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:

H1140 - Mudflats and sandflats not covered by seawater at low tide

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	**1140 - Mudflats and sandflats not covered by seawater at low tide**

2. Maps

2.1 Year or period	2013-2018
2.3 Distribution map	Yes
2.3 Distribution map Method used	Based mainly on expert opinion with very limited data
2.4 Additional maps	No

BIOGEOGRAPHICAL LEVEL

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs	**Marine Atlantic (MATL)**
3.2 Sources of information	McAdams Design, 2017. Dundrum Bay Inner Designated Shellfish Waters Catchment Investigation Final Report DAERA, 2017. River Basin Management Plan WFD 2nd Cycle Classification Summary-Strangford Lough North. Internal Document DAERA, 2017. River Basin Management Plan WFD 2nd Cycle Classification Summary-Strangford Lough South.Internal Document DAERA, 2017. River Basin Management Plan WFD 2nd Cycle Classification Summary- Inner Dundrum Bay. Internal Document

4. Range

4.1 Surface area (in km²)	76.78	
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 d) Method	No
4.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data The change is mainly due to:	Improved knowledge/more accurate data
4.12 Additional information		

5. Area covered by habitat

5.1 Year or period	2006-2018

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5.2 Surface area (in km²)	a) Minimum 76.78	b) Maximum 76.78	c) Best single value 76.78
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Based mainly on expert opinion with very limited data		
5.5 Short-term trend Period	2007-2018		
5.6 Short-term trend Direction	Uncertain (u)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Based mainly on expert opinion with very limited data		
5.9 Long-term trend Period			
5.10 Long-term trend Direction			
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	Improved knowledge/more accurate data The change is mainly due to: Improved knowledge/more accurate data		
5.15 Additional information			

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 37.88	Maximum 37.88
	b) Area in not-good condition (km²)	Minimum 0.0755	Maximum 0.0755
	c) Area where condition is not known (km²)	Minimum 38.82	Maximum 38.82
6.2 Condition of habitat Method used	Based mainly on expert opinion with very limited data		
6.3 Short-term trend of habitat area in good condition Period	2007-2018		
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	Based mainly on expert opinion with very limited data		
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
Agricultural activities generating marine pollution (A28)	H

Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution) (F20)	M
Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F22)	M
Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F23)	M
Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (G01)	M
Illegal harvesting, collecting and taking (G11)	M
Other invasive alien species (other then species of Union concern) (I02)	M

Threat	Ranking
Agricultural activities generating marine pollution (A28)	H
Construction or modification of commercial / industrial infrastructure in existing commercial / industrial areas (F04)	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
Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution) (F20)	M
Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F22)	M
Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F23)	M
Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (G01)	M
Illegal harvesting, collecting and taking (G11)	M
Other impacts from marine aquaculture, including infrastructure (G19)	M
Other invasive alien species (other then species of Union concern) (I02)	M

7.2 Sources of information

7.3 Additional information

8. Conservation measures

8.1 Status of measures	a) Are measures needed?	Yes

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	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	Long-term results (after 2030)
8.5 List of main conservation measures	

Reduce/eliminate marine pollution from agricultural activities (CA13)

Reduce impact of transport operation and infrastructure (CE01)

Reduce/eliminate marine contamination with litter (CF08)

Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities (CF12)

Other measures related to exploitation of species (CG15)

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

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

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11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region)	a) Minimum	37.97
	b) Maximum	37.97
	c) Best single value	37.97
11.2 Type of estimate	Best estimate	
11.3 Surface area of the habitat type inside the network Method used	Based mainly on extrapolation from a limited amount of data	
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	Based mainly on extrapolation from a limited amount of data	
11.6 Additional information		

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

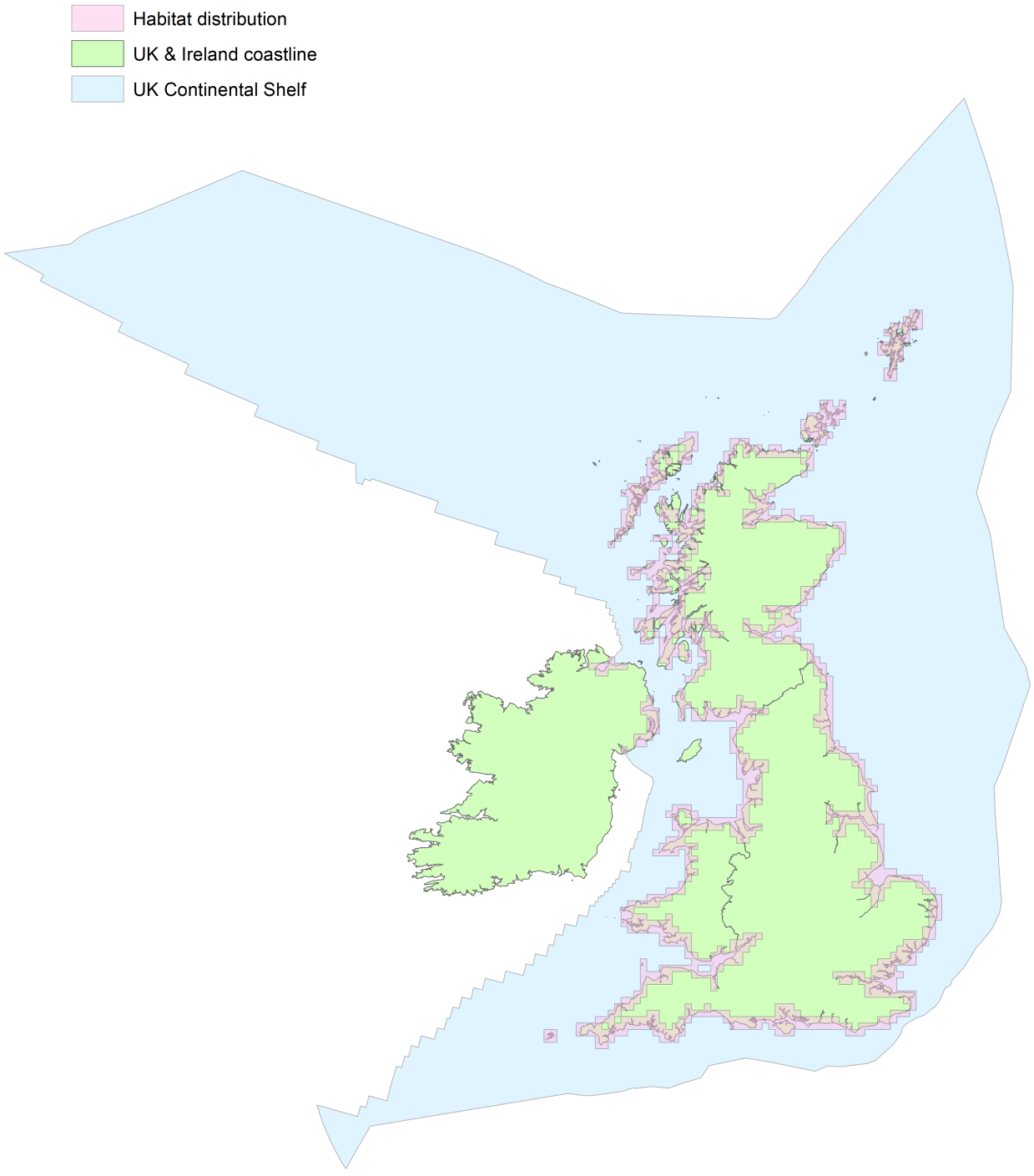

Figure 1: UK distribution map for H1140 - Mudflats and sandflats not covered by seawater at low tide.

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

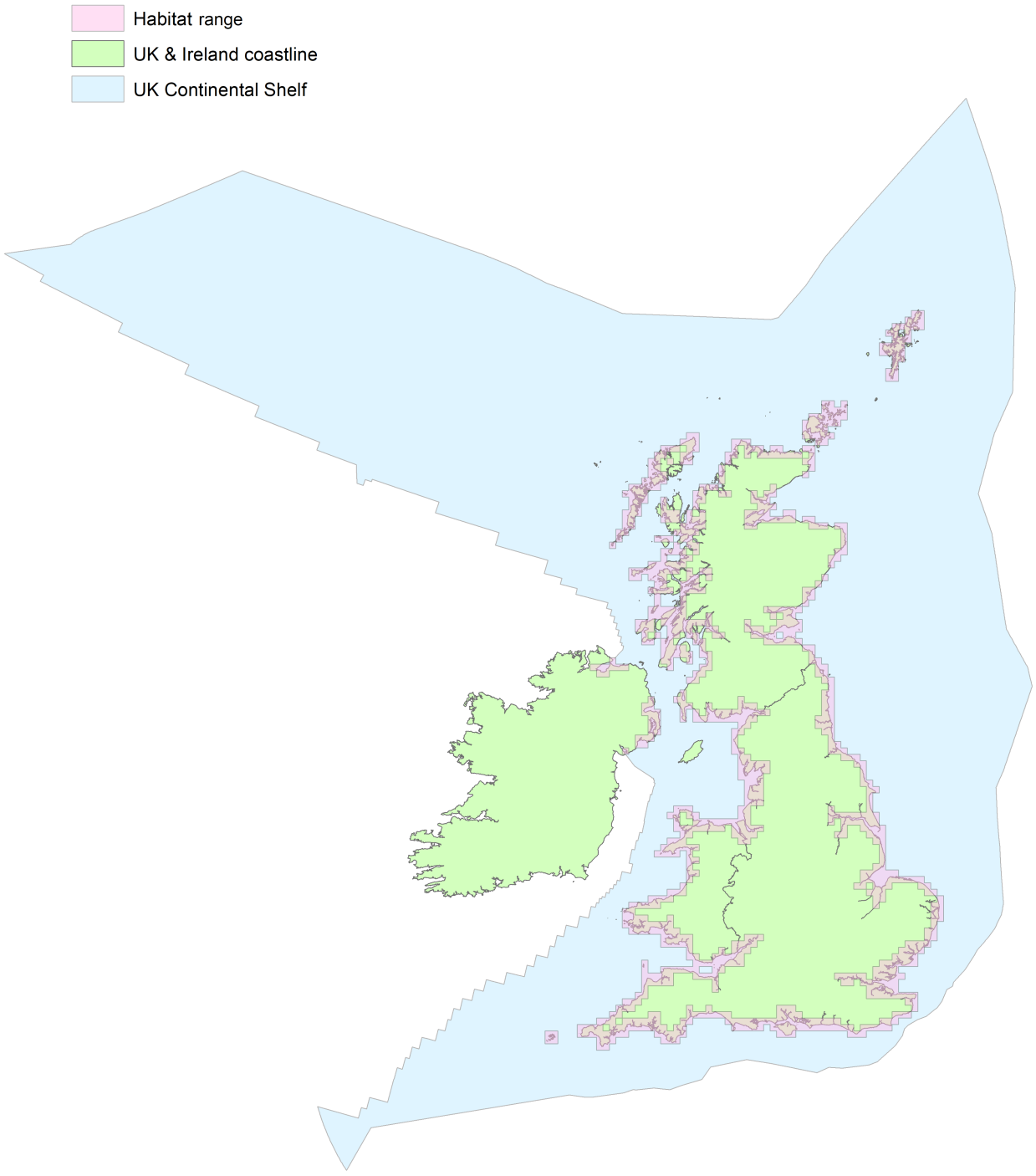

Figure 2: UK range map for H1140 - Mudflats and sandflats not covered by seawater at low tide.

The range of mudflats and sandflats is determined by physical and geological processes and was not related to the biological communities or processes supported by them. Therefore, the range was considered equivalent to the surface area of the habitat.

Explanatory Notes

Habitat code: 1140 Region code: MATL

Field label	Note
4.3 Short term trend; Direction	This was listed as 'Stable', after discussions with the Marine Habitats Expert Group, it was felt that although Mudflats and Sandflats can be quite mobile at a local scale, its range (the geographic envelope in which it is located within NI & UK waters) is highly unlikely to have changed within this relatively short period of time.
4.11 Change and reason for change in surface area of range	Yes there was change but this due to improved spatial data availability
5.4 Surface area; Method used	Based mainly on expert opinion with very limited data'- Although the data was more accurate than the 2013 figure incorporating survey data to groundtruth digitised polygons from high resolution aerial imagery, more ground truthing needs to be done to fine tune and verify the habitat in a number of these polygons.
5.6 Short term trend; Direction	Uncertain' was chosen as we have not fully completed the mapping of the coastal mudflats and sandflats so I think this is the best we can say. Although the condition assessments in both Murlough and Strangford Lough for this feature show that it is in 'Good Condition'.
5.14 Change and reason for change in surface area	See comment above as for range 4.11
6.1 Condition of habitat	Area in Good Condition here was the mudflats and sandflats within Strangford and Murlough SACs as this feature was reported in Good Condition in the SAC condition assessments. However it is important to also note that the small area of Habitat in 'Not Good' condition represents an area in which intertidal Zostera has disappeared within Murlough SAC since it was first surveyed in 2003. However there has been an 11% increase in the area of zostera since the last reporting cycle.
6.4 Short term trend of habitat area in good condition; Direction	Put in 'Stable'. In 2013 this was reported as declining in error through misunderstanding of parameter.
7.1 Characterisation of pressures/ threats	G01: Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species- Bait digging and shore based hand gathering of wild populations of shellfish are reported to occur throughout this Annex I habitat in Northern Ireland but at a relatively low level. Mudflats and Sandflats were assessed to be at medium risk from this type of activity as there are currently no regulations in place to manage this activity.
7.1 Characterisation of pressures/ threats	A28: Agricultural activities generating marine pollution- from nutrient enrichment which can cause macroalgal blooms causing the underlying habitat to become anoxic are considered a high risk pressure and threat for mudflats and sandflats in Northern Ireland. Mudflats and Sandflats in Foyle, Larne, Strangford and Dundrum are located adjacent to areas of intensive agriculture.
7.1 Characterisation of pressures/ threats	F04: Construction or modification of commercial / industrial infrastructure in existing commercial / industrial areas- Three of NI's major port and harbours have large areas of mudflats adjacent to them. Expansion plans of the Harbour area onto the mudflats must be therefore be considered giving this feature has a medium vulnerablity to pressures associated with this activity.
7.1 Characterisation of pressures/ threats	F08- Modification of Coastline for UWWT infrastructure, repair of sea walls, defences, coastal roads & railways. Risk of damage from these activities was assessed as medium threat for this Annex I feature

7.1 Characterisation of pressures/ threats	F22 & F23: Marine Litter from Industrial, Commercial, Residential and Recreational Activities- Marine litter is monitored and reported through a number of programmes, as part of the Bathing Water programme, additional information gathered on scientific research Surveys, Departmental sponsered shoreline and beach cleans. This information has shown that NI mudflats and sandflats are at medium risk from this pressure.
7.1 Characterisation of pressures/ threats	G19: Other impacts from marine aquaculture, including infrastructure- which includes the removal of boulders during site clearing, compaction of sediment from vehicles driving back and forth to trestle sites, movement of trestles, siltation and fouling of trestles leading to damage of sediment underneath. The risk from this pressure was considered to be medium.
7.1 Characterisation of pressures/ threats	I02: Other invasive alien species (other than species of Union concern)- A number of non-native species have been recorded within NIs estuaries apart from the Pacific oyster (Crassostrea gigas referred to in G17) and swarths of the non-native Spartina anglica which has been reported in Foyle, Strangford, Murlough and Carlingford. The Annex I habitat is at medium risk from this pressure.
7.1 Characterisation of pressures/ threats	F20: Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution)- MarESA showed that Mudflat-Sandflat habitats have a medium vulnerability to pressures associated with this activity such as nutrient enrichment from sewage outfalls.
8.5 List of main conservation measures	CA13: Reduce/eliminate marine pollution from agricultural activities- The Annex I Mudflats and Sandflats fall within Nitrate Sensitive area which have targeted management measures to reduce the impact from agricultural waste and therefore reduce nutrient enrichment in these areas under the Water Framework Directive. In addition a River Basin Catchment investigation was instigated in Dundrum Bay as a result of elevated levels of bacteria in nearby shellfish. Zostera beds were also noted to have declined significantly in the area which could also be attributed to nutrient enrichement from either agriculture or sewage inputs. Upgrade of the nearby Wastewater treatment works were recommended from the report and are now being added to the programme of works for the WWTW operators (Northern Ireland Water).
8.5 List of main conservation measures	CE01: Reduce impact of transport operation and infrastructure- A number of the Mudflats -Sandflats are adjacent to a navigation channel which must be maintained through dredging operations. Dredging and the disposal of the dredge material is a licenced activity for which DAERA is the licensing authority under Marine and Coastal Access Act.
8.5 List of main conservation measures	CF07: Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities- Under the Water (Northern Ireland) Order 1999, the discharge of trade or sewage waste to any waterway, or any water contained underground requires the consent of the Department of Agriculture, Environment and Rural Affairs. This includes waste from any commercial, industrial or domestic premises not connected to the public sewer.

8.5 List of main conservation measures	CF08: Reduce/eliminate marine contamination with litter- At NI level the Department (DAERA) is are addressing the problem of marine litter through the NI Marine litter Strategy. The Strategy's goals are to tackle marine litter through measures to reduce the amount of litter entering the sea and removing some of the litter pollution already there. Measures to reduce litter entering the sea are grouped around the following: 1. Awareness raising - these measures include campaigns such as Live Here Love Here or Fishing for Litter part sponsored by DAERA; 2. Enforcement of Statutory Deterrents - eg enforcing the Litter (Northern Ireland) Order 1994 (as amended) which makes it an offence to drop litter and waste legislation; 3. Data gathering and reports - eg through the Marine Litter Survey delivered by KNIB sponsored by DAERA, Coastwatch - all island survey and report led by Ulster Wildlife in NI, and the Marine Conservation - Great British Beachclean in September. These also feed into awareness raising and removing litter. 4. Coastal infrastructure - having appropriate sewage treatment works and litter bins eg compactor bins. Measures to remove litter already in the sea are primarily beach cleans. These are facilitated by local charities such as KNIB, Ulster Wildlife, volunteer groups eg Love Your Lough, divers and kayakers.In addition DAERA intends bringing forward the draft Environmental Protection (Microbeads) Regulations 2018 to ban the manufacture and sale of cosmetic products containing plastic microbeads.
8.5 List of main conservation measures	CF12: Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities- All activities which have the potential to impact the seabed including the foreshore area are subject to marine licence. If an application for work is in an SAC a Habitat Regulation Assessment will be required and if necessary an EIA to assess the likely risks from this activity to the designated habitat. The Marine licencing process is managed by DAERAs Marine Licencing team under the Marine and Coastal Access Act. In addition all planning applications down to the low water mark (ie covering the Intertidal Area) within ASSIs are subject to review under the Evironment Order. This is considered mitigation against F08 pressure.
8.5 List of main conservation measures	CG15: Other measures related to exploitation of species - DAERA is currently developing legislation to introduce strategic management of unregulated harvesting & gathering of shellfish in intertidal areas through fisheries regulations through seasonal closures and closed areas.
8.5 List of main conservation measures	CI03: Management, control or eradication of other invasive alien species- There is a Spartina eradication programme in place which uses a herbicide under licence and specific conditions to eradicate swarths of Spartina anglica, an invasive species, which includes Strangford Lough and Murlough SACs which both have Mudflats and Sandflats as designated features. The Department also runs an aquatic invasive species Surveillance monitoring programme with regular checks of harbours & marina's. In addition Fisheries Officers also check aquaculture imports and movement of stock between sea loughs for the presence of non-native species.
9.1 Future prospects of parameters	The range, area and structure and function are considered to be Overall Stable due to the management measures and surveillance programmes in place to mitigate against and monitor the pressures and threats identified for this feature.