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

2019-2024

Conservation status assessment for the habitat:

H1420 - Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

Wales

Cyfoeth Naturiol Cymru
Natural Resources Wales

JNCC

For further information please contact:

Natural Resources Wales, Welsh Government Offices, Cathays Park, King Edward VII Avenue, Cardiff, CF10 3NQ. https://naturalresources.wales

JNCC, Quay House, 2 East Station Road, Fletton Quays, Peterborough, PE2 8YY. https://jncc.gov.uk

This report was produced by JNCC in collaboration with Natural Resources Wales.

This document should be cited as:

Natural Resources Wales and JNCC. (2026). Conservation status assessment for the habitat: H1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*).

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: Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

Distribution Map

Range Map

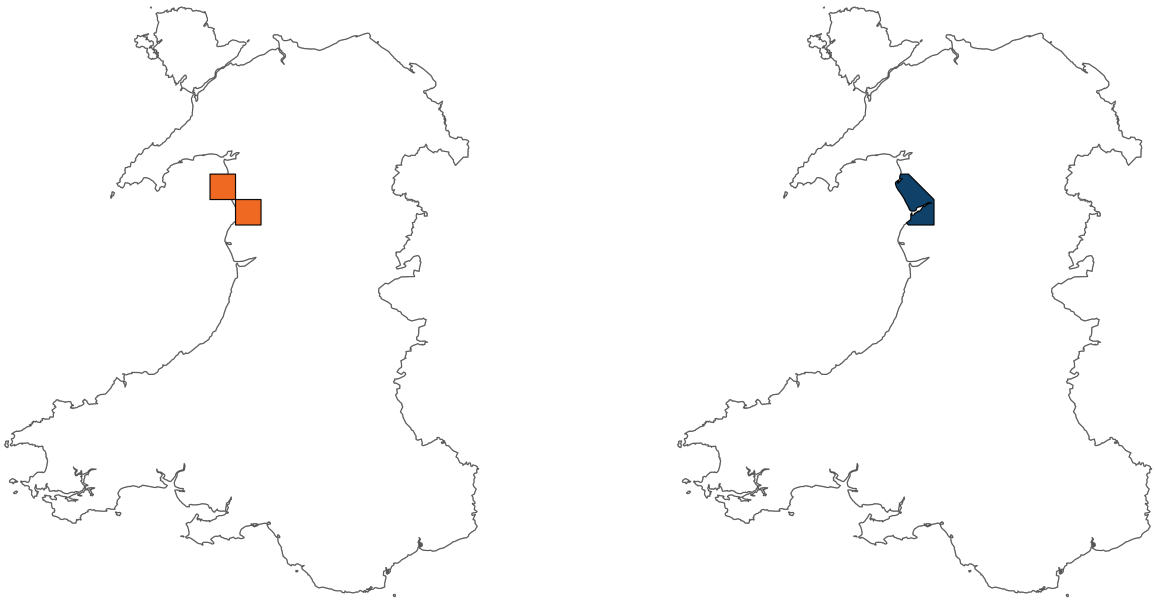

Figure 1: Wales distribution and range map for H1420 - Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority. The 10km grid square distribution map is based on available habitat records within the current reporting period.

Table 1: Table summarising the conservation status for H1420 - Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). 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)	**Unknown (XX)**
Area covered by habitat (see section 5)	**Unfavourable-inadequate (U1)**
Structure and functions (see section 6)	**Unknown (XX)**
Future prospects (see section 9)	**Unfavourable-inadequate (U1)**

List of Sections

National Level

1. General information

1.1 Country	Wales
1.2 Habitat code	H1420 - Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

2. Maps

2.1 Year or period	2003-
2.2 Distribution map	Yes
2.3 Distribution map; Method used	Complete survey or a statistically robust estimate

2.4 Additional information

No additional information

Biogeographical Level

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs ATL

3.2 Sources of information

See section 13 References

4. Range

4.1 Surface area (km²)	177.19
4.2 Short-term trend; Period	
4.3 Short-term trend; Direction	Unknown
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	Insufficient or no data available
4.6 Long-term trend; Period	
4.7 Long-term trend; Direction	Unknown
4.8 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Rate of decrease	
4.9 Long-term trend; Method used	Insufficient or no data available

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	Expert opinion
e) Quality of information	

4.11 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	

4.12 Additional information

No additional information

5. Area covered by habitat

5.1 Year or period	2013-2024
5.2 Surface area (km²)	
a) Minimum	
b) Maximum	
c) Best single value	0.07
5.3 Type of estimate	Best estimate
5.4 Surface area; Method used	Complete survey or a statistically robust estimate
5.5 Short-term trend; Period	
5.6 Short-term trend; Direction	Unknown
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	Insufficient or no data available

5.9 Long-term trend; Period	
5.10 Long-term trend; Direction	Uncertain
5.11 Long-term trend; Magnitude	
a) Minimum	
b) Maximum	
c) Confidence interval	
d) Rate of decrease	
5.12 Long-term trend; Method used	Insufficient or no data available
5.13 Favourable Reference Area (FRA)	
a) Area (km²)	
b) Pre-defined increment	Current area is between 2% and 10% smaller than the FRA
c) Unknown	No
d) Method used	Expert opinion
e) Quality of information	

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	0
aii) Maximum	0
Area not in good condition	
bi) Minimum	0
bii) Maximum	0
Area where condition is unknown	
ci) Minimum	0.07
cii) Maximum	0.07
6.2 Condition of habitat; Method used	Insufficient or no data available
6.3 Short-term trend of habitat area in good condition; Period	2013-2024
6.4 Short-term trend of habitat area in good condition; Direction	Uncertain
6.5 Short-term trend of habitat area in good condition; Method used	Insufficient or no data available

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
PE03: Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging)	Ongoing and likely to be in the future	Medium (M)
PF15: Modification of coastline, estuary and coastal conditions for built-up areas	Ongoing and likely to be in the future	Medium (M)
PF06: Deposition and treatment of waste/ rubbish from built-up areas	Only in future	Medium (M)
PJ01: Temperature changes and extremes due to climate change	Only in future	Medium (M)
PJ04: Sea-level rise due to climate change	Only in future	High (H)
PJ06: Wave exposure changes due to climate change	Ongoing and likely to be in the future	Medium (M)
PM07: Natural processes without direct or indirect influence from human activities or 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	Medium-term results (within the next two reporting periods, 2025–2036)

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
MG04: Control/eradication of illegal killing, fishing and harvesting of wild plants, fungi and anmals	Medium (M)
MF06: Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities (incl. contamination with litter)	Medium (M)
MF08: Manage changes in hydrological and coastal systems and regimes for construction and development (incl. restoration of habitats).	High (H)
MJ02: Implement climate change adaptation measures	High (H)
MK03: Restoration of habitats impacted by multi-purpose hydrological changes	High (H)

8.6 Additional information

No additional information

9. Future prospects

9.1a Future trends of parameters

ai) Range	Overall stable
bi) Area	Negative - decreasing <=1% (one percent or less) per year on average
ci) Structure and functions	Negative - slight/moderate deterioration

9.1b Future prospects of parameters

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

9.2 Additional information

No additional information

10. Conclusions

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

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	0.07
11.2 Type of estimate	Best estimate
11.3 Habitat area inside the network; Method used	Complete survey or a statistically robust estimate
11.4 Short-term trend of habitat area within the network; Direction	Uncertain
11.5 Short-term trend of habitat area within the network; Method used	Insufficient or no data available
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	Insufficient or no data available

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

Benoit, P. M. 1961. A note on Salicornia perennis (Perennial Glasswort). Nature in Wales, 7: 21-24.

Boorman, L. 2003. Saltmarsh Review. An overview of coastal saltmarsh, their dynamic and sensitivity characteristics for conservation and management. Report No. 334. Joint Nature Conservation Committee, Peterborough.

Boorman, L.A. and Hazelden, J. 2012. Impacts of additional aerial inputs of nitrogen to saltmarsh and transitional habitats. CCW Science Report No: 995, pp44, Countryside Council for Wales, Bangor, Wales.

BRIG. 2007. A preliminary assessment of the implications of climate change for the implementation of the UK BAP targets.

Dargie, T. 1998. NVC survey of saltmarsh habitat in the Severn Estuary. CCW Contract Science Report no. 341. Countryside Council for Wales, Bangor.

Dargie, T. 2000. Description of the Severn Estuary survey sectors identified in the 1998 NVC survey. CCW Contract Science Report no. 399. Countryside Council for Wales, Bangor.

Dargie, T. 2001. NVC survey of the saltmarsh and other habitats in the Dee and Clwyd estuaries 2000. CCW Contract Science Report no. 450. Countryside Council for Wales, Bangor.

Evans, F., Clarke, J. 2000. Ty Gwyn Marsh - National Vegetation Classification (NVC) Saltmarsh Survey. NRW Dataset.

JNCC Special Area of Conservation (SAC) Habitat account - Marine, coastal and halophytic habitats: 1420 Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticose). [Online] Available from: http://jncc.defra.gov.uk/protectedsites/sacselection/habitat.asp?FeatureIntCode=H1420 [Accessed 27 January 2025]

Jones, M.L.M., Angus S., Cooper A., Doody P., Everard M., Garbutt A., Gilchrist P., Hansom G., Nicholls R., Pye K., Ravenscroft N., Rees S., Rhind P. & Whitehouse A. 2011 Coastal margins [chapter 11]. In: UK National Ecosystem Assessment. Understanding nature's value to society. Technical Report. Cambridge, UNEP-WCMC, 411-457.

MarLIN: The Marine Life Information Website. Available from: https://www.marlin.ac.uk/habitats/detail/25 [Accessed 27 January 2025]

National Trust 2015. Shifting Shores Report, National Trust. https://www.nationaltrust.org.uk/documents/shifting-shores-report-2015.pdf

Natural Resources Wales. 2015. Water Watch Wales maps gallery. Cycle 2 waterbodies and rivers. Available: https://nrw.maps.arcgis.com/apps/webappviewer/index.html?id=2176397a06d64731af8b21fd69a143f6

Oaten J, Finch D, Frost N 2024a. Understanding the likely scale of deterioration of Marine Protected Area features due to coastal squeeze: Volume 1 – Methodology. NRW Evidence Report No: 789, 156 pp, Natural Resources Wales, Bangor

Oaten J, Finch D, Frost N 2024b. Understanding the likely scale of deterioration of Marine Protected Area features due to coastal squeeze: Volume 2 – Results & Discussion. NRW Evidence Report No: 789, 112pp, Natural Resources Wales, Bangor

Prosser, M.V. and Wallace, H.L. 1997. Braint Estuary pSAC, NVC survey 1996. CCW NW Area Report 3. Countryside Council for Wales, Bangor.

Prosser, M.V. and Wallace, H.L. 1998. Taf, Tywi and Gwendraeth saltmarsh survey (Burry Inlet cSAC), 1997. CCW Contract Science Report No 293. Countryside Council for Wales, Bangor.

Prosser, M.V. and Wallace, H.L. 1999a. Burry Inlet and Loughor Estuary SSSI, NVC Survey 1998. CCW Contract Science Report No 376. Countryside Council for Wales, Bangor.

Prosser, M.V. and Wallace, H.L. 1999b. Cefni and Aberffraw estuary pSAC: NVC survey 1998. Countryside Council for Wales, Bangor.

Prosser, M.V. and Wallace, H.L. 2002. National Vegetation Classification Survey: Saltmarshes of the Conwy Estuary. Countryside Council for Wales, Bangor.

Prosser, M.V. and Wallace, H.L. 2003. Milford Haven saltmarsh survey. Report to the Milford Haven Waterway Environmental Surveillance Group.

Prosser, M.V. and Wallace, H.L. 2004. Pen Llŷn a'r Sarnau cSAC and adjacent areas saltmarsh review and National Classification survey 2003. CCW Contract Science Report No. 642. Countryside Council for Wales, Bangor.

Prosser, M.V. and Wallace, H.L. 2004. Pen Llŷn a'r Sarnau cSAC and adjacent areas saltmarsh review and National Vegetation Classification survey 2003. CCW Contract Science Report No. 642. Countryside Council for Wales, Bangor.

Rhind, P.M. 2013. JNCC Supporting documentation for the Third Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2007 to December 2012 Conservation status assessment for Habitat: H1420 - Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)

Rodwell, J. S. 2000. British Plant Communities. Volume 5. Maritime Communities and Vegetation of Open Habitats. Cambridge University Press.

Royal Haskoning. 2012. SMP 21 St Ann's Head to Great Ormes Head (West of Wales) Shoreline Management Plan 2. Available from: Natural Resources Wales / Shoreline Management Plans [Accessed 27 January 2025]

Wilkinson K, Anstice S. Severn Estuary SAC Monitoring Report, Atlantic Salt Meadows, Monitoring Round 2013 to 2018 . NRW Internal Report.

Main pressures

7.2 Sources of information

No sources of information

14. Explanatory Notes

Field label	Note
2.3: Distribution map; Method used	The distribution and range 10km grid squares map data from the last reporting round 2013-2018 should be rolled forward for the surface area and range of H1240. Distribution and area estimates are based on the NVC survey of Pen Llŷn a'r Sarnau SAC and adjacent areas (Prosser & Wallace 2004). Only vegetation assigned to the SM7 NVC community was considered to be attributable to the Annex I habitat type and included within the Regulation 9 H1240 map layer. SM7 is recorded in the small Artro estuary and on the south side of the Mawddach estuary. Near comprehensive survey data is available for Welsh saltmarshes and no other examples of SM7 have been recorded and there are no records of Sarcocornia perennis elsewhere in the Wales (Dargie, 1998, 2000 & 2001), (Evans and Clarke, 2000), (Prosser and Wallace, 1997, 1998, 1999a, 1999b, 2002, 2003,2004). However, the age of the NVC survey data, the lack of monitoring for at least 20 years and the dynamic nature of saltmarsh mean that the confidence in the distribution is low.
4.3: Short-term trend; Direction	This habitat has not been monitored or confirmed as present since the Pen Llyn a'r Sarnau NVC survey was carried out in 2003.
4.11: Change and reason for change in surface area of range	The same data was used for the 2013 and 2019 reporting rounds.
5.4: Surface area; Method used	Distribution and area estimates are based on the Phase II survey: Pen Llŷn a'r Sarnau cSAC and Adjacent Areas: Saltmarsh Review and National Classification survey 2003 (Prosser & Wallace 2004). This survey includes all of the known examples of this habitat type in Wales. However, there has been no monitoring of this habitat type or confirmation of presence since the creation of the NVC map, therefore the confidence in the surface area is low.

5.6: Short-term trend; Direction	There is little available evidence relating to change in this habitat in Wales.
5.11: Long-term trend; Magnitude	See section 5.6
6.2: Condition of habitat; Method used	No monitoring or condition assessments have been carried out for this feature in Wales.
7.1: Characterisation of pressures	The majority of the pressures and threats have been identified through Marine Protected Area (MPA) Site Condition Assessments, NRW Evidence Reports, Water Environment Regulations (previously known as Water Framework Directive), Analysis of Nitrogen deposition data (no exceedance of critical load) and in some cases expert judgment. There is no evidence specifically for H1240, however evidence for pressures relating to H1310 and 1330 have been used for this habitat type in relation to wider pressures. PE03 Shipping lanes and ferry lanes transport operations The dredging within the Artro estuary is carried out to maintain channels for recreational boating. This is regulated however the removal of the sediments from the system has the potential to cause a decrease the sandy conditions which this habitat type favours. PF06 Deposition and treatment of waste/rubbish from built-up areas H1310 was assessed as having high sensitivity to chemical contamination and medium sensitivity abrasion / disturbance of the substrate on the surface of the seabed and smothering and siltation, nutrient enrichment and organic enrichment (Robbins et al. 2023) and it is likely that H1240 will have the same level of sensitivity. There is a single landfill site registered on low level land on the Mawddach Estuary which could potentially cause a threat to the H1240 if it begins to erode.

PG05: Marine plant harvesting

Unregulated collection of Salicornia spp. is a risk which has been identified however, the scale of collection needs to be assessed. Interest in foraging and foraged food is increasing and the commercial sale of foraged foods may lead to unsustainable harvesting. Reports of un-consented large scale Salicornia collection on the Dyfi estuary within the Pen Llŷn a'r Sarnau SAC from summer 2024 was likely to have been commercial use. Difficulties in policing foraging activities in remote locations increase the risk of damage. Although the risk is small, there are only c.7 ha of H1240 within Wales, therefore the habitat is very vulnerable to low levels of damage. Sarcocornia perennis the main component of the habitat type could easily be picked and uprooted alongside Salicornia spp. early in the season before stems become woody. The small area that occupied by this habitat make it very vulnerable.

PK02 Mixed source marine water pollution (marine and coastal)

The Mawddach WFD waterbody has been classified with a Moderate chemical status Polybrominated Diphenyl Ethers (PBDE). Confidence is medium as the human health protection goal has been used for the EQS for PBDE and as WFD sampling isn't focused on saltmarsh and the impact of contaminants on H1240 is not fully understood.

Localised growth of opportunistic macroalgae in the pioneer zone of the Artro waterbody was however recorded although the Water Body was assessed as 'Good' for Dissolved Inorganic Nitrogen.

PF06 Deposition and treatment of waste/rubbish from built-up areas

H1330 Atlantic Salt Meadows and H1310 Salicornia Habitat have been assessed as having high sensitivity to chemical

contamination and medium sensitivity abrasion / disturbance of the substrate on the surface of the seabed and smothering and siltation, nutrient enrichment and organic enrichment (Robbins et al. 2023). There is one historic landfill site within the Mawddach estuary which boarders the SAC which is approximately 6km upstream from the H1240 habitat.

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

Marine litter has been identified as an issue within the Severn Estuary and Dee Estuary SACs (LIFE Data). It is also highlighted as risk for Pembrokeshire Marine SAC, Pen Llŷn a'r Sarnau and Carmarthen Bay and Estuaries SACs. Saltmarshes effectively capture microplastics in their sediments (Lloret et al.,2021); the resulting decomposition of micro plastics could have numerous impacts on the marine ecosystem.

PF15: Modification of coastline, estuary and coastal conditions for built-up areas

Historic land claim has led to considerable changes in saltmarsh distribution and affected coastal processes within the vast majority of the estuaries and sheltered bays. Within Wales the vast majority of this predates the implementation of the Habitats Directive, therefore this pressure is assessed as a risk. Sea walls and other coastal defence structures will cause coastal squeeze and changes to sediment transport and supply. Structures such as groynes disrupt sediment movement cause declines in sediment availability this can lead to erosion and will compromise the ability of H1240 to be able to adapt to rising sea levels. With the increasing threat of rising sea levels there is the requirement for the upgrading or the implementation of new defences which would lead to coastal squeeze. Such projects would be regulated under legislation and would require compensation habitat if

necessary, however the creation of new saltmarsh habitat in good time is often needs to overcome significant barriers.

PJ01 Temperature changes and extremes due to climate change

Sea surface temperatures have warmed by approximately 0.3oC per decade over the last 40 years (Cornes et al., 2023). However, trends noted less observed warming to the west of the UK, which could include the Welsh coast with values of 0.1-0.2oC increase per decade recorded (Cornes et al., 2023).

The vulnerability of Annex I marine habitats to climate change in Wales, assigned saltmarsh a medium sensitivity threshold for between 23.25°C and 28.25°C to increases in sea temperature (Oaten et al., 2021).

The Atlantic salt meadows and Salicornia and other annuals colonising mud and sand features were assessed as highly vulnerable to projected changes in air temperature. The upper sensitivity threshold for saltmarsh was set at > 28°C and around the Welsh coast, maximum daily mean air temperatures are projected to reach approximately 29°C by 2025, 30°C by 2049, and 33°C by 2099 (Oaten et al., 2021). However, over the last 30 years, trends in marine air temperature warming are not significant over most of the UK region therefore the risk has been assessed as medium.

H1420 was not assessed for either air or water temperature changes due to climate change. As this is a southern habitat type it may not be as vulnerable to water temperature changes as H1310, therefore there is uncertainty in the level of risk for H1240.

PJ04 Sea-level rise due to climate change

Mean sea-level rise, coastal squeeze and 'natural

squeeze' (where saltmarsh is squeezed up against natural landforms) are contributing to a decline in the extent of saltmarshes. UKCP18 marine report scenario RCP 8.5 predicts a rise of 0.51 to 1.13 m in Cardiff by 2100 (Palmer et al., 2018). Saltmarsh may adjust to sea level rise by vertical growth where sediment supply is sufficient but there is potential for tipping points with continued sea level rise. Sea defences and rock armouring have contributed to declines in sediment supplies (Jones et al. 2011). In addition, erosion of channels and creeks is likely to occur, leading to poor condition and habitat loss.

Saltmarsh has been highlighted as the most vulnerable habitat to coastal squeeze; at a Wales level. 21% to 25% loss of saltmarsh as a whole is predicted by 2155 (depending on SLR projection) (Oaten et al., 2024).

The figure for predicted losses for intertidal habitats has not been adjusted for estuary infilling or morphological response to sea level rise and in that context, is seen as a worst-case scenario (Oaten et al., 2024).

The National Habitat Creation Programme has been set up to create compensation habitat to offset intertidal habitat loss due to coastal squeeze caused by coastal defences managed by Risk Management Authorities in Wales (which includes NRW and Local Authorities). In 2021, Welsh Government issued a policy clarification note (Use of the National Habitat Creation Programme in delivering Flood and Coastal Erosion Risk Management projects), which directs competent authorities to only consider coastal squeeze associated with new or upgraded coastal defences but not in relation to maintenance of historic structures. This means that the NHCP now only provides compensatory habitat for a small number of major coastal defence projects.

PM07 Natural processes without direct or indirect influence from human activities or climate change

	Succession to more terrestrial habitats is likely to occur over time as estuaries continue to infill in, particularly for the upper sandy margins where H1240 is found.
8.5: List of main conservation measures	MK03: Restore habitats impacted by multi-purpose hydrological changes & MF06: Manage changes in hydrological and coastal systems and regimes for construction and development Options for extending this feature as part of the programme are limited because of its current restricted distribution. However, Sarcocornia perennis has been noted colonising a 6ha realignment site on the Mawddach which has been established to provide mitigation for flood defence works carried out on the estuary. The West of Wales Shoreline Management Plan (Royal Haskoning, 2012) which identifies the most sustainable approach to managing the flood and coastal erosion risks to the coastline in the short, medium and long term, however the actions within this plan have yet to be fully implemented. (see section 9.1b). MF04: Reduce/eliminate pollution to surface or ground waters from commercial, residential and recreational areas and activities, and from industrial activities and structures. Relates to PF06 MF06: Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities (incl. contamination with litter) Relates to PF06 & PF10 A number of initiatives including the examples listed below are tackling pollution and the sources of pollution, however the sources are numerous and challenging therefore reducing pollution requires sustained effort.

Implementation and enforcement of water quality regulation (both marine and freshwater) is ongoing work and is making gains in improving water quality. The Water Resources (Control of Agricultural Pollution) (Wales) Regulations Act 2021 has come into force and it has the potential to improve water quality by decreasing pollution caused by agricultural management. Saltmarsh is relatively nitrogen-rich when compared with other natural habitats (Booreman & Hazelden 2012).

Management of the wider countryside including the implementation of the River Basin Management Plans by NRW and EA (cross border catchments) continues to contribute to improvements.

The Metal (Non-Coal) Mines Programme was established in 2020 to continue work to reduce pollution from metal mines which can also impact marine waterbodies. For example, the River Ystwyth receives all of the drainage from Cwm Ystwyth mine. WFD standards for zinc remain elevated downstream of the mine as far as the sea at Cardigan Bay (NRW 2025).

MJ02: Implement climate change adaptation measures
Implementation of climate change adaptation measures set out in the Shoreline Management Plans identify areas of the coast where there is a 'managed realignment' or 'no active intervention' policy for coastal management. The National Habitat Creation Programme has been set up to create compensation habitat to offset intertidal habitat loss due to coastal squeeze caused by coastal defences managed by Risk Management Authorities in Wales (which includes NRW and Local Authorities). In 2021, Welsh Government issued a policy clarification note (Use of the National Habitat Creation Programme in delivering Flood and Coastal Erosion Risk Management projects), which directs competent authorities to only consider coastal squeeze associated with new or upgraded coastal

	defences but not in relation to maintenance of historic structures. This means that the NHCP now only provides compensatory habitat for a small number of major coastal defence projects. At Morfa Friog, Fairbourne at the mouth of the Mawddach Estuary a small realignment site has developed into 6 ha of saltmarsh with a further c0.6 of a ha in a separate area close by. Sarcocornia perennis has been recorded within this site and conditions currently could favour development into H1240 habitat.
9.1:Future trends and prospects of parameters	Area: The main threat to H1420 is sea level rise. The 40ha loss of intertidal habitat by 2025 predicted by the West of Wales Shoreline Management Plan (SMP) (Royal Haskoning 2012) due to coastal squeeze could affect this habitat. A more recent NRW Evidence Report (Oaten et al, 2024) has also predicted significant losses of saltmarsh due to coastal squeeze. Saltmarsh can respond to sea level rise by vertical accretion, however this is dependent on sediment supply (Jones et al. 2011). The National Habitat Creation Programme has been set up to create compensation habitat to offset intertidal habitat loss due to coastal squeeze caused by coastal defences managed by Risk Management Authorities in Wales (which includes NRW and Local Authorities). In 2021, Welsh Government issued a policy clarification note (Use of the National Habitat Creation Programme in delivering Flood and Coastal Erosion Risk Management projects), which directs competent authorities to only consider coastal squeeze associated with new or upgraded coastal defences but not in relation to maintenance of historic structures. This means that the NHCP now only provides compensatory habitat for a small number of major coastal defence projects. The SMPs identify the most sustainable approach to

	managing the flood and coastal erosion risks to the coastline in the short medium and long term. Although SMPs have been adopted by Local Authorities and are referred to in planning policy and guidance, the implementation of SMPs is often problematic, especially where there has been a change in policy from 'hold the line' to 'no active intervention' or 'managed realignment'. Unless works to maintain a defence require regulation such as a marine licence, there is no specific driver to promote SMP implementation. Failure to implement the Shoreline Management Plans or to create new saltmarsh within timescales adequate to allow for development of new habitats prior to losses occurring could lead to declines in the extent of this feature. A small managed realignment site; Morfa Friog close to Fairbourne within the Mawddach Estuary, has a small number Sarcocornea perrennis plants recently established within the site and potential is there for spread of the species to develop into H1420. Structure & function: The whole of this feature in Wales is within the protected sites series and therefore is under a level of protection. Implementation of conservation measures are making positive contribution to improve structure and function of the saltmarsh. However, there is the likelihood of climate change pressures becoming more apparent within the next 12 years causing erosion and potential dissection of marshes. To reverse the declining trend in structure and function there needs to be more measures taken over a wider area.
10.1: Range	Conclusion on Range reached because:(i) the short-term trend direction in Range surface area is unknown; 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 unknown; (ii) the current Area is not more than 10% below the Favourable Reference Area and iii) the change in distribution pattern is unknown.
10.3: Specific structure and functions	Conclusion on Structure and function reached because the condition of the habitat is unknown as over 75% of the habitat has 'unknown' condition.
10.4: Future prospects	Conclusion on Future prospects reached because: (i) the Future prospects for Range are unknown; (ii) the Future prospects for Area covered by habitat are poor; and (iii) the Future prospects for Structure and function are poor.
10.5: Overall assessment of Conservation Status	Overall assessment of Conservation Status is Unfavourable-inadequate because two the conclusions are Unfavourable-inadequate and two are Unknown.
11.1: Surface area of the habitat type inside the pSCIs, SCIs and SACs network	This feature is confined to the Pen Llŷn a'r Sarnau SAC and the Morfa Harlech a Morfa Dyffryn SAC but is not a recognised feature of either of these sites. It is notified as part of the saltmarsh feature for the Morfa Dyffryn SSSI and the Amer Mawddach SSSI.
11.4: Short-term trend of habitat area within the network; Direction	The extent and condition of this feature has not been assessed since the baseline survey in 2003 (Prosser and Wallace 2004).
11.5: Short-term trend of habitat area within the network; Method used	The condition of this feature has not been formally assessed at any of its Welsh localities.
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.