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:

H2120 - Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`)

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	**2120 - Shifting dunes along the shoreline with Ammophila arenaria ("white d**

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	Data on aerial Nitrogen deposition taken from Air Pollution Information System website - http://www.apis.ac.uk/ 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

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 0.15
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	Uncertain (u)		
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 0.008	Maximum 0.008
	b) Area in not-good condition (km²)	Minimum 0.124	Maximum 0.124
	c) Area where condition is not known (km²)	Minimum 0.018	Maximum 0.018
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
Other invasive alien species (other then species of Union concern) (I02)	H
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
Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (C01)	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
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H

Threat	Ranking
Other invasive alien species (other then species of Union concern) (I02)	M
Sea-level and wave exposure changes due to climate change (N04)	H
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)	H
Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (C01)	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

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Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H

7.2 Sources of information

7.3 Additional information

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		Both inside and outside Natura 2000
8.4 Response to the measures		Medium-term results (within the next two reporting periods, 2019-2030)
8.5 List of main conservation measures		

Adapt/manage extraction of non-energy resources (CC01)

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

Implement climate change adaptation measures (CN02)

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

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

Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)

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:

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	b) Overall trend in conservation status
	No change
	The change is mainly due to:
10.8 Additional information	

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 0.132
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

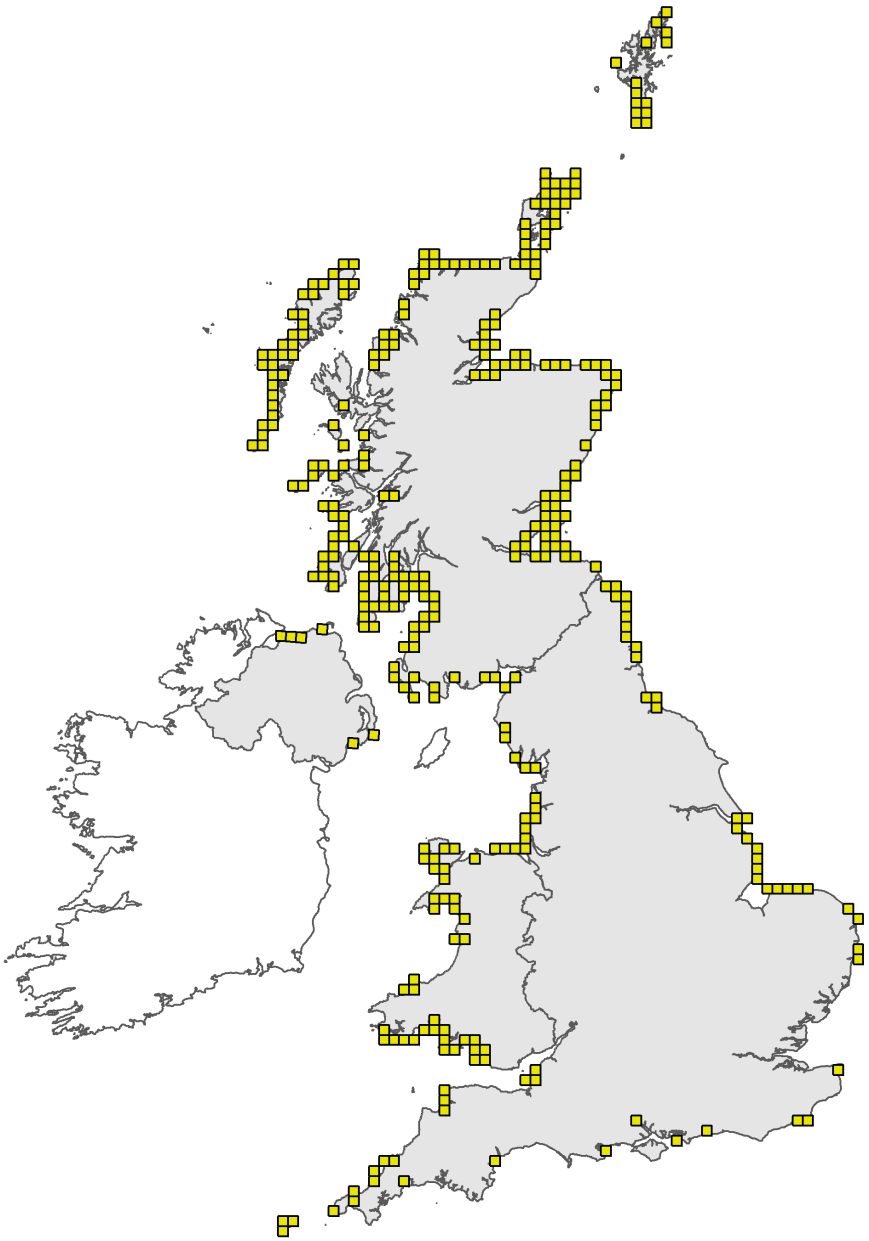

Figure 1: UK distribution map for H2120 - Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 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

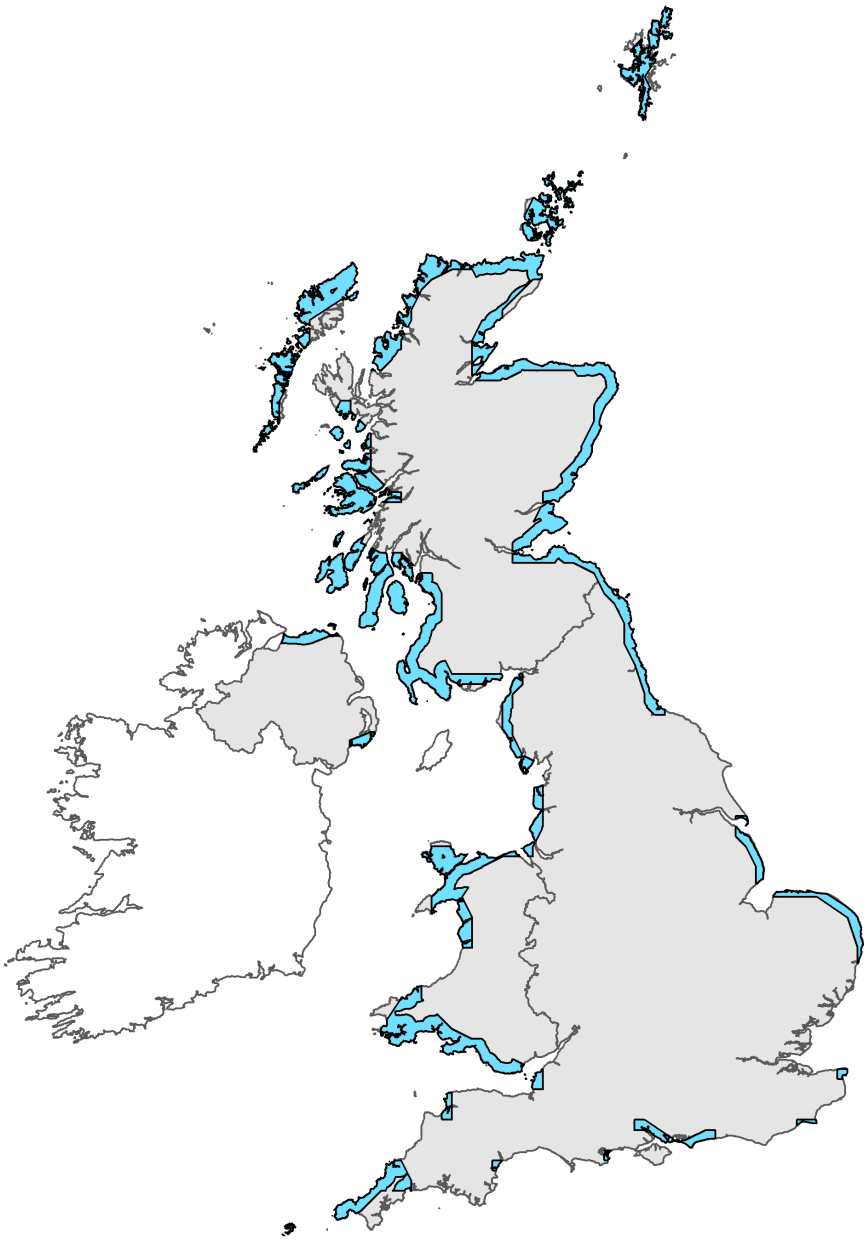

Figure 2: UK range map for H2120 - Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil 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: 2120

Field label	Note
2.2 Distribution map	This habitat type encompasses most of the vegetation of unstable dunes where there is active sand movement, and Marram Ammophila arenaria is the dominant species. The habitat corresponds very well to the NVC community SD6, the Ammophila arenaria mobile dune community. The habitat is present in NI, with both SD6a and SD6d recorded. However, current information suggests that its extent is limited, because of an apparent lack of dune-building sediment being deposited along the beaches (NI Coastal Survey - Cooper et al, 1992). It was recorded by the NI Coastal Survey at Magilligan, Bann Estuary (Portstewart), White Park Bay and Strangford Lough (Killard). NIEA have also recorded the habitat at Murlough (Ballykinler).
2.3 Distribution map; Method used	Range map based upon NI Coastal Survey (Cooper et al 1992), plus other sites surveyed by NIEA staff. All main sites visited during the reporting period. Existing network of protected sites provides a good representation of the distribution of the habitat in NI - with the bulk of the habitat within SACs and ASSIs.

Habitat code: 2120 Region code: ATL

Field label	Note
4.1 Surface area	Although dune systems are naturally dynamic structures, their general locations have remained mostly stable despite some turnover in area. Shifting white dunes have been less affected by land reclamation during historical and recent times compared to fixed dune types that occur further inland. They benefit by being naturally dynamic. Comparison of current range with range indicated in 1992 by NI Coastal Survey suggests there has been no loss in range over the time period.
4.5 Short term trend; Method used	Based upon regular condition monitoring of protected coastal sites. This covers all known major locations for the habitat.
5.2 Surface area	The figure for Northern Ireland is an estimate based on NI Coastal Survey with additional fieldwork by NIEA staff. In general, the habitat occurs as a linear feature, towards the seaward edge of more stable inland dune communities, which comprise a much larger proportion of the total sand dune complex. The bulk of the habitat in NI is within protected sites (SACs and ASSIs).
5.10 Long term trend; Direction	In common with general UK trend, it is likely that the longer term trend is probably decreasing, although there is no direct comparison of data from earlier time period to present - hence recorded as uncertain. The key factor is the degree to which mobile dunes have stabilised over the last half century or so, developing widely into fixed 'grey' dunes. In the UK as a whole, there is good evidence that this stabilisation was typical for many other dune systems (e.g. Carter and Wilson 1990, Pye 1990). This suggests there have been very substantial losses in area of H2120 over the past few decades.
6.1 Condition of habitat	Condition data for SACs and ASSIs with this feature record most sites to be in unfavourable condition, largely due to invasion by non-native species (Sea Buckthorn).
6.2 Condition of habitat; Method used	Data taken from the most recent Common Standards Monitoring on SACs and ASSIs that contain the habitat.

7.1 Characterisation of pressures/ threats	This is a habitat that does not generally require active management - apart from the removal of invasives. One of the main issues currently causing unfavourable condition at NI protected dune sites is invasion by Sea Buckthorn. Sand removal for building or other purposes is a direct impact on the habitat, but is now largely controlled. The habitat depends upon natural processes of sand movement so any building or construction that interferes with these natural processes (e.g. breakwaters, coastal protection measures, etc) - even some distance away - may threaten the habitat. Recreation is one of the main land-uses on most of the main dune sites. Moderate pressure by pedestrians may cause little damage, but excessive use - especially with ATVs - can lead to unacceptable erosion. Parking cars on beaches and beach cleaning can lead to problems with sand supply to embryo dunes, which are an essential part of the development of the slightly higher White Dunes. Parts of the habitat at both Magilligan and Murlough are managed by MOD as military ranges with positive management measures in place. Clearly in the future, the impact of climate change - and particularly sea-level rise and increased storminess - will have a major influence on the habitat, through mobilising and re-distributing sand supplies. It is difficult to predict what the long-term effects will be. Across the UK, there is widespread concern at the extent of stabilisation of this habitat, and its subsequent conversion to grey dune through natural successional processes. Sea-level rise may therefore actually benefit the habitat through remobilising large volumes of sand. For White Dunes, the critical load for atmospheric Nitrogen deposition is 10-20 kg N/ha/yr. At Magilligan SAC - the main area for this habitat in NI - the predicted average value is 8.2 kg N/ha/yr - below the lower threshold. Average values for Bann Estuary (12.2 kg N/ha/yr), North Antrim Coast (13.8 kg N/ha/yr) and Murlough (19.3 kg N/ha/yr) exceed the lower threshold. Hence, N deposition is a factor that need sto be closely monitored for the habitat.
7.2 Sources of information	Threats and pressures assessed from monitoring of existing protected sites and judgement on future trends.
9.1 Future prospects of parameters	Management measures are currently in place at most SACs to improve the condition of the dune habitats and these will benefit the White Dune habitat. Indications are that these are proving successful. For White Dunes, the critical load for atmospheric Nitrogen deposition is 10-20 kg N/ha/yr. At Magilligan SAC - the main area for this habitat in NI - the predicted average value is 8.2 kg N/ha/yr - below the lower threshold. Average values for Bann Estuary (12.2 kg N/ha/yr), North Antrim Coast (13.8 kg N/ha/yr) and Murlough (19.3 kg N/ha/yr) exceed the lower threshold. Hence, N deposition is a factor that needs to be closely monitored for the habitat. The Department is currently developing a road map to reduce atmospheric Nitrogen from agricultural sources. Atmospheric Nitrogen deposition is not believed to be a threat to the habitat, given the current levels of predicted N deposition on the North coast sites, and the mobile nature of the substrate that the habitat develops upon.
10.1 Range	Despite some losses of area, white dunes are still widely distributed along suitable stretches of coastline around NI. The current range still appears to cover most, if not all, of its former and potential natural range. This implies that the favourable reference range is occupied. The dynamic nature of the habitat has allowed it to respond to localised losses to erosion.
10.2 Area	It is believed that the area of this habitat across the UK as a whole has declined, mainly due to dune stabilisation and habitat loss and that this decline is still occurring. The dynamic nature of the habitat means that it has been capable of responding - but only partly - to losses of sand dune habitat. The current area is likely to be less than the favourable reference area.
10.3 Specific structure and functions	Feature largely recorded as unfavourable on protected sites, and these cover the bulk of the habitat in NI. Hence assessed as unfavourable bad.

10.4 Future prospects	The impact of climate change - and particularly sea-level rise and increased storminess - will have a major influence on the habitat, through mobilising and re-distributing sand supplies. It is difficult to predict what the long-term effects will be. Across the UK, there is widespread concern at the extent of stabilisation of this habitat, and its subsequent conversion to grey dune through natural successional processes. Sea-level rise may therefore actually benefit the habitat through remobilising large volumes of sand. Hence assessed as uncertain.
11.3 Surface area of the habitat type inside the network; Method used	Virtually all SACs mapped to NVC standard and CSM ongoing on a regular basis.