes

6. Geographical coordinates (latitude/longitude)**:**
54 03 00 N 06 07 00 W

7. General location:
Include in which part of the country and which large administrative region(s), and the location of the nearest large town.
Nearest town/city: Newry

The site is located in the south-east of Northern Ireland. The Lough is a cross-border site, with the southern shores in the Republic of Ireland

Administrative region: Newry and Mourne

8. Elevation (average and/or max. & min.) (metres)**:**
Min. 0
Max. 10
Mean 0

9. Area (hectares)**:** 830.51

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

A narrow sea lough surrounded by mountains. The northern shore is in Northern Ireland and includes the most significant mudflats in the lough, and an area of saltmarsh. At the mouth of the lough are several small rock and shingle islands which are of importance to terns.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

2, 6

Secretariat comment: The RIS provides information requiring the application of Criterion 4. This needs to be included in the next update.

12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 2

Supports an important assemblage of vulnerable and endangered Irish Red Data Book bird species. The site supports nationally important breeding populations of common tern *Sterna hirundo*. Roseate terns *Sterna dougallii* returned to the site after an absence of six years with 2 breeding pairs recorded in 1997. In the recent past the site has also supported nationally important numbers of Arctic tern *Sterna paradisaea*.

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in winter:

Light-bellied brent goose, *Branta bernicla hrota*, East Canada/Ireland	300 individuals, representing an average of 1.5% of the population (5 year peak mean (1998/9-2002/3))

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

14. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	sand, mud, sedimentary, sandstone, limestone/chalk

Geomorphology and landscape	coastal, intertidal sediments (including sandflat/mudflat), estuary, intertidal rock
Nutrient status	no information
pH	no information
Salinity	saline / euhaline
Soil	no information
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Armagh, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/armagh.html) Max. daily temperature: 12.9° C Min. daily temperature: 5.8° C Days of air frost: 40.4 Rainfall: 795.4 mm Hrs. of sunshine: 1191.6

General description of the Physical Features:

Carlingford Lough lies on the east coast of Northern Ireland and straddles the international border with the Irish Republic. It is a narrow sea lough surrounded by mountains. The northern shore lies in Northern Ireland and includes the most significant mudflats in the lough and an area of saltmarsh. At the mouth of the lough are several small rock and shingle islands.

15. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Carlingford Lough lies on the east coast of Northern Ireland and straddles the international border with the Irish Republic. It is a narrow sea lough surrounded by mountains. The northern shore lies in Northern Ireland and includes the most significant mudflats in the lough and an area of saltmarsh. At the mouth of the lough are several small rock and shingle islands.

16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

No special values known

17. Wetland types

Marine/coastal wetland

Code	Name	% Area
D	Rocky shores	1.2
E	Sand / shingle shores (including dune systems)	96.7
H	Salt marshes	2.1

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Carlingford Lough exhibits a range of unusual and rich littoral communities. Examples of three out of the four major intertidal sedimentary communities found in Northern Ireland are present on the site. The shore 1.5 km north from Killowen Point is a sheltered boulder shore very rich in invertebrate species. A number of normally sublittoral species occur here within the intertidal zone including the anemone *Metridium senile* (here at its only Northern Ireland intertidal location), featherstar *Antedon bifida*, the starfish *Solaster endeca* and green sea-urchin *Psammechinus miliaris*. This is the only example of this type of shore community in Northern Ireland outside Strangford Lough.

The botanical interest of this site is centred within the Mill Bay area and is related primarily to the saltmarsh vegetation located along the foreshore and to the localised but frequent beds of dwarf eelgrass *Zostera noltei* covering the intertidal mudflats. Large areas of saltmarsh are rare and under threat in Northern Ireland as most have been subjected to considerable grazing pressure or have disappeared either through natural erosion or as a result of commercial development. The Mill Bay area supports the largest remaining intact block of saltmarsh in Northern Ireland. The saltmarsh here exhibits an extremely clear and characteristic successional zonation from open mudflats to upper brackish marsh, while displaying a classic pattern of drainage channels (creeks), pools (saltpans) and hummocks. The range of saltmarsh communities found within the zonation sequence is diverse, comprising lower and middle saltmarsh communities along channels and the coastal margin, and backed by extensive expanses of brackish marsh around the mouth of the White Water River.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

None reported

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Sandwich tern , *Sterna (Thalasseus) sandvicensis sandvicensis*, W Europe	650 apparently occupied nests, representing an average of 0.7% of the breeding population (Seabird 2000 Census)
Common tern , *Sterna hirundo hirundo*, N & E Europe	509 apparently occupied nests, representing an average of 16.4% of the all-Ireland population (Seabird 2000 Census)

Species Information

None reported

21. Social and cultural values:

e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Fisheries production
Non-consumptive recreation
Scientific research
Sport hunting
Transportation/navigation

22. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
National/Crown Estate	+	

23. Current land (including water) use:

Activity	On-site	Off-site
Recreation	+	

Fishing: commercial	+	+
Marine/saltwater aquaculture	+	
Gathering of shellfish	+	
Rough or shifting grazing		+
Hunting: recreational/sport	+	

24. Factors adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Other	+	
Area of Outstanding National Beauty (AONB)	+	+

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

27. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

None reported

28. Current conservation education:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Little at present. Occasional visits by local school groups and possibly from a nearby outdoor pursuit centre.

29. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

Very limited and low-key at present.

30. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

31. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

32. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **13** above), list full reference citation for the scheme.

Site-relevant references

Barne, JH, Robson, CF, Kaznowska, SS, Doody, JP, Davidson, NC & Buck, AL (eds.) (1997) *Coasts and seas of the United Kingdom. Region 17. Northern Ireland*. Joint Nature Conservation Committee, Peterborough. (Coastal Directories Series.)

Buck, AL & Donaghy, A (eds.) (1996) *An inventory of UK estuaries. Volume 7. Northern Ireland*. Joint Nature Conservation Committee, Peterborough

Crowe, O (2005) *Ireland's wetlands and their waterbirds: status and distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. www.wwt.org.uk/publications/default.asp?PubID=14

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm

Way, LS, Grice, P, MacKay, A, Galbraith, CA, Stroud, DA & Pienkowski, MW (1993) *Ireland's Internationally Important Bird Sites: a review of sites for the EC Special Protection Area network*. Joint Nature Conservation Committee, Peterborough, for Department of the Environment (NI), Belfast, and Irish Wildlife Service, Dublin

Weighell, AJ, Donnelly, AP & Calder, K (eds.) (2000) *Directory of the Celtic coasts and seas*. Joint Nature Conservation Committee, Peterborough

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**

Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

CARLINGFORD LOUGH - SPECIAL PROTECTION AREA (SPA)

UK9020160

CONSERVATION OBJECTIVES

Including conservation objectives for Carlingford Lough ASSI

Document Details

Title	Carlingford Lough SPA Conservation Objectives
Prepared By	*Ian Enlander*
Approved By	*Mark Wright*
Date Effective From	*01/04/2015*
Version Number	*V3*
Next Review Date	January 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	09/03/1998	Internal working document	IE	
V1.1	August 2013	Review	IE	
V2.0	February 2015	Draft	IE	Complete review

Site relationship

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

This SPA adjoins the proposed Carlingford Lough SPA marine extension.

The SPA also includes the Carlingford Lough Ramsar site.

See also Boundary Rationale

The SPA is also close to, or adjoins, European designations in the Republic of Ireland. These are Carlingford Lough SPA and Carlingford Lough SAC. Dundalk Bay SPA and Dundalk Bay SAC are also close to the SPA.

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site"**.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4 GENERAL INFORMATION

COUNTY: Down

G.R. J230 129 AREA: 827.12 ha.

REVIEW OF ANY ADJOINING OR REMOTE MARINE AREAS WILL BE INFORMED BY JNCC REPORT ON MARINE USAGE BY TERN SPECIES FROM EXISTING SPA'S DESIGNATED FOR BREEDING TERNS.

CONSERVATION OBJECTIVES WILL BE REVISED AS THESE ISSUES PROGRESS

5 SUMMARY SITE DESCRIPTION

Carlingford Lough ASSI extends from Cranfield Point to the limit of main inter-tidal mudflats upstream towards Newry. The SPA extends from Soldiers Point to Killowen Point. The offshore islands at Blockhouse, Green Island and off Greencastle Point fall within both designations. Habitat is almost exclusively inter-tidal with the exception of the islands mentioned and coastal saltmarsh and wet grasslands in Mill Bay.

5.1 BOUNDARY RATIONALE

The ASSI includes the main inter-tidal habitats that support nationally significant wintering waterfowl populations together with other interest features. The SPA is limited to those areas regularly used by Light-bellied Brent Geese together with the tern nesting sites (those islands both currently used, used in the past, with the potential for use or in close proximity to any of these). Roost sites occurring outside the extent of natural or semi-natural habitat have not been included but their importance must not be underestimated. The Ramsar boundary is coincident with the SPA.

6 SPA SELECTION FEATURES

Feature Type	Feature	Population (5 year mean 1995-2000) except where stated	Population at time of designation (ASSI)	Population at time of designation (SPA)	SPA Review population	Common Standards Monitoring baseline
Species	Sandwich Tern [a]	650 (current population)		575	575	270 (1994-1998)
Species	Common Tern [b]	509 (current population)	218	339	339	250 (1994-1998
Species	Light-bellied Brent Goose [a]	254	225	319	319	89 (1993/94-1997/98)
Habitat[1]	Habitat extent					
Habitat[1]	Roost site locations					

Table 1. List of SPA selection features.

[1] Habitat is not a selection feature but is a factor and is more easily treated as if it were a feature. Habitat extent is also used for breeding birds reported as an area.

Notes on SPA features – may not be applicable to all SPAs

The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.

[a] – species cited in current SPA citation and listed on current N2K dataform

[b] – species selected post SPA designation through UK SPA Review 2001

[c] – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

6.1 ADDITIONAL ASSI SELECTION FEATURES

Feature Type (i.e. habitat, species or earth science)	Feature	Size/ extent / pop.	Population at time of designation (ASSI)	Common Standards Monitoring baseline
Habitat	Intertidal mudflats			
Habitat	Coastal saltmarsh			
Species	Great Crested Grebe		200	33 (1990/91-1995/96)
Species	Shelduck		233	165 (1990/91-1995/96)
Species	Scaup		342	197 (1990/91-1995/96)
Species	Red-breasted Merganser		36	9 (1990/91-1995/96)
Species	Oystercatcher		850	373 (1990/91-1995/96)
Species	Dunlin		1602	200 (1990/91-1995/96)
Species	Redshank		617	557 (1990/91-1995/96)
Species	Invertebrate assemblage			
Earth Science	Pleistocene			
Earth Science	Carboniferous Stratigraphy			

Table 2. List of ASSI features, additional to those that form all or part of SPA selection features. These will be referred to in ANNEX II.

7. CONSERVATION OBJECTIVES

The Conservation Objectives for this site are:

To maintain each feature in favourable condition.

For each feature there are a number of component objectives which are outlined in the tables below. Component objectives for Additional ASSI Selection Features are not yet complete. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

8 CARLINGFORD LOUGH SPA CONDITION ASSESSMENT 2014

Species	Year 1	Year 2	Year 3	Year 4	Year 5	CSM	5 yr mean	% CSM	Status
Light-bellied Brent Goose	538	508	542	483	626	189	539.40	**285.40**	Favourable
Common Tern (B)	0	10	?	84	130	250	56.00	**22.40**	Unfavourable
Sandwich Tern (B)	290	0	0	0	78	270	73.60	**27.26**	Unfavourable

9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species
Fledging success sufficient to maintain or enhance population
To maintain or enhance the range of habitats utilised by the qualifying species
To ensure that the integrity of the site is maintained;
To ensure there is no significant disturbance of the species and
To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

Feature	Component Objective
Sandwich Tern breeding population	As above
Sandwich Tern breeding population	Fledging success sufficient to maintain or enhance population
Common Tern breeding population	As above
Common Tern breeding population	Fledging success sufficient to maintain or enhance population
Light-bellied Brent Goose wintering population	As above
Habitat Extent	To maintain or enhance the area of natural and semi-natural habitats used or potentially usable by Feature bird species (780 ha intertidal area), (breeding areas 0.62 ha) subject to natural processes
Habitat Extent	Maintain the extent of main habitat components subject to natural processes
Roost sites	Maintain or enhance sites utilised as roosts

Table 3. SPA Component objectives

Tern nesting localities current and historical (TO BE FINALISED)

Green Island
Greencastle Point

Table 4. Tern nesting locations within the SPA

9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Intertidal mud/sand	
Coastal saltmarsh	
Great Crested Grebe	As for SPA selection feature objectives
Shelduck	As for SPA selection feature objectives
Scaup	As for SPA selection feature objectives
Red-breasted Merganser	As for SPA selection feature objectives
Oystercatcher	As for SPA selection feature objectives

Dunlin	As for SPA selection feature objectives
Redshank	As for SPA selection feature objectives
Pleistocene	
Carboniferous Stratigraphy	

Table 4. ASSI Component objectives

10. MANAGEMENT CONSIDERATIONS

See also Views About Management for relevant ASSI

Owner/Occupier's – (to be used to identify any key management considerations arising from ownership e.g. owners/organisations having an obvious bearing on conservation matters or from management agreements).

Approximately 35 individuals/organisations own land within the SPA. Major landowners and leasees within the SPA, relevant to the site management, include Mourne Ltd, Crown Estate Commissioners, National Trust and Private Individuals. The National Trust own areas of offshore islands. The RSPB are responsible for management of the tern colony. There may be conflicts of interest between the requirements of individual/organisations, both within and adjacent to the SPA, and the site management needs.

Adjacent commercial operations which may impact upon the SPA include the ports at Warrenpoint and Greenore. Future expansion of port facilities and the proposed ferry from Greencastle, may lead to loss of the intertidal area within the SPA and result in disturbance to the qualifying bird populations.

There are no management agreements within the SPA.

11. MAIN THREATS, PRESSURES, ACTIVITES WITH IMPACTS ON THE SITE OR SITE FEATURES

Notifiable Operations - Carrying out <u>any</u> of the Notifiable Operations listed in the schedule could affect the site. The list below is not exhaustive, but deals with the most <u>likely</u> factors that are either affecting Carlingford Lough SPA, or could affect it in the future. Although, features 1, 2, 3, 4 etc, are the qualifying SPA features, factors affecting ASSI features are also considered.

Generic site/feature issues

No	Issue	Threat/comments	Local considerations	Action
1	Adjoining habitat	Particularly important for swans and geese as well as providing high tide roost locations. Significant changes in land management and disturbance are key considerations. Such areas lie without the site making effective management of developments other than those for which planning permission is required, difficult.	Appears to be of minimal consequence other than for high tide roosts.	Assess planning applications. Identify key areas and promote site management schemes. Review use of Wildfowl Refuges. Consider the collective impact.
2	Aquaculture	Disturbance is a minor consideration unless carried out deliberately to minimise losses to shell-feeding	Existing licences widespread mainly outside SPA.	Liaise with DARD Fisheries Division. Assess all license applications individually. Consider

		waterfowl. Alteration of natural littoral and sub-littoral communities through seeding, tray/trestle cultivation, dredging/control of pest species. Naturalisation of introduced species – both the shellfish themselves and associated species e.g. algae and disease vectors.		the collective impact.
3	Bait digging – commercial or 'recreational' and shellfish gathering.	Disturbance and impact on sediment and invertebrate fauna – may be positive through making deeper prey items available on surface. Shellfish gathering represents a net loss to the system in terms of biomass. Generally unregulated.	Degree unknown	Monitor scale of activity. Consider the collective impact.
5	Beach sand and gravel extraction.	Disturbance issue together with loss of biologically active upper sediments. Most beach systems are sedimentalogically closed thus material removed may not be renewed making the activity unsustainable. May lead to changed sediment character of beach ultimately impacting on birds.	Degree unknown. Offshore gravel islands are subject to erosion and so no sand or gravel extraction should be permitted that could impact on these.	'Permitted' extraction of beach sand and gravel should be halted through management agreements. Ad hoc removal should be addressed in conjunction with local authorities.
6	Boating activity – commercial	Disturbance and potential for impact from high-speed liners.	Active ports at Greenore and Warrenpoint with proposed ferry operating from Greencastle. Disturbance and enhanced wash impact on islands especially are the main consideration.	Formal consultation likely relating to new schemes. Consider the collective impact.
7	Boating activity – recreational	Disturbance and potential for impact especially from jet skies. Generally relevant to particularly sensitive areas within site.	Current level of activity is unknown – main concern is of disturbance at tern colonies.	Liaise with appropriate authority with codes of good practice, zoning and use of by-laws as necessary. Consider the collective impact.
8	Coastal protection schemes	Where there is no history of this, it impacts on natural beach systems with loss of habitat.	Mainly natural coastal transitions except around Greencastle. Proposed ferry development may bring need for additional works.	Liaise with Planning Service and other parties with an involvement in coastal management.
9	Cull of fledglings/ young	Licensed selective culling of species impacting on 'more desirable' species. Licensed by NIEA.	No activity at present – may be required as part of the management of the tern colonies.	Consider the collective impact.
12	Dredging	Generally only an issue in relation to commercial shipping channels. Issues include disturbance,	Current position unknown. Main channel activity	Liaise with port authority and Environmental Protection as required with regard to water quality

		remobilisation of contaminated sediment and spoil dumping zones.	presumably is long-established. Dredging to accommodate the proposed ferry is close to the semi-stable tern islands and must be assessed very carefully.	issues and pollution incidents.
14	Fishing – commercial or recreational	Minimal disturbance consideration but may represent 'competition' for piscivorous birds. Represents a net loss to the system in terms of biomass.	Current position unknown.	Liaise with DARD and fishing authority as required. Liaise with angling clubs as required.
15	Habitat extent – inter-tidal	Loss of habitats through development, changes in coastal processes. Loss of inter-tidal habitat is a critical issue as this is the feeding zone for the majority (numbers and species) of birds.	Limited development pressure except from ferry proposal.	Assess planning applications. Monitor using aerial photography.
16	Habitat extent – open water	Loss likely to be limited but expansion of commercial port facilities can impact on key localities.	Limited development pressure except from ferry proposal.	Assess planning applications. Consider the collective impact.
17	Habitat quality – inter-tidal	Alteration of habitat quality through diminution of water quality, invasive species or changes in coastal processes.	Main concern relates to Spartina.	Assess planning applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
18	Habitat quality – open water	Alteration of habitat quality through diminution of water quality or invasive species.	Commercial activity is centred on Warrenpoint and Greenore. No obvious impacts on SPA.	Assess planning applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
19	Habitat extent and quality-breeding	Alteration of habitat area or quality through inappropriate use or absence of site management.	Historical tern colonies impacted by erosion. May require stabilisation and periodic 'rebuilding'.	Assess needs of breeding species. Liaise with RSPB and other owners or appropriate authority to adjust or introduce site management if necessary.
21	Introduced species	Range of threats from loss of habitat, feeding competition, disease, hosting species presenting a threat outside of the site.	Issues relate to aquaculture and Spartina. Spartina is the main issue with spread resulting in loss of more significant inter-tidal and saltmarsh habitats.	Liaise with appropriate authority. Consider feasibility of elimination. Participate in national/international initiatives.

23	Predation.	Mainly of concern on bird breeding sites.	Need to assess large gull impact on tern colony. See culling issue above.	Liaise with RSPB. Carry out appropriate site management.
24	Recreational activities.	Disturbance is the main consideration. Apart from disturbance of birds themselves, breeding birds, especially seabirds, are vulnerable to disturbance as absence of adults can often result in predation or chilling of young with a reduction/loss in fledging success.	Greencastle is a popular destination but terns seem unaffected. Issue as it relates to Brent is unknown. Shoreline has been heavily used for recreational activities over long timescale. Cumulative disturbance impacts (e.g. boating, wildfowlers, walkers, dogs etc) may be a significant factor for wintering bird populations impacting on both feeding (inter-tidal) and roosting birds	Liaise with local authorities and other managing parties.
25	Research activities.	Census and ringing activities especially have the potential to impact on bird populations, particularly at breeding sites.	Routine winter WEBS counts and summer breeding counts of terns nests are undertaken.	Census and ringing activities to be undertaken by competent individuals, appropriately trained. In case of ringers, appropriate license must be held.
27	Seaweed harvesting	Either cutting living weed or gathering storm debris. The former, depending on scale and frequency, may fundamentally impact on shore communities and their ability to support waterfowl. The latter, represents a net loss to the system in terms of habitat and biomass.	Current position unclear	
28	System dynamics	Cuts across many other issues. Dynamic systems, especially coastal, can be affected by many factors especially engineered structures and significant changes in dominant wind direction or storm frequency. Many systems may indeed still be undergoing responses to historical developments e.g. partial reclamation, seawall construction. Changes may include alteration in sediment grade, shifts in patterns of erosion and deposition etc. Consequences for habitat and species utilisation of the site can be	Limited coastal engineering at Greencastle, otherwise the shoreline is relatively natural. Expanding aquaculture represents an alteration to substrate.	Human induced change should be minimised. Assess planning applications and liaise with other relevant authorities. Ad hoc dumping and removal of natural materials should be managed. Major natural shifts in system behaviour may be identified through analysis of aerial photographs and site monitoring. Major and consistent changes to patterns of habitat distribution and bird utilisation of the site should be noted. Green Island, one of the Tern

		profound.		nesting sites, is subject to erosion. Action to stabilise may be necessary and should not be viewed as contentious.
31	Wildfowling	Has direct effect through bag sizes/bag species and wider disturbance issue. Issue of regulated (through recognised shooting clubs) and ad hoc shooters. Lead shot on grazing lands.	Extent of activity is unclear.	Liaise with relevant shooting bodies (BASC especially) to define areas for wildfowling, the development of Wildfowlers Codes of Good Practice and encourage bag returns. Support pressure to stop use of lead shot. Review use of Wildfowl Refuges. Consider the collective impact.

Table 5. List of site/feature management issues

12. MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook (To be written).

Maintain the integrity of the site. Undertake Site Integrity Monitoring (SIM) at least annually to ensure compliance with the SPA/ASSI schedule. The most likely processes of change (e.g. dumping, infilling, gross pollution) will either be picked up by Site Integrity Monitoring, or will be comparatively slow (e.g. change in habitat such as growth of mussel beds). More detailed monitoring of site features should therefore be carried out by Site Condition Assessment on a less frequent basis (every 6 years initially to pick up long-term or more subtle changes). A baseline survey will be necessary to establish the full extent of the communities present together with the current condition of the features, against which all further condition assessments will be compared.

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial photographs to determine site morphological changes. Methodology for this is being developed.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that no sand extraction or dumping has been carried out within the SAC boundary. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (dune, saltmarsh, species). This will detect if the features are in favourable condition or not. See Annexes I and II for SAC and Additional ASSI Features respectively.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

12.2. ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, world. Refer to BTO ALERT limits etc. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline (e.g. eutrophication) is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere e.g. breeding terns. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.
3. For passage/wintering species assess breeding information. No site action if site decline is due to breeding ground failure, unless breeding ground failure is related to poor adult condition resulting from factors affecting wintering / passage birds.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance e.g. mudflats reduced by encroaching mussel beds.
6. Assess prey availability. Issues to consider are both within site e.g. water quality, broad site management, and without site e.g. climatically driven factors.
7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.

8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for breeding seabird and wader sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

13. SELECTION FEATURE POPULATION TRENDS

Site trends are reported using running 5 year means of annual maximum count (WeBS data). Long term trends in index values have been used to assess changes in overall wintering populations for Northern Ireland and UK (WeBS data). Caution is always necessary in the interpretation and application of waterbird counts given the limitations of these data. The reduced number of both sites and birds in Northern Ireland, result in a greater degree of fluctuation. Trends for Ireland are based on five years of data 1994-1999 (I-WeBS data). Consequently short-term fluctuations apparent in the data series may reflect changes in between year productivity, or other short term phenomena, rather than being indicative of a real change in a population.

SPECIES	SITE TREND	NI TREND	ROI TREND	UK TREND	COMMENTS
Sandwich Tern	-	-	-	-	Not known, to be compiled.
Common Tern	-	-	-	-	Not known, to be compiled.
Light-bellied Brent Goose	Fluctuating	Fluctuating	Slight Fluctuation	-	

ANNEX I

Feature (SPA) – Breeding Seabirds

= primary attribute. One failure among primary attribute = unfavourable condition
= optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
* Sandwich Tern breeding population	Apparently occupied nests	No significant decrease in Sandwich Tern breeding population against national trends	Requirement that annual data is collected, then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Sandwich Tern fledging success	Annual survey (as per Gilbert *et al*. 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined
* Common Tern breeding population	Apparently occupied nests	No significant decrease in Common Tern breeding population against national trends	Requirement that annual data is collected , then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Common Tern fledging success	Annual survey (as per Gilbert *et al*. 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined

Non-Avian Factors – habitat

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures or breeding sites, where this would lead to different usage by notified species.

Feature (SPA) – Wintering Waterfowl

Attribute	Measure	Targets	Comments
* Light-bellied Brent Goose wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Non-Avian Factors – habitat

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural	Maintain the area of natural and semi-natural	Monitor once every reporting cycle by aerial photography.

	and semi-natural habitat	habitats used by notified species, within the SPA, subject to natural processes.	
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures where this would lead to different usage by notified species.
# Roost sites	Location of roost sites	Maintain all locations of roost sites.	Map roost site locations. Visit once every reporting cycle to ensure sites are available

ANNEX II

Feature (ASSI)

* = primary attribute. One failure among primary attribute = unfavourable condition
= optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
Intertidal mud/sand			
Coastal saltmarsh			
Great Crested Grebe	Bird numbers	No significant decrease in population against national trends, caused by on-site factors	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Shelduck	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Scaup	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Red-breasted Merganser	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Oystercatcher	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Dunlin	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Redshank	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Pleistocene			
Carboniferous Stratigraphy			

Northern Ireland Environment Agency

Further information to support the Ramsar proposals

January 2019

NIEA Northern Ireland Environment Agency
www.daera-ni.gov.uk

An Agency within the Department of Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

INVESTORS IN PEOPLE

Contact information: Northern Ireland Environment Agency
Conservation Designations and Protection
Klondyke Building
Cromac Avenue
Gasworks Business Park
Lower Ormeau Road
Belfast
BT7 2JA

Telephone: 028 9056 9522
Email: N2K-CMP@daera-ni.gov.uk
Website: www.daera-ni.gov.uk/topics/land-and-landscapes/ramsar-sites

Issued: January 2019

Overview

The Northern Ireland Environment Agency (NIEA), an Executive Agency within the Department of Agriculture, Environment and Rural Affairs (DAERA), is running two consultations concurrently:

1. Seeking views on the proposed designation of Derryleckagh Ramsar site.

2. Seeking views on the proposed designation of Teal Lough Ramsar site.

You can submit your views by email or post. When doing so, please remember to indicate which of the designations (Derryleckagh pRamsar or Teal Lough pRamsar) your comments apply to.

Why we are consulting

- **Derryleckagh pRamsar**

  This area was declared as Derryleckagh Area of Special Scientific Interest (ASSI) in 1994. The same area was classified as Derryleckagh Special Area of Conservation (SAC) in 2005. The site boundary is coincident with the Derryleckagh Bog part only of Derryleckagh ASSI and Derryleckagh SAC and excludes Derryleckagh Wood to the east. DAERA has identified that this Derryleckagh pRamsar area is an internationally important wetland because it meets the Ramsar Sites Criteria.

- **Teal Lough pRamsar**

  This area was declared in two constituent parts as Teal Lough and Slaghtfreeden Bogs ASSI in 1987 and Teal Lough Part II ASSI in 1995. The boundary of the site incorporates part of Teal Lough and Slaghtfreeden Bogs ASSI (Teal Lough part only), and all of Teal Lough Part II ASSI. The same area was classified as Teal Lough SAC in 2005. The boundary of the site is entirely coincident with Teal Lough SAC. DAERA has identified that this Teal Lough pRamsar area is an internationally important wetland because it meets the Ramsar Sites Criteria.

The former Department of the Environment (DOE) previously carried out consultations on the designation of Derryleckagh and Teal Lough as Ramsar sites in 2004 and 2005 respectively. These proposals did not proceed to formal designation. Due to the passage of time since these consultations DAERA is re-consulting on the proposed Ramsar sites.

Contents

Overview iii

Why we are consulting iii

List of Figures iv

1. Background 1
2. Site descriptions 2
   - Figure 2.1 Photograph of Derryleckagh pRamsar 2
   - Figure 2.2 Photograph of Teal Lough pRamsar 3
3. Reasons for designation 3
4. Assessment of the Ramsar interest 4
5. Site management 4
   - 5.1 Relationship with ASSIs 5
   - 5.2 Relationship with SACs 5
6. Ownership/occupation 6
7. References 7

List of Figures

Figure 2.1 Photograph of Derryleckagh pRamsar 2

Figure 2.2 Photograph of Teal Lough pRamsar 3

1. Background

Ramsar sites are designated under the International Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention). The UK is a signatory to the Ramsar Convention on Wetlands of International Importance. Article 2.1 provides that each contracting party shall designate suitable wetlands within its territory for inclusion in a list of Wetlands of International Importance.

Derryleckagh pRamsar and Teal Lough pRamsar sites both qualify as Ramsar, Wetlands of International Importance by meeting the Ramsar Sites Criteria.

The Ramsar Sites Criteria (Ramsar, 2014)

The nine criteria for identifying Wetlands of International Importance:

Group A of the Criteria. Sites containing representative, rare or unique wetland types

Criterion 1: *A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region*.

Group B of the Criteria. Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

Criterion 2: *A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities*.

Criterion 3: *A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region*.

Criterion 4: *A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions*.

Specific criteria based on waterbirds

Criterion 5: *A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds*.

Criterion 6: *A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird*.

Specific criteria based on fish

Criterion 7: *A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity*.

Criterion 8: *A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend*.

Specific criteria based on other taxa

Criterion 9: *A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species*.

2. Site descriptions

- **Derryleckagh pRamsar**

Derryleckagh is situated 1 km east of Newry. It is a long narrow valley mire and contains wetland and adjoining habitat which supports a wide range of plant communities and a number of scarce plant species (Figure 2.1). The variety of these habitats supports a wide diversity of invertebrates, including several notable species. The area of the site is 42.41 ha.

Figure 2.1 Photograph of Derryleckagh pRamsar



**Image courtesy of Bobbie Hamill (2011)*

- **Teal Lough pRamsar**

Teal Lough Bog lies some 10 km north-west of Cookstown beyond Lough Fea at an elevation of 220 m. This is one of the largest and least disturbed upland blanket peat and raised bog habitats in Northern Ireland (Figure 2.2). The features of interest are all hydrologically linked, with actively developing upland raised bog surrounded by active blanket peat, and with an oligotrophic lake to the north. Teal Lough has one of the finest hummock and pool complexes of any peatland complex in Northern Ireland. The area of the site is 198.22 ha.

Figure 2.2 Photograph of Teal Lough pRamsar



**Image courtesy of Bobbie Hamill (2015)*

Maps of these pRamsar sites are provided in the suite of consultation documents.

3. Reasons for designation

DAERA is proposing these two sites as a necessary contribution by the UK to the network of Ramsars. 20 Ramsar sites have already been designated in Northern Ireland. In total 149 Ramsar sites have been designated in the UK (JNCC, 2015). The designation of these sites will help to meet UK commitments under the Ramsar Convention.

4. Assessment of the Ramsar interest

Derryleckagh pRamsar

Derryleckagh pRamsar qualifies as a Wetland of International Importance under the Ramsar Convention because it meets the following selection criteria (Ramsar, 2014):

Criterion 1: '*A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region*'.

Derryleckagh pRamsar is internationally important because it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region. Northern Ireland is within the Atlantic biogeographic region.

The site is selected for the following feature:

- The site contains a mire in a transitional stage between fen and bog and is characterised by a broad range of surface conditions, ranging from slightly base-rich to markedly acidic.

Teal Lough pRamsar

Teal Lough pRamsar qualifies as a Wetland of International Importance under the Ramsar Convention because it meets the following selection criteria (Ramsar, 2014):

Criterion 1: '*A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region*'.

Teal Lough pRamsar is internationally important because it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region. Northern Ireland is within the Atlantic biogeographic region.

The site is selected for the following feature:

- The site contains one of the most extensive and least disturbed examples of upland blanket peat and raised bog habitats in Northern Ireland, including one of the finest hummock and pool complexes of any raised bog in Northern Ireland.

Citation documents for these pRamsar sites are provided in the suite of consultation documents.

5. Site management

DAERA do not expect these new designations to change the activity allowed in the proposed areas because these areas are already within existing Special Areas of Conservation (SACs) –namely the Derryleckagh SAC and Teal Lough SAC sites. The European Union Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) already requires activities which are likely to have a significant effect

on a designated interest feature of a European site, including indirect effects, to be assessed. Therefore activities in the proposed Ramsar areas are already being considered in this way.

5.1 Relationship with ASSIs

It is usual, necessary practice to underpin Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites on land with Areas of Special Scientific Interest (ASSIs).

- **Derryleckagh pRamsar**

  The site is already notified or designated as Derryleckagh ASSI (declared 1994). The site boundary is coincident with the Derryleckagh Bog part only of Derryleckagh ASSI and excludes Derryleckagh Wood to the east. The new designation is not expected to lead to a change in management or permissible activity.

- **Teal Lough pRamsar**

  The site is already notified or designated as Teal Lough and Slaghtfreeden Bogs ASSI (declared 1987) and Teal Lough Part II ASSI (declared 1995). The boundary of the site incorporates part of Teal Lough and Slaghtfreeden Bogs ASSI (Teal Lough part only), and all of Teal Lough Part II ASSI. The new designation is not expected to lead to a change in management or permissible activity.

5.2 Relationship with SACs

- **Derryleckagh pRamsar**

  The site is already classified as Derryleckagh SAC (designated 2005). The site boundary is coincident with the Derryleckagh Bog part only of Derryleckagh SAC and excludes Derryleckagh Wood to the east.

- **Teal Lough pRamsar**

  The site is already classified as Teal Lough SAC (designated 2005). The boundary of the site is entirely coincident with Teal Lough SAC.

As the Derryleckagh pRamsar and Teal Lough pRamsar areas are designated as SACs, and part of the Natura 2000 network, any development proposal is already subject to the provisions of the Habitats Regulations[1].

Under the requirements of the Habitats Regulations, the relevant competent authority is required to consider new plans or projects which have the potential to affect the designated interest feature/s of European (SAC and SPA) or Ramsar sites (directly or indirectly).

[1] As a matter of UK Government policy the Habitat Regulations (The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)) also apply to Ramsar sites, as specified in Policy NH 1 - European and Ramsar Sites - International of Planning Policy Statement 2: Natural Heritage (DOE, 2013) and includes listed or proposed Ramsar sites.

The Habitats Regulations Assessment (HRA) process aims to screen a project for any significant effects and on the undertaking of an appropriate assessment, whether there may be an adverse effect on the integrity of the site. This process will be informed by the site's Conservation Objectives. If the assessment concludes that there may be an adverse effect on the integrity of a European or Ramsar site, the project cannot proceed unless there are imperative reasons of overriding public interest and subject to securing necessary compensatory measures.

6. Ownership/occupation

- **Teal Lough pRamsar**

  Most of the area is owned by DAERA's Forest Service, with the remaining area owned by a few private landowners. Part of the SAC area is currently managed by Ulster Wildlife as a Nature Reserve, to which its members have access by arrangement.

- **Derryleckagh pRamsar**

  The site is in multiple private ownership, with a few main large landowners and numerous owners of smaller parcels of land. Sporting and grazing rights are also privately held.

All of the landowners or occupiers in the Derryleckagh pRamsar and Teal Lough pRamsar areas will receive notification of these proposals along with an invitation to comment.

As the areas are already designated as ASSI and SAC sites, the majority of landowners and occupiers will have already been identified by DAERA. These landowners or occupiers will have received communication or engaged with DAERA (or the former Department of the Environment (DOE)) with regard to activities in the ASSI or SAC sites over the period of time since designation. As such, activities taking place in these areas are not anticipated to require any additional management measures above and beyond those which already exist due to designation as ASSI or SAC.

7. References

Department of the Environment (DOE). 2013. *Planning Policy Statement 2: Natural Heritage*. [Online]. [Accessed 24 January 2018]. Available from: https://www.planningni.gov.uk/index/policy/policy_publications/planning_statements/pps2.htm

Joint Nature Conservation Committee (JNCC). 2015. *UK Ramsar sites*. [Online]. [Accessed 24 January 2018]. Available from: http://jncc.defra.gov.uk/page-1388

Ramsar. 2014. *The Ramsar Sites Criteria*. [Online]. [Accessed 24 January 2018]. Available from: https://www.ramsar.org/document/the-ramsar-sites-criteria

DERRYLECKAGH SAC

UK0016620

CONSERVATION OBJECTIVES

Document Details

Title	*Derryleckagh SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*01/04/2015*
Version Number	*V2*
Next Review Date	Nov 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	January 2015	Complete review	RMK

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: DOWN

GRID REFERENCE: IJ 118251

AREA: 49 ha

5. SUMMARY SITE DESCRIPTION

Derryleckagh is a large lowland transitional valley mire occupying a valley floor with a central basin mire which has a small, base-rich Hazel/Oak woodland on the eastern valley slope. The mire is in a transitional stage between fen and bog, and is characterised by its broad range of surface conditions, ranging from slightly base-rich to markedly acidic. These soil conditions are dependent upon the influence of the ground water on the surface peat layer and have a marked effect upon the plant communities present.

The diversity of wetland habitats support rich invertebrate communities, and supports notable wetland bird numbers.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The site boundaries were drawn to encompass the entire fen feature and the adjacent woodland, which qualifies for designation in its own right. The fen edge is usually well defined, but small areas of species-rich dry grassland adjacent to

the fen have also been included in the site to preserve important transitions, and the juxtaposition of good quality semi-natural habitats.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ pop^{n}
Habitat	Transition mires and quaking bogs	B	15 ha
Habitat	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	C	5 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Derryleckagh SAC.

6.1 ASSI SELECTION FEATURES

Derryleckagh ASSI

Feature Type	Feature	Size/ extent/ pop~
Habitat	Fens	14.6 ha
Habitat	Oakwood	5 ha
Species	Invertebrate Assemblage	

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The ***Conservation Objective*** for this site is:

To maintain (or restore where appropriate) the Transition mires and quaking bogs and Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objective
Transition mires and quaking bogs	B	Maintain and the extent of the existing mire.
		Maintain and enhance mire species and community diversity.
		Maintain and enhance mire vegetation structure
		Maintain edge transitions to existing semi-natural mineral soil communities
		Maintain the diversity and quality of habitats associated with the mire, e.g. pools and soaks.
Old sessile oak	C	Maintain and expand the extent of existing oak woodland.

woods with *Ilex* and *Blechnum* in the British Isles		Maintain and enhance woodland species diversity.
		Maintain and enhance woodland structure
		Maintain the diversity and quality of habitats associated with the woodland
		Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Fens	See SAC Selection Feature Objective Requirements table.
Oakwood	See SAC Selection Feature Objective Requirements table.
Invertebrate Assemblage	To maintain (and if feasible enhance) the diversity of the Coleoptera and Heteroptera populations, Marsh Fritillary, Silver-washed Fritillary Butterfly and the Rove Beetle Schistoglossa aubei including their abundance and distribution.

10. MANAGEMENT CONSIDERATIONS

Ownership

The site is in multiple private ownership, with 3 main land owners and 33 smaller land owners. Sporting and grazing rights are also privately held.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Derryleckagh, or could affect it in the future. Although Transition mires and quaking bogs and Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles are the qualifying SAC features, factors affecting ASSI features are also considered.

NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.

Drainage

Drainage anywhere in the basin fen leading to a reduction in the frequency,degree or duration of soil saturation is very likely to lead to deterioration in the quality of the existing wetland vegetation. Changes in water level will promote successional change in wetland communities.

ACTION: Ensure no drainage takes place through liaison and management agreements with landowners.

Application of fertiliser/manure/slurry

Whilst some fen areas are managed for grazing, at least in part, eutrophication derived from drift and run-off from adjacent agricultural areas remains probably more of a threat than direct application on site.

ACTION: Prevent nutrient enrichment from fertiliser drift and runoff by ensuring landowners leave adequate buffer strips between fertiliser spray areas and sensitive interest features such as fens.

Grazing

Grazing levels are important on these sites. The fen vegetation has a limited carrying capacity and overgrazing/poaching is a distinct possibility, but the exclusion of grazing from the more nutrient-rich fen areas is likely to result in the development of a rank, less diverse stand. Grazing within the woodland has already been noted to be damaging the ground flora. Introduced or feral browsers, such as goats, would quickly damage recruitment in the woodlands.

ACTION: Through liaison with landowners and monitoring, ensure sustainable grazing levels for the conservation interest features.

Fly-tipping

Both local fly tipping and more extensive infilling, is another threat particularly the former. Fly-tipping of spent mushroom compost and builders rubble has been noted along the southern perimeter of the site leading to a direct loss of intact habitat and the possibility of knock-on damage caused by leachate.

ACTION: Removal of any fly-tipped material from the site, to prevent the build-up of debris and to discourage further tipping.

Peat Cutting

It would be intuitive to assume that the site could not support peat cutting, but several notable plant and invertebrate species have their stronghold in the pools and soakways of old cuttings. It is desirable that a diversity of these habitats remain, and since they are probably vulnerable to natural accretion processes, strategic excavation may even be deemed appropriate.

ACTION: Consider the excavation of new peat pools to preserve habitat diversity.

Supplementary feeding

This is unlikely to be acceptable on the fen surface where localised vegetation and soil damage would occur.

ACTION: Through liaison with landowners ensure no supplementary feeding takes place on the fen surface.

Woodland clearance and timber removal

In October 1995, tree felling, along with grazing was considered to be the greatest threat to the woodland.

ACTION: Through liaison and monitoring ensure there is no removal of woodland from the site.

Dead Wood Removal

Dead wood should be left *in situ* if safe or practical to do so. This provides valuable habitat for fungi, invertebrates etc. Removal of wood or fire-wood should be discouraged.

ACTION: Through liaison and monitoring ensure there is no removal of dead wood from the site.

Invasion by exotics

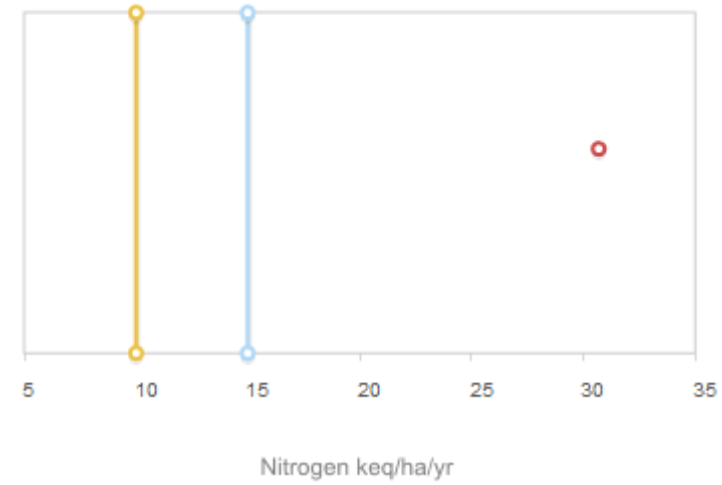
The woodland area is sensitive to the spread of exotic plants, particularly shrubs, and foremost in this situation, Rhododendron *R. ponticum*.

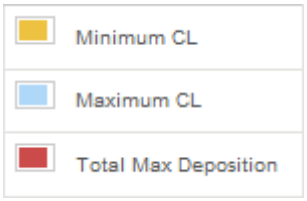
ACTION: The very invasive species require management to control their spread, which in most cases will require the current seed source to be removed from site. Those species not posing a threat at present should be monitored and in the long-term controlled if required.

Nitrogen Deposition

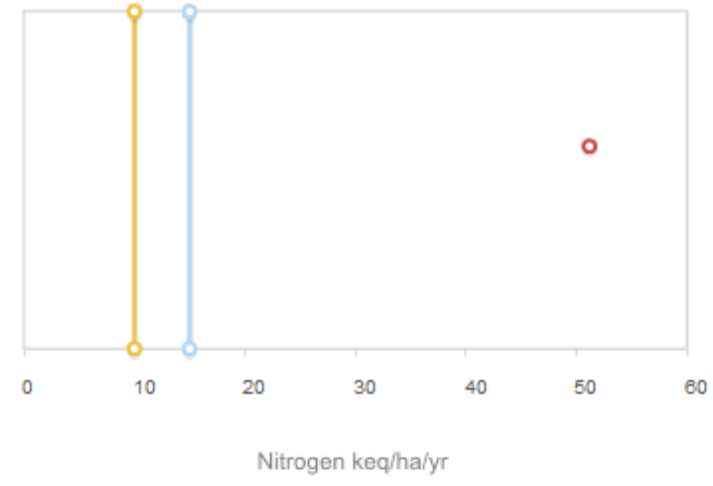
Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for habitats and species present on Derryleckagh SAC.

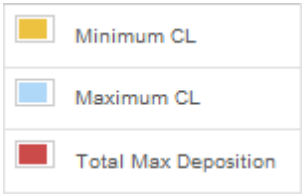
Feature: Transition mires and quaking bogs
Critical Loads (kg N/ha/yr): 10-15
Nitrogen Deposition (kg N/ha/yr):
Maximum: 30.7 Minimum: 29.8 Average: 30.3





Feature: Old sessile oak woods with Ilex and Blechnum in the British Isles
Critical Loads (kg N/ha/yr): 10-15
Nitrogen Deposition (kg N/ha/yr):
Maximum: 51.2 Minimum: 47.9 Average: 49.2





(Source: Air Pollution Information System (APIS) website - www.apis.ac.uk)
ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use
Any changes in local land-use e.g. drainage, road improvements, afforestation, agricultural intensification and development, may be detrimental to the SAC.
ACTION: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change
Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.
ACTION: When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place on using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat).

These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. *Monitor the integrity of the site (SIM or Compliance Monitoring)*
All of the site to be checked periodically, particularly for any evidence of fly-tipping or infilling, signs of inappropriate grazing levels, evidence of drainage (including over-deepening of existing drains, but not their periodic maintenance) or signs of drying out (the fen area should be 'soft, bouncy and squelchy'), evidence of slurry or fertiliser application or signs of eutrophication from agricultural run-off or any other source and on the woodland, for signs of timer extraction, Hazel clearance or stock grazing damage. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2005). Northern Ireland Species Action Plan – Marsh Fritillary *Euphydryas aurinia*.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan - Fens.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Oakwood.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Hobson, R., Bourn, N. and Warren, M. 2002 Conserving the Marsh Fritillary in Britain *British Wildlife* August 2002 pp 404-411.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

Nelson, B. 2000 *The Distribution, Status and Habitat Preferences of the Marsh Fritillary* Euphydryas aurinia *in Northern Ireland*. Environment and Heritage Service.

ANNEX I

Feature 1 (SAC) – Transition mires and quaking bogs (Status B)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Targets	Method of Assessment	Comments
* Area of Fen	Maintain the extent of fen.	Visual estimate in 2x2m plots and across the extent of the fen should be monitored using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Variety within fens is determined by water supply mechanism, hydroseral succession and land management practices. Account should be taken of successional processes and management aims/priorities.
* Mire community diversity	Maintain presence of fen communities as established at base line survey.	Visual estimate in 2x2m plots.	Natural succession may lead to an increase in the area of certain communities and a decrease in others. The most likely changes are subtle shifts in species composition as a result of eutrophication or water-level changes. Repeat monitoring of plots using GPS should indicate whether fen communities have changed or been lost.
Presence of associated semi-natural habitats	Maintain existing associated semi-natural habitats.	Visual estimate in 2x2m plots and across the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost. Note: Loss of associated habitats to fen communities may be desirable in some instances.

Vegetation height (cm)	Mean vegetation height of medium fen communities (e.g. M9, M22) should be 30–75cm. Mean vegetation height of short fen communities (e.g. M10, M13) should be 5–15cm.	Visual estimate in 2x2 m plots.	Medium fen communities are highly variable. After the baseline survey, these can be set with more precision.
Cover of litter/thatch accumulation (% cover)	Less than 10% mean cover in medium fen communities (e.g. M9, M22) Less than 5% mean cover in short fen communities (e.g. M10, M13)	Visual estimate in 2x2m plots.	More than 10% litter cover indicates insufficient removal of biomass by grazing.
Extent of bare mud visible without disturbing the vegetation (% cover)	Less than 10% mean cover in medium fen communities (e.g. M9) Less than 25% mean cover in short fen communities (e.g. M10, M13). Exclude naturally scoured flushes.	Visual estimate in 2x2m plots.	A high cover of exposed substrate will usually be undesirable and may indicate over-grazing and water scour. Patches of exposed substrate are likely to be more typical/desirable for short fen communities such as M10 which is often based on unconsolidated peat exposed beneath a water film.

* Combined cover of herbs and sedges in fen areas (**only applicable to medium height sedge fen communities** e.g. M9)	Maintain cover greater than 45%	Visual estimate in 2x2m plots.	
Cover of all bryophytes (**only applicable to medium height sedge fen communities** e.g. M9)	Maintain moss cover appropriate to fen vegetation communities recorded for the site.	Visual estimate in 2x2m plots.	Refer to Common Standards Monitoring guidance for lowland wetland habitats.
* Combined cover of key species – small *Carex*, all bryophytes, *Eleocharis* spp., *Eriophorum* spp., *Schoenus nigricans* and *Molinia caerulea* (% cover) (**only applicable to short sedge fen communities** e.g. M10, short M13)	At least 75% of the vegetation cover should be made up of key species. (exclude bare peat). To allow for a natural component of bare ground, it is the % of the vegetation that is composed of key species that should be recorded and NOT the % cover of the plot.	Visual estimate in 2x2m plots.	This is only applicable to short calcareous and alkaline fen.
* Frequency of positive indicators short medium fen (DAFOR scale)	At least six indicator species at least occasional, of which three are at least frequent throughout the sward.	Visual estimate in 2x2m plots.	The suite of key communities to be monitored is chosen on a site specific basis. In some instances short sedge communities

Alisma-plantago aquatica, Anagallis tenella, Angelica sylvestris, Berula erecta, Briza media, Caltha palustris, Carex curta, C. diandra, C. dioica, C. disticha, C. flacca, C. hostiana, C. nigra, C. panicea, C. pulicaris, C. rostrata, C. vesicaria, C. viridula, Cicuta virosa, Crepis paludosa, Dactylorhiza sp., Epilobium palustris, Equisetum fluviatile, E. palustre, Eriophorum angustifolium, Euphrasia spp., Galium palustris, Hydrocotyle vulgaris, Juncus articulatus, Linum catharticum, Lotus pedunculatus, Lychnis flos-cuculi, Lycopus europaeus, Lysimachia vulgaris,	At least frequent is equivalent to greater than 41% occurrence in recorded plots. At least occasional is equivalent to greater than 21% occurrence in recorded plots.		(e.g. M10, M13) may fail on this attribute as they are naturally species poor. However, providing they have passed on the % cover of combined key species they should be recorded as favourable for this attribute.

Lythrum salicaria, Mentha aquatica, Menyanthes trifoliata, Oenanthe crocata, Parnassia palustris, Pedicularis palustris, Pingiucula vulgaris, Potamogeton spp., Potentilla erecta, Potentilla palustris, Ranunculus flammula, Sagina nodosa, Selaginella selaginoides, Succisa pratensis, Triglochin palustre, Valeriana officinalis, Veronica scutellata, Viola palustris. Aulacomnium palustre, Bryum pseudotriquetrum, Calliergon spp., Campylium stellatum, Cratoneuron/Drepanocladus, Ctenidium molluscum, Polytrichum commune, Scorpidium			

scorpoides, Sphagnum denticulatum, Sphagnum fallax, Sphagnum palustre, Sphagnum squarrosum			
* Frequency and % cover of scrub/tree encroachment on the fen communities (DAFOR and % cover).	Scrub/tree encroachment including Betula, Salix, Rhododendron etc. should be no more than occasional over the fen communities. Mean cover should be less than 10 %. No more than occasional is equivalent to less than 40% occurrence in recorded plots.	Visual estimate within a 10 m radius of plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Scrub and woodland are integral components of many fen systems and may be particularly important for invertebrates. However, invasion by woody species, primarily Betula and Salix, and their development to maturity may indicate drying out, dereliction, disturbance and/or enrichment.
Height of trees and scrub within fen communities (cm)	Average height of scrub, where it is recorded.	Visual estimate within a 10 m radius of plots.	The average height of *Betula* and *Salix* scrub will help to access their maturity and help to inform management.
Frequency of seedlings/ saplings. (DAFOR)	Seedlings/saplings should be no more than rare over the fen communities. No more than occasional is equivalent to less than 20%	Visual estimate within a 10 m radius of plots.	High levels of seedlings and saplings indicate recent dereliction or other change in management. These fen communities are under threat from significant scrub encroachment.

	occurrence in recorded plots.		
* Frequency and % cover of negative indicator species- eutrophication indicators: *Phalaris arundinacea, Glyceria maxima, Typha latifolia, Epilobium hirsutum, Urtica dioica.*	No one negative indicator species more than rare throughout the fen and/or singly or together comprising more than 5% cover. No more than rare is equivalent to less than 20% occurrence in recorded plots.	Visual estimate in 2x2m plots.	
* % cover of negative species – indicating lack of management/ successional changes: *Filipendula ulmaria, Phragmites australis.*	No one negative indicator singly or together comprising more than 10% cover. In short fen communities (M10/M13) *Phragmites* cover should be no more than rare. No more than rare is equivalent to less than 20% occurrence in recorded plots.	Visual estimate in 2x2m plots.	

* % cover of *Juncus* spp in Group A and B Group A: jointed rushes (*Juncus acut/arti/subnod*) Group B: *J. conglomeratus, J. effusus and J. inflexus.*	All species combined less than 20% cover and less than 5% made up of species from Group B.	Visual estimate in 2x2m plots.	Where M22 vegetation is dominated by *Juncus subnodulosus* a higher mean cover may be considered.
* Cover of grasses (excludes *Phalaris* and *Phragmites*, but includes the rank grasses *Arrhenatherum elatius, Deschampsia cespitosum, Brachypodium sylvaticum*)	All grass species combined less than 20% cover and less than 10% made up of rank grasses.	Visual estimate in 2x2m plots.	
* % cover of *Molinia caerulea* (only applicable to the NVC communities M9/S27, M10 and M13)	% cover in M10 or M13 should be less than 25% % cover in M9/S27 should be less than 5%	Visual estimate in 2x2m plots.	
* Groundwater elevation (Ground soft, bouncy and squelchy)	Maintain the water table height as determined at baseline survey.	Test with foot	Maintain the water table height as determined at baseline survey. The water table level will obviously fluctuate seasonally and with local weather conditions. However, this assessment

			should try and gauge if the hydrology of the site is being adversely affected.
Presence of notable or locally distinctive species specific to the site (include species of note mentioned in the site citation)	Locally distinctive species recorded for the site should be at least present along the length of the Condition Assessment structured walk.		If these species are not recorded on any one visit, it does not automatically make the site unfavourable. Some sites may not have any notable or locally distinctive species recorded.

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 2 (SAC) – Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (Status C)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Targets	Method of Assessment	Comments
* Area of Oakwood	Maintain the extent of Oakwood.	Visual estimate in 10x10m plots and across the extent of the woodland using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Loss due to natural processes (e.g. wind-throw during extreme storm) is acceptable.
Oakwood community diversity	Maintain presence of woodland communities, W11, W17, W9 & W7 as established at base line survey.	Visual estimate in 10x10m plots	
Presence of associated features and semi-natural habitats	Maintain existing associated features and semi-natural habitats (wet/bog woodland, wet heath, semi-natural grasslands etc.)	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost. Note: Loss of associated habitats to Oakwood may be desirable in some instances.
* Structural variation (% cover)	Mean canopy cover greater than 70%	Estimate within the visual vicinity of the monitoring plots.	A well structured wood should have a well developed canopy and shrub layer.
	Mean shrub cover should be maintained between 20 -	Estimate within the visual vicinity of the monitoring	

	50%	plots.	
	Maintain current levels of standard variation within reasonable limits for field, herb and moss cover. Where present assess cover of *Luzula sylvatica*. *Note: L. sylvatica* may be dominant in the ground flora in some W11 communities	Visual estimate in 10x10m plots.	At least the current level of structural diversity should be maintained for field cover, herb cover and moss cover. Limits to be set for each site after the baseline survey. Note: *L. sylvatica* may be dominant in many W11 oakwood communities. The percentage cover of this species may affect Oak regeneration, but more information is required before that assumption can be made.
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
	Mean cover of bare ground should be less than 5%. Bare ground does not include boulders or rocks.	Visual estimate in 10x10m plots.	
* Age-class variation (DAFOR)	Young trees (5- 20cm diameter) at least occasional in 25% of plots	Estimate within the visual vicinity of the monitoring plots.	Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-classes present, including young and over-mature trees. However, on very steep sided slopes with shallow soils, over-mature trees are unlikely to occur as larger trees are likely to fall over before becoming over –mature. Note, that in many cases achieving the set targets is a long term aim. However, providing the correct management practices are in place, this attribute may be recorded as Unfavourable - recovering.
	Mature trees (20 - 75cm diameter) at least frequent in 75% of plots	Estimate within the visual vicinity of the monitoring plots.	
	Over-mature trees (>75cm diameter) at least present in 10% of plots	Estimate within the visual vicinity of the monitoring plots.	

* Presence of standing and fallen dead wood (DAFOR)	Standing dead wood at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	
	Fallen dead wood at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	
* Presence of epiphytes and climbers (DAFOR)	Epiphytes and climbers at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	Epiphytes and climbers are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.
* Presence of epiphytic bryophytes and lichens (DAFOR)	Epiphytic bryophytes and lichens at least occasional in 70% of plots and frequent in 30% of plots.	Visual estimate in 10x10m plots.	Epiphytic bryophytes and lichens are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.
* Regeneration potential (DAFOR) Maintain current levels of native tree regeneration within reasonable limits for the current	Regeneration of Oak seedlings.	Visual estimate in 10x10m plots.	The general aim is for the successful establishment of young stems (i.e. seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to maintain canopy density over a 10 year period. Regeneration of Oak in particular is likely to be slow and sporadic; in some stands, there may currently
	Regeneration of Oak saplings	Visual estimate in 10x10m plots.	
	Regeneration of other native seedlings.	Visual estimate in 10x10m plots.	
	Regeneration of other native	Visual estimate in 10x10m	

structure of the Oak woodland.	saplings.	plots.	not be sufficient and/or extensive enough gaps in the canopy for oak to regenerate. This does not necessarily indicate unfavourable condition.
* Cover of non-native species (all layers) (presence/absence)	Non–native invasive canopy species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	The canopy of the Oak woodland should be largely comprised of Oak trees. Non-native species are undesirable in the canopy, particularly invasive species such as Sycamore. In addition, non-native invasive species in any one layer is un-desirable. Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.
	Non–native invasive shrub species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non-native invasive canopy species seedlings/saplings should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non–native invasive ground flora species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
*Frequency and cover of eutrophication indicators: (DAFOR)	No one negative species no more than occasional throughout the wood and/or singly or together comprising more than 5% cover. No more than occasional is equivalent to less than 40% occurrence in recorded plots. *Galium aparine, Urtica dioica,*	Visual estimate in 10x10m plots.	

	Heracleum spp, Epilobium spp. Rumex obtusifolius		
* Cover of *Pteridium* (% cover)	The mean cover of *Pteridium* for the wood should be less than 10%.	Visual estimate in 10x10m plots.	
* Cover of grasses (non-woodland species) (% cover)	The mean cover of grass for the wood should be less than 10%.	Visual estimate in 10x10m plots.	A high cover of grasses indicates past and/or present grazing. Where heavy grazing has been a past management practice, the natural woodland ground flora will take a considerable time to re-establish (time limits for restoration currently unknown). However, providing the grazing pressure has been addressed, and there is evidence that woodland flora is beginning to re-appear, this attribute may be recorded as unfavourable, recovering.
Management /Disturbance			
* Grazing (DAFOR)	Grazing should be recorded as no more than occasional over 80% of plots.	Estimate within the visual vicinity of the monitoring plots.	Grazing by domestic stock, where it occurs should be light resulting in minimal damage to the ground flora through poaching and damage to seedlings and saplings.
* Poaching by cattle (DAFOR)	Poaching should be absent, or recorded in less than 20% of plots and frequent in less than 10% of plots.	Visual estimate in 10x10m plots.	
*Frequency of recent goat damage (1-2 years) (DAFOR)	Recent goat damage should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	

*Frequency of damage to seedlings/saplings (DAFOR)	Damage to seedling/saplings should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
Frequency of felling/coppicing (within 6 year monitoring cycle) (DAFOR)	There should be no felling or coppicing of native trees or shrubs.	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Felling non-native species as part of management for conservation is acceptable.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the acid woodland indicators (W11 & W17 communities) listed below:- *Vaccinium myrtillus, Blechnum spicant, Dicranum spp., Luzula pilosa, Rhytidiadelphus loreus*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained. However, the W11 & W17 communities should dominate the woodland.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the base-rich woodland indicators (W9 community) listed below:- *Sanicla europea, Geum urbanum, Polystichum setiferum, Aneomne nemorosa,*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.

	Primula vulgaris.		
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the flushed woodland indicators (W7 community) listed below:- *Carex remota,* *Ranunculus repens,* *Chrysosplenium oppositifolium,* *Filipendula ulmaria,* *Lysimachia nemorum.*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.
Presence of rare or scarce species specific to the site.	Maintain current levels of standard variation within reasonable limits for rare and notable species. If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	Name the species at least present along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

EAST COAST MARINE - SPECIAL PROTECTION AREA (SPA)

UK9020320

CONSERVATION OBJECTIVES

Document Details

Title	East Coast Marine SPA Conservation Objectives
Prepared By	*Ian Enlander*
Approved By	*Mark Wright*
Date Effective From	
Version Number	*V1*
Next Review Date	January 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	April 2015	Draft document	IE	CO for proposed SPA

Site relationship

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

The boundary adjoins the following existing Special Protection Areas –
Larne Lough SPA
Belfast Lough SPA
Outer Ards SPA
Copeland Islands SPA
Strangford Lough SPA

It also subsumes the existing Belfast Lough Open Water SPA

The boundary also adjoins the following existing Ramsar sites –
Larne Lough Ramsar
Belfast Lough Ramsar
Outer Ards Ramsar
Strangford Lough Ramsar

See also Boundary Rationale

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site"**.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4 GENERAL INFORMATION

Council bodies - marine waters adjoining:
Belfast City Council
Antrim and Newtownabbey Borough Council
Mid and East Antrim Borough Council
Ards and North Down Borough Council
Newry, Mourne and Down District Council

County: adjoining County Antrim and County Down

Area: 96668.34 Ha *Geographic co-ordinates:* 54.03.00 W
06.07.00 N

The principal interests are as follows – marine area used by -

- Wintering populations of Red-throated Diver and Eider Duck
- Rafting Manx Shearwater originating from an adjoining colony
- Foraging Sandwich, Common and Arctic Tern originating from adjoining tern colonies

5 SUMMARY SITE DESCRIPTION

The East Coast (Northern Ireland) Marine Special Protection Area includes coastal and near shore waters from Ringfad near Carnlough, Co. Antrim in the north, the marine area of Larne Lough, the marine area of Belfast Lough, waters around the Copeland Islands and offshore of the Ards Peninsula to Cloghan Head, near Ardglass in the south.

The SPA covers a diverse range of seabed habitats, from extensive coastal fringing reefs of various lithologies to the fine silt of inner Belfast Lough.

To the north of Belfast Lough, fringing reef is notable, with substantial areas of coarse sediments and boulders and cobbles offshore from Islandmagee. Further north, towards Ballygally and Carnlough, the glacial till dominates the seabed but also with important areas harbour maerl, a coralline algae (mostly *Phymatolithon calcareum*), known for its associated high biodiversity and for acting as a scallop nursery ground. Rippled sands and gravels are also notable between the relic drowned drumlins that are present off much of the 'Glens of Antrim' coastline. Bedrock outcrops with near vertical sides are found at the Maidens; these reefs and the surrounding sand banks are form part of the designated Maidens SAC.

Within Belfast Lough muds grade into muddy sands toward the outer Lough, with extensive areas of cobbles and shell debris overlying the muddy sand. Part of the muddy sand in the outer Lough is bioturbated by Dublin Bay prawn (*Nephrops norvegicus*), and also harbour the Seapen *Virgularia mirabilis*. Topographically complex reef areas surround the Copeland Islands.

To the south of Belfast Lough, the seabed off the Ards Peninsula is dominated by stony reef and mixed sands and gravels (often with a notable silt content). The gravelly sands support commercially harvestable seed mussel in geographically limited areas (affected by local hydrography), and further offshore support a scallop fishery (*Pecten maximus*). Mobile bedforms, such as extensive sand waves and banks, are found at Rigg Bank and extending south of the bank.

Offshore of Belfast Lough and off the Maidens Islands the seabed within the site reaches a depth of 125m.

5.1 BOUNDARY RATIONALE

The SPA represents a series of merged marine areas defined by a number of studies into use made of the marine area along the East Coast by selected species of waterbird and seabird.

Targeted survey work has identified an important area for non-breeding Red-throated Diver in the Belfast Lough area.

In addition a marine extension to the Copeland Islands SPA has been defined to reflect usage of the marine area by rafting Manx Shearwater originating from the Copeland colony.

Finally, a number of marine areas have been identified as important for a range of foraging tern species originating from adjoining tern colonies designated as part of the following existing Special Protection Areas -

Larne Lough SPA
Belfast Lough SPA
Outer Ards SPA
Copeland Islands SPA
Strangford Lough SPA

All of the above marine areas overlap to a greater or lesser extent. The SPA boundary subsumes all of these. In addition the SPA boundary subsumes the existing Belfast Lough Open Water SPA.

The landward boundary for this marine area is the MEAN LOW WATER MARK.

In addition to the designation map which shows the extent of the East Coast (Northern Ireland) Marine Special Protection Area, maps are also included for information purposes showing the marine areas used by each of the important bird populations.

6 SPA SELECTION FEATURES

Feature Type	Feature	Population	Population at time of designation (ASSI)	Population at time of designation (SPA)	SPA Review population	Common Standards Monitoring baseline
Species	Great Crested Grebe wintering population [a]	1646 individuals (5 year average 1995-2000)	N/A	1677 individuals – wintering		
Species	Red-throated Diver	142 individuals 5 year mean (2006/07 – 2008/08)		142 individuals 5 year mean (2006/07 – 2008/08)		
Species	Sandwich Tern	1656 pairs Breeding 5 year mean (2010 - 2014)		1656 pairs Breeding 5 year mean (2010 - 2014)		
Species	Common Tern	908 pairs Breeding 5 year mean (2010 - 2014)		908 pairs Breeding 5 year mean (2010 - 2014)		
Species	Arctic Tern	1351 pairs Breeding 5 year mean (2010 - 2014)		1351 pairs Breeding 5 year mean (2010 - 2014)		
Species	Manx Shearwater	4800 pairs Breeding 2000–2002				
Species	Eider Duck	3126 individuals				

		Wintering 5 year mean (2010/11 – 2014/15)				
Habitat[1]	Habitat extent					
Roosting /loafing sites[1]	locations of sites					

Table 1. List of SPA selection features.

[1] Habitat and roost sites are not a selection feature but are a factor and more easily treated as if they were a feature.

Notes on SPA features – may not be applicable to all SPAs

The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.

[a] – species cited in current SPA citation and listed on current N2K dataform

[b] – species selected post SPA designation through UK SPA Review 2001

[c] – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

6.1. ADDITIONAL ASSI SELECTION FEATURES

Note that as the site is entirely below the low water mark, none falls within the adjoining ASSI designations. As such there are no additional ASSI features but see section 9.1.

7. CONSERVATION OBJECTIVES

The Conservation Objectives for this site are:

To maintain each feature in favourable condition.

For each feature there are a number of component objectives which are outlined in the tables below. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

8. EAST COAST (NORTHERN IRELAND) MARINE SPA CONDITION ASSESSMENT 2014

Refer to the individual adjoining SPA Condition Assessments for further information – these are contained in the most recent conservation objectives for each of the sites. Relevant sites are

Larne Lough SPA
Belfast Lough SPA
Belfast Lough Open Water SPA
Outer Ards SPA
Copeland Islands SPA
Strangford Lough SPA

9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species
To maintain or enhance the range of habitats utilised by the qualifying species
To ensure that the integrity of the site is maintained;
To ensure there is no significant disturbance of the species and
To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

SPA SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Great Crested Grebe wintering population	As above
Red-throated Diver wintering population	As above
Sandwich Tern breeding season	As above
Common Tern breeding season	As above
Arctic Tern breeding season	As above
Manx Shearwater breeding season	As above
Eider Duck wintering population	As above
Habitat extent	Maintain the extent of main habitat components subject to natural processes
Roosting/loafing sites	Maintain all locations of sites.

Table 4. SPA Component objectives

9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

See Conservation Objectives for adjoining SPAs for selection feature objectives. These may be relevant to the present site. Relevant sites are -

Larne Lough SPA
Belfast Lough SPA
Outer Ards SPA
Copeland Islands SPA
Strangford Lough SPA

10. MANAGEMENT CONSIDERATIONS

Owner/Occupier's – (to be used to identify any key management considerations arising from ownership e.g. owners/organisations having an obvious bearing on conservation matters or from management agreements).

Key landowners, leasees and other users within the SPA, relevant to the site management, include Crown Estate Commissioners, local Councils (Belfast City Council, Antrim and Newtownabbey Borough Council, Mid and East Antrim Borough Council, Ards and North Down District Council, Newry, Mourne and Down District Council), Belfast Harbour Commissioners, Department of Agriculture and Rural Development Fisheries Division and shellfish operators, together with commercial shipping operators. There may be conflicts of interest between the requirements of individual/organisations, both within and adjacent to the SPA, and the site management needs.

Consideration must also be given to all land and sea based activities which have a bearing on site quality. This includes activities influencing water quality, ecological communities and disturbance.

There are a large number of significant commercial operations adjoining the marine area which may impact upon the SPA. Many of these are regulated through planning, relevant discharge and marine licensing arrangements. There is no evidence at present that any of these activities are having an adverse impact on the site features.

An assessment of the site boundary against commercial fisheries activity suggests that activity within the site tends to be inshore at Islandmagee, around the Copeland Islands, along the Outer Ards and towards the southern section of the site. Given that these sites are already important and of sufficient quality to support the birds, it may be reasonable to assume that current fishing in many of these areas is largely compatible with the birds' interest. However in cases where a type and level of fishing activity might impact upon the birds, a review may be needed so that authorities can establish the extent to which the fishing activities do influence the birds' interests. A fuller assessment of the distribution of fishing activities and the relationship between commercial stocks and site feature prey requirements will be undertaken.

11. MAIN THREATS, PRESSURES, ACTIVITES WITH IMPACTS ON THE SITE OR SITE FEATURES

The list below is not exhaustive, but deals with the most <u>likely</u> factors that are either affecting the East Coast (Northern Ireland) Marine SPA, or could affect it in the future. Factors affecting the features within the adjoining ASSI are also considered.

<u>Generic site/feature issues</u>

No	Issue	Threat/comments	Local considerations	Action
2	Aquaculture	Disturbance is a minor consideration unless carried out deliberately to minimise losses to shell-feeding waterfowl. Alteration of natural sub-littoral communities through seeding, maintenance, harvesting,	Licensed aquaculture areas in Larne Lough and Belfast Lough especially.	Liaise with DARD Fisheries Division. Assess all license applications individually. Current extent of licences may significantly alter seabed

		dredging/control of pest species. Naturalisation of introduced species – both the shellfish themselves and associated species e.g. algae and disease vectors.		conditions. Consider the collective impact.
6	Boating-shipping activity – commercial	Disturbance and potential for impact from high-speed shipping.	Major port facility at Larne and shipping channel at Larne Lough and Belfast Lough. These are long-established activities. Significant commercial fisheries activity at Portavogie. Smaller commercial harbours at Carnlough, Glenarm, Ballylumford, Carrickfergus, Bangor, Donaghadee and Ballywalter.	Formal consultation likely relating to new schemes. Consider the collective impact.
7	Boating activity – recreational	Disturbance and potential for impact especially from jet skies. Generally relevant to particularly sensitive areas within site.	Sailing clubs and/or facilities at Carnlough, Glenarm, Larne, Magheramourne Carrickfergus, Holywood, Cultra, Donaghadee, Ballywalter. Additional slipways and quays.	Liaise with appropriate authority with codes of good practice, zoning and use of by-laws as necessary. Consider the collective impact.
12	Dredging	Generally only an issue in relation to commercial shipping channels. Issues include disturbance to birds, disturbance to seabed, remobilisation of contaminated sediment and spoil dumping zones.	Ongoing capital dredging programme maintains shipping channel. Established ongoing maintenance programme.	Liaise with port authority and licensing bodies as required with regard to water quality issues and pollution incidents.
14	Fishing – commercial or recreational	Minimal disturbance consideration but may represent 'competition' for piscivorous birds. Represents a net loss to the system in terms of biomass.	Most commercial activity related to aquaculture. Current position unclear but there is little or no overlap between commercial stock and tern prey species. Recreational fishing not deemed to be a problem.	Liaise with DARD and fishing authority as required. Liaise with angling clubs as required.
16	Habitat extent – open water	Loss likely to be limited but expansion of commercial port facilities can impact on key localities.	Ongoing and further planned harbour developments will reduce open water area. Probably insignificant.	Assess planning and marine licensing applications. Consider the collective impact.
18	Habitat quality – open water	Alteration of habitat quality through diminution of water quality or invasive species.	Historically impacted by industrial and sewerage effluent. Vulnerable to pollution incidents from both industry and shipping.	Assess planning and marine licensing applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
21	Introduced species	Range of threats from loss of habitat, feeding competition, disease, hosting species presenting a threat outside of the site.	Not evident but given nature of the site, could be an issue through commercial shipping and aquaculture.	Liaise with appropriate authority. Consider feasibility of elimination. Participate in national/international initiatives.
	Marine	Potential for disturbance and direct	No site related proposals at time	Assess planning and

	renewable energy developments	impact to terns in flight and actively feeding (diving)	of writing. Potential for impact from schemes elsewhere	marine licensing applications. To be addressed through HRA process.
24	Recreational activities.	Disturbance is the main consideration	Open water has been heavily used for recreational activities over long timescale. Cumulative disturbance impacts (e.g. boating, wildfowlers etc) may be a significant factor for wintering bird populations	Liaise with local authorities and other managing parties.
25	Research activities.	To date targeted work has been land-based e.g. population census. A range of marine based activities are ongoing in relation to water quality, commercial shellfish and benthic communities.		All research activities to be undertaken by competent individuals, appropriately trained. If not directed at waterfowl, the latter must be considered. Liaise with relevant research bodies
	Sand dredging - commercial	Not actively pursued in the NI marine environment but pressures to seek alternative sources to terrestrial/freshwater sites may make this potentially viable.	Potential to impact seabed habitat of importance to seabird prey species.	Liaise with commercial operators, planning and other regulatory authorities.
28	System dynamics	Cuts across many other issues. Dynamic systems, especially coastal, can be affected by many factors especially engineered structures and significant changes in dominant wind direction or storm frequency. Many systems may indeed still be undergoing responses to historical developments e.g. partial reclamation, seawall construction. Changes may include alteration in sediment grade, shifts in patterns of erosion and deposition etc. Consequences for habitat and species utilisation of the site can be profound.	Main considerations are historical reclamation together with widespread coastal engineering works and ongoing developments. Sediment responses may be expected. Changes in water quality have led to changes e.g. an expansion of mussel beds in Belfast Lough, in turn altering system behaviour. Expanding aquaculture represents an alteration to substrate.	Human induced change should be minimised. Assess planning applications and liaise with other relevant authorities. Ad hoc dumping and removal of natural materials should be managed. Major natural shifts in system behaviour may be identified through analysis of aerial photographs and site monitoring. Major and consistent changes to patterns of habitat distribution and bird utilisation of the site should be noted.

Table 3. List of site/feature management issues

12. MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook (To be written).

Maintain the integrity of the site. Undertake Site Integrity Monitoring (SIM) at least annually to ensure compliance with the SPA objectives. The most likely processes of change (e.g. dumping, infilling, gross pollution) will either be picked up by Site Integrity Monitoring, or will be comparatively slow (e.g. change in habitat such as growth of mussel beds). More detailed monitoring of site features should therefore be carried out by Site

Condition Assessment on a less frequent basis (every 6 years initially to pick up long-term or more subtle changes). A baseline survey will be necessary to establish the full extent of the communities present together with the current condition of the features, against which all further condition assessments will be compared.

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial photographs to determine site morphological changes. Methodology for this is being developed.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that no sand extraction or dumping has been carried out within the SAC boundary. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (dune, saltmarsh, species). This will detect if the features are in favourable condition or not. See Annexes I and II for SAC and Additional ASSI Features respectively.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

12.2. ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, world. Refer to BTO ALERT limits etc. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline (e.g. eutrophication) is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere e.g. breeding terns. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.
3. For passage/wintering species assess breeding information. No site action if site decline is due to breeding ground failure, unless breeding ground failure is related to poor adult condition resulting from factors affecting wintering / passage birds.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance e.g. mudflats reduced by encroaching mussel beds.
6. Assess prey availability. Issues to consider are both within site e.g. water quality, broad site management, and without site e.g. climatically driven factors.
7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.
8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for breeding seabird and wader sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

13. SELECTION FEATURE POPULATION TRENDS

Site trends are reported using running 5 year means of annual maximum count (WeBS data). Long term trends in index values have been used to assess changes in overall wintering populations for Northern Ireland and UK (WeBS data). Caution is always necessary in the interpretation and application of waterbird counts given the limitations of these data. The reduced number of both sites and birds in Northern Ireland, result in a greater degree of fluctuation. Trends for Ireland are based on five years of data 1994-1999 (I-WeBS data). Consequently short-term fluctuations apparent in the data series may reflect changes in between year productivity, or other short term phenomena, rather than being indicative of a real change in a population.

Table to be completed

SPECIES	SITE TREND	NI TREND	ROI TREND	UK TREND	COMMENTS
Great Crested Grebe					
Red-throated Diver wintering population					
Sandwich Tern breeding season					
Common Tern breeding season					
Arctic Tern breeding season					
Manx Shearwater breeding season					
Eider Duck wintering population					

ANNEX I

Feature (SPA) – Wintering waterbirds

* = primary attribute. One failure among primary attribute = unfavourable condition
= Optional factors – these can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
*Great Crested Grebe wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Eider Duck wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
*Red-throated Diver wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends. WeBS methodologies have been shown to seriously underestimate Diver numbers. Species specific methodology to be employed. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Feature (SPA) – Breeding Seabirds

= primary attribute. One failure among primary attribute = unfavourable condition
= optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
* Sandwich Tern breeding population	Apparently occupied nests	No significant decrease in breeding population against national trends	Ideally annual data is collected, then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
* Common Tern breeding population	Apparently occupied nests	No significant decrease in breeding population against national trends	Ideally annual data is collected, then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
* Arctic Tern breeding population	Apparently occupied nests	No significant decrease in breeding population against national trends	Ideally annual data is collected, then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
* Manx Shearwater breeding population	Apparently occupied nests	No significant decrease in breeding population against national trends	Survey delivery likely to be tied to national seabird census programme. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Note that breeding seabird populations will be assessed at the 'source colonies'. Separate validation surveys may be required to assess utilisation of the marine area for foraging (tern species) and rafting (Manx Shearwater) behaviours. Further assessments e.g. of prey availability, water quality, impacts on seabed may also be necessary if inexplicable declines in breeding populations are recorded.

Non-avian factors

Attribute	Measure	Targets	Comments
* Habitat extent	Area of marine habitats	Maintain the area of marine habitats used or potentially usable by notified species, within the SPA, subject to natural processes.	To be addressed as part of wider marine monitoring programmes especially MSFD actions

EASTERN MOURNES SAC

UK0016615

CONSERVATION OBJECTIVES

Document Details

Title	*Eastern Mournes SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*11/10/2017*
Version Number	*V2.1*
Next Review Date	Nov 2020
Contact	cdp@daera-ni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1.0	June 2013	Internal working document	PC
V2.0	January 2015	Complete review	RMK
V2.0	01.04.2015	Effective date of Version 2.0	PC
V2.1	11.10.2017	Removed wording '*excluding recently burnt areas*' from bare peat target in all relevant Annex tables	PMC

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as “the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site”.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: DOWN

GRID REFERENCE: IJ 330270

AREA: 7510 ha

5. SUMMARY SITE DESCRIPTION

The Eastern Mournes consists of a compact range of mountains forming the highest ground in Northern Ireland. They are situated in the south-east of the Province in County Down, just west of Newcastle. Within the Mountain range, 12 peaks extend to over 600m, with Slieve Donard rising to 852m. The area is important geologically representing the largest outcrop of Tertiary granites in the British Isles covering some 150 sq. km. The Eastern Mournes host three distinct granite types with associated mineralogies.

The Eastern Mournes SAC has a unique combination of upland habitats and associated vegetation communities including the largest extent of European dry heaths in Northern Ireland. This is mostly of the *Calluna/Erica cinerea* type, but includes *Ulex gallii/Erica cinerea* dry heath on the lower slopes. The dominance of *Erica cinerea* is a notable feature of the area and characteristic of dry heath in the oceanic climate of more western parts of the UK. The area supports a number of other vegetation communities including wet heaths and blanket bog, montane heaths and grasslands on the highest summits and plant communities associated with the cliffs and scree.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The boundary has been drawn to include all areas of dry, wet, upland and lowland heath communities together with associated semi-natural habitats in the Eastern Mourne region. The major valley of the White Water, a small river that runs from Deers Meadow south, divides the lower lying Western Mournes from the Eastern Mournes. The vegetation communities along the length of this valley are severely degraded such as areas adjacent to the Moyad Road that runs along the bottom of the valley. At the time of designation, the Western Mournes were seen as a separate entity from the Eastern Mournes. The heathland and blanket bog associated with the Western Mournes will be declared as an ASSI at a later date.

The boundary around the entire Eastern Mournes SAC is clearly defined as the edge of high quality, semi-natural heathland communities surrounded by severely degraded heathland communities, improved agricultural land and forestry. The boundaries are generally clearly defined as stone walls - marking a change in land ownership or along the edge of roads, rivers and streams; or fences - along the edge of forestry plantations and field boundaries. These forests have been planted on the lower slopes of the mountains and many of the fields have also been reclaimed from the lowland heath communities in recent years. The majority of boundaries are stock proof.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ population
Habitat	European dry heaths	B	4680 ha
Habitat	Northern Atlantic wet heaths with *Erica tetralix*	B	889 ha
Habitat	Active blanket bogs	C	318 ha
Habitat	Alpine and boreal heaths	C	32.1 ha
Habitat	Siliceous alpine and boreal grasslands	C	32.1 ha
Habitat	Siliceous rocky slopes with chasmophytic vegetation	C	58.5 ha
Habitat	Siliceous scree of the montane to snow levels	C	17.7 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Eastern Mournes SAC.

6.1 ASSI SELECTION FEATURES

Eastern Mournes ASSI

Feature type	Feature	Size/ extent/ population
Habitat	Dry Heath	4680 ha
Habitat	Wet Heath	889 ha
Habitat	Blanket Bog	318 ha
Habitat	Montane Heath	64.2 ha
Habitat	Inland Rock	76.2 ha
Habitat	Oligotrophic lakes	4ha
Species	Higher Plant Assemblage	
Species	Notable assemblage of alpine fungi	
Species	Notable invertebrate assemblages of specialist montane species.	
Earth Science	Tertiary Igneous series - Five sub-sites within the Eastern Mournes SAC • Eagle Rock – Inland outcrops and streams • Bloody River – Coastal and river cliffs • Diamond Rocks - Inland outcrops and streams • Lindsay's Leap - Inland outcrops and streams • Ben Crom - Inland outcrops and streams	
Earth Science	Pleistocene – glacial erosional series. This comprises the assemblage of features including – corries, ice-plucked slopes, ice-smoothed walls, tors, glacial troughs and trimlines, debris fans and cones, streamlined bedrock, ice-shattered debris fields, meltwater channels.	
Earth Science	Pleistocene – glacial depositional series. This comprises the assemblage of features including moraines, dissected valley and drift terraces, boulder fields.	

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The *Conservation Objective* for this site is:

To maintain (or restore where appropriate) the

- European dry heaths
- Northern Atlantic wet heaths with *Erica tetralix*
- Active blanket bogs
- Alpine and boreal heaths
- Siliceous alpine and boreal grasslands
- Siliceous rocky slopes with chasmophytic vegetation
- Siliceous scree of the montane to snow levels

to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objectives
European dry heath	B	Maintain the extent of existing European dry heath vegetation.
		Maintain and enhance the quality of the European dry heath community types.
		Seek to expand the extent of the dry heath communities into degraded areas of species poor, dry acid grassland.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the dry heath.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for dry heath rehabilitation.
Northern Atlantic wet heath with *Erica tetralix*.	B	Maintain the extent of existing Northern Atlantic wet heath vegetation.
		Maintain and enhance the quality of the existing wet heathland.
		Seek to expand the extent of the wet heath communities into degraded areas of species poor, wet acid grassland.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the Northern Atlantic wet heath.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for wet heath rehabilitation.
Active blanket bog	B	Maintain the extent of intact blanket bog and actively regenerating blanket bog vegetation.
		Maintain and enhance the quality of the blanket bog community types including the presence of notable species.
		Seek to expand the extent of actively regenerating blanket bog vegetation into degraded (non-active) areas of cutover bog.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the blanket bog.
		Maintain the hydrology of the intact blanket bog peat mass.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for blanket bog rehabilitation.

Alpine and boreal heaths	C	Maintain the extent of existing alpine and boreal heath vegetation.
		Maintain and enhance the quality of the existing alpine and boreal heaths.
		Seek to expand the extent of the alpine and boreal heath communities into degraded areas of species poor acid grassland.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the alpine and boreal heaths.
Siliceous alpine and boreal grasslands	C	Maintain the extent of existing siliceous alpine and boreal grasslands.
		Maintain and enhance the quality of the siliceous alpine and boreal grassland community types.
		Seek to expand the extent of the siliceous alpine and boreal grassland communities into degraded areas of species poor, dry acid grassland.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the siliceous alpine and boreal grasslands.
Siliceous rocky slopes with chasmophytic vegetation	C	Maintain the existing acid rock chasmophytic Vegetation.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the siliceous rocky slopes.
Siliceous scree of the montane to snow levels	C	Maintain the extent of existing siliceous scree (partially vegetated siliceous scree).
		Maintain and enhance the quality of the siliceous scree community types.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the siliceous scree.

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Dry Heath	See SAC Selection Feature Objective Requirements table.
Wet Heath	See SAC Selection Feature Objective Requirements table.
Blanket Bog	See SAC Selection Feature Objective Requirements table.
Montane Heath	See SAC Selection Feature Objective Requirements table.
Inland Rock	See SAC Selection Feature Objective Requirements table.
Oligotrophic Lakes	Maintain the extent of oligotrophic lakes and ponds – i.e. Blue and Binnian Loughs.
	Maintain the open water area of the lakes.
	Maintain the water chemistry and water levels – i.e. water poor in plant nutrients and levels not to fluctuate outside normal limits.
	Maintain characteristic aquatic vegetation
Higher plant assemblage	Maintain viable populations, and enhance where practicable the species comprising the rare plant assemblage. (*Diphasiastrum alpinum, Salix herbace, Cryptogramma crispa, Phegopteris connectilis* *Carex bigelowii, Saxifraga stellaris*
Notable assemblage of alpine fungi	To be finalised.
Notable invertebrate assemblage	Ensure that the populations of notable invertebrates are maintained within the Eastern Mournes SAC.
Tertiary igneous rocks	Maintain the extent of exposure at each of the five sub-sites that display nationally important exposures of Tertiary igneous rocks and access to them subject to natural processes.
Pleistocene – glacial erosional series	Maintain the position in the landscape of these features including access opportunity, viewlines and physical character subject to natural processes
Pleistocene – glacial depositional series.	Maintain the extent and physical integrity of these features subject to natural processes

10. MANAGEMENT CONSIDERATIONS

Ownership
About 50% of the Eastern Mournes SAC (3,640 ha) is owned by Belfast Water Commissioners and this area of land is completely surrounded by the 'Mourne Wall' built between 1912 and 1920 to delimit their ownership. This area is often referred to as the high Eastern Mournes and acts as the catchment for the Ben Crom and Silent Valley Reservoirs. An additional eleven estates are located around the periphery of the high Eastern Mournes including the Annesley Estate, which is now the property of the National Trust. The remaining estates are privately owned and in multiple ownership with over 100 owners identified in the area in addition to a much greater number of graziers. Additional individuals also have shooting rights over the area.

The complex pattern of ownership and grazing rights together with the added complication of shooting rights makes a unified approach to site management more difficult.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Eastern Mournes, or could affect it in the future.

Although European dry heaths, Northern Atlantic wet heaths with *Erica tetralix*, Active blanket bogs, Alpine and boreal heaths, Siliceous alpine and boreal grasslands, Siliceous rocky slopes with chasmophytic vegetation and Siliceous scree of the montane to snow levels are the qualifying SAC features, factors affecting ASSI features are also considered.

NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.

Grazing
Within the Eastern Mournes SAC, many of the mountain summits and lower slopes are heavily grazed by sheep. As a consequence, these heathland communities are degraded and in unfavourable condition. Overgrazing has been identified on all lower slopes outside NI Water Ownership. Within the Mourne Wall, the grazing pressure is somewhat lower, but overgrazing still does occur. The areas that have been most severely affected by over-grazing include the montane heaths and grasslands on the summits of Slieve Donard and Slieve Commedagh, along tracks and paths such as the Brandy Pad and on some of the lower slopes. NI Water has tried to exclude sheep grazing from all lands within the Mourne Wall in an attempt to prevent the bacteria *Cryptosporidium* from infecting the water

supply. However, they have not been able to maintain a no grazing policy due to illegal grazing by landowners.
Therefore, overgrazing is a consequence of a number of factors that are extremely difficult to control. These include grazing prescriptions which have been set too high for the Mourne region, illegal grazing (including winter grazing which is particularly damaging to Heather), lack of shepherding and the difficulties of monitoring sheep numbers over extensive areas of upland.
ACTION: Establish a sustainable stocking density within each management unit of the Eastern Mournes SAC and ensure that set grazing prescriptions are strictly adhered to. Continue careful monitoring of the heathland communities to establish if the set grazing prescriptions are permitting the heathland communities to recover towards favourable condition.

Burning

Burning of the vegetation has taken place occasionally, with some areas of past burning being identifiable. Excessive burning will lead to the deterioration of all heathland communities. Within the Eastern Mournes, burning should only be carried out in exceptional circumstances.

ACTION: Ensure that any burning within the SAC is carefully controlled and monitored.

Scrub/Bracken Encroachment

There are many small pockets of bracken associated with the lower slopes around the periphery of the Eastern Mournes SAC as well as localised pockets of bracken on some of the upper slopes. There is also some limited scrub development – mainly *Ulex europaeus* associated with areas of disturbance. Any further scrub or bracken encroachment into the heathland communities is undesirable.
ACTION: Monitor further scrub/bracken encroachment (where it occurs) and take remedial action if required. Remove any invasive exotic species, such as Rhododendron as a matter of urgency.

Water abstraction

Within the Mourne Wall, the land is managed by NI Water for the purpose of water abstraction and supply. With growing water requirements within the Belfast area, there is constant pressure to increase supply.
ACTION: Ensure that increased levels of water abstraction do not damage the heathland communities within the SAC. There may be a requirement to lay new water pipelines from the upper reservoirs down to Spelga Dam or Fofany Dam. If required, pipe laying should be carried out with the minimum disruption to the heathland communities.

Fly-tipping

There does not appear to be a serious dumping issue anywhere within the Eastern Mournes SAC.

ACTION: If any dumping does occur, remove all evidence immediately to prevent any further incidences.

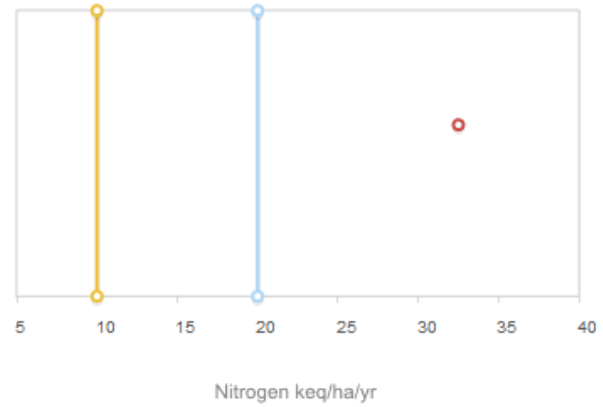
Quarrying
Historically quarrying within the Eastern Mournes has been very small scale and a number of mineral rights are held by private and state organisations in the area. There is currently no quarrying within the Mourne Wall, but there are two small scale operations presently in operation at Thomas' Mountain and Trassey Track.
ACTION: There should be no quarrying within the Eastern Mournes SAC. The status of mineral rights within the site requires clarification in order to identify potential threats that they might have on the SAC features.

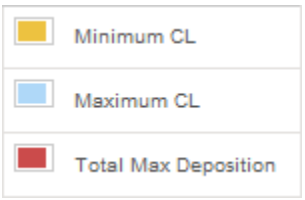
Land reclamation
Much of the lower *Ulex gallii* dry heaths have been lost to reclamation in recent years. The remaining *Ulex gallii* heath is an important component of the SAC. In addition some of the dry heaths further up-slope have also been reclaimed.
ACTION: Ensure that there is no further reclamation of the lowland or upland heaths anywhere within the SAC.

Recreation
An increased interest in hill walking within the Northern Ireland population together with increased tourist activity in the Newcastle area, is beginning to put real pressure on the footpaths and surrounding vegetation within the Eastern Mournes. Ideally, a sustainable level of recreational activity should be established to ensure that there is no adverse affect on the heathland communities.
ACTION: Ensure that all precautions are taken to minimise the impact of hill walking on upland paths throughout the Mourne Mountains. Footpath maintenance is of paramount importance and there is also a need to develop and promote paths in areas that are not highly sensitive to disturbance.

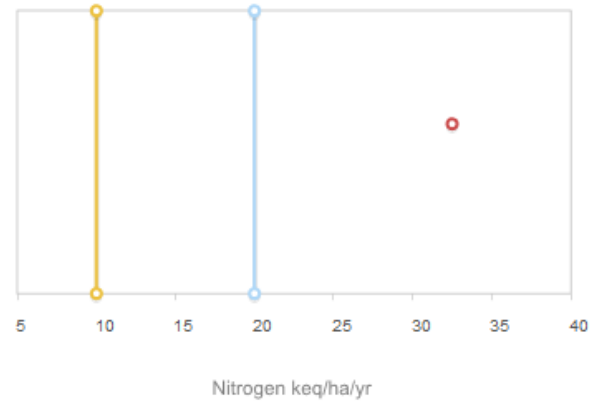
Nitrogen Deposition
Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for habitats and species present on Eastern Mournes SAC.

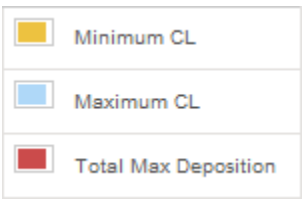
Feature: European dry heaths
Critical Load Class: Dry heaths
Critical Loads (kg N/ha/yr): 10-20
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.5 Minimum: 16.2 Average: 24.4



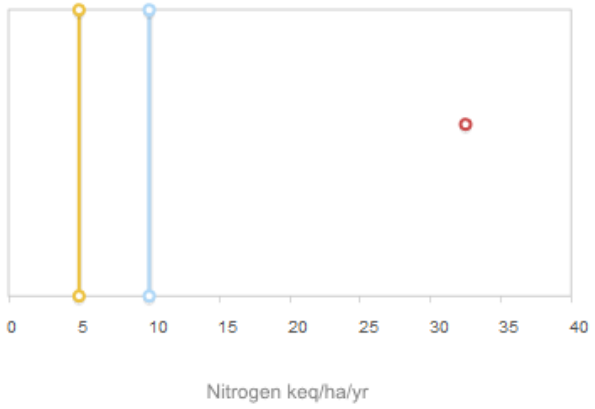


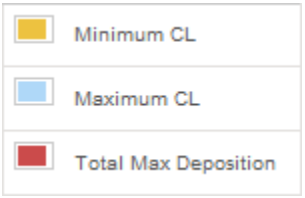
Feature: Northern Atlantic wet heaths with Erica tetralix
Critical Load Class: Northern wet heath: Erica tetralix dominated wet heath
Critical Loads (kg N/ha/yr): 10-20
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.5 Minimum: 16.2 Average: 24.4



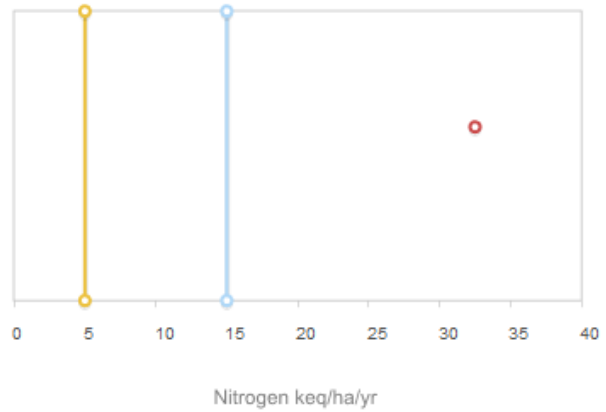


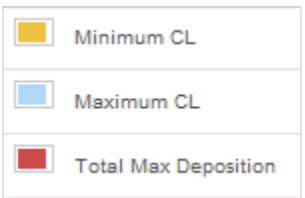
Feature: Blanket bogs (* if active bog)
Critical Load Class: Raised and blanket bogs
Critical Loads (kg N/ha/yr): 5-10
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.5 Minimum: 16.2 Average: 24.4



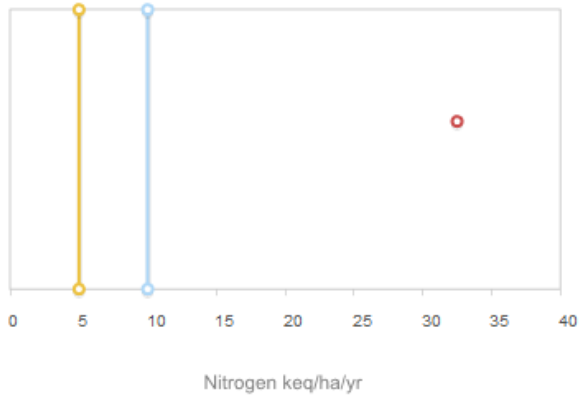


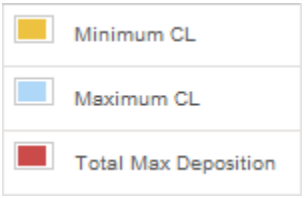
Feature: Alpine and Boreal heaths
Critical Load Class: Arctic, alpine and subalpine scrub habitats
Critical Loads (kg N/ha/yr): 5-15
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.5 Minimum: 16.2 Average: 24.4



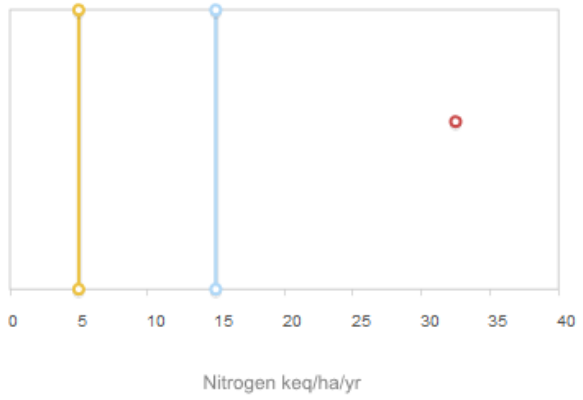


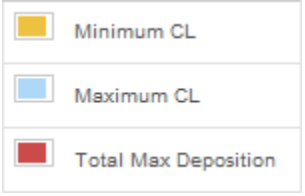
Feature: Siliceous alpine and boreal grasslands
Critical Load Class: Alpine and subalpine grasslands
Critical Loads (kg N/ha/yr): 5-10
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.5 Minimum: 16.2 Average: 24.4

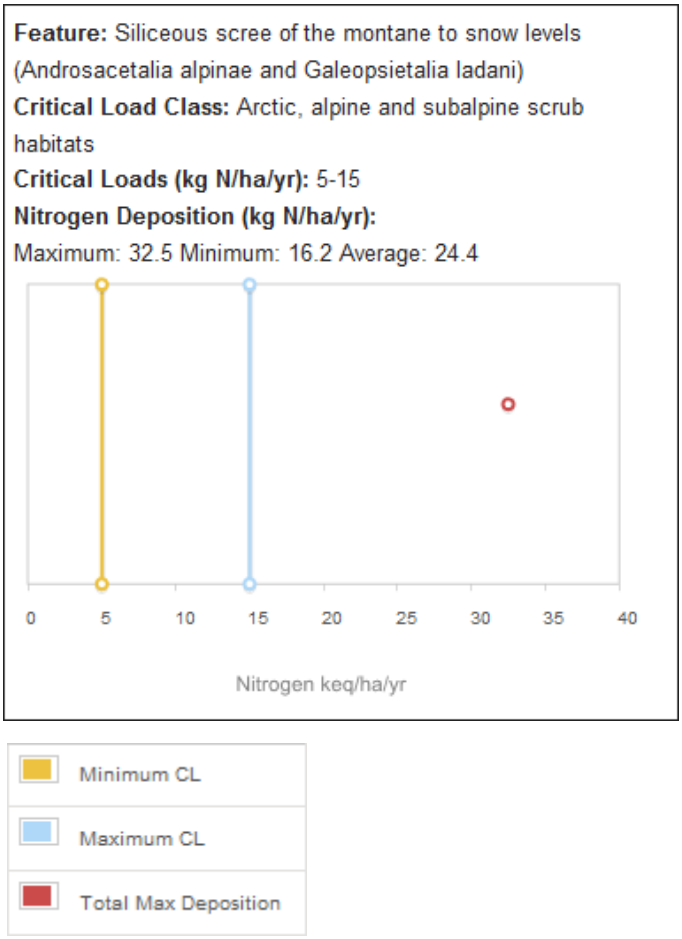




Feature: Siliceous rocky slopes with chasmophytic vegetation
Critical Load Class: Arctic, alpine and subalpine scrub habitats
Critical Loads (kg N/ha/yr): 5-15
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.5 Minimum: 16.2 Average: 24.4







(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use
Any changes in local land-use e.g. agricultural intensification, drainage works and development) may be detrimental to the SAC.
Action: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change
Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.
ACTION: When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat).

These longer-term changes will be picked up by monitoring of the feature via Site Condition Assessment - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. *Monitor the integrity of the site (SIM or Compliance Monitoring)*
Complete boundary survey to ensure that the fencing is still intact. Ensure that there has been no illegal grazing, dumping or burning carried out within the SAC boundary. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan – Blanket Bog.

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan – Upland Heathland.

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan – Montane Heath.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

ANNEX I

Feature 1 (SAC) - European dry heath (Status B)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
* Area of dry heath	Maintain the extent of dry heath at 4680 ha. The dry heath communities include H10 - *Calluna vulgaris-Erica cinerea*, H12 - *Calluna vulgaris-Vaccinium myrtillus* and H8 *Calluna vulgaris-Ulex gallii* heath. The extent and distribution of each community to be maintained.	Visual estimate in 2x2 m plots and across the dry heath using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Note that it may be possible to extend dry heath communities, provided this is into degraded areas and does not encroach into other habitats of scientific interest.
* Heath community diversity	Maintain the presence of the dry heath communities H7, H8, H10 etc. as established at base line survey.	Visual estimate in 2x2 m plots.	Repeat monitoring of plots using GPS should indicate whether dry heath communities have changed or been lost.
* Area of mosaic communities and associated semi-natural habitats	Maintain associated mosaic communities and semi-natural habitats.	Visual estimate in 2x2 m plots and across the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost.

Dwarf-shrub height	Average ericoid height should be 15–35cm with at least 25% of the dry heath in the late mature/degenerate growth phase (greater than 35cm).	Visual estimate in 2x2 m plots.	On some areas of dry heath (especially on gentle slopes), the ericoid age structure will largely reflect recent burning patterns. However, in dry heath, burning should only be carried out occasionally under carefully controlled and monitored circumstances. A varied heather age structure is reflected in the height of heather.
* Bare peat, or ground covered by algal mats (% cover)	Bare peat etc. should occupy less than 2% of the dry heath surface overall.	Visual estimate in 2x2 m plots.	Bare peat (NOT exposed rock) or peat carpeted by *Polytrichum* spp., *Campylopus* spp. crust forming lichens or algal mats can occur as a consequence of constant burning and/or grazing. Bare peat here represents bare peat etc. within the dry vegetation rather than naturally eroded surfaces where exposed rock can form a natural part of the dry heath community.
* Ericaceous cover (% cover)	Dwarf-shrub cover should be greater than 75% over at least 75% of the dry heath community; and Mean dwarf-shrub cover should be greater than 75%	Visual estimate in 2x2 m plots.	
* Ericoid diversity	At least two species of dwarf-shrub at least present in 90% of plots.	Visual estimate in 2x2 m plots.	Ericoid (dwarf-shrub species) include *Calluna vulgaris*, *E. cinerea*, *Vaccinium myrtillis*, *Erica tetralix*, *Ulex gallii*, *Empetrum nigrum* and *Myrica gale*.
* Cover of *Ulex gallii* (% cover)	*Ulex gallii* cover should be less than 50% in plots within H8 stands.	Visual estimate in 2x2 m plots.	Mean percentage cover should be assessed for stands of H8 only – i.e. exclude plots in other heath communities from the calculations. Stands of H8 are generally restricted to the south-east of Northern Ireland.

* Cover of graminoids (% cover)	Total graminoid cover should be less than 33%.	Visual estimate in 2x2 m plots.	Include true grasses, sedges, and rushes in this assessment. *Nardus stricta, Deschampsia flexuosa*, *Juncus squarrosus* or other graminoids should not dominate over other species.
* Frequency and % cover of bryophytes and bushy lichens (esp *Cladonia* spp.) (DAFOR and % cover)	Bryophytes (excluding *Polytrichum* spp. and *Campylopus* spp. on bare ground) and/or Cladonia species should be at least frequent. At least frequent is equivalent to greater than 41% occurrence in recorded plots. Combined mean cover should be greater than 5%.	Visual estimate in 2x2 m plots.	Generally only bryophytes (mosses and liverworts) figure in this assessment, but occasionally bushy lichens can also be a prominent feature of the dry heath vegetation.
* Frequency and % cover of scrub/tree encroachment on dry heath communities (DAFOR and % cover)	Scrub/tree encroachment should be no more than occasional over the dry heath community. No more than occasional is equivalent to less than 40% occurrence in recoded plots. Mean cover should be less than 5%.	Visual estimate within a 10 m radius of plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Scrub encroachment should be checked using a combination of aerial photographs and Condition Assessment. Include invasive alien species in addition to *Betula pubescens, Prunus spinosa, Rubus* spp. Invasive exotic species such as *Rhododendron ponticum* should be removed immediately. Exclude *Ulex europaeus* (see below)
* Cover of Gorse	Gorse (*Ulex europaeus)* cover	Visual estimate in 2x2	Although a natural component of heath communities,

Ulex europaeus (% cover)	should be less than 5%. During repeat surveys, Gorse cover should not exceed that of the baseline survey.	m plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Gorse can become invasive under both low and high grazing pressures. It is important to assess whether the relative quantities present in the site are increasing.
* Cover of Bracken (*Pteridium aquilinum*) encroachment (% cover)	Bracken cover less than 10% in dense canopy. During repeat surveys, Bracken cover should not exceed that of the baseline survey.	Visual estimate in 2x2 m plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Although a natural component of heath communities, Bracken can become invasive under both low and high grazing pressures. It is important to assess whether the relative quantities present in the site are increasing.
* Frequency and cover of undesirable agricultural grasses and weeds (DAFOR and % cover)	None of the following should be more than rare: *Cirsium arvense, C. vulgare, Senecio jacobaea, Urtica dioica, Plantago major, Phleum pratense, Trifolium repens, Holcus lanatus* and *Lolium perenne* No more than rare is equivalent to less than 20% occurrence in recorded plots. Combined mean cover of agricultural grasses and weeds less than 1%.	Visual estimate in 2x2 m plot.	

* Management - Grazing (% cover)	Signs of moderate or heavy grazing should occupy less than 5% of the dry heath vegetation. The frequency of droppings, the extent of poaching, uprooting of dwarf shrubs and invasion by *Juncus squarrosus* etc. indicate moderate and heavy grazing where any one of the above is recorded as more than occasional.	Visual estimate in 2x2 m plots.	
* Management - Burning (% cover)	Signs of recent burning should occupy less than 5% of the dry heath vegetation. Recent burning is represented by areas burnt within the last two years.	Visual estimate in 2x2 m plots and across feature using a combination of aerial photographs, SIM and Condition Assessment structured walk.	
Frequency and cover of erosion features associated with human impacts. (DAFOR and % cover)	No gully erosion or bare rock associated with more concentrated human impacts (ATV tracks or recreational activities). Man induced/enhanced erosion should occupy less than 2% of the total area of dry heath other than very localised	Visual estimate in 2x2 m plots.	The extent of man induced erosion should be monitored using a combination of aerial photographs and Condition Assessment. Erosion is a natural feature of high mountain slopes. However, where natural erosion is exacerbated by human activity, mainly hill walking, the heath will not be in favourable condition, except where such erosion is very limited in nature.

	instances.		
Herb diversity	Herbs (excluding negative indicators) at least frequent. At least frequent is equivalent to greater than 41% occurrence in recorded plots.	Visual estimate in 2x2 m plots.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ANNEX 1

Feature 2 (SAC) - Northern Atlantic wet heath with *Erica tetralix* (Status B)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
* Area of wet heath	Maintain the extent of wet heath at 889 ha. The wet heath community is M15 – *Scirpus cespitosus-Erica tetralix* wet heath.	Visual estimate in 2x2 m plots and across the wet heath using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Any loss of wet heath, or fragmentation of this habitat is unacceptable. Note that it may be possible to extend wet heath communities, provided this is into degraded areas and does not encroach into other habitats of scientific interest.
* Heath community diversity	Maintain the presence of the wet heath community M15 as established at base line survey.	Visual estimate in 2x2 m plots.	Repeat monitoring of plots using GPS should indicate whether wet heath communities have changed or been lost.
* Area of mosaic communities and associated semi-natural habitats	Maintain associated mosaic communities and semi-natural habitats.	Visual estimate in 2x2 m plots and across the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost.

Dwarf-shrub height	Average ericoid height should be 15–35cm with at least 25% of the wet heath in the late mature/degenerate growth phase (greater than 35cm).	Visual estimate in 2x2 m plots.	On some areas of wet heath (especially on gentle slopes), the ericoid age structure will largely reflect recent burning patterns. However, in wet heath, burning should only be carried out in exceptional circumstances. Heather height reflects the age structure of the Heather.
* Bare peat, or ground covered by algal mats (% cover)	Bare peat etc. should occupy less than 2% of the wet heath surface overall.	Visual estimate in 2x2 m plots.	Bare peat or peat carpeted by *Polytrichum* spp., *Campylopus* spp. crust forming lichens or algal mats can occur as a consequence of excessive burning and/or grazing. Bare peat here represents bare peat etc. within the wet heath vegetation.
* Ericaceous cover (% cover)	Dwarf-shrub cover should be maintained between 50–75%	Visual estimate in 2x2 m plots.	Although dominated by dwarf shrubs, the sward should be composed of a variety of higher plants and bryophytes.
* Ericoid diversity	At least two species of dwarf-shrub at least present in 90% of plots.	Visual estimate in 2x2 m plots.	Ericoid (dwarf-shrub species) include *Calluna vulgaris*, *Erica tetralix*, *Empetrum nigrum* and *Myrica gale*.
* Cover of graminoids (% cover)	Total graminoid cover should be less than 50%.	Visual estimate in 2x2 m plots.	Include true grasses, sedges, and rushes in this assessment. *Molionia caerulea, Trichophorum cespitosum, Deschampsia flexuosa*, *Juncus squarrosus* or other graminoids should not dominate over other species. Localised *Schoenus nigricans* flushes should not be included in this habitat assessment.
* Bryophyte cover and frequency of *Sphagnum* mosses (%	Mean bryophyte cover (excluding *Polytrichum* spp. and *Campylopus* spp. on	Visual estimate in 2x2 m plots.	Bryophytes should include a range of pleurocarpus species forming patches below, or in more open swards beneath the dwarf-shrubs as well as

cover and DAFOR)	bare ground) should be at least 25%. *Sphagnum* moss species should be at least frequent throughout the moss layer. At least frequent is equivalent to greater than 41% occurrence in recorded plots.		*Sphagnum* moss species.
* Frequency and % cover of scrub/tree encroachment on wet heath communities (DAFOR and % cover)	Scrub/tree encroachment should be no more than rare over the wet heath community. Mean cover should be less than 2%. No more than rare is equivalent to less than 20% occurrence in recorded plots.	Visual estimate within a 10 m radius of plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Scrub encroachment should be checked using a combination of aerial photographs and Condition Assessment. Invasive exotic species such as *Rhododendron ponticum* should be removed immediately.
* Frequency and cover of undesirable agricultural grasses and weeds (DAFOR and % cover)	None of the following should be more than rare: *Cirsium arvense, C. vulgare, Senecio jacobaea, Urtica dioica, Plantago major, Phleum pratense, Trifolium repens, Holcus lanatus* and *Lolium perenne*.	Visual estimate in 2x2 m plot.	

	No more than rare is equivalent to less than 20% occurrence in recorded plots. Combined mean cover of agricultural grasses and weeds less than 1%.		
* Management - Grazing (% cover)	Signs of moderate or heavy grazing should occupy less than 5% of the wet heath vegetation. The frequency of droppings, the extent of poaching, uprooting of dwarf shrubs and invasion by *Juncus squarrosus* etc. indicate moderate and heavy grazing where any one of the above is recorded as more than occasional.	Visual estimate in 2x2 m plots.	
* Management - Burning (% cover)	Signs of recent burning should occupy less than 5% of the wet heath vegetation. Recent burning is represented by areas burnt within the last two years.	Visual estimate in 2x2 m plots and across the feature using a combination of aerial photographs, SIM and Condition Assessment structured walk.	

Frequency and cover of erosion features associated with human impacts (DAFOR and % cover)	No gully erosion, bare peat or rock associated with more concentrated human impacts (ATV tracks or recreational activities). Man induced/enhanced erosion should occupy less than 2% of the total area of wet heath other than very localised instances.	Visual estimate in 2x2 m plots.	The extent of man induced erosion should be monitored using a combination of aerial photographs and Condition Assessment. Erosion is a natural feature of high mountain slopes. However, where natural erosion is exacerbated by human activity, mainly hill walking, the heath will not be in favourable condition, except where such erosion is very limited in nature.
Herb diversity	Herbs (excluding negative indicators) at least frequent. At least frequent is equivalent to greater than 41% occurrence in recorded plots.	Visual estimate in 2x2 m plots.	Wet heaths tend to be dominated by dwarf-shrubs and graminoids; however, some herbs should be present in most plots (albeit at a low cover).

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ANNEX 1

Feature 3 (SAC) - Active blanket bog (Status C)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
* Area of blanket bog and upland raised mire (ha)	Maintain the extent of the intact bog surface at 318 ha. The blanket bog communities include M17 – *Scirpus cespitosus Eriophorum vaginatum* blanket mire, M18 – *Sphagnum papillosum* raised and blanket mire and M19 *Calluna vulgaris - Eriophorum vaginatum* blanket mire.	Visual estimate in 2x2 m plots and across the blanket bog using a combination of aerial photographs, SIM and Condition Assessment structured walk.	The blanket bog communities include M17 – *Scirpus cespitosus Eriophorum vaginatum* blanket mire, M18 – *Sphagnum papillosum* raised and blanket mire and M19 *Calluna vulgaris - Eriophorum vaginatum* blanket mire.
* Area of mosaic communities and associated habitats	Maintain associated mosaic communities and habitats (wet heath, dry heath, upland fen, etc)	Visual estimate across the SAC using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring using condition assessment, SIM, and aerial photographs should indicate whether mosaics and associated habitats have changed or been lost.
* Pool/hummock system extent and complexity	The extent and complexity of pool and hummock systems at least maintained.	The extent of pool and hummock systems should be	The extent of pool and hummock systems should be monitored using a combination of aerial photographs and Condition Assessment.

	Differentiation of *Sphagnum* species should be recorded with *S. cuspidatum* or *S. auriculatum* in the pools and *S. papillosum* and *S. capillifolium* forming the lawns and hummocks.	monitored using a combination of aerial photographs and SIM.	
Dwarf-shrub Height (cm)	Average ericoid height should be 15-30cm.	Visual estimate in 2x2 m plots.	On some areas of blanket bog, the dwarf-shrub height will largely reflect recent management patterns. However, on largely undisturbed sites with minimal or no grazing, dwarf shrubs should display no apparent growth forms with a fairly uniform height between 15-30cm.
* Bare Peat, or ground covered by algal mats (%)	Bare peat etc should occupy less than 2% of the intact blanket bog surface overall.	Visual estimate in 2x2 m plots.	Bare peat, or bare ground carpeted by *Polytrichum* spp., *Campylopus* spp. crust forming lichens or algal mats can occur as a consequence of peat cutting or excessive burning and/or grazing. Bare ground here represents bare peat etc. within the blanket bog vegetation rather than naturally eroded surfaces where bare ground forms a natural part of the erosion feature.
* *Sphagnum* cover/ abundance (% cover and frequency) Active Peat Formation (DAFOR)	*Sphagnum* moss species should have a minimum cover of 25% over at least 66% of the intact blanket bog surface. Thick, hummock forming species of sphagnum should be at least occasional.	Visual estimate in 2x2 m plots.	A constant *Sphagnum* moss cover is indicative of active peat formation and is dependent on the maintenance of a high water table. *Sphagnum* moss is therefore used to measure the hydrological integrity of the blanket bog surface.

	Species present should include a mixture of both thin species: - *S. capillifolium* and *S. tenellum* and the thick hummock forming species*:* - *S. papillosum* and *S. magellanicum* at least occasional over the surface.		
* Ericaceous Cover (%)	Ericoid cover frequent over the surface of the intact blanket bog. Dwarf-shrub cover greater than 33%. Less than 33% is only acceptable in wetter areas where *Narthecium ossifragum* or *Sphagnum* spp. are abundant and forming lawns.	Visual estimate in 2x2 m plots.	Ericoid (dwarf-shrub species) include *Calluna vulgaris*, *Erica tetralix*, *E. cinerea*, *Myrica gale*, *Vaccinium myrtillis and Empetrum nigrum*.
* Ericoid diversity (DAFOR)	At least two species of dwarf-shrub should be widespread and frequent. Where three or more species are present, but only one frequent and widespread, the abundance of the less abundant species may be combined and treated as if they are a single species.	Visual estimate in 2x2 m plots.	A mono-dominant sward of *Calluna vulgaris* may suggest that the surface of the intact bog is drying out – i.e. the water table is too low beneath the surface of the bog.
* Scrub/tree encroachment on any active peat surface	Scrub/tree encroachment should be no more than rare on the intact bog surface, or in	Visual estimate in 2x2 m plots.	Scrub encroachment should be checked using a combination of aerial photographs and Condition Assessment. Invasive exotic species such as

(DAFOR)	the actively regenerating cutover areas.		*Rhododendron ponticum* should be removed immediately.
* Erosion Features associated with human impacts (% and DAFOR)	No gully erosion or bare peat associated with more concentrated human impacts (eg drainage, peat extraction, ATV tracks or recreational activities). Man induced/enhanced erosion should occupy less than 2% of the total area of blanket bog other than very localised instances.	Visual estimate in 2x2 m plots.	The extent of man induced erosion should be monitored using a combination of aerial photographs and Condition Assessment. Erosion is a natural feature of blanket bog, particularly marginal fretting on breaks of slope. However, where natural erosion is exacerbated by human activity, the bog will not be in favourable condition, except where such erosion is very limited in nature.
* Graminoid Cover (%)	Total cover of graminoids should not exceed 50%, unless dominated by *Molinia caerulea* forming even swards over waterlogged areas with *Sphagnum* moss cover greater than 25%.	Visual estimate in 2x2 m plots.	Include true grasses, sedges, and rushes in this assessment. *Eriophorum vaginatum*, *Trichophorum cespitosum*, *Deschampsia flexuosa*, *Juncus squarrosus* or other graminoids (except *Molinia* in some instances) should not dominate over other species.
* Management – Peat extraction	No evidence of unconsented active peat extraction.	Visual estimate in 2x2 m plots.	In some instances areas of cut peat can re-vegetate with good blanket bog vegetation which meets the attributes for favourable condition.
* Management - Grazing (%)	Signs of moderate or heavy grazing by cattle or sheep should occupy less than 5% of the blanket bog vegetation within any grazing unit.	Visual estimate in 2x2 m plots.	The frequency of droppings, the extent of poaching and the presence of grazing induced *Calluna vulgaris* growth forms indicate moderate and heavy grazing where any one of the above is recorded as more than occasional.

Molinia caerulea Cover (%)	Where *Molinia caerulea* cover is greater than 50%, it should form an even (not tussocky) sward in waterlogged conditions with *Sphagnum* moss cover greater than 25%.	Visual estimate in 2x2 m plots.	*Molinia caerulea* only occurs as a natural component of the bog vegetation in the extreme west of Northern Ireland where the climate is generally warmer and wetter i.e. more oceanic.
Presence of rare or scarce species specific to the site.	*Sphagnum imbricatum* and *Sphagnum fuscum*, where they have been recorded, should remain at least present along the length of each of the w-walks. If these species are not recorded on any one visit, it does not automatically make the SAC unfavourable.	Visual estimate in 2x2 m plots.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ANNEX 1

Feature 4 (SAC) - Alpine and boreal heaths (Status C)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
Area of montane heath (ha)	Maintain the extent of montane heath communities at a minimum of 32ha. These communities include H14 – *Calluna vulgaris-Racomitrium lanuginosum* heath and wind-pruned H10b - *Calluna vulgaris-Erica tetralix* heath (*Racomitrium* sub-community).	Visual estimate in 2x2 m plots and across the montane heath using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Any loss or fragmentation of this habitat is unacceptable. It is probably not possible to extend montane heath communities beyond their current range at Cuilcagh – i.e. no obvious areas where the habitat has been lost through damaging activities. Difficult to measure exactly; summit ridge is c. 30 ha in extent, but includes significant area of eroding blanket bog. Some higher level heath communities on slopes below summit may also conform to the type.
Ericoid Height (cm)	Average ericoid height should be 5 –10 cm.	Visual estimate in 2x2 m plots.	Dwarf-shrubs should be low growing (usually prostrate or semi-prostrate.
Bare Peat, or ground covered by algal mats (% and DAFOR)	Patches of bare ground greater than 10cm across in sheltered areas should be more or less absent.	Visual estimate in 2x2 m plots.	Bare peat or peat carpeted by *Polytrichum* spp., *Campylopus* spp. crust forming lichens or algal mats can occur as a consequence of excessive grazing.
Ericaceous Cover (%)	Dwarf-shrub cover should be greater than 60%.	Visual estimate in 2x2 m plots.	The sward should be composed of a low growing (and usually prostrate or semi-prostrate) dwarf-shrub in combination with abundant mosses and lichens.
Mean Cover of dwarf-shrubs/ *Racomitrium*	The collective cover of dwarf-shrubs, *Racomitrium*	Visual estimate in 2x2 m plots.	Characteristic species include a dominance of dwarf-shrubs with mosses, mainly *Racomitrium lanuginosum,*

lanuginosum and robust lichens. (%)	*lanuginosum* and robust lichens should compose at least 90% of total vegetation cover.		and robust lichens. The low-growing dwarf-shrub mat is dominated by *Calluna vulgaris* with *Erica tetralix*, *E. cinerea*, *Vaccinium myrtillis*, *Empetrum nigrum*, *V. vitis-idea*, etc.
Racomitrium lanuginosum (DAFOR)	*Racomitrium lanuginosum* to be constant and forming patches below, or in more open swards beneath the dwarf-shrubs.	Visual estimate in 2x2 m plots.	*Racomitrium lanuginosum* should form a major part of the ground cover for the vegetation to be in favourable condition.
Fine-leaved grass/*Galium saxatile*/*Potentilla erecta* Cover (%)	The collective cover of fine-leaved grasses, *Galium saxatile* and *Potentilla erecta* should not exceed 10%.	Visual estimate in 2x2 m plots.	Grasses to include *Deschampsia flexuosa* and *Festuca ovina/vivipara*.
Management - Grazing (% cover)	Signs of moderate or heavy grazing should occupy less than 5% of the montane heath vegetation.	Visual estimate in 2x2 m plots.	The frequency of droppings, the extent of poaching, uprooting of dwarf shrubs and invasion by *Juncus squarrosus* etc. indicate moderate and heavy grazing where any one of the above is recorded as more than occasional.
Management - Burning (% cover)	Signs of recent burning should occupy less than 5% of the montane heath vegetation.	Visual estimate in 2x2 m plots and within wider vicinity of the plot; in addition, across feature using a combination of aerial photographs, SIM and Condition Assessment	Recent burning is represented by areas burnt within the last two years.

		structured walk.	
Erosion Features associated with human impacts (% and DAFOR)	No bare rock or bare peat associated with more concentrated human impacts (ATV tracks or recreational activities). Man induced/enhanced erosion should occupy less than 2% of the total area of montane heath, other than very localised instances.	Visual estimate in 2x2 m plots and within wider vicinity of the plot; in addition, across feature using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Erosion is a natural feature of high mountain slopes. However, where natural erosion is exacerbated by human activity, mainly hill walking, the heath will not be in favourable condition, except where such erosion is very limited in nature.

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ANNEX 1

Feature 5 (SAC) - Siliceous alpine and boreal grasslands (Status C)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
* Area of siliceous alpine and boreal grassland	Maintain the extent of the siliceous alpine and boreal grassland communities at a minimum of 32 ha. This community includes U10 - *Carex bigelowii-Racomitrium lanuginosum* moss heath.	Visual estimate in 2x2 m plots and across the wet heath using a combination of aerial photographs, SIM and Condition Assessment structured walk.	The montane grasslands should be monitored using a combination of aerial photographs and condition assessment. Any loss or fragmentation of this habitat is unacceptable. It may be possible to extend siliceous alpine and boreal grassland communities into degraded areas without encroaching into other habitats of scientific interest.
* Height of graminoid/ bryophyte/Cladonia/ dwarf-shrub mat (cm)	The average depth of the vegetation mat should be greater than 5cm.	Visual estimate in 2x2 m plots.	Depth should be recorded by the vertical distance an object can be inserted into the vegetation mat until the ground is met. Exclude grass flower spikes from the depth measurement.
* Bare peat, or ground covered by algal mats (% cover)	Bare peat etc (excluding naturally exposed rock surfaces) should occupy less than 5% of the siliceous alpine and boreal grassland surface overall.	Visual estimate in 2x2 m plots.	This includes bare peat, but NOT exposed rock attributable to natural exposure effects. Bare ground can be attributed to excessive grazing.
* *Racomitrium lanuginosum* cover (%)	*Racomitrium lanuginosum* to be present with 100%	Visual estimate in 2x2 m plots.	*Racomitrium lanuginosum* must form a major part of the ground cover for the vegetation to be in

	Frequency and forming patches below, or in more open swards beneath the dwarf-shrubs.		favourable condition.
* Mean cover of graminoid/ bryophyte/Cladonia/dwarf-shrub mat (%)	The collective cover of characteristic species should be greater than 90%.	Visual estimate in 2x2 m plots.	Characteristic species include a dominance of mosses, mainly *Racomitrium lanuginosum* with *Carex bigelowii*, *C. pilulifera* robust lichens and dwarf- shrubs. The dwarf-shrubs which are prostrate include *Salix herbacea*, *Vaccinium myrtillis*, *V. vitis-idea*, *Calluna vulgaris* etc.
* Fine-leaved grass/*Galium saxatile*/*Potentilla erecta* cover (%)	The collective cover of fine-leaved grasses, *Galium saxatile* and *Potentilla erecta* should not exceed 10%.	Visual estimate in 2x2 m plots.	Grasses to include *Deschampsia flexuosa*, *Nardus stricta* and *Festuca ovina/vivipara*.
* Management - Grazing (% cover)	Signs of moderate or heavy grazing by sheep should occupy less than 5% of the siliceous alpine and boreal grassland vegetation within any grazing unit.	Visual estimate in 2x2 m plots.	The frequency of droppings, the extent of poaching, uprooting of dwarf shrubs, grazing of flower heads and shrubs and invasion by fine-leaved grasses etc. indicate moderate and heavy grazing.
* Frequency and cover of erosion features associated with human impacts (DAFOR and % cover)	No bare rock or peat associated with more concentrated human impacts (ATV tracks or recreational activities). Man induced/enhanced erosion should occupy less than 2% of	Visual estimate in 2x2 m plots.	The extent of man induced erosion should be monitored using a combination of aerial photographs and Condition Assessment. Erosion is a natural feature of high mountain slopes. However, where natural erosion is exacerbated by human activity, mainly hill walking, the montain grassland will not be in favourable condition,

	the total area of montane grassland other than very localised instances.		except where such erosion is very limited in nature.

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ANNEX 1

Feature 6 (SAC) - Siliceous rocky slopes with chasmophytic vegetation (Status C)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
Area of siliceous rocky slopes	Maintain the extent of siliceous rocky slopes at 58.5 ha. These cliff face communities include U21 - (*Cryptogramma crispa-Deschampsia flexuosa* community).	Visual estimate in 2x2 m plots and across the siliceous rocky slopes using a combination of aerial photographs, SIM and Condition Assessment structured walk.	
Indicators of current grazing	Less than 50% of live leaves (forbs) or the shoots (dwarf-shrubs) should show signs of having been grazed or browsed.	Target assessed against visual estimate for as much of the feature as is visible while standing at a sample location.	
Non-native species	Less than 1% of vegetation cover should be made up of non-native species.	Target assessed against visual estimate for as much of the feature	

		as is visible while standing at a sample location.	
Cover of Bracken, tress and scrub	Less than 25% of the ground cover should be made up of bracken, trees and shrubs.	Target assessed against visual estimate for as much of the feature as is visible while standing at a sample location.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ANNEX 1

Feature 7 (SAC) - Siliceous scree of the montane to snow levels (Status C)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
Area of siliceous scree	Maintain the extent of siliceous scree at 17.7 ha. The montane acid scree communities include U21 - (*Cryptogramma crispa-Deschampsia flexuosa* community).	Visual estimate in 2x2 m plots and across the siliceous scree using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Note that it may be possible to extend siliceous scree communities, provided this is into degraded areas and does not encroach into other habitats of scientific interest.
Indicators of current grazing	At least 33% of ground cover should be free from overgrowth by vascular plants Less than 50% of live leaves (forbs) and/or the shoots (dwarf-shrubs) should show signs of having been grazed or browsed.	Targets assessed against visual estimate for as much of the feature as is visible while standing at a sample location.	
Non-native species	Less than 1% of vegetation cover should be made up of non-native species.	Target assessed against visual estimate for as	

		much of the feature as is visible while standing at a sample location.	
Cover of Bracken, tress and scrub	Less than 25% of the ground cover should be made up of bracken, trees and shrubs.	Target assessed against visual estimate for as much of the feature as is visible while standing at a sample location.	
Cover of agricultural weeds	Less than 1% of vegetation cover should consist of, collectively, *Cirsium arvense, Cirsium vulgare, Pteridium aquilinum,* large docks (excluding *Rumex acetosa*), *Rubus fruticosus, Senecio jacobaea, Urtica dioica*	Target assessed against visual estimate for as much of the feature as is visible while standing at a sample location.	
Physical structure — indicators of ground disturbance due to herbivore and human activity.	Less than 10% of the *ground* cover should be disturbed by human or animal paths, scree running, or vehicles.	Target assessed against visual estimate for as much of the feature as is visible while standing at a sample location.	The nature of the scree – i.e. large, block scree – more or less precludes recreational use, and appears to discourage most of the grazing animals.

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

MURLOUGH SAC
UK0016612

CONSERVATION OBJECTIVES

Document Details

Title	*Murlough SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*24/3/2017*
Version Number	*V4*
Next Review Date	Nov 2020
Contact	cdp@daera-ni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	January 2015	Complete review	RMK
V3	March 2017	Review marine features	LP
V4	November 2018	Review seal targets	LP

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable

Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: DOWN

GRID REFERENCE: J 410360

AREA: 11902.03 ha

5. SUMMARY SITE DESCRIPTION

The site adjoins Dundrum Bay and includes the shallow waters of the Bay itself, of importance as the largest area of shallow sub-littoral sandbanks in Northern Ireland. The inter-tidal sands and muds are also extensive, and the beach area at Ballykinler is important as a haul-out for Common Seal. The terrestrial element comprises the major dune systems of Murlough and Ballykinler, together with the relatively intact low dunes and ridges within Royal County Down golf club. These host a range of dune communities, but most important, are the dune heath and grey dune grasslands.

The site is particularly important for the population of Marsh Fritillary butterfly. The Inner Bay supports limited saltmarsh. The site is of international importance for earth science with contemporary coastal processes, including a classic ridge and runnel beach form, and associated dune forms, together with features important to understanding post-glacial sea-level history including the important underlying gravel series. The dunes host important fossil soil horizons with associated archaeological artefacts.

Further details of the site are available on the DAERA website (https://www.daera-ni.gov.uk/publications/reasons-designation-special-area-conservation-murlough).

5.1 BOUNDARY RATIONALE

The seaward boundary includes Outer Dundrum Bay, its line being determined by the main area of sublittoral sandbanks. The landward boundary includes all undeveloped beach area between Newcastle harbour and the western end of Tyrella Beach (this being the presumed active coastal unit associated with the selected dune complexes), the main dune system at Murlough, including the Royal County Down golf course, and at Ballykinler. The boundary in Inner Dundrum Bay includes all inter-tidal habitat, together with all substantive units of adjoining semi-natural habitat.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ pop·
Habitat	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	A	93 ha*
Habitat	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	C	8.5 ha
Habitat	Dunes with *Salix repens ssp. Argentea* (*Salicion arenariae*)	C	0.2 ha
Habitat	Embryonic shifting dunes	C	2.0 ha
Habitat	Fixed dunes with herbaceous vegetation (grey dunes)	B	127.0 ha
Habitat	Mudflats and sandflats not covered by seawater at low tide	C	785.0 ha
Habitat	Sandbanks which are slightly covered by sea water all the time	C	10000.0 ha
Habitat	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)	C	4.5 ha
Species	Marsh Fritillary *Euphydryas aurinia*	B	
Species	Harbour (Common) Seal *Phoca vitulina*	C	106 individuals

Table 1. List of SAC selection features. Those with global status A-C will be referred to in Annex I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Murlough SAC.

6.1 ASSI SELECTION FEATURES

Murlough ASSI

Feature Type	Feature	Size/ extent/ pop~
Habitat	Coastal Sand Dunes	226.7 ha
Habitat	Coastal Saltmarsh	8.5 ha
Habitat	Mudflats	785 ha
Species	Marsh Fritillary	
Species	Harbour (Common) Seal	
Species	Higher Plant Assemblage	
Species	Wintering waterfowl assemblage	
Species	Invertebrate assemblage	
Earth science	Contemporary coastal processes – Recent dune systems together with the associated fossil soil horizons and sub-fossil dune series.	
Earth science	Holocene sea-level history – buried and semi-buried components within dune system	

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The ***Conservation Objective*** for this site is:

To maintain (or restore where appropriate) the

- **Atlantic decalcified fixed dunes (Calluno-Ulicetea)**
- **Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)**
- **Dunes with *Salix repens ssp. Argentea* (*Salicion arenariae*)**
- **Embryonic shifting dunes**
- **Fixed dunes with herbaceous vegetation (grey dunes)**

- Mudflats and sandflats not covered by seawater at low tide
- Sandbanks which are slightly covered by sea water all the time
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- Marsh Fritillary *Euphydryas aurinia*
- Harbour (Common) Seal *Phoca vitulina*

to favourable condition.
Maintain implies that the feature is in favourable condition and will, subject to natural change, remain at its condition at designation. Restore implies that the feature is degraded to some degree and that activities will have to be managed to reduce or eliminate negative impact(s). Restoration in the marine environment can refer to natural recovery through the removal of unsustainable physical, chemical and biological pressures, as well as intervention.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objective
Atlantic decalcified fixed dunes (Calluno-Ulicetea)	A	Maintain and if feasible, expand the extent of existing decalcified fixed dune, H 11 and H10. Increase permitted into areas of rank dune grassland, NOT into spp-rich short turf (Grey Dune SD8).
		Maintain and enhance structural and species diversity within the H11 and H10 communities including the presence of notable species.
		Seek nature conservation management over suitable areas immediately outside the SAC where there is possibility of restoring decalcified fixed dune
		Maintain the diversity and quality of habitats associated with the decalcified fixed dunes, e.g. neutral grasslands, scrub, especially where these exhibit natural transition to decalcified fixed dune vegetation.
Atlantic salt	C	Maintain or extend, as appropriate, the area

meadows (*Glauco-Puccinellietalia maritimae*)		of saltmarsh, subject to natural processes
		Maintain or enhance, as appropriate, the composition of the saltmarsh communities
		Maintain transitions between saltmarsh communities and to other adjoining habitats
		Permit the continued operation of formative and controlling natural processes acting on the saltmarsh communities
Dunes with *Salix repens ssp. Argentea* (*Salicion arenariae*)	C	Maintain and expand the extent of existing Fixed dunes with *Salix repens.* Increase permitted into areas of rank dune grassland, NOT into spp-rich short turf (Grey Dune SD8).
		Maintain and enhance species diversity within the SD16 community including the presence of notable species.
		Seek nature conservation management over suitable areas immediately outside the SAC where there is possibility of restoring fixed dune with *Salix repens*
Embryonic shifting dunes	C	Maintain or enhance the extent of embryonic shifting dunes subject to natural processes
		Allow the natural processes which determine the development and extent of embryonic shifting dunes to operate appropriately
Fixed dunes with herbaceous vegetation (grey dunes)	B	Maintain and expand the extent of existing species-rich fixed dune, SD8.
		Maintain and enhance species diversity within the SD8 community including the presence of notable species.
		Seek nature conservation management over suitable areas immediately outside the SAC where there is possibility of restoring fixed dune
		Maintain the diversity and quality of habitats associated with the fixed dunes, e.g. neutral grasslands, scrub, especially where these exhibit natural transitions to fixed dune vegetation.
Mudflats and sandflats not covered by seawater at low tide	C	Maintain the extent of mudflats and sandflats not covered by sea water at low tide
		Allow the natural processes which determine the development, structure and extent of mudflats and sandflats not covered by sea water at low tide, to operate appropriately

		Maintain and enhance, as appropriate, the species diversity within this habitat.
Sandbanks which are slightly covered by sea water all the time	C	Allow the natural processes which determine the development, structure and extent of sandbanks which are slightly covered by sea water all the time, to operate appropriately
		Maintain and enhance, as appropriate, the species diversity within this habitat.
		Maintain the extent and volume of sandbanks which are slightly covered by sea water all the time, subject to natural processes.
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)	C	Maintain and enhance the extent of white dunes subject to natural processes
		Allow the natural processes which determine the development and extent of white dunes to operate appropriately
		Maintain and enhance, as appropriate, the species diversity within this community
Marsh Fritillary *Euphydryas aurinia*	B	Maintain (and if feasible enhance) population numbers and distribution.
		Maintain (and if feasible enhance) the extent and quality of suitable Marsh Fritillary breeding habitat, particularly suitable rosettes of the larval food plant *Succisa pratensis*
Harbour (Common) Seal *Phoca vitulina*	C	Maintain (and if feasible enhance) population numbers and distribution of Harbour (Common) Seal.
		Maintain and enhance, as appropriate, physical features used by Harbour (Common) Seals within the site

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Coastal Sand Dunes	See SAC Selection Feature Objective Requirements table.
Coastal Saltmarsh	See SAC Selection Feature Objective Requirements table.
Mudflats	See SAC Selection Feature Objective Requirements table.
Sandbanks	See SAC Selection Feature Objective Requirements

	table.
Marsh Fritillary *Euphydryas aurinia*	See SAC Selection Feature Objective Requirements table.
Harbour (Common) Seal *Phoca vitulina*	See SAC Selection Feature Objective Requirements table.
Higher Plant Assemblage	To maintain (and if feasible enhance) the populations of notable species, including their abundance and distribution: i.e. *Carlina vulgaris, Echium vulgare, Juncus subnodulosus, Teesdalia nudicaulis, Erigeron acer, Filigo minima* and the bryophytes *Rhodobryum roseum* and *Racomitrium canescens*.
Wintering waterfowl assemblage	To be finalised.
Invertebrate assemblage	Maintain or enhance, as appropriate, the invertebrate population together with their habitat requirements.
Contemporary coastal processes – Recent dune systems together with the associated fossil soil horizons and sub-fossil dune series.	Permit the continued operation of formative and controlling natural processes acting on the dune systems. Maintain natural site morphology subject to natural processes. Maintain the potential for access to fossil soil horizons and sub-fossil dune series.
Holocene sea-level history – buried and semi-buried components within dune system	Maintain the potential for access to buried and semi-buried components necessary for the demonstration of sea-level history as related to this site.

10. MANAGEMENT CONSIDERATIONS

Ownership

Considerable portions of the site are owned by the National Trust and managed as a NNR (Murlough). Ministry of Defence own and actively use much of the Ballykinler area but have a broadly favourable attitude to site conservation objectives. Royal County Down golf club own much of the western portion of the Murlough dune complex; again, they have a broadly favourable attitude to site conservation objectives.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Murlough, or could affect it in the future. Although **Atlantic decalcified**

fixed dunes (Calluno-Ulicetea), Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), Dunes with *Salix repens ssp. Argentea* (*Salicion arenariae*), Embryonic shifting dunes, Fixed dunes with herbaceous vegetation (grey dunes), Mudflats and sandflats not covered by seawater at low tide, Sandbanks which are slightly covered by sea water all the time, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Marsh Fritillary *Euphydryas aurinia* and Common Seal *Phoca vitulina* are the qualifying SAC features, factors affecting ASSI features are also considered.

NOTE - Carrying out <u>any</u> of the Notifiable Operations listed in the ASSI schedule could affect the site.

Grazing

In common with many dune grasslands in the UK, parts of the Murlough system suffer from under-grazing. In the absence of livestock, a healthy rabbit population can generally maintain short, species-rich swards and sufficient open ground for important communities of annual plants and invertebrates. However, populations are prone to very wide fluctuations, and once the sward becomes too rank, they are generally ineffective at reversing the trend, even if populations recover. Increased rankness leads to the loss of less competitive species and eventual colonisation by bracken and scrub – over much of the Murlough system Gorse *Ulex europaeus* is the main species.

The problem of increasing rankness may be even more severe in dune slacks and hollows, where under-grazing exacerbates a natural tendency towards drying out as plant litter accumulates progressively over time. Hydrological changes – a lowering of the underlying water table – will accelerate this process (note – only applicable at Ballykinler). In such cases, the only effective methods of managing the site are the manual removal of scrub and the introduction of livestock grazing. Further hydrological management may be required for dune slacks – for example, re-configuring dune profiles.

On the National Trust land at Murlough, a new grazing regime has been established using rare breeds (Dexter cattle – now replaced by Galloway cattle - and Exmoor ponies). The effectiveness of this regime will be formally determined through condition assessment and adjusted as required, but early indications suggest that the livestock are successful in reducing the rank growth. This has been combined with a programme of bracken and scrub control (part of HLF grant-aided "Tomorrow's Heathland Heritage" programme). Again, early indications suggest that the work is improving the condition of the dunes.

To ensure optimum conditions for Marsh Fritillary, a series of grazing exclosures have been established in areas where breeding takes place; however, these should not be allowed to become too rank.

Management of the other major part of the dune complex at Ballykinler is more problematical; here, the rabbit population is relatively low and much of the grey dune habitat is becoming rank. The difficulty is introducing a regime of livestock grazing in an area that is used so intensively for military training.

ACTION: Continue to work with MOD and National Trust staff at Murlough as partners to:

a. explore the possibility of extending current livestock grazing over the bulk of the dune system
b. develop a scrub and bracken management plan for the whole site
c. investigate options for maintaining (and restoring where feasible) dune slack communities at Ballykinler.

Sea Buckthorn

Sea-buckthorn is an alien species that can spread widely in dune systems and cause radical changes to the composition of the vegetation, and the underlying soils. The species is widespread in places at Murlough, both within NT and MOD land (especially in the dunes around Murlough House and on the opposite bank of the channel at Ballykinler). A programme of control should be implemented.

ACTION: Review the need for a Sea Buckthorn control programme with National Trust and MOD.

Military Use

Military use has the potential to cause substantial impacts on the dune system. The current management committee and agreed management plan provide a framework for resolving issues.

ACTION: Continue to liaise with M.O.D. and other stakeholders

Disruption to natural sediment regime

Like most dune systems, Murlough is a highly dynamic system that needs sensitive management. Construction on the shore – including rock armouring and other coastal defence works – are likely to have "knock-on" impacts throughout the system, potentially leading to coastal erosion and loss of intertidal and adjacent coastal habitats.

Natural sand loss from the western end of the beach fronting Newcastle is probably an ongoing system response to hard engineering activities foreshortening the beach profile. Ongoing retreat of the dune front is most noticeable east of the Slieve Donard Hotel. This has resulted in the golf club getting approval for installation of hard engineering coastal protection structures, which generally have the effect of reducing or stopping the interchange of sediment between the beach and dune components of the system, and to exacerbate erosion further down 'drift'.

Substantial erosion of the dune front is ongoing over the length of the National Trust ownership – no management response is anticipated. Historically emplaced railway sleepers near the dune foot fronting the golf course have been recently

renewed. In general, the Newcastle - Murlough beach/dune system is undergoing erosion while the Ballykinler side is stable or actively accreting.
ACTION: Liaise with Council, MOD, NT, Golf Course and others as appropriate.

Recreational Impact

Trampling through dunes can have a destabilising effect, with particular impacts on foredunes and shifting white dunes. Severe cases can result in blow-outs. Less intensive trampling can affect plant communities through the loss of species sensitive to trampling.

In the Murlough system, recreational impacts are clearly more pronounced on the NT land, where public access is permitted. However, NT has a proactive management strategy for dealing with visitors, which includes fencing the most sensitive areas, and the use of boardwalks where access to the beach is concentrated. As a result, recreational pressure does not currently appear to be a major issue on this part of the system.

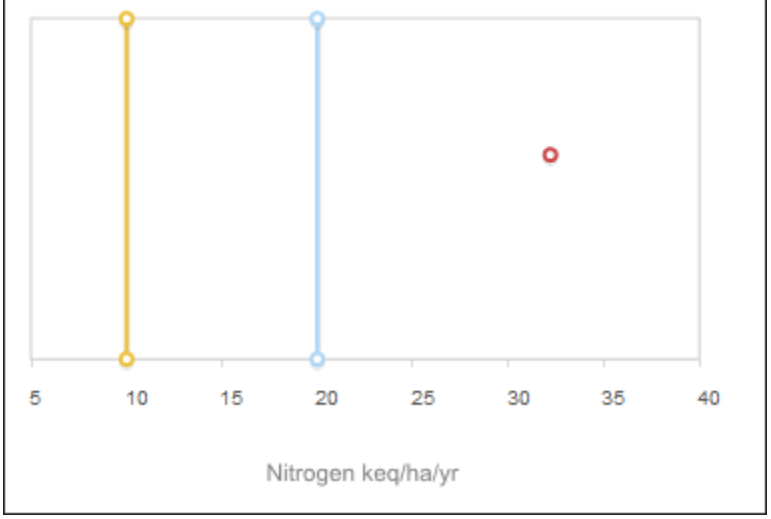
At Ballykinler, the dunes represent an important amenity area for military personnel, and recreation tends to be concentrated in the more accessible parts (e.g. to the east).

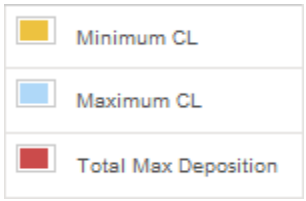
At Royal County Down, golf course management is important for the condition of the grey dunes and especially dune heaths. Gorse removal offers the opportunity to extend the area of more desirable communities.
ACTION: Liaise with NT, MOD and Golf Course as appropriate.

Nitrogen Deposition

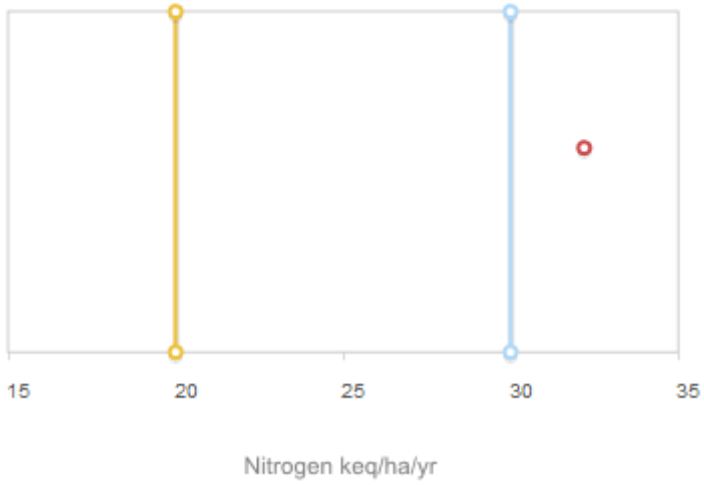
Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Murlough SAC.

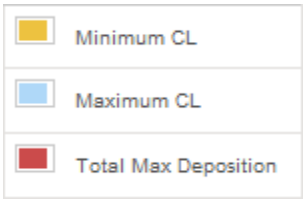
Feature: Atlantic decalcified fixed dunes (Calluno-Ulicetea)
Critical Load Class: Coastal dune heaths
Critical Loads (kg N/ha/yr): 10-20
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.2 Minimum: 14.3 Average: 12.6



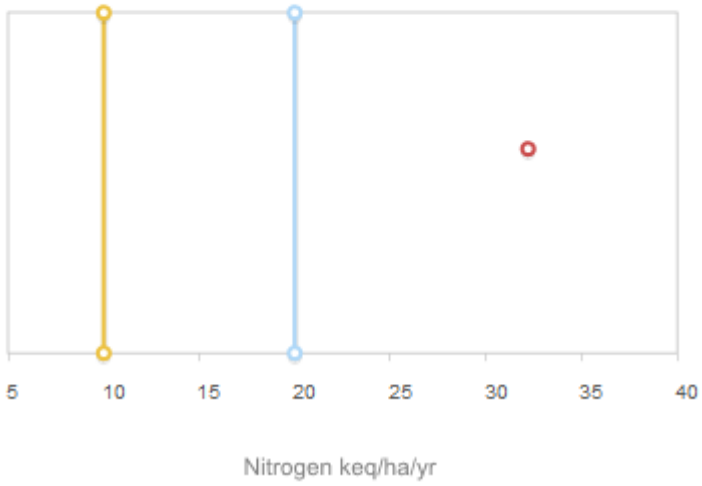


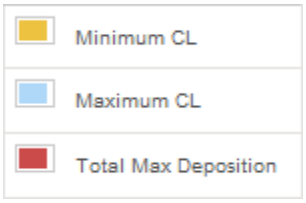
Feature: Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
Critical Load Class: Pioneer, low-mid, mid-upper saltmarshes
Critical Loads (kg N/ha/yr): 20-30
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.2 Minimum: 14.3 Average: 12.6



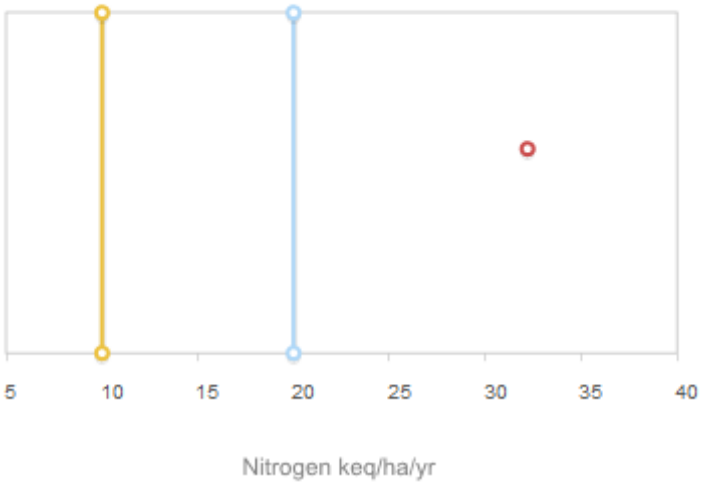


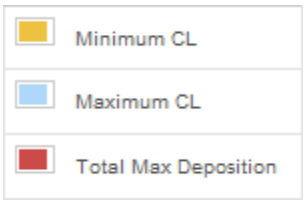
Feature: Dunes with Salix repens ssp argentea (Salicion arenariae)
Critical Load Class: Moist to wet dune slacks
Critical Loads (kg N/ha/yr): 10-20
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.2 Minimum: 14.3 Average: 12.6



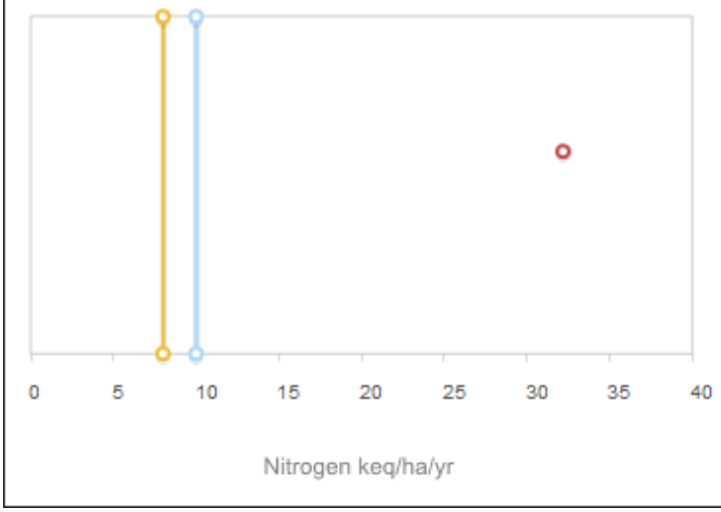


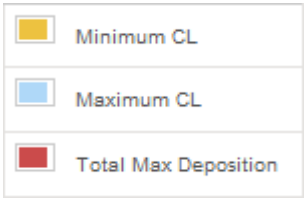
Feature: Embryonic shifting dunes
Critical Load Class: Shifting coastal dunes
Critical Loads (kg N/ha/yr): 10-20
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.2 Minimum: 14.3 Average: 12.6



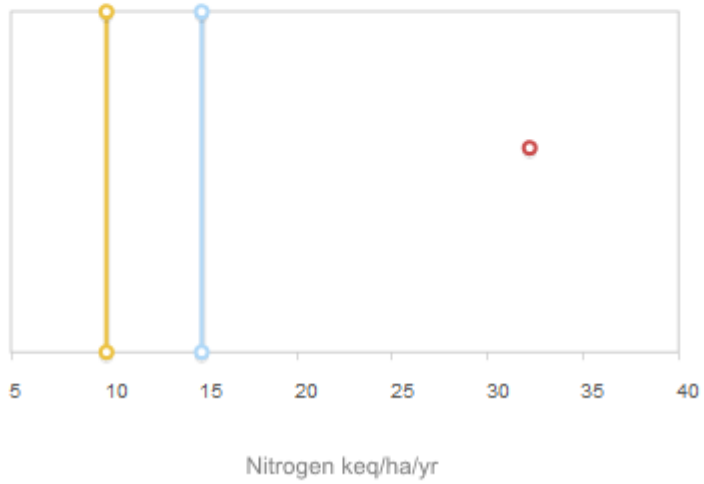


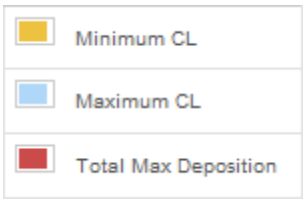
Feature: Fixed coastal dunes with herbaceous vegetation ("grey dunes")
Critical Load Class: Coastal stable dune grasslands - acid type
Critical Loads (kg N/ha/yr): 8-10
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.2 Minimum: 14.3 Average: 12.6





Feature: Fixed coastal dunes with herbaceous vegetation ("grey dunes")
Critical Load Class: Coastal stable dune grasslands - calcareous type
Critical Loads (kg N/ha/yr): 10-15
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.2 Minimum: 14.3 Average: 12.6





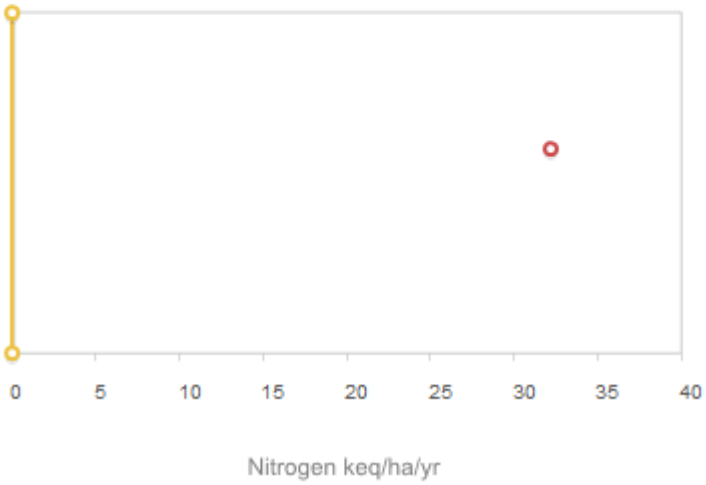
Feature: Mudflats and sandflats not covered by seawater at low tide

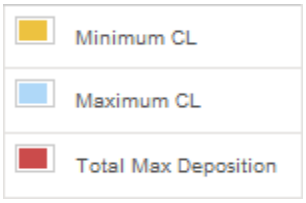
Critical Load Class: No comparable habitat with established critical load estimate available

Critical Loads (kg N/ha/yr): no critical loads available for this feature

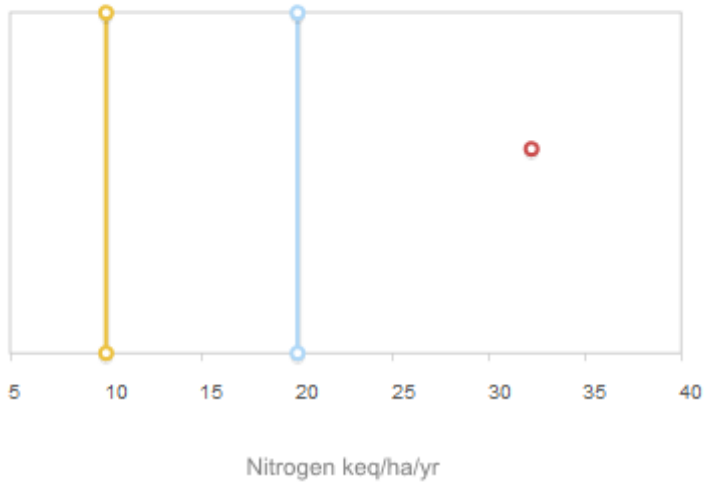
Nitrogen Deposition (kg N/ha/yr):

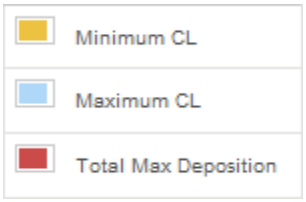
Maximum: 32.2 Minimum: 14.3 Average: 12.6

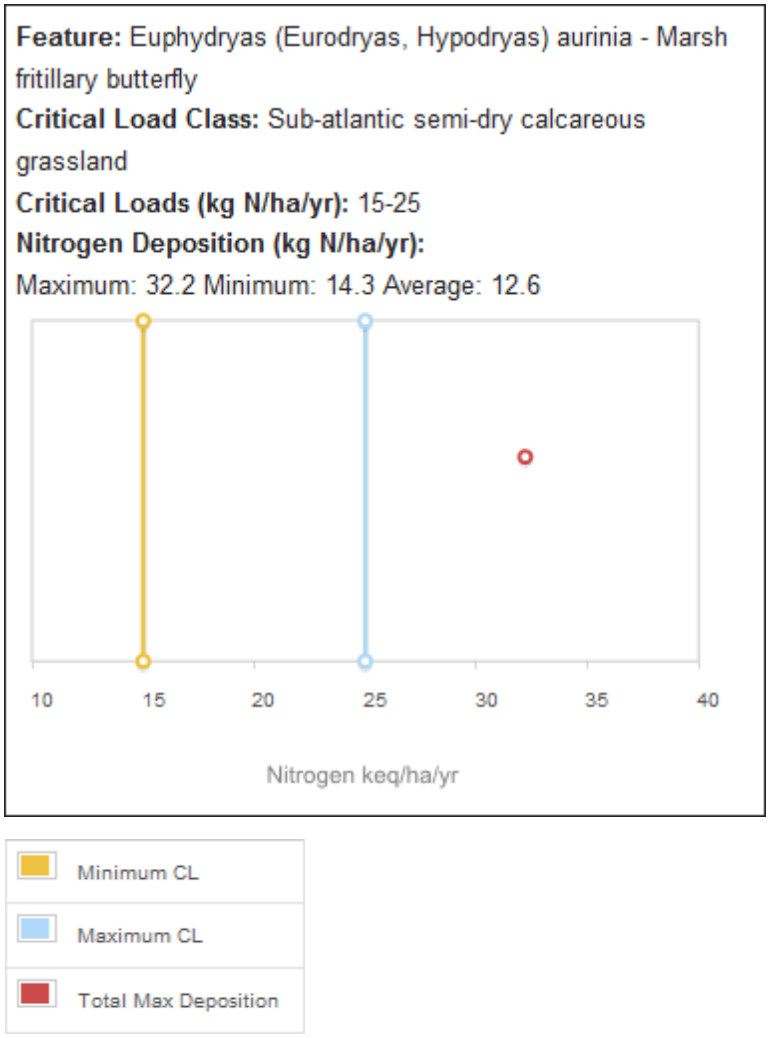




Feature: Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")
Critical Load Class: Shifting coastal dunes
Critical Loads (kg N/ha/yr): 10-20
Nitrogen Deposition (kg N/ha/yr):
Maximum: 32.2 Minimum: 14.3 Average: 12.6







(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use

Any changes in local land-use e.g. agricultural intensification, drainage works, and coastal development) may be detrimental to the SAC.

Action: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change

Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events. The Northern Ireland Climate Change Adaptation Programme was published in January 2014. This contains the Northern Ireland Executive's response to the risks and opportunities identified in the Climate

Change Risk Assessment for Northern Ireland (published January 2012) as part of the overall UK Climate Change Risk Assessment. The Adaptation Programme provides the strategic objectives in relation to adaptation to climate change, the proposals and policies by which each department will meet these objectives and the timescales associated with the proposals and policies identified in the period up to 2019.

ACTION: When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

The SACs are surveyed using two forms of monitoring:

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat). In addition, potentially damaging activities may be picked up through the active marine ranger programme or by members of the public raising concerns with the Department. These reports are followed up through consultation with the relevant competent authorities.

Site Condition Assessment of the designated features is carried out on a rolling 6 year basis to pick up subtle changes in the condition of the feature and to ensure that the conservation objectives are being met.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland. For marine features, condition assessments include a variety of techniques such as diving, remote cameras, sediment sampling and acoustic seabed mapping. Marine mammal monitoring programmes also contribute.

12.1 MONITORING SUMMARY

1. *Monitor the integrity of the site (SIM or Compliance Monitoring)*
Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that no sand extraction, dumping or dune damage has occurred within the SAC boundary. This SIM should be carried out at least once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex I is intended to supplement the conservation objectives only in relation to management of established and

ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

AFBI, 2015. Bathymetric and Habitat Map for Murlough Special Area of Conservation and offshore, Northern Ireland. Report to the Department of the Environment.

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan – Mudflats.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Coastal Sand Dunes.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Coastal Saltmarsh.

Department of the Environment for Northern Ireland (2005). Northern Ireland Species Action Plan – Marsh Fritillary.

Erwin, D.G., Picton, B.E., Connor, D.W., Howson, C.M., Gilleece, P. and Bogues, M.J. (1986). The Northern Ireland Sublittoral Survey (NISS) Ulster Museum.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

Wilkinson, M., Fuller, I.W.A., Telfer, T.C., Moore, C.G. & Kingston, P.F. (1988). Northern Ireland Littoral Survey: A conservation-orientated survey of the intertidal seashore of Northern Ireland. Institute of Offshore Engineering, Heriot-Watt Unveristy, Edinburgh.

ANNEX I

Feature 1 (SAC) – Atlantic decalcified fixed dunes (Calluno-Ulicetea) (Status A)

(* = primary attribute. One failure among primary attributes = unfavourable condition)

Attribute	Targets/Limits	Method of Assessment	Comments
* Area (ha)	Maintain the extent of dune heath community.	Visual estimate in 2x2 plots and across the site using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Any loss of the current intact area is unacceptable. The fixed dune communities include H11 *Calluna vulgaris – Carex arenaria* heath (only H11a *Erica cinerea* subcommunity and H11c species-poor subcommunity present in NI) and H10 *Calluna vulgaris – Erica cinerea* heath.
Extent and distribution of dune heath vegetation communities	Maintain extent and distribution of dune heath communities/sub-communities: Both variants of H11a: H11a(i) – grassy on slopes H11a(ii) – lichen rich in hollows And non-coastal dry heath: H10x – species-poor variant	Visual estimate in 2x2 m plots.	
* Area of mosaic communities and associated habitats	Maintain associated mosaic communities and habitats.	Visual estimate across the SAC using a combination of aerial photographs,	Repeat monitoring using condition assessment, SIM, and aerial photographs should indicate whether mosaics and associated habitats have changed or been lost.

		SIM and Condition Assessment structured walk.	
Vegetation height	Average vegetation height should be 20-50cm cm. Where H11a (II) lichen community occurs this should be assessed separately and be between 5-20cm.	Visual estimate in 2x2 m plots.	
Dwarf-shrub cover (%)	Dwarf-shrub cover should be maintained between 25-90%. Both *Calluna vulgaris* and *Erica cinerea* should be frequent.	Visual estimate in 2x2m plots	
Bare ground (%)	Bare ground or sand (not rock) extent, noticable without disturbing the vegetation < 5%	Visual estimate in 2x2m plots	
Bryophyte cover (%)	Bryophytes should have a minimum cover of 33% over at least 66% of the site.	Visual estimate in 2x2m plots	
Lichen cover (%)	Lichens should have a minimum cover of 33% over at least 66% of the site.	Visual estimate in 2x2m plots	
Graminoid cover (excluding *Ammophila*) (%)	Graminoid cover (excluding Ammophila) should be less than 40%.	Visual estimate in 2x2m plots	

* Frequency of community character species	At least 3 of the following at least frequent, with at least two also frequent from either list A or List B throughout the sward: *Erica cinerea, Dicranum scoparium, Lotus corniculatus, Luzula campestris* Frequency of the following species on slopes: List A *Calluna vulgaris, Pleurozium schreberi, Teucrium scorodonia* Frequency of the following species in hollows: List B *Cladonia* spp*, Hypochaeris radicata*	Visual estimate in 2x2m plots	
* Frequency of negative indicators	Any one of the following more than frequent throughout the sward: *Cirsium arvense, Cirsium vulgare, Lolium perenne, Senecio jacobaea, Urtica dioica, Arrhenatherum elatius*	Visual estimate in 2x2m plots	

Pteridium cover (%)	Mean cover should be less than 15%	Visual estimate in 2x2m plots	
* Frequency and % cover of scrub/tree encroachment. (DAFOR and % cover)	Scrub/tree encroachment should be no more than occasional. Mean cover should be less than 5%.	Visual estimate within a 10x10 m radius of plots.	
* Management – Grazing (DAFOR)	Signs of grazing (poaching/dung) should be no more than occasional.	Visual estimate in 2x2 m plots.	
Management – Disturbance (DAFOR)	Tracks/disturbed ground should not be recorded as frequent in more than 25% of plots over the whole area.	Visual estimate in 2x2 m plots.	
* Presence of rare or scarce species specific to the site.	Locally distinctive species recorded for the site should be at least present along the length of the Condition Assessment structured walk.	Name the species at least present along the length of the Condition Assessment structured walk.	If these species are not recorded on any one visit, it does not automatically make the site unfavourable.

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
>60%=Constant

Feature 2 (SAC) – Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (Status C)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Target	Method of assessment	Comments
* Area of saltmarsh	Subject to natural processes, maintain the overall extent of saltmarsh vegetation.	Visual estimate in 2 x 2 m plots and across the extent of the saltmarsh using a combination of aerial photographs and SIM. The area should be measured once per reporting cycle (6 years) during the summer months of June, July, August or early September.	Judgements in changes to extent/area will have to take particular care to distinguish changes as a result of natural erosion vs. anthropogenic actions.
* Mobility	No increase in either the linear extent or the area constrained by introduced structures or landforms.	Visual inspection of aerial photographs, SIM and Condition assessment structured walk. Check for any new physical structures that may impact on this community.	Introduction of physical constraints would reduce the extent of this community and affect its structure.

Physical structure: creeks and pans	Realignment of creeks absent or rare. No further anthropogenic alteration of creek patterns or loss of pans compared to an established baseline.	Visual inspection of aerial photographs, SIM and Condition assessment structured walk. Check for man-made influences on creeks and pans.	Creeks and pans vary in size and density. Creeks absorb tidal energy and assist with the delivery of sediment into saltmarshes. Major erosion of saltmarsh is indicated by internal dissection and enlargement of the drainage network.
* Saltmarsh community diversity	Maintain presence of saltmarsh communities SM10, SM13, SM16, SM18, SM19, SM20 and SM28 as established at baseline survey.	Visual estimate in 2x2m plots.	
*Presence of associated semi-natural habitats	Maintain other saltmarsh communities and transitions to freshwater/flush and grassland - e.g. some of the samples to contain open SM8 communities with *Salicornia*; S21 communities with *Scirpus maritimus*; and S4d communities with *Phragmites*	Visual estimate in 2x2 m plots	*Zostera* and *Ruppia* beds (SM1 and SM2) and stands of *Salicornia* and *Suaeda* (SM8 and SM9) are included within other Annex 1 habitat types. Where they occur with saltmarsh communities, their presence should be recorded.
* Maintain frequency of positive indicators for low-level marsh (SM10)	At least 5 of the indicator species listed below at least occasional, of which 3 are at least frequent throughout the	Visual estimate in 2x2 m plots	Ensure species-poor/rank communities/sub-communities do not increase at the expense of other sub-communities.

	sward: *Suaeda maritima, Salicornia* agg., *Puccinellia maritima, Aster tripolium, Limonium humile, Glaux maritima, Cochlearia officinalis, Plantago maritima, Triglochin maritima Armeria maritime* At least occasional is equivalent to greater than 21% occurrence in recorded plots. At least frequent is equivalent to greater than 41% occurrence in recorded plot.		**Note:** *Zostera* and *Ruppia* beds (SM1 and SM2) and stands of *Salicornia* and *Suaeda* (SM8 and SM9) are included within other Annex 1 habitat types/ ASSI selection features.
* Sward Height (SM10)	Maintain short sward in areas of species-rich vegetation. Maintain mean sward height at less than 12 cm.	Visual estimate in 2 x 2 m plots	Measure during summer (July/August/early September)
* Maintain frequency of positive indicators for low-level marsh (SM13a, b, c and d)	At least 5 of the indicator species listed below at least occasional, of which 3 are at least frequent throughout the sward: *Suaeda maritima, Salicornia*	Visual estimate in 2 x 2 m plots	Ensure species-poor/rank communities/sub-communities do not increase at the expense of other sub-communities. **Note:** *Zostera* and *Ruppia* beds (SM1 and SM2) and stands of *Salicornia* and *Suaeda* (SM8 and SM9) are

	agg., *Puccinellia maritima, Aster tripolium, Limonium humile, Glaux maritima, Cochlearia officinalis, Plantago maritima, Triglochin maritima Armeria maritime.* At least occasional is equivalent to greater than 21% occurrence in recorded plots. At least frequent is equivalent to greater than 41% occurrence in recorded plot.		included within other Annex 1 habitat types/ ASSI selection features..
* Sward Height (SM13a, b, c and d)	Maintain short sward in areas of species-rich vegetation. Maintain mean sward height at less than 15 cm.	Visual estimate in 2 x 2 m plots	Measure during summer (July/August/early September)
* Maintain frequency of positive indicators for middle marsh communities (SM16b, c, d and e)	At least 6 of the indicator species listed below at least occasional, of which 4 are at least frequent throughout the sward: *Puccinellia maritima, Aster tripolium, Limonium humile, Glaux maritima, Cochlearia officinalis, Plantago maritima, Triglochin maritima Armeria maritima, Festuca rubra,*	Visual estimate in 2 x 2 m plots	Ensure species-poor/rank communities/sub-communities do not increase at the expense of other sub-communities. **Note:** *Zostera* and *Ruppia* beds (SM1 and SM2) and stands of *Salicornia* and *Suaeda* (SM8 and SM9) are included within other Annex 1 habitat types/ ASSI selection features.

	Juncus gerardii, Agrostis stolonifera, Trifolium repens, Leontodon autumnalis, Carex flacca At least occasional is equivalent to greater than 21% occurrence in recorded plots. At least frequent is equivalent to greater than 41%		
* Sward Height (SM16b, c, d and e)	Maintain short sward in areas of species-rich vegetation. Maintain mean sward height at less than 20 cm.	Visual estimate in 2 x 2 m plots	Measure during summer (July/August/early September)
* Maintain frequency of positive indicators for upper marsh communities (e.g.SM18a, SM19 and SM20 and SM28)	At least 6 of the indicator species listed below at least occasional, of which 4 are at least frequent throughout the sward: *Juncus maritimus, Agrostis stolonifera, Festuca rubra*, *Glaux maritima*, *Juncus gerardii, Triglochin maritima, Plantago maritima, Armeria maritima, Aster tripolium, Elymus repens, Atriplex*	Visual estimate in 2 x 2 m plots	Ensure species-poor/rank communities/sub-communities do not increase at the expense of other sub-communities.

	prostrata, Potentilla anserina, Phragmites australis, Blysmus rufus, Eleocharis uniglumis At least occasional is equivalent to greater than 21% occurrence in recorded plots. At least frequent is equivalent to greater than 41% occurrence in recorded plot.		
Sward Height (Upper marsh communities)	Maintain mean sward height less than 1m.	Visual estimate in 2x2 m plots	Measure during summer (July/August/early September) As upper saltmarsh communities are tall, often mono-dominant stands of vegetation, the height of the vegetation is not critical.
* Frequency and/or % cover of *Spartina* encroachment into the saltmarsh communities (% Cover)	*Spartina* be should be recorded as absent or rare across the saltmarsh communities. Mean cover should be less than 2 %. No more than rare is equivalent to less than 20% occurrence in recoded plots	Visual estimate within a 10x10 m radius of monitoring plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	*Spartina* is extremely invasive across all saltmarsh communities and its occurrence should be carefully recoded to ensure that it does not pose a threat to these valuable communities.

* Frequency and % cover of negative indicators excluding *Spartina* (DAFOR and % cover)	Negative indicators no more than occasional across the saltmarsh communities Mean cover should be less than 2 %. No more than occasional is equivalent to less than 40% occurrence in recoded 2x2m plots.	Visual estimate in 2x2 m plots	
* Frequency and % cover of scrub/tree encroachment into transitional communities (DAFOR and % cover)	Scrub encroachment no more than occasional in transitional communities. Mean cover should be less than 5 %. No more than occasional is equivalent to less than 40% occurrence in recoded 10x10m plots.	Visual estimate within a 10x10 m radius of monitoring plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	
* Cover of litter/thatch accumulation (% cover)	Less than 25% mean cover. Lower thresholds may be appropriate for short SM 10 communities.	Visual estimate in 2x2m plots.	More than 25% litter cover indicates insufficient removal of biomass by grazing, particularly in middle and upper saltmarsh communities such as SM13 and SM16. A lower threshold for thatch should be set - perhaps 10%

			For SM10 communities (to be determined).
* % cover of bare ground	Bare areas resulting from trampling by stock or human activity (vehicle use, etc.) should account for less than 10 % of the extent of all communities with the exception of SM 10.	Visual estimate in 2x2m plots and across the extent of the saltmarsh using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Saltmarsh can be severely affected by persistent heavy trampling Note: UK CSM suggests 25% upper limit for poaching – a lower limit is recommended for SM13 and SM16 at most saltmarsh areas in N. Ireland.
Lack of disturbance	There should be no management activities leading to erosion.	Visual estimate in 2x2m plots and across the extent of the saltmarsh using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Saltmarsh can be severely affected by persistent heavy trampling Lower marsh communities naturally have higher cover of bare ground than middle and upper marsh communities.
Lack of pollution	No evidence of oil or other forms of pollution	Visual estimate in 2x2m plots and across the extent of the saltmarsh using a combination of aerial photographs, SIM and Condition Assessment structured walk.	

Saltmarsh hydrology	Artificial drainage channels adversely affecting hydrology are absent or rare,	Visual estimate across the extent of the saltmarsh using a combination of aerial photographs, SIM and Condition Assessment structured walk.	
* Maintain distinctive elements at current extent/levels and/or in current locations	Maintain distinctive elements at current extent/levels and/or in current locations (e.g. maintain existing populations of notable species, important structural attributes or notable transitions between habitats)	Visual estimate in 2x2 m plots and across the extent of the saltmarsh using a combination of aerial photographs, SIM and Condition Assessment structured walk. Check for presence of species/structural attributes, and/or transitions.	This attribute is intended to cover any site-specific aspects of this habitat feature which are not adequately covered by the previous attributes.

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 3 (SAC) – Dunes with *Salix repens ssp. Argentea* (*Salicion arenariae*) (Status C)

(* = primary attribute. One failure among primary attributes = unfavourable condition)

Attribute	Targets/Limits	Method of Assessment	Comments
* Area (ha)	Maintain the extent of *Salix* dune slack community.	Visual estimate in 2x2 plots and across the site using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Any loss of the current intact area is unacceptable. The Salix dune slack community includes SD16 *Salix repens – Holcus lanatus* dune-slack community (with *Salix repens* dominant).
* Area of mosaic communities and associated habitats	Maintain associated mosaic communities and habitats.	Visual estimate across the SAC using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring using condition assessment, SIM, and aerial photographs should indicate whether mosaics and associated habitats have changed or been lost.
Height and frequency of *Salix repens*	Average height of *Salix repens* should be 5–30cm. *Salix repens* should be at least	Visual estimate in 2x2 m plots.	Low bushy *Salix* should be maintained in association with open patches of shorter dune communities.

	frequent.		
Litter (%)	Litter in a more or less continuous layer, distributed either in patches or in one larger area should not cover > 50% of the area.	Visual estimate in 2x2m plots	
Bare ground (%)	Bare ground or sand (not rock) extent, noticable without disturbing the vegetation < 10%	Visual estimate in 2x2m plots	
* Frequency of community character species	At least two of the following at least frequent and two at least occasional throughout the sward: *Salix repens,* *Festuca rubra,* *Carex flacca,* *Carex arenaria,* *Ononis repens,* *Lotus corniculatus,* *Pilosella officinarum*	Visual estimate in 2x2m plots	At least frequent is equivalent to greater than 41% occurrence in recorded plots. At least occasional is equivalent to greater than 21% occurrence in recorded plots.
* Frequency of negative indicators	Any one of the following more than frequent throughout the sward: *Cirsium arvense, Cirsium vulgare, Cirsium palustre, Lolium perenne, Senecio jacobaea, Urtica dioica, Pteridium aquilinum, Arrhenatherum elatius, Rubus fruticosus.*	Visual estimate in 2x2m plots	

*Frequency and % cover of scrub/tree encroachment (excluding *Salix repens*) (DAFOR and % cover)	Scrub/tree encroachment (excluding *Salix repens*) should be no more than occasional. Mean cover should be less than 5%.	Visual estimate within a 10x10 m radius of plots.	If scrub/tree species are more than occasional throughout the sward but less than 5% cover they are soon likely to become a problem if grazing levels are not sufficient or if scrub control is not being carried out.
* Presence of rare or scarce species specific to the site.	Locally distinctive species recorded for the site should be at least present along the length of the Condition Assessment structured walk. If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	Name the species at least present along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 4 (SAC) – Embryonic shifting dunes (Status C)

(* = primary attribute. One failure among primary attributes = unfavourable condition)

Attribute	Targets/Limits	Method of Assessment	Comments
*Area (ha)	Presence of embryonic dunes appropriately positioned within the site	Visual estimate in 2x2 plots and across the site using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Ideally there should be a presence of this community but its ephemeral nature makes prediction of presence or position at dune front difficult. Provided that no human developments result in direct loss of habitat or of areas with the potential to develop this habitat, or change the site dynamics, then the attribute should be deemed to be in favourable condition.
* Area of mosaic communities and associated habitats	Maintain associated mosaic communities and habitats.	Visual estimate across the SAC using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring using condition assessment, SIM, and aerial photographs should indicate whether mosaics and associated habitats have changed or been lost.
* Frequency of community character species	Presence of characterising species, particularly *Elytrigia juncea*, and/or *Leymus arenarius*, with other species such as *Honkenya peploides, Cakile maritima* during the summer months of June, July or August	Visual estimate in 2x2m plots	At least frequent is equivalent to greater than 41% occurrence in recorded plots. At least occasional is equivalent to greater than 21% occurrence in recorded plots.

* Presence of rare or scarce species specific to the site.	Locally distinctive species recorded for the site should be at least present along the length of the Condition Assessment structured walk.	Name the species at least present along the length of the Condition Assessment structured walk.	If these species are not recorded on any one visit, it does not automatically make the site unfavourable.

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 5 (SAC) – Fixed dunes with herbaceous vegetation (grey dunes) (Status B)

(* = primary attribute. One failure among primary attributes = unfavourable condition)

Attribute	Targets/Limits	Method of Assessment	Comments
* Area (ha)	Maintain the extent of fixed dune community.	Visual estimate in 2x2 plots and across the site using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Any loss of the current intact area is unacceptable. The fixed dune communities include SD7 *Ammophila arenaria – Festuca rubra*, SD8 *Festuca rubra – Galium verum*, SD10 *Carex arenaria*, SD19 *Phleum arenarium – Arenaria serpyllifolia*, U4 *Agrostis capillaris – Galium saxatile* and W25.
* Relative % proportion of species-rich short dune vegetation to taller Marram dominated swards	30-70% of sward to comprise species-rich short dune vegetation, between 2-15 cm tall.	.	.
* Area of mosaic communities and associated habitats	Maintain associated mosaic communities and habitats.	Visual estimate across the SAC using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring using condition assessment, SIM, and aerial photographs should indicate whether mosaics and associated habitats have changed or been lost.
Vegetation height	Average vegetation height should be 2–25cm over the whole grey dune vegetation.	Visual estimate in 2x2m plots.	Outside target indicates insufficient grazing or over-grazing.

Litter (%)	Litter in a more or less continuous layer, distributed either in patches or in one larger area should not cover > 10% of the area.	Visual estimate in 2x2m plots	
Bare ground (%)	Bare ground or sand (not rock) extent, noticable without disturbing the vegetation < 5%	Visual estimate in 2x2m plots	
Grass:herb ratio	40–90% herbs	Visual estimate in 2x2m plots	
* Frequency of community character species	At least four of the following at least frequent and four at least occasional throughout the sward: *Polygala sp,* *Centaurium erythraea,* *Primula vulgaris,* *Euphrasia sp,* *Thymus polytrichus,* *Galium verum,* *Ranunculus bulbosus,* *Linum catharticum,* *Koeleria macrantha,* *Lotus corniculatus,* *Peltigera/Cladonia,* *Scilla verna,* *Viola tricolor,* *Pilosella officinarum,*	Visual estimate in 2x2m plots	

	Veronica officinalis, *Succisa pratensis,* *Orchid sp,* *Anthyllis vulnareria,* *Erodium* spp., *Campanula rotundifolia*, *Erophila verna*, *Hyacinthoides non-scripta*, *Ononis repens*, *Phleum arenarium*, *Polypodium* spp., small *Carex* At least frequent is equivalent to greater than 41% occurrence in recorded plots. At least occasional is equivalent to greater than 21% occurrence in recorded plots.		
* Frequency of negative indicators	Any one of the following more than frequent throughout the sward: *Cirsium arvense, Cirsium vulgare, Lolium perenne, Senecio jacobaea, Urtica dioica, Pteridium aquilinum, Arrhenatherum elatius*	Visual estimate in 2x2m plots	
* Frequency and %	Scrub/tree encroachment	Visual estimate within a	If scrub/tree species are more than occasional

cover of scrub/tree encroachment. (DAFOR and % cover)	should be no more than occasional. Mean cover should be less than 5%.	10x10 m radius of plots.	throughout the sward but less than 5% cover they are soon likely to become a problem if grazing levels are not sufficient or if scrub control is not being carried out.
* Presence of rare or scarce species specific to the site.	Locally distinctive species recorded for the site should be at least present along the length of the Condition Assessment structured walk. If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	Name the species at least present along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 6 (SAC) – Mudflats and sandflats not covered by seawater at low tide (Status C)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Sub-feature	Attribute	Measure	Targets	Comments
	*Morphological naturalness (extent, mobility and substrate)	Ensure that any loss in extent and change in system dynamics is only due to natural processes	No human induced developments impacting on the natural system.	This habitat occupies a naturally dynamic position in coastal systems. Provided that no human developments result in direct loss of habitat, or change the site dynamics, then the attribute should be deemed to be in favourable condition. Substrate supply and distribution should be regulated by natural coastal processes.
Intertidal Sand and Gravel communities Intertidal Fine Sand and Mud Communities	*Characteristic biotopes at sites chosen so as to provide some indication of the distribution and extent of the Sub-Feature.	Presence of the selected biotopes as identified by the NI Littoral survey at selected sites measured once during the reporting cycle	Results should not deviate significantly from the established baseline, subject to natural change.	Baseline survey was carried out as part of the Northern Ireland Littoral Survey between 1984 and 1987 by Heriot-Watt University. Changes in extent and distribution may indicate long term changes in the physical conditions at the site.
	*Species composition of selected biotopes at monitoring sites.	Species composition of the selected biotopes as identified by the NI Littoral survey measured once during the reporting cycle.	Composite species of selected biotopes should not deviate significantly from the established baseline, subject to natural change.	Species composition will be used to determine the biotope classification. The species composition of some biotopes may provide further information on changes/trends in these communities. A list of selected indicator species identified by field surveys will be utilised to determine the achievement of the conservation objectives through presence/absence at monitoring sites.

Zostera Spp Beds (*Z.noltii, Z. angustifolia, Z. marina*)	Distribution of *Zostera* beds.	Distribution of *Zostera* beds, measured during autumn once during the reporting cycle.	Distribution should not deviate significantly from the established baseline, subject to natural change.	The distribution of the beds is of key importance to their conservation condition. It is important that any consideration of *Zostera* within the context of these conservation objectives fits with the UK Biodiversity Action Plan for Seagrass Beds. A considerable amount of data has recently been collated regarding this attribute. A target value and consequently limits, will be derived from this data.
	Extent	Area (ha) of *Zostera* spp. Beds	Extent should not deviate significantly from the established baseline, subject to natural change.	A considerable amount of data has recently been collated regarding this attribute. A target value and consequently limits, will be derived from this data.
	Taxonomic composition	Presence of selected taxa	Taxonomic species should not deviate significantly from the established baseline, subject to natural change.	A considerable amount of data has recently been collated regarding this attribute. A target value and consequently limits, will be derived from this data.
	Density	Measuring *Zostera* shoot density	Target: Average shoot density should not deviate significantly from the long term average.	An early indicator of seagrass under stress is a reduction in the number of plants and loss of plants on the lower shore. This will probably concentrate only on *Z. angustifolia* which, being a larger plant, is found at lower densities than *Z. noltii*.

Feature 7 (SAC) – Sandbanks which are slightly covered by sea water all the time (Status C)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
*Extent and disturbance	Area (ha) of the subtidal sandbanks to be measured periodically (frequency to be determined).	Ensure that quality and extent of sandbank are not threatened by unsustainable aggregate removal.	Aggregate removal is subject to EIA, HRA and marine license regulations. Therefore, it could only be approved if shown not to impact the conservation objectives of the site.
*Characteristic biotopes at sites chosen so as to provide some indication of the distribution and extent.	Presence of the selected biotopes at selected sites measured once during the reporting cycle.	Results should not deviate significantly from the established baseline, subject to natural change.	Northern Ireland Sublittoral Survey (NISS) carried out the baseline survey during 1980s. This was enhanced by the Inis Hydro project which mapped 182km^2 of the SAC. DOE commissioned AFBI to produce a habitat map of Murlough in 2015. This details biotope complexes down to L4 (https://www.afbini.gov.uk/sites/afbini.gov.uk/files/publications/dundrum_bay.pdf). Changes in extent and distribution may indicate long term changes in the physical conditions at the site.

*Species composition of selected biotopes at monitoring sites	Species composition of the selected biotopes measured once during the reporting cycle.	Composite species of selected biotopes should not deviate significantly from the established baseline, subject to natural change.	Species composition will be used to determine the biotope classification. The species composition of some biotopes may provide further information on changes/trends in these communities. A list of selected indicator species identified by field surveys will be utilised to determine the achievement of the conservation objectives through presence/absence at monitoring sites.

Feature 8 (SAC) – Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (Status C)

(* = primary attribute. One failure among primary attributes = unfavourable condition)

Attribute	Targets/Limits	Method of Assessment	Comments
* Area (ha)	Maintain the extent of white dune community.	Visual estimate in 2x2 plots and across the site using a combination of aerial photographs, SIM and Condition Assessment structured walk.	This community occupies a naturally dynamic position in coastal systems. Provided that no human developments result in direct loss of habitat or of areas with the potential to develop this habitat, or change the site dynamics, then the attribute should be deemed in favourable condition. The white dune community includes SD6 *Ammophila arenaria*.
* Area of mosaic communities and associated habitats	Maintain associated mosaic communities and habitats (bog woodland, fen, etc)	Visual estimate across the SAC using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring using condition assessment, SIM, and aerial photographs should indicate whether mosaics and associated habitats have changed or been lost.
Bare ground (%)	Bare ground or sand (not rock) extent, should be noticeable without disturbing the vegetation.	Visual estimate in 2x2m plots	

* Frequency of community character species	*Ammophila arenaria* at least frequent and one of the following at least present throughout the sward: *Euphorbia* spp., *Eryngium maritima*, *Leymus arenarius*, *Calystegia soldanela,* *Festuca rubra*, *Sonchus* spp At least frequent is equivalent to greater than 41% occurrence in recorded plots. At least occasional is equivalent to greater than 21% occurrence in recorded plots.	Visual estimate in 2x2m plots	
* Frequency of non-native species	There should be no non-native species recorded within the white dunes.	Visual estimate in 2x2m plots	
*Frequency and % cover of Sea buckthorn encroachment. (DAFOR and % cover)	Sea buckthorn encroachment should be absent. Mean cover should be 0%.	Visual estimate within a 10x10 m radius of plots.	There is a limited range of invasive species that are likely to be able to establish themselves on shifting dunes. Sea buckthorn would probably present the greatest threat.
* Presence of rare or scarce species	Locally distinctive species recorded for the site should be	Name the species at least present	

specific to the site.	at least present along the length of the Condition Assessment structured walk If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 9 (SAC) – *Euphydryas aurinia* (Status B)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
* Population Size	Number of larval webs present in at least one year in six	At least 150 larval webs should be present in at least one year in six with a minimum of 20 colonies. (unless unfavourable meteorological conditions during the flight period occur more often)	Larval webs are a much more reliable measure of the "health" of the colony than flying adults. National Trust undertakes an annual survey to assess population and distribution. By its nature, this species naturally adopts a dispersed breeding pattern. Murlough is the most important area for this species with Ballykinler having little Succisa or potential habitat. Exclosures have been used at Murlough to reduce the impact of the recently introduced grazing regime.
* Habitat Extent	Extent of suitable grassland	Maintain the extent of suitable grassland – determine area.	Definition of suitable grassland -Stands of grassland where *Succisa pratensis* is present. Vegetation height and extent of Succisa are critical.
	Extent of good marsh fritillary breeding habitat	Maintain the extent of good marsh fritillary breeding habitat.	Definition of good marsh fritillary breeding habitat
* Habitat Mosaic	Extent of other semi-natural habitats	Maintain the extent of other semi-natural habitats which contribute to marsh fritillary breeding success. No loss in extent of other semi-natural habitats	

Feature 10 (SAC) – *Phoca vitulina* (Status B)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
*Population	Number of Harbour Seals counted during the autumn moult period.	Maintain a population of at least 106 Harbour Seals.	Using baseline data from 1994-1999 the mean maximum counts for each year within this 6 year period gave a value of 141 individuals. Allowing for a maximum decline of 25% from this baseline value gives a target of 106 individuals. When monitoring Harbour Seal numbers, ideally 2 counts would be performed during the moult season and 2 counts would be performed during the pupping season each year to give a reasonable estimate of the population. The population within this area could be influenced by factors including population trends within the wider Irish Sea, food availability and disturbance. Murlough data should be considered in the context of both long-term trends and existing seal numbers in Co.Down, all Ireland, UK and North East Atlantic.

Pups	Percentage of pups in relation to number of seals counted in the moult period.	Maintain a pup percentage of at least 25%.	
*Haul-outs	Integrity of haul-outs.	Maintain integrity of traditional haul-outs.	Changes to traditional haul-outs should only be through natural processes e.g. coastal erosion/deposition.
Disturbance	Disturbance events.	Contain disturbance events to a level which do not significantly impact the population.	Disturbance can result in injury to pups, separation of pups from their mothers and reduced opportunities to feed and rest. Disturbance events reported previously within this SAC include recreational activities on the shore and on water. Deliberate disturbance by boating activities has also been reported. Incidents reported to DAERA should be logged and investigated where practicable. If the population becomes unfavourable then more monitoring effort may be required to determine disturbance effects.

REA'S WOOD & FARR'S BAY SAC
UK0030244

CONSERVATION OBJECTIVES

Document Details

Title	*Rea's Wood & Farr's Bay SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*01/04/2015*
Version Number	*V2*
Next Review Date	Nov 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	Dec 2014	Complete review	RMK

Site relationships

To fully understand the conservation requirements of this site, it is necessary to also refer to the Conservation Objectives for Lough Neagh SPA.

The Rea's Wood & Farr's Bay SAC boundary partially overlaps with the boundary of the Lough Neagh SPA.

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: ANTRIM

GRID REFERENCE: J091872, J142853

AREA: 38.02 ha

5. SUMMARY SITE DESCRIPTION

Rea's Wood and Farr's Bay have developed on a series of shorelines exposed by successive lowerings of Lough Neagh. The former lakebed has an undulating terrain consisting of raised ridges and wet, occasionally flooded hollows, with a resulting variation in the type of woodland cover.

The present foreshore supports inundation Willow/Alder woodland along the shore and Alder swamp woodland in the permanently flooded hollows behind, whilst the drier ridges support base-rich Ash woodland. The diversity of woodland types is reflected in the rich flora and fauna, which includes a large number of rare species.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The boundary takes in all of Rea's Wood NNR and Farr's Bay NR, and part of Randalstown Forest NR. It has been drawn to include the best examples of swamp woodland, in addition to other semi-natural habitats that form part of the natural transition, such as inundation zones, Ash woodland, swamp and fen

vegetation. The site boundary uses permanent boundary features where possible; however, at the eastern side of Farr's Bay the NR boundary was used.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ population
Habitat	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion alvae*)	B	26 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Rea's Wood & Farr's Bay SAC.

6.1 ASSI SELECTION FEATURES

Rea's Wood & Farr's Bay ASSI

Feature Type	Feature	Size/ extent/ population
Habitat	Wet Woodland	26 ha
Species	Higher Plant Assemblage. *Alisma lanceolatum* (3), *Butomus umbellatus* (1), *Chenopodium polyspermum* (5), *Leucojum aestivum* (3), *Polygonum mite* (3), *Prunus padus* (2), *Cicuta virosa* (2), *Cardamine amara* (5), *Rorippa sylvestris* (1), *Lemna polyrhiza* (2), *Carex elongata* (5), *C. strigosa* (2) and *Scirpus sylvatica* (2)	ABCD score 36
Species	Invertebrate Assemblage Survey at these two sites has amassed an extensive inventory of the various invertebrate groups present. A number of these groups are extremely rich in species, which include a large number of rare or very locally distributed individual species that have been recorded. Major groups recorded include Nemertea, Mollusca, Diplopoda, Coleoptera, Hemiptera, Lepidoptera, Diptera, Hymenoptera, Crustacea, Opiliones and Odonata	Further research required and the need to set firm selection criteria for invertebrate assemblages.

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The *Conservation Objective* for this site is:

To maintain (or restore where appropriate) the Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion alvae*) to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

SAC Feature	Global Status	Component Objective
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion alvae*)	B	Maintain and expand the extent of existing swamp woodland. (There is an area of wetland and damp grassland which have the potential to develop into carr woodland)
		Maintain and enhance swamp woodland species diversity and structural diversity
		Maintain the diversity and quality of habitats associated with the swamp woodland, e.g. fen, swamp, especially where these exhibit natural transition to swamp woodland.
		Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.
		Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

ASSI Feature	Component Objective
Wet Woodland	See SAC Selection Feature Objective Requirements table.
Higher Plant Assemblage	Map location of rare species
	Maintain abundance and distribution and if feasible enhance population.
	Establish the status of these species and if appropriate draw up further conservation priorities for this species.
Invertebrate assemblage	Map location of rare species
	Maintain abundance and distribution and if feasible enhance population.
	Establish the status of these species and if appropriate draw up further conservation priorities for this species.

10. MANAGEMENT CONSIDERATIONS

Ownership

Both sections of this site are owned and managed as national nature reserves except for a small parcel of wood at the western end of Farr's Bay, which is in private ownership.

Adjoining Land Use

The extent of inundation is dependent on the level of Lough Neagh during the winter months. This level is regulated at the Toome Weir, which controls flow down the Lower Bann. Winter inundation of the marginal woodland supplies a renewable source of water borne seeds including exotics. Lough Neagh, already a major source of water for NI, will come under greater pressure from continual increase in demand for water resources.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Rea's Wood & Farr's Bay, or could affect it in the future. Although Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion alvae*) is the qualifying SAC feature, factors affecting ASSI features are also considered.

NOTE - Carrying out <u>any</u> of the Notifiable Operations listed in the ASSI schedule could affect the site.

Woodland Clearance
Removal of woodland would lead to a reduction in diversity. No recent significant broadleaved woodland clearance has been recorded, although *ad hoc* clearance continues.
ACTION: No further removal of woodland from the site.

Dead Wood Removal
Dead wood should be left *in situ* if safe or practical to do so. This provides valuable habitat for fungi, invertebrates etc. Removal of wood or fire-wood should be discouraged.
ACTION: No removal of dead wood from the site.

Invasion by Exotics
Exotic species are widespread particularly in Rea's Wood, varying in their degree of impact and threat they pose. Very invasive species such as Sycamore *Acer pseudoplatanus*, Indian Balsam *Impatiens glandulifera*, Pick–a-Back Plant Tolmiea menziesii, Dogwood *Cornus sanguinea*, Japanese Knotweed *Fallopia japonica,* Salmon Berry *Rubus spectabilis*, Skunk Cabbage *Lysichiton americanus* and Giant Hogweed *Heracleum mantegazzianum* are seen as posing a current threat. Other invasives not seen as an immediate threat due to their limited occurrence, include Horse Chestnut *Aesculus hippocastanum*, Rhododendron *Rhododendron ponticum*, Bamboo *Bambosoideae*, Monkey Flower *Mimulus guttatus*, Common Comfrey *Symphytum officinale*, Monk's-hood *Aconitum napellus*, Ostrich fern *Matteuccia struthiopteris*, Hop *Humulus lupulus*, Cherry Laurel *Prunus laurocerasus*, Black Current *Ribes nigrum* or slow rate of spread Beech *Fagus sylvatic*a. Other species which have been established for a long time on the site such as Keeled Garlic *Allium carinatum*, Summer Snowflake *Leucojum aestivum*, Confused Michaelmas-daisy *Aster x salignus*, are not seen as a threat.
ACTION: The very invasive species require management to control their spread, which in most cases will require the current seed source to be removed from site. This is impractical with those species such as Indian Balsam *Impatiens glandulifera* and Giant Hogweed *Heracleum mantegazzianum* whose seed supply is partly recruited annually from water borne seeds, here other methods of control will be required. In the case of Indian Balsam *Impatiens glandulifera* it will probably be impossible to control its spread and so research should be carried out to identify the effect this species is having on the woodland community. Those species not posing a threat at present should be monitored and in the long-term controlled if required.

Changes in Water Level
The past series of lowering Lough Neagh's water levels has had a fundamental impact on the marginal habitats, including woodland. Each lowering of the water

level has resulted in a successional series of shoreline colonisation. Wet woodland which has developed on previously exposed lake bed has changed to dryer woodland community types, with the increasingly elevated shoreline, after each lowering of the loughs water level. The lowering of water levels also creates newly exposed beds which are subsequently colonised by new wet woodland. Proposals to increase water extraction from the Lough will lower the summer water level again but is unlikely to effect winter levels.
ACTION: Monitor the effects of the increased summer drop down resulting from the increase in water-extraction.

Drainage of Swamp Woodland
A series of foreshore ridges, created during past lowering of water levels, previously acted as a natural barrier to drainage resulting in impoundment of water. The impounded areas remained flooded throughout the year, supporting much of the best swamp woodland. A study of the changes in the vegetation of Rea's Wood between 1984 and 1991 by Rachel Shepperson and Brian Rushton, (Applied Ecology Research Group, UUC) found there has been a shift in the composition of the woodland flora in general from characteristic wetland species to those preferring drier conditions. No reasons for this vegetation community shift were proposed during the study. However, it was noted, woodland adjacent to drains that have been cut through these ridges, show pronounced signs of drying out.
ACTION: Further study should be undertaken to assess the effect of the drains on the impounded areas, to evaluate the impacts of increased rate of water loss. If the effects of drainage are proven significant, the installation of weirs across these drains would allow for controlled retention of water during the summer.

Fly-tipping
Water borne material is the major source of rubbish deposited onto the shore line wood, during winter flooding or storms.
ACTION: Where practical, remove tide-line deposited rubbish from the woods to prevent the build up of debris and to discourage fly-tipping.

Nitrogen Deposition
Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Rea's Wood & Farr's Bay SAC.

Designated feature/feature habitat not sensitive to eutrophication.

(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use

Activities occurring outside the site (e.g. agricultural intensification, drainage works, and development) may be detrimental to the site through remote affects.

Action: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change

Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.

ACTION:When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place on using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. woodland clearance, overwintering of stock, dumping etc), or will be comparatively slow. These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (SIM or Compliance Monitoring)

Complete boundary survey to ensure that walls and fences are still intact. Ensure that there has been no tree felling, ground disturbance, dumping or inappropriate burning carried out within the SAC boundary. Evaluation of feral goat damage should be carried out throughout the site. SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each selection feature. This will detect if the features are in favourable condition or not.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan – Wet Woodland.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

ANNEX 1

Feature 1 (SAC) – Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion Alnion incanae, Salicion alvae*) (Status B)

* = primary attribute. One failure among primary attribute = unfavourable condition

Attribute	Targets	Method of Assessment	Comments
* Area of Wet woodland	Maintain the extent Wet woodland at 26ha.	Visual estimate in 10x10m plots and across the extent of the woodland using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Loss due to natural processes (e.g. wind-throw during extreme storm) is acceptable
Alder woodland community diversity	Maintain presence of the woodland community, W5 as established at base line survey.	Visual estimate in 10x10m plots	
Presence of associated features and semi-natural habitats	Maintain existing associated features and semi-natural habitats.	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost. Note: Loss of associated habitats to Wet woodland may be desirable in some instances.

* Structural variation (% cover)	Mean canopy cover greater than 50%	Estimate within the visual vicinity of the monitoring plots.	A well structured wood should have a well developed canopy and shrub layer. However, many Wet woodlands do not support a tall canopy or very mature trees.
	Mean shrub cover should be maintained between 15-50%	Estimate within the visual vicinity of the monitoring plots.	
	Maintain current levels of standard variation within reasonable limits for field, herb and moss cover.	Visual estimate in 10x10m plots.	At least the current level of structural diversity should be maintained for field cover, herb cover and moss cover. Limits to be set for each site after the baseline survey. The ground flora may appear sparse, particularly where periodic flooding leaves areas of bare mud etc. Its composition may be variable. Hydrology is difficult to assess given vagaries of climate. The regime should be allowed to revert to a natural one. Negative changes will be picked up in vegetation changes over time but more detailed recording may be necessary
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
	Water-filled pools and ditches (or mud) should be at least present in 50% of plots.	Visual estimate in 10x10m plots.	
* Age-class variation (DAFOR)	Young trees (5- 20cm diameter) at least occasional in 25% of plots.	Visual estimate in 10x10m plots.	Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-

	Mature trees (20 - 75cm diameter) at least frequent in 75% of plots.	Visual estimate in 10x10m plots.	classes present, including young and over-mature trees. Note, that in many cases achieving the set targets is a long term aim. However, providing the correct management practices are in place, this attribute may be recorded as Unfavourable -recovering.
	Over-mature trees (>75cm diameter) at least present in 10% of plots.	Visual estimate in 10x10m plots.	
* Presence of standing and fallen dead wood (DAFOR)	Standing dead wood at least occasional in 50% of plots.	Visual estimate in 10x10m plots.	Dead wood is often abundant but because there tend to be fewer big trees in wet woodland the size of the fallen wood is often small. Flooding may lead to local accumulations with other areas totally lacking fallen wood.
	Fallen dead wood at least occasional in 50% of plots.	Visual estimate in 10x10m plots.	
* Presence of epiphytes and climbers (DAFOR)	Epiphytes and climbers at least occasional in 50% of plots and at least frequent in 10% of plots.	Visual estimate in 10x10m plots.	Epiphytes and climbers are an important component in all woodlands. However, in Wet woodlands, their occurrence is much more sporadic than in other woodland types.
* Presence of Epiphytic bryophytes and lichens (DAFOR)	Epiphytic bryophytes and lichens at least occasional in 70% of plots and frequent in 30% of plots.	Visual estimate in 10x10m plots.	Epiphytic bryophytes and lichens are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.
* Regeneration potential (DAFOR)	Regeneration of native seedlings.	Visual estimate in 10x10m plots.	The general aim is for the successful establishment of young stems (i.e. seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to
	Regeneration of native saplings.	Visual estimate in 10x10m plots.	

Maintain current levels of native tree regeneration within reasonable limits for the current structure of the Wet Woodland.			maintain canopy density over a 10 year period. Regeneration of some native species is likely to be slow and sporadic; in some stands, there may currently not be sufficient and/or extensive enough gaps for young trees to regenerate. This does not necessarily indicate unfavourable condition.
* Cover of non-native species (all layers) (presence/absence)	Non–native invasive canopy species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	The canopy of the Wet Woodland should be largely comprised of Alder and Willow trees with associated native species. Non-native species are undesirable in the canopy, particularly invasive species such as Sycamore. In addition, non-native invasive species in any one layer is un-desirable. Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.
	Non–native invasive shrub species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non-native invasive canopy species seedlings/saplings should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non–native invasive ground flora species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
* Frequency and cover of eutrophication indicators: (DAFOR)	No one negative species no more than occasional throughout the wood and/or singly or together comprising more than 5% cover.	Visual estimate in 10x10m plots.	

	Galium aparine, Urtica dioica, Heracleum spp, Epilobium spp. Rumex obtusifolius No more than occasional is equivalent to less than 40% occurrence in recorded plots.		
* Cover of grasses (non-woodland species) (% cover)	The mean cover of grass for the wood should be less than 10%.	Visual estimate in 10x10m plots.	A high cover of grasses indicates past and/or present grazing. Where heavy grazing has been a past management practice, the natural woodland ground flora will take a considerable time to re-establish (time limits for restoration currently unknown). However, providing the grazing pressure has been addressed, and there is evidence that woodland flora is beginning to re-appear, this attribute may be recorded as unfavourable, recovering.
* Grazing (DAFOR)	Grazing should be recorded as no more than occasional over 80% of plots.	Estimate within the visual vicinity of the monitoring plots.	Grazing by domestic stock, where it occurs should be light resulting in minimal damage to the ground flora through poaching and damage to seedlings and saplings.
* Poaching by cattle (DAFOR)	Poaching should be absent, or recorded in less than 20% of plots and frequent or more in less than 10 % of plots.	Visual estimate in 10x10m plots.	

* Frequency of recent goat damage (1-2 years) (DAFOR)	Recent goat damage should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
* Frequency of damage to seedlings/saplings (DAFOR)	Damage to seedling/saplings should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
Frequency of felling/coppicing (within 6 year monitoring cycle) (DAFOR)	There should be no felling or coppicing of native trees or shrubs.	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Felling non-native species as part of management for conservation is acceptable.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the wet woodland indicators (W5 community) listed below:- *Filipendula ulmaria,* *Galium palustris,* *Caltha palustris,* *Cardamine pratensis,* *Lysimachia. nummularia,* *Ranunculus repens,* *Mentha aquatica,* *Angelica sylvestris,* *Potentilla palustris,* *Lythrum salicaria,*	Visual estimate in 10x10m plots.	

	Myosotis scorpioides, *Oenanthe crocata,* *Lycopus europaeus,* *Angelica sylvestris,* *Scutellata,* *Solanum dulcamara,* *Valeriana officinalis* *Iris pseudacorus,* *Equisetum fluviatile,* *Phragmites australis,* *Carex rostrata,* *C. paniculata,* *C. remota,* *C. vesicaria*.		
Indicators of Local Distinctiveness			
Presence of rare or scarce species specific to the site.	Maintain current levels of standard variation within reasonable limits for rare and notable species. If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	Name the species at least present along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ROSTREVOR WOOD SAC

UK0030268

CONSERVATION OBJECTIVES

Document Details

Title	*Rostrevor Wood SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*01/04/2015*
Version Number	*V2*
Next Review Date	Nov 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	Dec 2014	Complete review	RMK

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: DOWN

GRID REFERENCE: IJ186170

AREA: 16.6 ha

5. SUMMARY SITE DESCRIPTION

Rostrevor Wood is located on the lower but exposed west facing slope of Slievemeen overlooking Carlingford Lough and rises from approx. 10m above sea level to 130m at its highest point. The underlying rock is Silurian Slate with the covering soil comprised of Brown Earth interspersed with fine scree and boulders.

Rostrevor Wood is a mature Oak Woodland known to be at least 250 years old and may be a remnant of the original forest which once covered the region. The dominant woodland type occurs on the upper, freely-draining slopes that are acidic in nature. The tall, dense canopy is dominated by Oak with an understorey of Hazel and occasional Holly and a field layer of Bramble, Honeysuckle and Bilberry. The ground flora is typically acidic with carpets of Greater Wood-rush. The lower slopes are flushed and mildly base-rich resulting in the presence of Ash and to a lesser extent Goat Willow and Wych Elm in the canopy. The field layer and the ground flora are typically much more diverse.

The woodland flora also includes a number of rare plants such as Wood Fescue (*Festuca altissima*), Toothwort (*Lathraea squamaria*) and Bird's-nest Orchid (*Neottia nidus-avis*). A number of nationally scarce species of Lichen have also been recorded for the site including (*Melaspilea granitophia*), a record new to Ireland. Invertebrate sampling has indicated that the site is also important for a number of Hoverflies and House-flies from the Order Diptera.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The SAC boundary follows the ASSI boundary, which utilises permanent man made boundary features. The NNR and SAC/ASSI boundaries along the upper eastern slope are not consistent, as some parts of the NNR boundary extend beyond or contract within the fence line followed by the SAC/ASSI.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ population
Habitat	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	B	16 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Rostrevor Wood SAC.

6.1 ASSI SELECTION FEATURES

Rostrevor Wood ASSI

Feature Type	Feature	Size/ extent/ population
Habitat	Oakwood	16 ha
Species	Invertebrate Assemblage Rich invertebrate assemblage including a number with a very limited known distribution in Ireland. *Ad hoc* sampling has indicated that the site may be important for certain groups such as Coleoptera	.

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The ***Conservation Objective*** for this site is:

To maintain (or restore where appropriate) the Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

SAC Feature	Global Status	Component Objective
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	B	Maintain the extent of the existing oak woodland.
		Maintain and enhance Oak woodland species diversity and structural diversity.
		Maintain the diversity and quality of habitats associated with the Oak woodland, especially where these exhibit natural transitions to Oak woodland
		Seek nature conservation management over adjacent forested areas outside the ASSI where there may be potential for woodland rehabilitation.
		Seek nature conservation management over suitable areas immediately outside the ASSI where there may be potential for woodland expansion.

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

ASSI Feature	Component Objective
Oakwood	See SAC Selection Feature Objective Requirements table.
Notable invertebrate assemblage	Map location of rare species
	Maintain abundance and distribution and if feasible enhance population.
	Establish the status of these species and if appropriate draw up further conservation priorities for this species.

10. MANAGEMENT CONSIDERATIONS

Ownership
The site is owned by DARD but managed by NIEA and has one individual with rights.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Rostrevor Wood, or could affect it in the future. Although Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles is the qualifying SAC feature, factors affecting ASSI features are also considered.

NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.

Woodland Clearance
Removal of woodland would lead to a reduction in diversity. No recent significant broadleaved woodland clearance has been recorded.
ACTION: No removal of woodland from the site.

Dead Wood Removal
Dead wood should be left *in situ* if safe or practical to do so. This provides valuable habitat for fungi, invertebrates etc. Removal of wood or fire-wood should be discouraged.
ACTION: No removal of dead wood from the site.

Grazing/Poaching/Tree barking/browsing
Current management precludes stock.
ACTION: Continue to exclude stock from the site.

Invasion by Exotics
There is a localised distribution of exotic species within the wood, which vary in the degree of possible threat they may pose. Very invasive species such as Sycamore *Acer pseudoplatanus*, are seen as posing a current threat. Others are not seen as an immediate threat due to their limited occurrence (Horse Chestnut *Aesculus hippocastanum*) or slow rate of spread (Beech *Fagus sylvatic*a).
ACTION: The very invasive species require management to control their spread, which in most cases will require the current seed source to be removed from site. Those species not posing a threat at present should be monitored and in the long-term controlled if required.

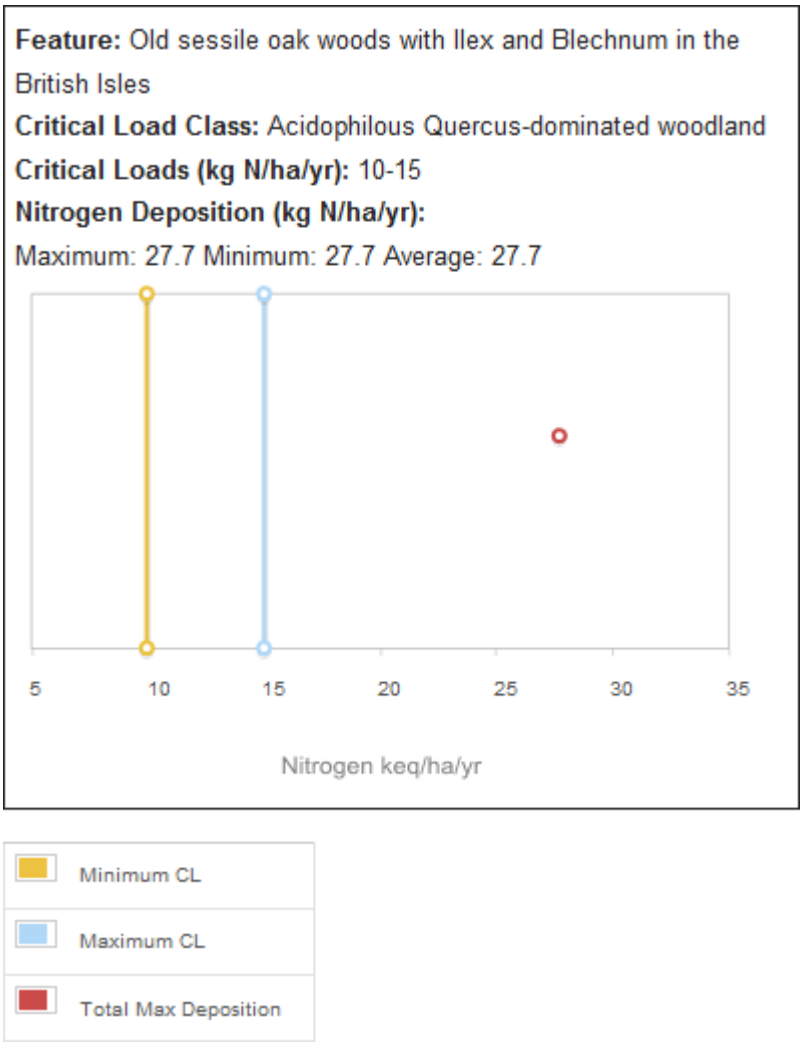
Fly-tipping

There is some localised and light fly-tipping.

ACTION: Removal of any dumped material from the woods where practical, to prevent the build-up of debris and to discourage further tipping.

Nitrogen Deposition

Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Rostrevor Wood SAC.



(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use
Activities occurring outside the site (e.g. agricultural intensification, drainage works, and development) may be detrimental to the site through remote affects.
Action: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change
Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.
ACTION:When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. woodland clearance, overwintering of stock, dumping etc), or will be comparatively slow. These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (SIM or Compliance Monitoring)
Complete boundary survey to ensure that walls and fences are still intact. Ensure that there has been no tree felling, ground disturbance, dumping or inappropriate burning carried out within the SAC boundary. Evaluation of feral goat damage should be carried out throughout the site. SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each selection feature. This will detect if the features are in favourable condition or not.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and

ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan – Oakwood.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

ANNEX 1

Feature 1 (SAC) – Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (Status B)

* = primary attribute. One failure among primary attribute = unfavourable condition

Attribute	Targets	Method of Assessment	Comments
* Area of Oakwood	Maintain the extent of Oakwood at 16ha.	Visual estimate in 10x10m plots and across the extent of the woodland using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Loss due to natural processes (e.g. wind-throw during extreme storm) is acceptable.
Oakwood community diversity	Maintain presence of woodland communities, W11, W17, W9 & W7 as established at base line survey.	Visual estimate in 10x10m plots	
Presence of associated features and semi-	Maintain existing associated features and semi-natural	Visual estimate in 10x10m plots and	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats

natural habitats	habitats (wet/bog woodland, wet heath, semi-natural grasslands etc.)	across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	have changed or been lost. Note: Loss of associated habitats to Oakwood may be desirable in some instances.
* Structural variation (% cover)	Mean canopy cover greater than 70%	Estimate within the visual vicinity of the monitoring plots.	A well structured wood should have a well developed canopy and shrub layer.
	Mean shrub cover should be maintained between 20 - 50%	Estimate within the visual vicinity of the monitoring plots.	
	Maintain current levels of standard variation within reasonable limits for field, herb and moss cover. Where present assess cover of *Luzula sylvatica*.	Visual estimate in 10x10m plots.	At least the current level of structural diversity should be maintained for field cover, herb cover and moss cover. Limits to be set for each site after the baseline survey. Note: *L. sylvatica* may be dominant in many W11 oakwood communities. The percentage cover of this species may affect Oak regeneration, but more information is required before that assumption can be made.
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
	Mean cover of bare ground should be less than 5% Bare ground does not include boulders or rocks.	Visual estimate in 10x10m plots.	

* Age-class variation (DAFOR)	Young trees (5- 20cm diameter) at least occasional in 25% of plots	Estimate within the visual vicinity of the monitoring plots.	Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-classes present, including young and over-mature trees. However, on very steep sided slopes with shallow soils, over-mature trees are unlikely to occur as larger trees are likely to fall over before becoming over –mature. Note, that in many cases achieving the set targets is a long term aim. However, providing the correct management practices are in place, this attribute may be recorded as Unfavourable - recovering.
	Mature trees (20 - 75cm diameter) at least frequent in 75% of plots	Estimate within the visual vicinity of the monitoring plots.	
	Over-mature trees (>75cm diameter) at least present in 10% of plots	Estimate within the visual vicinity of the monitoring plots.	
* Presence of standing and fallen dead wood (DAFOR)	Standing dead wood at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	
	Fallen dead wood at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	
* Presence of epiphytes and climbers (DAFOR)	Epiphytes and climbers at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	Epiphytes and climbers are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.

* Presence of epiphytic bryophytes and lichens (DAFOR)	Epiphytic bryophytes and lichens at least occasional in 70% of plots and frequent in 30% of plots.	Visual estimate in 10x10m plots.	Epiphytic bryophytes and lichens are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.
* Regeneration potential (DAFOR) Maintain current levels of native tree regeneration within reasonable limits for the current structure of the Oak woodland.	Regeneration of Oak seedlings.	Visual estimate in 10x10m plots.	The general aim is for the successful establishment of young stems (i.e. seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to maintain canopy density over a 10 year period. Regeneration of Oak in particular is likely to be slow and sporadic; in some stands, there may currently not be sufficient and/or extensive enough gaps in the canopy for oak to regenerate. This does not necessarily indicate unfavourable condition.
	Regeneration of Oak saplings	Visual estimate in 10x10m plots.	
	Regeneration of other native seedlings.	Visual estimate in 10x10m plots.	
	Regeneration of other native saplings.	Visual estimate in 10x10m plots.	
* Cover of non-native species (all layers) (presence/absence)	Non–native invasive canopy species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	The canopy of the Oak woodland should be largely comprised of Oak trees. Non-native species are undesirable in the canopy, particularly invasive species such as Sycamore. In addition, non-native invasive species in any one layer is un-desirable. Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.
	Non–native invasive shrub species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non-native invasive canopy species seedlings/saplings	Visual estimate in 10x10m plots.	

	should be present in less than 20% of plots, but never frequent.		
	Non–native invasive ground flora species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
*Frequency and cover of eutrophication indicators: (DAFOR)	No one negative species no more than occasional throughout the wood and/or singly or together comprising more than 5% cover. *Galium aparine, Urtica dioica, Heracleum spp, Epilobium spp. Rumex obtusifolius* No more than occasional is equivalent to less than 40% occurrence in recorded plots.	Visual estimate in 10x10m plots.	
* Cover of *Pteridium* (% cover)	The mean cover of *Pteridium* for the wood should be less than 10%.	Visual estimate in 10x10m plots.	
* Cover of grasses (non-woodland species) (% cover)	The mean cover of grass for the wood should be less than 10%.	Visual estimate in 10x10m plots.	A high cover of grasses indicates past and/or present grazing. Where heavy grazing has been a past management practice, the natural woodland ground flora will take a considerable time to re-establish (time limits for restoration currently unknown). However, providing the grazing pressure has been addressed, and there is evidence that

			woodland flora is beginning to re-appear, this attribute may be recorded as unfavourable, recovering.
Management /Disturbance			
* Grazing (DAFOR)	Grazing should be recorded as no more than occasional over 80% of plots.	Estimate within the visual vicinity of the monitoring plots.	Grazing by domestic stock, where it occurs should be light resulting in minimal damage to the ground flora through poaching and damage to seedlings and saplings.
* Poaching by cattle (DAFOR)	Poaching should be absent, or recorded in less than 20% of plots and frequent in less than 10% of plots.	Visual estimate in 10x10m plots.	
*Frequency of recent goat damage (1-2 years) (DAFOR)	Recent goat damage should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
*Frequency of damage to seedlings/saplings (DAFOR)	Damage to seedling/saplings should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
Frequency of felling/coppicing (within 6 year monitoring cycle) (DAFOR)	There should be no felling or coppicing of native trees or shrubs.	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Felling non-native species as part of management for conservation is acceptable.

Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the acid woodland indicators (W11 & W17 communities) listed below:- *Vaccinium myrtillus,* *Blechnum spicant,* *Dicranum spp.,* *Luzula pilosa,* *Rhytidiadelphus loreus*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained. However, the W11 & W17 communities should dominate the woodland.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the base-rich woodland indicators (W9 community) listed below:- *Sanicla europea,* *Geum urbanum,* *Polystichum setiferum,* *Aneomne nemorosa,* *Primula vulgaris.*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the flushed woodland indicators (W7 community) listed below:- *Carex remota,* *Ranunculus repens,* *Chrysosplenium oppositifolium,* *Filipendula ulmaria,* *Lysimachia nemorum.*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.

Presence of rare or scarce species specific to the site.	Maintain current levels of standard variation within reasonable limits for rare and notable species. If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	Name the species at least present along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

SLIEVE BEAGH – MULLAGHFAD – LISNASKEA - SPECIAL PROTECTION AREA (SPA)

UK9020302

CONSERVATION OBJECTIVES

Document Details

Title	Slieve Beagh – Mullaghfad – Lisnaskea SPA Conservation Objectives
Prepared By	*Ian Enlander*
Approved By	*Mark Wright*
Date Effective From	*01/04/2015*
Version Number	*V3*
Next Review Date	January 2020
Contact	cdp@doeni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	28/03/2006	Internal working document	IE	
V1.1	August 2013	Review	IE	
V2.0	February 2015	Draft	IE	Complete review

Site relationship

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

This SPA overlaps with Slieve Beagh SAC

The SPA also includes the Slieve Beagh Ramsar site.

See also Boundary Rationale

The SPA is also close to, or adjoins, European designations in the Republic of Ireland. This is Slieve Beagh SPA.

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site"**.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4 GENERAL INFORMATION

COUNTY: Armagh/Fermanagh

G.R. H525 435
AREA: 8936ha.

5 SUMMARY SITE DESCRIPTION

The Slieve Beagh SPA comprises an area of land extending between Slatbeg in the north-east and Coolnasillagh in the south-west and incorporating the Slieve Beagh massif, Mullaghfad Forest and Lisnaskea Forest. Slightly more than half the south-eastern boundary is formed by the border with the Republic of Ireland. Habitat within the site is a mosaic of upland heath, blanket bog, commercial forestry and largely unimproved grassland.

5.1 BOUNDARY RATIONALE

The boundary determination process for the Slieve Beagh SPA has taken into account the distribution of Hen Harrier nesting attempts and site-fidelity over the past 15 years together with foraging distribution, habitat availability and current land-use.

All Hen Harrier nesting areas in the area used since 1997 are incorporated within the SPAs. In order to provide adequate foraging areas, the proposed boundary is based on a foraging radius of 2.5km around all confirmed and probable nest sites recorded in 1997, 1998 and 2004.

While the model used to define the boundary has generally resulted in the SPA comprising mainly unenclosed moorland and forest, it has been necessary to include some (mainly unimproved) pastureland. Inclusion of all such lands is supported by field data on nesting and foraging areas. The boundary line is based, as far as is possible, on physical features that should allow straightforward demarcation on the ground.

It is important to note that the SPA area does not include all lands used by foraging Hen Harrier during the breeding season. Information simply doesn't exist to allow all foraging areas to be identified and foraging ranges of individual birds are known to exceed 10km (based on studies outside Northern Ireland). It is known that some degraded habitats (e.g. degraded heath and semi-improved acid grasslands) do hold higher densities of prey species (e.g. Meadow Pipit – based on studies in England). Such habitats will not necessarily have been included in the SPA, notably were they are beyond the foraging radii figure used in the boundary selection model described above.

6 SPA SELECTION FEATURES

Feature Type (i.e. habitat or species)	**Feature**	**Designation Population**	**Population at time of designation (ASSI)**	**Population at time of designation (SPA)**	**SPA Review population**
Species	Hen Harrier breeding population [a]	10 pairs[1]	n/a	10 pairs	10 pairs
Habitat[2]	Habitat extent				
Habitat[2]	Habitat quality[3]				

Table 1. List of SPA selection features.

[1] Designation population given as 2004 survey total

[2] Habitat is not a selection feature but is a factor and is more easily treated as if it were a feature.

[3] Habitat quality will be assessed in the context of component SACs and ASSIs

Notes on SPA features – may not be applicable to all SPAs

The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.

[a] – species cited in current SPA citation and listed on current N2K dataform

[b] – species selected post SPA designation through UK SPA Review 2001

[c] – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

6.1 ADDITIONAL ASSI SELECTION FEATURES

Feature Type (i.e. habitat, species or earth science)	Feature	Size/ extent/ pop.
See conservation objectives for Slieve Beagh ASSI/SAC and Lough Corry ASSI for ASSI feature details		

Table 2. List of ASSI features, additional to those that form all or part of SPA selection features.

7 CONSERVATION OBJECTIVES

The Conservation Objectives for this site are:

To maintain each feature in favourable condition.

For each feature there are a number of component objectives which are outlined in the tables below. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

8 SLIEVE BEAGH – MULLAGHFAD – LISNASKEA SPA CONDITION ASSESSMENT 2014

Species	1998	2004	2010	CSM	5 yr mean	% CSM	Status
Hen Harrier	8	10	16	8	16	200.00	Favourable

9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species
Fledging success sufficient to maintain or enhance population
To maintain or enhance the range of habitats utilised by the qualifying species
To ensure that the integrity of the site is maintained;
To ensure there is no significant disturbance of the species and
To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

Feature	Component Objective
Hen Harrier breeding population	As above
Hen Harrier breeding population	Fledging success sufficient to maintain or enhance population

Table 3. List of SPA Selection Feature Component Objectives

9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

Feature	Component Objective
See SAC conservation objectives for Slieve Beagh ASSI/SAC and Lough Corry ASSI for ASSI feature details	

Table 4. List of Additional ASSI Selection Feature Objectives

10 MANAGEMENT CONSIDERATIONS

See also Views About Management for relevant ASSI

Owner/Occupier's – As of March 2006 there were a total of XXX landowners within the site boundary. Landowners include the Department of Agriculture and Rural Development (DARD) Forest Service and a number of private individuals. Grazing rights generally lie with the land, as do Turbary rights which account for approximately XX% of the total area of the site. Sporting rights have not been established within the site boundary.

Forest Service activities – Forest Service are a major landowner within the site. Their activities are a significant factor in relation to the Hen Harrier population. The main issues are summarized in Table 3. At the time of designation, the Hen Harrier population in the SPA (and in Northern Ireland) is increasing. This, together with the fact that Hen Harrier are mobile species typically changing nest locations in response to local conditions, indicates that these species show a degree of flexibility. It will be impossible to retain existing conditions at nest sites within afforested lands due to commercial tree rotations. The broad objective will be to ensure a balanced mix of woodland stages with the longer term objective of using appropriate wider habitat management actions that promote nesting within the open moorland.

Forest Service activities will be assessed against SPA objectives through consultation on the relevant 5-year forestry plans and an annual review of selected work programmes against the most recent information available on nest locations. The latter action will be undertaken in conjunction with RSPB.

More recent survey data suggests that the population at site and Northern Ireland levels has stabilized with anecdotal evidence the both populations are now showing signs of decline. This appears to be mainly due to further loss of semi-natural habitat suitable for nesting, notably extensive stands of tall heather.

Grouse management – Hen Harrier populations are often seen as a threat to Red Grouse management. At present such management is very localized in Northern Ireland and undertaken at a small scale. Future expansion of shoots may bring conflicts with the objectives for the SPA. Such conflict can be minimized through appropriate liaison and, if necessary, provision of food dumps to reduce levels of predation of grouse by Hen Harrier.

Windfarms – all upland areas are currently of interest to the windfarm industry. While this activity falls within the planning system, the pressure on the uplands is

sufficient to merit specific comment. There is no presumption within the UK against such developments in SPAs supporting raptor or other bird populations.

Such developments represent a potential threat through loss of foraging habitat, disturbance to nest and roosting sites, risk of collision and providing access to previously remote areas.

Careful consideration is requires at the planning stage with windfarm and turbine location having regard to Hen Harrier distribution. Research and monitoring needs have been set out under guidance to planning team NIEA.

There is no unequivocal evidence that raptors can or cannot co-exist with windfarm developments. Pre-development assessments need to recognize variability between sites (studies are not necessarily transferable) together with the long term changes in breeding population populations (assessment may be undertaken at a low point) and historical changes in nest distribution within sites.

11. MAIN THREATS, PRESSURES, ACTIVITES WITH IMPACTS ON THE SITE OR SITE FEATURES

Site/feature management issues

Issue	Threat/comments	Local considerations	Action
Habitat extent and quality – natural and semi-natural habitat	Reduction of habitat area or quality through inappropriate use or absence of site management including reclamation for agricultural purposes..	Parts of site are SACs and ASSIs so management will seek to achieve appropriate vegetation community structure. Evidence suggests Hen Harrier favour managed forest within the site for nesting. Habitat management objective should be to encourage nesting in natural and semi-natural habitats	Assess needs of breeding species. Liaise with owner or appropriate authority to adjust or introduce site management if necessary.
Forestry areas – habitat	In general an expansion of forest represents a loss of foraging habitat. Objective should be to prevent loss of foraging habitat through expansion of forestry. Mixed stands of forest are however of value for nest selection and in providing some foraging. Existing rotation policy appears to offer good balance between areas supporting felled, young and old plantation.	Existing guidance should prevent any planting on peatland. Marginal semi-improved grasslands may come under threat from afforestation Balance of forestry management actions should be assessed against the site as a whole.	Liaise with Forest Service and private forestry sector.
Forestry areas – nest sites -	Forestry activities should be compatible	The importance of forested areas for nesting birds cannot	Liaise with Forest Service, private forestry sector, RSPB

Issue	Threat/comments	Local considerations	Action
forest management	with needs of breeding birds.	be underestimated. Existing forest practise should ensure management does not interfere with birds through the critical breeding period. To be informed by nest location data.	and other groups/individuals with information on nest sites.
Forestry areas – nest sites - disturbance	Disturbance to nesting birds through non-forestry activities on forestry property. Apart from disturbance of birds themselves, breeding birds, especially are vulnerable to disturbance as absence of adults can often result in predation or chilling of young with a reduction/loss in fledging success.	Selection of routes e.g. for public access or motorcar trials must take the needs of breeding birds into account.	Liaise with Forest Service, private forestry sector, local authorities and other relevant parties.
Predation.	Mainly of concern on bird breeding sites.	Thought to be a significant factor in determining Hen Harrier breeding success.	Must be dealt with as part of wider countryside management considerations. Carry out appropriate site management.
Research activities.	Census and ringing activities especially have the potential to impact on bird populations, particularly at breeding sites. These are however necessary for population monitoring and developing a better understanding of species ecology.	Assessed as part of regular programme of raptor monitoring.	Census and ringing activities to be undertaken by competent individuals, appropriately trained. In case of ringers, appropriate license must be held.

Table 5. List of site/feature management issues

12. MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook.

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial photographs to determine site morphological changes. Methodology for this is being developed.

12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – to monitor major changes in landuse within the site and identify relevant processes of change e.g. changes in grazing regimes, peat cutting. This SIM should be carried out once per year. Note that Forest Service will routinely review all relevant forestry

programmes with NIEA. state forestry activities need not be included in the SIM exercise.

2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (species, assemblage, habitat, etc). This will detect if the features are in favourable condition or not. See Annex I for SPA Features.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

12.2 ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.
3. Consider whether breeding populations could be affected by unfavourable factors outside the breeding season.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance.
6. Assess prey availability. Issues to consider are both within site broad site management, and without site e.g. climatically driven factors.

7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.
8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

13. SELECTION FEATURE POPULATION TRENDS

A summary statement of site population trends, together with wider geographical trends. Date of completion is given as well as information sources used. Due to a lack of data site trends are generally limited to terms such as 'consistent increase/decline', 'variable with overall increase/decline', 'no discernable trend'. Other trends are also generally limited to terms such as 'consistent increase/decline', 'variable with overall increase/decline', 'no discernable trend'.

SPECIES	SITE TREND	NI TREND	IRISH TREND	UK TREND	COMMENTS
Hen Harrier (breeding)	Increase	Increase	Increase	Increase (2004 Hen Harrier Survey)	

ANNEX 1

Feature (SPA) – Breeding Hen Harrier

* = primary attribute. One failure among primary attribute = unfavourable condition
= optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
* Hen Harrier breeding population	Breeding pairs	No significant decrease in breeding population against national trends	Population surveyed at least once per reporting cycle.
# Hen Harrier fledging success	Fledgling success	On average >1 fledgling per pair successfully raised.	Appropriate level of fledgling survival to be determined.

Non-Avian Factors – habitat

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used or potentially usable by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Habitat quality	To be assessed as part of SAC/ASSI monitoring		Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures where this would lead to different usage by notified species.

SLIEVE GULLION SAC

UK0030277

CONSERVATION OBJECTIVES

Document Details

Title	*Slieve Gullion SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*11/10/2017*
Version Number	*V2.1*
Next Review Date	Nov 2020
Contact	cdp@daera-ni.gov.uk

Revision History:

Version	Date	Summary of Changes	Initials
V1.0	June 2013	Internal working document	PC
V2.0	January 2015	Complete review	RMK
V2.0	01.04.2015	Effective date of Version 2	PC
V2.1	11.10.2017	Removed wording '*excluding recently burnt areas*' from bare peat target in all relevant Annex tables	PMC

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas 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 as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as 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 population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: ARMAGH

GRID REFERENCE: J 023210

AREA: 612.13 ha

5. SUMMARY SITE DESCRIPTION

Slieve Gullion is a compact upland formed by volcanic activity in Tertiary times, some 60 million years ago. It is situated in south Armagh about 5 miles southwest of Newry, and at a height of 573m, it represents a prominent landscape feature. The area is important geologically, representing the finest example of a Tertiary igneous centre in Ireland and it is also among the best topographic expressions of a ring-dyke system in the British Isles.

Slieve Gullion SAC supports a range of upland habitats and associated transitional communities, especially to the north of the site, where the upland heath grades downslope into lowland heaths, acid grasslands and basin fens.

Annex 1 habitat European dry heath is extensive over the area and represents one of the largest expanses of this habitat in Northern Ireland outside the Mourne Mountains. The community is mostly of the *Calluna vulgaris/Erica cinerea* and *Calluna vulgaris/Vaccinium myrtillus* types, but includes *Ulex gallii/Erica cinerea* dry heath on the lower slopes. The area supports a number of other vegetation communities, including wet heath and blanket bog on the summit and upper slopes, wet and dry grassland communities, and transition mires and quaking bogs.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The boundary has been drawn to include all areas of dry, wet, upland and lowland heath communities, together with associated semi-natural habitats around the summit of Slieve Gullion. It is generally well-defined, and excludes the more degraded heathland/grassland mosaics, improved agricultural land and forestry.

The forests have been planted on the lower slopes of the hill and form the boundary around more than 50% of the site. The boundaries are generally clearly defined as stone walls and fences, but there are some areas around the south of the SAC where only the edge of the trees demarcates the boundary with no fence-line. Many of the fields to the north and west of the site have been reclaimed from lowland heath in recent years. Although the majority of boundaries are stock proof, there are clearly areas where stock are free to roam from the heath into the forest and back again.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ population
Habitat	European dry heaths	B	490 ha
Habitat	Northern Atlantic wet heaths with *Erica tetralix*	D	30.6 ha
Habitat	Active blanket bogs	D	30.6 ha
Habitat	Transition mires and quaking bogs	D	0.8 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Slieve Gullion SAC.

6.1 ASSI SELECTION FEATURES

Slieve Gullion ASSI

Feature type	Feature	Size/ extent/ population
Habitat	Dry Heath	490 ha
Habitat	Fens - Four small basin fens that are very 'natural' and rich in wetland species, with a number of associated fen communities.	Combined area 4.5 ha
Species	Breeding Bird Assemblage	
Species	Invertebrate assemblage	
Earth Science	Tertiary Igneous series - three sub-sites within Slieve Gullion SAC are of special scientific interest for their Tertiary igneous rocks. These are; Slieve Gullion – Crag Sarah Daly's Bridge – Crag Forest Quarry – Quarry	

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The *Conservation Objective* for this site is:

To maintain (or restore where appropriate) the European Dry Heaths to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objectives
European dry heaths	B	Maintain the extent of existing European dry heath vegetation.
		Maintain and enhance the quality of the European dry heath community types.
		Seek to expand the extent of the dry heath communities into degraded areas of species-poor, dry acid grassland.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transitions to the dry heath.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for dry heath rehabilitation.

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Dry Heath	See SAC Selection Feature Objective Requirements table.
Fens	Maintain the extent and quality of the existing lowland basin fen vegetation and ensure fen community types are also maintained.
Breeding Bird Assemblage	To be finalised.
Invertebrate assemblage	To be finalised.
Tertiary igneous rocks	Maintain the extent of each of the three sub-sites that display nationally important exposures of Tertiary igneous rocks and access to them subject to natural processes.

10. MANAGEMENT CONSIDERATIONS

Ownership
About 300 ha, almost 50% of Slieve Gullion SAC, is owned by Forest Service, DARD. Their ownership encompasses the lands to the south of the site. Until recently, Northern Ireland Electricity owned much of the remainder, but it has recently been sold back to the original owners or their descendants. In total, there are 30 landowners with land lying within the SAC, mainly in the enclosed lands around the periphery. An additional 20 individuals have shooting or mineral rights. This complex pattern of ownership and grazing rights together with the added complication of shooting rights makes a unified approach to site management more difficult.

Much of the SAC is lightly grazed by sheep, although in the past, some areas were more intensely managed. Occasional burning of the vegetation has taken place.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Slieve Gullion, or could affect it in the future.

Although European Dry Heaths is the qualifying SAC feature, factors affecting ASSI features are also considered.

NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.

Grazing
Heavy grazing can lead to changes in species composition, and ultimately, conversion from heath to grassland. Within much of the SAC, the heathland is only very lightly grazed by sheep. The heathland communities are therefore largely in favourable condition. However, overgrazing does occur, particularly in recently burnt areas and on the more grassy slopes surrounding the old farmstead to the northeast of the area. This concentrated selective grazing by sheep is generally fairly restricted in extent, but the heathland communities affected are degraded and in unfavourable condition.

Overgrazing is a consequence of a number of factors that are extremely difficult to control. These include common grazing, winter grazing, which is particularly damaging to Heather, lack of shepherding and the difficulties of monitoring sheep numbers over extensive areas of upland. As much of the upland area is completely unenclosed, sheep can roam freely from one land ownership to another. In addition, in some places there is no stock-proof boundary between the SAC and surrounding rough pasture, with the result that stock from surrounding lands (mostly sheep, but some horses and cattle) can graze the SAC.
ACTION: Establish a sustainable stocking density within each management unit of the Slieve Gullion SAC and ensure that set grazing prescriptions are strictly adhered to. Continue monitoring of the heathland communities to ensure that prescriptions are allowing degraded heathland communities to recover towards favourable condition. If necessary, establish some form of shepherding over the unenclosed upland parts of the site in order to spread the grazing pressure more evenly.

Burning
Burning is sometimes used as a management tool to increase the structural and floristic diversity of dry heath, or to increase the carrying cpacity for grouse or livestock. However, excessive or badly managed burning can lead to the deterioration of heathland communities, with a reduction in the cover of mosses and ericaceous species, and a corresponding increase in the cover of sedges, *Molinia caerulea* and *Nardus stricta*. In addition, structural diversity is reduced. High levels of grazing can exacerbate the effects, as sheep tend to selectively graze the young ericoid shoots, thus inhibiting regeneration.

Burning has taken place within the SAC, with some quite extensive areas of past burning being clearly identified. Sheep appear to be concentrating much of their grazing pressure in some of the recently burnt areas. In general, it is recommended that burning should only be carried out in circumstances where there is a clearly identified conservation need. Alternative methods of diversifying the vegetation should be considered first (e.g. mowing/flailing).
ACTION: Through liaison and management agreements with landowners ensure that any burning within the SAC is carefully controlled and monitored.

Scrub/Bracken Encroachment

There are many small pockets of bracken associated with the lower slopes around the periphery of Slieve Gullion SAC, as well as localised pockets of bracken on some of the upper slopes. There is also some limited scrub development – mainly *Ulex europaeus* associated with areas of disturbance. Any further scrub or bracken encroachment into the heathland communities is undesirable.
ACTION: Monitor further scrub/bracken encroachment (where it occurs) and take remedial action if required. Remove any invasive exotic species, such as Rhododendron as a matter of urgency.

Fly-tipping
There is an extensive area of severe fly-tipping in the northern section of the SAC. This dumping appears to be carried out by the landowner as the only access to the dump site is along a private track. Dumped items include all types of farm-yard waste (including fallen animals), TVs, washing machines and cars. In other parts of the site, there is currently no evidence of fly tipping. However, it is possible that fly tipping may occur along the edge of Ballard Road into the fen areas, i.e. where the SAC boundary runs along the edge of this minor road.
ACTION: All material from the large fly-tipping site in the northern area of the SAC should be removed or buried and any further dumping should be prevented. It may be necessary to reinstate heath vegetation over the area. If any fly-tipping starts to occur along the minor Ballard Road or anywhere else on the site, remove all evidence as soon as possible to prevent any further incidences.

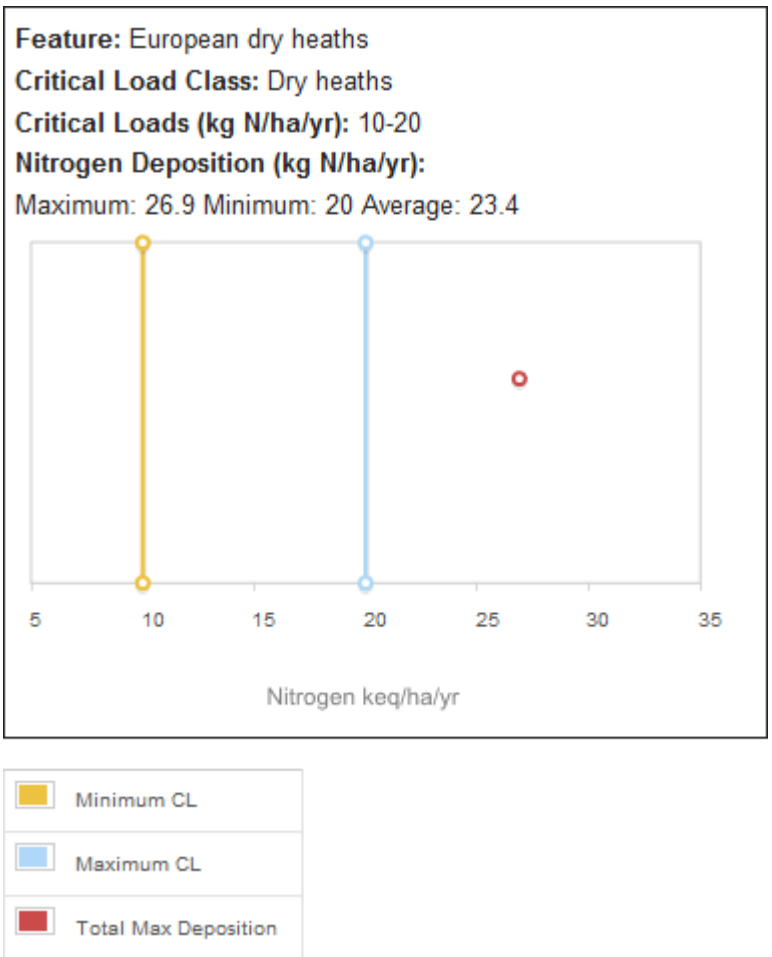
Quarrying
Although there is no current quarrying, some small-scale quarrying has previously taken place. However, there are a number of mineral rights held by private and state organisations in the area.
ACTION: There should be no commercial quarrying within the Slieve Gullion SAC. However, it may be necessary to remove some rock from the face of the Forest Quarry to ensure the geological features of interest remain exposed.

Land Reclamation
Much of the lower *Ulex gallii* dry heaths have been lost to reclamation in recent years. The remaining *Ulex gallii* heath is an important component of the SAC. In addition, some of the dry heaths further up-slope have also been reclaimed and afforested.
ACTION: Through liaison and management agreements with landowners ensure there is no further reclamation of the lowland or upland heaths within the SAC.

Recreation
An increased interest in hill walking within the Northern Ireland population together with increased tourist activity in the South Armagh area, is beginning to put pressure on the footpath that runs up to the South Cairn. The path itself consists of exposed bare peat in many places with localised gully erosion and the surrounding vegetation along the edges of the path are beginning to be impacted.

Ideally, paths should be pitched to allow for sustainable levels of recreational activity without having an adverse affect on the heathland communities.
ACTION: Ensure that the impact of hill walking in Slieve Gullion SAC is minimised. Footpath creation and maintenance is of paramount importance and there is also a need to develop and promote pathways in areas that are not highly sensitive to disturbance.

Nitrogen Deposition
Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Slieve Gullion SAC.



(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use
Any changes in local land-use e.g. agricultural intensification, drainage works and development) may be detrimental to the SAC.
Action: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change
Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.
ACTION: When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat).

These longer-term changes will be picked up by monitoring of the feature via Site Condition Assessment - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. *Monitor the integrity of the site (SIM or Compliance Monitoring)*
Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that there has been no dumping or burning carried out within the ASSI. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2003). Northern Ireland Habitat Action Plan – Upland Heathland.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3rd UK Habitats Directive Report.

ANNEX I

Feature 1 (SAC) - European dry heath (Status B)

(* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
* Area of dry heath	Maintain the extent of dry heath at 490 ha.	Visual estimate in 2x2 m plots and across the dry heath using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Note that it may be possible to extend dry heath communities, provided this is into degraded areas and does not encroach into other habitats of scientific interest.
* Heath community diversity	Maintain the presence of the dry heath communities H7, H8, H10 etc. as established at base line survey.	Visual estimate in 2x2 m plots.	Repeat monitoring of plots using GPS should indicate whether dry heath communities have changed or been lost.
* Area of mosaic communities and associated semi-natural habitats	Maintain associated mosaic communities and semi-natural habitats.	Visual estimate in 2x2 m plots and across the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost.
Dwarf-shrub height	Average ericoid height should be 15–35cm with at	Visual estimate in 2x2 m plots.	On some areas of dry heath (especially on gentle slopes), the ericoid age structure will largely reflect

	least 25% of the dry heath in the late mature/degenerate growth phase (greater than 35cm).		recent burning patterns. However, in dry heath, burning should only be carried out occasionally under carefully controlled and monitored circumstances. A varied heather age structure is reflected in the height of heather.
* Bare peat, or ground covered by algal mats (% cover)	Bare peat etc. should occupy less than 2% of the dry heath surface overall.	Visual estimate in 2x2 m plots.	Bare peat (NOT exposed rock) or peat carpeted by *Polytrichum* spp., *Campylopus* spp. crust forming lichens or algal mats can occur as a consequence of constant burning and/or grazing. Bare peat here represents bare peat etc. within the dry vegetation rather than naturally eroded surfaces where exposed rock can form a natural part of the dry heath community.
* Ericaceous cover (% cover)	Dwarf-shrub cover should be greater than 75% over at least 75% of the dry heath community; and Mean dwarf-shrub cover should be greater than 75%	Visual estimate in 2x2 m plots.	
* Ericoid diversity	At least two species of dwarf-shrub at least present in 90% of plots.	Visual estimate in 2x2 m plots.	Ericoid (dwarf-shrub species) include *Calluna vulgaris*, *E. cinerea*, *Vaccinium myrtillis*, *Erica tetralix*, *Ulex gallii*, *Empetrum nigrum* and *Myrica gale*.
* Cover of *Ulex gallii* (% cover)	*Ulex gallii* cover should be less than 50% in plots within H8 stands.	Visual estimate in 2x2 m plots.	Mean percentage cover should be assessed for stands of H8 only – i.e. exclude plots in other heath communities from the calculations. Stands of H8 are generally restricted to the south-east of Northern Ireland.
* Cover of graminoids (% cover)	Total graminoid cover should be less than 33%.	Visual estimate in 2x2 m plots.	Include true grasses, sedges, and rushes in this assessment. *Nardus stricta, Deschampsia flexuosa*,

			Juncus squarrosus or other graminoids should not dominate over other species.
* Frequency and % cover of bryophytes and bushy lichens (esp *Cladonia* spp.) (DAFOR and % cover)	Bryophytes (excluding *Polytrichum* spp. and *Campylopus* spp. on bare ground) and/or Cladonia species should be at least frequent. At least frequent is equivalent to greater than 41% occurrence in recorded plots. Combined mean cover should be greater than 5%.	Visual estimate in 2x2 m plots.	Generally only bryophytes (mosses and liverworts) figure in this assessment, but occasionally bushy lichens can also be a prominent feature of the dry heath vegetation.
* Frequency and % cover of scrub/tree encroachment on dry heath communities (DAFOR and % cover)	Scrub/tree encroachment should be no more than occasional over the dry heath community. No more than occasional is equivalent to less than 40% occurrence in recoded plots. Mean cover should be less than 5%.	Visual estimate within a 10 m radius of plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Scrub encroachment should be checked using a combination of aerial photographs and Condition Assessment. Include invasive alien species in addition to *Betula pubescens, Prunus spinosa, Rubus* spp. Invasive exotic species such as *Rhododendron ponticum* should be removed immediately. Exclude *Ulex europaeus* (see below)

* Cover of Gorse *Ulex europaeus* (% cover)	Gorse (*Ulex europaeus)* cover should be less than 5%. During repeat surveys, Gorse cover should not exceed that of the baseline survey.	Visual estimate in 2x2 m plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Although a natural component of heath communities, Gorse can become invasive under both low and high grazing pressures. It is important to assess whether the relative quantities present in the site are increasing.
* Cover of Bracken (*Pteridium aquilinum*) encroachment (% cover)	Bracken cover less than 10% in dense canopy. During repeat surveys, Bracken cover should not exceed that of the baseline survey.	Visual estimate in 2x2 m plots and across the feature using a combination of aerial photographs and Condition Assessment structured walk.	Although a natural component of heath communities, Bracken can become invasive under both low and high grazing pressures. It is important to assess whether the relative quantities present in the site are increasing.
* Frequency and cover of undesirable agricultural grasses and weeds (DAFOR and % cover)	None of the following should be more than rare: *Cirsium arvense, C. vulgare, Senecio jacobaea, Urtica dioica, Plantago major, Phleum pratense, Trifolium repens, Holcus lanatus* and *Lolium perenne* No more than rare is equivalent to less than 20% occurrence in recorded plots.	Visual estimate in 2x2 m plot.	

	Combined mean cover of agricultural grasses and weeds less than 1%.		
* Management - Grazing (% cover)	Signs of moderate or heavy grazing should occupy less than 5% of the dry heath vegetation. The frequency of droppings, the extent of poaching, uprooting of dwarf shrubs and invasion by *Juncus squarrosus* etc. indicate moderate and heavy grazing where any one of the above is recorded as more than occasional.	Visual estimate in 2x2 m plots.	
* Management - Burning (% cover)	Signs of recent burning should occupy less than 5% of the dry heath vegetation.	Visual estimate in 2x2 m plots and across feature using a combination of aerial photographs, SIM and Condition Assessment structured walk.	
Frequency and cover of erosion features associated with human impacts. (DAFOR and % cover)	No gully erosion or bare rock associated with more concentrated human impacts (ATV tracks or recreational activities). Man	Visual estimate in 2x2 m plots.	The extent of man induced erosion should be monitored using a combination of aerial photographs and Condition Assessment. Erosion is a natural feature of high mountain slopes. However, where natural erosion is exacerbated by human activity, mainly hill

	induced/enhanced erosion should occupy less than 2% of the total area of dry heath other than very localised instances.		walking, the heath will not be in favourable condition, except where such erosion is very limited in nature.
Herb diversity	Herbs (excluding negative indicators) at least frequent. At least frequent is equivalent to greater than 41% occurrence in recorded plots.	Visual estimate in 2x2 m plots.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

ISSN 2009-4086

National Parks and Wildlife Service

Conservation Objectives Series

Carlingford Lough SPA 004078



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

National Parks and Wildlife Service,
Department of Arts, Heritage and the Gaeltacht,

7 Ely Place, Dublin 2, Ireland.

Web: www.npws.ie
E-mail: nature.conservation@ahg.gov.ie

Citation:

NPWS (2013) Conservation Objectives: Carlingford Lough SPA 004078. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Series Editor: Rebecca Jeffrey
ISSN 2009-4086

Introduction

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

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

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

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

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Notes/Guidelines:

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

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

004078	Carlingford Lough SPA
A046	Brent Goose *Branta bernicla hrota*
A999	Wetlands

Please note that this SPA overlaps with Carlingford Shore SAC (002306). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site 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 :	2013
Title :	Carlingford Lough SPA (site code 4078) Conservation objectives supporting document V1
Author :	NPWS
Series :	Conservation objectives supporting document

Conservation Objectives for : Carlingford Lough SPA [004078]

A046 **Brent Goose *Branta bernicla hrota***

To maintain the favourable conservation condition of Light-bellied Brent Goose in Carlingford Lough SPA, which is defined by the following list of attributes and targets:

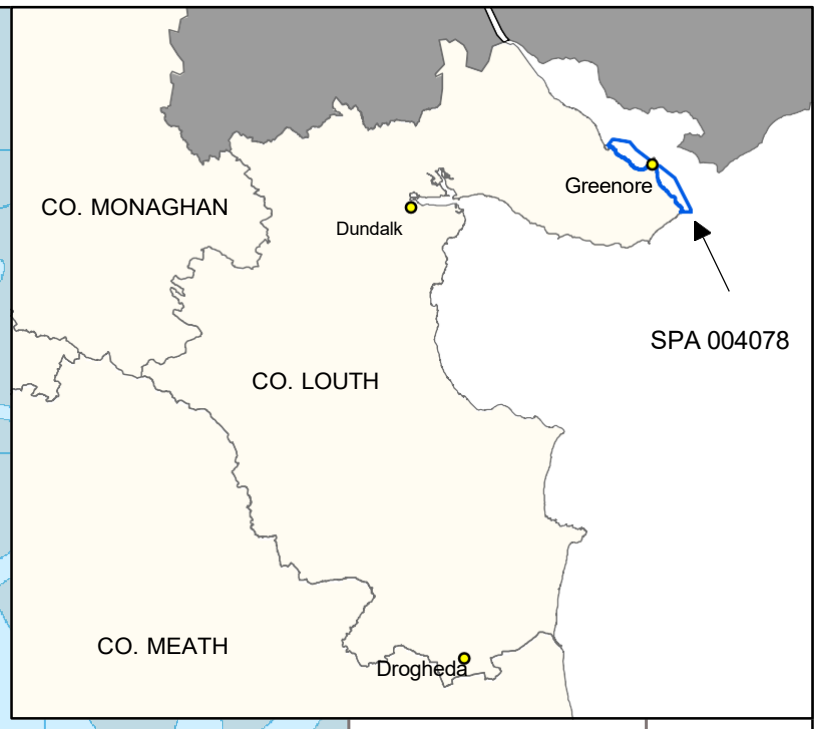
Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	Waterbird distribution from survey work undertaken in 2010/2011 is discussed in part five of the conservation objectives supporting document

Conservation Objectives for : Carlingford Lough SPA [004078]

A999 Wetlands

To maintain the favourable conservation condition of the wetland habitat in Carlingford Lough SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 595 hectares, other than that occurring from natural patterns of variation	The wetland habitat area was estimated as 595ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document



Cairlinn
Carrigaroan
Carriganean
Marina
Carlingford
Cairlinn Carlingford
Harbour
Point
Quay
Midden
Perch
Black Rock
Perch
Greenore
Point
Greenore
An Grianfort
Cliff & Coastal Rescue
N.T.
Fire Sta
Priory
Sch
Shiltias Lough
Breakwater
Harbour
Railway
Dismantled
Liberties Of Carlingford
Priory
R173
Mullatee
R176
R175
Industrial Estate
Boharboy
Holy Well
Millgrange
Ballytrasna
Muchgrange
Sch
Ballynamony
Cairn
Bullaun Stone
Crossanley
Grange Cross
Reservoir
Railway
Grange
Ch
Rath
Monksland
Barrow
Rogans Cross
Múllabane
Ballagan
Ballagan Point
Rath Lower
Sch
Maguires Cross
Grange Old
Mucklagh
Barrow
54° 00′
Petestown
Sch
Seecrin
Galtrimsland
Willville
Whitestown
Ardtully More
Ardtully Beg
Ballynamony
Ballug
Castle
Ballynamaghery
Holy Well
Church
Templetown
Rathcor Lower
12
11
10
09
08
07
06

Legend

SPA 004078

An Roinn Ealaíon, Oidhreachta agus Gaeltachta / Department of Arts, Heritage and the Gaeltacht	**MAP 1: CARLINGFORD LOUGH SPA CONSERVATION OBJECTIVES SPA DESIGNATION**	Map to be read in conjunction with the NPWS Conservation Objectives Document.	**SITE CODE: SPA 004036 version 2.01**

0 0.25 0.5 0.75 1 km

The mapped boundaries are of an indicative and general nature only. Bo un dar ies of des

ignated areas are subject to revision. Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
NÍl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

Map Version 1
Date: March 2406

CO. DOWN

CO. LOUTH

SAC 002306

SPA 004078

Legend

- SAC 002306 Carlingford Shore
- SPA 004078 Carlingford Lough
- OSi Discovery Series County Boundary

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

MAP 2:
CARLINGFORD LOUGH SPA
CONSERVATION OBJECTIVES
ADJOINING / OVERLAPPING DESIGNATIONS

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

SITE CODE:
SPA 004036 version 2.01
SAC 002306 version 1

0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

Map Version 1
Date: March 2013

ISSN 2009-4086

National Parks and Wildlife Service

Conservation Objectives Series

Carlingford Shore SAC 002306



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



National Parks and Wildlife Service,
Department of Arts, Heritage and the Gaeltacht,

7 Ely Place, Dublin 2, Ireland.

Web: www.npws.ie
E-mail: nature.conservation@ahg.gov.ie

Citation:

NPWS (2013) Conservation Objectives: Carlingford Shore SAC 002306. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Series Editor: Rebecca Jeffrey
ISSN 2009-4086

Introduction

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

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

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

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

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Notes/Guidelines:

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

Qualifying Interests

** indicates a priority habitat under the Habitats Directive*

002306	Carlingford Shore SAC
1210	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks

Please note that this SAC overlaps with Carlingford Lough SPA (004078). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site 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 :	1999
Title :	National Shingle Beach Survey of Ireland 1999
Author :	Moore, D.; Wilson, F.
Series :	Unpublished Report to NPWS
Year :	2009
Title :	Coastal Monitoring Project 2004-2006
Author :	Ryle, T.; Murray, A.; Connolly, C.; Swann, M.
Series :	Unpublished report to NPWS
Year :	2013
Title :	Carlingford Shore SAC (site code 2306) Conservation objectives supporting document- coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	2008
Title :	The phytosociology and conservation value of Irish sand dunes
Author :	Gaynor, K.
Series :	Unpublished PhD thesis, National University of Ireland, Dublin

Spatial data sources

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 3)

1210 Annual vegetation of drift lines

To maintain the favourable conservation condition of Annual vegetation of drift lines in Carlingford Shore 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, but thought to occur in a mosaic with perennial vegetation of stony banks (1220). 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	Current distribution unknown, but thought to occur in a mosaic with perennial vegetation of stony banks (1220). 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	Accumulation of organic matter in tidal litter is essential for trapping sand. Rock armour is present at Ballagan Point and Greenore. These physical barriers will affect sediment supply. 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	Thought to occur in a mosaic with perennial vegetation of stony banks (1220). 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 (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and orache (*Atriplex* spp.)	Based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009) and Gaynor (2008). 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	Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Based on data from Ryle et al. (2009). 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 Carlingford Shore 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. Habitat recorded during the National Shingle Beach Survey (NSBS) (Moore and Wilson, 1999) from three sub-sites: Whitestown to Cooley Point, Ballagan Point and Greenore. Although extent was not mapped, these contiguous sites extend for 3.5km along the coastline. Area of vegetated shingle is estimated to cover 130ha. 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 3 for mapped locations	Based on data from Moore and Wilson (1999). Exact current distribution unknown, although the habitat has been recorded along a 3.5km stretch of coastline from Greenore, extending south to Cooley Point (Moore and Wilson, 1999). 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 Moore and Wilson (1999). West of Cooley Point there has been a lot of development at Templetown beach, including the installation of a car park. The NSBS noted two areas of coastal defences (rock armour), one in an area south of Ballagan Point and another in an area south of Greenore (approx. 200m in length). A number of tourism-related developments, including a promenade protected with rock armour, have been constructed at Greenore. Shingle features are relatively stable in the long term. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Moore and Wilson (1999). At Ballagan Point the shingle vegetation is backed by cobble-based grassland. Elsewhere along the Carlingford shore, gradations to inland habitats are disrupted by a road. Habitat is thought to occur in a mosaic with annual vegetation of drift lines (1210). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain the typical vegetated shingle flora including the range of sub-communities within the different zones	Based on data from Moore and Wilson (1999). 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

Co. DOWN
Co. an Dúin

Lat 54° 05'N

Kilkeel 7km / 4.5mls

Rosstrevor Mountains

Mourne Mountains West
Beanna Beurtha Thiar

Warrenpoint
An Pointe

Rosstrevor
Ros Treabhair

CARLINGFORD LOUGH
Loch Cairlinn

Carlingford
Cairlinn

Carlingford Mountain

Slieve Foye
Sliabh Fea

Greenore Point

Greenore
An Grianfort

Cliff & Coastal Rescue

Barnavave

Slievenaglogh
410

Annalughan Mountain

CO. MONAGHAN
CO. LOUTH
CO. MEATH
Dundalk
Ardee
Drogheda
Greenore
SAC 002306

Legend

SAC 002036

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

MAP 1:
CARLINGFORD SHORE SAC
CONSERVATION OBJECTIVES
SAC DESIGNATION

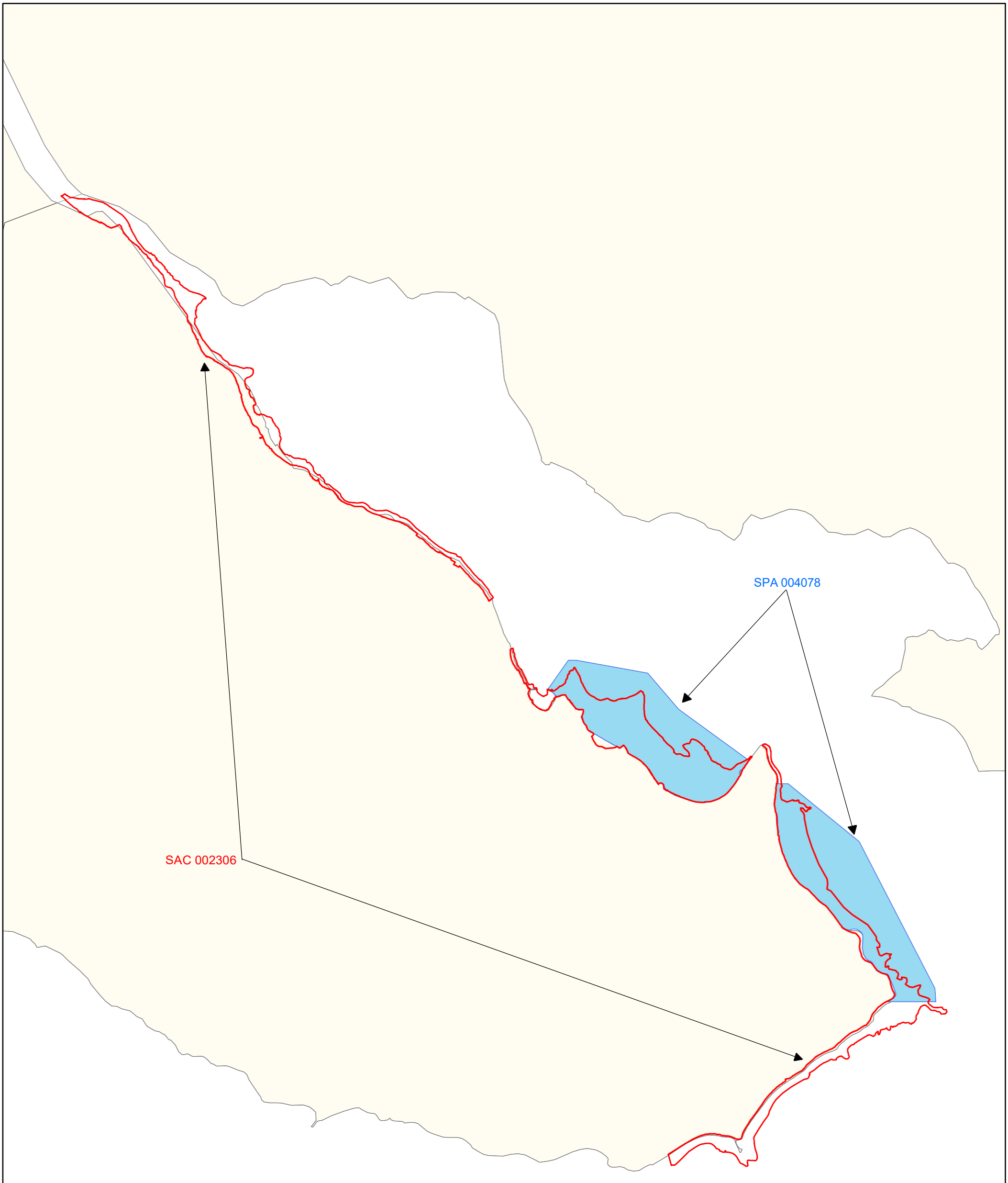
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 002306; version 3

0 1 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

Map Version 1
Date: June 2016



Legend

- Carlingford Shore SAC 002306
- Carlingford Lough SPA 004078
- OSi Discovery Series County Boundaries

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

MAP 2:
CARLINGFORD SHORE SAC
CONSERVATION OBJECTIVES
ADJOINING / OVERLAPPING DESIGNATIONS

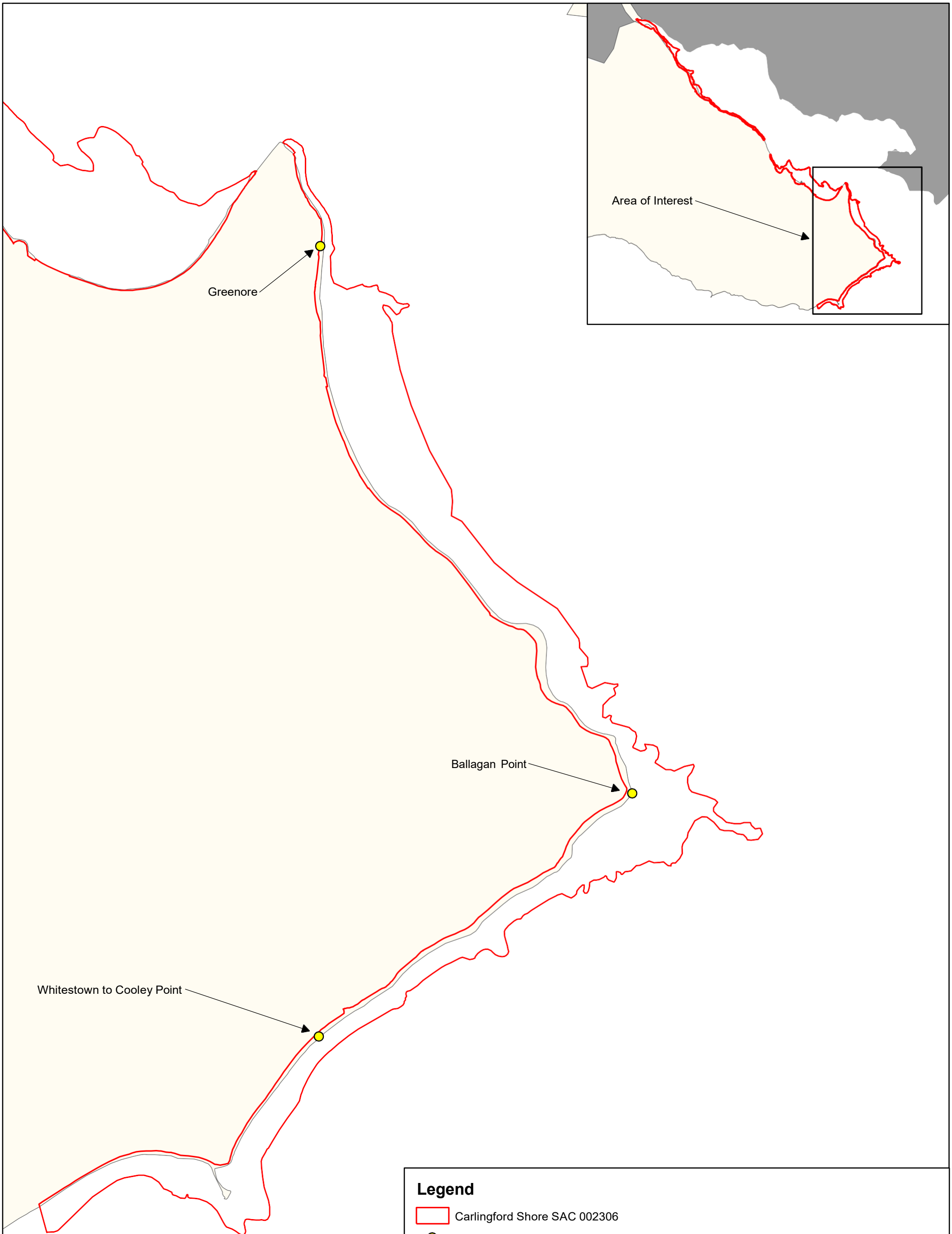
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE: SAC 002306; version 3
SPA 004078; version 2.01

0 1 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

Map Version 1
Date: June 2013



Legend

- Carlingford Shore SAC 002306
- 1220 Perennial vegetation of stony banks (National Shingle Beach Survey of Ireland 1999)
- OSi Discovery Series County Boundaries

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

MAP 3:
CARLINGFORD SHORE SAC
CONSERVATION OBJECTIVES
PERENNIAL VEGETATION OF STONY BANKS

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

SITE CODE:
SAC 002306; version 3

0 0.5 1 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)

Map Version 1
Date: June 2011

National Parks and Wildlife Service

Conservation Objectives

Dundalk Bay SAC 000455
Dundalk Bay SPA 004026

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

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***

000455 Dundalk Bay SAC

QI	Description
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1220	Perennial vegetation of stony banks
1310	*Salicornia* and other annuals colonizing mud and sand
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
1410	Mediterranean salt meadows (*Juncetalia maritimi*)

004026 Dundalk Bay SPA

QI	Description	
A005	Great Crested Grebe *Podiceps cristatus*	wintering
A043	Greylag Goose *Anser anser*	wintering
A046	Light-bellied Brent Goose *Branta bernicla hrota*	wintering
A048	Shelduck *Tadorna tadorna*	wintering
A052	Teal *Anas crecca*	wintering
A053	Mallard *Anas platyrhynchos*	wintering
A054	Pintail *Anas acuta*	wintering
A065	Common Scoter *Melanitta nigra*	wintering
A069	Red-breasted Merganser *Mergus serrator*	wintering
A130	Oystercatcher *Haematopus ostralegus*	wintering
A137	Ringed Plover *Charadrius hiaticula*	wintering
A140	Golden Plover *Pluvialis apricaria*	wintering
A141	Grey Plover *Pluvialis squatarola*	wintering
A142	Lapwing *Vanellus vanellus*	wintering
A143	Knot *Calidris canutus*	wintering
A149	Dunlin *Calidris alpina*	wintering
A156	Black-tailed Godwit *Limosa limosa*	wintering
A157	Bar-tailed Godwit *Limosa lapponica*	wintering
A160	Curlew *Numenius arquata*	wintering
A162	Redshank *Tringa totanus*	wintering
A179	Black-headed Gull *Chroicocephalus ridibundus*	wintering
A182	Common Gull *Larus canus*	wintering
A184	Herring Gull *Larus argentatus*	wintering
A999	Wetlands & Waterbirds	

Supporting documents, relevant reports & publications (listed by date)

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

Title: Dundalk Bay SPA (004026): Conservation objectives supporting document [Version 1]

Year: 2011

Author: NPWS

Series: Unpublished Report to NPWS

Title: Dundalk Bay SAC (000455): Conservation objectives supporting document - marine habitats [Version 1]

Year: 2011

Author: NPWS

Series: Unpublished Report to NPWS

Title: Dundalk Bay SAC (000455): Conservation objectives supporting document - coastal habitats [Version 1]

Year: 2011

Author: NPWS

Series: Unpublished Report to NPWS

Title: A subtidal soft sediment survey of Dundalk Bay

Year: 2009

Author: Aquatic Services Unit

Series: Unpublished Report to NPWS

Title: Saltmarsh Monitoring Report 2007-2008

Year: 2009

Author: McCorry, M.; Ryle, T.

Series: Unpublished Report to NPWS

Title: A survey of mudflats and sandflats in Ireland. An intertidal soft sediment survey of Dundalk Bay

Year: 2008

Author: Aquatic Services Unit

Series: Unpublished Report to NPWS

Title: A survey of mudflats and sandflats [Dundalk Bay]

Year: 2007

Author: Aquatic Services Unit

Series: Unpublished Report to NPWS

Title: Saltmarsh Monitoring Report 2006

Year: 2007

Author: McCorry, M.

Series: Unpublished Report to NPWS

Title: National Shingle Beach Survey of Ireland 1999

Year: 1999

Author: Moore, D.; Wilson, F.

Series: Unpublished Report to NPWS

Spatial data sources

Year:	2010
Title:	EPA transitional waterbody data
GIS operations:	Clipped to SAC boundary
Used for:	1130

Year:	Interpolated 2011
Title:	Mudflat and sandflat surveys 2007, 2008; subtidal soft sediment survey 2009
GIS operations:	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data
Used for:	Marine community types, 1140

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; Saltmarsh and Sand Dune CO datasets erased out
Used for:	Marine community types base data

Year:	Revision 2010
Title:	Saltmarsh Monitoring Project 2007-2008. Version 1
GIS operations:	QIs selected; clipped to SAC boundary
Used for:	1310, 1330, 1410

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; saltmarsh data for site combined to HWM and LWM polygon feature class; resulting polygon feature class unioned with SPA boundary; resulting polygon feature class clipped to SPA boundary; bird use zone attributes assigned to each polygon
Used for:	Bird use zones (map 6)

1130 Estuaries

To maintain the favourable conservation condition of Estuaries in Dundalk Bay 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 2	Habitat area was estimated at 2799ha using OSI data and the defined Transitional Water Body area under the Water Framework Directive. See marine habitats supporting document for further information
Community distribution	Hectares	The Subtidal fine sand community complex should be conserved in a natural condition. See map 4	Habitat structure was elucidated from intertidal core and dig sampling undertaken in 2007 and 2008 combined with data obtained from subtidal grab samples obtained in 2009. See marine habitats supporting document for further information

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 at Dundalk Bay 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 at 4375ha using OSI data. See marine habitats supporting document for further information
Community distribution	Hectares	The Muddy fine sand community and Intertidal fine sand community complex should be conserved in a natural condition. See map 4	Habitat structure was elucidated from intertidal core and dig sampling undertaken in 2007 and 2008 combined with data obtained from subtidal grab samples obtained in 2009. See marine habitats supporting document for further information

1220 Perennial vegetation of stony banks

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

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable, subject to natural processes, including erosion and succession	Exact current area unknown, but shingle is known to occur almost continuously from Salterstown to Lurgan White House in the south bay and from Jenkinstown to east of Giles Quay in the north bay. Shingle is estimated to cover 12ha. Probably less than 25% of this would be vegetated. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes	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 the national shingle beach survey conducted in 1999 (Moore and Wilson, 1999). See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	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 sample of monitoring stops	Maintain the presence of species-poor communities with characteristic species: *Honckenya peploides*, *Beta vulgaris* ssp. *maritima*, *Crithmum maritimum*, *Tripleurospermum maritimum*, *Glaucium flavum* and *Silene uniflora*	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). See coastal habitats supporting document for further details

1310 *Salicornia* and other annuals colonizing mud and sand

To restore the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in Dundalk Bay 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 surveyed: 35.00ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped, giving a total estimated area of 35ha for Salicornia mudflat, which is one of the largest areas of this habitat in the country. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details.
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore 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/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of *Spartina*. 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). 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 in Dundalk Bay 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 the sub-site (357.57ha) and potential areas (22.42ha) mapped: 379.98ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped and additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area for Atlantic salt meadow of 379.98ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further information
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore 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/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species- *Spartina anglica*	Hectares	No significant expansion of *Spartina*. 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). See coastal habitats supporting document for further details

1410 Mediterranean salt meadows (*Juncetalia maritimi*)

To maintain the favourable conservation condition of Mediterranean salt meadows in Dundalk Bay 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: 0.045ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped, giving a total estimated area of 0.045ha for Mediterranean salt meadow. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore 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/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species-*Spartina anglica*	Hectares	No significant expansion of *Spartina*. 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). See coastal habitats supporting document for further details

A005 Great Crested Grebe *Podiceps cristatus*

To maintain the favourable conservation condition of Great Crested Grebe in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A043 Greylag Goose *Anser anser*

To maintain the favourable conservation condition of Greylag Goose in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys.See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in section 5 of the SPA conservation objectives supporting document

A046 Light-bellied Brent Goose *Branta bernicla hrota*

To maintain the favourable conservation condition of Light-bellied Brent Geese in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A048 Shelduck *Tadorna tadorna*

To maintain the favourable conservation condition of Shelduck in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A052 Teal *Anas crecca*

To maintain the favourable conservation condition of Teal in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A053 Mallard *Anas platyrhynchos*

To maintain the favourable conservation condition of Mallard in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A054 Pintail *Anas acuta*

To maintain the favourable conservation condition of Pintail in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A065 Common Scoter *Melanitta nigra*

To maintain the favourable conservation condition of Common Scoter in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 of the SPA conservation objectives supporting document for more details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A069 Red-breasted Merganser *Mergus serrator*

To maintain the favourable conservation condition of Red-breasted Merganser in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A130 Oystercatcher *Haematopus ostralegus*

To maintain the favourable conservation condition of Oystercatcher in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A137 Ringed Plover *Charadrius hiaticula*

To maintain the favourable conservation condition of Ringed Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A140 Golden Plover *Pluvialis apricaria*

To maintain the favourable conservation condition of Golden Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A141 Grey Plover *Pluvialis squatarola*

To maintain the favourable conservation condition of Grey Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A142 Lapwing *Vanellus vanellus*

To maintain the favourable conservation condition of Lapwing in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A143 Knot *Calidris canutus*

To maintain the favourable conservation condition of Knot in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A149 Dunlin *Calidris alpina*

To maintain the favourable conservation condition of Dunlin in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A156 Black-tailed Godwit *Limosa limosa*

To maintain the favourable conservation condition of Black-tailed Godwit in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A157 Bar-tailed Godwit *Limosa lapponica*

To maintain the favourable conservation condition of Bar-tailed Godwit in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A160 Curlew *Numenius arquata*

To maintain the favourable conservation condition of Curlew in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A162 Redshank *Tringa totanus*

To maintain the favourable conservation condition of Redshank in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A179 Black-headed Gull *Chroicocephalus ridibundus*

To maintain the favourable conservation condition of Black-headed Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 for more details of the SPA conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A182 Common Gull *Larus canus*

To maintain the favourable conservation condition of Common Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 of the SPA conservation objectives supporting document for more details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A184 Herring Gull *Larus argentatus*

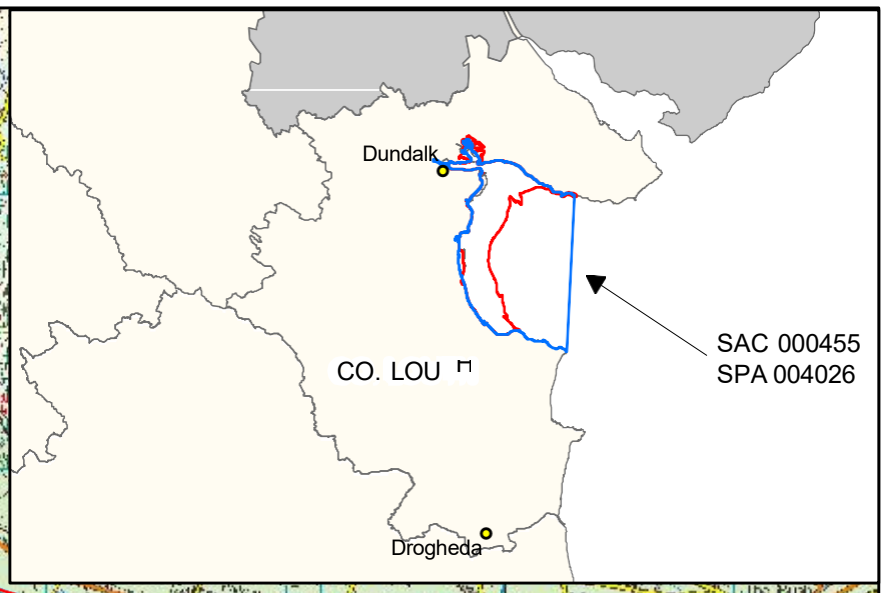
To maintain the favourable conservation condition of Herring Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 for more details of the SPA conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A999 Wetlands & Waterbirds

To maintain the favourable conservation condition of the wetland habitat in Dundalk Bay SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent area occupied by the wetland habitat is stable and not significantly less than the areas of 8136, 4374 and 649 hectares respectively for subtidal, intertidal, and supratidal habitats, other than that occurring from natural patterns of variation. See map 6	As defined by SPA boundary to MLWM; MLWM to MHWM; and MHWM to SPA boundary (the latter value is minus the area of Lurgangreen Fields)



Dundalk Harbour

DUNDALK
Dún Dealgan

North Bul

South Bul

BLACKROCK
Na Creagacha Dubha

DUNDALK BAY
Cuan Dhún Dealgan

Castlebellingham
Baile an Ghearánaigh

River Glyde

River Dee
An Nith

Dunany Point
Rinn Dhún Aine

IRISH S
Muir Éir

Legend

SAC 000455

SPA 004026

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

MAP 1: DUNDALK BAY CONSERVATION OBJECTIVES SAC & SPA DESIGNATIONS

CO. LOUTH

0 0.5 1 1.5 2 km

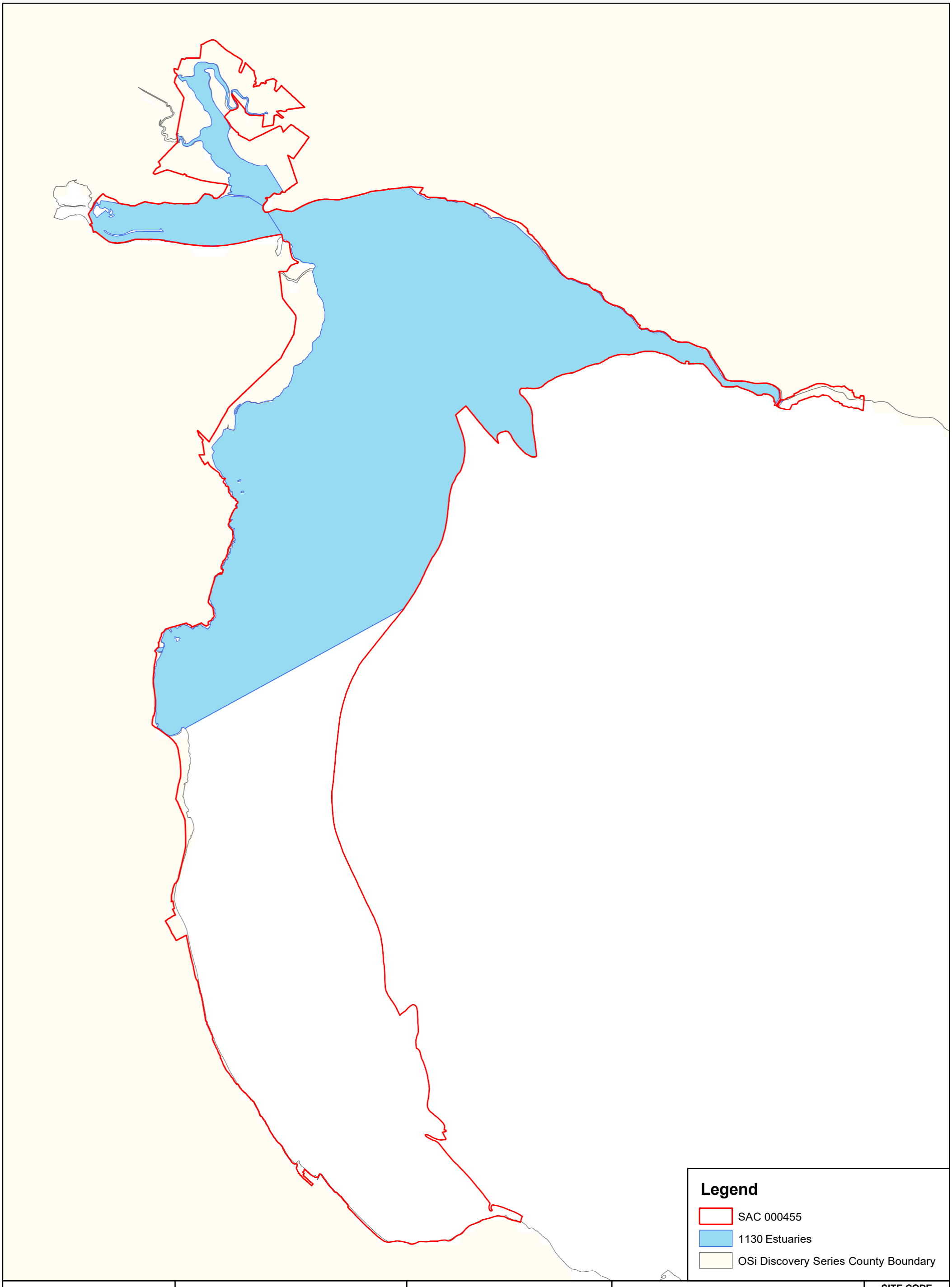
The mapped boundaries are of an indicative and general nature only. Boundaries of designated area

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

s are subject to revision. Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE SAC 000455
Version 1.02
SPA 004026

Version 1.02
Map Version 1
Date: March 2011



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

MAP 2:
DUNDALK BAY
CONSERVATION OBJECTIVES
ESTUARIES

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

CO. LOUTH

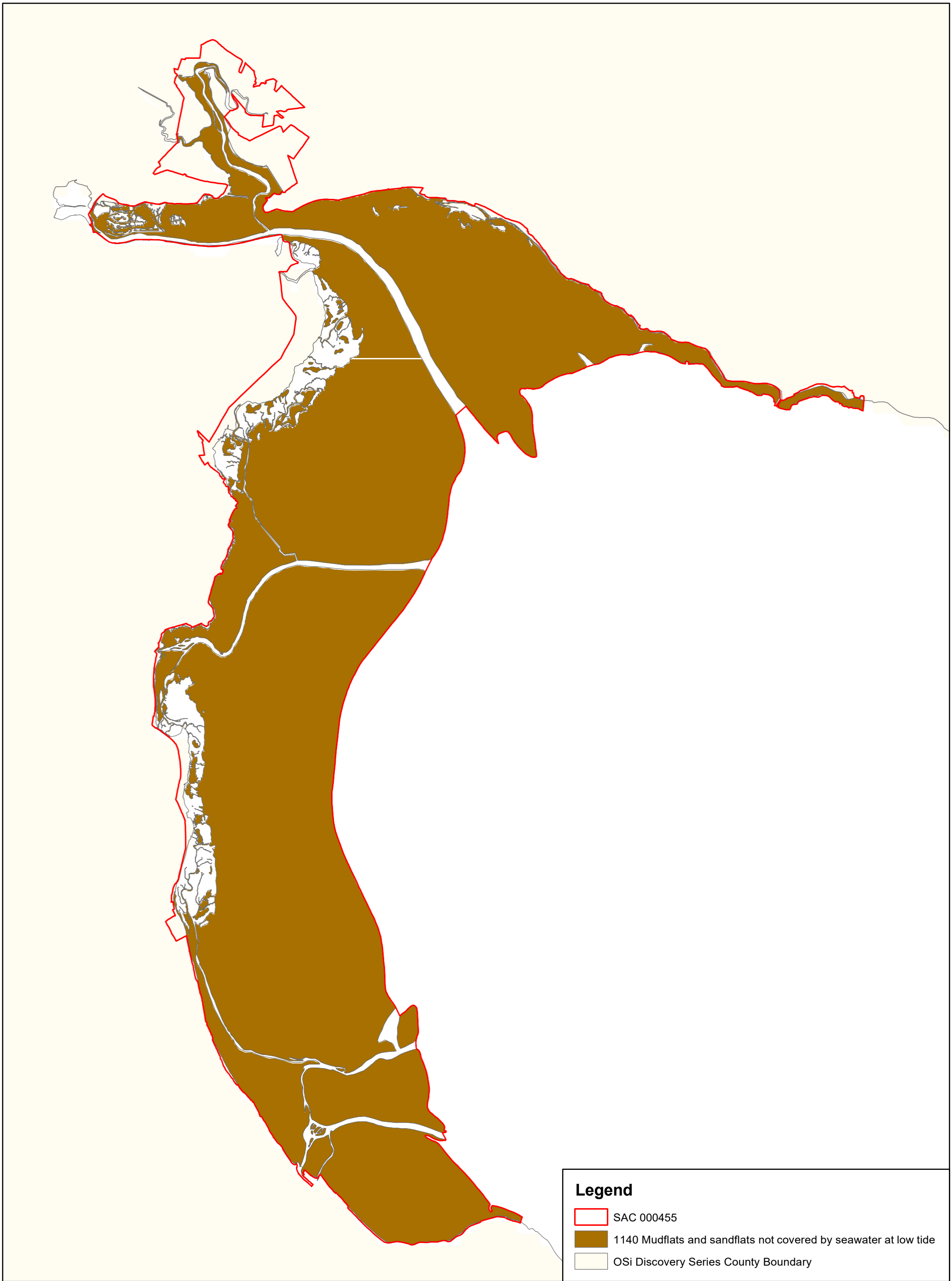
0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission
of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar
comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis
le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SAC 000455
Version 1.02

Map Version 1
Date: March 2011



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

MAP 3: DUNDALK BAY CONSERVATION OBJECTIVES MUDFLATS AND SANDFLATS

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

CO. LOUTH

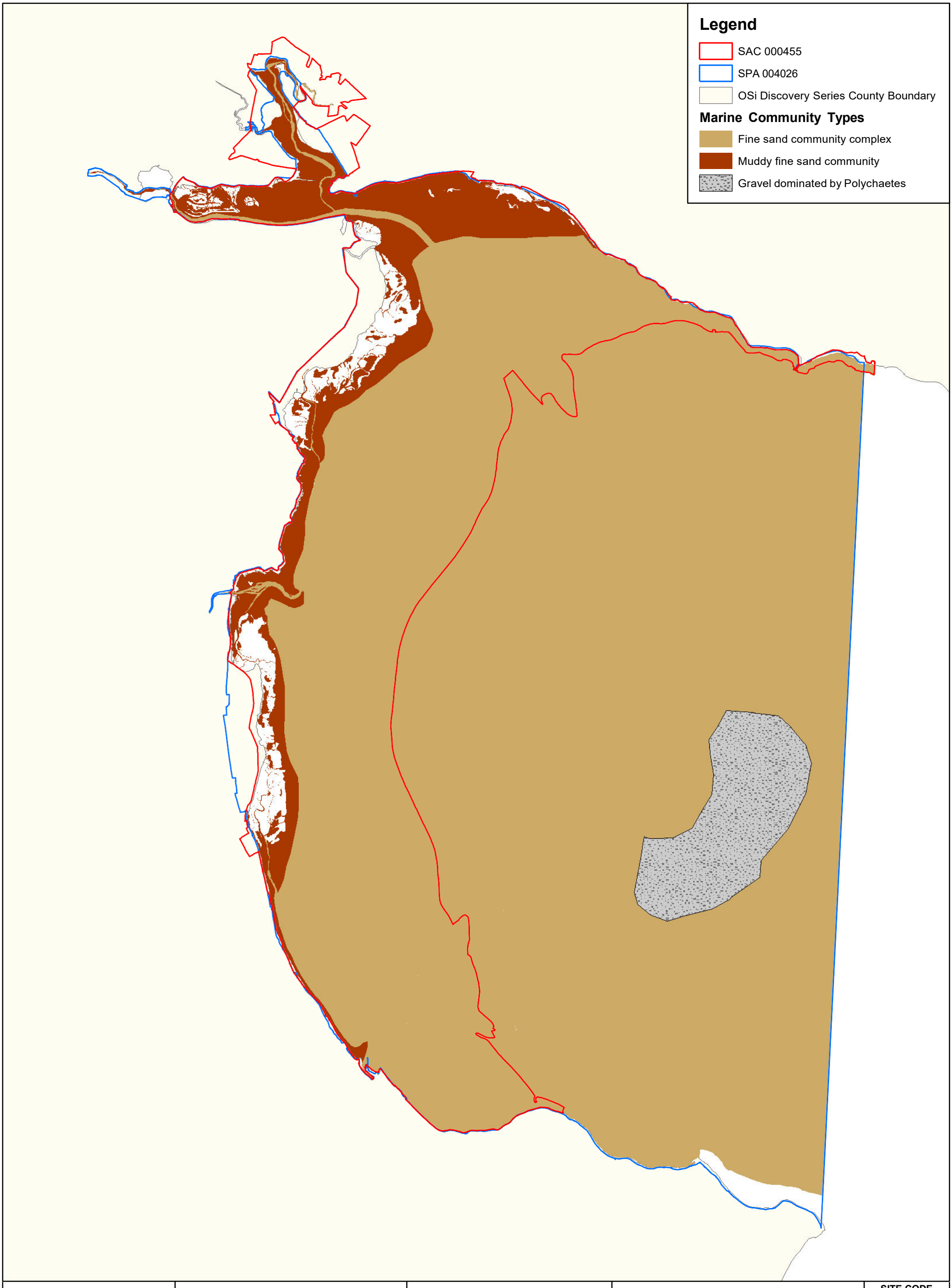
0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SAC 000455
Version 1.02

Map Version 1
Date: March 2011



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

MAP 4: DUNDALK BAY CONSERVATION OBJECTIVES MARINE COMMUNITY TYPES

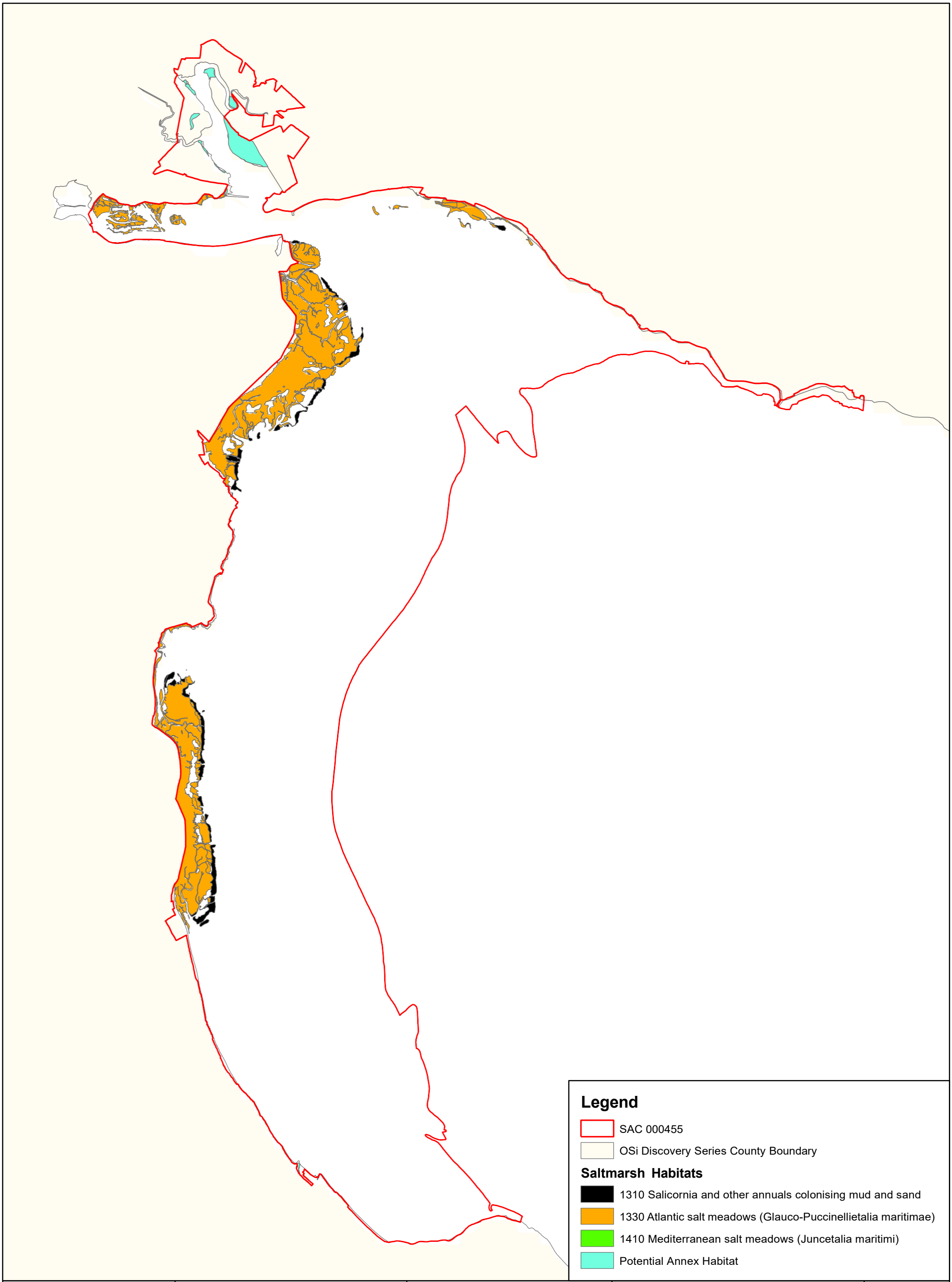
Map to be read in conjunction with the NPWS Conservation Objectives Document.

CO. LOUTH

0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE
SAC 000455
Version 1.02
SPA 004026
Version 1.02
Map Version 1
Date: March 2011



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

MAP 5: DUNDALK BAY CONSERVATION OBJECTIVES SALTMARSH HABITATS

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

CO. LOUTH

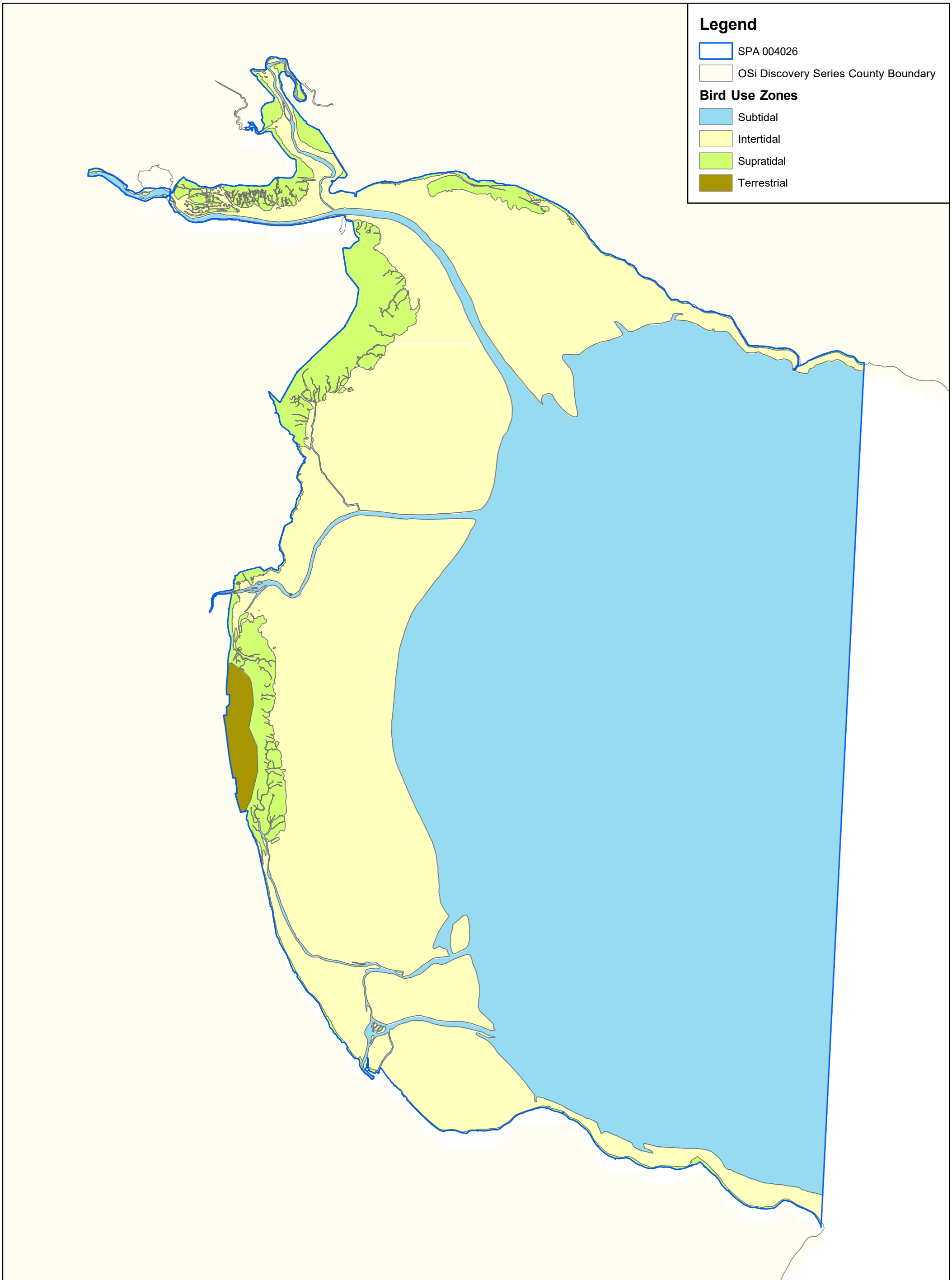
0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SAC 000455
Version 1.02

Map Version 1
Date: March 2011



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

MAP 6:
DUNDALK BAY
CONSERVATION OBJECTIVES
WETLANDS AND WATERBIRDS
BIRD USE ZONES

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

CO. LOUTH

0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SPA 004026
Version 1.02

Map Version 1
Date: March 2011

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

Produced by: National Parks and Wildlife Service,
Department of Arts, Heritage and the Gaeltacht,
7 Ely Place, Dublin 2, Ireland.
Web: www.npws.ie
E-mail: natureconservation@environ.ie

Citation:
NPWS (2011) Conservation Objectives: Dundalk Bay SAC 000455 and Dundalk Bay SPA 004026. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Series Editors: Rebecca Jeffrey & Naomi Kingston
ISSN 2009-4086

National Parks and Wildlife Service

Conservation Objectives

Dundalk Bay SAC 000455
Dundalk Bay SPA 004026

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

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***

000455 Dundalk Bay SAC

QI	Description
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1220	Perennial vegetation of stony banks
1310	*Salicornia* and other annuals colonizing mud and sand
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
1410	Mediterranean salt meadows (*Juncetalia maritimi*)

004026 Dundalk Bay SPA

QI	Description	
A005	Great Crested Grebe *Podiceps cristatus*	wintering
A043	Greylag Goose *Anser anser*	wintering
A046	Light-bellied Brent Goose *Branta bernicla hrota*	wintering
A048	Shelduck *Tadorna tadorna*	wintering
A052	Teal *Anas crecca*	wintering
A053	Mallard *Anas platyrhynchos*	wintering
A054	Pintail *Anas acuta*	wintering
A065	Common Scoter *Melanitta nigra*	wintering
A069	Red-breasted Merganser *Mergus serrator*	wintering
A130	Oystercatcher *Haematopus ostralegus*	wintering
A137	Ringed Plover *Charadrius hiaticula*	wintering
A140	Golden Plover *Pluvialis apricaria*	wintering
A141	Grey Plover *Pluvialis squatarola*	wintering
A142	Lapwing *Vanellus vanellus*	wintering
A143	Knot *Calidris canutus*	wintering
A149	Dunlin *Calidris alpina*	wintering
A156	Black-tailed Godwit *Limosa limosa*	wintering
A157	Bar-tailed Godwit *Limosa lapponica*	wintering
A160	Curlew *Numenius arquata*	wintering
A162	Redshank *Tringa totanus*	wintering
A179	Black-headed Gull *Chroicocephalus ridibundus*	wintering
A182	Common Gull *Larus canus*	wintering
A184	Herring Gull *Larus argentatus*	wintering
A999	Wetlands & Waterbirds	

Supporting documents, relevant reports & publications (listed by date)

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

Title: Dundalk Bay SPA (004026): Conservation objectives supporting document [Version 1]

Year: 2011

Author: NPWS

Series: Unpublished Report to NPWS

Title: Dundalk Bay SAC (000455): Conservation objectives supporting document - marine habitats [Version 1]

Year: 2011

Author: NPWS

Series: Unpublished Report to NPWS

Title: Dundalk Bay SAC (000455): Conservation objectives supporting document - coastal habitats [Version 1]

Year: 2011

Author: NPWS

Series: Unpublished Report to NPWS

Title: A subtidal soft sediment survey of Dundalk Bay

Year: 2009

Author: Aquatic Services Unit

Series: Unpublished Report to NPWS

Title: Saltmarsh Monitoring Report 2007-2008

Year: 2009

Author: McCorry, M.; Ryle, T.

Series: Unpublished Report to NPWS

Title: A survey of mudflats and sandflats in Ireland. An intertidal soft sediment survey of Dundalk Bay

Year: 2008

Author: Aquatic Services Unit

Series: Unpublished Report to NPWS

Title: A survey of mudflats and sandflats [Dundalk Bay]

Year: 2007

Author: Aquatic Services Unit

Series: Unpublished Report to NPWS

Title: Saltmarsh Monitoring Report 2006

Year: 2007

Author: McCorry, M.

Series: Unpublished Report to NPWS

Title: National Shingle Beach Survey of Ireland 1999

Year: 1999

Author: Moore, D.; Wilson, F.

Series: Unpublished Report to NPWS

Spatial data sources

Year:	2010
Title:	EPA transitional waterbody data
GIS operations:	Clipped to SAC boundary
Used for:	1130

Year:	Interpolated 2011
Title:	Mudflat and sandflat surveys 2007, 2008; subtidal soft sediment survey 2009
GIS operations:	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data
Used for:	Marine community types, 1140

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; Saltmarsh and Sand Dune CO datasets erased out
Used for:	Marine community types base data

Year:	Revision 2010
Title:	Saltmarsh Monitoring Project 2007-2008. Version 1
GIS operations:	QIs selected; clipped to SAC boundary
Used for:	1310, 1330, 1410

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; saltmarsh data for site combined to HWM and LWM polygon feature class; resulting polygon feature class unioned with SPA boundary; resulting polygon feature class clipped to SPA boundary; bird use zone attributes assigned to each polygon
Used for:	Bird use zones (map 6)

1130 Estuaries

To maintain the favourable conservation condition of Estuaries in Dundalk Bay 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 2	Habitat area was estimated at 2799ha using OSI data and the defined Transitional Water Body area under the Water Framework Directive. See marine habitats supporting document for further information
Community distribution	Hectares	The Subtidal fine sand community complex should be conserved in a natural condition. See map 4	Habitat structure was elucidated from intertidal core and dig sampling undertaken in 2007 and 2008 combined with data obtained from subtidal grab samples obtained in 2009. See marine habitats supporting document for further information

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 at Dundalk Bay 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 at 4375ha using OSI data. See marine habitats supporting document for further information
Community distribution	Hectares	The Muddy fine sand community and Intertidal fine sand community complex should be conserved in a natural condition. See map 4	Habitat structure was elucidated from intertidal core and dig sampling undertaken in 2007 and 2008 combined with data obtained from subtidal grab samples obtained in 2009. See marine habitats supporting document for further information

1220 Perennial vegetation of stony banks

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

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable, subject to natural processes, including erosion and succession	Exact current area unknown, but shingle is known to occur almost continuously from Salterstown to Lurgan White House in the south bay and from Jenkinstown to east of Giles Quay in the north bay. Shingle is estimated to cover 12ha. Probably less than 25% of this would be vegetated. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes	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 the national shingle beach survey conducted in 1999 (Moore and Wilson, 1999). See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	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 sample of monitoring stops	Maintain the presence of species-poor communities with characteristic species: *Honckenya peploides*, *Beta vulgaris* ssp. *maritima*, *Crithmum maritimum*, *Tripleurospermum maritimum*, *Glaucium flavum* and *Silene uniflora*	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). See coastal habitats supporting document for further details

1310 *Salicornia* and other annuals colonizing mud and sand

To restore the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in Dundalk Bay 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 surveyed: 35.00ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped, giving a total estimated area of 35ha for Salicornia mudflat, which is one of the largest areas of this habitat in the country. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details.
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore 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/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of *Spartina*. 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). 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 in Dundalk Bay 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 the sub-site (357.57ha) and potential areas (22.42ha) mapped: 379.98ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped and additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area for Atlantic salt meadow of 379.98ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further information
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore 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/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species- *Spartina anglica*	Hectares	No significant expansion of *Spartina*. 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). See coastal habitats supporting document for further details

1410 Mediterranean salt meadows (*Juncetalia maritimi*)

To maintain the favourable conservation condition of Mediterranean salt meadows in Dundalk Bay 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: 0.045ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped, giving a total estimated area of 0.045ha for Mediterranean salt meadow. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore 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/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species-*Spartina anglica*	Hectares	No significant expansion of *Spartina*. 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). See coastal habitats supporting document for further details

A005 Great Crested Grebe *Podiceps cristatus*

To maintain the favourable conservation condition of Great Crested Grebe in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A043 Greylag Goose *Anser anser*

To maintain the favourable conservation condition of Greylag Goose in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys.See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in section 5 of the SPA conservation objectives supporting document

A046 Light-bellied Brent Goose *Branta bernicla hrota*

To maintain the favourable conservation condition of Light-bellied Brent Geese in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A048 Shelduck *Tadorna tadorna*

To maintain the favourable conservation condition of Shelduck in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A052 Teal *Anas crecca*

To maintain the favourable conservation condition of Teal in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A053 Mallard *Anas platyrhynchos*

To maintain the favourable conservation condition of Mallard in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A054 Pintail *Anas acuta*

To maintain the favourable conservation condition of Pintail in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A065 Common Scoter *Melanitta nigra*

To maintain the favourable conservation condition of Common Scoter in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 of the SPA conservation objectives supporting document for more details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A069 Red-breasted Merganser *Mergus serrator*

To maintain the favourable conservation condition of Red-breasted Merganser in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A130 Oystercatcher *Haematopus ostralegus*

To maintain the favourable conservation condition of Oystercatcher in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A137 Ringed Plover *Charadrius hiaticula*

To maintain the favourable conservation condition of Ringed Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A140 Golden Plover *Pluvialis apricaria*

To maintain the favourable conservation condition of Golden Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A141 Grey Plover *Pluvialis squatarola*

To maintain the favourable conservation condition of Grey Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A142 Lapwing *Vanellus vanellus*

To maintain the favourable conservation condition of Lapwing in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A143 Knot *Calidris canutus*

To maintain the favourable conservation condition of Knot in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A149 Dunlin *Calidris alpina*

To maintain the favourable conservation condition of Dunlin in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A156 Black-tailed Godwit *Limosa limosa*

To maintain the favourable conservation condition of Black-tailed Godwit in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A157 Bar-tailed Godwit *Limosa lapponica*

To maintain the favourable conservation condition of Bar-tailed Godwit in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A160 Curlew *Numenius arquata*

To maintain the favourable conservation condition of Curlew in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A162 Redshank *Tringa totanus*

To maintain the favourable conservation condition of Redshank in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A179 Black-headed Gull *Chroicocephalus ridibundus*

To maintain the favourable conservation condition of Black-headed Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 for more details of the SPA conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A182 Common Gull *Larus canus*

To maintain the favourable conservation condition of Common Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 of the SPA conservation objectives supporting document for more details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A184 Herring Gull *Larus argentatus*

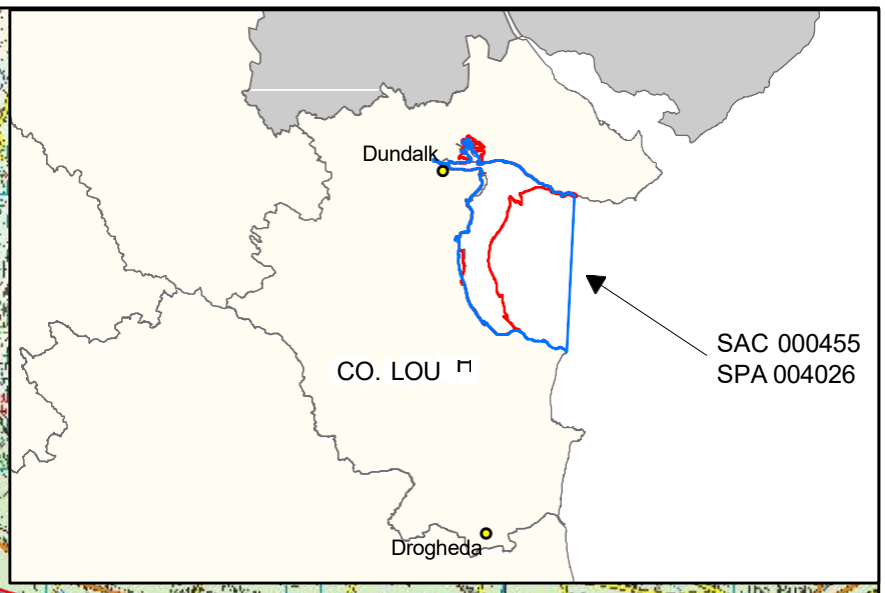
To maintain the favourable conservation condition of Herring Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 for more details of the SPA conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

A999 Wetlands & Waterbirds

To maintain the favourable conservation condition of the wetland habitat in Dundalk Bay SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent area occupied by the wetland habitat is stable and not significantly less than the areas of 8136, 4374 and 649 hectares respectively for subtidal, intertidal, and supratidal habitats, other than that occurring from natural patterns of variation. See map 6	As defined by SPA boundary to MLWM; MLWM to MHWM; and MHWM to SPA boundary (the latter value is minus the area of Lurgangreen Fields)



Dundalk Harbour

DUNDALK
Dún Dealgan

North Bul

South Bul

BLACKROCK
Na Creagacha Dubha

DUNDALK BAY
Cuan Dhún Dealgan

Castlebellingham
Baile an Ghearánaigh

River Glyde

River Dee
An Nith

Dunany Point
Rinn Dhún Aine

IRISH S
Muir Éir

Legend

SAC 000455

SPA 004026

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

MAP 1: DUNDALK BAY CONSERVATION OBJECTIVES SAC & SPA DESIGNATIONS

CO. LOUTH

0 0.5 1 1.5 2 km

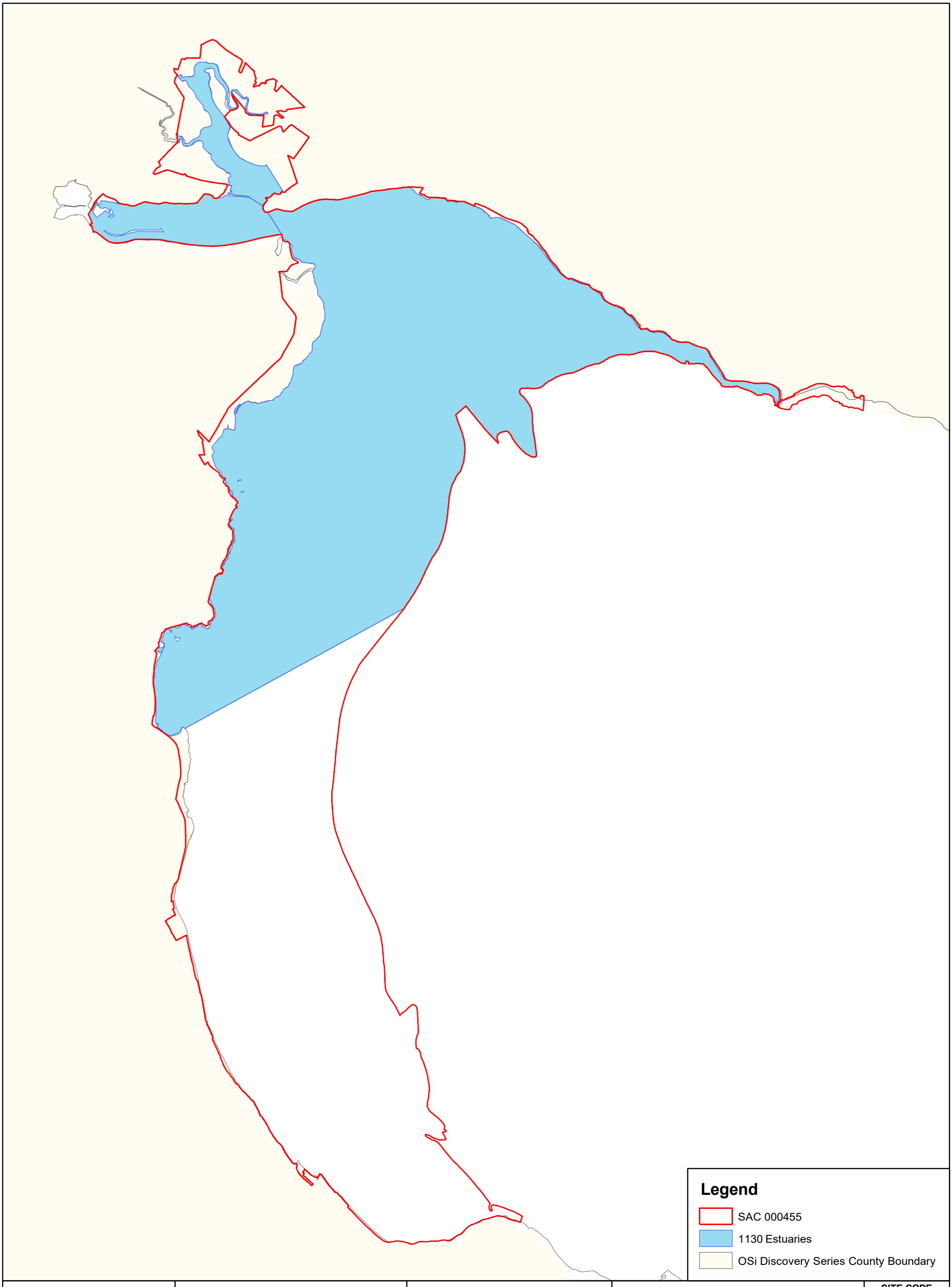
The mapped boundaries are of an indicative and general nature only. Boundaries of designated area

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

s are subject to revision. Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE SAC 000455
Version 1.02
SPA 004026

Version 1.02
Map Version 1
Date: March 2011



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

MAP 2: DUNDALK BAY CONSERVATION OBJECTIVES ESTUARIES

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

CO. LOUTH

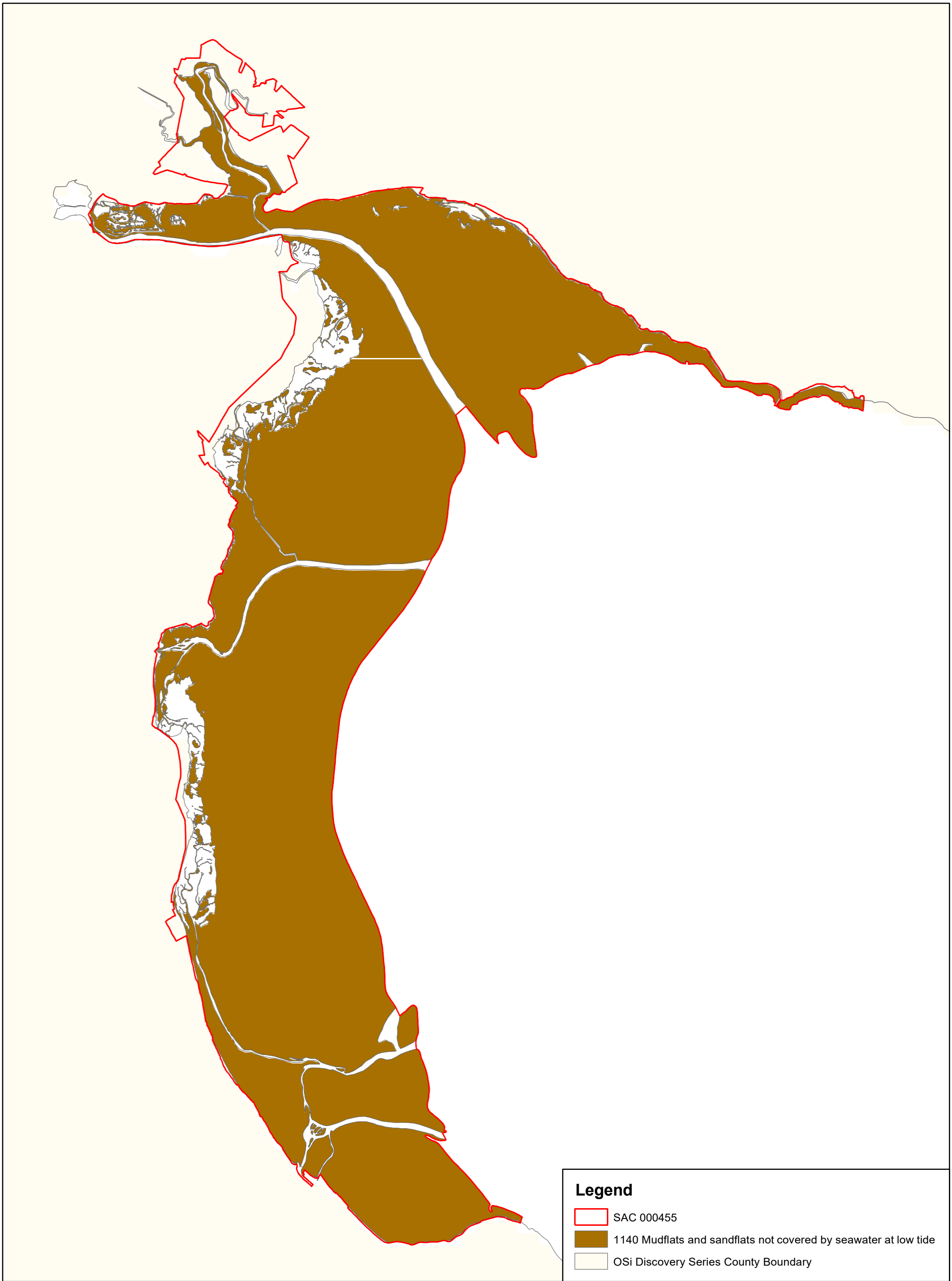
0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SAC 000455
Version 1.02

Map Version 1
Date: March 2011



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

MAP 3: DUNDALK BAY CONSERVATION OBJECTIVES MUDFLATS AND SANDFLATS

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

CO. LOUTH

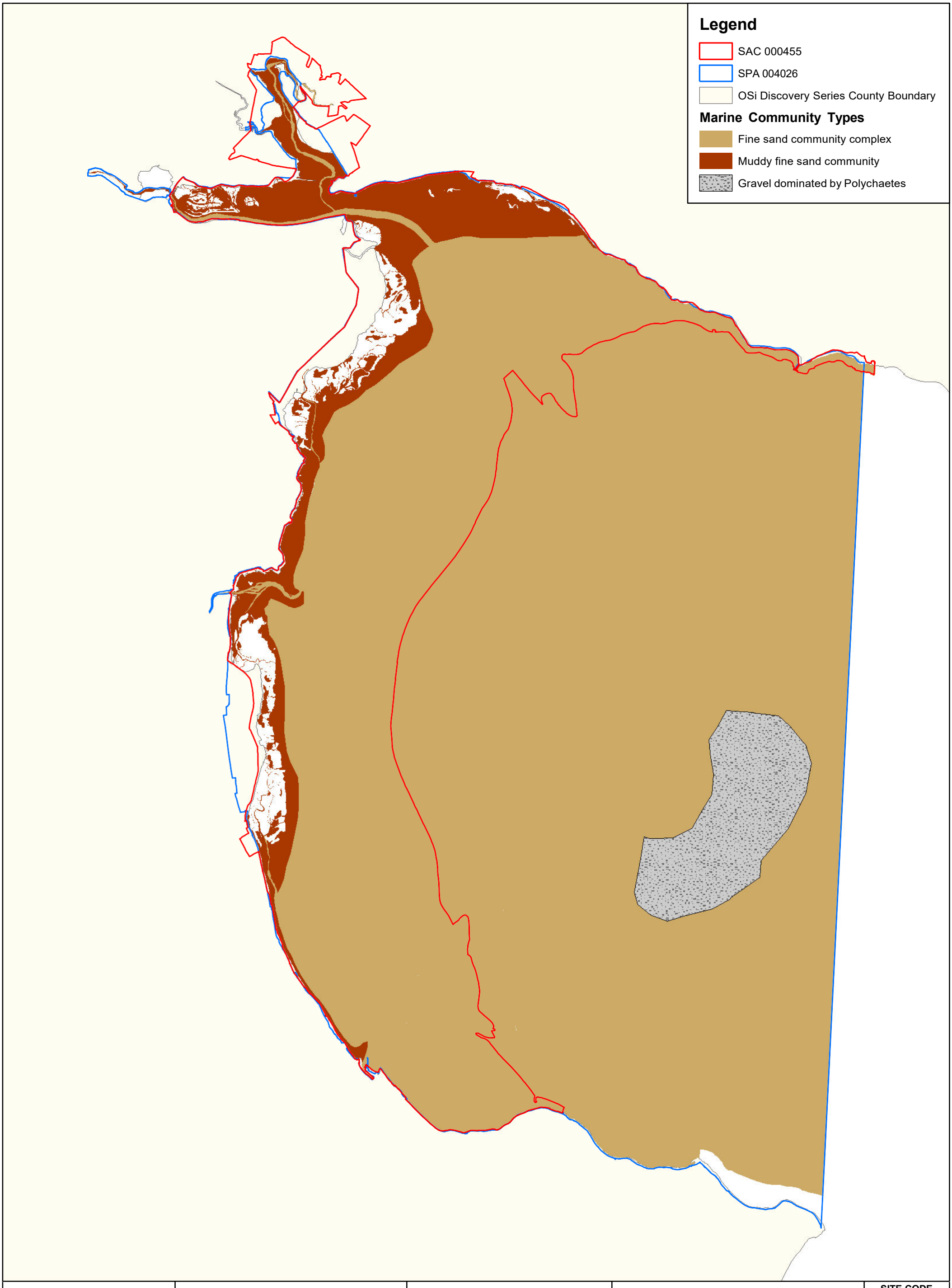
0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SAC 000455
Version 1.02

Map Version 1
Date: March 2011



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

MAP 4: DUNDALK BAY CONSERVATION OBJECTIVES MARINE COMMUNITY TYPES

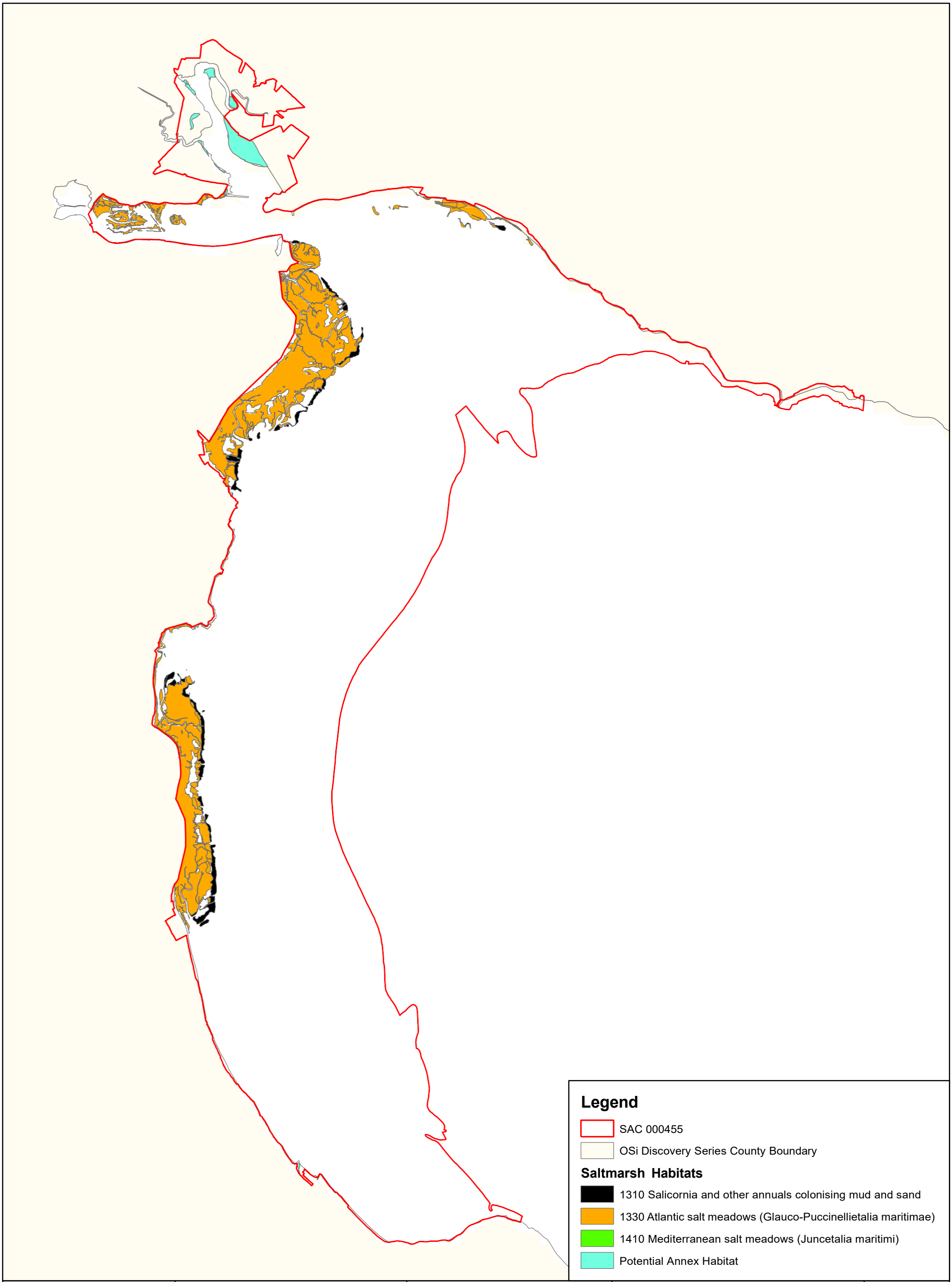
Map to be read in conjunction with the NPWS Conservation Objectives Document.

CO. LOUTH

0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE
SAC 000455
Version 1.02
SPA 004026
Version 1.02
Map Version 1
Date: March 2011



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

MAP 5: DUNDALK BAY CONSERVATION OBJECTIVES SALTMARSH HABITATS

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

CO. LOUTH

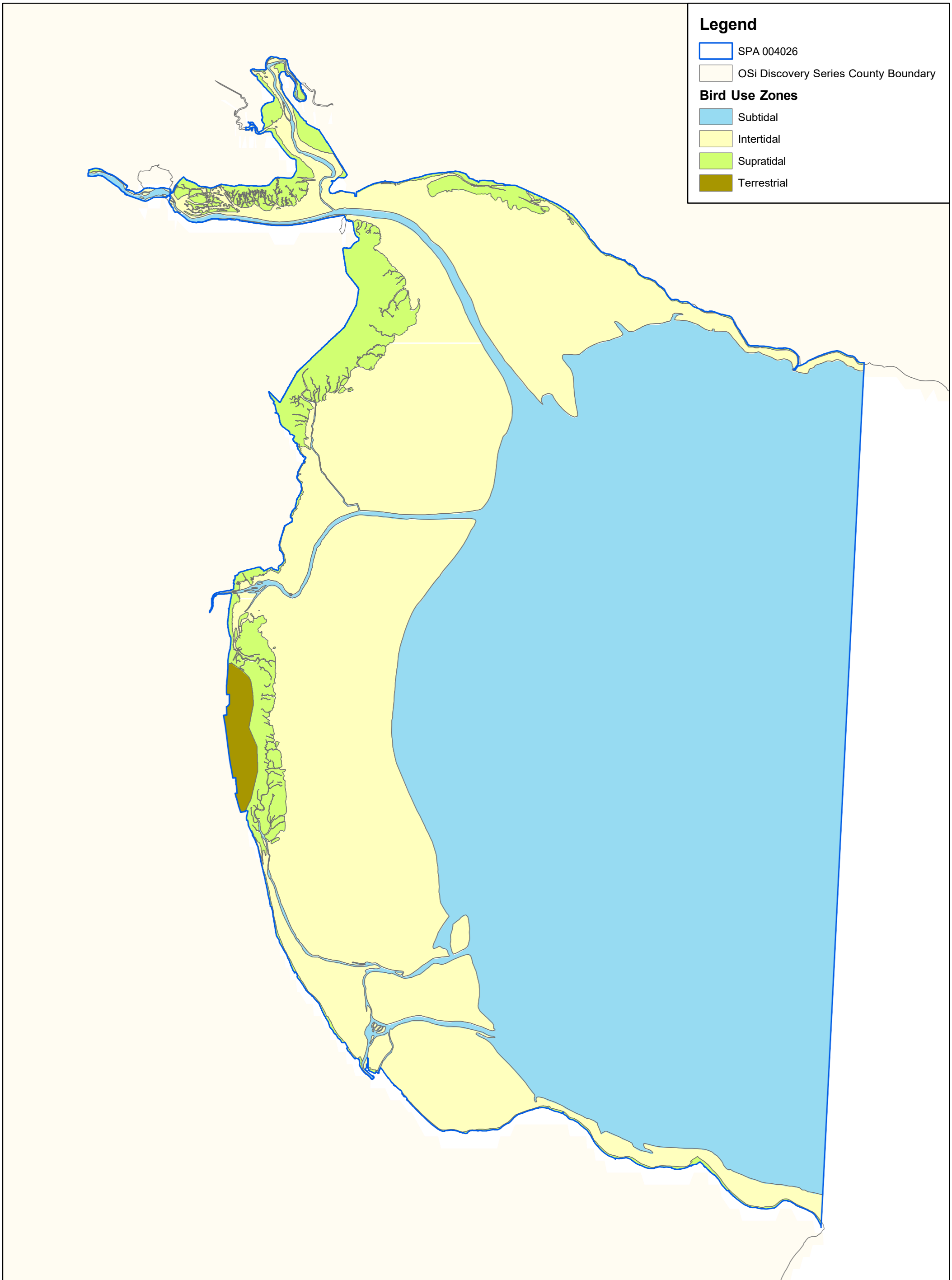
0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SAC 000455
Version 1.02

Map Version 1
Date: March 2011



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

MAP 6: DUNDALK BAY CONSERVATION OBJECTIVES WETLANDS AND WATERBIRDS BIRD USE ZONES

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

CO. LOUTH

0 0.5 1 1.5 2 km

The mapped boundaries are of an indicative and general nature only.
Boundaries of designated areas are subject to revision.
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059208).
Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta.
Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059208)

SITE CODE

SPA 004026
Version 1.02

Map Version 1
Date: March 2011

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

Produced by: National Parks and Wildlife Service,
Department of Arts, Heritage and the Gaeltacht,
7 Ely Place, Dublin 2, Ireland.
Web: www.npws.ie
E-mail: natureconservation@environ.ie

Citation:
NPWS (2011) Conservation Objectives: Dundalk Bay SAC 000455 and Dundalk Bay SPA 004026. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Series Editors: Rebecca Jeffrey & Naomi Kingston
ISSN 2009-4086

ISSN 2009-4086

National Parks and Wildlife Service

Conservation Objectives Series

Slieve Beagh SPA 004167



An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

National Parks and Wildlife Service,
Department of Housing, Local Government and Heritage,

90 King Street North, Dublin 7, D07 N7CV, Ireland.

Web: www.npws.ie
E-mail: natureconservation@housing.gov.ie

Citation:

NPWS (2022) Conservation Objectives: Slieve Beagh SPA 004167. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Series Editors: Rebecca Jeffrey and Colin Heaslip
ISSN 2009-4086

Introduction

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

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

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

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

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Notes/Guidelines:

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

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

004167	Slieve Beagh SPA
A082	Hen Harrier *Circus cyaneus*

Supporting documents, relevant reports & publications

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

NPWS Documents

Year :	2015
Title :	Hen harrier special protection area (SPA) habitat mapping project 2014
Author :	Moran, P.; Wilson-Parr, R.
Series :	Irish Wildlife Manual No. 83
Year :	2015
Title :	Hen harrier conservation and the forestry sector in Ireland - forestry - V3.2
Author :	NPWS
Series :	Unpublished Report
Year :	2016
Title :	The 2015 national survey of breeding hen harrier in Ireland
Author :	Ruddock, M.; Mee, A.; Lusby, J.; Nagle, A.; O'Neill, S.; O'Toole, L.
Series :	Irish Wildlife Manual No. 93
Year :	2022
Title :	Conservation objectives supporting document: breeding hen harrier
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

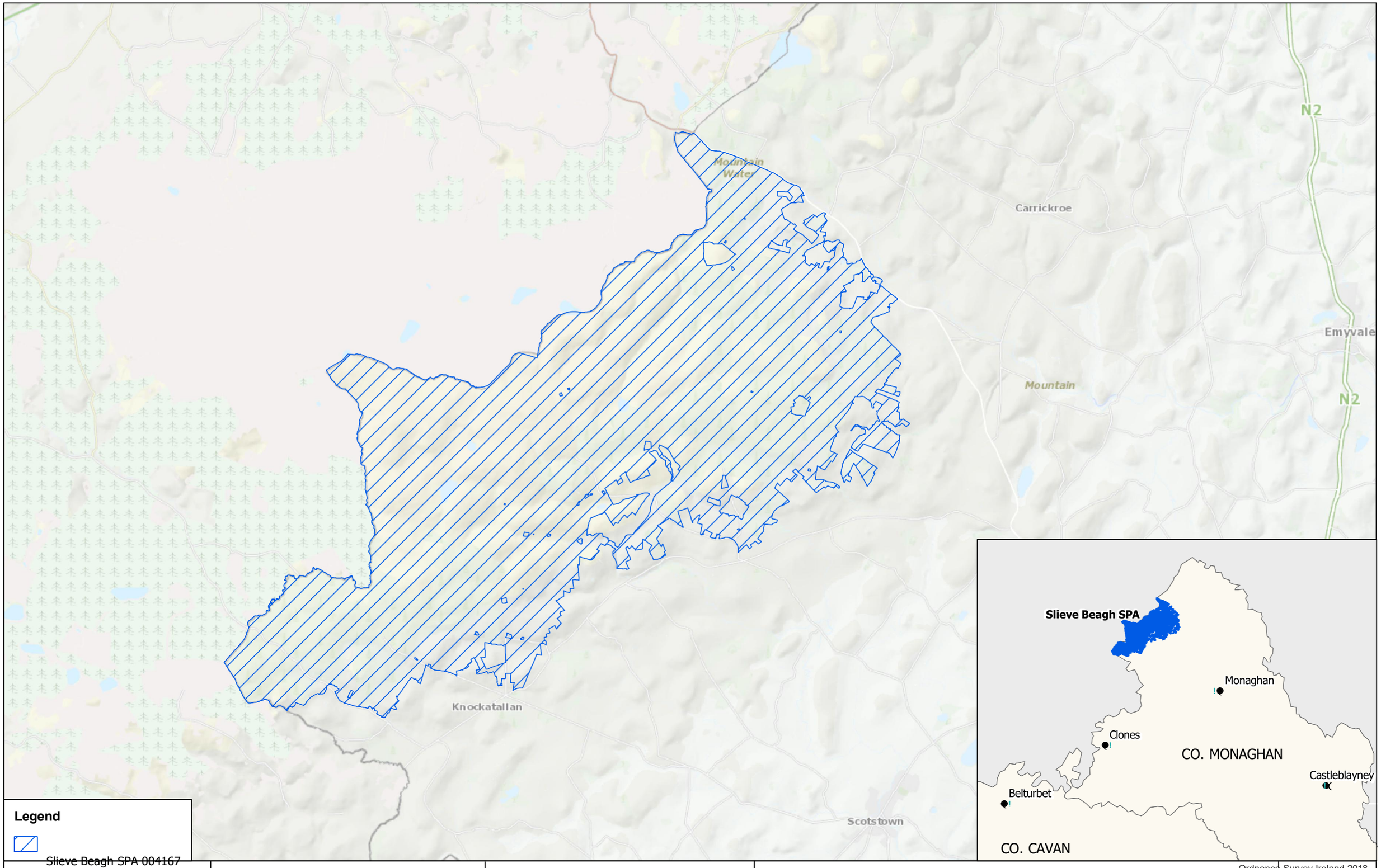
Year :	2002
Title :	A national survey of breeding hen harriers (*circus cyaneus*) in Ireland 1998-2000
Author :	Norriss, D.W., Marsh, J., McMahon, D. & Oliver, G.A.
Series :	Irish Birds, 7, 1-10
Year :	2006
Title :	The second national survey of breeding hen harriers *circus cyaneus* in Ireland
Author :	Barton, C., Pollock, C., Norriss, D.W., Nagle, T., Oliver, G.A. & Newton, S.
Series :	Irish Birds, 8, 1–20
Year :	2006
Title :	The distribution of hen harriers in Ireland in relation to land use cover, particularly forest cover
Author :	Wilson, M.; Gittings, T.; O'Halloran, J.; Kelly, T.; Pithon, J.
Series :	Environment No. 6. COFORD, Dublin
Year :	2012
Title :	Optimum scenarios for hen harrier conservation in Ireland; final report 2012
Author :	Irwin, S.; Wilson, W.; O'Donoghue, B.; O'Mahony, B.; Kelly, T.; O'Halloran, J.
Series :	Prepared for the Department of Agriculture, Food and the Marine by the School of Biological, Earth and Environmental Sciences, University College Cork
Year :	2014
Title :	Ranging behaviour of hen harriers breeding in special protection areas in Scotland
Author :	Arroyo, B.; Leckie, F.; Amar, A.; Cluskie, A; Redpath, S.
Series :	Bird Study, 61:1, 48-55

A082 Hen Harrier *Circus cyaneus*

To restore the favourable conservation condition of hen harrier in Slieve Beagh SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population size	Number of confirmed breeding pairs	Maintain numbers at or above 3–4 confirmed breeding pairs	The attribute 'confirmed breeding pairs' is based on standard survey methods (see Ruddock et al., 2016). The target for this SPA is informed by the first two national surveys of 1998–2001 (Norriss et al., 2002) and 2005 (Barton et al., 2006). For further information on this and all other attributes, please refer to the conservation objectives supporting document for breeding hen harrier (NPWS, 2022) for further details
Productivity rate	Number of fledged young per confirmed pair	Maintain at least 1.0–1.4 fledged young per confirmed pair	At the SPA level, the productivity rate can be highly variable in any given year. Generally, the setting of a minimum level of productivity to ensure a stable and/or increasing population at a given site ought to be informed by robust estimates of: post-fledging survival; adult survival; and immigration and emigration rates. Setting a single precise and robust rate is constrained by a lack of comprehensive Irish data. In order to frame this uncertainty, a threshold of 1.0–1.4 fledged young per confirmed breeding pair is set for this attribute. If population size of the SPA is not favourable, then the upper end of this productivity rate range is to be met. In order for estimates to be sufficiently representative of the SPA, they need to be of sufficient sample size and ideally over multiple years in order to account for inter-annual variability
Spatial utilisation by breeding pairs	Percentage	Maintain the spatial utilisation of the SPA by breeding pairs at 100%	Optimal resilience depends on breeding pairs utilising the SPA to the maximum extent possible. The spatial distribution of breeding pairs is expressed by the proportion of the SPA being used by them. Breeding pairs predominantly use the area within 5km of their nest site or centre of territory, though they can travel further (e.g. Irwin et al., 2012; Arroyo et al., 2014). Thus, the core area used by confirmed pairs can be broadly and generically estimated by calculating the portion that lies within 5km of all recorded nest sites. Ideally, the breeding population should be well dispersed around the SPA. The target range for this attribute for this SPA is informed by the first two national surveys of 1998–2001 and 2005
Extent and condition of heath and bog and associated habitats	Hectares; condition assessment	Maintain the extent and quality of this resource to support the targets relating to population size, productivity rate and spatial utilisation	Open heath and bog occur in mosaics and often with other semi-natural habitats (e.g. scrub). These habitats can provide important nesting and foraging resources for the breeding population providing they are in suitable condition. Based on the habitat mapping of Moran and Wilson-Parr (2015), the estimated total extent of these habitats in this SPA is 1,380ha. Qualitative aspects were not assessed by Moran and Wilson-Parr (2015), but some important aspects to consider are the habitats' structure, soil integrity and overall open habitat coherence
Extent and condition of low intensity managed grasslands and associated habitats	Hectares; condition assessment	Maintain extent and quality of this resource to support the targets relating to population size, productivity rate and spatial utilisation	Low intensity managed grasslands occur in mosaics and often with other semi-natural habitats (e.g. scrub). These habitats can provide important foraging resources for the breeding population providing they are in suitable condition. Based on the habitat mapping of Moran and Wilson-Parr (2015), the estimated total extent of these habitats in this SPA is 106ha. Qualitative aspects were not assessed by Moran and Wilson-Parr (2015), but some important aspects to consider are the habitats'

Extent and condition of hedgerows	Kilometres; condition assessment	Maintain the length and quality of this resource to support the targets relating to population size, productivity rate and spatial utilisation	Hedgerows can be an important foraging resource for hen harrier throughout the year by providing food and refuge for prey animals i.e. small mammals and birds. Moran and Wilson-Parr (2015) quantified the hedgerow resource in this SPA with an estimated total linear extent of 64.3km, with two structural hedgerow types namely 'intact and dense' and 'boxed and moderate' accounting for 27.7km of that total. These combined types account for 43% of the total hedgerow resource of the SPA
Age structure of forest estate	Percentage	Maintain an even and consistent distribution of age-classes across the forest estate	This attribute aims to define optimal forest age-class composition required to reduce the forest demographic bottleneck, as set out in NPWS (2015) and Wilson et al. (2006)
Disturbance to breeding sites	Level of impact	Disturbance occurs at levels that does not significantly impact upon breeding hen harrier	The impact of any significant disturbance on the SPA's breeding population will ultimately be manifested in the targets which relate to population demographics (i.e. population size, productivity rate) and the spatial utilisation of the SPA by breeding pairs. Factors such as intensity, frequency, timing and duration of a potentially disturbing activity need to be taken into account to determine its significance on breeding hen harrier in the SPA



Legend

Slieve Beagh SPA 004167

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

MAP 1:
SLIEVE BEAGH SPA
CONSERVATION OBJECTIVES
SPA DESIGNATION

SITE CODE:
SPA 004167; version 3
CO. MONAGHAN

0 0.5 1 2 Kilometres

Ordnance Survey Ireland 2018

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
Ordnance Survey of Ireland Licence No OSI-NMA-014. © Ordnance Survey of Ireland Government of Ireland

Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Suirbhéarachta Ordonáis na hÉireann Ceadúnas Uimh OSI-NMA-014. © Suirbhéarachta Ordonáis na hÉireann Rialtas na hÉireann

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

Date: July 2025

2024/25 Summary Feature Condition Status of Protected Areas

Designated Site	ASSI Feature	Environmental Stats Category	Latest condition assessment	Condition Sub-category	Latest monitoring year of assessment (financial)
Carlingford Lough	Arctic Tern (Breeding)	Birds	Favourable	Un-classified	2019
Carlingford Lough	Carboniferous stratigraphy	Earth Science	Favourable	Maintained	2009
Carlingford Lough	Coastal saltmarsh	Coastal	Unfavourable	Un-classified	2016
Carlingford Lough	Common Tern (Breeding)	Birds	Unfavourable	Un-classified	2018
Carlingford Lough	Dunlin (Winter)	Birds	Favourable	Un-classified	2018
Carlingford Lough	Great Crested Grebe (Winter)	Birds	Unfavourable	Un-classified	2018
Carlingford Lough	Invertebrate assemblage - Brackish pools assemblage	Invertebrates	Unfavourable	Un-classified	2024
Carlingford Lough	Invertebrate assemblage - Estuarine assemblage	Invertebrates	Unfavourable	Un-classified	2024
Carlingford Lough	Invertebrate assemblage - Saltmarsh assemblage	Invertebrates	Unfavourable	Un-classified	2024
Carlingford Lough	Invertebrate assemblage - Sandy beach assemblage	Invertebrates	Unfavourable	Un-classified	2024
Carlingford Lough	Light-bellied Brent Goose (Winter)	Birds	Favourable	Un-classified	2018
Carlingford Lough	Oystercatcher (Winter)	Birds	Favourable	Un-classified	2018
Carlingford Lough	Pleistocene	Earth Science	Destroyed	Completely	2009
Carlingford Lough	Red-breasted Merganser (Winter)	Birds	Favourable	Un-classified	2018
Carlingford Lough	Redshank (Winter)	Birds	Unfavourable	Un-classified	2018
Carlingford Lough	Sandwich Tern (Breeding)	Birds	Unfavourable	Un-classified	2018
Carlingford Lough	Scaup (Winter)	Birds	Unfavourable	Un-classified	2018
Carlingford Lough	Shelduck (Winter)	Birds	Unfavourable	Un-classified	2018
Derryleckagh	Fens	Fen, marsh and swamp	Unfavourable	Un-classified	2024
Derryleckagh	Invertebrate assemblage - Base-flushed cutover bog assemblage	Invertebrates	Unfavourable	Un-classified	2024
Derryleckagh	Invertebrate assemblage - Ponds and ditches assemblage	Invertebrates	Favourable	Un-classified	2007
Derryleckagh	Oakwood	Woodlands	Unfavourable	Un-classified	2024
Eastern Mournes	Blanket bog	Bogs	Unfavourable	Un-classified	2016
Eastern Mournes	Dry heath	Heathlands	Unfavourable	Un-classified	2016
Eastern Mournes	Fungi assemblage	Fungi	Unfavourable	Un-classified	2008
Eastern Mournes	Higher plant assemblage	Vascular Plants	Unfavourable	Un-classified	2003
Eastern Mournes	Inland rock - Siliceous rocky slopes with chasmophytic vegetation	Inland Rock	Favourable	Maintained	2016
Eastern Mournes	Inland rock - Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	Inland Rock	Favourable	Maintained	2016
Eastern Mournes	Invertebrate assemblage	Invertebrates	Unfavourable	Un-classified	2018
Eastern Mournes	Montane heath - Alpine and Boreal heaths	Heathlands	Unfavourable	Un-classified	2016

Annex A

Designated Site	ASSI Feature	Environmental Stats Category	Latest condition assessment	Condition Sub-category	Latest monitoring year of assessment (financial)
Eastern Mournes	Montane grasslands - Siliceous alpine and boreal grasslands	Grasslands	Unfavourable	Un-classified	2016
Eastern Mournes	Oligotrophic lakes	Freshwater	Favourable	Un-classified	2014
Eastern Mournes	Pleistocene	Earth Science	Favourable	Maintained	2023
Eastern Mournes	Tertiary igneous	Earth Science	Favourable	Maintained	2023
Eastern Mournes	Wet heath	Heathlands	Unfavourable	Un-classified	2016
Lough Neagh	Bewick's Swan (Winter)	Birds	Unfavourable	Un-classified	2018
Lough Neagh	Breeding bird assemblage	Birds	Favourable	Un-classified	2019
Lough Neagh	Breeding wader assemblage	Birds	Unfavourable	Un-classified	2019
Lough Neagh	Breeding waterbird assemblage	Birds	Favourable	Un-classified	2019
Lough Neagh	Common Tern (Breeding)	Birds	Favourable	Un-classified	2018
Lough Neagh	Coot (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Fens	Fen, marsh and swamp	Unfavourable	No Change	2011
Lough Neagh	Freshwater and estuarine fish assemblage	Fish	Unfavourable	Un-classified	2007
Lough Neagh	Gadwall (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Golden Plover (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Goldeneye (Winter)	Birds	Unfavourable	Un-classified	2018
Lough Neagh	Great Cormorant (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Great Crested Grebe (Passage)	Birds	Favourable	Un-classified	2018
Lough Neagh	Great Crested Grebe (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Greylag Goose (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Higher plant assemblage	Vascular Plants	Unfavourable	Un-classified	2011
Lough Neagh	Invertebrate assemblage	Invertebrates	Favourable	Un-classified	2007
Lough Neagh	Lapwing (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Little Grebe (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Mallard (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Mute Swan (Winter)	Birds	Unfavourable	Un-classified	2018
Lough Neagh	Pochard (Winter)	Birds	Unfavourable	Un-classified	2018
Lough Neagh	Pollan - Coregonus pollan	Fish	Unfavourable	Un-classified	2007
Lough Neagh	Purple Moor-grass and rush pastures	Grasslands	Unfavourable	No Change	2011
Lough Neagh	Reedbeds and swamps	Fen, marsh and swamp	Unfavourable	No Change	2011
Lough Neagh	Scaup (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Shelduck (Winter)	Birds	Unfavourable	Un-classified	2018
Lough Neagh	Shoveler (Winter)	Birds	Favourable	Un-classified	2018

Annex A

Designated Site	ASSI Feature	Environmental Stats Category	Latest condition assessment	Condition Sub-category	Latest monitoring year of assessment (financial)
Lough Neagh	Teal (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Tufted Duck (Winter)	Birds	Unfavourable	Un-classified	2018
Lough Neagh	Waterbird assemblage (Winter)	Birds	Unfavourable	Un-classified	2018
Lough Neagh	Wet woodland	Woodlands	Unfavourable	No Change	2011
Lough Neagh	Whooper Swan (Winter)	Birds	Favourable	Un-classified	2018
Lough Neagh	Wigeon (Winter)	Birds	Favourable	Un-classified	2018
Montiaghs Moss	Dragonfly assemblage	Invertebrates	Favourable	Un-classified	2020
Montiaghs Moss	Higher plant assemblage	Vascular Plants	Unfavourable	Un-classified	2003
Montiaghs Moss	Invertebrate assemblage	Invertebrates	Favourable	Un-classified	2020
Montiaghs Moss	Marsh Fritillary - Euphydryas aurinia	Invertebrates	Unfavourable	Un-classified	2015
Murlough	Coastal processes	Earth Science	Favourable	Maintained	2019
Murlough	Coastal saltmarsh - Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Coastal	Unfavourable	Un-classified	2011
Murlough	Coastal sand dunes - Atlantic decalcified fixed dunes (Calluno-Ulicetea)	Coastal	Unfavourable	Maintained	2011
Murlough	Coastal sand dunes - Dunes with Salix repens ssp. argentea (Salicion arenariae)	Coastal	Unfavourable	Un-classified	2011
Murlough	Coastal sand dunes - Embryonic shifting dunes	Coastal	Unfavourable	Un-classified	2011
Murlough	Coastal sand dunes - Fixed dunes with herbaceous vegetation ("grey dunes")	Coastal	Unfavourable	Un-classified	2011
Murlough	Coastal sand dunes - Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	Coastal	Unfavourable	Un-classified	2011
Murlough	Common Scoter (Winter)	Birds	Unfavourable	Un-classified	2012
Murlough	Dunlin (Winter)	Birds	Favourable	Un-classified	2018
Murlough	Great Crested Grebe (Winter)	Birds	Unfavourable	Un-classified	2018
Murlough	Higher plant assemblage	Vascular Plants	Unfavourable	Un-classified	2022
Murlough	Invertebrate assemblage - Estuarine assemblage	Invertebrates	Favourable	Un-classified	2008
Murlough	Invertebrate assemblage - Grass/ heath assemblage	Invertebrates	Favourable	Un-classified	2022
Murlough	Invertebrate assemblage - Moth assemblage of coastal grassland/ heathland	Invertebrates	Favourable	Un-classified	2022
Murlough	Invertebrate assemblage - Sandy beach and fore-dune assemblage	Invertebrates	Unfavourable	Un-classified	2022
Murlough	Knot (Winter)	Birds	Favourable	Un-classified	2018
Murlough	Lapwing (Winter)	Birds	Unfavourable	Un-classified	2018
Murlough	Light-bellied Brent Goose (Winter)	Birds	Favourable	Un-classified	2018
Murlough	Marsh Fritillary - Euphydryas aurinia	Invertebrates	Favourable	Un-classified	2007
Murlough	Mute Swan (Winter)	Birds	Unfavourable	Un-classified	2018
Murlough	Oystercatcher (Winter)	Birds	Favourable	Un-classified	2018
Murlough	Red-breasted Merganser (Winter)	Birds	Unfavourable	Un-classified	2018

Annex A

Designated Site	ASSI Feature	Environmental Stats Category	Latest condition assessment	Condition Sub-category	Latest monitoring year of assessment (financial)
Murlough	Redshank (Winter)	Birds	Favourable	Un-classified	2018
Murlough	Sealevel history	Earth Science	Favourable	Maintained	2019
Murlough	Shelduck (Winter)	Birds	Unfavourable	Un-classified	2018
Peatlands Park	Fens	Fen, marsh and swamp	Unfavourable	Un-classified	2013
Peatlands Park	Higher plant assemblage	Vascular Plants	Unfavourable	Un-classified	2007
Peatlands Park	Invertebrate assemblage	Invertebrates	Unfavourable	Un-classified	2007
Peatlands Park	Lowland raised bog - Active raised bogs	Bogs	Unfavourable	Un-classified	2024
Peatlands Park	Lowland raised bog - Degraded raised bogs still capable of natural regeneration	Bogs	Unfavourable	Un-classified	2024
Peatlands Park	Oakwood	Woodlands	Unfavourable	Un-classified	2024
Peatlands Park	Wet woodland - Bog woodland	Woodlands	Unfavourable	Un-classified	2024
Rostrevor Wood	Invertebrate assemblage	Invertebrates	Favourable	Un-classified	2019
Rostrevor Wood	Oakwood	Woodlands	Unfavourable	Recovering	2016
Slieve Gullion	Breeding bird assemblage	Birds	Favourable	Un-classified	2007
Slieve Gullion	Dry heath	Heathlands	Unfavourable	Un-classified	2024
Slieve Gullion	Fens	Fen, marsh and swamp	Unfavourable	Un-classified	2024
Slieve Gullion	Invertebrate assemblage	Invertebrates	Favourable	Un-classified	2008
Slieve Gullion	Tertiary igneous	Earth Science	Favourable	Un-classified	2009

Marine sites

Designated Site	Designation type	ASSI Feature	European Feature	MCZ Feature	Feature Type	Reporting Category	Environmental Stats Category	Latest condition assessment	Condition Sub-category	Latest monitoring year of assessment
Carlingford Lough	MCZ			Philine quadripartita and Virgularia mirabilis in soft stable infralittoral mud	Habitat - Marine	Sublittoral Sediment	Habitat - Marine	Favourable	Maintained	2023
Murlough	SAC	Phoca vitulina Common seal	Phoca vitulina Common seal		Species - Mammal	Marine mammals	Marine mammals	Favourable	Maintained	2023
Murlough	SAC		Sandbanks which are slightly covered by sea water		Habitat - Marine	Sublittoral sediment	Habitat - Marine	Favourable	Maintained	2016

Annex A

Designated Site	Designation type	ASSI Feature	European Feature	MCZ Feature	Feature Type	Reporting Category	Environmental Stats Category	Latest condition assessment	Condition Sub-category	Latest monitoring year of assessment
			all the time							
Murlough **	ASSI	Intertidal mudflats and sandflats	Mudflats and sandflats not covered by seawater at low tide		Habitat - Marine	Littoral sediment	Habitat - Marine	Favourable	Recovered	2021