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

Conservation status assessment for the habitat:

H1130 - Estuaries

UNITED KINGDOM

IMPORTANT NOTE - PLEASE READ

- The information in this document represents 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.
- It is based on supporting information provided by the geographically-relevant Statutory Nature Conservation Bodies, which is documented separately.
- The 2019 Article 17 UK Approach document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Maps showing the distribution and range of the habitat are included (where available).
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the UK assessments. Further underpinning explanatory notes are available in the related country-level and/or UK offshore-level reports.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; and/or (ii) completion of the field was not obligatory.
- The UK-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**
1.2 Habitat code	**1130 - Estuaries**

2. Maps

2.1 Year or period	1988-2018
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	England ABP Marine Environment Research Ltd. 2011. River Hamble Maintenance Dredge Plan. Abrehart, T. R. and Jackson, R. L. 2013. An NVC of the Alde-Ore Estuary SSSI, Suffolk. An ecological survey including flora and fauna observations undertaken for Natural England by Abrehart Ecology.: Abrehart Ecology. ADAS Ltd. 2015. Solent Harbours Nitrogen Management Investigation: ADAS Ltd. ADAS Ltd. 2015. Solent Harbours Nitrogen Management Investigation: ADAS Ltd. Ager, J., Hebert, R., Pope, C. and Riley, A. 1999. Spartina maritima in the Solent Current status and distribution with special reference to the population at Newtown Harbour, IOW. Medina Valley Centre for Natural England: Medina Valley Centre for Natural England. AHTI Ltd., 2016, River Hamble Soft Sediment Habitat Retention Feasability Study. Report to River Hamble Harbour Authority, AHTI Ltd. Report to River Hamble Harbour Authority Alde and Ore Estuary Partnership (AOEP). 2014. Draft Estuary Plan [Online]. [Accessed 22/04/2015]. http://www.suffolkcoastandheaths.org/estuaries/alde-and-ore-estuary-partnership/2014-draft-estuary-plan/ Allen, J. H. and Proctor, N. V. 2003. Monitoring Subtidal Sandbanks of the Isles of Scilly and the Fal and Helford Special Areas of Conservation: Institute of Estuarine and Coastal Studies (ICES), University of Hull. Antill, R., Thomas, P. and Linnane, K. 2017. Natural England baseline intertidal and infralittoral rock survey of the Tweed Estuary SAC: APEM Scientific Report for Natural England. Associated British Ports (ABP). 2011. Environmental Statement for Port of Southampton: Berth 201 / 202 Works updated by Further Information Associated British Ports. Bailey, B. and Pearson, A. W. 2007. Change detection mapping and analysis of salt marsh areas of central southern England from Hurst Castle spit to Pagham Harbour. Journal of Coastal Conservation, 23, 1549-1564. Ball, J., Hill, C., Thomas, N., Kenny, A., Collins, K., Mallinson, J., Sheader, M. and Jenson, A. 2000. Solent and South Wight Mapping of Intertidal and Subtidal Marine cSACs: GeoData Institute. Bealey, C., Cox, J. and Markham, A. 2006. Survey of saltmarsh and coastal

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4. Range

4.1 Surface area (in km²)	3292	
4.2 Short-term trend Period	2007-2018	
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	Based mainly on expert opinion with very limited data	
4.6 Long-term trend Period		
4.7 Long-term trend Direction		
4.8 Long-term trend Magnitude	a) Minimum	b) Maximum

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4.9 Long-term trend Method used		
4.10 Favourable reference range	a) Area (km²)	3292
	b) Operator	
	c) Unknown	No
	d) Method	The favourable reference range of estuaries is likely to remain the same as the actual range given the physiographic nature of the feature. Therefore, the current range of estuaries is, considered to be the favourable reference range. The known range has increased due to improved knowledge and this has led a change in the Favourable reference range.
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	4.1 - Estuaries are physiographic features and so their range is determined primarily by geomorphological and hydrographic processes occurring over geological time-scales and is not related to biological communities or processes supported by communities. Therefore, the range was considered equivalent to the surface area of the habitat. 4.3- Estuaries are physiographic features and so their range is determined primarily by geomorphological and hydrographic processes occurring over geological time-scales and is not related to biological communities or processes supported by communities. Therefore, the range was considered equivalent to the surface area of the habitat. While the surface area of some of these individual habitats may have declined due to localised pressures, the geographic spread and distribution of features is not thought to have been reduced. 4.11- As a result of improved mapping of the habitat, the surface area of range in UK Estuaries is larger than the figure that was reported in 2013. For more information on the approach taken please refer to the JNCC website for the 2019 UK Approach Document.	

5. Area covered by habitat

5.1 Year or period	1988-2018			
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value	3292
5.3 Type of estimate	Best estimate			
5.4 Surface area Method used	Based mainly on extrapolation from a limited amount of 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)	3292		
	b) Operator			

	c) Unknown	No
	d) Method	There is no evidence that the current area of estuaries is not viable and therefore it is considered the favourable reference area. The known area has increased due to improved knowledge and this has led a change in the favourable reference area.
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	5.1 - The data sources used to produce the surface area map ranged from 1988 to 2016. 5.4- The 2013 UK Article 17 surface area data for Annex I Estuaries was revised at a UK level by the JNCC following updates submitted by the UK Country Agencies. For further details see JNCC website (JNCC 2018a) and the 2019 UK Approach Document. 5.6 - Expert judgement was used to determine the short-term trend direction at the UK-level. The largest proportion of this resource is in England inshore waters. Here, the overall trend of the habitat is uncertain, however, there have been reported losses due to sea-level rise, realignment and coastal developments. The trend is reported as stable in Scotland, Wales and Northern Ireland. 5.14- As a result of improved mapping of the habitat, the surface area UK Estuaries is larger than the figure reported in 2013. For more information on the approach taken please refer to the JNCC website for the 2019 UK Approach Document.	

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 1672.55454	Maximum 1672.55454	
	b) Area in not-good condition (km²)	Minimum 816.2881	Maximum 816.2881	
	c) Area where condition is not known (km²)	Minimum 803.4869	Maximum 803.4869	
6.2 Condition of habitat Method used	Based mainly on extrapolation from a limited amount of 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	Decreasing (-)			
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	6.1-The area of habitat in 'good' (favourable) 'not good (unfavourable) and unknown condition was assessed in each of the four countries and the results were summed. 25% of the habitat is in unfavourable (not good) condition, 51% of the habitat is in favourable (good condition) and 24% of the habitat is in unknown condition. The structure and functions conservation status is, therefore, unfavourable-bad, it was also unfavourable-bad in 2013. 6.4-The short-term trend of habitat in good condition was assessed by the four countries and the results were aggregated (see 2019 UK Approach Document).			

England has the largest proportion of UK Estuaries and reported a decreasing short-term trend as a result of coastal squeeze. The short-term trend was also decreasing in 2013.
The approach taken to assess habitat condition and trends in condition is outlined on the JNCC website in the 2019 UK Approach Document and in country-level reporting information.

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Agricultural activities generating marine pollution (A28)	H
Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (E03)	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
Deposition and treatment of waste/garbage from commercial and industrial facilities (F10)	M
Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F22)	M
Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (G03)	H
Other invasive alien species (other then species of Union concern) (I02)	M
Mixed source marine water pollution (marine and coastal) (J02)	H
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	M
Sea-level and wave exposure changes due to climate change (N04)	M

Threat	Ranking
Agricultural activities generating marine pollution (A28)	H
Wind, wave and tidal power, including infrastructure (D01)	M
Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (E03)	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
Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam) (F22)	M

Other invasive alien species (other then species of Union concern) (I02)	H
Mixed source marine water pollution (marine and coastal) (J02)	M
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	H
Sea-level and wave exposure changes due to climate change (N04)	H
Change of species distribution (natural newcomers) due to climate change (N08)	M

7.2 Sources of information

7.3 Additional information

There were often more than ten pressures, threats (of high or medium importance), or conservation measures identified, and an aggregation method was used to identify the top ten of each. As a result the top ten lists for the habitat may not correspond with each other. For example, a pressure may be in the reported top ten list, but the corresponding conservation measure might not appear in the top ten list of conservation measures. This does not mean that the measure is not in place, but instead it is in the extended list of measures that did not make the top ten but are detailed in the additional information section.
The following pressures were also identified as medium importance but a maximum of ten could be reported: G11-Illegal harvesting, collecting and taking, A23-Use of other pest control methods in agriculture (excluding tillage), A09-Intensive grazing or overgrazing by livestock, D05-Development and operation of energy production plants (including bioenergy plants, fossil and nuclear energy plants), F20-Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution), H08-Other human intrusions and disturbance not mentioned above, F21-Industrial or commercial activities and structures generating marine pollution (excluding marine macro- and micro-particular pollution), F23-Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam), F28-Modification of flooding regimes, flood protection for residential or recreational development, G01-Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species.
The following threats were also identified as medium importance but a maximum of ten could be reported: D05-Development and operation of energy production plants (including bioenergy plants, fossil and nuclear energy plants),E07-Land, water and air transport activities generating marine pollution,G11-Illegal harvesting, collecting and taking,A23-Use of other pest control methods in agriculture (excluding tillage),A09-Intensive grazing or overgrazing by livestock,F20-Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution),F23-Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, Styrofoam),E02-Shipping lanes and ferry lanes transport operations,F21-Industrial or commercial activities and structures generating marine pollution (excluding marine macro- and micro-particular pollution),F28-Modification of flooding regimes, flood protection for residential or recreational development,G03-Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor

habitats,G04-Marine plant harvesting,N05-Change of habitat location, size, and / or quality due to climate change,G01-Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, F10-Deposition and treatment of waste/garbage from commercial and industrial facilities
For further details on the approach taken for this section please refer to the JNCC website in the 2019 UK Approach Document and country-level reporting 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		Restore the habitat of the species (related to '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		

Reduce/eliminate marine pollution from agricultural activities (CA13)
Adapt/manage renewable energy installation, facilities and operation (CC03)
Reduce impact of transport operation and infrastructure (CE01)
Reduce impact of outdoor sports, leisure and recreational activities (CF03)
Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities (CF07)
Reduce/eliminate marine contamination with litter (CF08)
Manage changes in hydrological and coastal systems and regimes for construction and development (CF10)
Management of professional/commercial fishing (including shellfish and seaweed harvesting) (CG01)
Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants (CG02)
Early detection and rapid eradication of invasive alien species of Union concern (CI01)

8.6 Additional information	There were often more than ten pressures, threats (of high or medium importance), or conservation measures identified, and an aggregation method was used to identify the top ten of each. As a result the top ten lists for the habitat may not correspond with each other. For example, a pressure may be in the reported top ten list, but the corresponding conservation measure might not appear in the top ten list of conservation measures. This does not mean that the measure is not in place, but instead it is in the extended list of measures that did not make the top ten but are detailed in the additional information section. The following conservation measures were also identified, however, a maximum of 10 could be listed: CA05- Adapt mowing, grazing and other equivalent agricultural activities , CF02- Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructure, operations and activities, CJ01- Reduce impact of mixed source pollution , CF01- Manage conversion of land for construction and development of infrastructure, CN02- Implement climate change adaptation measures, CI03- Management, control or eradication of other invasive alien species, CG04 - Control/eradication of illegal killing, fishing and harvesting. For further details on the approach taken for this section please refer to JNCC

website for the 2019 UK Approach Document and country-level reporting information.

9. Future prospects

9.1 Future prospects of parameters	a) Range	Good
	b) Area	Poor
	c) Structure and functions	Bad
9.2 Additional information	Future trends for each parameter were selected by the four countries and then aggregated to give a future trend for the UK (see 2019 UK Approach Document). Table 32 in the EU Guidelines was used to bring the future trend and conservation status of each parameter together to conclude on future prospects. 9.1a)- Future prospects are bad because the future trend is very negative and the conclusion for the parameter is Unfavourable-bad. Future prospects were also bad in 2013. 9.1b)-Future prospects are poor because the future trend is negative and current conservation status of the parameter is unknown. Future prospects were unknown in 2013. 9.1c)- Future prospects are bad because the future trend is very negative and current conservation status of the parameter is unfavourable-bad. Future prospects were also bad in 2013. For further details on the approach taken to identify future prospects please refer to JNCC website for the 2019 UK Approach Document and country-level reporting information.	

10. Conclusions

10.1. Range	Favourable (FV)
10.2. Area	Unknown (XX)
10.3. Specific structure and functions (incl. typical species)	Unfavourable - Bad (U2)
10.4. Future prospects	Unfavourable - Bad (U2)
10.5 Overall assessment of Conservation Status	Unfavourable - Bad (U2)
10.6 Overall trend in Conservation Status	Unknown (x)
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 Use of different method The change is mainly due to: Use of different method
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 b) Maximum c) Best single value 2298
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	Decreasing (-)
11.5 Short-term trend of habitat area in good condition within network Method used	Based mainly on expert opinion with very limited data
11.6 Additional information	11.3- The estuaries surface area map was intersected with all Natura 2000 sites that contain qualifying marine habitats or species (JNCC, 2018b). The cut-off used for SAC designations was Tranche 56 in November 2017. For further details on approaches taken in this section please refer to JNCC website for the 2019 UK Approach Document and country-level reporting information.

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	

Distribution Map

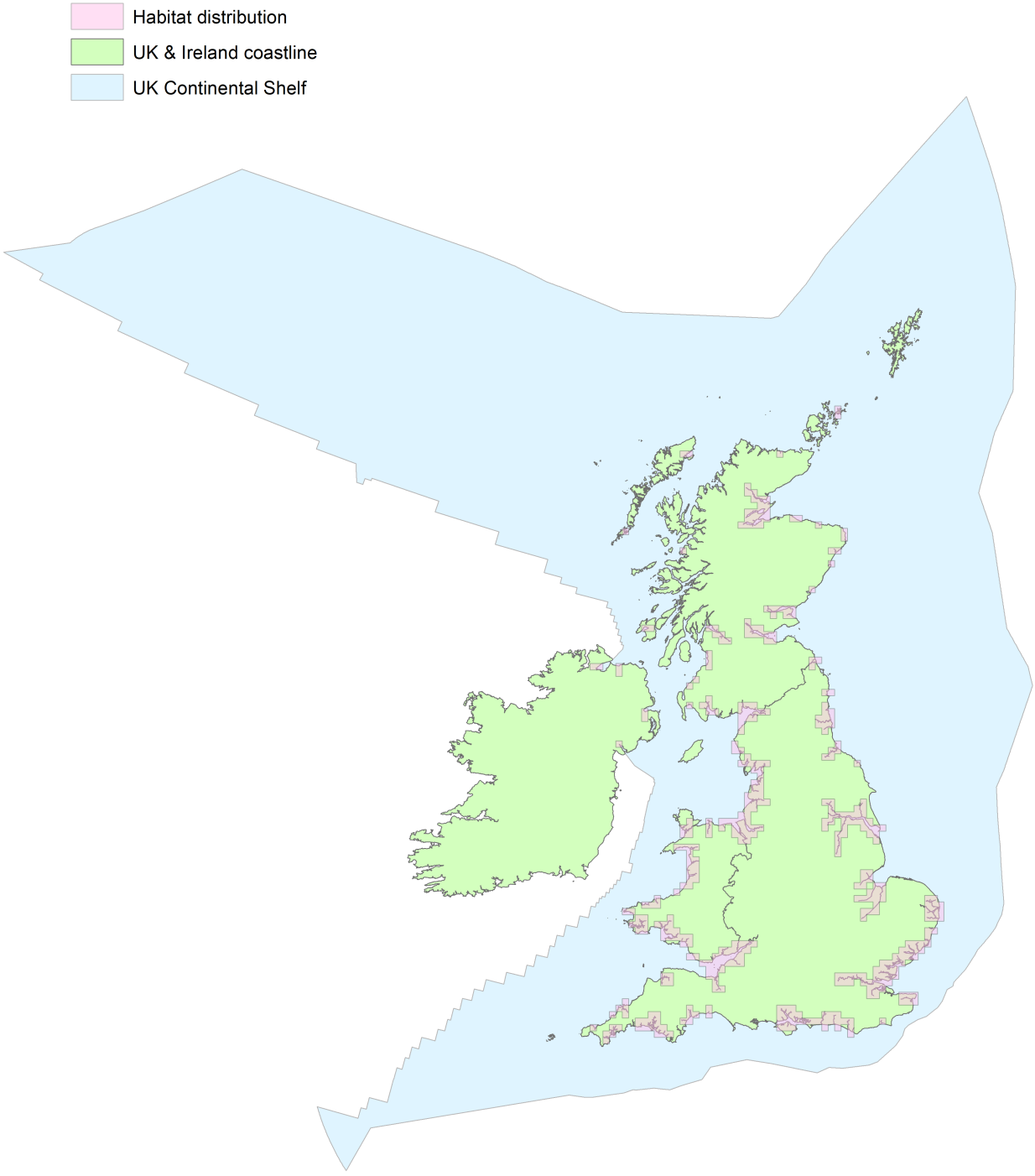

Figure 1: UK distribution map for H1130 - Estuaries.

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

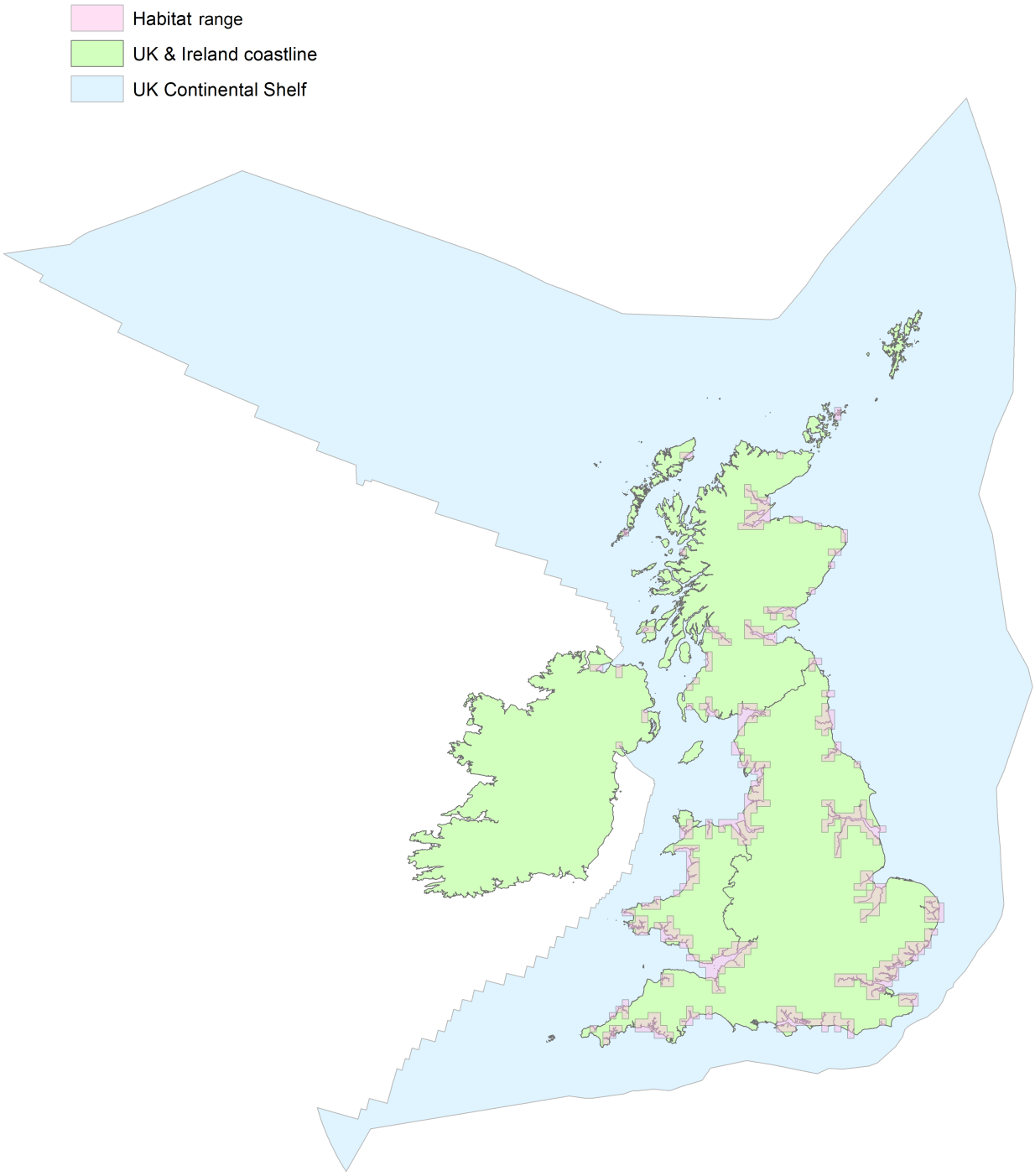

Figure 2: UK range map for H1130 - Estuaries.

Estuaries are physiographic features and so their range is determined primarily by geomorphological and hydrographic processes occurring over geological time-scales and is not related to biological communities or processes supported by communities. Therefore, the range was considered equivalent to the surface area (distribution) of the habitat.

Explanatory Notes

Habitat code: 1130

Field label	Note
2.2 Distribution map	The data sources used to produce this map ranged from 1988 to 2018
2.3 Distribution map; Method used	The surface area map was gridded to create the distribution map. The 2013 UK Article 17 area data for Annex I Estuaries were revised at a UK level by the JNCC following updates submitted by the UK Country Agencies. For further details see JNCC website (JNCC 2018a).

Habitat code: 1130 Region code: MATL

Field label	Note
4.1 Surface area	Estuaries are physiographic features and so their range is determined primarily by geomorphological and hydrographic processes occurring over geological time-scales and is not related to biological communities or processes supported by communities. Therefore, the range was considered equivalent to the surface area of the habitat.
4.3 Short term trend; Direction	Estuaries are physiographic features and so their range is determined primarily by geomorphological and hydrographic processes occurring over geological time-scales and is not related to biological communities or processes supported by communities. While the surface area of some of these individual habitats may have declined due to localised pressures, the geographic spread and distribution of features is not thought to have been reduced.
4.5 Short term trend; Method used	See 4.3
5.1 Year or period	The data sources used to produce the surface area map ranged from 1988 to 2016.
5.4 Surface area; Method used	The 2013 UK Article 17 surface area data for Annex I Estuaries was revised at a UK level by the JNCC following updates submitted by the UK Country Agencies. For further details see JNCC website (JNCC 2018a).
5.6 Short term trend; Direction	Expert judgement was used to determine the short-term trend direction at the UK-level. The largest proportion of this resource is in England inshore waters. Here, the overall trend of the habitat is uncertain, however, there have been reported losses due to sea-level rise, realignment and coastal developments. The trend is reported as stable in Scotland, Wales and Northern Ireland.
5.8 Short term trend; Method used	See 5.6
5.14 Change and reason for change in surface area	As a result of improved mapping of the habitat, the surface area UK Estuaries is larger than the figure reported in 2013.
6.1 Condition of habitat	The area of habitat in 'good' (favourable),'not good' (unfavourable) and unknown condition was assessed in each of the four countries and the results were summed. 25% of the habitat is thought to be in unfavourable (not good) condition, 51% of the habitat is thought to be in favourable (good condition) and 24% of the habitat is in unknown condition. The structure and functions conservation status is, therefore, unfavourable-bad. It was also unfavourable-bad in 2013.
6.4 Short term trend of habitat area in good condition; Direction	The short-term trend of habitat in good condition was assessed by the four countries and the results were aggregated (see 2019 UK Approach Document). England has the largest proportion of UK Estuaries and reported a decreasing short-term trend as a result of coastal squeeze. The short-term trend was also decreasing in 2013.

9.1 Future prospects of parameters	Future trends for each parameter were selected by the four countries and then aggregated to give a future trend for the UK (see 2019 UK Approach Document). Table 32 in the EU Guidelines was used to bring the future trend and conservation status of each parameter together to conclude on future prospects.
9.1a Future prospects of parameters - Range	Future prospects are bad because the future trend is very negative and the conclusion for the parameter is Unfavourable-bad. Future prospects were also bad in 2013.
9.1b Future prospects of parameters - Area	Future prospects are poor because the future trend is negative and current conservation status of the parameter is unknown. Future prospects were unknown in 2013.
9.1c Future prospects of parameters - Structure and functions	Future prospects are bad because the future trend is very negative and current conservation status of the parameter is unfavourable-bad. Future prospects were also bad in 2013.
10.8 Additional information	10.1-Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable; and (ii) the current Range surface area is approximately equal to the Favourable Reference Range. 10.2-Conclusion on Area covered by habitat reached because: (i) the short-term trend direction in Area is uncertain; and (ii) the current Area is approximately equal to the Favourable Reference Area. 10.3-Conclusion on Structure and functions reached because 25% of the habitat is in unfavourable (not good) condition. 51% of the habitat is in favourable (good condition) and 24% of the habitat is in unknown condition. 10.4-Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Area covered by habitat are poor; and (iii) the Future prospects for Structure and functions are bad. 10.5-Overall assessment of Conservation Status is Unfavourable-bad because two of the conclusions are Unfavourable-bad. 10.6-Overall trend in Conservation Status is based on the combination of the short-term trends for Range - stable, Area covered by habitat - uncertain, and Structure and functions - decreasing. 10.7-The Overall Trend in Conservation Status has changed between 2013 (declining) and 2019 (unknown). This is a methodological change because of the removal of the Future Prospects trend from the 2019 method used to assess Overall Trend. 2013: Range = stable, Area = unknown, S&F= decreasing, FP = unknown. 2019: Range=stable, Area = uncertain, S&F = decreasing, [FP not included]. For detailed methods see the JNCC website for 2019 UK Approach Document and country-level reporting information.
11.3 Surface area of the habitat type inside the network; Method used	The estuaries surface area map was intersected with all Natura 2000 sites that contain qualifying marine habitats or species (JNCC, 2018b). The cut-off used for SAC designations was Tranche 56 in November 2017.