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:

H2110 - Embryonic shifting 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	**2110 - Embryonic shifting dunes**

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.

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)	
	b) Operator	
	c) Unknown	No
	d) Method	

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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 0.05
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 0.035	Maximum 0.035
	b) Area in not-good condition (km²)	Minimum 0.006	Maximum 0.006
	c) Area where condition is not known (km²)	Minimum 0.009	Maximum 0.009
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)		
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			

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6.8 Additional information

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (C01)	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

Threat	Ranking
Sea-level and wave exposure changes due to climate change (N04)	H
Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (C01)	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)	H
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

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		Short-term results (within the current reporting period, 2013-2018)
8.5 List of main conservation measures		

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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)

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	

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 0.041
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)

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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

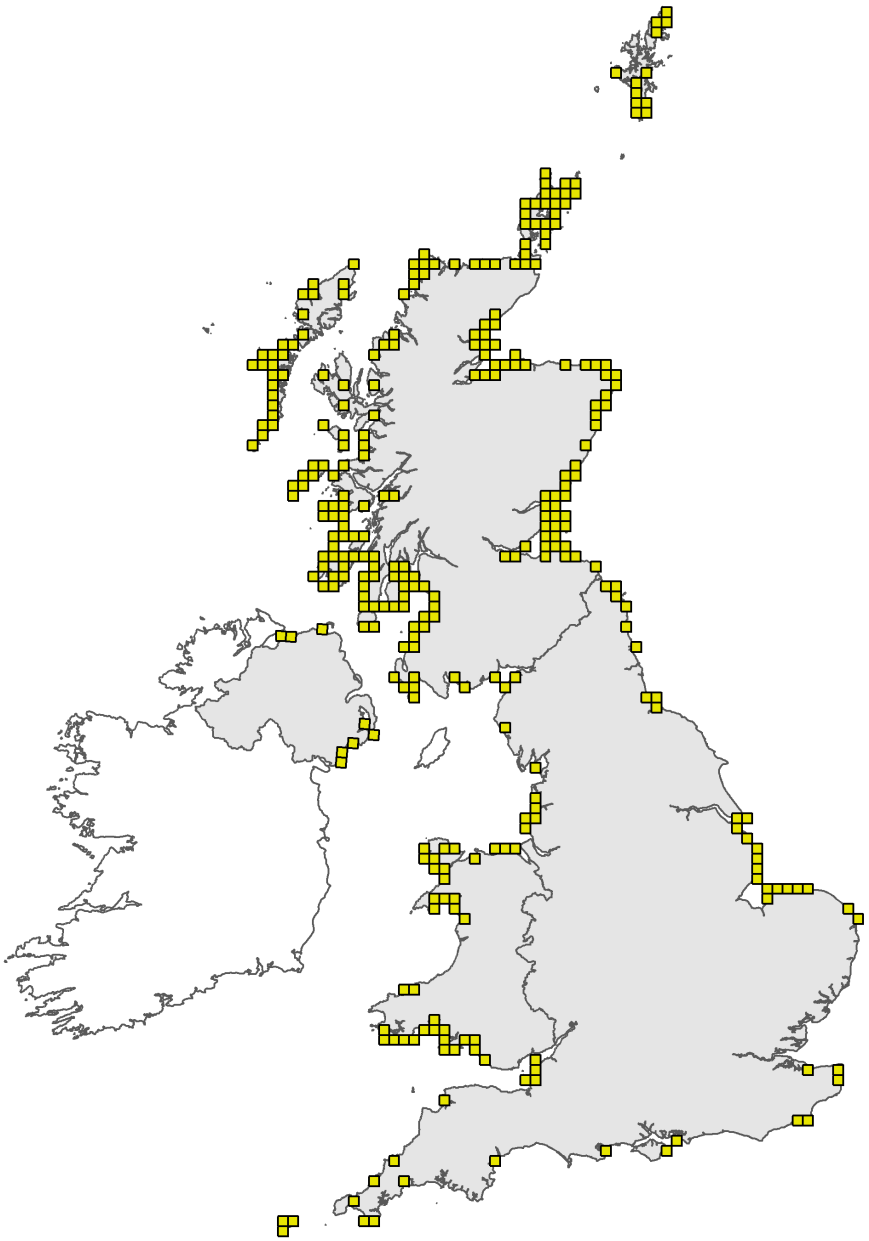

Figure 1: UK distribution map for H2110 - Embryonic shifting dunes. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

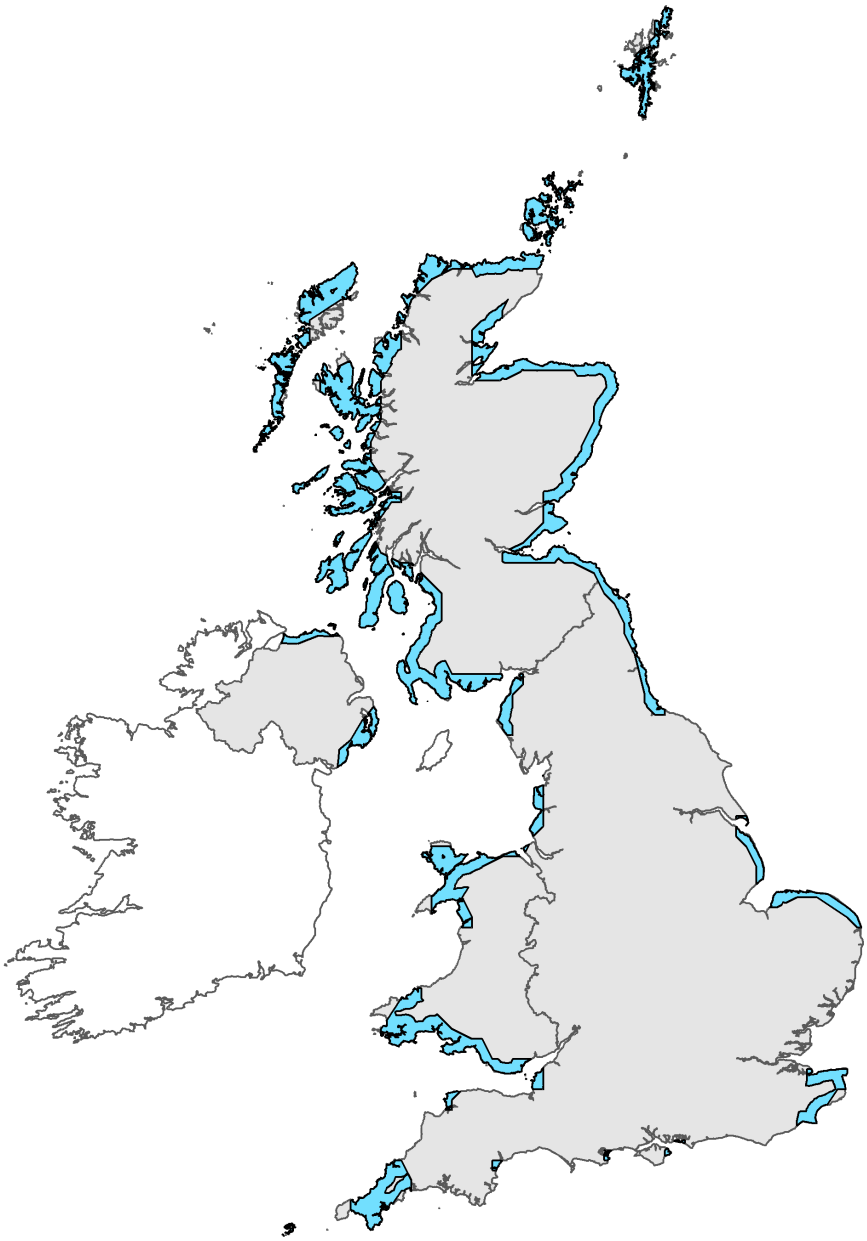

Figure 2: UK range map for H2110 - Embryonic shifting dunes. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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: 2110

Field label	Note
2.2 Distribution map	The main NVC community is SD4 Elymus farctus foredune, but the habitat also includes certain stands of SD2 Honckenya peploides - Cakile maritima strandline and occasionally the SD5 Leymus arenarius mobile dune community. In NI, the community is generally widespread but not extensive, as the majority of the main dune systems tend to be eroding, rather than prograding. However, the community often occurs where dune fronts are eroding and the sand deposits are re-mobilised. In addition, some of the characteristic plants (e.g. Leymus arenarius) are scarce in NI. However, SD4 has been recorded from Magilligan and Bann Estuary SACs (NI Coastal Survey - Cooper et al, 1992), and is also present at Murlough SAC (notably on the Ballykinler side). Small stands of the habitat also occur sporadically around the coast in suitable locations.
2.3 Distribution map; Method used	The maps are based upon the NI Coastal Vegetation Survey (1992) with subsequent fieldwork to confirm presence in these locations, plus other known locations.

Habitat code: 2110 Region code: ATL

Field label	Note
4.1 Surface area	No evidence of loss from any of the known locations for the habitat.
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	H2110 is a very restricted habitat in its extent within NI. As this vegetation is ephemeral in nature, the location and extent of this habitat at both site level and in NI as a whole will vary considerably from year to year, and even the largest sites support only around 2 ha of this habitat.
7.1 Characterisation of pressures/ threats	This is a habitat that does not generally require active management. 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 can lead to problems with sand supply to embryo dunes. Beach cleaning can remove the organic nuclei required for embryo dunes to form. 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 impact on the habitat, through mobilising and re-distributing sand supplies. Atmospheric Nitrogen deposition is not believed to be a threat to the habitat, given the current levels of predicted deposition on the North coast sites, and the highly mobile nature of the substrate that the habitat develops upon.
7.2 Sources of information	Threats and pressures assessed from monitoring of existing protected sites and judgement on future trends.
8.1 Status of measures	Measures currently in place at one site to manage the impact of recreational use (Bann Estuary).
8.2 Main purpose of the measures taken	Measures aimed at restoring natural process of sand movement.
8.4 Response to the measures	Early indications suggest that these measures are proving successful.

9.1 Future prospects of parameters	The trend for structures and functions has been assessed as Overall stable - note that atmospheric Nitrogen deposition is not believed to be a threat to the habitat, given the current levels of predicted deposition on the North coast sites, and the highly mobile nature of the substrate that the habitat develops upon
10.1 Range	The habitat is naturally dynamic and can respond to change quickly - for example, erosion of dune fronts often results in remobilisation of blown sand and formation of embryo dunes. Hence, it is not believed that the range has contracted significantly over time. Current range therefore judged as stable and not less than the FRR.
10.2 Area	The habitat is naturally dynamic and can respond to change quickly - for example, erosion of dune fronts often results in remobilisation of blown sand and formation of embryo dunes. Hence, it is not believed that the area has contracted significantly over time. Current area is stable and not less than the FRA.
10.3 Specific structure and functions	This feature assessed as favourable on 2 out of 3 SACs, with the majority of the feature in favourable condition - hence assessed as unfavourable inadequate.
10.4 Future prospects	Climate change and in particular sea-level rise may be beyond the ability to influence by management. The key issue is to ensure that this habitat maintains its ability to adapt to these changes or there may be losses in area and range as a result of coastal squeeze. Although increases in erosion can actually benefit the habitat by re-mobilising sand currently locked up in more stable dune communities, the impacts of sustained sea-level rise and possibly more stormy conditions are difficult to predict. Given the unpredictability of climate change and sea-level rise, the judgement is Unfavourable Inadequate.
10.5 Overall assessment of Conservation Status	Range and Extent both Favourable; Structure and Function and Future Prospects both Unfavourable Inadequate; hence overall conclusion Unfavourable Inadequate.
11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network	Habitat is present at three SACs - Bann Estuary, Magilligan and Murlough.
11.5 Short term trend of habitat area in good condition within the network; Method used	Area in good condition based upon recent condition assessment data.