European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)

Fourth Report by the United Kingdom under Article 17

on the implementation of the Directive
from January 2013 to December 2018

Supporting documentation for the
conservation status assessment for the habitat:

H2150 - Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)

NORTHERN IRELAND

IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to the UK Report on the conservation status of this habitat, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.
- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.
- The UK Report on the conservation status of this habitat is provided in a separate document.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; and/or (iii) the field was only relevant at UK-level (sections 10 Future prospects and 11 Conclusions).
- For technical reasons, the country-level future trends for Range, Area covered by habitat and Structure and functions are only available in a separate spreadsheet that contains all the country-level supporting information.
- The country-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, https://jncc.gov.uk/article17, for further information on UK Article 17 reporting.

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

NATIONAL LEVEL

1. General information

1.1 Member State	**UK (Northern Ireland information only)**
1.2 Habitat code	**2150 - Atlantic decalcified fixed dunes (Calluno-Ulicetea)**

2. Maps

2.1 Year or period	2013-2018
2.3 Distribution map	Yes
2.3 Distribution map Method used	Complete survey or a statistically robust estimate
2.4 Additional maps	No

BIOGEOGRAPHICAL LEVEL

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs	**Atlantic (ATL)**
3.2 Sources of information	Cooper, E.A., Crawford, I., Malloch, A.J.C. & Rodwell, J.S. (1992). Coastal vegetation survey of Northern Ireland. Lancaster, Lancaster University Environment and Heritage Service, Belfast. Northern Ireland Habitat Action Plan - Coastal Sand Dunes - March 2005 JNCC (1997). Coasts and seas of the United Kingdom, Region 17 Northern Ireland. Coastal Directories Series NIEA. Internal Condition Assessment Reports (various sites and years). Rodwell, J.S. (2000). British Plant Communities. Volume 5, Maritime Communities and Vegetation of Open habitats. Cambridge: Cambridge University Press Rodwell, J.S., Dring, J.C., Averis, A.B.V., Proctor, M.C.F., Malloch, A.J.C., Schaminee, J.H.J & Dargie, T.C.D. 1998. Review of Coverage of the National Vegetation Classification. Lancaster: Unit of Vegetation Science report to the Joint Nature Conservation Committee. Carter and Wilson, 1990 Pye, K. 1990. Physical and human influences on coastal dune development between the Ribble and Mersey estuaries, north-west England. IN/ Nordstrom K.F., Psuty N. P. & Carter R.W.G. (eds.) Coastal dunes: form and process. Wiles, Chichester. Pp337-359 Rodwell, J.S. (19??). British Plant Communities. Volume 2, Mires and Heaths. Cambridge: Cambridge University Press

4. Range

4.1 Surface area (in km²)		
4.2 Short-term trend Period		
4.3 Short-term trend Direction	Stable (0)	
4.4 Short-term trend Magnitude	a) Minimum	b) Maximum
4.5 Short-term trend Method used		
4.6 Long-term trend Period		
4.7 Long-term trend Direction		
4.8 Long-term trend Magnitude	a) Minimum	b) Maximum
4.9 Long-term trend Method used		
4.10 Favourable reference range	a) Area (km²)	

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	b) Operator	
	c) Unknown	No
	d) Method	
4.11 Change and reason for change in surface area of range	No change	
	The change is mainly due to:	
4.12 Additional information		

5. Area covered by habitat

5.1 Year or period	2013-2018		
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value 1.2
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Complete survey or a statistically robust estimate		
5.5 Short-term trend Period	2007-2018		
5.6 Short-term trend Direction	Stable (0)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Complete survey or a statistically robust estimate		
5.9 Long-term trend Period	1994-2018		
5.10 Long-term trend Direction	Stable (0)		
5.11 Long-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used			
5.13 Favourable reference area	a) Area (km²)		
	b) Operator		
	c) Unknown	No	
	d) Method		
5.14 Change and reason for change in surface area of range	No change		
	The change is mainly due to:		
5.15 Additional information			

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 0	Maximum 0
	b) Area in not-good condition (km²)	Minimum 1.2	Maximum 1.2
	c) Area where condition is not known (km²)	Minimum 0	Maximum 0
6.2 Condition of habitat Method used	Complete survey or a statistically robust estimate		
6.3 Short-term trend of habitat area in good condition Period	2013-2018		
6.4 Short-term trend of habitat area in good condition Direction	Stable (0)		

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6.5 Short-term trend of habitat area in good condition Method used	Complete survey or a statistically robust estimate
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period? No
6.7 Typical species Method used	
6.8 Additional information	

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Other invasive alien species (other then species of Union concern) (I02)	M
Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures) (F08)	M
Development and maintenance of beach areas for tourism and recreation incl. beach nourishment and beach cleaning (F06)	M
Sports, tourism and leisure activities (F07)	M
Military, paramilitary or police exercises and operations on land (H01)	M
Agricultural activities generating air pollution (A27)	M

Threat	Ranking
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	M
Sea-level and wave exposure changes due to climate change (N04)	M
Agricultural activities generating air pollution (A27)	H
Other invasive alien species (other then species of Union concern) (I02)	M
Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures) (F08)	M
Development and maintenance of beach areas for tourism and recreation incl. beach nourishment and beach cleaning (F06)	M
Sports, tourism and leisure activities (F07)	M
Military, paramilitary or police exercises and operations on land (H01)	M

7.2 Sources of information	
7.3 Additional information	

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8. Conservation measures

8.1 Status of measures	a) Are measures needed?	Yes
	b) Indicate the status of measures	Measures identified and taken
8.2 Main purpose of the measures taken	Maintain the current range, population and/or habitat for the species	
8.3 Location of the measures taken	Only inside Natura 2000	
8.4 Response to the measures	Short-term results (within the current reporting period, 2013-2018)	
8.5 List of main conservation measures		

Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures (CA04)

Management, control or eradication of other invasive alien species (CI03)

Reduce impact of outdoor sports, leisure and recreational activities (CF03)

Implement climate change adaptation measures (CN02)

Manage changes in hydrological and coastal systems and regimes for construction and development (CF10)

Reduce/eliminate air pollution from agricultural activities (CA12)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters	a) Range b) Area c) Structure and functions
9.2 Additional information	

10. Conclusions

10.1. Range	
10.2. Area	
10.3. Specific structure and functions (incl. typical species)	
10.4. Future prospects	
10.5 Overall assessment of Conservation Status	
10.6 Overall trend in Conservation Status	
10.7 Change and reasons for change in conservation status and conservation status trend	a) Overall assessment of conservation status No change The change is mainly due to: b) Overall trend in conservation status No change The change is mainly due to:
10.8 Additional information	

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11. Natura 2000 (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region)	a) Minimum b) Maximum c) Best single value 1.2
11.2 Type of estimate	Best estimate
11.3 Surface area of the habitat type inside the network Method used	Complete survey or a statistically robust estimate
11.4 Short-term trend of habitat area in good condition within the network Direction	Stable (0)
11.5 Short-term trend of habitat area in good condition within network Method used	Complete survey or a statistically robust estimate
11.6 Additional information	

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

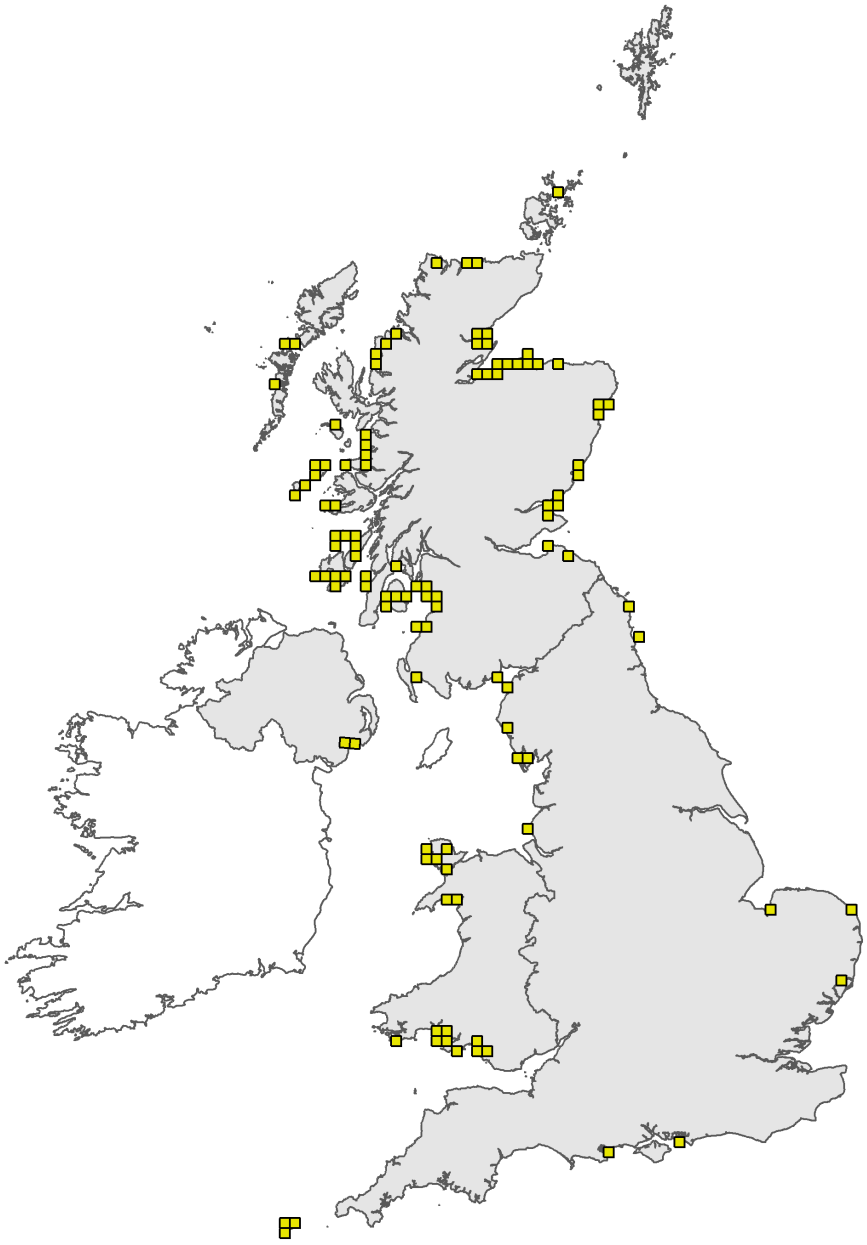

Figure 1: UK distribution map for H2150 - Atlantic decalcified fixed dunes (*Calluno-Ulicetea*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available habitat records which are considered to be representative of the distribution within the current reporting period. For further details see the 2019 Article17 UK Approach document.

Range Map

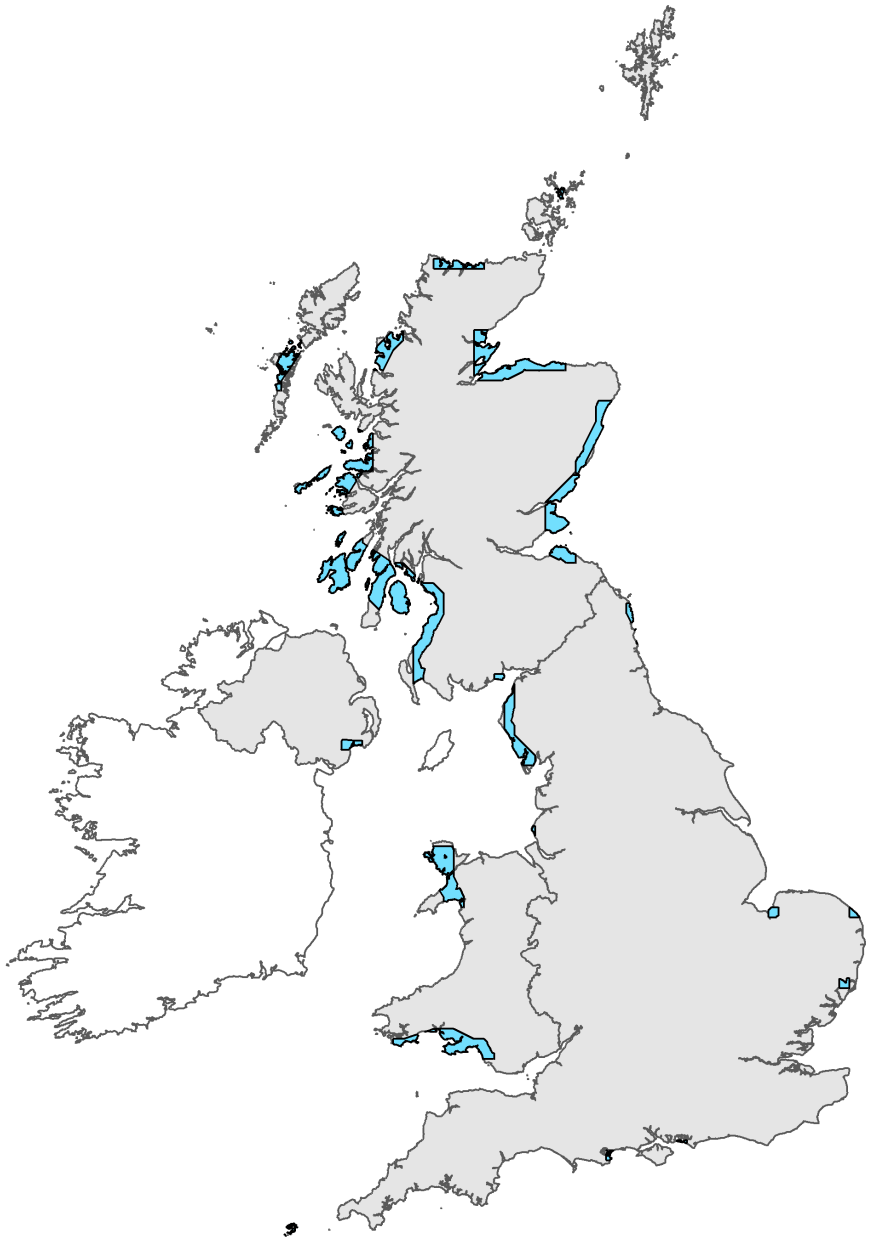

Figure 2: UK range map for H2150 - Atlantic decalcified fixed dunes (*Calluno-Ulicetea*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) to the 10km grid square distribution map presented in Figure 1. The alpha value for this habitat was 25km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Habitat code: 2150

Field label	Note
2.2 Distribution map	The habitat occurs on mature, stable dunes where the initial calcium carbonate content of the dune sand is low. This is why its only occurrence in NI is at Murlough in Co Down, where the underlying dunes have been derived from granite parent material. The surface layers rapidly lose their remaining calcium carbonate through leaching and become acidified. The most characteristic community is dune heath in which Calluna vulgaris is found in combination with Carex arenaria. In the UK this vegetation corresponds to the NVC communities H11a Calluna vulgaris-Carex arenaria heath (Erica cinerea sub-community), H11c Calluna vulgaris-Carex arenaria species-poor sub-community and H1d Calluna vulgaris - Festuca ovina heath (Carex arenaria sub-community), in addition to H10 Calluna vulgaris - Erica cinerea developed over dunes. Of these communities, the NI Coastal Survey (Cooper et al, 1992) recorded H11a only at Murlough (with one small, impoverished quadrat - not on sand - from Horse Island). Two distinctive variants were recognised - one rich in grasses and the other with a high proportion of acrocarpous mosses and an exceptionally rich lichen flora. In addition, some stands of H10 were also recorded from Murlough.
2.3 Distribution map; Method used	The maps are based upon the NI Coastal Vegetation Survey (1992). The occurrence at Murlough is believed to the only one in NI; subsequent fieldwork at other coastal sites around NI has failed to find any other stands of the habitat.

Habitat code: 2150 Region code: ATL

Field label	Note
4.1 Surface area	No evidence of the habitat previously occurring anywhere else in NI other than Murlough.
4.5 Short term trend; Method used	Based upon regular condition monitoring of protected coastal sites. This covers the only known location for the habitat in NI.
5.2 Surface area	Surface area measured from known site.
6.1 Condition of habitat	Condition data for Murlough SAC indicates the condition of the habitat in NI - only known occurrence.
6.2 Condition of habitat; Method used	Data taken from the most recent Common Standards Monitoring of Murlough SAC.

7.1 Characterisation of pressures/ threats	Low intensity grazing is necessary to maintain the dune heath. Over- grazing can have damaging effects, but at present, the major management issue is undergrazing, leading to invasion by coarse grasses and scrub - including both invasive non-native species such as Sea Buckthorn, and by problematic native species, such as Gorse and Blackthorn. Bracken is also a significant issue on this acidic dune system. Rabbits can be locally effective in maintaining a short turf, but their population often fluctuates dramatically. Recreation is a major land use on Murlough. Moderate pressure by pedestrians may cause little damage, and may even help to counteract the effects of abandonment of grazing. However, excessive pedestrian use, as on routes between car parks and beaches, and vehicular use in particular, can lead to severe erosion. Golf courses are present on parts of the site, and may be beneficial in retaining much of the original dune heath vegetation in the roughs, although fairways and greens are often severely modified by mowing, fertilising and re-seeding. Sea defence works or artificial stabilisation measures such as sand fencing and marram planting may also be an issue. While carefully applied dune management measures can help to counteract severe erosion, engineered defence systems usually reduce the natural dynamism of dune systems, and may cause sediment starvation down-drift. Part of the habitat is managed by MOD as a military range with positive management measures in place. Nutrient enrichment is possibly one of the greatest threats to the long-term conservation of this habitat. The critical load range for dune heath is 10-20 kg N /ha/yr. With an average predicted deposition of 19.3 kg N/ha/yr, Murlough considerably exceeds the lower threshold for this habitat. With lichens being particularly important in some of the sub-communities present, such levels are of particular concern, as these tend to be very sensitive to N (especially ammonia). Although the habitat is not likely to be subjected to the most immediate impacts of climate change (and particularly sea-level rise and increased storminess) there will inevitably be some effects on the habitat, through mobilising and re-distributing sand supplies within the overall dune complex. It is difficult to predict what the long-term effects of this will be.
7.2 Sources of information	Threats and pressures assessed from monitoring at Murlough and judgement on future trends.
8.1 Status of measures	Condition assessment suggests that the dune heath at Murlough is in unfavourable condition. This is largely due to previous grazing history - reduced livestock grazing and decline in rabbit populations have combined to allow invasive non-native and native species to spread. Particular problem species at Murlough include Sea Buckthorn, Gorse and Bracken. Hence structure and function are reported as Bad. Measures currently in place to maintain livestock grazing and to control invasive native and non-native species.
8.2 Main purpose of the measures taken	Measures aimed at reducing rank growth and controlling scrub and Bracken encroachment.
8.3 Location of the measures taken	Only known occurrence of the habitat in NI is on Murlough SAC.
8.4 Response to the measures	Indications from monitoring suggest that these measures are proving successful, but need to be maintained.

9.1 Future prospects of parameters	Recent monitoring of Grey Dunes at SACs and ASSIs has shown that the habitat is currently in unfavourable condition. However, much of the habitat is recorded as recovering, and there are a range of conservation measures in place at most sites. It is likely that these will become even more effective in the future. Nutrient enrichment is possibly one of the greatest threats to the long-term conservation of this habitat. The critical load range for grey dunes is 8-10 kg N /ha/yr for acid dunes and 10 - 15 kg N/ha/yr for calcareous dunes. All four SACs in NI for this habitat exceed these figures (at least the lower threshold). Although the Department is developing a road map to reduce atmospheric Nitrogen from agricultural sources, until this initiative is implemented and its impacts evaluated, advice from JNCC is that the assessment of future prospects for Structure and Function should be assessed as Negative.
9.1 Future prospects of parameters	Recent monitoring of Dune Heath at Murlough SAC has shown that the habitat is currently in unfavourable condition. However, there are a range of conservation measures in place, and it is likely that these will become even more effective in the future. On the other hand, nutrient enrichment by atmospheric Nitrogen is possibly one of the greatest threats to the long-term conservation of this habitat. The critical load range for dune heath is 10-20 kg N /ha/yr. With an average predicted deposition of 19.3 kg N/ha/yr, Murlough considerably exceeds the lower threshold for this habitat. With lichens being particularly important in some of the sub-communities present, such levels are of particular concern, as these tend to be very sensitive to N (especially ammonia). Hence, air pollution is considered to be a potentially significant threat to the condition this habitat. Although the Department is developing a road map to reduce atmospheric Nitrogen from agricultural sources, until this initiative is implemented and its impacts evaluated, advice from JNCC is that the assessment of future prospects for Structure and Function should be assessed as Negative.
10.1 Range	There is no evidence to suggest that the habitat occurred formerly elsewhere in NI, other than at Murlough. Therefore current range occupied by the habitat in NI judged favourable.
10.2 Area	There is no evidence of any recent loss in extent from Murlough. Therefore current area occupied by the habitat in NI judged favourable.
10.3 Specific structure and functions	The resource is reported as not good for structure and function. This is due to issues with grazing management and encroachment by scrub and Bracken. As a result, it has been assessed as Unfavourable Bad. However, much of the site has favourable management in place, so this attribute may be expected to show improvement if measures are maintained and appropriately targetted.
10.4 Future prospects	Although many of the issues currently affecting the structure and function of the habitat are being addressed through sympathetic management, future prospects are judged to be uncertain in the light of potential impacts of sea level rise and climate change, and particularly the impact of atmospheric deposition of Nitrogen, due to the high sensitivity of the habitat to this pressure. Hence Unfavourable Inadequate.
10.5 Overall assessment of Conservation Status	Range and extent are stable; structure and function have shown some improvement over the reporting period as a result of management measures. Future prospects are rather uncertain, with Nitrogen deposition and climate change unpredictable. Hence an overall unfavourable inadequate assessment.
11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network	Habitat is present at one SAC only - Murlough.
11.3 Surface area of the habitat type inside the network; Method used	Most of the SAC has been mapped to NVC standard and CSM is undertaken on a regular basis.

11.5 Short term trend of habitat area in good condition within the network; Method used	Conclusion based upon recent condition assessment data. The habitat has been reported as being in bad condition, and is recorded as unfavourable, but much of the management is sympathetic.