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

**2019-2024**

Conservation status assessment for the habitat:

# H1310 - *Salicornia* and other annuals colonising mud and sand

**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: H1310 *Salicornia* and other annuals colonising mud and sand.

**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: *Salicornia* and other annuals colonising mud and sand

### Distribution Map

### Range Map

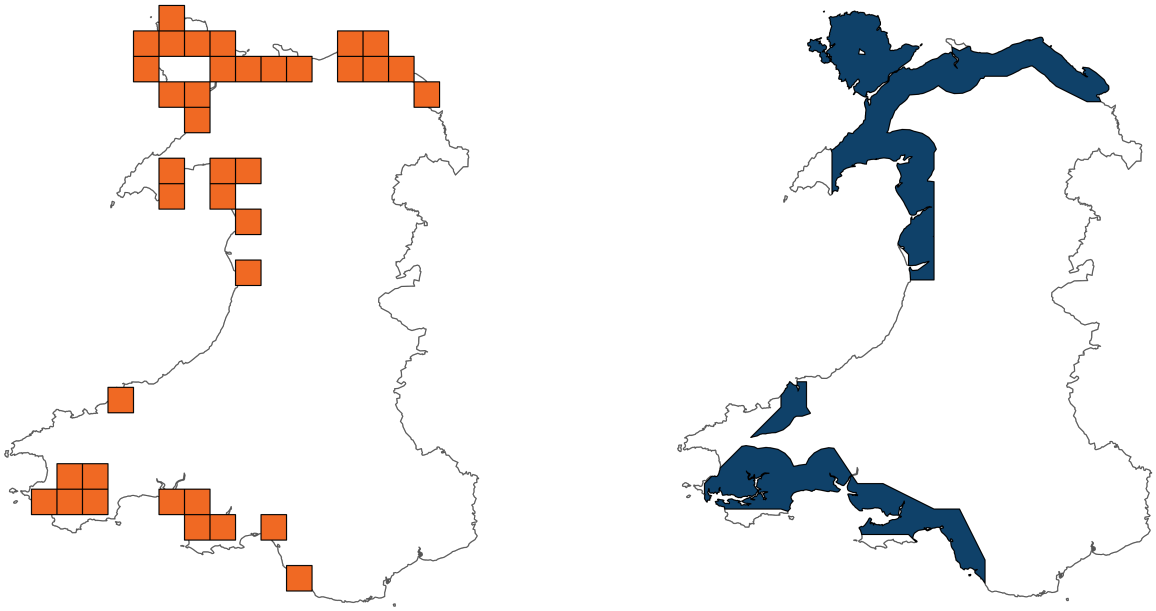

**Figure 1:** Wales distribution and range map for H1310 - *Salicornia* and other annuals colonising mud and sand. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil 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 H1310 - *Salicornia* and other annuals colonising mud and sand. 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) | **Favourable (FV)** |
| **Future prospects** (see section 9) | **Unknown (XX)** |

# List of Sections

# National Level

## 1. General information

| | |
|---|---|
| **1.1 Country** | Wales |
| **1.2 Habitat code** | H1310 - *Salicornia* and other annuals colonising mud and sand |

## 2. Maps

| | |
|---|---|
| **2.1 Year or period** | 1996-2018 |
| **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)** | 4,707.08 |
| **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** | Reference-based approach |
| **e) Quality of information** | moderate |

**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

No additional information

## 5. Area covered by habitat

| | |
|---|---|
| **5.1 Year or period** | 1997-2024 |
| **5.2 Surface area (km²)** | |
| **a) Minimum** | |
| **b) Maximum** | |
| **c) Best single value** | 1.67 |
| **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** | 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** | 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** | Reference-based approach |
| **e) Quality of information** | moderate |

**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** | 1.2 |
| **aii) Maximum** | 1.2 |
| **Area not in good condition** | |
| **bi) Minimum** | 0 |
| **bii) Maximum** | 0 |
| **Area where condition is unknown** | |
| **ci) Minimum** | 0.5 |
| **cii) Maximum** | 0.5 |
| **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 |
|---|---|---|
| PE02: Shipping lanes and ferry lanes transport operations | Ongoing and likely to be in the future | Medium (M) |
| PG12: Illegal harvesting, collecting and taking of plants and fungi | Only in future | Medium (M) |
| PF10: Residential, commercial and industrial activities and structures generating marine pollution | Ongoing and likely to be in the future | Medium (M) |
| PF15: Modification of coastline, estuary and coastal conditions for built-up areas | Only in future | High (H) |
| PJ01: Temperature changes and extremes due to climate change | Only in future | High (H) |
| PJ04: Sea-level rise due to climate change | Ongoing and likely to be in the future | Medium (M) |
| PJ06: Wave exposure changes due to climate change | Ongoing and likely to be in the future | High (H) |
| PK02: Mixed source marine water pollution (marine and coastal) | Ongoing and likely to be in the future | High (H) |

### 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** | Only 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 |
|---|---|
| MA10: Reduce/eliminate point or diffuse source pollution to surface or ground waters (including marine) from agricultural activities | Medium (M) |
| ME01: Reduce impact of transport operation and infrastructure | Medium (M) |
| MF04: Reduce/eliminate pollution to surface or ground waters from commercial, residential and recreational areas and activities, and from industrial activities and structures | 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) |

### 8.6 Additional information

Only part of the measures identified have been taken.

## 9. Future prospects

### 9.1a Future trends of parameters

| | |
|---|---|
| **ai) Range** | Unknown |
| **bi) Area** | Unknown |
| **ci) Structure and functions** | Negative - slight/moderate deterioration |

### 9.1b Future prospects of parameters

| | |
|---|---|
| **aii) Range** | Unknown |
| **bii) Area** | Unknown |
| **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)** | Favourable (FV) |
| **10.4 Future prospects** | Unknown (XX) |
| **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** | 1.5 |
| **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** | Based mainly on expert opinion with very limited data |
| **11.6 Short-term trend of habitat area in good condition within the network; Direction** | Uncertain |

| | |
|---|---|
| **11.7 Short-term trend of habitat area in good condition within the network; Method used** | Based mainly on expert opinion with very limited 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


APIS Air Pollution Information System (online) http://www.apis.ac.uk/overview/pollutants/overview_N_deposition.htm. Accessed 20th February 2025.

Atkins. 2010. SMP 19 Anchor Head to Lavernock Point (Severn Estuary) Shoreline Management Plan (SMP) Review. https://naturalresources.wales/flooding/managing-flood-risk/shoreline-management-plans/?lang=en

Blackstock TH, Howe E A, Stevens J P, Burrows CR, Jones PS. 2010. Habitats of Wales. A comprehensive field survey 1979–1997. University of Wales Press, Cardiff.

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

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.

Brazier P, Birch K, Brunstrom A, Bunker A, Jones M. Lough N, Salmon L, & Wyn G. 2007. When the tide goes out, the biodiversity and conservation of the shores of Wales – results from a 10 year intertidal survey of Wales. The Countryside Council for Wales, Bangor

Bricheno, L.M., Amies, J.D., Chowdhury, P., Woolf, D. and Timmermans, B. 2023. Climate change impacts on storms and waves relevant to the UK and Ireland. MCCIP Science Review 2023, 20pp. doi: 10.14465/2023.reu09.str

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

Burden, A., Smeaton, C., Angus, S., Garbutt, A., Jones, L., Lewis H. D. and Rees. S.M. 2020. Impacts of climate change on coastal habitats relevant to the coastal and marine environment around the UK. MCCIP Science Review 2020, 228–255.

Cornes, R.C. et al. 2023. The impacts of climate change on sea surface temperature around the UK and Ireland, MCCIP Science Review 2023, p. 18. Available at: https://doi.org/10.14465/2022.reu08.tem.

Dargie T. 1998. NVC survey of saltmarsh habitat in the Severn Estuary. CCW Contract Science Report no. 341.

Dargie T. 2000a. Description of the Severn Estuary survey sectors identified in the 1998 NVC survey. CCW Contract Science Report no. 399.

Dargie T. 2001. NVC survey of the saltmarsh and other habitats in the Dee and Clwyd estuaries 2000. CCW Contract Science Report no. 450.

Environment Agency. 2007. Saltmarsh management manual. R&D Technical Report SC030220.

Garbutt, A. & Wolters, M. 2008. The natural regeneration of salt marsh on formerly reclaimed land. Applied Vegetation Science, 11, 335–344.

Halcrow Group. 2012. SMP 22 Great Ormes Head to Scotland (North West England and North Wales) Shoreline Management Plan SMP2. Available from: https://naturalresources.wales/flooding/managing-flood-risk/shoreline-management-plans/?lang=en

Halcrow. Group. 2012. SMP 20 Lavernock Point to St Ann's Head (South Wales) Shoreline Management Plan SMP2. Available from: https://naturalresources.wales/flooding/managing-flood-risk/shoreline-management-plans/?lang=en

Hambidge, C., Phelan, N. No Date. Saltmarsh mapping standardisation for the Water Framework Directive. (online) https://www.nmbaqcs.org/media/5fjpq2qj/saltmarsh-mapping-standard_140814_final-1.pdf Accessed 20 February 2025

Heathcote S, Sheehan K, Thomas L, Hodgkinson L, Porter C, 2024. National Vegetation Classification Survey of selected areas of the Dee Estuary 2022. NRW Evidence Report No: 747, 141pp, Natural Resources Wales, Bangor

JNCC. 2000 Common Standards Monitoring Guidance For Saltmarsh Habitats. Version August 2000. JNCC, Peterborough. http://jncc.defra.gov.uk/pdf/CSM_coastal_saltmarsh.pdf

Jones MLM, 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.

Kay L, Lewis H. 2018. H1330 Atlantic Salt Meadow - Article 17 reporting GIS mapping workflow notes 2018. Natural Resources Wales Internal Document.

Khan, B., Burgess, R.M. and Cantwell, M.G., 2023. Occurrence and bioaccumulation patterns of per-and polyfluoroalkyl substances (PFAS) in the marine environment. American Chemical Society, Environmental Science and Technology: Water, 3(5), pp.1243-1259.

Lewis, H. 2011. Pen Llŷn a'r Sarnau SAC Monitoring Report, Atlantic Salt Meadows and Salicornia and other annuals colonising mud and sand. CCW Internal Report.

MarLIN: The Marine Life Information Website: Network https://www.marlin.ac.uk/

Mike J. Lush, Thomas A. Haynes and Claire E. Lush Natural England. 2016. Spartina anglica and its management in estuarine Natura 2000 sites: an update of its status and monitoring future change in England. Natural England, Peterborough

Natural England and RSPB. 2014. Climate Change Adaption Manual. Part 2. Coastal Saltmarsh.

Natural Resources Wales. 2015. Water Watch Wales maps gallery. Cycle 2 waterbodies and rivers (online). NRW internal dataset.

NRW, 2018b. Dee Estuary / Aber Dyfrdwy Special Area of Conservation: Indicative site level feature condition assessments 2018. NRW Evidence Report Series, Report No: 229, 35pp, NRW, Bangor

NRW, 2018c. Glannau Môn: Cors Heli / Anglesey Coast: Saltmarsh Special Area of Conservation: Indicative site level feature condition assessments 2018. NRW Evidence Report Series, Report No: 225, 29pp, NRW, Bangor.

NRW, 2018d. Pen Llŷn a'r Sarnau / Lleyn Peninsula and the Sarnau Special Area of Conservation: Indicative site level feature condition assessments 2018. NRW Evidence Report Series, Report No: 234, 58pp, NRW, Bangor.

NRW. Actions Database. Internal NRW Database. Accessed December 2024.

NRW.2018a. Indicative feature condition assessments for European marine sites (EMS). (Online). Available from: https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/find-protected-areas-of-land-and-seas/indicative-feature-condition-assessments-for-european-marine-sites-ems/?lang=en

Oaten J, Brooks A, Frost N, Hull S, Williamson D. 2021. Assessing the vulnerability of Annex I marine habitats to climate change in Wales. NRW Evidence Report No: 536, 110pp. Natural Resources Wales, Bangor

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 MV, Wallace HL. 1997. Braint Estuary pSAC, NVC survey 1996. CCW NW Area Report 3.

Prosser MV, Wallace HL. 1999b. Cefni and Aberffraw estuary pSAC: NVC survey 1998. Countryside Council for Wales, Bangor.

Prosser MV, Wallace HL. 2004. Pen Llŷn a'r Sarnau cSAC and adjacent areas saltmarsh review and National Vegetation Classification Survey 2003. CCW Contract Science Report No. 642.

Prosser MV, Wallace, HL. 2002. National Vegetation Classification Survey: Saltmarshes of the Conwy Estuary. Countryside Council for Wales, Bangor.

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

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

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

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.

Robbins, K; Bernard, B; Brooks, A; Frost, N. 2023. Investigating the impact of landfill sites at the coast on Marine Protected Area features in Wales. NRW Evidence Report. Report No: 673, 84pp, Natural Resources Wales, Cardiff

Rodwell JS. (ed.) 1991b. British Plant Communities. Volume 2. Mires and heath. Cambridge University Press.

Rodwell JS. (ed.) 1992. British Plant Communities. Volume 3. Grassland and montane communities. Cambridge University Press.

Rodwell JS. (ed.) 1995. British Plant Communities. Volume 4. Aquatic communities, swamps and tall-herb fens. Cambridge University Press.

Rodwell JS. (ed.) 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: https://naturalresources.wales/flooding/managing-flood-risk/shoreline-management-plans/?lang=en

Surry, K. 2012. Dee Estuary / Aber Dyfrdwy: Saltmarsh: 1310 Salicornia and other annuals colonising mud and sand, 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) Draft SAC monitoring report 2012. Internal CCW document.

Surry, K., Creer J. 2011 Glannau Môn: Cors Heli / Anglesey Coast: Saltmarsh: 1310 Salicornia and other annuals colonising mud and sand, 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) Draft SAC monitoring report 2011. Internal CCW Report.

West, R. 2013. Loughor Salicornia report, NRW Internal Report.

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 10km square distribution and habitat area estimates are derived from the extent layer used in the 2018 Article 17 Extent map; there is no change in Range compared to the updated 2025 Regulation 9a map.<br><br>Data source No1: Regulation 9a H1310 Salicornia habitat extent map.<br><br>This GIS layer updated in 2025 contains the extent of H1310 used in this report. It supersedes the layer submitted as part of the Article 17 process in 2018.<br><br>The H1310 2025 Regulation 9a map has been updated and there has been a change in the primary data source; the primary source is now the taken from the WFD Cycle 3 data whereas previously National Vegetation Survey (NVC) data was the main evidence source for the Article 17 2018 layer along with Phase I Marine Intertidal Biotope Survey (Brazier et al., 2007).<br><br>A single aggregated GIS layer was created for this habitat across Wales using data from the WFD Cycle 3 Zonation map 'Pioneer' class. Data from the Article 17 Salicornia map 2018, was used where WFD zonation data was unavailable. An exception to this was where there was recent NVC survey data for the west bank of the Dee where there is a recent NVC survey (2022) where all stands were mapped on the ground using GPS. Within one area aerial photograph interpretation was used where a recent area of Salicornia habitat has become established.<br><br>Processing notes related to the map will be produced.<br><br>Data source No 2: WFD Cycle 3 Water Framework Directive Maps |

Water Environment (Water Framework Directive, WFD) (England and Wales) Regulations 2017 based on surveys between 2014 to 2019. The data used was used was the WFD Cycle 3 Zonation map 'Pioneer' class. The mapping is based on the interpretation of aerial images alongside ground truthing. The aerial imagery this was captured between 2014-2019. Hambidge & Phelan (no date) provides more details of the WFD mapping methodology.

Data Source No 3: Article 17 H1310 Salicornia GIS Layer 2018

This layer was primarily created from NVC surveys created in ranging between 1996 and 2004 and are listed below. In addition, the Phase I Intertidal Survey (Brazier et al.), Phase I Terrestrial vegetation survey produced by CCW and aerial photograph analysis contributed to the map layer.

Data Source No 3: Phase II Saltmarsh National Vegetation Classification (NVC) survey GIS Layer

Detailed National Vegetation Survey (Rodwell (ed.) 2000) information exists for the majority of the H1310 feature within SACs in Wales however, this data is now relatively old and relies on surveys carried out between 1996 and 2004.

The two surveys used to fill in WFD gaps in zonation coverage were within the Pen Llŷn a'r Sarnau SAC - the Mawddach and Glaslyn/Dwyryd estuaries, (Prosser and Wallace 1997 and Prosser and Wallace 2004).

Data Source No 3: Phase I Intertidal Biotopes Survey 1996-2004, (Brazier et al., 2007). A comprehensive intertidal biotope survey of the Welsh coast. This element of the Article 17 layer covered much of the Salicornia habitat outside of protected sites. Areas from this layer where

| | |
|---|---|
| | Salicornia habitat was not covered on Ynys Môn were used as part of the Regulation 9a Salicornia Extent Map.<br><br>Data Source No.4<br><br>Digital Layer: NRW Aerial Imagery, layers range between 2018 and 2022 |
| 4.11: Change and reason for change in surface area of range | There is no evidence to indicate a genuine change in 10 km square distribution or range of H1310 in Wales since 2018, nor is one considered likely to have occurred. |
| 5.4: Surface area; Method used | The change in the primary data source for the H1310 extent map to the Water Environment Regulations (WER) (formally known as Water Framework Directive) Cycle 3 zonation maps makes it difficult to compare between reporting rounds. This habitat is always going to be difficult to map, the sparsely vegetated, open nature of this habitat could be difficult to pick up from aerial imagery and can be dynamic in nature. There are no known losses of Salicornia habitat between reporting rounds but there have been new areas where Salicornia has become established.<br><br>The surface estimate is derived primarily from the WER Cycle 3 zonation maps where the data range between 2008 and 2018.<br><br>In addition to the WER data:<br><br>On the west bank if the Dee Estuary data from an NVC survey of the west (Heathcote et al., 2022) was added.<br><br>Data from the 2018 Article 17 H1330 Extent Maps was used for areas where WER zonation mapping had not been carried out. |
| 5.6: Short-term trend; Direction | stable / increasing / decreasing / uncertain / unknown<br><br>Natural patterns of erosion and accretion mean that net losses and gains in the extent of Salicornia habitat can be difficult to quantify, in addition to the difficulties of accurately |

mapping this dynamic habitat.

Many of the Welsh estuaries are believed to be still infilling with sediment allowing for growth of the saltmarsh habitat both vertically and at the expense of intertidal sand and mud.

Losses due to coastal squeeze where habitats are caught between rising sea-levels and fixed defences, are predicted by the Shoreline Management Plans (SMPs) (Atkins, 2010, Halcrow, 2012(a), Halcrow, 2012(b), Royal Haskoning, 2012). Within the first epoch (2005 to 2025) the SMPs estimated that 331ha of intertidal habitat (which includes Salicornia habitat) predicted loss from the SACs within or partially within Wales. 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.

This figure has been arrived at from the predicted losses set out in the Annexes for the four SMPs which partially or wholly cover Wales. The highest losses predicted are from within the Severn Estuary where 679 ha are predicted to be lost within the first epoch, however only approximately a third of this is from within Wales and the overall figure above has been adjusted to reflect this. No loss is predicted for the Dee which is a cross boarder site for the first epoch.

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. A recent NRW Evidence Report (Oaten et al, 2024) predicts significant losses of saltmarsh due to coastal squeeze.<br><br>To date one compensation scheme at Cwm Ivy has been implemented under the NHCP in partnership with the National Trust which has led to the creation of 32ha of saltmarsh to date with further potential for growth. Salicornia habitat makes up 1ha of the site. There are also further NHCP realignment projects are at the planning stage. A further realignment site within the Mawddach Estuary has also been established to provide mitigation for flood defence works and has now developed 6.4ha of saltmarsh with 3.10 ha of Salicornia habitat (Lush 2025). In the longer term the saltmarsh habitat within these sites is expected to develop primarily into Atlantic salt meadow.<br><br>Therefore, the short term trend in area is likely to be stable with losses in extent of saltmarsh due to sea level rise offset by gains due to expansion within infilling estuaries, however there is a lack of evidence to confirm this, therefore the direction of change in extent is listed as uncertain. |
| 5.10: Long-term trend; Direction | See section 5.6 above.<br><br>On the Dee Estuary at Talacre Salicornia and other annuals colonising mud and sand has become established where vehicles have been excluded from an area previously used for parking on the beach, much of the pioneer habitat has now matured into Atlantic salt meadow and only 0.1ha remains. A further breach has occurred to the south, on the west bank of the Dee estuary where 0.5 ha of Salicornia habitat has developed. Two other relatively large stands of H1310 have developed one on the Dyfi estuary and on the Loughor estuary. |

| | |
|---|---|
| | Sporobolus anglicus (Spartina anglica) was identified as a pressure in the 2013 H1310 Article 17 Report (Rhind 2013). Sporobolus anglicus now appears to be declining in some parts of Wales where it was previously rapidly increasing, although this has not necessarily benefited H1310. Sporobolus anglicus dominated vegetation declined on the Dee and Clwyd estuaries by 90% between 1987 and 2000 however, within the same time period the Salicornia dominated vegetation declined by almost 60% (Dargie 2000).<br><br>A Natural England Report on the Management of Spartina anglica within Natura 2000 sites (2016) concluded that a review of literature had failed to provide unequivocal evidence that this species had either a negative or a positive effect of saltmarsh vegetation including Salicornia habitat, although further research and academic review was recommended. |
| 5.14: Change and reason for change in surface area | Although new areas of extent have been recorded in the evidence above, these areas are easy pick up whereas losses of extent due to changes to coastal processes are not so easy to assess. |
| 6.2: Condition of habitat; Method used | No targeted SAC feature monitoring was carried out for the Salicornia habitat since the 2013 reporting round. WFD monitoring does include a saltmarsh element of the overall waterbody assessment, however, this covers the entire of the saltmarsh. |
| 6.5: Short-term trend of habitat area in good condition; Method used | Three of the four SACs which support H1310 Salicornaia habitat in Wales have been assessed as Favourable in recent condition Assessments (Jackson-Bué 2025). A further SAC had a basic condition assessment carried out in 2018 which was Favourable, primarily based on expert opinion.<br><br>The H1310 habitat is subject to, poor water quality and at risk from the pressures of climate change (discussed in Section 7). |

| | |
|---|---|
| 7.1: Characterisation of pressures | The majority of the pressures and threats have been identified through Marine Protected Area Site Condition Assessment for Atlantic Salt Meadows and Salicornia Habitat NRW Evidence Reports (Jackson-Bué et al., 2025), Water Environment (previously known as Water Framework Directive Data), and records from NRW's Special Sites Actions Data Base, case work and in some cases expert judgment was used.<br><br>Pressures<br><br>PA07:  Intensive grazing or overgrazing by livestock<br><br>Areas of intensive grazing cover a significant proportion of Welsh saltmarshes particularly within the North Gower area of the Carmarthen Bay and Estuaries SAC. Trampling of Salicornia  has been noted along creek sides in areas of very heavy grazing.<br><br>PD01: Wind, wave and tidal power (including infrastructure)<br><br>There are currently no solid plans for tidal lagoons in Wales however,  the creation of tidal lagoons remains a threat. Such developments could have the potential to alter the tidal range both inside and outside the lagoon structure, leading to losses in extent and damage to the structure and function of this feature.<br><br>PD06: Transmission of electricity and communications (cables)<br><br>The UK government's commitment to achieving 50 GW of offshore wind generating capacity by 2030 means this growth is going to continue at a rapid pace over the next five years at least. This represents a threat to saltmarsh; cabling through saltmarsh can in some cases lead to permanent loss of extent and poor condition within the cable corridor. |

PE02: Shipping lanes and ferry lanes transport operations

The threat of oil spill, although low is a threat which could see contamination of large areas of saltmarsh including H1310. See also the narrative for PK02.

PE05 Sports, tourism and leisure activities

The pressures for sport, tourism and leisure activities are generally localised. The use of vehicles on the saltmarsh can be particularly damaging and other issues include access on foot, horse riding and moorings boats on the saltmarsh.

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

265 landfill sites along the Welsh coast and have the potential to release waste directly into the marine environment based on present day flooding and coastal erosion data (Robbins et al. 2023). 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).

Concentrations of coastal landfill sites occur around the Dee Estuary, Burry Inlet and the Severn Estuary in Wales; the Dee Estuary and Burry Inlet in supporting  a significant proportion of H1330 (Robbins et al. 2023).

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 pre-dates 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 H1330 to be able to adapt to raising sea levels. With the increasing threat of rising sea levels there is the requirement for the upgrading or the implementation of new defences for many built up areas 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.

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 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.

PG12: Illegal harvesting, collecting and taking of plants and fungi

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 such activities in remote locations increase the risk of damage.

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. Within SACs in Wales 67% of the extent of H1310 Annex I habitat was assessed as medium vulnerability to increases in water temperature (Oaten et al., 2021).

Atlantic salt meadows and Salicornia and other annuals colonising mud and sand features were assessed as highly vulnerable to projected changes in air temperature (Oaten et al., 2021). Over 95% of the spatial extent of these features were assessed as highly vulnerable. 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.

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. However, sea defences and rock armouring have contributed to declines in sediment supplies (Jones et al. 2011)

Shoreline management plans (SMPs) covering the Welsh coast; Atkins, 2010, Halcrow, 2012(a), Halcrow, 2012(b) & Royal Haskoning, 2012, together predicted losses of 331ha of intertidal habitat from the SACs wholly or partially within Wales due to sea level rise between 2005 and 2025. 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 and to date there is no evidence of loss due to coastal squeeze for saltmarsh.

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). 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).

PJ06: Wave exposure changes due to climate change

There is a likelihood that Storms and Waves in the UK will experience increasing storminess and an intensified wintertime storm track (Bricheno et al., 2023). Increase in wave energy is likely to increase erosion and in more exposed areas prevent saltmarsh developing.

Saltmarsh develops in relatively low-energy environments where wave action is limited (Burden et al.,2020). Erosion predominantly affects lower marsh communities which are more vulnerable to wave action (Burden et al., 2020).

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

Diffuse pollution is derived primarily from agricultural activities, resulting in raised levels of nutrient (nitrogen and phosphorus). Saltmarsh is generally associated with quite high levels of Nitrogen (Boorman & Hazeldean, 2012), in particular the pioneer zone.

There are also numerous other significant sources of marine pollution, diffuse and point source from numerous sources such as sewage, industry, chemical pollution from mines, waste and transport including shipping however the level of impact is not necessarily clear.

Eutrophication of coastal waters with Dissolved Inorganic Nitrogen and Phosphorous can causes enrichment of saltmarshes, increases primary production which can lead to overgrowth of increases in macro-algae (Packham and Willis 2007). In areas where there are elevated levels of nitrogen opportunistic macroalgae increase and can smother saltmarsh plants, although this would primarily be in the pioneer zone. For example, 'Major' input of Dissolved Inorganic Nitrogen (DIN) into the Milford Haven Inner waterbody is confirmed from diffuse sources associated with farm infrastructure and probable from losses from agricultural land (Lock 2021). An investigative report was

| | |
|---|---|
| | carried out in 2021 and updated in 2024 in response to the Milford Haven Inner transitional waterbody failing its WFD objectives for (DIN) and Opportunistic Macroalgae elements in Cycle 2 (2015) and Cycle 3 (2021) (Lock 2021). Opportunistic macro algae can blanket and supress Salicornia spp. and Suaeda maritima which are the main components of H1310.<br><br>There is the potential for unregulated contaminants (such as PFAS) to increase. This could affect some of the biota of the ASM feature as PFAS has been shown to bioaccumulate in marine species, increasing up the trophic levels (Khan et al., 2023). However, the biological impact of PFAS on marine species is not well understood.<br><br>Some persistent chemicals are not measured in every waterbody, and some of the relevant waterbodies have not been classified for any chemicals. |
| 8.5: List of main conservation measures | MC01: Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities): Relates to pressure PD01<br><br>MC06 Energy production processes and related infrastructure development: Relates to pressure PD06<br><br>MC07: Habitat restoration/creation from resources, exploitation areas or areas damaged due to installation of renewable energy infrastructure Relates to pressure: PD01 & PD06<br><br>Energy projects are regulated through planning and licencing legislation. Where compensation habitat for saltmarsh is required due to development of renewable energy installation facilities, managed realignment is generally successful in terms of saltmarsh creation; recognisable saltmarsh communities can develop within about 15 years, generally without the need for other intervention (Garbutt & Wolters 2008) although full restoration will take much longer. However, marshes |

reactivated by managed realignment do not provide habitats and species in comparable proportions to natural marshes and do not have equivalent biological characteristics (Mossman et al., 2012).

ME01 Reduce impact of transport operation and infrastructure

This measure relates primarily to the risk of oils spills. Shared multi-agency pollution response plans to deal with major incidences are in place and are regularly updated. However, a major incident related to shipping could still lead to considerable impacts.

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)MA10 Reduce/ eliminate point or diffuse source pollution to surface or ground waters (including marine) from agricultural activities

Relates to PF06 & PF10

Implementation and enforcement of water quality regulation (both marine and freshwater) is ongoing work and is making some gains in improving water quality. 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.

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. With a further NRW project planned to reduce water pollution due to overgrazing on saltmarsh in the Bury Inlet.

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).

Other NRW projects, related to landfill sites and marine litter which contribute to poor water quality have been carried out with further work planned.

MG04 Control/eradication of illegal killing, fishing and harvesting of wild plants, fungi and animals

This generally relates to risk. Work is needed to establish the level of harm relating to the gathering of Salicornia.

MJ02 Implement climate change adaptation measures (Specific)

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.

Shoreline Management Plans this includes identifying areas of the coast where there is a management realignment or no active intervention policy for coastal management. The Wales National Habitat Creation Programme (NHCP) aims to restore intertidal habitats in Wales to provide compensation habitat for habitat lost to coastal squeeze relating to sea defences owned and maintained by Risk Management Authorities (NRW and Local Authorities). Saltmarsh is the most likely habitat to develop within re-alignment schemes. To date two schemes: Cwm Ivy (Gower) in partnership with the National Trust which has produced 32ha new saltmarsh habitat including 1ha of Salicornia habitat and Morfa Friog at the mouth of the Mawddach Estuary a has developed 6 ha of saltmarsh much of which is Salicornia habitat.

Implementation of climate change adaptation measures set out in the Shoreline Management Plans. Shoreline Management Plans (SMPs) set out a shared strategic approach  and for managing the coastline from coastal flooding and erosion risks. Their aim is to reduce the risks to people, the developed, historic and natural environments over the next century. Policy units for managed realignment need to be taken forward.

The Shoreline Management Plans (SMP) identify the most sustainable approach to managing the flood and coastal erosion risks to the coastline in the short medium and long term have been produced for the whole of the Welsh coast, however, these plans have yet to be fully implemented. (see section 9.1b).

| | |
|---|---|
| | The creation of buffer zones with appropriate conservation management to allow for the potential movement of saltmarsh inland where there are no existing barriers would be beneficial. Where there are flood defences, targeted actions including managed realignment could enable more connectivity of saltmarsh if implemented. |
| 9.1:Future trends and prospects of parameters | Range:<br><br>Statutory protection of the vast majority of H1310 provides a good level protection for some pressures. It is difficult to predict how H1310 will respond to sea level rise in the short term future. With increased erosion rates driven by sea level rise and it is possible that Salicornia habitat may lose extent through erosion but there is also potential for this pioneer habitat to benefit from sediment inputs from eroded marsh creating conditions created conditions for salicornia to establish. However, there are numerous ongoing threats to the habitat, not least the threat of sea level rise to which saltmarsh is particularly vulnerable.<br><br>Area:<br><br>Saltmarsh has been highlighted as the most vulnerable habitats to sea level rise as a result of coastal squeeze (Oaten et al., 2024). However, it is difficult to predict how H1310 will respond to sea level rise in the short term future. With increased erosion rates driven by sea level rise and it is possible that Salicornia habitat may lose extent through erosion but there is also potential for this pioneer habitat to benefit from sediment inputs from eroded marsh creating conditions created conditions for salicornia to establish.<br><br>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. A recent NRW Evidence Report (Oaten et al, 2024) predicts significant losses of saltmarsh due to coastal squeeze.

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. There are also significant sections of the Welsh coast which are constrained by assets which are in private ownership, including an extensive railway network.

Failure to implement the SMPs or to create new saltmarsh within timescales adequate to allow for development of new habitats prior to losses occurring will lead to declines in the extent of this feature. However, there are some good examples of sustainable shoreline policies in place by NGOs for which we are already seeing the results, for example the National Trusts' (NT) 'Shifting Shores' policy; the Cwm Ivy saltmarsh restoration site within the Carmarthen Bay SAC is a joint project between the NT and NRW with further projects in the pipeline.

Structure & function:

The vast majority of H1310 (97%) is within the protected

| | |
|---|---|
| | sites series and is therefore 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 habitat condition data indicates that less than c.5% 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 unknown; (ii) the Future prospects for Area covered by habitat are unknown; 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 one of the conclusions is Unfavourable-inadequate. |
| 11.1: Surface area of the habitat type inside the pSCIs, SCIs and SACs network | This figure includes all habitat within SACs. |
| 11.3: Surface area of the habitat type inside the network; Method used | (See section 2.3) |

| | |
|---|---|
| 11.4: Short-term trend of habitat area within the network; Direction | Due to changes in the primary data source for the mapping between reporting rounds the trend is 'uncertain'. |
| 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. |