Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A

2019-2024

Conservation status assessment for the habitat:

H1110 - Sandbanks which are slightly covered by sea water all the time

Wales

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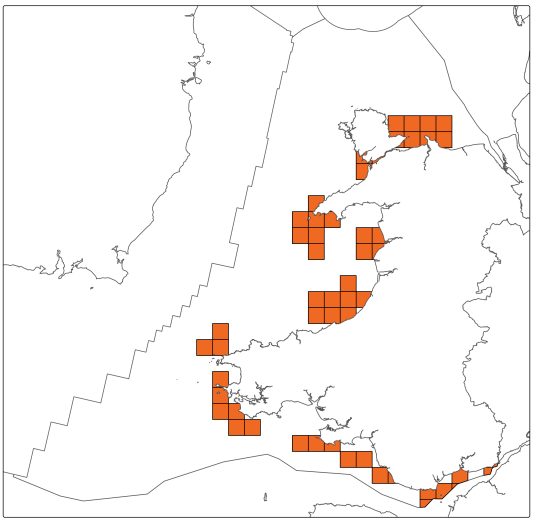
Important note - Please read

- The information in this document represents Wales Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A, for the period 2019-2024.
- It is based on supporting information provided by Natural Resources Wales, which is documented separately.
- The Habitats Regulations reporting 2019-2024 Approach Document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- Maps showing the distribution and range of the habitat are included.
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the assessments. Further underpinning explanatory notes are available in the related country reports.
- 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 not relevant to this habitat (section 11 National Site Network coverage for Annex I habitats).

Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the JNCC website.

Assessment Summary: Sandbanks which are slightly covered by sea water all the time

Distribution Map



Range Map

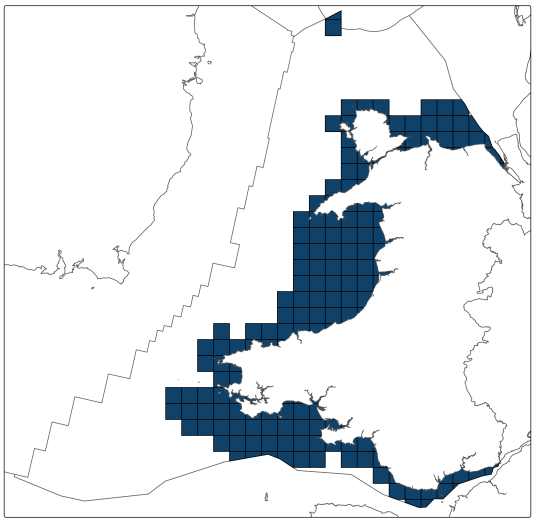


Figure 1: Wales distribution and range map for H1110 - Sandbanks which are slightly covered by sea water all the time. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 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.

Range was calculated by using distribution map with the addition of the area of sloping sandy sediment habitat down to 60m and connected to a sandbank in less than 20m of water. The 60m limit is equivalent to the deepest known sandbank contour in the UK (found at Dogger Bank SAC). Mapped data of the habitat has been created by combining existing data (i.e. sandbanks already mapped within SACs) with an analysis of bathymetric depth, slope and aspect and sediment data across UK waters' and is based on current best available evidence.

Table 1: Table summarising the conservation status for H1110 - Sandbanks which are slightly covered by sea water all the time. Overall conservation status for habitat is based on assessments of range, area covered by habitat, structure and functions, and future prospects.

Overall Conservation Status (see section 10)

Unfavourable-inadequate (U1)

Breakdown of Overall Conservation Status

Range (see section 4)	**Favourable (FV)**
Area covered by habitat (see section 5)	**Favourable (FV)**
Structure and functions (see section 6)	**Unfavourable-inadequate (U1)**
Future prospects (see section 9)	**Unknown (XX)**

List of Sections

National Level

1. General information

1.1 Country	Wales
1.2 Habitat code	H1110 - Sandbanks which are slightly covered by sea water all the time

2. Maps

2.1 Year or period	2000-2024
2.2 Distribution map	Yes
2.3 Distribution map; Method used	Based mainly on extrapolation from a limited amount of data

2.4 Additional information

No additional information

Biogeographical Level

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs	MATL

3.2 Sources of information

See section 13 References

4. Range

4.1 Surface area (km²)	6,318
4.2 Short-term trend; Period	2013-2024
4.3 Short-term trend; Direction	Stable
4.4 Short-term trend; Magnitude	

a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
4.5 Short-term trend; Method used	Based mainly on extrapolation from a limited amount of data
4.6 Long-term trend; Period	
4.7 Long-term trend; Direction	
4.8 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Rate of decrease	
4.9 Long-term trend; Method used	

4.10 Favourable Reference Range (FRR)

a) Area (km²)	
b) Pre-defined increment	Current range is less than 2% smaller than the FRR
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	low

4.11 Change and reason for change in surface area of range

a) Change	Yes
b) Genuine change	No

c) Improved knowledge or more accurate data	No
d) Different method	Yes
e) No information	No
f) Other reason	No
g) Main reason	Use of different method

4.12 Additional information

6318km2 (inshore) + 417km2 (offshore)

5. Area covered by habitat

5.1 Year or period	2000-2024
5.2 Surface area (km²)	
a) Minimum	
b) Maximum	
c) Best single value	637.84
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	2013-2024
5.6 Short-term trend; Direction	Stable
5.7 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
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	Unknown
5.11 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Confidence interval	
d) Rate of decrease	
5.12 Long-term trend; Method used	Based mainly on expert opinion with very limited data
5.13 Favourable Reference Area (FRA)	
a) Area (km²)	
b) Pre-defined increment	Current area is less than 2% smaller than the FRA
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	low

5.14 Change and reason for change in surface area of range

a) Change	No
b) Genuine change	
c) Improved knowledge or more accurate data	
d) Different method	
e) No information	
f) Other reason	
g) Main reason	

5.15 Additional information

No additional information

6. Structure and functions

6.1 Condition of habitat (km²)	
Area in good condition	
ai) Minimum	355.37
aii) Maximum	355.37
Area not in good condition	
bi) Minimum	73.99
bii) Maximum	73.99
Area where condition is unknown	
ci) Minimum	208.48
cii) Maximum	208.48
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	
6.4 Short-term trend of habitat area in good condition; Direction	Unknown
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

Typical species were not used directly in the assessment of conservation status for habitat structure and function as a comprehensive list of typical species for each habitat was not available. However, the status of typical species was considered when the

condition of individual sites was assessed using Common Standards Monitoring Guidance. Common Standards Monitoring (CSM) data was used to assess the area of habitat in ‘good’ and ‘not good’ condition (field 6.1). Species were a component of the attributes assessed under CSM. Therefore, an assessment of species is considered to have formed part of the reporting under field 6.1 which supported the Habitats Structure and Function assessment (field 10.3).

7. Main pressures

7.1 Characterisation of pressures

Table 2: Pressures affecting the habitat, including timing and importance/impact ranking. Pressures are defined as factors acting currently and/or during the reporting period (2019–2024). Rankings are: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Pressure	Timing	Ranking
PG01: Marine fish and shellfish harvesting causing reduction of species/prey populations and disturbance of species (professional)	Ongoing and likely to be in the future	Medium (M)
PF10: Residential, commercial and industrial activities and structures generating marine pollution	Ongoing and likely to be in the future	Medium (M)
PK02: Mixed source marine water pollution (marine and coastal)	Ongoing and likely to be in the future	Medium (M)
PJ01: Temperature changes and extremes due to climate change	Ongoing and likely to be in the future	Medium (M)
PJ10: Change of habitat location, size, and / or quality due to climate change	Only in future	Medium (M)
PJ11: Desynchronisation of biological / ecological processes due to climate change	Only in future	Medium (M)
PJ12: Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change	Only in future	Medium (M)
PJ13: Change of species distribution (natural newcomers) due to climate change	Ongoing and likely to be in the future	Medium (M)

7.2 Sources of information

See section 13 References

7.3 Additional information

No 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, surface area or structure and functions of the habitat type
8.3 Location of the measures taken	Both inside and outside National Site Network
8.4 Response to measures	Long-term results (after 2036)

8.5 List of main conservation measures

Table 3: Key conservation measures addressing current pressures and/or anticipated threats during the next two reporting periods (2025–2036). Measures are ranked by importance/impact: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Conservation measure	Ranking
MC01: Adapt/manage extraction of non-energy resources	High (H)
MC03: Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities)	Medium (M)
MC07: Habitat restoration/creation from resources, exploitation areas or areas damaged due to installation of renewable energy infrastructure	High (H)
MF06: Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities (incl. contamination with litter)	Medium (M)
MJ01: Implement climate change mitigation measures	Medium (M)
MC06: Reduce impact of service corridors and networks	Medium (M)
MG01: Management of professional/commercial fishing, shellfish and seaweed harvesting (incl. restoration of habitats)	High (H)

MI03: Management, control or eradication of other invasive alien species	Medium (M)
MK01: Reduce impact of mixed source pollution	High (H)

8.6 Additional information

Only part of the measures identified have been taken

9. Future prospects

9.1a Future trends of parameters

ai) Range	Overall stable
bi) Area	Unknown
ci) Structure and functions	Unknown

9.1b Future prospects of parameters

aii) Range	Good
bii) Area	Unknown
cii) Structure and functions	Unknown

9.2 Additional information

No additional information

10. Conclusions

10.1 Range	Favourable (FV)
10.2 Area	Favourable (FV)
10.3 Specific structure and functions (incl. typical species)	Unfavourable-inadequate (U1)
10.4 Future prospects	Unknown (XX)
10.5 Overall assessment of Conservation Status	Unfavourable-inadequate (U1)

10.6 Overall trend in Conservation Status	Stable

10.7 Change and reason for change in conservation status

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

10.7 Change and reason for change in conservation status trend

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

10.8 Additional information

No additional information

11. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (km²)

a) Minimum	
b) Maximum	
c) Best single value	438.85
11.2 Type of estimate	Best estimate
11.3 Habitat area inside the network; Method used	Based mainly on extrapolation from a limited amount of data
11.4 Short-term trend of habitat area within the network; Direction	Stable
11.5 Short-term trend of habitat area within the network; Method used	Based mainly on expert opinion with very limited data

11.6 Short-term trend of habitat area in good condition within the network; Direction	Unknown
11.7 Short-term trend of habitat area in good condition within the network; Method used	Based mainly on extrapolation from a limited amount of data

11.8 Additional information

No additional information

12. Complementary information

12.1 Justification of percentage thresholds for trends

No justification information

12.2 Other relevant information

No other relevant information

13. References

Biogeographical and marine regions

3.2 Sources of information

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Main pressures

7.2 Sources of information

No sources of information

14. Explanatory Notes

Field label	Note
2.3: Distribution map; Method used	Datasources: Multibeam, Admiralty Charts, JNCC Astrium Digital Elevation Model
4.1: Surface area	6318km2 (inshore) + 417km2 (offshore) Range was calculated using distribution map with the addition of the area of sloping sandy sediment habitat down to 60m and connected to a sandbank in less than 20m of water. This method was the same as the previous reporting round. Although the method for calculating range is the same as previous reporting round, the sandy sediment layer used is different, resulting in a different range calculation to the previous reporting round. The remaining sections in this report (all other than field 4.1) used the Wales Sandbank Article 17/Regulation 9a Feature layer which is composed of distinct sandbanks ascertained using multibeam, admiralty charts and JNCC Astrium Digital Elevation Model. The range data was calculated by JNCC using a sediment distribution Dataset, supplemented by additional areas of sandy sediment down to 60m that were connected to polygons from the Distribution Dataset. This method was the same as the previous reporting round. However, an updated sandy sediment layer was used as an input, resulting in a different output to that of Area. The remaining sections in this report (all other than field 4.1) used the Wales Sandbank Article 17/Regulation 9a Feature layer which is composed of distinct sandbanks ascertained using multibeam, admiralty charts and JNCC Astrium Digital Elevation Model.
4.3: Short-term trend; Direction	Assessment of range using JNCC derived range calculation: There is no decent time series here on which to base a trend assessment, the trend could be given as

	unknown. However, within Welsh waters, and in light of the range estimation method used it is most likely that the habitat's range value has remained stable over the long-term trend period. Extraction of aggregate from the south Wales banks is unlikely to have affected the range value, and no other significant perturbation that may have affected the range of the banks is known. However, this is provided with a low confidence due to the lack of empirical supporting data. Assessment of Range using NRW sandbanks feature layer: As this feature is defined by topography and substrate type rather than by a specific biological community, its range is determined by geological and/or hydrodynamic processes depending on the type of sandbank (JNCC Website, 2025). The nature of these processes means that the geographic range of this feature is likely to have remained stable in recent geological times.
4.5: Short-term trend; Method used	Some topographical information assessed in collaboration with JNCC (sediment type, elevation/slope/sediment parameters assessed alongside expert judgement).
4.11: Change and reason for change in surface area of range	The surface area of range has changed since the last reporting round (JNCC, 2019) this is assumed to be due to how the range was calculated. However, this could also be due to changes in underlying extent (i.e. Range is also based on current distribution).
5.6: Short-term trend; Direction	The key source of anthropogenic loss for sandbanks in Wales is most likely to be due to aggregate dredging. Subtidal sandbanks which have had aggregate extraction activities since 2013 include Sandbanks in the Severn Estuary. Aggregate activity in the Severn estuary are all assumed to be managed sustainably and are unlikely to represent loss in habitat (dredging activities have all passed HRAs and there is a Regional Seabed Monitoring Plan with ongoing surveys and analysis to ensure no adverse effects). The known areas of loss relate to windfarm development at Constable Bank and dredging at Nash Bank but these occurred over 12 years ago (see

	section 5.10) (Robinson and Green, 2018). Overall, analysis has been undertaken for condition assessment to assess extent, distribution and topography, all related indicators passed for all areas assessed but no in-depth overall assessment of sandbank area has been undertaken in recent years across Wales which reduces overall confidence in the assessment of area (especially outside of SACs and within the Seven SAC where no formal Welsh Condition assessment has been undertaken). Information previously included in this section (JNCC, 2019) has now been updated and included in section 5.10 due to timescale of impacts.
5.9: Long-term trend; Period	Approximately 1990–2024
5.10: Long-term trend; Direction	The key source of anthropogenic related loss of sandbanks in Wales is most likely to be due to wind farm development and aggregate dredging. Subtidal sandbanks which have had aggregate extraction activities since 2000 include Sandbanks in the Severn Estuary, Helwick Bank and Nash Bank. Aggregate extraction ceased at Helwick Bank in 2005 and ceased at Nash Bank in 2010. Aggregate activity in the Severn estuary are all assumed to be managed sustainably and do not represent loss in habitat (dredging activities have all passed HRAs and there is a Regional Seabed Monitoring Plan with ongoing surveys and analysis to ensure no adverse effects). An analysis published in 2010 reported areas enclosed by -5m and -10m (in relation to Chart Datum) reduced by 20% and 2% respectively between 1993 and 2009 at Nash Bank (HR Wallingford, 2010). At which point dredging ceased. A recent analysis was undertaken to compare the bank between 2010 and 2018 (Fairly, 2025). The main bathymetric change is caused by change in sinuosity of the bank with a straightening of the bank by 2018.

	Volumetrically, there is a slight percentage increase in area above the -7m contour and a greater percentage increase in area in the intertidal area (above 0m CD). The horizontal cross-sectional area is similar for the -7m CD slice and substantially larger for the 0m CD slice. The clearest changes are on the eastern end of the bank outside of the past dredging area, patterns of change are similar along the whole bank however. This suggests there may have been some recovery at Nash Bank. A windfarm developed by 2009 on approximately 1 km2 of Constable bank would represent some loss of habitat (i.e. direct loss from the installation of piles and scour protection and some indirect loss from scour). In summary, the area assumed lost is with approximately 1km2 (0.16% of mapped Welsh resource) although the habitat directly lost is likely to be less than this (Robinson and Green, 2018). Although key activities have been briefly assessed, overall, no in-depth assessment of sandbank area has been undertaken in the long term across the sandbank resources across Wales. The trend is therefore unknown.
5.14: Change and reason for change in surface area	A small (approx. 0.01km2) change in area was calculated in area calculations made by NRW between the 2019 and 2024 report. However, the maps have not changed and this is likely due to calculation processes rather than methodological or actual changes. This is therefore not significant enough to report (5.24a). A change was also noted between the 2013 and 2019 reports, the below text explains this change: Annex I sandbanks in UK waters have been delineated, where possible, using a combination of BGS Seabed Sediments (v3) and bathymetry, slope and aspect from multibeam data where available, otherwise the 2012 Defra/ Astrium Digital Elevation Model. See 'UK_Sandbanks_Method' document for more information (Marine Protected Areas Technical Group Document,

	2012). SAC feature maps (Reg 37) were also used within Wales (specifically PLAS and MSCB) in addition to the areas produced by the JNCC delineation tool. JNCC and the country conservation agencies strive to provide advice based on the best available evidence and, as a result of ongoing survey effort and improved analysis techniques, the evidence base is continually evolving. Between the 2013 and 2019 Article 17 reporting round, substantially improved information on bathymetry has been obtained in large areas of the UK Continental Shelf and consequently developed a methodology for providing a better estimate of the UK resource of Annex I sandbank habitat to incorporate this newly acquired dataset. It is recognised that no methodology is perfect and, whilst the layer provides us with a better estimate, it does not provide a complete representation of all Annex I sandbank resource, particularly within territorial waters where smaller sandbanks are present but bathymetry data are not available at a high enough resolution. We will continue to strive over the coming years to improve the evidence base underpinning the layer to address some of these unresolved issues.
6.1: Condition of habitat	Overview: Area in Good/Not Good Condition: The area in good/not good/unknown condition for structure and function of Welsh sandbanks was assessed using collated available evidence and conclusions from specific data analyses which were spatially and ecologically relevant to Welsh Sandbanks. Evidence used included; conclusions of the site level condition assessments (Jackson-Bué et al., 2025) for monitored sandbanks within Welsh SACs and intersecting Water Framework Directive waterbody classification and specific casework information. Where information was not readily available sandbanks were assessed as 'unknown'. Only one area estimate was calculated, there is low or medium confidence in this

assessment due to low confidence in underlying assessment of data due to the remote and dynamic nature of Welsh Sandbanks and availability of resources to study them. Each bank was assessed as a single unit apart from where specific spatial impact evidence was available.

Result Summary:

There has been a large change in the area in good/not good from the previous reporting round (In 2018 Area in Good: 6.6km2, Not Good: 592.4km2 and Unknown: 39.2km2). This is partly due to changes (introduction of secondary indicators) and updates (updated data analysis and assessments) in condition assessment reporting and apparent improvements in diversity at some banks. It is unclear whether increases in diversity is an actual community change or due to improved methods.

SAC Condition Assessments Process:

Marine feature condition assessments in NRW consisted of selecting performance indicators for the feature, gathering the best available evidence to assess those indicators and conducting the assessment. In a series of workshops, a range of NRW specialists used all available evidence to assess the performance indicator attributes and targets using a pass, fail or unknown. A confidence score for each target conclusion was also provided. The results were combined from the assessment of feature indicators to provide an overall assessment of condition at the feature level.

The indicators were assessed using a combination of NRW Habitats Regulations monitoring (primarily grab sampling invertebrate and sediment data analysed using multivariate and univariate techniques), Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (henceforth referred to as the WFD), monitoring, commissioned evidence reports, plan and project

assessments, external monitoring databases (e.g. National Biodiversity Network) and expert judgement. There are 10 individually monitored sandbanks across five SACs in Wales, data from these sandbanks were used in this assessment. The outcome of the condition assessment was only used for banks which are monitored (invertebrate grab sampling) the remaining banks were assessed as unknown. Nine sandbanks in four of the five SACs were assessed as being in favourable condition. The only sandbank SAC feature which was assessed in unfavourable condition was a bank in Conwy Bay and Menai Strait SAC.

Regulation 9a Proxy Condition Assessment:

Sandbanks outside of relevant SACs and within the Severn Estuary SAC have not been assessed through the NRW condition assessment process. In these cases a regulation 9a proxy condition assessment was undertaken. The proxy condition assessment used readily available casework information and WFD assessment data. Where a WFD element which related to one primary indicator (e.g. species composition) or two secondary indicators (e.g. nutrient water quality; and contaminant water quality) failed the bank was assessed to be in not good condition. Where there was no data the bank was assessed as unknown. Casework records of anthropogenic impacts on sand bank habitat were considered where readily available. These were limited to aggregate extraction in the Severn Estuary and Bristol Channel and an offshore wind farm development on Constable bank. Where this was associated with an area of the bank (e.g. footprint of a wind turbine or removal of habitat) that area was assessed as 'not good' with the remaining area as unknown. Following this assessment, it was judged that structure and function was Not Good for 1km2 at constable bank due to development of a windfarm (Robinson and Green, 2018). Habitat loss has been indicated at Nash Bank in 2010, a recent analysis has suggested some recovery so this bank

	was assessed as unknown. Consideration of Offshore Data: JNCC BH2 assessment of diversity (Duncombe-smith, et al., in prep & Van Loon, et al. 2018) of banks were considered where condition assessment had not been completed. Unfortunately very few data points were available and this was therefore not used for assessment. BH3 extent of physical disturbance (Matear, 2023) on benthic habitats was also considered but not used as it was based on VMS data (offshore vessels) and all Welsh sandbanks are located in inshore areas.
6.3: Short-term trend of habitat area in good condition; Period	Original surveys were conducted in 2001 which have been used as a baseline, several surveys have been conducted at banks within SACs since (many using the same locations as the 2001 baseline survey), improvements in methods have been made since 2013 (to be more consistent with the baseline survey).
6.4: Short-term trend of habitat area in good condition; Direction	The area assessed as good is notably higher than previously assessed (JNCC, 2019). This is because a more detailed and updated assessment of data has been undertaken and a change in some SAC condition assessment criteria has been implemented (which was adopted for sandbanks outside SACs). For example, in the previous Article 17 report, before the recent development of specific indicators for condition assessments all ecological/chemical or nutrient WFD failures resulted in Not Good condition for all features. Now specific indicators for each feature have primary, secondary or tertiary weightings and for sandbanks water quality/ nutrients are secondary indicators, In addition to this, apparent improvements in biodiversity in recent years were seen in recent data assessments (after an initial apparent drop of biodiversity from 2001 baseline data, there has been an improvement in some biodiversity metrics in recent years at some banks compared to the interim surveys). It is

	not clear whether the improvements in biodiversity is a real change or due to improved monitoring methods in recent years
7.1: Characterisation of pressures	Pressure and Threats were identified using Article 17 2018 sandbank report (which in turn used the 2013 report, Actions Database and consultation with NRW staff). For this report, where readily available new evidence indicated a specific issue this has been updated (e.g. Water Environment (WFD Classification (hence forth referred to as WFD) Coastal Waterbody Classification, JNCC offshore sandbanks assessment and SONNAR report findings (related to climate change evidence), 2025 condition assessments and brief NRW internal consultation). Key changes outlined below: PG03 was considered and assessed using newly available data produced by JNCC using the BH3 assessment tool (Matear, 2023) but due to exclusion of inshore VMS data from under-12m fishing vessels it was decided that there was too much uncertainty with this assessment in inshore sandbanks. This highlights an evidence gap which would be useful to fill for future reporting using more appropriate inshore data. PD01 was recorded in the 2018 report as a potential threat due to possible impacts from a planned tidal lagoon in Swansea Bay. The scheme is no longer being pursued, and although the final Wales National Marine Plan (WNMP) (Welsh Government, 2019) and other UK planning policy is broadly supportive of low carbon energy development including tidal range that support isn't spatially specific. The WNMP mostly focuses on the need to understand the implication of tidal range development before the sector moves forward. Pressures (time scale) PG01: Marine fish and shellfish harvesting causing

reduction of species/prey populations and disturbance of species (professional) Medium (3)

Sandbanks are important for many fish species, some of which are caught in commercial fisheries, either targeted or as bycatch.

Fish species recorded at Welsh sandbanks were identified using data collected in 2001 (Kaiser, 2004) from beam trawl surveys of key sandbanks around the Welsh coast. ICES stock abundance data for fish species recorded on Welsh sandbanks (Kaiser, 2004) were considered. However, the majority of the fish recorded at Welsh sandbanks are small bodied teleost species associated with sandy habitats (e.g. gobies and weevers) which are not commercially fished for which no assessment is available.

The 2001 survey recorded 38 species (and one species family group, sandeels) on sandbanks in Wales, of which 10 species have ICES assessments covering ICES areas 7a, f and g in Welsh waters and 28 species do not. The latest ICES assessments (2024) record 2 species (European plaice, whiting) where spawning stock size is below MSY (or MSY proxy) across all ICES areas 7 a, f and g, with the fishing pressure above FMSY (or FMSY proxy) in at least one of ICES areas 7 a, f and g. There are 7 species (common sole, anglerfish/monkfish, small-spotted catshark, small-eyed ray, nursehound, spotted ray and thornback ray) where spawning stock size is above MSY (or MSY proxy) across all ICES areas 7 a, f and g. Two of the seven species (common sole, thornback ray) have fishing pressure above FMSY (or FMSY proxy) in at least one of ICES areas 7a,f or g, and the other 5 species (anglerfish/monkfish, small-spotted catshark, small-eyed ray, nursehound and spotted ray) have fishing pressure below FMSY (or FMSY proxy) across all ICES areas 7 a, f and g. Blonde ray spawning stock size and fishing pressure cannot be assessed relative to MSY (or MSY proxy). Where there is a data limited method and a proxy indicator is used

(such as European plaice and elasmobranch species) these are without a formal MSY estimate (often referred to as unknown status) (ICES Advice, accessed 2025).

Of the 38 species from the 2001 survey, 4 species are assessed as Near Threatened (blonde ray, thornback ray, nursehound and small-eyed ray), and the other 34 species are assessed as either Least Concern or Data Deficient (IUCN website).

Six species (anglerfish/monkfish, blonde ray, thornback ray, whiting, plaice and sole) with ICES stock assessments covering Welsh waters and recorded at sandbanks are included on the interim Section 7 list (under review) of the Environment (Wales) Act 2016 (Welsh Government, 2016) as they are of principal importance for the purpose of maintaining and enhancing biodiversity in Wales.

Regionally, there is concern about the stock status of two commercially fished species (European plaice and whiting) associated with sandbanks. It is unclear how long it will take for whiting and plaice populations to recover, their recovery may also be impacted by other factors such as climate change. While ICES/IUCN assessments provides some wider geographic context, there is limited evidence on the removal of these fish species from the vicinity of Welsh sandbanks with the majority of the Welsh fishing fleet comprising of <10m vessels which predominantly target shellfish (HM Government, 2024), however some vessels will target commercial fish species. The abundance of commercially fished species on the sandbanks will be influenced by fishing related mortality that does not occur on the sandbanks themselves, including outside Welsh waters. The data assessed was considered relevant to Welsh sandbanks but low confidence should be associated with this assessment due to the size of the area covered by ICES assessments and, in some cases, low abundance of fish originally recorded on the sandbanks in 2001. There is a lack of fisheries data available for the assessment and

what data is available are of low confidence in relation to Welsh Sandbanks.

Overall, on a UK level, a positive trend towards a greater proportion of stocks fished sustainably is evident in both the long term and short term. There is also a positive trend for fish within safe biological limits in the long term, however no change in the short term. For stocks fished sustainably, the percentage of stocks with an 'unknown status' is decreasing and was 23% in 2020 (Lynam et al, 2022, cited by JNCC website, accessed 2025).

PF10: Residential, commercial and industrial activities and structures generating marine pollution

Artificial material from anthropogenic origin were recorded at all sandbanks surveyed in 2014-2022 by NRW at the majority of sample stations. It was uncertain whether artificial litter originated from residential or industrial sources. Poor knowledge of the material present and limited knowledge of its impact on species and communities present gives little scope to infer persistence of materials and future impact (see Bergmann, 2015) and the potential for impact from marine plastics on subtidal sediment habitat features has been assessed as unlikely to be relevant or undetermined (MBIEWG, 2020). However, due to the high proportion of samples where litter has been recorded as present at Welsh sandbanks, the long-term prevalence of some anthropogenic materials, evidence of ingestion of many related taxa and demonstrated impact on some studied marine taxa, there is cause for concern and it is likely that pressure will continue into the near future. Due to the lack of understanding of the extent of litter, the potential for sample contamination and the uncertainty of ecological impact of the litter at sandbanks low confidence was associated with this assessment.

PK02: Mixed source marine water pollution (marine and coastal) Medium (3)

Approximately 22 sandbanks representing 38.3% of sandbank area are partly or wholly within water bodies that have been classified as achieving less than good status (WFD Interim Classification, 2024) (e.g. Severn Estuary and Helwick Bank and some North Wales banks). Water quality was identified as a threat to condition in all condition assessments (Jackson-Bué, 2025). The causes of WFD failures are various ecological indications of poor water quality and chemical level failures. Confidence in this pressure assessment is low as the spatial spread of samples has not been assessed and the impact on sandbank communities is uncertain (Water Environment Regulations, Waterbody Classifications, 2024).

PA17: Agricultural activities generating pollution to surface or ground waters (including marine) Low (3)

Coastal nearshore waters are subject to anthropogenically raised levels of nutrients. Approximately 6 sandbanks representing 5.2% of sandbank area are partly or wholly within water bodies that have been assessed as not achieving good status due to these factors (Dissolved Inorganic Nitrogen failure e.g. Bristol Channel sandbanks). Confidence in this assessment is low as the spatial spread of samples has not been assessed and the impact on communities is uncertain (Water Environment Regulations waterbody classifications, 2024). This was not identified as an issue or a threat in condition assessments (Jackson-Bué, 2025).

Climate Change Related Pressures:

JNCC offshore pressures and timing have been adopted with additional text from SONARR report.

• PJ01 Temperature changes and extremes due to climate change Medium (3)

JNCC text (UK offshore): 'There is evidence to suggest temperatures are increasing in the North Sea and benthic habitats are predicted to face increased temperatures and frequency of heatwaves under climatic projections in the future (QSR, 2023). Offshore circalittoral sediments are thought to face a strong effect of increased temperatures in the future (QSR, 2023). While confidence in evidence has increased from low to medium, there are still knowledge gaps meaning we are unable to fully assess the scale of benthic species and community responses in relation to climate change for broadscale habitats (Moore & Smale, 2020).”

• PJ10 Change of habitat location, size, and / or quality due to climate change Medium (4)

JNCC text (UK offshore): 'Large knowledge gaps in current climate change and ocean acidification impacts and how this will influence the habitat's quality on this habitat remain (QSR, 2023). Calcifying organisms are most likely to be vulnerable to increases in ocean acification (Hoppit & Schmidt, 2022). Climatic models predict there will be changes to area of suitable habitat in the future depending on the climatic scenario (Moore & Smale, 2020)”

• PJ11 Desynchronisation of biological / ecological processes due to climate change Medium (4)

JNCC text (UK offshore): 'The changes in community structure predicted under different climatic scenario models could alter ecosystem functioning and trophodynamics of North Sea benthic habitats in the future. Other studies suggest ecosystem-level responses could remain stable over long periods of time, depending on the species involved (Moore & Smale, 2020).”

• PJ12 Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change Medium (4)

JNCC text (UK offshore: 'There is evidence to suggest that climate change is driving changes in amphipod assemblages and negatively affecting some primary productivity in the North Sea and Western Channel, however there have also been slight increases in other benthic species (Moore & Smale, 2020). 'Future European benthic ecosystems are predicted to undergo restructering based on current climate emission pathways' (Hoppit & Schmidt, 2022). While confidence in available evidence has increased from low to medium, knowledge gaps remain meaning it is difficult to assess how trophic interactions will respond to climate change (Moore & Smale, 2020).”

• PJ13 Change of species distribution (natural newcomers) due to climate change Medium (3)

JNCC text (UK offshore): 'There is evidence to suggest climate change is causing changes in benthic infaunal invertebrate species distributions and range shifts of local species, with some increase in warm-water affinity species especially in the South-West. Climatic models predict this trend will continue (Moore & Smale, 2020).”

Wales text (source: SONNAR reporting):

UK seas show an overall warming trend. Over the past 30 years, warming has been most pronounced to the north of Scotland and in the North Sea. Warming of UK shelf seas is projected to continue over the coming century. Most models suggest an increase of between 0.25°C and 0.4°C per decade (MCCIP, 2020) (PJ01).

Data from the Irish Sea region shows a strong warming trend over the period 1960 to 2020 of 0.3°C per decade, with values since 2000 being consistently above the 1991–2020 average (Cornes et al., 2023) (PJ01).

The annual mean sea-surface temperature (SST) for 2023

for near-coast waters around the UK was 1.3°C above the 1961-1990 long term average, making this the UK's warmest year for near-coast SST in a series from 1870 for the second successive year (Kendon et al., 2024) (PJ01).

The annual number of marine heatwaves experienced in the British Isles increased by an average of four events per year in the period 2000–2016 compared with the period 1982–1998 (Cornes et al., 2023) (PJ01).

Increases in warm-water fish species in UK waters continue to be observed, along with local declines of some cold-affinity species (Wright, Pinnegar and Fox, 2020) (PJ13).

General marine Short term Trend overview:

If decadal observations of water temperatures (Cornes et al., 2023) are consistent, sea surface temperature is likely to have increased by 0.05-0.15oC over the five years between 2020 and 2025 (PJ01).

Short term measurements (2014-2015) for the Celtic Sea indicated oxygen deficiency in late summer, which can have negative effects on marine ecosystems, although the lack of historic data means it is not possible to verify whether this is a recent development or a regularly occurring phenomenon (Mahaffey et al., 2020) (PJ10).

General Marine Future Outlook:

Model simulations indicate a continuing warming trend in sea surface temperatures around the UK, with an average increase of 0.3°C per decade in the short term (PJ01 likely to lead to issues relating to other pressures identified).

Ocean temperatures are expected to continue to rise and will affect species composition and abundances. Shifts in food-webs may occur due to changes in species composition and abundances affecting predator-prey

relationships (Burton et al., 2023; Fox et al., 2023; Martin, Banga and Taylor, 2023) (PJ10, PJ11, PJ12 & PJ13).

Warming of UK shelf seas is projected to continue over the coming century. Most models suggest an increase of between 0.25°C and 0.4°C per decade. There may be some regional differences. For example, warming is expected to be greatest in the English Channel and North Sea, with smaller increases in the outer UK shelf regions (MCCIP, 2020) (PJ01).

Projections suggest that by 2100, thermal stratification in UK shelf seas will extend in duration by around 2 weeks, and increase in strength, due to changes in air temperature. This may lead to less upward mixing of nutrients and possible reductions in primary productivity (Sharples et al., 2022) (PJ10).

Average annual mean SST values in the Irish Sea region are predicted to increase by 3.11←C (±0.98←C) for the end of the century (2079–2098) under the business-as-usual RCP8.5 scenario. Near bed temperatures are predicted to increase by 2.87←C (±0.97←C) for the same period (Cornes et al., 2023) (PJ01).

Ocean temperatures increases will affect species compositions and abundances. Shifts in food-webs are likely to occur due to changes in predator-prey relationships (Burton et al., 2023; Fox et al., 2023; Martin, Banga and Taylor, 2023) (PJ11 & PJ12).

By the end of the century, conditions could become favourable for warm-water species such as Mediterranean horse mackerel to be present as far north as the middle of the Irish and North Seas (Fox et al., 2023) (PJ13).

For UK shelf waters, models project that annual mean oxygen concentration will decline most strongly in North

Sea regions and the Celtic Sea (5.6 to 5.9% by 2100, RCP 8.5) (Mahaffey et al., 2020). This could affect the metabolism, health, and reproduction of many marine organisms, which could have major impacts on ecosystems and commercial fisheries (PJ10).

By 2050, under a high emissions scenario, UK waters will experience marine heatwave conditions 66% of the year, rising to 93% by 2100, up from the current 8% (2000-2019) (Berthou et al., 2024) (PJ01).

Sandbank/infauna specific:

It has been noted that climate change is likely to impact the benthos in the future. The changes documented in soft-sediment communities in adjacent seas are expected to continue, and probably escalate, in response to the cumulative effects of seawater warming and ocean acidification (Gihwala, 2024) (PJ10-13). Some infauna related examples below: Change to the species dominating crustacean assemblages in the Bristol Channel and the occurrence of previously undocumented species in the western Channel suggest some degree of climate-influence (Birchenough et al., 2013) (PJ13). North Sea infaunal (burrowing) species have shifted their distributions in response to changing sea temperature, however, most species have not been able to keep pace with shifting temperature, meaning that species are subjected to warmer conditions (More and Smale, 2020) (PJ01). Analysis of a 40-year data–series found that small, generally shorter lived, infauna experienced some changes in community structure related to changes in Sea-Surface Temperature (SST), but this affect was dampened because increased food availability meant that temperature induced rises in energy use were counteracted. This was not the case for large-bodied species that experienced increased competition leading to altered community structures (PJ13). This highlights that changes in non-climate drivers may interact with climate change to mediate species –

community level responses and that responses may depend on species life-history traits (for a synthesis see More and Smale, 2020). There is evidence to climate-generated shifts in the zooplankton species composition lead to a mismatch in timing between food availability and the early life history of lesser sandeels (an important species in Sandbanks) in the North East Atlantic (North Sea) (PJ11, possibly other climate pressures) (van Deurs et al., 2009).

Climate change was highlighted as a threat in all sandbank condition assessments (Jackson-Bué et al., 2025). A recent study which looked at vulnerability of Annex I habitats within SACs showed that sandbanks which are slightly covered by seawater all the time were mostly assessed as medium vulnerability (43% coverage). 18% coverage was assessed as not sensitive, 39% low, and 0% high. The Severn Estuary SAC, Menai Strait and Conway Bay SAC, and Cardigan Bay SAC had the greatest extent of Sandbank biotopes assessed as medium vulnerability at 78%, 67% and 65% respectively. Component biotopes assessed as medium vulnerability include infralittoral muddy sand (biotope SS.SSa.IMuSa), which was given a medium sensitivity threshold of between 20°C and 25°C (Oaten, 2021).

It is difficult to make predictions on temperature trends over the next two Article 17 reporting cycles (12 years). With the limited information available it seems likely that temperatures will rise at a magnitude which associated communities of the a significant proportion of Welsh sandbanks may have a medium sensitivity to over long-time periods. It was also thought that sandbanks would be susceptible to increases in wave exposure if wave exposure increases this is likely to have an impact (relates to PJ04), however, observed trends in storm patterns cannot be directly attributed to climate change because of high natural variability and limited understanding of global mechanisms (Bricheno et al., 2023).

PI02: Other invasive alien species (other than species of Union concern) Low (4)

Non-native taxa was flagged as a threat to sandbanks in all condition assessments (Jackson-Bué, 2025). Assessment of sandbank macrobenthic community data shows there are several non-native taxa recorded at monitored Sandbanks around Wales (Goniadella gracilis, Monocorophium sextonae [cryptogenic], Monocorophium insidiosum [cryptogenic] and Crepidula fornicata). There is currently little indication that the presence of non-native taxa are likely to be impacting communities at sandbanks in a major way (Stebbing et al., 2015), however this is based on limited data. The only species considered invasive recorded on sandbanks is Credidula fornicata which has been recorded around or within banks in the Menai Strait, (North Wales) Helwick Bank (Carmarthenshire) and Middle Haven and Martin's haven (Pembrokeshire). Although Crepidula fornicata is a cosmopolitan species, which can tolerate a wide range of environmental conditions, populations are particularly well developed in wave protected areas such as bays, estuaries or sheltered sides of wave exposed islands (Blanchard, 1997, as cited in Rayment, W.J. 2008). The species is found on a variety of substrata but is most abundant in muddy or mixed muddy areas (De Montaudouin & Sauriau, 1999, as cited in Rayment, W.J. 2008). Therefore, this species is more likely to impact the part of the sandbanks which are more stable but probably not mobile sandy sediment habitats. Broad scale habitats which characterise Welsh sandbanks were assessed to have 'not sensitive – medium sensitivity' to introductions of non-native species (Tillin et al, 2010). A report in 2020 looking at potential impacts of INNS on Welsh MPA features also did not identify sandbanks / subtidal sand as a particularly vulnerable habitat for INNS (Tillin et al, 2020). There are now increasing biosecurity initiatives in Wales which aim to prevent the introduction and spread of non-native taxa. An example of this is the

Welsh Government funded Nature Networks project (2021-2025) which has developed a series of site Biosecurity Plans and Species Action Plans for Wales. It is unlikely that there will be an increase in non-native species which will establish and impact sandbank communities within the next two reporting rounds. However, warmer waters have been found to be facilitating the establishment of some non-native species in the marine environment and evidence now exists to demonstrate that indirect consequences of climate change, such as ocean acidification and increased extreme weather events will favour certain non-native species (Cottier-Cook, 2017) so this may be of more concern over the longer term. Therefore, this was assessed as a low threat.

PC01: Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) Low (3)

Dredging has occurred on sandbanks in the Severn Estuary and has historically occurred at other sandbanks in the Bristol Channel. The area considered to be impacted by aggregate dredging over the past reporting period were assumed to be confined to the licenced areas in the Severn Estuary and therefore relatively small. This assumption was made as there is regular monitoring in and outside the Severn Estuary licenced areas and adjacent local indirect deleterious impacts have not been noted. The condition of historically dredged banks in the Bristol Channel are assumed recovered/recovering (recent multibeam assessment suggests accretion in the shallower areas of the bank) or unknown, impacts occurred before 2013. Impacts of dredging are severe and direct but these are monitored and managed (i.e. only permitted in resilient habitats) and in small areas relative to the Welsh sandbank resource (HR Wallingford 2010, 2016a,b &c; Marine Ecological Surveys Ltd. 2012; Pethick & Thompson, 2002; Welsh Government, 2004; ABPMer, 2022).

The Welsh National Marine Plan was published in 2019

(Welsh National Marine Plan) and sets an annual limit of 800,000 tonnes for the Severn Estuary extraction areas. It is reasonable to assume that dredging in the Seven estuary will continue to be a pressure into the foreseeable future. Expansion is unlikely due to currently planned extraction limits (Welsh National Marine Plan, 2019).

Demand for marine aggregates materials is closely linked to the construction sector and the wider economy. It is likely to be influenced significantly by large scale infrastructure projects, the need for soft engineering defences (such as beach replenishment), and for coastal flood and erosion defence, demand for which may increase as a result of climate change. The refined resource area mostly avoids designated sandbanks but is in some cases the area is adjacent to sandbanks. In principle local dredging could impact sandbanks but it is probably a low likelihood of this happening (Wales Marine Planning Portal).

Overall, the area likely to be impacted is very small and in the majority of cases (in the Severn Estuary) activities will be subject to Habitats Regulations Assessments where banks are in or adjacent to SACs.

PD01: Wind, wave and tidal power (including infrastructure) Low (3)

There is one windfarm which overlaps with Constable bank. In addition to direct habitat loss around wind turbines, the latest assessment across the monitoring period shows there has been a small change in sediment composition at the wind farm, along the cable route and the near field sites, leading to a slight coarsening of the substrate. Some associated changes in species composition (including a decline in abundance of some species) have also been noted (Rhyl Flats Offshore Windfarm, Final report 2013 & Robinson and Green, 2018). However, the footprint of the windfarm which overlaps with the sandbank is very small and some recovery is likely. Also see text under PD06.

PD06: Transmission of electricity and communications (cables) Low (3)

Constable Bank and Conwy Bay Sandbank (Fourfathom Bank Complex), North Wales: There is a relatively small area intersecting with the constable bank where a cable has been laid to transfer power back to land from an offshore windfarm. The area is relatively very small and there is likely to have been some recovery (Rhyl Flats Offshore Windfarm, Final report 2013). It is also likely that sand wave clearance will be conducted on Constable Bank with a cable corridor going through Constable Bank and then Menai Strait and Conwy SAC however there will be no sand wave clearance permitted in Menai Strait and Conwy SAC. Cable protection will be placed in Menai Strait and Conwy SAC but with reduced height and not anticipated to affect any SAC features.

There are cables currently, or planned to be, running through or close to Turbot Bank, Pembrokeshire. An interconnector cable protection is located on the northern flank of Turbot Bank. It is unlikely to be having an impact on the form and function of the bank due to its limited size. Future placement of an offshore wind farm cable protection is planned across a cable crossing on the western flank of Turbot Bank. Cable protection to the north west and the south west of Turbot Bank will potentially interfere with sediment transport but this will be mitigated through gaps in protection and restricted height of berm to allow sediment to transport over it. Analysis has shown that these future works will not impact on the form and function of Turbot Bank (Blue Gem, 2022). There is a plan to route an offshore wind farm cable corridor along the southern flank of Turbot Bank and close to the bank within 100m on its eastern flank. There is no requirement for cable protection at this stage. However, if cable is exposed in future, there could be potential for cable protection to interfere with form and function of Turbot Bank but this threat is low. There will

	be future constraints on the cable route for future Floating Offshore Wind in the Celtic Sea, meaning there maybe interaction between cables and the Turbot Bank and St Gowans Shoal sandbanks as the main landing locations are connection to National Grid at Pembroke Dock. PH02: Military, paramilitary or police exercises and operations in the marine environment Low (3): There may be pressure from ongoing military operations at Turbot bank and St Gowan's Shoal (as well as Banks in Cardigan Bay) this may include previous settlement of material on seabed as well as potential pollution from contaminants. Limited information is available as the HRA is not available for these activities. The area potentially impacted is small (relative to the total resource area) the severity of the impact was assumed to be medium due to the likely resilience of the local habitats.
8.1: Status of measures	Majority of most important conservation measures relating to this habitat type have been identified and are taken or planned to some degree. This is considered to be a low confidence assessment because the ability of some of these measures to fully address known and potential pressures and threats is uncertain and the time scale is also uncertain.
8.2: Main purpose of the measures taken	The majority of main conservation measures relating to this habitat are A. This is considered to be a low confidence assessment because the ability of some of these measures to fully address known and potential pressures and threats is uncertain.
8.4: Response to the measures	Mainly chosen c) Long-term results (after 2036) due to uncertainty of timing with many related measures.
8.5: List of main conservation measures	Measures identified either by conservation national legislation, thematic actions plans or outputs from the actions database. MG01: Management of professional/commercial fishing (including shellfish and seaweed harvesting) (High):

Key measures in place to mitigate fisheries related pressures and threats identified in this assessment are driven by UK and Welsh fisheries legislation.

The UK's fisheries management framework is based on the Fisheries Act 2020 (HM Government, 2020) which sets out the legal framework for managing UK fisheries post EU exit. The Act contains seven key objectives to guide decision making including the sustainability objective, the precautionary objective, the ecosystem objective, and the scientific objective.

The Fisheries Act 2020 requires Fishery Policy Authorities to produce Fishery Management Plans (FMPs). FMPs will set out details for managing specific fish stocks or fisheries at maximum sustainable yield or explain why that has not been possible and what needs to be done to achieve MSY. The Celtic Sea and Western Channel Demersal, Irish Sea Demersal, King Scallop, Whelk, Crab and lobster FMPs will all be relevant for assessing and managing the interactions of relevant fishing activities with sandbank fish and shellfish species in Welsh waters. The FMPs will aim to ensure stocks are fished sustainably in line with the ecosystem objective which will include consideration of impacts on benthic habitats. The plans will be reviewed and if necessary updated every 6 years.

The Marine and Coastal Access Act (MCAA) 2009 (HM Government, 2009) aims to improve management and protection of the UK marine and coastal environment. It has eight key elements, including fisheries management and marine enforcement

The Scallop Fishing (Wales) (No.2) Order 2010 (HM Government, 2010) and The Whelk Fishing Permit (Wales) Order 2021 (Welsh Government 2021a) are both assessed annually for their impact on Welsh sandbanks.

In general, the impacts from offshore (outside 12nm) fishing on sandbanks, by non-Welsh boats, in Wales is poorly understood.

The measure is ranked as High as related pressure and threat G01 ranked medium and is relevant to a wide area.

MK01 Reduce impact of mixed source pollution (High):

General water quality measures:

Key measures which are in place to mitigate water quality related pressure and threats identified in this assessment (PK02 & PA17) are driven by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, henceforth referred to as the WFD. The WFD aims to:

• maintain the 'High and Good status” of waters,

• prevent any deterioration in the existing status of waters, and

• restore at least to 'Good status” in relation to all waters, unless other objectives have been set.

The mechanism by which this is to be achieved under the WFD is through the adoption and implementation of River Basin Management Plans (RBMPs) and Programmes of Measures (PoM) for each of the identified River Basin Districts. Many national measures aim to deal with issues causing WFD coastal and estuarine waterbody failures for ecological and chemical elements. The PoM delivers many of the statutory requirements for other Regulations and associated legislations e.g. Habitats Regulations, UK Marine Strategy, Urban Wastewater Treatment Regulations, Bathing Waters Regulations and Eel Regulations.

WFD investigations are carried out when WFD classifications indicate a waterbody is failing to meet WFD standards. Investigations are undertaken when an element fails to meet Good status and/or when a waterbody status deteriorates between WFD Cycle classifications (includes deteriorations from High to Good) (does not include interim classifications); however, deterioration investigations are only undertaken when there is high confidence a classification has changed. The goal of investigations is to identify if a failure or deterioration is a true failure/ deterioration (Stage 1) and if deemed a true failure/ deterioration, a Stage 2 investigation is carried out to identify reasons for not achieving good (RNAGs) or reasons for deterioration (RfDs). These investigations help to then inform actions that can be put in place to address the failures or deteriorations occurring in the water body and bring the water body back up to at least Good status.

Nutrients specific measures:

The impact of nutrients is thought to be low on sandbanks as a relatively small area of sandbanks are within waterbodies failing for levels of dissolved inorganic nitrogen.

A programme of measures relating to nutrients include Implementation of the Water Resources (Control of Agricultural Pollution)(Wales) Regulations 2021 in Wales including: nutrient management planning; sustainable fertiliser applications linked to the requirements of the crop; protection of water from pollution related to when, where and how fertilisers are spread; manure storage standards.

Dŵr Cymru Welsh Water are undertaking source apportionment studies for nutrients entering the marine environment in waters bodies failing for DIN and showing a biological response in AMP8 with the possibility of asset improvements thereafter. Also, the marine WFD

Opportunity catchments project is aiming to reduce nitrogen loading to the marine environment.

Overview:

Key failing waterbodies relevant to Welsh sandbanks are at different stages of investigation for various elements for 2015 and 2021 classifications. The WFD investigations programme to date has identified few actions for specific waterbodies relevant to the Welsh sandbank feature. But the investigation reports have been used to inform the MPA condition assessments. NRW's ability to assess and investigate WFD failures has vastly improved in recent years due to the development of a small marine WFD investigation team. More progress is expected in the next reporting cycle than the last but the timeline is still uncertain as investigations continue. It is therefore difficult to assess the timeframe of delivery of the measures identified in the investigation reports for the sandbank feature or the success of those measures at a sandbank feature scale.

This conservation measure relates to pressure PK02 and PA17. Related actions are relevant for large areas of sandbank, therefore, pressure ranked high.

MC03: Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities) (Medium):

MC06: Reduce impact of service corridors and networks(Medium)

This conservation measure is related to pressure PD06 (which could also be recorded as PD01) and PD01. All marine renewable energy projects will require consents, which is likely to include a Marine Licence (Pt4 of Marine and Coastal Access Act 2009) and a Section 36 Energy

Consent under the Electricity Act and or a Development Consent Order (Planning Act 2008). The consents required depends on the location (e.g. Environmental Impact Assessment, WFD assessment, Habitats Regulations Assessment) of the project and the energy generation thresholds. The Welsh Government have legislated a new Infrastructure Consents (Infrastructure (Wales) Act 2024), however at the time of writing are unknown and is yet to be enacted. This measure relates to PD06 and was ranked as medium because only a small area of sandbanks likely to be affected but potentially this process prevents development at a wider-scale.

MF06: Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities (incl. contamination with litter) (Medium):

This conservation measure relates to pressure and threat PF10. National and international action aims to reduce the effect of marine litter, which has been well publicised as a threat.

In the UK, the UK Marine Strategy identifies marine litter as a descriptor of clean seas (Descriptor 10), and requires UK administrations to ensure that 'properties and quantities of marine litter do not cause harm to the coastal and marine environment'. As a Contracting Party to the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, UK government in collaboration with devolved governments is also developing and implementing actions under the OSPAR Regional Action Plan for Marine Litter to 'prevent inputs of and significantly reduce marine litter, including microplastics, to reach levels that do not cause adverse effects to the marine and coastal environment with the ultimate aim of eliminating inputs of litter”. The Action Plan has three key themes: actions to reduce land-based sources of marine litter, actions to

reduce sea-based sources of marine litter and cross cutting actions.

In Wales, the Welsh National Marine Plan (Welsh Government, 2019) encourages action to reduce litter in the marine environment (ENV_04), and requires developers to consider how to prevent or minimise marine litter in their proposals. The Wales Clean Seas Partnership, part of the United Nations Clean Seas Campaign and Global Partnership on Marine Litter is a multi-stakeholder group which develops and delivers the Marine Litter Action Plan for Wales. Welsh Government funds Keep Wales Tidy and Natural Resources Wales' Fly Tipping Action Wales Programme, which work to enable proper waste management and prevent fly tipping which can be a source of marine litter. In 2021, Welsh Government published the Beyond Recycling Strategy (Welsh Government, 2021), to implement a circular economy in Wales. This encourages proper waste management and commits to phase out single-use plastics which could end up as marine litter. In 2023, the Welsh Government launched the Environmental Protection (Single-use Plastic Products) Act (Welsh Government 2023), which bans the sale and supply of selected single use plastic items, such as plastic cutlers and straws, many of which are commonly found as marine litter. Future exemptions are likely to also include wet wipes and single use vapes.

In NRW, actions relating to marine litter identified by the actions database (site level) include:

• Direct management is the most frequently identified mechanism for addressing marine litter impacts. This mechanism predominantly refers to action required by Local Authorities (LA) to support and help implement measures to remove litter from beaches (e.g. third party collections and LA beach cleaning), ensuring that approaches are sensitive to features.

• Investigation actions principally relate to improving the evidence base to underpin better management and reduce both sources of marine litter and impacts on features. This includes investigations to develop better understanding of local sources of marine litter and its disposal, and identification or high risk areas for marine litter.

• Targeted education, awareness raising and liaison actions include, for example, developing opportunities to reduce litter at source (locally), including site level awareness.

MC07: Habitat restoration/creation from resources, exploitation areas or areas damaged due to installation of renewable energy infrastructure (High)

Active management has led to cessation of dredging at some banks, for example, at Nash Bank and contributed to cessation of dredging at Helwick Bank (both banks represent 5.7% of the sandbank resource). At Nash Bank dredging was phased out and finally ceased in 2010. This decision, made by Welsh Government, who were the regulator at the time, was based on evidence suggesting the bank volume was reducing more than the extracted tonnage, with no clear evidence of replenishment (Pethick & Thompson, 2002). The extraction was considered unsustainable, and there was concern that it may have led to reduced coastal protection from this feature. At Helwick Bank, after a public enquiry (2005), the permitted extraction rate and time period was significantly reduced from that proposed. This was implemented to address environmental concerns regarding the morphology of the bank and concern regarding potential impact on local beaches. The new licence was not used and was eventually relinquished by the applicant. This is in part because the applicant had successfully developed a new licence further offshore. This conservation measure relates to pressure and threat PC01. Management of aggregate activity is ranked as high as it

represents management of direct removal of habitat.

MC01 Adapt/manage extraction of non-energy resources (High):

Appropriate management of aggregate extraction within the Severn Estuary SAC is undertaken using a marine licence which provides a means of adaptive management. Habitats Regulation Assessment is the main driver/ legislative tool in relation to protection of subtidal sandbanks but WFD compliance and EIA Directive compliance are also part of the Marine licence regulatory process and have a role in protection of this feature. Regulation of activities ensure that aggregate extraction occurs in areas which are likely to be resilient and not to excess. Potential impacts to benthic, fish and physical processes from aggregate dredging are monitored through Marine Licence conditions. The aggregate industry undertake a Regional Seabed Monitoring Programme (RSMP), which includes geophysical surveys and benthic habitat surveys to monitor potential changes to benthic communities, seabed sediment composition and morphology. The results from regional surveys are submitted to NRW as interim survey reports and five-year substantive reviews throughout the licence. If survey data or substantive reviews show evidence of changes to benthic communities, sediment composition or resource thickness beyond natural variability, licence conditions may not be discharged, and active dredging areas are redefined as appropriate. This conservation measure relates to pressure and threat PC01. Management of aggregate activity is ranked as high as it represents direct removal of habitat.

MI03: Management, control or eradication of other invasive

alien species (Medium):

This conservation measure relates to pressure PI02.

Legislative agreements seek to protect biodiversity, species and habitats, and include provisions requiring measures to prevent the introduction, spread and control of, invasive non-native species, especially those that threaten native or protected species and habitats.

The UK is a signatory to the Ballast Water Convention which aims to prevent the spread of harmful aquatic organisms by establishing standards and procedures for the management and control of ships' ballast water and sediments. These include specific ballast water management standards (e.g. concerning the efficacy of water exchange), the requirement for international vessel traffic to manage ballast water and sediments in accordance with vessel-specific ballast water management plans, and for all such vessel to carry a ballast water record book and an international ballast water management certificate.

The implementation of the Marine Strategy Framework Directive (MSFD) in the UK, through the Marine Strategy Regulations, aims to ensure that INNS introduced by human activities are at levels that 'do not adversely alter the ecosystems'. The strategy sets out indicators for Good Environmental Status (GES) which is defined by 11 Descriptors. Descriptor 2 covers non-indigenous species. Criteria and targets for measuring progress towards GES include 'The number of newly introduced NIS is minimised and where possible reduced to zero' and 'The rate of spread of invasive NIS, as a result of human activities is minimised and reduced where possible'. As there are no dedicated monitoring programmes for the detection of marine NIS introduction and spread in the UK, various monitoring data from statutory bodies is used. In Wales, statutory and ad-hoc monitoring programmes contribute

towards the MSFD INNS evidence baseline, including marine rapid assessment surveys of Welsh marinas carried out most recently in 2023/2024.

Contingency plans are currently being developed for priority marine INNS species not yet established in Wales. Where potentially high impact INNS have been detected historically, innovative approaches to eradication or control have been implemented where appropriate/technically feasible (e.g. Didemnum vexillum at Holyhead Marina). This has recently been supplemented by laboratory trials of eradication of Didemnum vexillum using ultrasound.

The impacts associated with INNS are also recognised as potentially significant anthropogenic pressures through the UK's approach to implementing the Water Framework Directive. Impacts from invasive non-native species are considered as part of the assessment of the ecological status of water bodies and, in general terms, measures are adopted to improve status and address impacts, on a water body by water body basis, where INNS are implicated in a water body failing to achieve its objectives.

At a national level, specific legislation restricts the spread or release of INNS in the wild. Section 14 of the Wildlife and Countryside Act 1981, contains specific provisions relating to the introduction of new species and provides that it is an offence to release or allow to escape into the wild, any animal which is not ordinarily resident in Great Britain, or those listed in Schedule 9. Of the marine species listed under Schedule 9, Crepidula fornicata is of particular relevance to sandbanks which are slightly covered by sea water all of the time. In Wales, anthropogenic activities with the potential to introduce or spread INNS are managed through the implementation of biosecurity risk assessment and management planning under existing regulatory and consenting frameworks. Examples include the marine licensing provisions of the Marine and Coastal Access Act, Habitats Regulations Assessments under the Conservation

of Habitats and Species Regulations 2017 and Sites of the Special Scientific Interest (SSSI) consenting procedures under the Wildlife and Countryside Act 1981.

Natural Resources Wales and the Welsh Government were members of the UK Marine Pathways Group, a coordinated approach to preventing new INNS introductions, early detection and rapid response and containment and long-term control measures. The group produced INNS guidance, voluntary best practice and supported specific Welsh control and eradication projects. This group no longer exists in its current form. However, a UK Marine INNS T&F group has been running since 2023 and has produced a recent paper with recommendations on the management of three pathways for INNS (recreational boating, aquaculture and shipping) to be presented to the GB NNSS Programme Board in April 2025.

This was included as a medium rank as sandbanks were assessed to have medium sensitivity to introduction of non-native species.

MJ01: Implement climate change mitigation measures (Medium)

The UK, including Wales, has implemented various conservation measures to mitigate climate change impacts, focusing on carbon reduction, habitat restoration, and sustainable resource management.

One major initiative is the UK's net-zero by 2050 target, which Wales supports through its Net Zero Wales plan under the Environment (Wales) Act 2016. This includes decarbonising industries, investing in marine renewables like floating offshore wind farms in the Celtic Sea, and restoring natural carbon sinks (Welsh Government, 2021c). There is growing focus on marine and coastal restoration of

	habitats such as salt marsh, seagrass and native oyster, all of which are important for blue carbon storage. A number of projects to restore these habitats right across Wales, and a further focus on restoration is supported by WG's Programme for Government commitment to put in place targeted programmes of restoration for sea grass and salt marsh. Habitat conservation plays a crucial role in climate mitigation. For example, peatland restoration is a key focus in Wales, as peatlands store vast amounts of carbon. The National Peatland Action Programme aims to restore 600-800 hectares of peatland per year, with projects in Eryri (Snowdonia), Bannau Brycheiniog (Brecon Beacons), and the Cambrian Mountains (NRW, 2022). Similarly, the National Forest for Wales is expanding tree planting to improve carbon sequestration and biodiversity. Wales is also reforming agriculture under the Sustainable Farming Scheme, which rewards farmers for climate-friendly practices like soil conservation and agroforestry. These conservation efforts, combined with emissions reduction policies, contribute to Wales' climate resilience strategy.
9.1:Future trends and prospects of parameters	Future prospects of range The occurrence of this habitat is defined by physiographic processes over long timescales. While the physical area of some banks may change (although this is very uncertain) (see 9.1b), the geographic spread and distribution of features is not expected to change within the next 12 years. Future prospects of area Future prospects were assessed as unknown due to uncertainties. Further analysis was not possible due resource constraints.

	Future prospects of structure and function Future prospects were assessed as unknown as there are many uncertainties and confidence are low in almost all assessments of condition of area, likely pressure and threats and likely effectiveness of conservation measures. Further analysis was not possible due resource constraints.
10.1: Range	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: Area	Conclusion on Area reached because:(i) the short-term trend direction in Area is stable; (ii) the current Area is approximately equal to the Favourable Reference Area; and iii) there has been no significant change in distribution pattern within range.
10.3: Specific structure and functions	Conclusion on Structure and function reached because habitat condition data indicates that between c.5-25% of the habitat is in unfavourable (not good) condition.
10.4: Future prospects	Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Area covered by habitat are unknown; and (iii) the Future prospects for Structure and function are unknown.
10.5: Overall assessment of Conservation Status	Overall assessment of Conservation Status is Unfavourable-inadequate because one of the conclusions is Unfavourable-inadequate.
11.1: Surface area of the habitat type inside the pSCIs, SCIs and SACs network	This is based on area of habitat mapped within Special Areas of Conservation where sandbanks are designated as a primary or secondary feature.
11.3: Surface area of the habitat type inside the network; Method used	Data sources: Combination of JNCC Digital Elevation Model, Survey data, Admiralty Charts and Expert knowledge

11.4: Short-term trend of habitat area within the network; Direction	Area was judged within condition assessments (this was not judged in the Severn Estuary) as favourable at all SACs assessed.
11.6: Short-term trend of habitat area in good condition within the network; Direction	The area assessed as good is notably higher than previously assessed (JNCC, 2019). This is because a more detailed and updated assessment of data has been undertaken and a change in some SAC condition assessment criteria has been implemented (which was adopted for sandbanks outside SACs). For example, in the previous Article 17 report, before the recent development of specific indicators for condition assessments all ecological/chemical or nutrient WFD failures resulted in Not Good condition for all features. Now specific indicators for each feature have primary, secondary or tertiary weightings and for sandbanks water quality/ nutrients are secondary indicators, In addition to this, apparent improvements in biodiversity in recent years were seen in recent data assessments (after an initial apparent drop of biodiversity from 2001 baseline data, there has been an improvement in some biodiversity metrics in recent years at some banks compared to the interim surveys). It is not clear whether the improvements in biodiversity is a real change or due to improved monitoring methods in recent years.
5.13: Favourable Reference Area (FRA)	The UK-level FRV for surface area was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019 Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current habitat extent and trends.
4.10: Favourable Reference Range (FRR)	The UK-level FRV for range was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent

reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019 Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current distribution and trends.