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:

H1160 - Large shallow inlets and bays

SCOTLAND

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 (Scotland information only)**
1.2 Habitat code	**1160 - Large shallow inlets and bays**

2. Maps

2.1 Year or period	
2.3 Distribution map	Yes
2.3 Distribution map Method used	
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	Moore, C. G., Harries, D. B., Porter, J. S. and Lyndon, A. R. (2010). The establishment of site condition monitoring of the marine features of Loch Laxford Special Area of Conservation. Scottish Natural Heritage Commissioned Report No. 378, pp 382, http://www.snh.org.uk/pdfs/publications/commissioned_reports/378.pdf Moore, C.G., Cook, R.L., Porter, J.S., Sanderson, W.G., Want, A., Ware, F.J., Howson, C., Kamphausen, L. & Harries, D.B. 2017. 2015 site condition monitoring of marine sedimentary and reef habitats in Loch Laxford SAC. Scottish Natural Heritage Commissioned Report No. 943. pp 109, https://www.nature.scot/sites/default/files/2017-12/Publication 2017 - SNH Commissioned Report 943 - 2015 Site Condition monitoring of marine sedimentary and reef habitats in Loch Laxford SAC.pdf Allen, C., Axelsson, M., Doran, J., & Dewey, S. (2014). Survey of marine features within the Luce Bay and Sands Special Area of Conservation (SAC). Scottish Natural Heritage Commissioned Report No 738. pp 233, http://www.snh.org.uk/pdfs/publications/commissioned_reports/738.pdf ERT (Scotland) Ltd (2011) Broadscale mapping of marine features within the Luce Bay and Sands Special Area of Conservaion. Scottish Natural Heritage Commissioned Report No.471. pp 180, http://www.snh.org.uk/pdfs/publications/commissioned_reports/471.pdf Moore, C.G., Harries, D.B., Lyndon, A.R., Mair, J.M., Tulbure, K.W., Saunders, G.R, Grieve, R. & Brash, J. 2016. 2015 site condition monitoring and site check surveys of marine sedimentary and reef habitats in the Loch nam Madadh SAC, Loch nam Madadh SSSI and Loch an Duin SSSI. Scottish Natural Heritage Commissioned Report No. 923. pp161. https://www.nature.scot/sites/default/files/Publication 2016 - SNH Commissioned Report 923 - 2015 site condition monitoring and site check surveys of marine sedimentary and reef habitats in the Loch nam Madadh SAC%2C Loch nam Madadh SSSI and Loch an Duin SSSI.pdf Bates, C. R., Moore, C. G., Harries, D. B., Austin, W. and Mair, J. (2004). Broad scale mapping of sublittoral habitats in Loch Laxford, Scotland Scottish Natural Heritage Commissioned Report No. 004 (ROAME No. F01AA401A) www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=421. Mair, J.M., Lyndon, A.R., Moore, C.G. and Sotheron, I.S. Site Condition

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Monitoring of the Sullom Voe Special Area of Conservation. Scottish Natural Heritage Commissioned Report No. 350 www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1504
Moore, C. G., Harries, D. B., Porter, J. S. and Lyndon, A. R. (2010). The establishment of site condition monitoring of the marine features of Loch Laxford Special Area of Conservation. Scottish Natural Heritage Commissioned Report No. 378 (ROAME No. F05AC701) www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1681.
Moore, C.G., Saunders, G., Mair, J.M. and Lyndon, A.R. (2006). The inauguration of site condition monitoring of marine features of Loch Maddy Special Area of conservation. Scottish Natural Heritage Commissioned Report No. 152 (ROAME No. F02AA409) www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=576.
Bates, C. R., Moore, C. G., Harries, D. B., Austin, W. and Mair, J. (2004). Broad scale mapping of sublittoral habitats in Loch Laxford, Scotland. Scottish Natural Heritage Commissioned Report No. 004 (ROAME No. F01AA401A) www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=421.
Mair, J.M., Lyndon, A.R., Moore, C.G. and Sotheron, I.S. Site Condition Monitoring of the Sullom Voe Special Area of Conservation. Scottish Natural Heritage Commissioned Report No. 350 www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1504
Baxter, J.M., Boyd, I.L., Cox, M., Donald, A.E., Malcolm, S.J., Miles, H., Miller, B., Moffat, C.F., Editors. (2011).Scotland's Marine Atlas: information for the national marine plan. Marine Scotland, Edinburgh. Available from: http://www.gov.scot/Topics/marine/science/atlas
Marine Scotland Consultation Webpage for Priority Marine Feature Consultation https://consult.gov.scot/marine-scotland/priority-marine-features]

4. Range

4.1 Surface area (in km²)	4205.15	
4.2 Short-term trend Period		
4.3 Short-term trend Direction		
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	
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

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5.2 Surface area (in km²)	a) Minimum 4205.15	b) Maximum 4205.15	c) Best single value 4205.15
5.3 Type of estimate			
5.4 Surface area Method used			
5.5 Short-term trend Period			
5.6 Short-term trend Direction			
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used			
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	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 3318.18919	Maximum 3318.18919
	b) Area in not-good condition (km²)	Minimum 240.51902	Maximum 240.51902
	c) Area where condition is not known (km²)	Minimum 646.44562	Maximum 646.44562
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	Stable (0)		
6.5 Short-term trend of habitat area in good condition Method used	Based mainly on extrapolation from a limited amount of 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
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)	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
Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (G03)	M
Modification of coastal conditions for marine aquaculture (G15)	M
Marine aquaculture generating marine pollution (G16)	M

Threat	Ranking
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)	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)	H
Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (G03)	H
Modification of coastal conditions for marine aquaculture (G15)	M
Marine aquaculture generating marine pollution (G16)	H
Other invasive alien species (other then species of Union concern) (I02)	M
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
Change of habitat location, size, and / or quality due to climate change (N05)	M
Change of species distribution (natural newcomers) due to climate change (N08)	M

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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		

Management of professional/commercial fishing (including shellfish and seaweed harvesting) (CG01)

Reduce/eliminate marine pollution from marine aquaculture (CG08)

Other measures to reduce impacts from marine aquaculture infrastructures and operation (CG09)

Manage changes in coastal conditions for marine aquaculture (CG07)

Implement climate change adaptation measures (CN02)

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

8.6 Additional information

Conservation measures operating now and into the future
For SACs conservation objectives, information on pressures and threats, and details of the habitats and species are contained within the Regulation 33 packages.
For SACs licensable activities e.g. aquaculture, renewable developments, oil and gas exploration and development, coastal developments, activities associated with shipping/vessels e.g. dredging, anchorage, moorings military activities are subject to Habitiats Regulations Appraisal in Scotland which considers whether a particular plan or project (activities) will cause a likely significant effect on the habitat and result in an adverse effect on site integrity. If the tests of the HRA are not met then the development normally will not be allowed to continue unless suitable mitigation can be undertaken.
Fisheries orders have been put in place for the following sites as of 2016 which protect the large shallow inlet and bays (and other features where appropriate) from fishing methods to which they are sensitive (mainly mobile fishing gear e.g. dredging): Luce Bay and Sands SAC, Loch Laxford SAC. In Loch nan Madadh the Inshore Fishing (Prohibition of Fishing for Cockles)(Western Isles)(Scotland) Order 2009 applies.
Sullom Voe - Linked with Yell Sound Coast SAC. Shetland regulating Order, SSMEI Marine Spatial Plan, Area covered by Sullom Voe Harbour Order, ZCC policy , Soteag, SVT management plan, Sullom Voe Oil spill contingency plan.
Outside of MPAs impacts are considered on Priority Marine Features (PMFs) (https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/priority-marine-features-scotlands-seas) , of which there are some that

include biotopes that could be considered as components of the Annex I large shallow inlet and bay habitat e.g. maerl beds, seagrass beds, burrowed mud, kelp and seaweed communities on sublittoral sediment, kelp beds, tide swept coarse sands with burrowing bivalves. These features are considered through Environmental Impact Assessments. Policy GEN 9 Natural Heritage in Scotland's National Marine Plan (Marine Scotland 2015) requires that development and use of the marine environment must not result in a significant impact on the national status of PMFs, including these habitats. Regional Marine Management Plans for some regions (Shetland, Clyde) have been developed which seek to identify the location of sensitive PMFs including some associated with large shallow inlets and bays and propose regional marine management policies to limit impacts of activities on these features and site development in more appropriate places.
Conservation measures which will start to operate during the next reporting period -
Fisheries management measures for Loch nam Madadh SAC for fishing gear that the habitat is sensitive to will be consulted on in 2018 with an aim to implement these in 2019.
Currently underway (as of July 2018) is a consultation lead by Marine Scotland to consider where there is a need to consider additional management for bottom contacting mobile fishing gears to ensure there is no significant impact on the national status of the most sensitive habitat PMFs within the 6 nautical mile (NM) limit. This specifically deals with the location of these sensitive habitats outside of Marine Protected Areas including SACs. See https://consult.gov.scot/marine-scotland/priority-marine-features/
Some of the feature being considered are found within LSIB e.g. maerl beds, seagrass beds, maerl or coarse shell gravel with burrowing sea cucumbers, blue mussel beds. Therefore if measures go ahead to protect these features outside of the current MPAs in Scotland then this could offer additional protected to some locations within other LSIB outside the MPAs.

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	1871.65834
	b) Maximum	1871.65834
	c) Best single value	1871.65834
11.2 Type of estimate		
11.3 Surface area of the habitat type inside the network Method used		
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

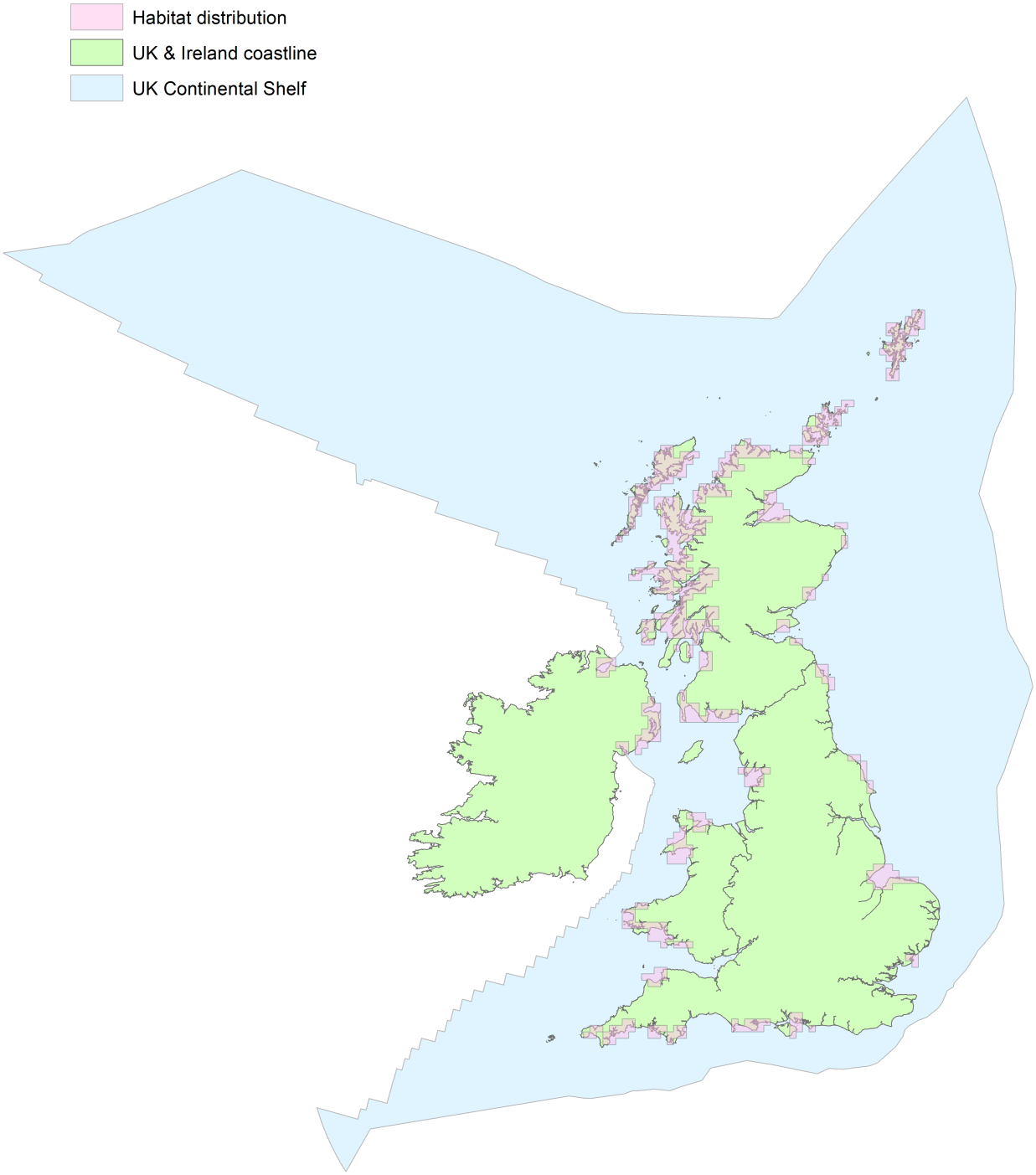

Figure 1: UK distribution map for H1160 - Large shallow inlets and bays.

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

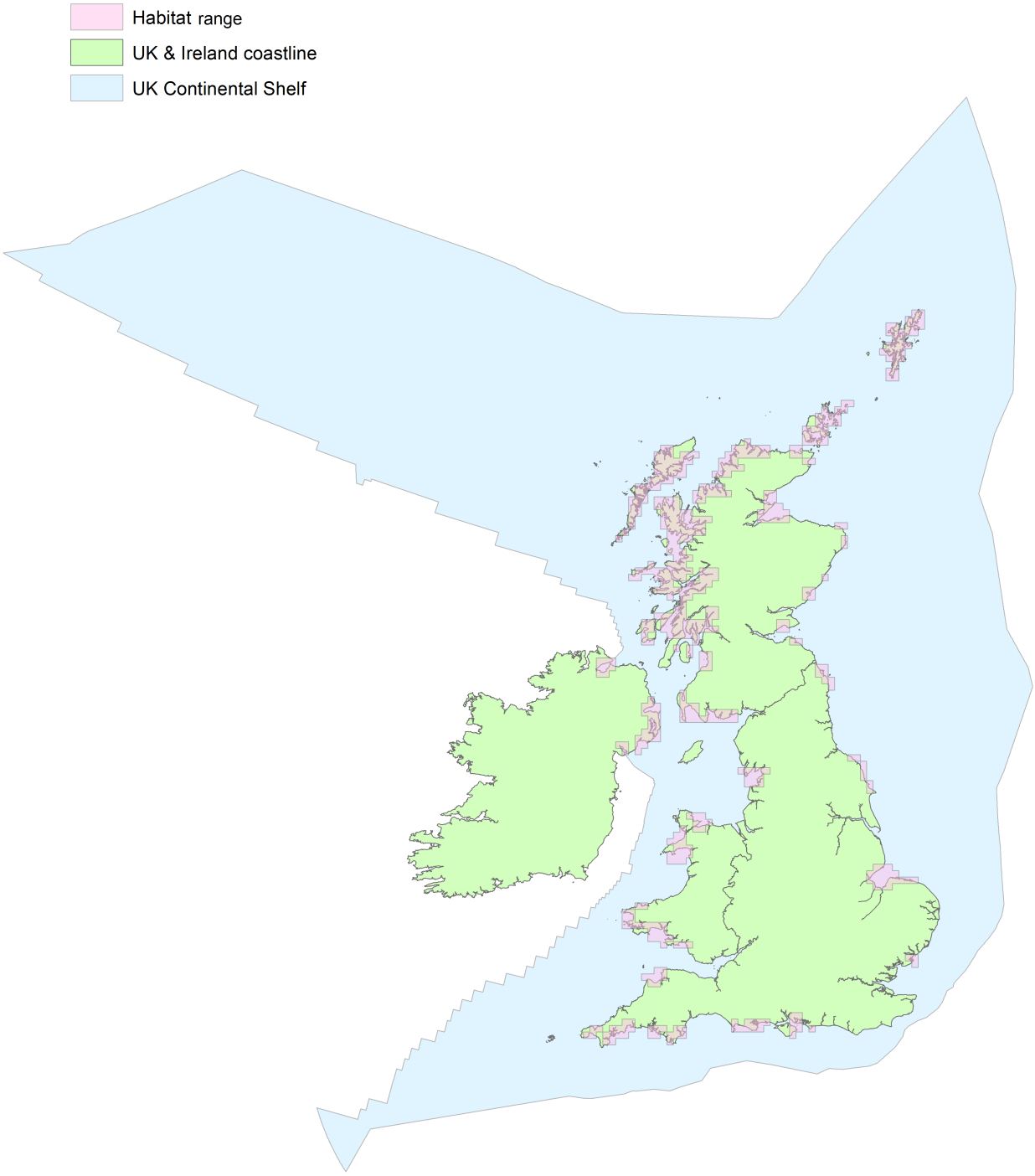

Figure 2: UK range map for H1160 - Large shallow inlets and bays.

Large shallow inlets and bays are physiographic features and so their range is determined primarily by geomorphological and hydrographic processes occurring over long 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.

Explanatory Notes

Habitat code: 1160 Region code: MATL

Field label	Note
6.2 Condition of habitat; Method used	The SACs which have been used to assess the habitat area in good condition (1871.658349km2) (based on favourable SCM) are Loch nam Madadh, Loch Laxford and Sullom Voe and Luce Bay and Sands (based on survey work and knowledge as no formal SCM assessment has been undertaken). There is no indication that the habitat condition between 2007-2018 has been anything apart from favourable and stable. For the rest of the habtiat area within Scotland (2333.495493km2) most of this is classed as being in good condition based on the habitat assessments in Baxter et al. (2011) for all regions apart from Hebrides (549.353743km2) and North Scotland Coast (97.091878km2) where it is unknown (due to a mix of status between habitats being considered from stable with no/few concerns, deteriorating, and unknown trend. Therefore the total area of unknown = 646.445621km2. Also the LSIB in the Clyde outside of protected areas are considered to be in not-good condition based on the status assessments of habtiats in Baxter et al. (2011) = 240.519025km2.
6.5 Short term trend of habitat area in good condition; Method used	Stable has been noted as the short term trend. The areas of habitat in good condition were taken from SACs. There is no indication that there has been any notable deterioration in these SACs over the period 2007-2018 but there has been limited repeat surveys in these sites so therefore this is based mainly on expert opinion with very limited data. However, Loch nam Madadh was assessed as favourable maintained in 2015 (after a previous survey in 2005). Whilst the earlier data is before the trend period requested (therefore a longer period has been considered) there has not been a change in condition in this site. Loch Laxford was assessed as favourable maintained in 2015, assessed after establishment of SCM in 2009.
9.1 Future prospects of parameters	We believe that the range and area of this habitat should remain stable in the future over the next 12 year period because this is a physiographic feature that is unlikely to change in range or extent in Scottish waters unless there was an exceptionally large development, which currently we don't forsee. We propose that there is the potential for a positive trend in structure and functions albeit slight/moderate based on the management measures now in place and that are proposed again both inside and outside protected areas. However, it should be recognised that there are uncertainties in the positive assessment because the new management measures are being targeted on the basis of the existing evidence-base only and it is unclear whether there may be future iterations needed similar to the current PMF review process. It is also clear from recent work (e.g. in Loch Carron on flameshell beds) that human activities will continue to modify examples of our most sensitive PMFs in areas where no survey records currently exist. Therefore there maybe sensitive components of this habitat that we are currently unaware of that are being impacted by human activities. However, as we are now taking very positive steps in relation to the most sensitive components and the key pressures / threats, this has been recognised in the future prospect trends of stable area and positive structure and function.
11.5 Short term trend of habitat area in good condition within the network; Method used	The areas of habitat in good condition were taken from SACs. There is no indication that there has been any notable deterioration in these SACs over the period 2007-2018 but there has been limited repeat surveys in these sites so therefore this is based mainly on expert opinion with very limited data. However, Loch nam Madadh was assessed as favourable maintained in 2015 (after a previous survey in 2005). Whilst the earlier data is before the trend period requested (therefore a longer period has been considered) there has not been a change in condition in this site. Loch Laxford was assessed as favourable maintained in 2015, assessed after establishment of SCM in 2009.