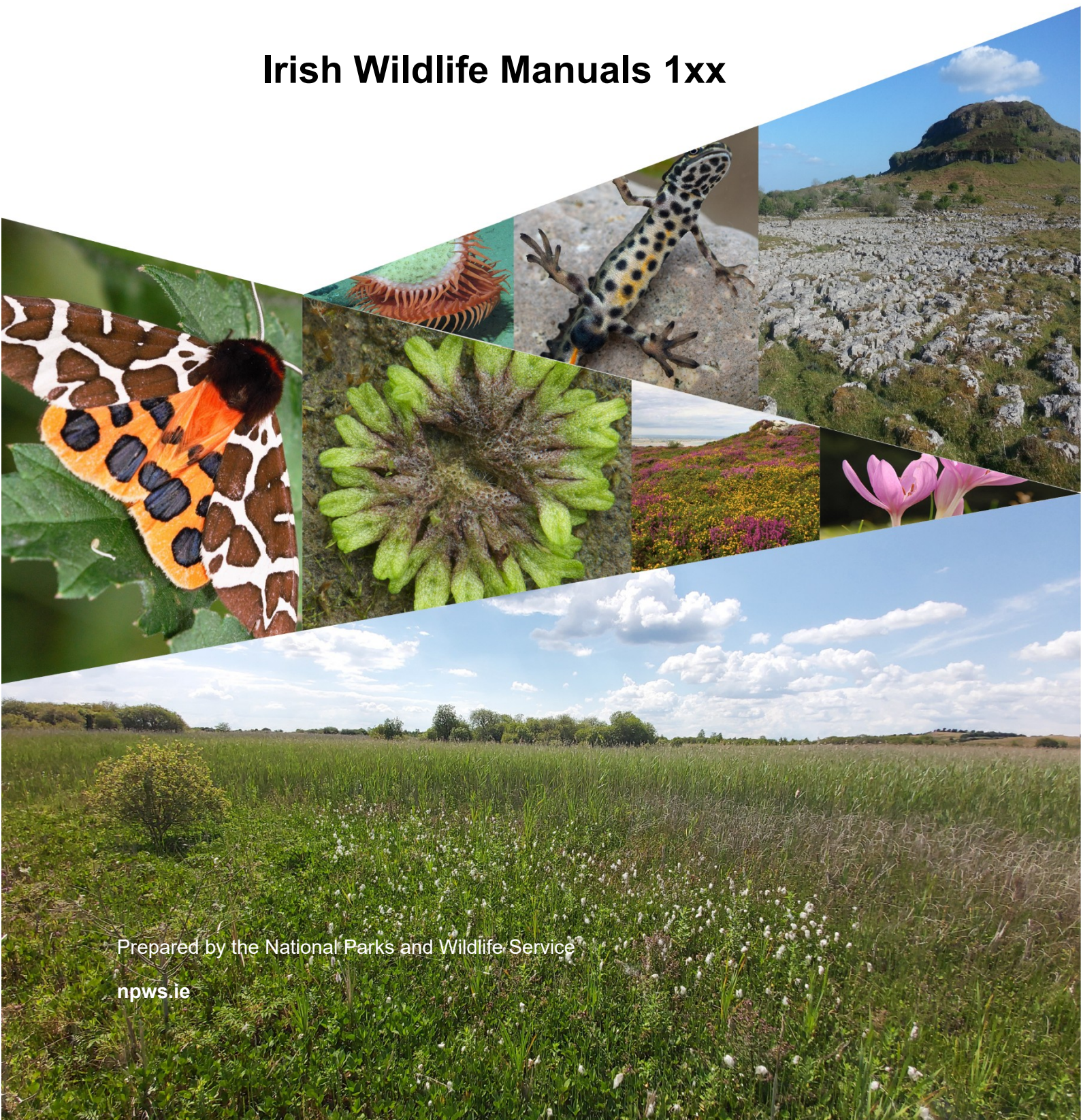




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agus Fiadhúlra
National Parks and Wildlife Service

Monitoring Survey of Coastal Habitats in the Northwest of Ireland

Irish Wildlife Manuals 1xx



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Front cover, from left to right and top to bottom:

A deep water fly trap anemone *Phelliactis* sp., Yvonne Leahy; **Common Newt** *Lissotriton vulgaris*, Brian Nelson; **Limestone pavement**, Bricklieve Mountains, Co. Sligo, Andy Bleasdale; **Garden Tiger** *Arctia caja*, Brian Nelson; **Violet Crystalwort** *Riccia huebeneriana*, Robert Thompson; **Coastal heath**, Howth Head, Co. Dublin, Maurice Eakin; **Meadow Saffron** *Colchicum autumnale*, Lorcan Scott

Bottom photograph: **Saltmarsh and dune system at sub-site 19.01 Dooley**



Monitoring Survey of Northwest of Ireland

Coastal Habitats in the

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Executive Summary

The Coastal Habitats in the Northwest of Ireland Monitoring Project field survey commenced in April 2022 and was completed in August 2024. The main aim of the project was to assess the conservation status of 13 coastal habitats at a representative sample of sites to inform reporting under Article 17 of the Habitats Directive in 2025. These habitats had previously been surveyed and assessed during the Coastal Monitoring Project (Ryle *et al.*, 2009), the Saltmarsh Monitoring Project (McCorry & Ryle, 2009), the Sand Dune Monitoring Project (Delaney *et al.*, 2013), the Vegetated Shingle Monitoring Project (Martin *et al.*, 2017) and the Saltmarsh Monitoring Project II (Brophy *et al.*, 2019).

The National Parks and Wildlife Service (NPWS) selected 29 sites inside 18 SACs and 11 SPAs as a representative monitoring sample. These sites were previously surveyed during the above-mentioned monitoring projects. The number of sites in the survey area where each Annex I habitat occurred and the total area recorded are shown in Table 1.

Table 1 Annex I habitats included in this survey, the number of sites where they were recorded and the total area they occupied. Priority Annex I habitats are indicated with an asterisk (*).

Annex I habitat	Number of sites	Total area (ha)
1210 Annual vegetation of drift lines	19	9.1
1220 Perennial vegetation of stony banks	13	11.1
1310 <i>Salicornia</i> flats	12	30.4
1330 Atlantic salt meadows	24	578.1
1410 Mediterranean salt meadows	22	298.7
2110 Embryonic shifting dunes	22	73.1
2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	25	141.5
*2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)	25	3660.3
*2140 Decalcified fixed dunes with <i>Empetrum nigrum</i>	1	0.1
*2150 Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)	5	34.3
2170 Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>)	9	66.0
2190 Humid dune slacks	19	132.5
*21A0 Machairs	14	1570.0

The *Conservation Assessment* methodologies described in Delaney *et al.* (2013), Brophy *et al.* (2019) and Martin *et al.* (2017) were developed in line with guidelines for the 2025 Report of the Article 17 of the Habitats Directive (DG Environment, 2023a). These methods were designed to take the specific conditions affecting habitats in Ireland into account, reducing the requirement for expert judgement in assessing habitats and resulting in a more consistent approach.

The 29 sites were divided into sub-sites based on sites identified during the previous monitoring projects. Forty-one of these sub-sites were field surveyed and Annex I coastal habitats recorded in each site were assessed at sub-site level. The remaining sub-sites were desk reviewed in order to identify changes in area due to human activities, natural

modifications and impacting activities. In these sub-sites, no field-based assessment of habitat conditions was carried out.

The findings of the field survey and desk review were used to inform the 2025 Article 17 report and assessment of *Conservation Status* for Annex I habitat at national level.

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1 Introduction

1.1 The Habitats Directive

The Habitats Directive (Council Directive 92/43/EEC) was adopted in 1992 with the aim of conserving wild flora, fauna and habitats to maintain biodiversity within EU member states. Annex I habitats are habitats of European importance which are listed under Annex I of the EU Habitats Directive (Council Directive 92/43/EEC). As a signatory state to the Directive, Ireland is obliged to report on the conservation status of Annex I habitats that occur within its boundaries, and has committed to conserving these habitats (NPWS, 2025). The conservation status of Annex I habitats is reported to the European Commission every six years under Article 17 of the Directive. The current round of reporting (2025) covers the period 2019-2024.

1.2 Rationale and context of the project

The Coastal Habitats in the Northwest of Ireland Monitoring Project (CHNW) builds upon a series of national coastal habitat monitoring programmes undertaken by the National Parks and Wildlife Service (NPWS) to establish a coherent and standardised framework for the surveillance and assessment of Ireland's Annex I coastal habitats under the EU Habitats Directive (92/43/EEC). These programmes, implemented over more than two decades, have progressively developed and refined methodologies for the collection of quantitative and qualitative data on habitat *Area, Structure and Functions*, and *Future Prospects*, forming the scientific and methodological foundation for CHNW.

The first national initiative addressing these habitats was the National Shingle Beach Survey (NSBS) (Moore & Wilson, 1999), which constituted the earliest systematic inventory of Ireland's shingle systems. The survey's main objectives were to document the extent, vegetation, and floristic composition of shingle beaches, as well as the distribution of rare or notable plant species. A total of 153 potential sites for the Annex I habitat *1220 Vegetated shingle* were visited around the Irish coast, and vascular plant lists were compiled for each site. Although the NSBS did not include a formal Annex I habitat *Condition Assessment*, it provided an invaluable baseline dataset by ranking sites as of high, medium, or low conservation importance, thus laying the groundwork for future national monitoring.

The Coastal Monitoring Project (CMP) (Ryle *et al.*, 2009), conducted between 2004 and 2006, represented the first comprehensive National Conservation Assessment of sand dune systems and associated coastal habitats in Ireland. A total of 181 dune systems were identified, of which all but four were surveyed. The CMP provided data for Ireland's first Article 17 reporting cycle (NPWS, 2008) for Annex I sand dune and shingle habitats, applying assessment criteria derived primarily from the Joint Nature Conservation Committee of the United Kingdom (JNCC) guidance (2004c), with modifications to reflect Irish geomorphological and ecological conditions. Although its principal focus was on dune and vegetated shingle habitats, the CMP also included the collection of data from adjacent saltmarsh areas, particularly along the east coast. The CMP also standardised survey protocols for habitat mapping, vegetation recording, and *Conservation Assessment*, creating a methodological template subsequently adopted and refined in later monitoring projects.

Building upon this foundation, the Saltmarsh Monitoring Project (SMPI) (McCorry & Ryle, 2009) was undertaken between 2006 and 2008 to establish a detailed national baseline for Annex I saltmarsh habitats. Conducted in two survey phases, the project assessed 131 saltmarsh sites, providing the first systematic mapping and evaluation of the four relevant habitats *1310 Salicornia mud*, *1330 Atlantic salt meadows*, *1410 Mediterranean salt meadows*, and *1420 Halophilous scrub*. The SMPI employed methodologies adapted from JNCC (2004b) and European Commission (2006) guidelines, and produced a standardised set of monitoring and *Condition Assessment* procedures. The data collected under the SMPI were used in Ireland's

2008 national report under Article 17 of the Habitats Directive, significantly enhancing the understanding of saltmarsh distribution, extent, and condition across the country.

The Sand Dune Monitoring Project (SDM) (Delaney *et al.*, 2013), undertaken between 2011 and 2012, aimed to refine the CMP methodology and update the baseline information on Annex I sand dune habitats in Ireland. A total of 40 dune sites were surveyed, selected from the original CMP dataset, to ensure geographic and ecological representativeness. The SDM assessed 10 Annex I dune habitat types, ranging from 1210 *Drift lines* and 1220 *Vegetated shingle* to 2190 *Dune slacks*. The methodology followed the structure of the CMP but incorporated enhanced criteria for evaluating habitat *Structure and Functions* and improved mapping and data management procedures. The results of the SDM were directly used to inform Ireland's 2013 Article 17 report, providing an updated assessment of the *Conservation Status* of the national dune resource and forming the basis for future monitoring cycles.

Subsequent to the SDM, the Vegetated Shingle Monitoring Project (VSM) (Martin *et al.*, 2017) was undertaken to provide an updated and detailed assessment of the Annex I habitat 1220 *Vegetated shingle*. Conducted between May and September 2016, the VSM surveyed 30 coastal sites, confirming the presence of the habitat at 27 locations. The survey identified four characteristic vegetation community types (pioneer, grassland, scrub, and lichen/heath) and used the same assessment framework as the SDM, evaluating habitat condition in terms of *Area, Structure and Functions*, and *Future Prospects*. The VSM refined the NSBS and CMP methodologies, introducing clearer definitions of habitat boundaries, improved sampling consistency, and a more detailed typology of vegetation assemblages.

The Saltmarsh Monitoring Project II (SMPII) (Brophy *et al.*, 2019) updated and expanded upon the SMPI baseline for the 2013–2018 Article 17 reporting period. Conducted between 2017 and 2018, the SMPII surveyed 85 saltmarsh sites nationwide, encompassing both previously studied and newly identified areas. The project evaluated the same four Annex I saltmarsh habitats using a revised and enhanced methodology that incorporated results from the Saltmarsh Angiosperm Assessment Tool for Ireland (SMAATIE), thereby aligning Habitats Directive monitoring with Water Framework Directive (WFD) ecological assessment requirements. The SMPII provided high-resolution data on saltmarsh extent, zonation, and vegetation composition, improving comparability between monitoring cycles and enabling a more integrated approach to coastal habitat surveillance and *Conservation Assessment*.

This report documents the Coastal Habitats in the Northwest of Ireland (CHNW) survey, carried out between 2021 and 2024, representing the first coordinated monitoring initiative dedicated to Annex I coastal habitats along the north-western seaboard of Ireland, encompassing 29 sites across counties Donegal, Sligo and Mayo. The project assessed the conservation status of the coastal habitats previously surveyed during the SDM, VSM and SMPII projects. During the same period, the Coastal Habitats East and South (CHES) (NPWS, in prep.), Coastal Habitats Southwest (CHSW) (Gallagher & Crushell, in prep.) and Coastal Monitoring of West Ireland (CMWI) (NPWS, in prep.) surveys were undertaken in other parts of the country, applying equivalent aims and methodologies. Together, these four monitoring programmes informed the National Conservation Assessment for Ireland's coastal habitats for the 2025 Article 17 report, the results of which are presented in The Status of EU Protected Habitats and Species in Ireland 2025 (NPWS, 2025).

1.3 Assessment of Annex I habitats

Annex I habitats are assessed on the basis of their *Range, Area, Structure and Functions*, and *Future Prospects*. An evaluation matrix for assessing the conservation status of Annex I habitats using these four parameters is presented by Evans and Arvela (2011). A modified version of this matrix, updated for the 2019-2024 reporting cycle (DG Environment, 2023a) is given in Table 2. Each of the aforementioned parameters can receive a score of *Favourable* (green), *Unfavourable-Inadequate* (amber), or *Unfavourable-Bad* (red). *Favourable* is used when the habitat can be expected to prosper without any change to existing management or

policies. *Unfavourable-Inadequate* is used in situations where a change in management or policy is required to allow the habitat to prosper, but the danger of extinction is not high. *Unfavourable-Bad* is used when the habitat is in danger of disappearance. Annex I habitats should be managed to attain and maintain *Favourable* conservation status within their range in each Member State (NPWS, 2008).

The guidance provided in Reporting under Article 17 of the Habitats Directive: Guidelines on concepts and definitions – Article 17 of Directive 92/43/EEC (DG Environment, 2023a) relates to the National Conservation Assessments of Annex I habitats. Annex I coastal habitats can also be assessed at a site level using a similar approach, based on the parameters *Area*, *Structure and Functions* and *Future Prospects*. The *Area* assessment is based on habitat extension and losses in *Area* recorded during the past 12 years. The *Structure and Functions* of the habitat are assessed using habitat-specific criteria (see methodology). The last parameter, *Future Prospects*, is assessed on the basis of the current and foreseeable effects of pressures and threats operating at the individual site. As at national level, the overall conservation status assigned to a habitat at site level corresponds to the least favourable of the assessed parameters.

Table 2 Summary matrix of the parameters and conditions required to assess the conservation status of habitats. Modified from DG Environment (2023a).

Parameter	Favourable ('green')	Unfavourable - Inadequate ('amber')	Unfavourable - Bad ('red')
Range	Stable or increasing and >Favourable Reference Range	>0% - <1% decline/year and >10% Favourable Reference Range	>1% decline in range/year over specified period or <10% Favourable Reference Range
Area	Stable or increasing and > Favourable Reference Area and no significant changes in distribution pattern	>0% - <1% decline/year and >10% Favourable Reference Area	>1% decline in area/year over specified period or major losses in distribution pattern or <10% Favourable Reference Area
Structure and Functions	Structures and functions (including typical species) in good condition and no significant deteriorations/pressures	Any other combination	>25% of the area is unfavourable as regards its specific structures and functions (including typical species)
Future Prospects	Excellent, no significant impact from threats expected. Long-term viability assured	Any other combination	Bad, severe impact from threats expected; Long-term viability not assured
Overall assessment of Conservation Status	All Favourable	One or more Unfavourable - Inadequate	One or more Unfavourable - Bad

The fourth parameter, *Range*, is assessed exclusively at national level and is not applicable at sub-site scale. *Range* refers to the spatial envelope within which the habitat occurs and is evaluated in relation to its overall distribution pattern and trends over time. As CHNW focused on sub-site level assessments within a defined geographic subset of the national resource, the *Range* parameter was not assessed as part of this project. National-level *Range* assessments are addressed within the Article 17 reporting process.

Central to the national assessment of *Range* and *Area* is the concept of Favourable Reference Values (FRVs), comprising the Favourable Reference Range (FRR) and the Favourable

Reference Area (FRA). These are derived from the definition of Favourable conservation status in Article 1 of the Habitat Directive, which requires that a habitat's natural distribution, *Structure and Functions* are maintained in the long term and that its typical species are in favourable condition. In effect, the habitat must be capable of sustaining itself as a viable component of its natural ecosystems over time. The Favourable Reference Range is the geographical range within a biogeographical region considered sufficient to encompass the habitat's ecological variation and to ensure its long-term survival. It must be at least equal to the range occupied when the Directive entered into force. The Favourable Reference Area is the total area within a biogeographical region regarded as the minimum necessary to secure the habitat's long-term viability. It must be at least equal to the area occupied when the Directive came into force and, where current coverage is insufficient, should include additional area required for restoration to achieve favourable status (DG Environment, 2023a).

1.4 Annex I coastal habitats in Ireland

The coastal habitat descriptions have been reproduced below with some sections taken directly from Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019).

1.4.1 1210 Annual vegetation of drift lines

This type of vegetation occurs on sandy, shingle or stony substrate at the upper part of the strand, around the high tide mark. Water-borne material including organic matter is deposited on the shore and provides nutrients and a seed source (NPWS, 2025). The vegetation predominantly consists of annual species, such as Oraches *Atriplex* spp., Sea Rocket *Cakile maritima* and Prickly Saltwort *Salsola kali* (JNCC, 2004c), which are highly specialised to deal with the harsh conditions of high salinity, wind exposure and drought (NPWS, 2008). This habitat is generally very species-poor, fragmented and tends not to occupy large areas due to its narrow, linear nature (Dargie, 1995). It exists in a state of instability and may be absent in some years due to natural and/or anthropogenic causes (JNCC, 2004c).

The habitat description of *1210 Annual vegetation of drift lines* provided by the European Commission changed in the years. Originally, this habitat was defined as occurring on sand or shingle substrate (Ryle *et al.*, 2009). In contrast, the 2007 Interpretation Manual of European Union Habitats (European Commission, 2007) and its subsequent revised version (European Commission, 2013) states that gravel or shingle should provide at least part of the substrate for *1210 Annual vegetation of drift lines* and if the substrate is entirely sandy, this type of vegetation should be considered under *2110 Embryonic shifting dunes* where appropriate (European Commission, 2013). Following consultation with staff at NPWS, Delaney *et al.* (2013) did not alter the interpretation of the habitat in an Irish context, adopting the original definition from Ryle *et al.* (2009). In the same way during the current survey, any vegetation occurring around the high tide mark, dominated by broadleaved herbs and associated with organic drift line deposits was considered here, even if it occurred only on sandy substrate.



Figure 1 Habitat 1210 Annual vegetation of drift lines at sub-site 4.01 Doo Lough, Co. Mayo.

1.4.2 1220 Perennial vegetation of stony banks

This habitat occurs on shingle beaches (formed by cobbles, pebbles and gravel ≥ 2 mm) at and above the high tide mark. The pioneer beach fringing vegetation, typically rooted in gravel, sand or organic deposits, represents a relatively species-poor and particularly unstable version of this habitat (Moore and Wilson, 1999). This pioneer community may also vary inter-annually in response to storm activity, in a manner comparable to *1210 Annual vegetation of drift lines* (Delaney *et al.*, 2013). It tends to be dominated by perennial species, typically including Sea Sandwort *Honckenya peploides*, Curled Dock *Rumex crispus*, Sea Beet *Beta vulgaris* ssp. *maritima*, Rock Samphire *Crithmum maritimum* and Sea Mayweed *Tripleurospermum maritimum*. The rare plants Sea-kale *Crambe maritima* and Oysterplant *Mertensia maritima* are also associated with this community (Fossitt, 2000). Species diversity is influenced by the degree of exposure and by substrate stability, coarseness and particle size. The presence of lichens indicates long-term stability (Moore and Wilson, 1999; NPWS, 2013).

The Interpretation Manual of EU Habitats (European Commission, 2013) associates this habitat in particular with the upper beaches of great shingle banks, vegetated with a range of perennial species. It notes the wide range of vegetation types that may develop on extensive and more stable shingle structures inland of the upper beach, including coastal forms of grassland, heath and scrub vegetation, as well as unusual lichen and bryophyte-dominated communities, developing on more mature, stable, shingle.

The grassland community may be characterised by grasses such as Common Bent *Agrostis capillaris*, Creeping Bent *Agrostis stolonifera*, False Oat-grass *Arrhenatherum elatius*, Cocksfoot *Dactylis glomerata*, Spreading Meadow-grass *Poa humilis*, Common Couch *Elytrigia repens*, Red Fescue *Festuca rubra*, Yorkshire Fog *Holcus lanatus*, and broadleaf herbs such as Yarrow *Achillea millefolium*, Thrift *Armeria maritima*, Common Mouse-ear *Cerastium fontanum*, Wild Carrot *Daucus carota*, Autumn Hawkbit *Leontodon autumnalis*, Common Bird's-foot-trefoil *Lotus corniculatus*, Buck's-horn Plantain *Plantago coronopus*, Ribwort Plantain *Plantago lanceolata*, Silverweed *Potentilla anserina*, Dandelion *Taraxacum officinale* agg., Lady's Bedstraw *Galium verum*, and White Clover *Trifolium repens*. The scrub community can be characterised by the woody species Honeysuckle *Lonicera periclymenum*, Blackthorn *Prunus spinosa*, Bramble *Rubus fruticosus* agg., Gorse *Ulex europaeus* and the climber Hedge Bindweed *Calystegia sepium* (NPWS, 2025).



Figure 2 Habitat 1220 *Perennial vegetation of stony banks* at sub-site 1.01 Bartraw Strand, Co. Mayo.

1.4.3 1310 *Salicornia* and other annuals colonising mud and sand

This habitat is a pioneer saltmarsh community that may occur on muddy sediment seaward of established saltmarsh, or form patches within other saltmarsh communities where the elevation is suitable and there is regular tidal inundation.

The Interpretation Manual of EU Habitats (European Commission, 2013) defines 1310 *Salicornia and other annuals colonising mud and sand* as annuals belonging mainly to the genus *Salicornia* that colonise periodically inundated muds and sands of marine or interior salt marshes and belong to the phytosociological classes: *Thero-Salicornietea*, *Frankenietea pulverulenta* and *Saginetea maritima*. Vegetation from the first and third class is known in Ireland. According to the Irish Vegetation Classification (IVC) (Perrin, 2018), two vegetation communities correspond to the Annex I habitat 1310: SM1A *Salicornia* agg. saltmarsh and SM1C *Suaeda maritima* saltmarsh. Mono-specific swards of Glasswort *Salicornia* spp. growing on muddy sediments are the most common plant community belonging to this Annex I habitat type found in Ireland.

As this habitat is dominated by annuals, it can be ephemeral or transient in nature and is highly susceptible to erosion. Its distribution can vary considerably from year to year and it can move in response to changing conditions, e.g. in estuaries with shifting river channels.



Figure 3 Habitat 1310 *Salicornia* and other annuals colonising mud and sand at sub-site 1.04 Killadangan, Co. Mayo.

1.4.4 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

This habitat generally occupies the widest part of the saltmarsh gradient. It also presents a distinctive topography with an intricate network of creeks and salt pans occurring on the medium to large sized saltmarshes. Atlantic salt meadows contain several distinctive zones that are related to elevation and submergence frequency. The lowest part along the tidal zone is generally dominated by Common Saltmarsh-grass *Puccinellia maritima* with species like Glasswort *Salicornia* spp., Annual Sea-blite *Suaeda maritima* and Lax-flowered Sea-lavender *Limonium humile* also important. The invasive Common Cord-grass *Spartina anglica* can be locally abundant in this habitat.

The mid-marsh zones are generally characterised by Thrift *Armeria maritima* and or Sea Plantain *Plantago maritima*. This zone is generally transitional to an upper marsh herbaceous community with Red Fescue *Festuca rubra*, Saltmarsh Rush *Juncus gerardii* and Creeping Bent *Agrostis stolonifera*.

This habitat is also important for other wildlife including wintering waders and wildfowl. Atlantic salt meadows are distributed around most of the coastline of Ireland. The intricate topography of the Irish coastline with many inlets has created an abundance of sites that are sheltered and allow muddy sediments to accumulate, leading to the development of saltmarsh.

Atlantic salt meadows can comprise a number of plant communities, including communities from the following groups from the IVC: SM2 *Puccinellia maritima* – *Spergularia media*, SM3 *Plantago maritima* – *Armeria maritima*, SM4 *Festuca rubra* – *Seriphidium maritimum*, SM6 *Agrostis stolonifera* – *Juncus gerardii* (Perrin, 2018).



Figure 4 Habitat 1330 *Atlantic salt meadows* (*Glauco-Puccinellietalia maritimae*) at sub-site 17.01 Lunniagh salt marshes, Co. Donegal.

1.4.5 1410 *Mediterranean salt meadows (Juncetalia maritimi)*

This habitat occupies the upper zone of saltmarshes and usually occurs adjacent to the boundary with terrestrial habitats. It is widespread on the Irish coastline, however, it is not as extensive as *1330 Atlantic salt meadows*. The habitat is distinguished from Atlantic salt meadows by the presence of rushes such as Sea Rush *Juncus maritimus* and/or, less commonly, Sharp Rush *Juncus acutus*, along with a range of species typically found in Atlantic salt meadows; including Sea Aster *Aster tripolium*, Sea Purslane *Atriplex portulacoides*, Sea-milkwort *Glaux maritima*, Saltmarsh Rush *Juncus gerardii*, Parsley Water-dropwort *Oenanthe lachenalii*, Sea Plantain *Plantago maritima* and Common Saltmarsh-grass *Puccinellia maritima*.

Mediterranean salt meadows can comprise plant communities SM5A *Juncus maritimus* – *Festuca rubra* saltmarsh and SM5B *Juncus maritimus* – *Plantago maritima* saltmarsh in the IVC (Perrin, 2018).



Figure 5 Habitat 1410 Mediterranean salt meadows (*Juncetalia maritimi*) at sub-site 3.02 Tullaghan Bay, Co. Mayo.

1.4.6 2110 Embryonic shifting dunes

Embryonic shifting dunes are low sand mounds (generally less than a metre high) found between the high tide mark and 2120 *Shifting dunes along the shoreline with* *Ammophila arenaria* (*white dunes*). They are unstable habitats that occur where wind-blown sand is common and they are still vulnerable to saltwater intrusion (Radley, 1994). They represent the initial phase of dune formation and are largely unvegetated (Fossitt, 2000). They typically form where sand gathers around salt-tolerant species such as Lyme-grass *Leymus arenarius* and Sand Couch *Elytrigia juncea*. Other plants such as Sea Rocket *Cakile maritima*, Sea Sandwort *Honckenya peploides* and Prickly Saltwort *Salsola kali* may also occur and Marram *Ammophila arenaria* is generally absent (Fossitt, 2000). They can be very short-lived habitats, which are subject to natural erosion processes and are susceptible to removal by storms or high tides, or alternatively to proceed to the next stage of succession (NPWS, 2025).



Figure 6 Habitat 2110 Embryonic shifting dunes at sub-site 8.01 Bartragh Island, Co. Mayo.

1.4.7 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

These dunes are partially stabilised and are dominated by Marram *Ammophila arenaria*. They are taller than the 2110 *Embryonic shifting dunes*, sometimes reaching heights of 15-20 m, and are located further inland (Fossitt, 2000). The dunes are actively created by *Ammophila arenaria* which traps sand, and the accumulation of sand stimulates further growth of *Ammophila arenaria* (NPWS, 2008). As the sand deposits within the shifting dunes grow, they become elevated above the tide level and become less salty, which facilitates the colonisation of *Ammophila arenaria*. The dominant species occurring in this habitat are Marram *Ammophila arenaria*, Sand Couch-grass *Elymus junceiformis* and Lyme-grass *Leymus arenarius* (NPWS, 2025). Vegetation cover is incomplete and bare sand between the *Ammophila arenaria* tussocks can be colonised by species such as Sand Sedge *Carex arenaria*, Sea Spurge *Euphorbia paralias*, Sea-holly *Eryngium maritimum* and various yellow-flowered Asteraceae species (NPWS, 2008; Fossitt, 2000).



Figure 7 Habitat 2120 *Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)* at sub-site 4.01 Doo Lough, Co. Mayo.

1.4.8 *2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

This is one of four priority Annex I habitats occurring in sand dune systems in Ireland. The boundary between 2120 *Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)* and 2130 *Fixed coastal dunes with herbaceous vegetation (grey dunes)* can be diffuse, but in general grey dunes are more stable and sheltered than white dunes and sand mobility is greatly reduced, resulting in decreased abundance and vigour of Marram *Ammophila arenaria* (Gaynor, 2008). The sandy substrate is frequently overlain by a layer of humus, there is a more or less closed carpet of vegetation and lichens and mosses are often abundant (Fossitt, 2000). Species diversity and composition varies, but usually fixed dune vegetation is typical of herb-rich grassland. Species such as Red Fescue *Festuca rubra*, Bent *Agrostis* spp., Yarrow *Achillea millefolium*, Common Bird's-foot-trefoil *Lotus corniculatus*, Kidney Vetch *Anthyllis vulneraria*, Ribwort Plantain *Plantago lanceolata*, Eyebright *Euphrasia* spp., Wild Thyme *Thymus polytrichus* and Lady's Bedstraw *Galium verum* are common (Fossitt, 2000). It can be an important habitat for orchids such as Pyramidal Orchid *Anacamptis pyramidalis* and Bee Orchid *Ophrys apifera* (NPWS, 2008). Consolidated and flattened dune areas behind

the main dune ridges are also included as fixed dune, unless they conform to *21A0 *Machairs*, which are described below.

Between the mobile and fixed dunes there is a zone of vegetation which is more open than fixed dune vegetation, but is more species-rich than mobile dunes. Yellow composites, Fairy Flax *Linum catharticum* and bryophytes such as Screw-moss *Syntrichia* spp. can be frequent here, as well as grasses such as Marram *Ammophila arenaria* and Red Fescue *Festuca rubra*. This semi-fixed transitional zone was treated as part of the fixed dune habitat for the purposes of this survey, consistent with the approach adopted by Delaney *et al.* (2013), for both mapping and assessment purposes.



Figure 8 Habitat *2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) at sub-site 20.01 Rinclevan dunes, Co. Donegal.

1.4.9 *2140 Decalcified fixed dunes with *Empetrum nigrum*

These dunes are similar to *2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) in that sand mobility has decreased/ceased and some soil development is evident. This priority habitat is extremely rare in Ireland, probably due to the long history of grazing on Irish sand dune systems and also due to the highly calcareous nature of many of Ireland's sand dune systems (Gaynor, 2008). It develops when heath species colonise decalcified fixed dunes (Fossitt, 2000), with the substrate becoming more acidic due to leaching of calcium over time (NPWS, 2008) or where sand has become fixed over siliceous rock (NPWS, 2025). This habitat is characterised by Mountain Crowberry *Empetrum nigrum*, in conjunction with Heather *Calluna vulgaris*, Cross-leaved Heath *Erica tetralix*, *Ulex* spp. and Sand Sedge *Carex arenaria*. Lack of grazing plays an important role in the development and maintenance of this habitat (Gaynor, 2008).

1.4.10 *2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)

The second heath-dominated dune community is also a priority habitat. Again, it is found in dune systems where the substrate has become decalcified or acidified. The species present within this habitat are almost identical to those present in *2140 Decalcified fixed dunes with *Empetrum nigrum*, but Mountain Crowberry *Empetrum nigrum* is absent (NPWS, 2008). In fact, the distinction between the two habitats is very weak (Gaynor, 2008). Heather *Calluna vulgaris*, *Erica* spp., *Ulex* spp. and Sand Sedge *Carex arenaria* are typical, and lichens, especially Cup Lichen *Cladonia* spp., can be locally abundant (NPWS, 2008). This habitat often forms a mosaic with fixed dune vegetation communities, and although the presence of dwarf shrubs is

the most distinguishing feature (Gaynor, 2008), they usually have a low cover (JNCC, 2004a). As with *2140 *Decalcified fixed dunes with Empetrum nigrum*, it is extremely rare, with a few known sites in Ireland (Gaynor, 2008; NPWS, 2008).



Figure 9 Habitat *2150 *Atlantic decalcified fixed dunes (Calluno-Ulicetea)* at sub-site 13.01 Maghera Strand, Co. Donegal.

1.4.11 2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)

The distinction between this habitat and 2190 *Humid dune slacks* is very difficult to determine as the two are closely associated (Gaynor, 2008), and often form a complex mosaic with each other and with fixed dunes (Ryle *et al.*, 2009). This habitat is typically found either on sandy hummocks within dune slacks or on the sides of dune ridges adjacent to slacks. In order to be classified as 2170 *Dunes with Salix repens* ssp. *argentea* (*Salicion arenariae*), the area in question should be beyond the influence of the water table, either through elevation of the surface of the ground (NPWS, 2008) or by a lowering of the water table (Gaynor, 2008). It is characterised by dominance of Creeping Willow *Salix repens*, which often forms a dense ground cover. Moisture-loving plant species typically associated with dune slacks should be absent or noticeably reduced (NPWS, 2008). Other species associated with this habitat include Yorkshire Fog *Holcus lanatus*, Glaucous Sedge *Carex flacca* and Sand Sedge *Carex arenaria*, Creeping Bent *Agrostis stolonifera*, Common Restharrow *Ononis repens* and Bird's-foot-trefoil *Lotus corniculatus* (Ryle *et al.* 2009; NPWS, 2008; Fossitt, 2000).



Figure 10 Habitat 2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) at sub-site 13.01 Maghera Strand, Co. Donegal.

1.4.12 2190 Humid dune slacks

Dune slacks are topographically the lowest lying regions within a dune system, found in hollows or depressions either behind or between dune ridges (Fossitt, 2000). The waterlogged condition of the soil is an important determinant of the vegetation; the water table is usually within 1 m of the surface, with diurnal, seasonal and annual fluctuations (Devaney, 2007). 2190 *Humid dune slacks* can remain flooded from two to six months annually, with fluctuations in the water table based on precipitation and evapotranspiration. They can be classified as either primary or secondary depending on how they are formed. Primary slacks are formed by rapidly advancing dune ridges cutting off former beach plains from the influence of the sea, while secondary slacks are formed by localised erosion in older dunes. In each case, the wind erodes the bare sand until the groundwater level is reached and pioneer dune slack vegetation begins to colonise (Boorman *et al.*, 1997). They are floristically rich and support wetland communities. Typical species include Rush *Juncus* spp., Sedge *Carex* spp., Marsh Pennywort *Hydrocotyle vulgaris*, Water Mint *Mentha aquatica*, Creeping Bent *Agrostis stolonifera*, Silverweed *Potentilla anserina*, Bog Pimpernel *Anagallis tenella* and orchids such as Marsh Helleborine *Epipactis palustris*, Spotted-orchid *Dactylorhiza* spp. and Twayblade *Neottia ovata* (NPWS, 2008; Devaney, 2007; Fossitt, 2000). Soil formation is more advanced within dune slacks than in the preceding habitats, and they are more nutrient enriched due to leaching from the surrounding dunes (Devaney, 2007).

Over time, dune slacks can dry out as sand is dumped in the slack, raising the surface level of the ground (NPWS, 2008) or because of lowering of the water table (Gaynor, 2008). As a result, dune slacks have a number of vegetation communities demonstrating all phases of succession within them, from pioneer to dry mature slacks. When a dune slack has dried to the point where it is no longer directly influenced by groundwater, the habitat undergoes succession to 2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) or *2130 Fixed dunes with herbaceous vegetation (grey dunes). Once this has happened, although the habitat retains its characteristic dune slack morphology, it is no longer considered to correspond to 2190 Humid Dune slacks for the purposes of Conservation Assessment.



Figure 11 Habitat 2190 *Humid dune slacks* at sub-site 9.02 Strandhill, Co. Sligo.

1.4.13 *21A0 Machairs

*21A0 *Machairs*, constituting the fourth priority sand dune habitat, are complex, dynamic systems which are considered natural landforms that are the product of both wind erosion and cultural activities (Gaynor, 2006). They are globally restricted to the northwest coasts of Ireland and Scotland (NPWS, 2008). There are a number of criteria which must be met before an area can be classified as *21A0 *Machairs*. A machair should typically be a flat, sandy, coastal plain, in an oceanic location with a cool, moist climate. The sandy substrate should have a significant percentage of shell-derived material, producing lime-rich soil with a pH normally greater than 7 (NPWS, 2008). The vegetation should be herb-rich, with a low frequency of sand-binding species (Curtis, 1991). Wetness of the soil varies, due to the proximity of the water table, with much of the vegetation transitional between wet and dry communities (Gaynor, 2006). There should be a history of human interference, principally from grazing, and in some cases rotational cropping (JNCC, 2004c), although crops are far more typical of the habitat in Scotland and arable land is rare in Irish machair.

This habitat is found in exposed locations between Galway Bay and Malin Head (Co. Donegal) (Curtis, 1991). Frequent species include Red Fescue *Festuca rubra*, Bird's-foot-trefoil *Lotus corniculatus*, Ribwort Plantain *Plantago lanceolata*, Daisy *Bellis perennis*, Sand Sedge *Carex arenaria*, Lady's Bedstraw *Galium verum* and White Clover *Trifolium repens*. There is, however, no suite of species unique to machair (Gaynor, 2006; Fossitt, 2000).



Figure 12 Habitat *21A0 *Machairs* at sub-site 20.01 Rinclevan dunes, Co. Donegal.

1.5 Nomenclature of the Annex I habitats

The nomenclature of Annex I coastal habitats described above follows the Interpretation Manual of European Union habitats (European Commission, 2013). There is an abbreviated version of some of the habitat names used in The Status of the EU Protected Habitats and Species in Ireland (NPWS, 2025). These abbreviations have been adopted for the remainder of this document so that *1210 Annual vegetation of drift lines* are referred to as *1210 Drift lines*, *1220 Perennial vegetation of stony banks* are referred to as *1220 Vegetated shingle*, *1310 Salicornia and other annuals colonising mud and sand* are referred to as *1310 Salicornia mud*, *1330 Atlantic salt meadows (Glauco-Puccinellietalia maritima)* are referred to as *1330 Atlantic salt meadows*, *1420 Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)* are referred to as *1420 Halophilous scrub*, *2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)* are referred to as *2120 Marram dunes (white dunes)*, **2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)* are referred to as **2130 Fixed dunes (grey dunes)*, **2140 Decalcified fixed dunes with *Empetrum nigrum** are referred to as **2140 Empetrum dunes*, **2150 Atlantic decalcified fixed dunes (Calluno-Ulicetea)* are referred to as **2150 Dune heath*, *2170 Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae)* are referred to as *2170 Dunes with Creeping Willow*, and *2190 Humid dune slacks* are referred to as *2190 Dune slacks*.

2 Methodology

The primary aim of this project was to assess the conservation status of 13 Annex I coastal habitats at a representative sample of 29 coastal sites in the north-west of Ireland, notably in counties Donegal, Sligo and Mayo. *Conservation Assessments* were carried out for 1210 *Drift lines*, 1220 *Vegetated shingle*, 1310 *Salicornia mud*, 1330 *Atlantic salt meadows*, 1410 *Mediterranean salt meadows*, 2110 *Embryonic shifting dunes*, 2120 *Marram dunes (white dunes)*, *2130 *Fixed dunes (grey dunes)*, *2150 *Dune heath*, 2170 *Dunes with creeping willow*, 2190 *Dune slacks* and *21A0 *Machairs*. Information on area and impacting activities related to *2140 *Empetrum dunes* was also recorded, but no sub-site level *Conservation Assessment* was carried out. Habitat 1420 *Halophilous scrub* is among the Annex I habitats of saltmarsh in Ireland but it has not been recorded in the north-west of Ireland and it was not found during CHNW. Consequently, this habitat was not assessed. The survey and assessment methodologies used in CHNW followed those implemented for sand dunes by Delaney *et al.* (2013), vegetated shingles by Martin *et al.* (2017) and saltmarshes by Brophy *et al.* (2019). The *Conservation Assessment* methodology was further refined on the basis of the guidelines for the 2025 Report of the Article 17 of the Habitats Directive (DG Environment, 2023a).

2.1 Site selection

A sample of 29 sites was selected by NPWS from locations previously surveyed by Ryle *et al.* (2009), McCorry & Ryle (2009), Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019) (Fig. 13, Table 3). The selection aimed to ensure continuity with established monitoring baselines while providing a representative sample of the full coastal habitat gradient across the north-west of Ireland, including counties Mayo, Sligo and Donegal. For the purposes of CHNW project, these 29 sites were further subdivided into 67 sub-sites, reflecting the spatial units used in earlier NPWS surveys and enabling consistent temporal comparison of habitat extent, condition and pressures.

Of these 67 sub-sites, 41 were surveyed in the field, where detailed assessments of habitat *Area, Structure and Functions*, and *Future Prospects* were completed, allowing a full sub-site level *Conservation Assessment*. The remaining 26 sub-sites were investigated through desktop analysis, during which evident changes in habitat extent—arising from natural coastal dynamics or anthropogenic modification—and identifiable pressures and threats were mapped through aerial imagery interpretation. This combined field-based and desktop approach provided comprehensive coverage while ensuring methodological consistency across all coastal systems included in CHNW.

It should be noted that the term ‘sub-site level’ used in this document is equivalent to the ‘site level’ applied in earlier monitoring projects.

The figure below illustrates the spatial distribution of field-surveyed and desk surveyed sites and provides an overview of the geographic extent of the CHNW project area.

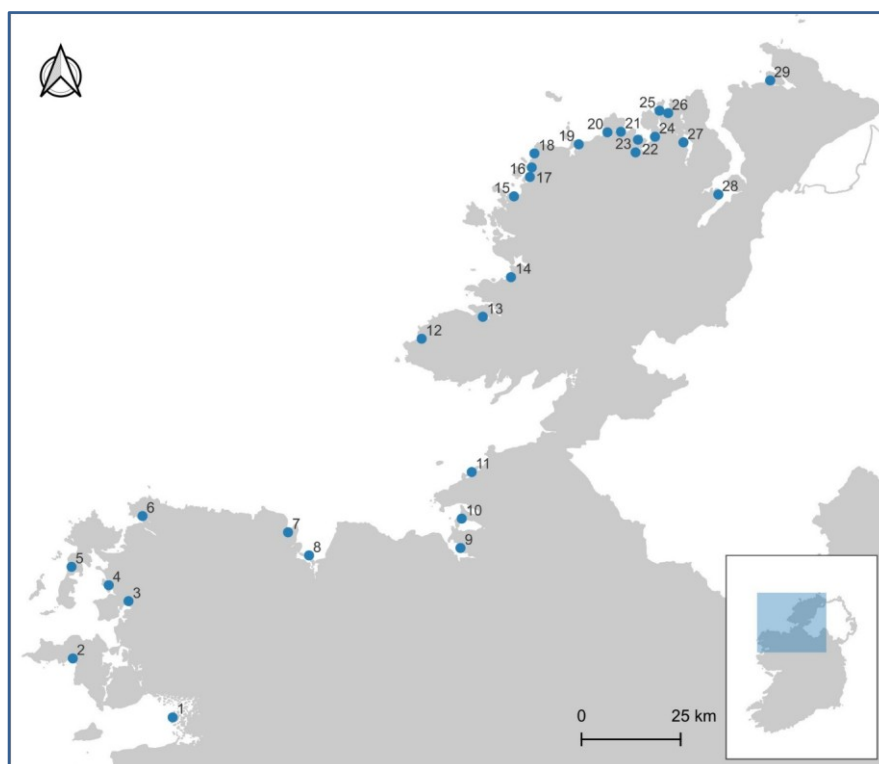


Figure 13 Sites surveyed during the CHNW.

Table 3 Sites surveyed during CHNW, their counties and SAC(s) with which they coincide.

Site number	Site name	County	SAC code
1	Westport Bay to Mulranny	Mayo	001482
2	Keel	Mayo	001513
3	Tullaghan Bay to Doonagh	Mayo	004037
4	Blacksod	Mayo	004037, 000470
5	The Mullet Peninsula	Mayo	004227, 000470
6	Garther Hill and Ross Port	Mayo	004037, 000500
7	Lackan	Mayo	-
8	Killala Bay	Mayo, Sligo	004036, 000458
9	Ballysadare	Sligo	004129, 000622
10	Sligo Bay	Sligo	004035, 000627
11	Streedagh	Sligo	001680
12	Glen Bay	Donegal	000190
13	Maghera to Ardara	Donegal	004150, 000190
14	Lettermacaward to Clooney	Donegal	000197
15	Gweedore	Donegal	001141, 004150
16	Derrybeg	Donegal	001141, 004150
17	Lunniagh	Donegal	001141, 004150
18	Port Ui Chuireain to Bunaniver	Donegal	001141
19	Ballyness Bay	Donegal	001090, 004149
20	Rinclevan	Donegal	000147, 004194
21	Dunfanaghy	Donegal	-
22	Ards to Marble Hill	Donegal	-

Site number	Site name	County	SAC code
23	Creelough	Donegal	-
24	Rosapenna	Donegal	-
25	Tranarossan to Melmore	Donegal	000194, 002159, 004194
26	L. Nagreaney to Gortnatraw	Donegal	000164, 002159, 004194
27	Mulroy	Donegal	-
28	Swilly	Donegal	002287, 004075
29	North Inishowen	Donegal	002012, 004034, 004146

2.2 Field surveys

The field survey methodologies presented below are based on Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019).

2.2.1 Field equipment

Field surveyors employed a combination of printed resources and digital tools to support navigation, data collection, habitat boundary verification and the systematic recording of field observations. Paper maps were used to maintain an overview of the whole sub-site and to assist with orientation across extensive or geographically complex survey areas.

The principal tool for data capture was a dedicated QField project incorporating georeferenced baseline habitat layers, sub-site boundaries and relevant historical survey information (*i.e.* monitoring stops recorded during previous surveys). QField was used to navigate within each sub-site, verify and refine mapped habitat boundaries, record changes in habitat extent, pressures and threats. The application also allowed the accurate geolocation of monitoring plots and other significant features.

For the purpose of condition assessment, surveyors utilised standardised paper record sheets (see Appendix III) developed by Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019). These sheets were used to document *Structure and Functions* attributes, vegetation composition within monitoring stops, and other notes relevant to habitat quality, local distinctiveness and sub-site level condition.

2.2.2 Mapping area

Area mapping was undertaken by comparing the habitat distribution recorded during CHNW with a consolidated GIS baseline derived from previous NPWS coastal surveys. The baseline comprised a composite shapefile produced by merging and harmonising habitat polygon datasets from earlier projects, including sites surveyed by Ryle *et al.* (2009), McCorry & Ryle (2009), Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019). This dataset was provided as a georeferenced polygon layer and incorporated into the QField project.

All accessible sub-sites were walked in the field. Surveyors examined the baseline polygons derived from previous NPWS monitoring programmes and verified, refined or amended the delineation of habitat extents as required. Where adjustments were necessary, their location and extent were recorded using georeferenced points or short line segments in QField. Where baseline boundaries were poorly defined or incomplete, the perimeter of the habitat was walked and recorded as a continuous GPS track to establish a revised field-derived polygon.

Minimum mapping units followed established NPWS practice. Narrow units of 10 × 2 m were applied to fringing and dynamic foredune habitats (1210, 1220, 2110, and 2120). A minimum

area of 100 m² was used for intermediate and stabilised dune habitats (*2130, *2140, *2150, 2170, 2190, *21A0), and a minimum of 400 m² for saltmarsh habitats (1310, 1330, 1410).

The full surface area of each sub-site was attributed to an Annex I habitat where present, or to an appropriate Fossitt (2000) habitat where Annex I habitats did not occur. Areas that were not directly accessible were assessed at a distance and classified as field-validated, or subsequently interpreted using aerial imagery.

Habitat mosaics were mapped where necessary. For more stable dune habitats, polygon boundaries were delineated as precisely as possible in order to minimise the need for mosaic mapping. In contrast with earlier dune surveys, areas dominated by scrub, woodland or invasive species capable of supporting dune habitat were classified according to the vegetation present rather than on geomorphological criteria alone. These areas were reassigned in their entirety to the most appropriate Fossitt (2000) habitat, rather than an Annex I habitat, reflecting a stricter application of habitat definitions.

The field-walked boundary validation approach, previously applied to *1310 Salicornia mud*, *1330 Atlantic salt meadows* and *1410 Mediterranean salt meadows* by McCorry & Ryle (2009) and Brophy *et al.* (2019), and to inland dune habitats by Delaney *et al.* (2013), was subsequently implemented to all Annex I coastal habitats surveyed during CHNW. In particular, it was extended to habitats *1210 Drift lines*, *1220 Vegetated shingle*, *2110 Embryonic shifting dunes* and *2120 Marram dunes (white dunes)*, which in earlier monitoring programmes had often been mapped using transects oriented perpendicular to the shoreline. In addition, habitats *1210 Drift lines*, *1220 Vegetated shingle* and *2110 Embryonic shifting dunes* were mapped only where positive indicator species were observed.

Although these approaches improve spatial accuracy, internal consistency and confidence in habitat identification, they may result in smaller mapped extents. Apparent reductions in habitat area should therefore be interpreted with caution when comparing CHNW results with earlier surveys, as differences may reflect methodological refinement rather than actual habitat loss.

For *1220 Vegetated Shingle*, the extent and distribution of principal community types were recorded in the field. The cover of Scrub, Heath, Grassland and Pioneer communities were documented using the relevant Fossitt habitat codes. For *1330 Atlantic Salt Meadows*, the proportional cover of the saltmarsh communities was recorded using the appropriate IVC categories (SM2, SM3, SM4, SM6 and SM7). This was estimated following a walkover of the polygon.

In some instances, well-developed habitats were recorded at locations where they had not been mapped during previous surveys. Where rapid habitat development was unlikely, such occurrences were considered as omissions attributable to changes in interpretation, differences in mapping resolution, incomplete sub-site coverage during earlier surveys, or digitisation errors. These discrepancies were addressed during the revision of CHNW mapping so that final habitat extents reflected conditions observed during the present survey.

2.2.3 Structure and Functions

Monitoring stops established for the *Structure and Functions* assessment consisted of 2 × 2 m plots positioned to provide representative coverage of each Annex I habitat present within the sub-site. The number of monitoring stops required was determined using the standard allocation procedure applied in earlier NPWS coastal monitoring programmes. In some instances, however, the total number of monitoring stops was calculated at site level rather than sub-site level, resulting in a reduced number of plots.

Table 4 The number of monitoring stops recorded in each Annex I coastal habitat in 2022 and 2023.

Number of monitoring stops recorded	Area of habitat (ha) 2012
0	<0.04
2	>0.04 - 0.25
4	>0.25 – 1
8	>1 – 25
12	>25 – 100
16	>100

Where possible, monitoring stops were positioned at or near locations surveyed during previous monitoring cycles, particularly for saltmarsh habitats, where continuity with Brophy *et al.* (2019) was considered important to ensure methodological comparability. Where original locations were inaccessible or where the previously recorded habitat was no longer present, stops were relocated to the nearest suitable area representative of the same habitat type.

All data were recorded on paper field sheets consistent with those used in earlier projects (Appendix III). These provided a standardised format for documenting species composition, vegetation structure, and other attributes relevant to the *Structure and Functions* assessment.

For dune and vegetated shingle habitats, the assessment followed the procedures applied by Delaney *et al.* (2013) and subsequently adapted by Martin *et al.* (2017). Percentage cover estimates were recorded within the plot for the habitats that required it, replacing the Domin scale used in the earliest iterations of these methodologies. Structural and environmental attributes were also recorded in accordance with established procedures.

For *1220 Vegetated Shingle*, additional information was recorded on the cover of the principal vegetation community types, using the relevant Fossitt categories for Scrub, Heath, Grassland and Pioneer communities, consistent with the approach applied by Martin *et al.* (2017).

Table 5 Criteria assessed as part of the *Structure and Functions* assessment for dunes and vegetated shingles habitats during the CHNW and the habitats in which they were applied.

Criterion	Assessment	1210	1220	2110	2120	*2130	*2150	2170	2190	*21A0
Positive indicator species	Frequency within the whole habitat	✓		✓	✓	✓		✓	✓	✓
Positive indicator species	Number of species within each monitoring stop					✓		✓	✓	✓
Typical species	Not assessed (key)						✓			
Rare species	Evidence of decline within the habitat since SDM or VSM; not assessed (*2150)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cover of bryophytes	Cover within each monitoring stop (*21A0) or frequency within the habitat (2190)								✓	✓
Negative indicator species	Frequency and cover within the whole habitat and cover within each monitoring stop	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-native invasive species	Frequency within the habitat	✓	✓	✓	✓	✓	✓	✓	✓	✓
Native species	Evidence of decline within the habitat since SDM or VSM		✓							
Shingle habitat	Evidence of decline within the habitat since SDM or VSM		✓							
Flowering and fruiting of positive indicator species	Frequency within the habitat					✓				✓
Green shoots and flowering in flowering season	Frequency within the habitat			✓	✓					
Signs of browsing	Frequency within the habitat						✓			
Calluna growth phases	Presence and frequency within stop						✓			
Height of vegetation	Mean height within the habitat (*21A0) or % of stops that achieve a target range within the habitat (*2130)					✓				✓
Bare ground	Percentage cover within the habitat					✓	✓	✓	✓	✓
Salix repens	Percentage cover within the habitat								✓	

Criterion	Assessment	1210	1220	2110	2120	*2130	*2150	2170	2190	*21A0
Scrub, tree cover	Frequency and cover (*2150) of scrub close to monitoring stops and total cover within the habitat					✓	✓	✓	✓	
Proportion of broadleaved herbs	Cover of broadleaved herbaceous species as a percentage of total vegetation cover within each monitoring stop								✓	
Indicators of rank conditions	Percentage cover within the habitat							✓		
Height of Salix repens	Height within each stop							✓		
Trees/saplings from adjacent plantations	Frequency of trees/saplings from adjacent plantations within 20 m of monitoring stops					✓				
Interference with sediment dynamics	Evidence of structures or practices which currently interfere the sediment dynamics of the habitat	✓	✓	✓	✓	✓	✓	✓	✓	✓
Damage due to disturbance	Percentage area affected across the whole habitat	✓	✓	✓	✓	✓	✓	✓	✓	✓

For saltmarsh habitats, indicators recorded at each plot followed the procedures developed by Brophy *et al.* (2019), with attributes selected to reflect the condition of 1310, 1330 and 1410 habitats.

Table 6 Criteria assessed as part of the *Structure and Functions* assessment for saltmarsh habitats during the CHNW and the habitats in which they were applied.

Criterion	Assessment	1310	1330	1410
Positive indicator species	Combined density within the whole habitat	✓		
Positive indicator species	Number of species within each monitoring stop		✓	
Positive indicator species	Number of species within each monitoring stop and frequency within the whole habitat			✓
Negative indicator species	Cover and evidence of decline within the whole habitat	✓	✓	✓
Vegetation height	Standard deviation of median of maximum leaf height from four quadrants of plot		✓	
Signs of negative activities	Presence within the habitat	✓	✓	✓
Disturbed ground	Cover within the habitat		✓	✓
Occurrence of human disturbance to hydrology	Presence relative to SMPI and SMP II	✓	✓	✓
Site-specific target species	Evidence of decline within the habitat since SMP	✓	✓	✓
Presence of <i>Spartina</i> spp	Evidence of decline within the habitat since SMP	✓	✓	✓
Natural transitions to semi-natural terrestrial habitats	Evidence of decline within the habitat since SMP		✓	✓
SM zonation (IVC)	Evidence of decline within the habitat (site-specific target)		✓	

Structure and Functions criteria comprised both stop-level and sub-site level attributes. Stop-level criteria were completed directly at each monitoring stop. Sub-site level criteria were informed by observations made during the walkover of the sub-site and finalised after reviewing field notes, mapping edits, and survey photographs.

In addition to the monitoring stops, supplementary relevé surveys were carried out following NPWS instruction. Relevés of 2 × 2 m were completed within selected saltmarsh communities, specifically IVC SM1c and SM7, and within dune habitats at sub-sites 5.01 Aghleam and 20.01 Rinclevan dunes. Moreover, larger 5 × 5 m relevés were undertaken in areas characterised by stands of *Hippophaë rhamnoides* (Fossitt habitat WS3). All relevé data were subsequently transcribed into spreadsheets formatted for compatibility with Turboveg, allowing integration with national vegetation datasets and ensuring consistency with earlier survey cycles.

2.2.4 Future Prospects

Future Prospects were assessed on the basis of pressures, threats and measures identified during the field survey. Surveyors recorded these features *in situ* using dedicated waypoints in QField, noting both the precise location and a brief description. Observations included

activities or processes considered capable of influencing the structure, functions or long-term viability of the habitat, whether of anthropogenic or natural origin. All recorded pressures, threats and measures were subsequently reviewed in conjunction with sub-site notes, habitat extent data and known management practices to inform the evaluation of future habitat condition.

2.3 Post-survey analyses and Condition Assessment

Following completion of the field survey, all spatial and ecological data were processed and organised to allow the evaluation of *Area*, *Structure and Functions*, *Future Prospects* and *Overall Assessment of Conservation Status*. The procedures outlined below describe the post-survey steps undertaken to prepare the CHNW datasets for assessment.

2.3.1 Area

Post-survey analyses for *Area* involved the systematic processing of all spatial data collected during the field survey. Boundary edits recorded in QField—including georeferenced points, linear corrections and GPS tracks—were transferred to a desktop GIS environment (QGIS) and examined alongside the composite coastal baseline and recent aerial imagery, notably the OSi High Resolution Imagery. These datasets were used to refine habitat boundaries and to prepare the updated CHNW habitat map.

For sub-sites surveyed in the field, changes recorded were reviewed in relation to the baseline. Evidence collected during field surveys was used to redraw polygon boundaries where appropriate or to digitise new areas of habitat. Each modification was classified as a correction of interpretation, a refinement of an existing boundary, or a genuine alteration in habitat extent, depending on the nature and consistency of the supporting field observations.

Changes resulting from natural succession or transitions between Annex I habitat types were treated as natural dynamics or interpretative refinements rather than as real gain or loss in habitat extent. Anthropogenic modifications, such as construction of buildings or access tracks, habitat degradation or erosion associated with overgrazing, or the expansion of invasive species or forestry, were digitised in a separate layer and retained for use in the assessment of *Future Prospects*.

Digitisation procedures were applied consistently across all habitat types. For dune habitats, baseline polygons were adjusted along ridges, swales and breaks of slope recorded in the field. For saltmarsh habitats, boundaries were aligned with creek systems, pans, embankments and other geomorphological features identifiable on aerial imagery and confirmed during the survey. For *1220 Vegetated shingle*, habitat limits were mapped by walking the boundary on the ground, rather than applying the method adopted in Martin *et al.* (2017) of defining the seaward extent at the upper storm beach or limit of frequent wave action and the landward extent where shingle substrate becomes overlain by deeper soils or grades into dune, grassland or scrub vegetation. Small adjustments were made to maintain coherent polygon geometry, to respect the minimum mapping area and to avoid the creation of sliver polygons, while still representing key ecological transitions.

Once all edits had been incorporated, polygons were checked for completeness and assigned either to an Annex I habitat or to an appropriate Fossitt (2000) category. In polygons where habitat mosaics occurred, the percentage cover of each component habitat was recorded in the polygon attribute table. Areas characterised by scrub, trees or dense bracken were treated according to the condition observed during the survey. Where the previously mapped habitat was no longer present, these areas were remapped accordingly. In other cases, such vegetation was recorded as a negative impact, including instances where its influence was of high intensity. The final polygon layer represents the revised interpretation of habitat extent

for the CHNW survey period and forms the spatial basis for the *Area* component of the *Conservation Assessment*.

For sub-sites not surveyed in the field, habitat extent was assessed exclusively through aerial imagery interpretation. The composite coastal baseline was reviewed against OSi High Resolution Imagery, and polygon boundaries were amended only where clear and unambiguous changes were visible. These changes related primarily to coastal erosion, scrub encroachment and other natural dynamics, as well as to identifiable anthropogenic modifications including new tracks, buildings or localised land-take. As with the field-surveyed sub-sites, all habitat alterations attributable to anthropogenic causes were digitised in a separate layer and retained for use in the assessment of *Future Prospects*. In contrast to field-surveyed sub-sites, where each polygon was assigned to an Annex I or Fossitt (2000) habitat and boundaries were updated in the field, the desk-survey polygons were not otherwise altered and polygons that had not been attributed to a habitat type during earlier monitoring cycles and for which a reliable interpretation could not be made from imagery were retained with their original 'Not surveyed' designation.

Finally, each polygon was labelled to indicate whether it had been fully surveyed ('Surveyed'), surveyed in less detail ('Field validated'), surveyed with aerial imagery interpretation ('Imagery only') or had been totally inaccessible ('Not surveyed').

The *Area* assessment for CHNW was undertaken by comparing the extent of each habitat recorded on the final CHNW maps with the corresponding extent shown on the composite baseline. For all habitats in which a change in area was identified, the nature and origin of the change were examined. Where no loss of area had occurred, or where the change resulted from natural processes characteristic of dynamic coastal systems, the reduction was not considered negative and the *Area* parameter was assessed as *Favourable*. In contrast, where a loss of area was attributable to an anthropogenic factor, the habitat was assessed as *Unfavourable*. Area loss, where confirmed, was expressed as an annual percentage change using the formula $(\text{Area lost} / (\text{Current area} + \text{Area lost})) \times 100$ divided by the number of years since the baseline survey.

This allowed a standardised comparison across sites/sub-sites and survey periods. If the reduction in area was less than 1% per year since the relevant baseline surveys of Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019), *Area* was assessed as *Unfavourable–Inadequate*. Where the reduction exceeded 1% per year, *Area* was assessed as *Unfavourable–Bad*.

To support the interpretation of changes, historical aerial imagery from the Ordnance Survey of Ireland (1995, 2000, 2005, 2010) and time-series imagery available through Google Earth were consulted. These resources were used to verify whether area losses had occurred since the baseline—particularly in relation to construction, road development, or other land-use changes—and to assist with interpretation at sub-sites not fully covered during earlier monitoring cycles.

Increases in area were considered in the assessment only where they resulted from demonstrable human activities, such as habitat restoration or improved management. Natural increases arising from accretion or successional processes were regarded as neither positive nor negative, as such dynamics form part of the natural behaviour of coastal habitats. The terminology and thresholds adopted were selected to ensure consistency with the guidelines for the 2025 Report of the Article 17 of the Habitats Directive (DG Environment, 2023a).

2.3.2 Structure and Functions

Structure and Functions were assessed using the criteria listed in tables 5 and 6. Each criterion was examined in turn, and the field data, photographs and habitat maps were

reviewed where a criterion did not initially meet the required target. Where the failure was attributable to natural processes operating within coastal systems, the result was re-evaluated and, where appropriate, the criterion was allowed to pass on the basis of expert judgement. When expert judgement was applied in this manner, a note was made on the assessment sheet and in the individual sub-site report.

Criteria referring to sub-site level attributes were assessed using information derived from the updated habitat mapping, from recent aerial imagery interpretation, and from pressures and threats recorded during the survey. These sources were used to provide the broader context required to evaluate those criteria that cannot be determined from monitoring stops alone.

Once all criteria had been applied—and expert judgement used where appropriate—the number of criteria which failed was recorded. If no criteria failed, *Structure and Functions* were assessed as *Favourable*. If one or two criteria failed, *Structure and Functions* were assessed as *Unfavourable–Inadequate*. If three or more criteria failed, *Structure and Functions* were assessed as *Unfavourable–Bad*. Although the number of criteria differs between habitats, the same thresholds were used for all. Failure of three or more criteria indicates that several aspects of *Structure and Functions* are impaired, regardless of how many criteria were assessed.

This process produced the *Structure and Functions* assessment at sub-site level. For each habitat, the proportion of the habitat area considered to be in good condition (*Favourable*) was then estimated by using the monitoring stops as representatives of the parts of the sub-site they occupied and by taking account of the impacts currently affecting those areas.

For sub-sites assessed through desk study, no monitoring stops were established. As no field data on habitat *Structure and Functions* were collected, this parameter was not subject to assessment for those sub-sites.

2.3.3 Future Prospects

Future Prospects were assessed at sub-site level based on all impacts and measures identified during the survey. Pressures and threats were recorded in the field as georeferenced waypoints and supplemented by impacts identified through aerial imagery interpretation. For each impact, the following details were recorded: its intensity (high, medium or low), its effect (positive, negative or neutral), its timing (past/suspended, ongoing, ongoing/future or future), the percentage of each Annex I habitat affected, and whether the source of the impact originated inside or outside the habitat. The estimated area affected by each impact was then calculated in order to derive the proportion of the habitat influenced within the sub-site. This provided a quantitative basis for evaluating the likely consequences of pressures and threats during the next monitoring cycle.

In addition to impacts recorded during the current survey, pressures and threats documented in previous NPWS monitoring programmes—namely Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019)—were examined to determine whether each impact was new, persistent or changing in extent or severity. Where an impact recorded in earlier surveys remained present, its persistence was noted and considered during the evaluation.

All pressures and threats were classified according to the List of Pressures and Threats to reporting 2019–2024 (DG Environment, 2023b) (Appendix IV), which is based on the classification system applied during the 2013–2018 reporting cycle, with minor modifications introduced to ensure consistency (DG Environment, 2023a). Each pressure was assigned an impact score following the approach used by Delaney *et al.* (2013) and Martin *et al.* (2017). The impact score reflected the magnitude and extent of the pressure and its potential to affect the *Area* or the *Structure and Functions* of the habitat. Where multiple impacts occurred, possible cumulative effects were considered.

Table 7 Scoring system used to quantify impacts in Annex I habitats (modified from O'Neill *et al.*, 2010). Impact score is the mathematical product of all three attribute scores.

Attribute of impact	Value	Attribute score
1. Intensity of impact	High	1.5
	Medium	1
	Low	0.5
2. Effect of impact	Positive	1
	Neutral	0
	Negative	-1
3. % Area of Annex I polygon impacted	≥1%	0.5
	2-25%	1
	26-50%	1.5
	51-75%	2
	>75%	2.5
	100%	3

Although the impact score provides a structured basis for evaluation, all individual impacts were examined in detail before *Future Prospects* were assigned. Impacts assessed as neutral, generally attributable to natural coastal dynamics, were noted but not considered detrimental. Impacts assessed as positive, particularly those associated with habitat restoration or beneficial management, were also recorded and considered in the assessment.

Measures were classified according to the List of Conservation Measures for the 2019–2024 reporting period (DG Environment, 2023c) (Appendix V), which mirrors the List of Pressures and Threats and follows the structure applied during the 2013–2018 reporting cycle, with minor modifications to ensure consistency. Measures implemented on sub-site with the potential to support habitat recovery were incorporated into the evaluation in the same manner as pressures and threats, with their anticipated effects on future habitat condition considered.

Future Prospects scores were reviewed, and in some cases adjusted, on the basis of expert judgement where additional context or sub-site-specific considerations indicated that a revision was warranted. Any application of expert judgement was documented on the assessment sheets and in the sub-site reports.

Where pressures and threats were minor, localised, or unlikely to influence the habitat within the next monitoring cycle, *Future Prospects* were assessed as *Favourable*. Where pressures were present but of limited extent, uncertain trend or moderate severity, *Future Prospects* were assessed as *Unfavourable–Inadequate*. Where pressures or threats were extensive, persistent, or assigned high impact scores indicating a significant likelihood of deterioration, *Future Prospects* were assessed as *Unfavourable–Bad*.

For sub-sites not surveyed in the field, pressures, threats and relevant management measures were identified through a combination of aerial imagery interpretation, previous monitoring project site reports (Delaney *et al.*, 2013; Martin *et al.*, 2017; Brophy *et al.*, 2019) and other available sources. In these cases, only the impact code, the impact description, and—where it could be determined reliably—the area affected were recorded. Other impact parameters could not be assessed. As a result, a sub-site level assessment of *Future Prospects* was not undertaken for these sub-sites. Nevertheless, the information collected was retained and incorporated into the *National Conservation Assessment of Future Prospects* for each Annex I habitat.

2.4 Sub-site level Conservation Assessment

The conservation condition for each Annex I habitat at sub-site level was determined by combining the results of the three parameters assessed: *Area*, *Structure and Functions*, and *Future Prospects*. Each parameter was first evaluated independently, following the procedures set out in the preceding sections, and the resulting assessments were then integrated to produce an overall judgement.

The *Overall Assessment of Conservation Status* followed the standard approach applied in previous NPWS coastal monitoring programmes following the guidelines for the 2025 Report of the Article 17 of the Habitats Directive (DG Environment, 2023a), whereby the least favourable of the three parameter assessments determines the final conservation condition for the habitat at the sub-site. Thus, if *Area*, *Structure and Functions* and *Future Prospects* were all assessed as *Favourable*, the overall conservation condition was assessed as *Favourable*. If any one of the parameters was assessed as *Unfavourable–Inadequate* and none as *Unfavourable–Bad*, the overall condition was assessed as *Unfavourable–Inadequate*. If any parameter was assessed as *Unfavourable–Bad*, the overall condition was assessed as *Unfavourable–Bad*.

Where expert judgement had been used in the assessment of any parameter—whether to overturn a *Structure and Functions* criterion, adjust a *Future Prospects* score, or clarify the interpretation of *Area* changes—a note was made on the *Conservation Assessment* sheet. All decisions were supported by field evidence, habitat mapping, and, where appropriate, reference to previous NPWS monitoring.

The results of the *Conservation Assessment* for each habitat were recorded in the sub-site assessment sheets and incorporated into the CHNW database. These results form the basis for the evaluation of conservation status at national level.

The results of the condition assessments for each Annex I habitat at each of the 41 sub-sites are presented in the individual sub-site reports of CHNW.

2.5 National conservation assessment

The *National Conservation Assessment* for coastal habitats was subsequently undertaken using the data collected during CHNW, CHSW, CHES and CMWI and the previous reporting cycles. The results of this assessment are presented in the 2025 Article 17 report (NPWS, 2025).

3 Results

3.1 1210 Annual vegetation of drift lines

Habitat *1210 Drift lines* was investigated at 19 sites distributed across the survey area (Figure 14, Appendix II). These comprised 14 field-surveyed sub-sites and nine desk study sub-sites. The habitat was recorded in 12 of the field-surveyed sub-sites and was no longer present at 5.01 Aghleam and 29.03 Crummies Bay. An overall sub-site level *Conservation Assessment* was completed for 11 sub-sites. At one additional sub-site only the *Area* and *Future Prospects* parameters were assessed.

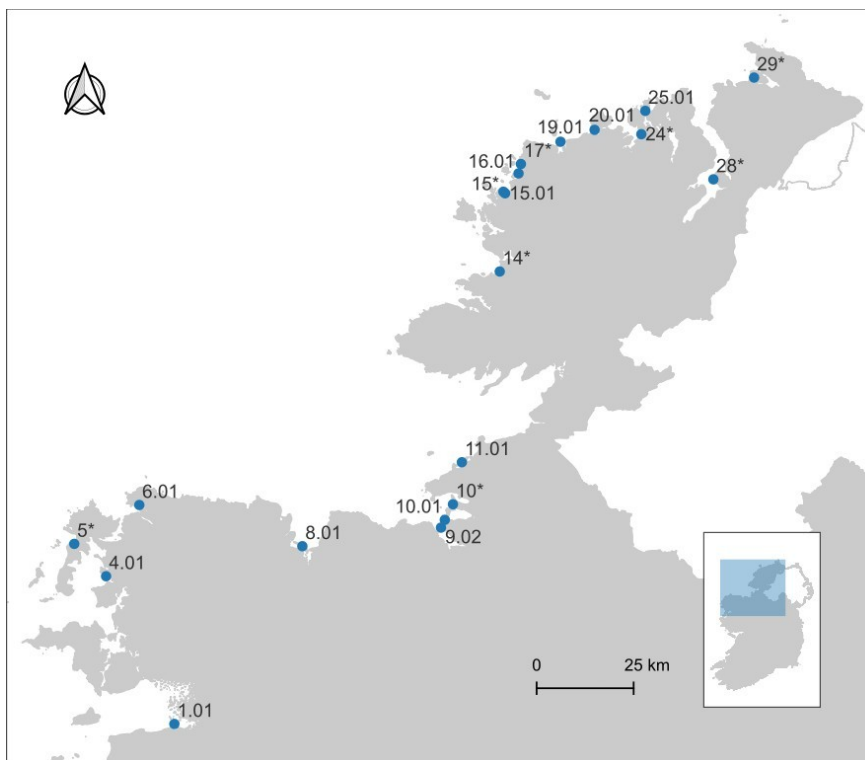


Figure 14 Distribution of CHNW sub-sites supporting *1210 Drift lines* (* indicates desk study sub-sites).

3.1.1 Area and distribution

The total mapped extent of *1210 Drift lines* within the CHNW sites is 9.11 ha. Of this, 3.39 ha occur within the 12 field-surveyed sub-sites and 5.72 ha within the nine desk study sub-sites (Table 8). The *Area* parameter was assessed in 12 sub-sites (Appendix II).

Comparison with the baseline mapping indicates an overall reduction of 2.61 ha (22.3%) within the surveyed sites. The majority of this change reflects the ephemeral nature of the habitat, natural coastal processes and revised interpretation of habitat boundaries following methodological updates.

Table 8 Total area of *1210 Drift lines* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	5.78	5.94	11.72
CHNW Area (ha)	3.39	5.72	9.11

Anthropogenic losses resulted from the construction of coastal defence structures and the associated interference with sediment dynamics were recorded at sub-sites 10.01 Strandhill (0.88 ha) and 15.01 Kincaslough (0.06 ha) by Delaney *et al.* (2013). At sub-site 16.01 Derrybeg dunes, area losses recorded during previous surveys were likewise associated with human activities. No area loss attributable to anthropogenic activities was recorded during CHNW.

Despite the overall reduction, the *Area* parameter was assessed as *Favourable* at nine sub-sites (75%). The two sub-sites (16.7%) assessed as *Unfavourable–Bad* were those affected by coastal defence structures, as although some local redistribution of the habitat was observed, the original extent had not been re-established. One additional sub-site (8.3%) was assessed as *Unfavourable–Inadequate*. For these three sub-sites, the trend is considered decreasing, while it is generally stable at all remaining *Favourable* sites (Appendix II).

3.1.2 Structure and Functions

Although *1210 Drift lines* was recorded at 12 sub-sites, *Structure and Functions* were assessed at 11 sub-sites, as no monitoring stops were surveyed at sub-site 25.01 Rossguill Peninsula. In total, 3.34 ha (36.7% of the total area mapped during CHNW) were included in the assessment.

All floristic criteria passed at all assessed sub-sites, including the presence of positive indicator species, absence of negative indicator species, absence of non-native species and the presence of notable or rare species. The criterion relating to interference with sediment dynamics failed at one sub-site (15.01 Kincaslough), where coastal defence structures have altered natural processes (Table 9).

Table 9 *Structure and Functions* assessment criteria for the 11 CHNW sub-sites where *1210 Drift lines* was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	11 (100%)
2. Negative indicator species	11 (100%)
3. Non-native species	11 (100%)
4. Notable/rare species	11 (100%)
5. Interference with the sediment dynamics	10 (91%)
6. Damage due to disturbance	11 (100%)

Ten sub-sites (90.9%) were assessed as *Favourable* and one sub-site (9.1%) (15.01 Kincaslough) was assessed as *Unfavourable–Inadequate*. No sub-sites were assessed as *Unfavourable–Bad* under this parameter. The trend is stable at every sub-site where it was assessed (Appendix II).

Overall, 3.28 ha (98.2%) of the *1210 Drift lines* area assessed for *Structure and Functions* were found to be in good condition (Appendix II).

3.1.3 Future Prospects

Future Prospects were assessed at the 12 sub-sites where *1210 Drift lines* was recorded during CHNW. No pressures were identified at sub-sites 1.01 Bartraw Strand, 6.01 Garter Hill, 15.01 Kincaslugh and 20.01 Rinclevan dunes.

No positive impacts were recorded for this habitat.

Neutral impacts (Table 10) were recorded across seven sub-sites and included low-intensity recreational activities (e.g. walking), natural erosion and the presence of long-established coastal protection structures. Natural coastal processes, including erosion and redistribution of strandline material, were widespread but are considered intrinsic to the functioning of this dynamic habitat.

Table 10 Neutral impacts affecting *1210 Drift lines*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PF05	Walking		3		3	0.60	18
PF15	Coastal defences	1	2		3	Unknown	Unknown
PM07	Natural erosion	1			1	0.40	12

Negative impacts (Table 11) were limited in extent, affecting collectively two sub-sites. These included offroad driving, agricultural or recreational. Coastal defence structures were recorded at sub-site 15.01 Kincaslugh, previously identified by Delaney *et al.* (2013) as experiencing anthropogenic loss. No new coastal protection works affecting the habitat were recorded during CHNW.

Table 11 Negative impacts affecting *1210 Drift lines*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA25	Offroad driving (agriculture)			1	1	0.0004	< 1
PF05	Offroad driving			1	1	0.04	1
PF15	Coastal defences	1			1	Unknown	Unknown

Overall, *Future Prospects* were assessed as *Favourable* at 11 field-surveyed sub-sites (91.7%). At sub-site 15.01 Kincaslugh, where coastal defence structures continue to interfere with sediment dynamics, *Future Prospects* were assessed as *Unfavourable–Inadequate*. No sub-sites were assessed as *Unfavourable–Bad* (Appendix II).

At the desk study sub-sites (Table 12), offroad driving was recorded at two sub-sites, affecting less than 1% of the total area. Natural erosion, not attributable to anthropogenic causes, was recorded at four sub-sites and affected approximately 50% of the total desk study area.

Table 12 Impacts affecting 1210 Drift lines, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PF05	Offroad driving and walking	2	0.03	< 1
PM07	Natural erosion and natural succession	4	2.73	48

3.1.4 Overall Conservation Assessment

At sub-site level, the overall *Conservation Assessment* was completed for 11 sub-sites (Table 13, Appendix II). The habitat was assessed as *Favourable* at eight sub-sites (72.7%). Two sub-sites (18.2%) (10.01 Strandhill and 15.01 Kincaslugh) were assessed as *Unfavourable–Bad* due to pressures associated with coastal defences structures, which interfere with natural sediment dynamics. Sub-site 16.01 Derrybeg dunes was assessed as *Unfavourable–Inadequate* for the same reason.

The trend is stable at five sub-sites and improving at sub-site 9.02 Strandhill. Trend was not assessed at the remaining sub-sites.

Table 13 Sub-site level assessment results of habitat 1210 Drift lines.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	9	10	11	8
Unfavourable - Inadequate	1	1	1	1
Unfavourable - Bad	2	0	0	2
Not assessed (NA)	0	1	0	1

3.2 1220 Perennial vegetation of stony banks

Habitat *1220 Vegetated shingle* was recorded at 13 sites distributed across the survey area (Figure 15, Appendix II). These comprised 13 field-surveyed sub-sites and five desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for 10 sub-sites. At two additional sub-sites, only the *Area* and *Future Prospects* parameters were assessed.

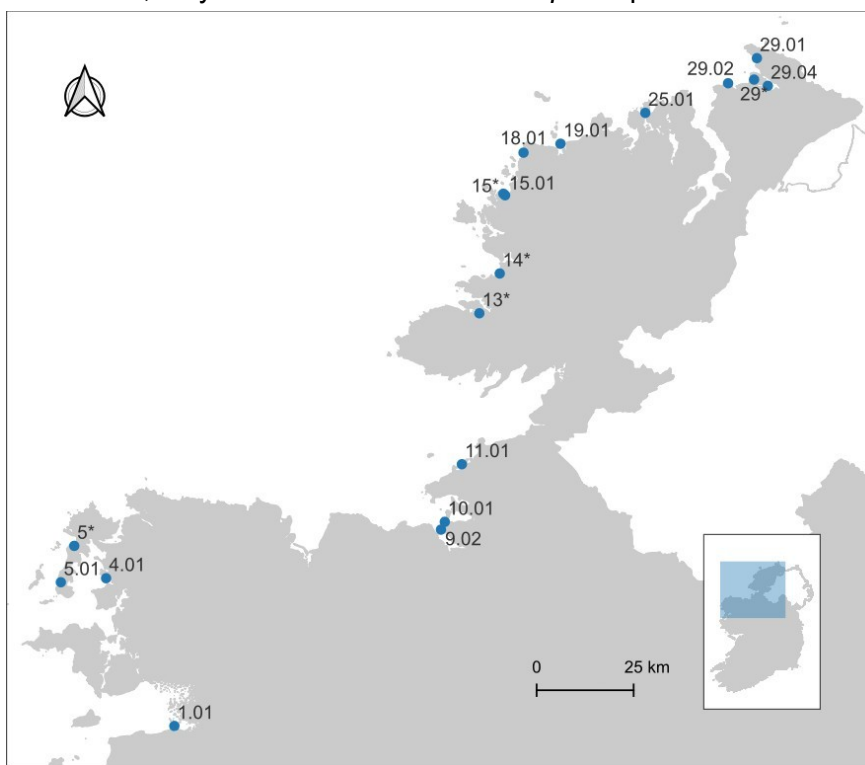


Figure 15 Distribution of CHNW sub-sites supporting *1220 Vegetated shingle* (* indicates desk study sub-sites).

3.2.1 Area and distribution

The total mapped extent of *1220 Vegetated shingle* within the CHNW sites is 11.13 ha. Of this, 8.95 ha were recorded within field-surveyed sub-sites and 2.18 ha within desk study sub-sites (Table 14). *Area* was assessed at all sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall reduction of 0.32 ha (2.8%) since the baseline survey. The majority of this change reflects the ephemeral nature of the habitat, natural coastal processes and revised interpretation of habitat boundaries following methodological updates.

Table 14 Total area of *1220 Vegetated shingle* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	9.28	2.17	11.45
CHNW Area (ha)	8.95	2.18	11.13

During the CHNW, an anthropogenic loss of 0.02 ha was recorded at sub-site 18.01 Port Ui Chuireain to Bunaniver (Table 15). This loss is attributable to drainage works, which altered local site conditions and facilitated the invasion of problematic native and alien species.

Losses had also been reported during previous monitoring cycles at sub-sites 29.01 Whitestrand Bay – Culoort and 29.02 Tullagh Bay and Tullagh Point. No further anthropogenic reduction in extent was recorded at these sub-sites during CHNW.

Table 15 Loss in area of *1220 Vegetated shingle* within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	0.02	0.00	0.02
Loss due to natural processes	0.00	0.00	0.00
Total Result	0.02	0.00	0.02

Despite minor localised changes in distribution, the *Area* parameter was assessed as *Favourable* at nine sub-sites (75%). The three sub-sites (25%) (18.01 Port Ui Chuireain to Bunaniver, 29.01 Whitestrand Bay – Culoort and 29.02 Tullagh Bay and Tullagh Point) where habitat losses occurred during CHNW or previous monitoring cycles were assessed as *Unfavourable–Inadequate*. No sub-site was assessed as *Unfavourable-Bad*. The trend is stable at sub-sites assessed as *Favourable* and decreasing at those assessed as *Unfavourable–Inadequate* (Appendix II).

3.2.2 Structure and Functions

Although *1220 Vegetated shingle* was recorded at 13 sites, *Structure and Functions* were assessed at 10 sub-sites. No monitoring stops were recorded at sub-site 15.01 Kincaslugh, and at sub-sites 19.01 Dooey and 29.04 Trawbreaga Bay the habitat extent was below the minimum monitoring area. In total, 8.87 ha (79.7% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

At two sub-sites (20%), the criterion relating to interference with sediment dynamics failed due to the presence of coastal defence structures and associated alterations to shingle mobility. At one sub-site (10%), the criterion relating to damage due to disturbance failed. All other criteria met the target at all assessed sub-sites (Table 16).

Table 16 *Structure and Functions* assessment criteria for the 10 CHNW sub-sites where *1220 Vegetated shingle* was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Shingle habitat	10 (100%)
2. Native species	10 (100%)
3. Notable/rare species	10 (100%)
4. Negative indicator species	10 (100%)
5. Non-native species	10 (100%)
6. Interference with the sediment dynamics	8 (80%)
7. Damage due to disturbance	9 (90%)

Eight sub-sites (80%) were assessed as *Favourable* and two sub-sites (20%) (18.01 Port Ui Chuireain to Bunaniver and 29.01 Whitestrand Bay – Culoort) were assessed as *Unfavourable–Inadequate*. No sub-site was assessed as *Unfavourable-Bad* under this parameter. The trend was generally considered as stable with two sub-sites (4.01 Doo Lough and 29.02 Tullagh Bay and Tullagh Point) with an increasing trend (Appendix II).

3.2.3 Future prospects

Neutral impacts were recorded for *1220 Vegetated shingle* at four sub-sites, negative impacts were also recorded at four sub-sites, and at seven sub-sites no impacts were observed for this habitat. No positive impacts or activities were recorded.

The five neutral impacts affecting the habitat area are shown in Table 17. The two impacts which affected the largest area were walking and old sea defences with which the habitat has come into equilibrium. Grazing, overgrazing and natural erosion were each noted at one site.

Table 17 Neutral impacts affecting *1220 Vegetated shingle*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA07	Overgrazing		1		1	0.22	2
PA08	Grazing		1		1	0.38	4
PF05	Walking		4		4	1.67	19
PF15	Coastal defences		2		2	Unknown	Unknown
PM07	Natural erosion			1	1	0.02	< 1

Negative impacts affecting *1220 Vegetated shingle* are presented in Table 18. Coastal defence structures were recorded as a significant pressure at four sub-sites. These affected a substantial area of the habitat, however, it was not possible to determine the total extent affected due to the indirect nature of impacts on coastal sedimentary processes. Other negative high intensity impacts were primarily associated with human activities, including presence of roads and associated offroad driving and parking, as well as recreational activities including waste deposition and camping. The majority of these negative impacts were recorded at sub-site 29.01 Whitestrand Bay – Culoort.

High-intensity negative impacts included drainage works at sub-site 18.01 Port Ui Chuireain to Bunaniver, which resulted in the spread of problematic native and non-native species, including Giant-rhubarb *Gunnera tinctoria*, and led to the area loss reported above.

Table 18 Negative impacts affecting 1220 *Vegetated shingle*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA22	Drainage and spread of problematic species	1			1	0.02	< 1
PE01	Road	1			1	0.42	5
PF03	Camping	1			1	0.06	1
PF04	Litter (recreational activities)	1	1		2	0.22	3
PF05	Offroad driving and parking	1		1	2	0.20	2
PF06	Dumping	1	1		2	0.01	< 1
PF15	Coastal defences	4			4	Unknown	Unknown
PI01	Invasion of problematic non-native species <i>Gunnera tinctoria</i>	1			1	0.002	< 1

Future Prospects were assessed as *Favourable* at nine field-surveyed sub-sites, *Unfavourable–Inadequate* at sub-sites 18.01 Port Ui Chuireain to Bunaniver and 29.02 Tullagh Bay and Tullagh Point and as *Unfavourable–Bad* at sub-site 29.01 Whitestrand Bay – Culoort (Appendix II).

In the desk study sub-sites, natural erosion was recorded at one sub-site and affected almost the 50% of the total habitat area (Table 19).

Table 19 Impacts affecting 1220 *Vegetated shingle*, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PM07	Natural erosion and natural succession	1	1.06	48

3.2.4 Overall Conservation Assessment

At subsite level, the overall *Conservation Assessment* was completed for 10 sub-sites (Table 20, Appendix II). The habitat was assessed as *Favourable* at seven sub-sites (70%). Two sub-sites (18.01 Port Ui Chuireain to Bunaniver and 29.02 Tullagh Bay and Tullagh Point) were assessed as *Unfavourable–Inadequate*. Sub-site 29.01 Whitestrand Bay – Culoort was assessed as *Unfavourable–Bad*. The trend is improving at five sub-sites (4.01 Doo Lough, 9.02 Strandhill, 10.01 Strandhill, 18.01 Port Ui Chuireain to Bunaniver and 29.02 Tullagh Bay and Tullagh Point) and stable at three sub-sites (1.01 Bartraw Strand, 25.01 Rossguill Peninsula and 29.01 Whitestrand Bay – Culoort).

Table 20 Sub-site level assessment results of habitat 1220 *Vegetated shingle*.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	9	8	9	7
Unfavourable - Inadequate	3	2	2	2
Unfavourable - Bad	0	0	1	1
Not assessed (NA)	0	2	0	2

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3.3 1310 *Salicornia* and other annuals colonising mud and sand

Habitat 1310 *Salicornia mud* was investigated at 13 sites distributed across the survey area (Figure 16, Appendix II). These comprised 18 field-surveyed sub-sites and five desk study sub-sites. The habitat was present in 14 field-surveyed sub-sites and was no longer recorded at sub-sites 1.02 Rosmurrevagh, 1.03 Caraholly, 3.01 Doona, 3.02 Tullaghan Bay. An overall sub-site level *Conservation Assessment* was completed for eight sub-sites. At six additional sub-sites, only the *Area* and *Future Prospects* parameters were assessed.

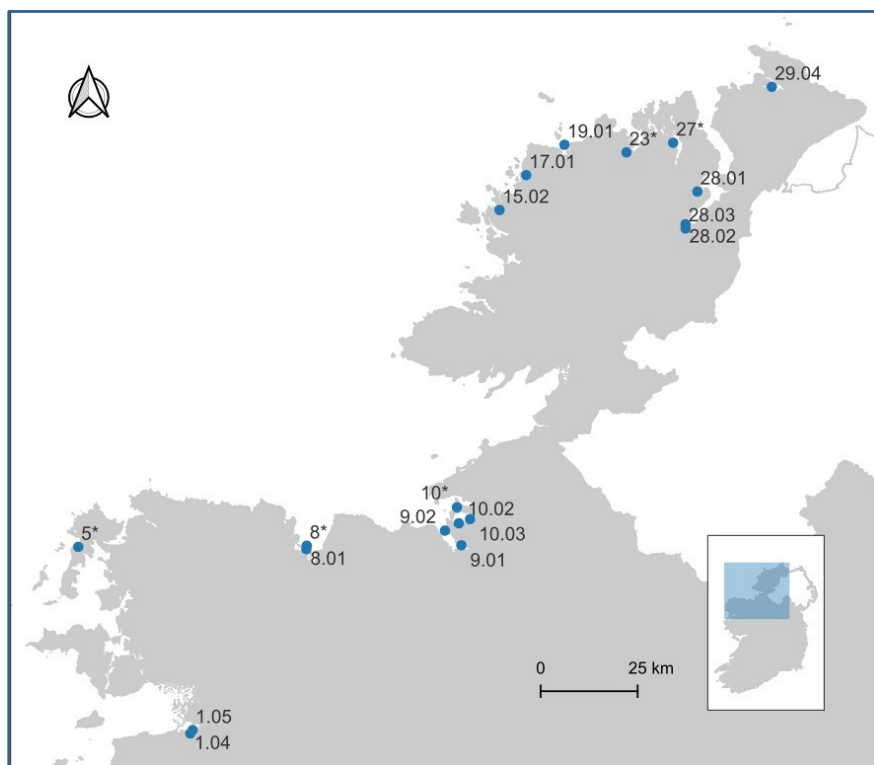


Figure 16 Distribution of CHNW sub-sites supporting 1310 *Salicornia mud* (* indicates desk study sub-sites).

3.3.1 Area and distribution

The total mapped extent of 1310 *Salicornia mud* within the CHNW sites is 30.39 ha. Of this, 8.54 ha were recorded within field-surveyed sub-sites and 21.85 ha within desk studied sub-sites (Table 21). Area was assessed at 14 sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall increase of 3.54 ha (13.2%) since the baseline survey attributable to natural processes.

Table 21 Total area of 1310 *Salicornia mud* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	5.01	21.84	26.85
CHNW Area (ha)	8.54	21.85	30.39

The *Area* parameter was assessed as *Favourable* at all 14 sub-sites assessed. The trend is considered stable, as the increase reflects natural coastal processes (Appendix II).

3.3.2 Structure and Functions

Although 1310 *Salicornia mud* was recorded at 14 sub-sites, *Structure and Functions* were assessed at eight sub-sites, as no monitoring stops were recorded in the remaining sub-sites. In total, 5.68 ha (18.7% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

At two sub-sites (25%), the criterion relating to the presence of *Spartina* spp. within vicinity of the habitat failed. *Spartina* is an invasive non-native species that occupies areas typically associated with 1310 *Salicornia mud*. All other assessed criteria met the target at all sub-sites (Table 22).

Table 22 *Structure and Functions* assessment criteria for the eight CHNW sub-sites where 1310 *Salicornia mud* was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	8 (100%)
2. Negative indicator species	8 (100%)
3. Signs of negative activities, e.g. infilling, reclamation, turf-cutting, pollution	8 (100%)
4. Occurrence of human disturbance to hydrology	8 (100%)
5. Presence of site-specific target species	8 (100%)
6. Presence of <i>Spartina</i> spp. within vicinity of habitat	6 (75%)

Two sub-sites (25%) were assessed as *Unfavourable-Inadequate* and six sub-sites (75%) as *Favourable*. No sub-sites were assessed as *Unfavourable-Bad*. The trend is stable at all sub-sites assessed as *Favourable* and decreasing at two sub-sites assessed as *Unfavourable* (Appendix II).

Overall, 5.06 ha(89.1%) of the 1310 *Salicornia mud* area assessed for *Structure and Functions* was found to be in good condition (Appendix II).

3.3.3 Future prospects

Future Prospects were assessed at 14 sub-sites where 1310 *Salicornia mud* was recorded during CHNW. No pressures were identified at nine sub-sites, namely 1.04 Killadangan, 8.01 Bartragh Island, 9.01 Ballysadare Bay, 9.02 Strandhill, 10.02 Cummeen Strand, 10.03 Garavoge Estuary, 15.02 Keadew, 17.01 Lunniagh salt marshes and 29.04 Trawbreaga Bay.

No positive or neutral impacts or activities were recorded for this habitat.

Three negative impacts were recorded (Table 22). These comprised high-intensity spread of *Spartina anglica*, affecting 17% of the total habitat area mapped within the field-surveyed sub-sites, and low-intensity trampling by sheep, recorded at one sub-site and affecting 29% of the total area.

Table 22 Negative impacts affecting 1310 *Salicornia mud*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA07	Trampling		1		1	2.49	29
PF05	Offroad driving	1			1	0.16	2
PI02	<i>Spartina anglica</i>	4			4	1.48	17

Future Prospects were assessed as *Favourable* at nine field-surveyed sub-sites and *Unfavourable–Inadequate* at five sub-sites affected by high-intensity impacts. No sub-sites were assessed as *Unfavourable–Bad* under this parameter (Appendix II).

Regarding the impacts recorded through the desk study, silting up was noted at one site. It was not possible to determine with certainty the extent of the habitat area affected (Table 23).

Table 23 Impacts affecting 1310 *Salicornia mud*, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PM07	Silting up	1	Unknown	Unknown

3.3.4 Overall Conservation Assessment

At sub-site-level the overall *Conservation Assessment* was completed for eight sub-sites (Table 24, Appendix II) The habitat was assessed as *Favourable* at four sub-sites (50%) and as *Unfavourable–Inadequate* in the remaining four sub-sites (50%) due to pressures associated with trampling by sheep and spreading of *Spartina* spp. The presence of the invasive alien species was also the determining factor in the failure of the *Structure and Functions* parameter at two sub-sites. No sub-sites were assessed as *Unfavourable–Bad*.

The trend is stable at six sub-sites, deteriorating at 19.01 Dooley and improving at 1.04 Killadangan.

Table 24 Sub-site level assessment results of habitat 1310 *Salicornia mud*.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	14	6	9	4
Unfavourable - Inadequate	0	2	5	4
Unfavourable - Bad	0	0	0	0
Not assessed (NA)	0	6	0	0

3.4 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)

Habitat 1330 *Atlantic salt meadows* was recorded at 24 sites distributed across the survey area (Figure 17, Appendix II). These comprised 25 field-surveyed sub-sites and 21 desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for 24 sub-sites.

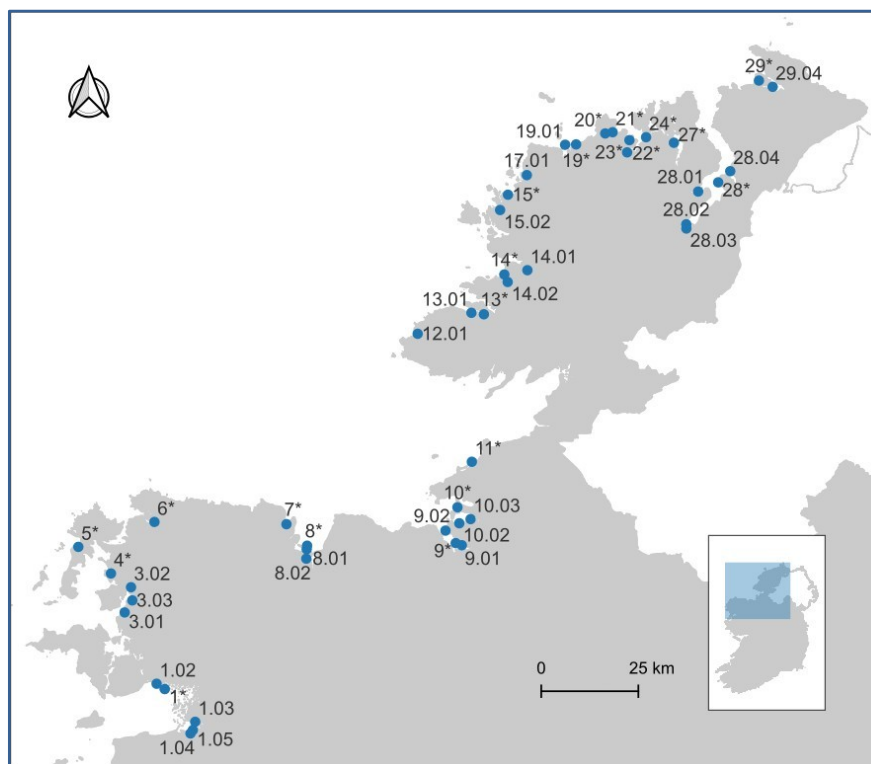


Figure 17 Distribution of CHNW sub-sites supporting 1330 *Atlantic salt meadows* (* indicates desk study sub-sites).

3.4.1 Area and distribution

The total mapped extent of 1330 *Atlantic salt meadows* within the CHNW sites is 578.16 ha. Of this, 278.71 ha were recorded within field-surveyed sub-sites and 299.45 ha within desk study sub-sites (Table 25). Area was assessed at 24 sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall decrease of 4.25 ha (0.7%) since the baseline survey. Most of this reduction reflects differences in habitat interpretation and natural processes, with a smaller proportion attributable to anthropogenic activities.

Table 25 Total area of 1330 *Atlantic salt meadows* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	282.4	300.01	582.41
CHNW Area (ha)	278.71	299.45	578.16

During CHNW, habitat loss of 0.32 ha attributable to anthropogenic activities was recorded across four field-surveyed sub-sites (9.01 Ballysadare Bay, 10.03 Garavoge Estuary, 28.03 Lower Lough Swilly and 29.04 Trawbreaga Bay) (Table 26). This loss resulted from the construction of coastal defence structures and the intensive use of habitat areas for vehicle

parking. Additional reductions in extent were associated with natural processes, including the spread of swamp and reed habitats, succession to wet grassland and vegetation encroachment.

In the desk study sub-sites, a further 0.63 ha was recorded as lost due to the construction of roads and recreational buildings (Table 26).

Table 26 Loss in area of 1330 *Atlantic salt meadows* within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	0.32	0.63	0.95
Loss due to natural processes	1.17	0.00	1.17
Total Result	1.49	0.63	2.12

The *Area* parameter was assessed as *Favourable* at 17 sub-sites (70.8%) and as *Unfavourable–Inadequate* at seven sub-sites (29.2%) where area loss was recorded, as well as at three sub-sites where losses had been recorded during previous monitoring cycles and the habitat had not recovered. No sub-sites were assessed as *Unfavourable–Bad*.

The trend is stable at 17 sub-sites assessed as *Favourable* and at 29.04 Trawbreaga Bay. In the remaining six *Unfavourable* sub-sites the trend is decreasing (Appendix II).

3.4.2 Structure and Functions

1330 *Atlantic salt meadows* was recorded and assessed at 24 sub-sites. In total, 278.71 ha (48.2% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

Results from monitoring stops recorded at field-surveyed sub-sites are summarised in Table 27. Four criteria met the target at all assessed sub-sites: human disturbance to hydrology, natural transitions to semi-natural terrestrial habitats, presence of site-specific target species and number of IVC vegetation communities within the habitat.

Criteria relating to negative pressures also met the target at most sub-sites. Signs of negative activities met the target at 96% of sub-sites, while negative indicator species and presence of Common cord-grass *Spartina* spp. met the target at 92% of sub-sites. The disturbed ground criterion met the target at 83% of sub-sites.

In contrast, vegetation composition and structure were the criteria most frequently failing. Positive indicator species and vegetation height each met the target at 54% of sub-sites, representing the lowest rates of compliance among the assessed criteria.

Table 27 *Structure and Functions* assessment criteria for the 24 CHNW sub-sites where 1330 *Atlantic salt meadows* was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	13 (54%)
2. Vegetation height	13 (54%)
3. Negative indicator species	22 (92%)
4. Disturbed ground	20 (83%)
5. Signs of negative activities, e.g. infilling, reclamation, turf-cutting, pollution	23 (96%)

Assessment criteria	Number (%) of sub-sites passing criteria
6. Human disturbance to hydrology	24 (100%)
7. Natural transitions to semi-natural terrestrial habitats on landward margin	24 (100%)
8. Presence of <i>Spartina</i> spp. within vicinity of habitat	22 (92%)
9. Presence of site-specific target species	24 (100%)
10. Number of zones (SM2, SM3, SM4, SM6BCD, SM7/driftline) covering 1% or more of 1330 area	24 (100%)

Eight sub-sites (33.3%) were assessed as *Favourable*, 11 sub-sites (45.8%) as *Unfavourable-Inadequate* and five sub-sites (20.8%) as *Unfavourable-Bad*. The trend is stable at 18 sub-sites, increasing at four sub-sites (14.01 Gweebarra River salt marshes, 15.02 Keadew, 17.01 Lunniagh salt marshes and 28.01 Rathmelton) and decreasing at two sub-sites (28.02 Green Hill and 29.04 Trawbreaga Bay) (Appendix II).

Overall, 209.05 ha (75%) of the 1330 *Atlantic salt meadows* area assessed for *Structure and Functions* was found to be in good condition (Appendix II). Two sub-sites (1.02 Rosmurrevagh and 1.05 Annagh Island) were assessed as entirely not in good condition due to the failure of three *Structure and Functions* criteria linked to high-intensity pressures including overgrazing, trampling and off-road driving.

3.4.3 Future prospects

Future Prospects were assessed at 24 sub-sites where 1330 *Atlantic salt meadows* was recorded during CHNW.

Two positive impacts were identified (Table 28), namely undergrazing and non-intensive grazing, each occurring at separate sub-sites and each affecting no more than 1% of the total habitat area.

Table 28 Positive impacts affecting 1330 *Atlantic salt meadows*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA05	Undergrazing and abandonment of management			1	1	0.21	< 1
PA08	Non-intensive grazing		1		1	1.61	1

Eight neutral impacts were recorded across 20 sub-sites (Table 29). These comprised low and medium-intensity agricultural activities (e.g. grazing and drainages), recreational activities (e.g. walking and trampling), as well as erosion and coastal protection structures that pre-dated designation and had no negative effect on the habitat at time of survey. All neutral impacts affected no more than 1% of the total habitat area.

Table 29 Neutral impacts affecting 1330 *Atlantic salt meadows*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA05	Undergrazing or cessation of grazing			1	1	0.08	< 1
PA22	Drainages		8		8	0.62	< 1
PA23	Alteration of water bodies (dam)		1		1	0.05	< 1
PF05	Walking and trampling		1	1	2	0.29	< 1
PF13	Drainages		1		1	0.12	< 1
PF15	Coastal defences	1	1	5	7	0.58	< 1
PI02	Invasion of problematic non-native species (<i>Spartina anglica</i>)		1		1	0.02	< 1
PM07	Natural erosion, natural succession and encroachment	2	5	6	13	1.90	1

Twelve negative impacts were recorded across 23 sub-sites (Table 30). These were primarily associated with high-intensity agricultural activities, including overgrazing and trampling, which affected 34% of the total habitat area, and land reclamation. Low-intensity recreational activities were also recorded at several sub-sites but affected less than 1% of the habitat's area.

Non-native species affected 3% of the total habitat area, with Common cord-grass *Spartina anglica* being the principal species recorded, followed by ornamental garden escapes.

Table 30 Negative impacts affecting 1330 *Atlantic salt meadows*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA07	Overgrazing and trampling	13	2	5	20	95.57	34
PA22	Land reclamation	2			2	2.02	1
PA25	Vehicle tracks for farming and turf removal	12		1	13	1.38	1
PE01	Road	2			2	0.05	< 1
PF04	Litter (recreational activities)			1	1	0.01	< 1
PF05	Offroad driving, walking and dog-walking	4	1	2	7	1.50	1
PF06	Deposition of waste	2		1	3	0.59	< 1
PG04	Abandoned shellfish structures	1			1	0.24	< 1
PI02	Non-native species	7			7	7.98	3
PI03	Problematic native species			1	1	0.05	< 1
PK02	Water pollution	1			1	0.05	< 1
PK05	Litter	1		1	2	0.15	< 1

Impacts and threats affecting 1330 *Atlantic salt meadows* were multiple and widespread across the majority of sub-sites, albeit varying in intensity and spatial extent. Grazing pressure was a key factor influencing habitat condition and requires careful management to avoid deterioration of conservation status. Although not extensively distributed, the presence of Common cord-grass *Spartina* spp. represents a potential threat to the habitat.

These pressures are reflected in the *Future Prospects* assessment (Appendix II), which resulted in *Favourable* status at two field-surveyed sub-sites (8.3%), *Unfavourable–Inadequate* at 16 sub-sites (66.7%) and *Unfavourable–Bad* at six sub-sites (25%).

Regarding impacts recorded during the desk study (Table 31), ten impacts were identified at 17 sub-sites. The most significant were offroad driving and walking, drainage and natural succession.

Table 31 Impacts affecting 1330 *Atlantic salt meadows*, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA06	Cutting of grassland	2	0.39	< 1
PA07	Trampling (erosion)	1	0.39	< 1
PA25	Vehicle tracks	9	1.11	< 1
PE01	Road	3	0.10	< 1
PF01	Housing	1	0.10	< 1
PF03	Stone circle	1	0.02	< 1
PF05	Offroad driving and walking	11	2.69	1
PF15	Coastal defences	4	0.04	< 1
PL02	Drainage	17	7.90	3
PM07	Natural erosion, natural succession and silting up	13	8.25	3

3.4.4 Overall Conservation Assessment

At sub-site level the overall *Conservation Assessment* was completed for 24 sub-sites (Table 32, Appendix II). The habitat was assessed as *Favourable* at two sub-sites (8.3%), and *Unfavourable-Inadequate* at 16 sub-sites (66.7%), due mainly to pressures associated with overgrazing, trampling and poaching by sheep and cattle. Six sub-sites were assessed as *Unfavourable-Bad* (25%), reflecting agricultural pressures, including ecologically unsuitable grazing regimes and land reclamation, as well as the presence of the invasive non-native species Common cord-grass *Spartina anglica* (Appendix II).

The trend is stable at most sub-sites. Four sub-sites (9.02 Strandhill, 10.02 Cummeen Strand, 10.03 Garavoge Estuary and 28.02 Green Hill) were assessed as deteriorating, while 14.01 Gweebarra River salt marshes was the single sub-site where an improving trend was recorded.

Table 32 Sub-site level assessment results of habitat 1330 *Atlantic salt meadows*.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	17	8	2	2
Unfavourable - Inadequate	7	11	16	16
Unfavourable - Bad	0	5	6	6
Not assessed (NA)	0	0	0	0

3.5 1410 Mediterranean salt meadows (*Juncetalia maritimi*)

Habitat 1410 *Mediterranean salt meadows* was recorded at 22 sites distributed across the survey area (Figure 18, Appendix II). These comprised 23 field-surveyed sub-sites and 16 desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for 18 sub-sites. At two additional sub-sites, only the *Area* and *Future Prospects* parameters were assessed.

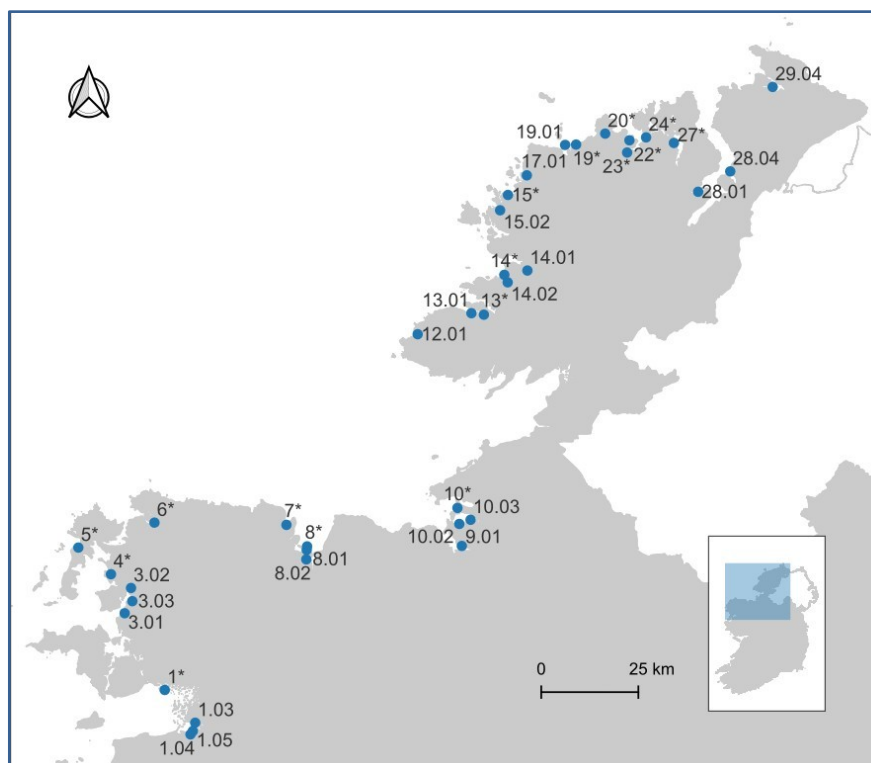


Figure 18 Distribution of CHNW sub-sites supporting 1410 *Mediterranean salt meadows* (* indicates desk study sub-sites).

3.5.1 Area and distribution

The total mapped extent of 1410 *Mediterranean salt meadows* within the CHNW sites is 298.74 ha. Of this, 106.49 ha were recorded within field-surveyed sub-sites and 192.25 ha within desk study sub-sites (Table 23). *Area* was assessed at 20 sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall increase of 0.79 ha (0.3%) since the baseline survey, attributable to natural processes.

Table 33 Area of 1410 *Mediterranean salt meadows* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	105.65	192.3	297.95
CHNW Area (ha)	106.49	192.25	298.74

During CHNW, an anthropogenic loss of 0.13 ha since the baseline survey was identified (Table 34). Of this, 0.03 ha was recorded at field-surveyed sub-site 10.03 Garavoge Estuary, attributable to the construction of a rock embankment. A further loss of 0.10 ha was recorded

at the desk study sub-sites 15 Gweedore and 27 Mulroy, resulting from the construction of roads and other artificial surfaces. In addition, a loss of 1.45 ha was attributed to natural processes.

Table 34 Loss in area of 1410 Mediterranean salt meadows within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	0.03	0.10	0.13
Loss due to natural processes	1.45	0.00	1.45
Total Result	1.48	0.10	1.58

The Area parameter was assessed as *Favourable* at 18 sub-sites (90%). Two sub-sites (10%) (10.03 Garavoge Estuary and 29.04 Trawbreaga Bay), where habitat losses occurred during CHNW or previous monitoring cycles, were assessed as *Unfavourable-Inadequate*. No sub-sites were assessed as *Unfavourable-Bad*. The trend is stable at all sub-sites, with the exception of 10.03 Garavoge Estuary, where it is decreasing (Appendix II).

3.5.2 Structure and Functions

Although 1410 Mediterranean salt meadows was recorded at 20 sub-sites, *Structure and Functions* were assessed at 18 sub-sites, as the habitat extent was below the minimum monitoring area (0.04 ha) at sub-sites 1.02 Rosmurrevagh and 28.03 Lower Lough Swilly. In total, 106.49 ha (35.6% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

At one site (28.01 Rathmelton) the criterion relating to the presence of positive indicator species failed. All other criteria passed at all of the sub-sites (Table 35).

Table 35 *Structure and Functions* assessment criteria for the 18 CHNW sub-sites where 1410 Mediterranean salt meadows was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	17 (94%)
2. Negative indicator species	18 (100%)
3. Disturbed ground	18 (100%)
4. Signs of negative activities, e.g. infilling, reclamation, turf-cutting, pollution	18 (100%)
5. Human disturbance to hydrology	18 (100%)
6. Natural transitions to semi-natural terrestrial habitats on landward margin	18 (100%)
7. Presence of site-specific target species (indicators of local distinctiveness)	18 (100%)
8. Presence of <i>Spartina</i> spp. within vicinity of habitat	18 (100%)

Seventeen sub-sites (94.4%) were assessed as *Favourable* and one site (5.6%) as *Unfavourable-Inadequate*. No sub-site was assessed as *Unfavourable-Bad*. The trend is generally stable, increasing at five sub-sites (3.02 Tullaghan Bay, 3.03 Aghness, 8.02 Rusheens, 12.01 Glen Bay Inner area and 17.01 Lunniagh salt marshes) and decreasing at the *Unfavourable* sub-site 28.01 Rathmelton (Appendix II).

Overall, 103.46 ha (97.1%) of the area assessed for *Structure and Functions* were found to be in good condition (Appendix II).

3.5.3 Future prospects

Future Prospects were assessed at 20 sub-sites where *1410 Mediterranean salt meadows* was present during the CHNW survey. Seven sub-sites had no identified impacts or pressures.

No positive impacts were recorded for this habitat.

Seven neutral impacts were recorded across 11 sub-sites (Table 36). These comprised low and medium-intensity agricultural activities (e.g. overgrazing and drainage) and recreational activities (e.g. offroad driving and walking), natural succession and coastal protection structures that pre-dated designation and had no negative effect on the habitat at the time of survey. All recorded pressures affected less than 1% of the total habitat area. It was not possible to determine precisely the extent of the area influenced by coastal defence structures.

Table 36 Neutral impacts affecting *1410 Mediterranean salt meadows*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA07	Overgrazing		2		2	0.38	< 1
PA22	Drainages		7		7	0.31	< 1
PA23	Alteration of water bodies (dam)		1		1	0.07	< 1
PF05	Walking and trampling		1		1	0.18	< 1
PF13	Drainages		2		2	0.04	< 1
PF15	Coastal defences			1	1	Unknown	Unknown
PM07	Natural succession and encroachment		1	3	4	0.76	1

Four negative impacts were recorded across 11 sub-sites (Table 37). These were primarily associated with high-intensity agricultural practices, including overgrazing and trampling by livestock, which affected 3% of the total habitat area. Recreational activities, including offroad driving and waste deposition were also recorded but affected less than 1% of the habitat area.

Table 37 Negative impacts affecting *1410 Mediterranean salt meadows*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA07	Overgrazing and trampling	2	3	2	7	2.70	3
PA25	Offroad driving (agriculture)	2			2	0.02	< 1
PF05	Offroad driving	1	1		2	0.02	< 1
PF06	Deposition of waste	1			1	0.01	< 1

Future Prospects were assessed as *Favourable* at 16 field-surveyed sub-sites (80%) and *Unfavourable-Inadequate* at four sub-sites (20%). No sub-sites were assessed as *Unfavourable-Bad* (Appendix II).

In the desk study sub-sites (Table 38), five impacts were identified across 12 locations, with drainage representing the most significant pressure (4% of the total habitat area).

Table 38 Impacts affecting 1410 Mediterranean salt meadows, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA25	Vehicle tracks (agriculture)	6	0.32	< 1
PF05	Offroad driving and walking	4	0.09	< 1
PF15	Coastal defences	1	Unknown	Unknown
PL02	Drainage	13	7.67	4
PM07	Natural erosion and natural succession	3	0.56	< 1

3.5.4 Overall Conservation Assessment

At sub-site level the overall *Conservation Assessment* was completed for 18 sub-sites (Table 39, Appendix II). The habitat was assessed as *Favourable* at 13 sub-sites (72.2% of cases). Five sub-sites (3.02 Tullaghan Bay, 10.03 Garavoge Estuary, 12.01 Glen Bay Inner area, 28.01 Rathmelton and 29.04 Trawbreaga Bay) were assessed as *Unfavourable-Inadequate* (27.7%), due mainly to pressures associated with trampling and offroad driving. No sub-sites were assessed as *Unfavourable-Bad*.

The trend is generally stable. Three sub-sites (3.03 Aughness, 8.02 Rusheens and 17.01 Lunniagh salt marshes) were assessed as improving, while two (10.03 Garavoge Estuary and 28.01 Rathmelton) were assessed as deteriorating.

Table 39 Sub-site level assessment results of habitat 1410 *Mediterranean salt meadows*.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	18	17	16	14
Unfavourable - Inadequate	2	1	4	4
Unfavourable - Bad	0	0	0	0
Not assessed (NA)	0	2	0	2

3.6 2110 Embryonic shifting dunes

Habitat 2110 *Embryonic shifting dunes* was investigated at 23 sites distributed evenly around the coast (Figure 19, Appendix II). These comprised 17 field-surveyed sub-sites and nine desk study sub-sites. The habitat was present in 15 of the field-surveyed sub-sites and was no longer recorded at 1.01 Bartraw Strand and 13.01 Maghera Strand. An overall sub-site level *Conservation Assessment* was completed for 13 sub-sites. At one additional sub-site, only the *Area and Future Prospects* parameters were assessed.

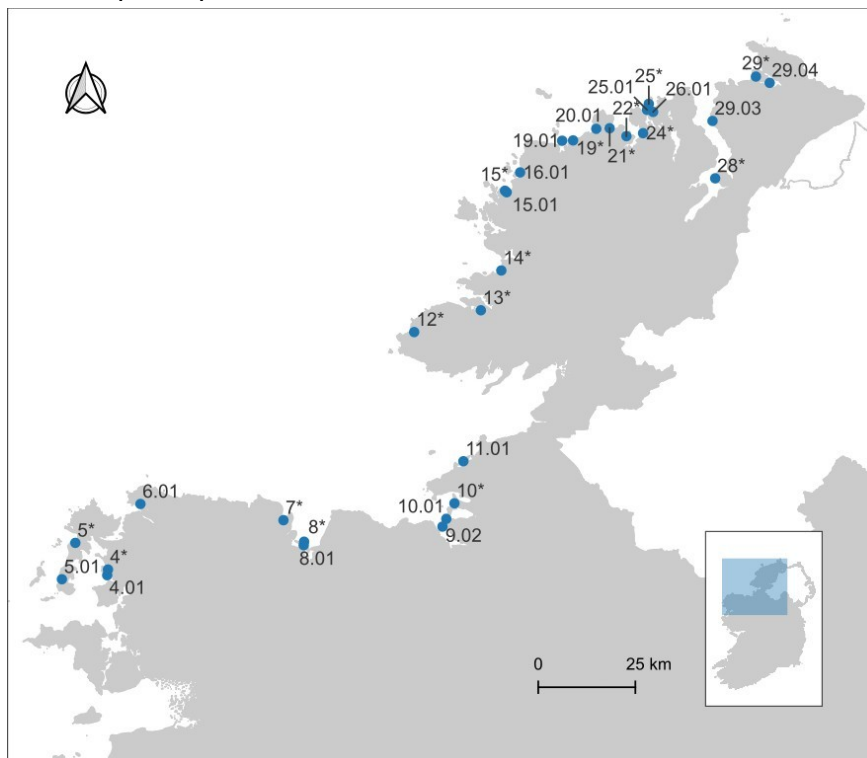


Figure 19 Distribution of CHNW sub-sites supporting 2110 *Embryonic shifting dunes* (* indicates desk study sub-sites).

3.6.1 Area and distribution

The total mapped extent of 2110 *Embryonic shifting dunes* within the CHNW sites is 73.15 ha. Of this, 19.17 ha were recorded within field-surveyed sub-sites and 53.98 ha within desk study sub-sites (Table 40). Area was assessed at 14 sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall increase of 2.22 ha (3.1%) since the baseline survey, attributable to natural processes.

Table 40 Area of 2110 *Embryonic shifting dunes* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	16.26	54.67	70.93
CHNW Area (ha)	19.17	53.98	73.15

During the CHNW an anthropogenic loss of 0.01 ha was noted in a desk study sub-site (Table 41).

Table 41 Loss in area of 2110 Embryonic shifting dunes within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	0.00	0.01	0.01
Loss due to natural processes	0.00	0.00	0.00
Total Result	0.00	0.01	0.01

The Area parameter was assessed as *Favourable* at all 14 assessed sub-sites with a stable trend (Appendix II).

3.6.2 Structure and Functions

Although 2110 Embryonic shifting dunes was recorded at 15 sub-sites, *Structure and Functions* were assessed at 13 sub-sites. The habitat extent was below the minimum monitoring area (0.04 ha) at sub-site 20.01 Rinclevan dunes, and it was not included in the survey at the saltmarsh sub-site 29.04 Trawbreaga Bay. In total, 19,07 ha (26.1% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

The criterion related to flowering or fruiting of positive indicator species failed at sub-site 19.01 Dooley. All other criteria passed at all of the sub-sites (Table 42).

Table 42 *Structure and Functions* assessment criteria for the 13 CHNW sub-sites where 2110 Embryonic shifting dunes was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	13 (100%)
2. Negative indicator species	13 (100%)
3. Non-native species	13 (100%)
4. Flowering or fruiting of positive indicator species	12 (92%)
5. Notable/rare species	13 (100%)
6. Interference with the sediment dynamics	13 (100%)
7. Damage due to disturbance	13 (100%)

Twelve sub-sites (85.7%) were assessed as *Favourable* and one sub-site (7.1%), namely 19.01 Dooley, as *Unfavourable-Inadequate*. None of the sites were assessed as *Unfavourable-Bad*. The trend is stable at 13 sub-sites and decreasing at one sub-site (Appendix II).

Overall, 16.96 ha (88.9%) of the area assessed for *Structure and Functions* was found to be in good condition (Appendix II).

3.6.3 Future prospects

Future Prospects were assessed at 14 sub-sites where 2110 Embryonic shifting dunes was present during CHNW. Three sub-sites had no identified impacts or pressures.

No positive impacts were recorded for this habitat.

Five neutral impacts were recorded across 11 sub-sites (Table 43). These consisted of low and medium-intensity recreational activities (e.g. offroad driving and walking), animal trampling, erosion and coastal protection structures which pre-dated designation and did not have a negative effect on the habitat at time of survey. Off-road driving, walking and animal trampling were the most widespread neutral impacts.

Table 43 Neutral impacts affecting *2110 Embryonic shifting dunes*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA07	Animal trampling, nutrient enrichment		2		2	1.66	9
PC06	Dumping of dredged sand		1		1	0.01	< 1
PF05	Offroad driving and walking		6	1	7	2.29	12
PF15	Coastal defences	1	3	1	5	Unknown	Unknown
PM07	Natural erosion	1	1	2	4	0.40	2

Two negative impacts affecting *2110 Embryonic shifting dunes* were identified during CHNW (Table 44). Waste deposition at sub-site 16.01 Derrybeg dunes, and offroad driving and walking at sub-site 19.01 Dooley, which affected a substantial proportion of the habitat area. Both were associated with recreational activities and were assessed as low to medium intensity.

Table 44 Negative impacts affecting *2110 Embryonic shifting dunes*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PF04	Litter			1	1	0.35	2
PF05	Offroad driving, walking and paths		1		1	2.10	11

Future Prospects were assessed as *Favourable* at 12 field-surveyed sub-sites and *Unfavourable–Inadequate* at two sub-sites. No sub-site was assessed as *Unfavourable–Bad* (Appendix II).

Regarding impacts identified through the desk study (Table 45), offroad driving was recorded at ten sub-sites, affecting 6% of the total habitat area. Natural erosion, not attributable to anthropogenic causes, was recorded at 13 sub-sites and affected the 25% of the total area.

Table 45 Impacts affecting *2110 Embryonic shifting dunes*, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA25	Vehicle tracks (agriculture)	1	0.003	< 1
PF05	Offroad driving and walking	10	3.48	6
PM07	Natural erosion and natural succession	13	13.46	25

3.6.4 Overall Conservation Assessment

At sub-site level, the overall *Conservation Assessment* was completed for 13 sub-sites (Table 46, Appendix II). The habitat was assessed as *Favourable* at 11 sub-sites (84.6%) and as *Unfavourable-Inadequate* at two sub-sites (15.4%), 16.01 Derrybeg dunes and 19.01 Dooley, due to pressures associated with recreational activities. The trend at these two sub-sites is deteriorating, while it is stable or improving for the other sub-sites.

Table 46 Sub-site level assessment results of habitat 2110 Embryonic shifting dunes.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	14	12	12	11
Unfavourable - Inadequate	0	1	2	2
Unfavourable - Bad	0	0	0	0
Not assessed (NA)	0	1	0	1

3.7 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

Habitat 2120 *Marram dunes (white dunes)* was recorded at 25 sites distributed across the survey area (Figure 20, Appendix II). These comprised 19 field-surveyed sub-sites and 18 desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for 17 sub-sites.

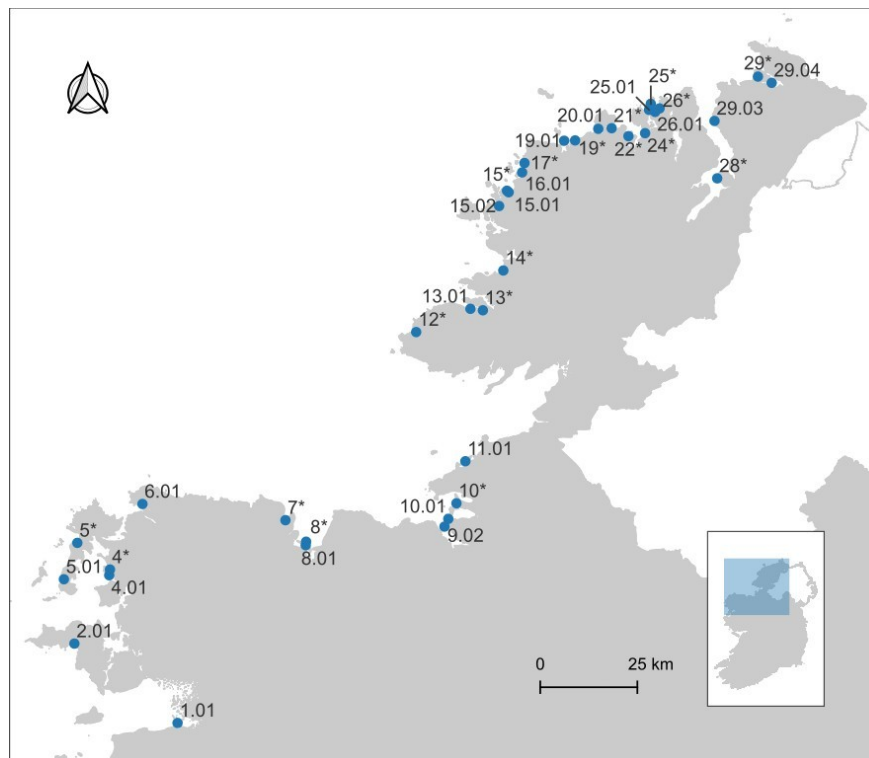


Figure 20 Distribution of CHNW sub-sites supporting 2120 *Marram dunes (white dunes)* (* indicates desk study sub-sites).

3.7.1 Area and distribution

The total mapped extent of 2120 *Marram dunes (white dunes)* within the CHNW sites is 141.51 ha. Of this, 63.62 ha were recorded within field-surveyed sub-sites and 77.89 ha within desk study sub-sites (Table 47). Area was assessed at 17 sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall increase of 3.32 ha (2.4%) since the baseline survey, reflecting natural processes of sand accumulation and subsequent evolution of the vegetation.

Table 47 Total area of 2120 *Marram dunes (white dunes)* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	58.58	79.61	138.19
CHNW Area (ha)	63.62	77.89	141.51

During CHNW, an anthropogenic loss of 0.02 ha was recorded at sub-site 25.01 Rossguill Peninsula as a result of encroachment by the invasive non-native species Sea-buckthorn

Hippophaë rhamnoides. A further loss of 0.03 ha was recorded at the desk study sub-site 24 Rosapenna, resulting from the construction of roads and other artificial surfaces (Table 48).

Table 48 Loss in area of 2120 Marram dunes (white dunes) within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	0.02	0.03	0.05
Loss due to natural processes	0.00	0.00	0.00
Total Result	0.02	0.03	0.05

The Area parameter was assessed as *Favourable* at 16 sub-sites (94.1%). One sub-site (25.01 Rossguill Peninsula), where habitat losses occurred during CHNW or previous monitoring cycles, was assessed as *Unfavourable–Bad*. No sub-site was assessed as *Unfavourable–Inadequate* (Appendix II). The trend is stable at all sub-sites, except at 25.01 Rossguill Peninsula (decreasing), and 9.02 Strandhill (increasing).

3.7.2 Structure and Functions

Although 2120 Marram dunes (white dunes) was recorded at 19 sub-sites, *Structure and Functions* were assessed at 13 sub-sites. The habitat extent was below the minimum monitoring area (0.04 ha) at sub-site 15.02 Keadew and it was not included in the survey at the saltmarsh sub-site 29.04 Trawbreaga Bay. In total, 63.55 ha (44.9% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

The criteria which assessed flowering or fruiting of positive indicator species, alterations to the sediment dynamics of the habitat, and damage due to disturbance each failed at one or more sub-sites. Damage due to disturbance was recorded in 50% of the monitoring stops at the sub-site 2.01 Trawmore, Keel. Furthermore, the habitat had been undermined by excessive trampling and was structurally damaged at sub-site 9.02 Strandhill. All other criteria passed at all of the sub-sites (Table 49).

Table 49 *Structure and Functions* assessment criteria for the 17 CHNW sub-sites where 2120 Marram dunes (white dunes) was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	17 (100%)
2. Negative indicator species	17 (100%)
3. Non-native species	17 (100%)
4. Flowering or fruiting of positive indicator species	16 (94%)
5. Notable/rare species	17 (100%)
6. Interference with the sediment dynamics	16 (94%)
7. Damage due to disturbance	15 (88%)

Thirteen sub-sites (76.5%) were assessed as *Favourable* and four (23.5%) were assessed as *Unfavourable–Inadequate*. No sub-site was assessed as *Unfavourable–Bad*. The trend is stable at all sub-sites, with the exception of 5.01 Aghleam (decreasing) (Appendix II).

Overall, 58.10 ha (91.5%) of the area assessed for *Structure and Functions* were found to be in good condition (Appendix II).

3.7.3 Future prospects

Future Prospects were assessed at 17 sub-sites where *2120 Marram dunes (white dunes)* was present during CHNW.

No positive impacts or activities were recorded for this habitat.

Seven neutral impacts were recorded across 15 sub-sites (Table 50). These consisted mainly of low and medium-intensity recreational activities (e.g. offroad walking) and agricultural activities, including animal overgrazing and trampling. High-intensity impacts associated with coastal defences were recorded at two sub-sites. Natural erosion was recorded across six sub-sites and affected 14.68 ha (23%) of the habitat area.

Table 50 Neutral impacts affecting *2120 Marram dunes (white dunes)*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA06	Silage bales			1	1	0.002	< 1
PA07	Overgrazing and trampling		1	1	2	0.69	1
PA08	Grazing			1	1	4.48	7
PF03	Boardwalk		1		1	Unknown	Unknown
PF05	Walking offroad and on designated paths		3	3	6	1.89	3
PF15	Coastal defences	2	1		3	0.52	1
PM07	Natural erosion	6		5	11	14.68	23

Six negative impacts were recorded across seven sub-sites (Table 51). Three impacts of these (deposition of waste and offroad driving and walking) were associated with recreational activities, were assessed as medium to high intensity and affected approximately 5 ha of the habitat area. Coastal defences structures and spreading of native and non-native species affected less than 1% of the habitat area.

Table 51 Negative impacts affecting *2120 Marram dunes (white dunes)*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PF04	Litter	2			2	0.16	< 1
PF05	Offroad driving, walking and paths	1	1	6	8	4.71	7
PF06	Deposition of waste	2			2	0.01	< 1
PF15	Coastal defences	1		1	2	Unknown	Unknown
PI02	Non-native species	2			2	0.02	< 1
PI03	Problematic native species			1	1	0.01	< 1

Future Prospects were assessed as *Favourable* at 10 field-surveyed sub-sites (58.8%), as *Unfavourable-Inadequate* at six sub-sites (35.3%) and as *Unfavourable-Bad* at one sub-site (5.9%), 9.02 Strandhill (Appendix II).

In the desk study sub-sites (Table 52), offroad driving and walking were recorded at 13 sub-sites affecting 6% of the total area, while natural erosion not attributable to anthropogenic causes was recorded at 16 sites and affected the 28% of the total area.

Table 52 Impacts affecting 2120 Marram dunes (white dunes), the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA07	Trampling (erosion)	1	1.07	1
PA25	Vehicle tracks (agriculture)	1	0.03	< 1
PF03	Runway	1	0.01	< 1
PF05	Offroad driving and walking	13	4.56	6
PM07	Natural erosion and natural succession	16	21.82	28

3.7.4 Overall Conservation Assessment

At sub-site level the overall *Conservation Assessment* was completed for 17 sub-sites (Table 53, Appendix II). The habitat was assessed as *Favourable* at nine sub-sites (52.9%). Six sub-sites (35.3%), including 1.01 Bartraw Strand, 2.01 Trawmore, Keel, 5.01 Aghleam, 16.01 Derrybeg dunes, 19.01 Dooey and 20.01 Rinclevan dunes, were assessed as *Unfavourable-Inadequate* due to pressures associated with recreational activities, sheep trampling and waste deposition. Two sub-sites (9.02 Strandhill and 25.01 Rossguill Peninsula) were assessed as *Unfavourable-Bad* due to waste deposition and the spread of native (*False Oat-grass Arrenatherum elatius*) and non-native (*Seiceamar Acer pseudoplatanus*, *Sea-buckthorn Hippophaë rhamnoides*) species recorded as high-intensity pressures.

At sub-site level, the trend is stable or improving at sub-sites assessed as *Favourable*. The trend is deteriorating at sub-sites 5.01 Aghleam, 9.02 Strandhill, 19.01 Dooey, 20.01 Rinclevan dunes and 25.01 Rossguill Peninsula.

Table 53 Sub-site level assessment results of habitat 2120 Marram dunes (white dunes).

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	16	13	10	9
Unfavourable - Inadequate	0	4	6	6
Unfavourable - Bad	1	0	1	2
Not assessed (NA)	0	0	0	0

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3.8 *2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

Habitat *2130 *Fixed coastal dunes with herbaceous vegetation (grey dunes)* was recorded at 25 sites distributed across the survey area (Figure 21, Appendix II). These comprised 17 field-surveyed sub-sites and 18 desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for 17 sub-sites.

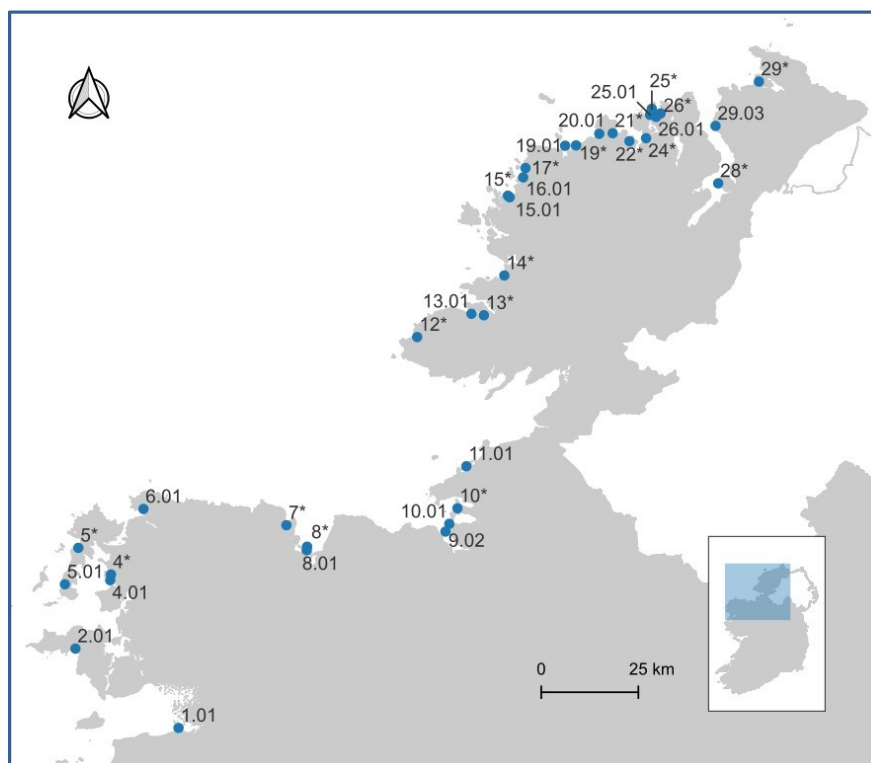


Figure 21 Distribution of CHNW sub-sites supporting *2130 *Fixed coastal dunes (grey dunes)* (* indicates desk study sub-sites).

3.8.1 Area and distribution

The total mapped extent of *2130 *Fixed coastal dunes (grey dunes)* within the CHNW sites is 3660.3 ha. Of this, 1298.74 ha were recorded within field-surveyed sub-sites and 2361.56 ha within desk study sub-sites (Table 54). Area was assessed at 17 sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall decrease of 32.43 ha (0.9%) since the baseline survey, primarily reflecting differences in interpretation and mapping methodology and, to a lesser extent, natural processes or succession to other Annex I habitats. The reduction is largely non-anthropogenic.

Table 54 Total area of *2130 *Fixed coastal dunes (grey dunes)* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	1325.2	2367.53	3692.73
CHNW Area (ha)	1298.74	2361.56	3660.3

During the CHNW, an anthropogenic loss of 7.95 ha since the baseline survey (Table 55). This loss is primarily attributable to high-intensity grazing, Sea-buckthorn *Hippophaë rhamnoides*

encroachment, road construction and offroad driving and parking, expansion of conifer plantations, erection of sea defences in field-surveyed sub-sites. In the desk study sub-sites, losses were associated with recreational structures, roads construction and overgrazing.

Table 55 Loss in area of *2130 Fixed dunes (grey dunes) within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	4.48	3.47	7.95
Loss due to natural processes	0.06	0.00	0.06
Total Result	4.54	3.47	8.01

The *Area* parameter was assessed as *Favourable* at 11 sub-sites (64.7%), as *Unfavourable–Inadequate* at five sub-sites (29.4%) and as *Unfavourable–Bad* at sub-site 10.01 Strandhill, where sea defence structures have resulted in significant erosion of the habitat area. The trend is stable or increasing at sub-sites assessed as *Favourable* and decreasing at those assessed as *Unfavourable*, with the exception of sub-site 9.02 Strandhill (Appendix II).

3.8.2 Structure and Functions

Habitat *2130 Fixed dunes (grey dunes) was recorded and assessed for *Structure and Functions* at 17 sub-sites. In total, 1298.74 ha (35.5% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

Five criteria passed the *Structure and Functions* assessment at all sub-sites where assessed (Table 56). The criterion most frequently failing was height of vegetation, generally associated with undergrazing or overgrazing. Sub-sites also failed the *Structure and Functions* assessment due to failure to meet criteria relating to alterations in sediment dynamics, presence of positive indicator species, cover of trees and scrub, and presence of bare sand, often associated with blow-outs.

Table 56 *Structure and Functions* assessment criteria for the 17 CHNW sub-sites where *2130 Fixed dunes (grey dunes) was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	14 (82%)
2. Negative indicator species	12 (71%)
3. Non-native species	17 (100%)
4. Cover of trees and scrub other than <i>Juniperus communis</i>	16 (94%)
5. Trees or saplings from adjacent plantations	17 (100%)
6. Height of vegetation	4 (24%)
7. Flowering or fruiting of positive indicator species	17 (100%)
8. Bare sand	16 (94%)
9. Notable/rare species	17 (100%)
10. Interference with the sediment dynamics	13 (76%)
11. Damage due to disturbance	17 (100%)

Three sub-sites (17.6%) were assessed as *Favourable*, eleven sub-sites (64.7%) as *Unfavourable–Inadequate* and three (17.6%) were assessed as *Unfavourable–Bad*. The trend is stable at eight sub-sites, decreasing at four sub-sites (4.01 Doo Lough, 6.01 Garter Hill, 8.01

Bartragh Island and 16.01 Derrybeg dunes) and increasing at five sub-sites (2.01 Trawmore, Keel, 9.02 Strandhill, 10.01 Strandhill, 11.01 Trawgar to Dernish Island and 15.01 Kincaslugh) (Appendix II).

Overall, 1032.40 ha (79.5%) of the area assessed for *Structure and Functions* was found to be in good condition. At sub-site 1.01 Bartragh Strand area was assessed as entirely not in good condition due to significant failures of *Structure and Functions* criteria, and pressures mostly associated with lack of grazing and impacting recreational activities (Appendix II).

3.8.3 Future prospects

Future Prospects were assessed at 17 sub-sites where *2130 Fixed dunes (grey dunes) was present during CHNW.

One positive impact, non-intensive grazing, was recorded across eight sub-sites (Table 57).

Table 57 Positive impacts affecting *2130 Fixed dunes (grey dunes), the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Non-intensive grazing	2	3	3	8	159.50	12

Seven neutral impacts were recorded across 15 sub-sites (Table 58). These comprised low and medium-intensity recreational activities (e.g. offroad driving and walking), lack of grazing, which affected 290.46 ha (22%) of the total area, and natural erosion which affected 93.42 ha (7%) of the habitat area across 16 different sub-sites.

Table 58 Neutral impacts affecting *2130 Fixed dunes (grey dunes), the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA05	Lack of grazing			3	3	290.46	22
PA08	Grazing, nutrient enrichment			1	1	111.29	9
PF03	Boardwalk	1			1	0.79	< 1
PF05	Offroad driving and walking		2		2	2.27	< 1
PF15	Coastal defences		1		1	Unknown	Unknown
PM05	Collapse of terrain	1			1	0.03	< 1
PM07	Natural erosion, sand blowouts, natural succession, encroachment	3	2	11	16	93.42	7

Fifteen negative impacts were recorded across 17 sub-sites (Table 59). The principal pressures related to grazing regimes, including undergrazing or lack of grazing and

overgrazing, collectively affecting 487 ha (38%) of the total habitat area. Other significant pressures included vehicle tracks, offroad driving, pedestrian tracks and walking which affected 5% of the habitat. High-intensity impacts included the spread of problematic native and species affecting approximately 1% of the habitat area. The presence of conifer plantations represented a high-intensity external pressure, acting as a seed source at two sub-sites. Additional high-intensity agricultural pressures included supplementary feeding, offroad driving, waste deposition and storage of silage bales.

Table 59 Negative impacts affecting *2130 Fixed dunes (grey dunes), the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA05	Undergrazing and lack of management	1	5	3	9	233.55	18
PA07	Overgrazing and trampling	5		6	11	253.45	20
PA10	Supplementary feeding	1		1	2	0.64	< 1
PA19	Deposition of waste from agriculture and silage bales stocking	1			1	5.88	1
PA25	Offroad driving (agriculture)	6		3	9	7.81	1
PB01	Conifer plantation	1	1		2	4.30	< 1
PE01	Road	3			3	2.05	< 1
PF03	Camping, Sports pitch		1	2	3	3.28	< 1
PF04	Litter			1	1	0.11	< 1
PF05	Offroad driving, walking and paths	5	3	8	16	59.11	5
PF06	Deposition of waste	1		1	2	1.32	< 1
PF15	Coastal defences	4			4	Unknown	Unknown
PH08	Deposition of tyres		1		1	2.94	< 1
PI02	Non-native species	9			9	14.96	1
PI03	Problematic native species	3	1	4	8	17.68	1

Multiple pressures and threats affect *2130 Fixed dunes (grey dunes), as presented in the tables above. This is reflected in the *Future Prospects* assessment, which resulted in *Favourable* status at one field-surveyed sub-site (5.9%), *Unfavourable–Inadequate* at nine sub-sites (53%) and *Unfavourable-Bad* at seven sub-sites (41.1%) (Appendix II).

Regarding impacts identified through the desk study (Table 60), overgrazing and trampling, agricultural activities and offroad driving and walking were recorded across 24 sub-sites, affecting 32% of the total habitat area. Natural erosion, not attributable to anthropogenic causes, was recorded at 22 subsites and affected 6% of the total habitat area.

Table 60 Impacts affecting *2130 Fixed dunes (grey dunes), the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA01	Conversion into agricultural land	1	1.29	< 1
PA06	Mowing or cutting of grassland	4	26.89	1
PA07	Overgrazing and trampling	16	764.69	32
PA10	Structure for livestock	5	2.94	< 1
PA19	Silage bales stocking	2	5.98	< 1
PA25	Vehicle tracks (agriculture)	20	79.79	3
PC01	Old site of sand extraction	1	3.72	< 1
PE01	Road	7	9.24	< 1
PE03	Ramp for boat	1	0.41	< 1
PF01	Housing, roads and bridge leading to houses	3	5.47	< 1
PF03	Camping, sport pitch, beach access	7	4.23	< 1
PF05	Offroad driving and walking, golf	24	49.80	2
PF06	Deposition of waste and building supplies	2	2.54	< 1
PF15	Coastal defences	1	Unknown	Unknown
PG04	Boat storage	1	0.11	< 1
PI02	Rabbits	6	54.46	2
PL02	Drainage	3	9.65	< 1
PM07	Natural erosion and natural succession	22	152.69	6

3.8.4 Overall Conservation Assessment

At sub-site level, the overall *Conservation Assessment* was completed for 17 sub-sites (Table 61, Appendix II). The habitat was assessed as *Favourable* at one sub-site (5.9%) (2.01 Trawmore, Keel). *Unfavourable–Inadequate* at eight sub-sites (47%) and *Unfavourable–Bad* at a further eight sub-sites (47%).

Despite a generally stable *Area* assessment, with *Favourable* status at most sub-sites, the *Structure and Functions* and *Future Prospects* results indicate the presence of ongoing pressures, particularly those associated with grazing regimes, coastal defence structures and recreational activities. Grazing pressure reflects a delicate balance between undergrazing (or lack of grazing) and overgrazing, both of which can adversely affect habitat condition. Similarly, while coastal defence structures aim to reduce coastal erosion, they may also alter sediment dynamics that are fundamental to the maintenance of this habitat.

With regard to trends, three sub-sites (2.01 Trawmore, Keel, 11.01 Trawgar to Dernish Island, and 29.03 Crummies Bay) were assessed as improving. Five sub-sites (4.01 Doo Lough, 5.01 Aghleam, 6.01 Garter Hill, 8.01 Bartragh Island and 16.01 Derrybeg dunes) were assessed as deteriorating. At the remaining sub-sites, all of which were assessed as *Unfavourable*, the trend is stable.

Table 61 Sub-site level assessment results of habitat *2130 Fixed dunes (grey dunes).

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	11	3	1	1
Unfavourable - Inadequate	5	11	9	8
Unfavourable - Bad	1	3	7	8
Not assessed (NA)	0	0	0	0

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3.9 *2140 Decalcified fixed dunes with *Empetrum nigrum*

Habitat *2140 *Decalcified Empetrum dunes* was recorded at sub-site 15 Gweedore through desk study (Figure 22). No assessment was undertaken for this habitat during CHNW.

This habitat is extremely rare in Ireland. It was previously mapped at sub-site 13.01 Maghera Strand by Ryle *et al.* (2009). However, Delaney *et al.* (2013) identified it as dune heath as no *Empetrum nigrum* was recorded. The habitat was therefore considered to correspond to *2150 *Dune heath*. Similarly, no *Empetrum nigrum* was recorded at this location during CHNW.

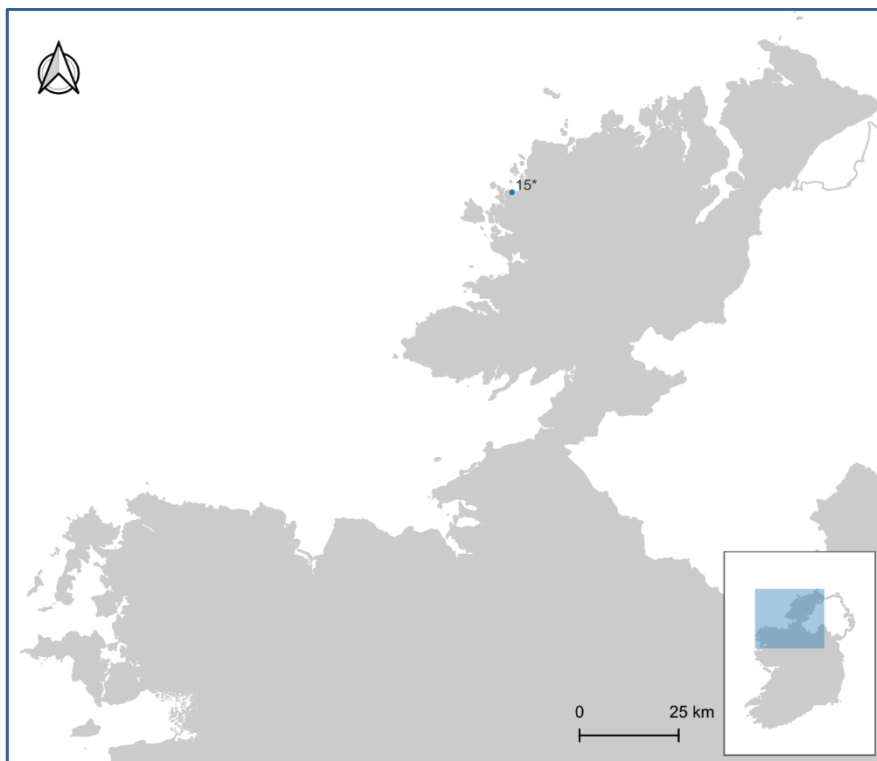


Figure 22 Distribution of CHNW sub-site supporting *2140 *Decalcified Empetrum dunes* (* indicates desk study sub-sites).

3.9.1 Area and distribution

The total mapped extent of *2140 *Empetrum dunes* within the CHNW sites is 0.13 ha (Table 62).

No change in habitat extent has been recorded since the baseline survey.

Table 62 Total area of *2140 *Decalcified Empetrum dunes* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	0	0.13	0.13
CHNW Area (ha)	0	0.13	0.13

3.9.2 Structure and Functions

No monitoring stops were recorded for habitat *2140 *Empetrum dunes* during CHNW and no *Structure and Functions* assessment was undertaken.

3.9.3 Future prospects

No pressures or threats were identified for habitat *2140 *Empetrum dunes* through the desk study and no *Future Prospects* assessment was undertaken.

3.9.4 Overall Conservation Assessment

The sub-site level overall *Conservation Assessment* of habitat *2140 *Empetrum dunes* was not completed during CHNW.

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3.10 *2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)

Habitat *2150 *Dune heath* was recorded at 5 sites distributed across the survey area (Figure 23, Appendix II). These comprised three field-surveyed sub-sites and three desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for three sub-sites.

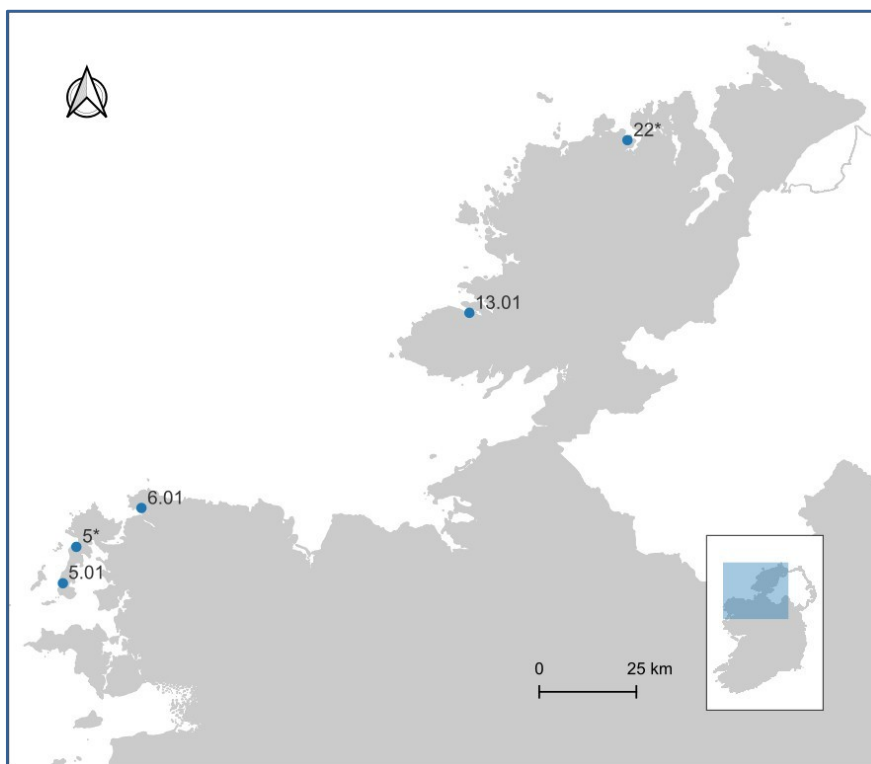


Figure 23 Distribution of CHNW sub-sites supporting *2150 *Dune heath* (* indicates desk study sub-sites).

3.10.1 Area and distribution

The total mapped extent of *2150 *Dune heath* within the CHNW sites is 29.45 ha. Of this, 21.98 ha were recorded within field-surveyed sub-sites and 7.47 ha within desk study sub-sites (Table 63). *Area* was assessed at three sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall increase of 5.92 ha (25.1%) since the baseline survey. This increase reflects differences in mapping methodology and identification of the habitat at sub-site 6.01 Garter Hill, previously classified as dry heath.

Table 63 Total area of *2150 *Dune heath* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	16.06	7.47	23.53
CHNW Area (ha)	21.98	7.47	29.45

No area loss attributable to anthropogenic activities was recorded during CHNW.

The *Area* parameter was assessed as *Favourable* at all three sub-sites, with a stable trend. No sub-site was assessed as *Unfavourable-Inadequate* or *Unfavourable-Bad* (Appendix II).

3.10.2 Structure and Functions

Structure and Functions were assessed at all three sub-sites. In total, 21.98 ha (74.6% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

The criteria assessing *Calluna vulgaris* growth phases, presence of negative indicator species and cover of trees and scrub each failed at two separate sub-sites. All other criteria passed at all of the sub-sites (Table 64).

Table 64 *Structure and Functions* assessment criteria for the three CHNW sub-sites where *2150 Decalcified dune heath was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Typical species	3 (100%)
2. Browsing	3 (100%)
3. <i>Calluna vulgaris</i> growth phases	2 (67%)
4. Negative indicator species	2 (67%)
5. Non-native species	3 (100%)
6. Cover of trees and scrub	2 (67%)
7. Cover of dwarf shrubs	3 (100%)
8. Bare sand	3 (100%)
9. Disturbance	3 (100%)
10. Pre-designation Coastal defences currently affecting the habitat	3 (100%)
11. Post-designation anthropogenic impacts on substrate/mobility of the system	3 (100%)

One sub-site (33.3%) was assessed as *Favourable* and two (66.7%) were assessed as *Unfavourable-Inadequate*. No sub-site was assessed as *Unfavourable-Bad*. Trend is decreasing at 13.01 Maghera Strand and was not assessed for the other sub-sites (Appendix II).

Overall, 17.14 ha (78%) of the area assessed for *Structure and Functions* was found to be in good condition (Appendix II).

3.10.3 Future prospects

Future Prospects were assessed at three sub-sites where *2150 Dune heath was present during CHNW. No impacts were recorded at sub-site 5.01 Aghleam.

One positive impact (Table 65), namely non-intensive grazing, was recorded at one sub-site (13.01 Maghera Strand), affecting 53% of the total habitat area.

Table 65 Positive impacts affecting *2150 Dune heath, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Non-intensive grazing		1		1	11.59	53

One neutral impact (Table 66), encroachment due to natural processes, was recorded at one sub-site (13.01 Maghera Strand), affecting 6% of the total habitat area.

Table 66 Neutral impacts affecting *2150 *Dune heath*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PM07	Encroachment			1	1	1.36	6

Two negative impacts affecting *2150 *Dune heath* were recorded during CHNW (Table 67). The most significant was encroachment by Bracken *Pteridium aquilinum* at sub-site 13.01 Maghera Strand, affecting 19% of the total habitat area. Offroad driving was recorded as a high intensity pressure at sub-sites 6.01 Garter Hill and 13.01 Maghera Strand, although it affected only 1% of the total habitat area.

Table 67 Negative impacts affecting *2150 *Dune heath*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA25	Offroad driving	1		1	2	0.11	1
PI03	Problematic native species			1	1	4.09	19

Future Prospects were assessed as *Favourable* at one (33.3%) field-surveyed sub-site (5.01 Aghleam) and as *Unfavourable–Inadequate* at two (66.7%) sub-sites (6.01 Garter Hill and 13.01 Maghera Strand). No sub-sites were assessed as *Unfavourable-Bad* (Appendix II).

3.10.4 Overall Conservation Assessment

At sub-site level, the overall *Conservation Assessment* was completed for three sub-sites (Table 68, Appendix II). The habitat was assessed as *Favourable* at one sub-site (33.3%) (5.01 Aghleam) and it was assessed as *Unfavourable-Inadequate* at two sub-sites (66.7%), 6.01 Garter Hill and 13.01 Maghera Strand, due to pressures associated with land abandonment, recreational activities and bracken encroachment. No sub-site was assessed as *Unfavourable-Bad*. Trend is decreasing at 13.01 Maghera Strand and was not assessed for the other sub-sites.

Table 68 Sub-site level assessment results of habitat *2150 Dune heath.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	3	1	1	1
Unfavourable - Inadequate	0	2	2	2
Unfavourable - Bad	0	0	0	0
Not assessed (NA)	0	0	0	0

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3.11 2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)

Habitat 2170 *Dunes with creeping willow* was recorded at 11 sites distributed across the survey area (Figure 24, Appendix II). These comprised eight field-surveyed sub-sites and three desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for seven sub-sites. At one additional sub-site, only the *Area* and *Future Prospects* parameters were assessed.

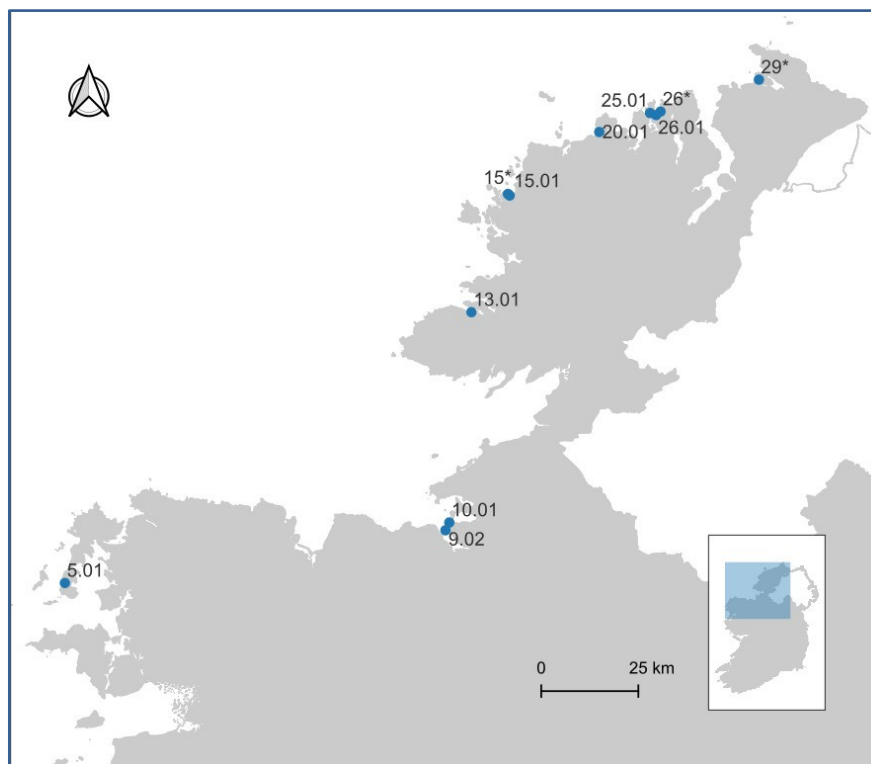


Figure 24 Distribution of CHNW sub-sites supporting 2170 *Dunes with creeping willow* (* indicates desk study sub-sites).

3.11.1 Area and distribution

The total mapped extent of 2170 *Dunes with creeping willow* within the CHNW sites is 65.97 ha. Of this, 62.29 ha were recorded within field-surveyed sub-sites and 3.68 ha within desk study sub-sites (Table 69). *Area* was assessed at eight sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall decrease of 2.15 ha (3.1%) since the baseline survey. This reduction is not attributable to anthropogenic activities and reflects natural processes, succession to other Annex I habitat and differences in mapping methodology.

Table 69 Total area of 2170 *Dunes with creeping willow* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	64.44	3.68	68.12
CHNW Area (ha)	62.29	3.68	65.97

No area loss attributable to anthropogenic activities was recorded during CHNW.

The Area parameter was assessed as *Favourable* at all eight sub-sites, with a stable trend. No sub-site was assessed as *Unfavourable-Inadequate* or *Unfavourable-Bad* (Appendix II).

3.11.2 Structure and Functions

Although *2170 Dunes with creeping willow* was recorded at eight sub-sites, *Structure and Functions* were assessed at seven sub-sites, as the habitat extent was below the minimum monitoring area at sub-site 15.01 Kincaslugh. In total, 62.26 ha (94.4% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

Three criteria failed the *Structure and Functions* assessment across different sub-sites (Table 70). The height of *Salix repens* criterion failed at four sub-sites (57%), cover of trees and scrub at three sub-sites (43%), and presence of negative indicator species at two sub-sites (29%). These failures mostly reflect inappropriate grazing regimes and invasion of problematic native species. All other criteria met the target at all assessed sub-sites.

Table 70 *Structure and Functions* assessment criteria for the seven CHNW sub-sites where *2170 Dunes with creeping willow* was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	7 (100%)
2. Negative indicator species	5 (71%)
3. Non-native species	7 (100%)
4. Rank grasses	7 (100%)
5. Cover of trees and scrub other than <i>S. repens</i>	4 (57%)
6. Height of <i>Salix repens</i>	3 (43%)
7. Bare sand	7 (100%)
8. Notable/rare species	7 (100%)
9. Interference with the sediment dynamics	7 (100%)
10. Damage due to disturbance	7 (100%)

Two sub-sites (28.6%) were assessed as *Favourable* (20.01 Rinclevan dunes and 25.01 Rossguill Peninsula), three sub-sites (42.9%), including 5.01 Aghleam, 9.02 Strandhill and 26.01 Lough Nagreaney, as *Unfavourable-Inadequate* and two sub-sites (28.6%), namely 10.01 Strandhill and 13.01 Maghera Strand, as *Unfavourable-Bad*. The trend is stable at two *Unfavourable-Inadequate* sub-sites, increasing at 20.01 Rinclevan dunes and decreasing at 10.01 Strandhill, 13.01 Maghera Strand and 26.01 Lough Nagreaney (Appendix II).

Overall, 47.03 ha (75.5%) of the *2170 Dunes with creeping willow* area assessed for *Structure and Functions* was found to be in good condition. At sub-site 13.01 Maghera Strand, lack of grazing resulted in 30% of the habitat area being in good condition (Appendix II).

3.11.3 Future prospects

Future Prospects were assessed at eight sub-sites where *2170 Dunes with creeping willow* was recorded during CHNW. No pressures were identified at sub-sites 15.01 Kincaslugh and 25.01 Rossguill Peninsula.

One positive impact, non-intensive grazing, was recorded at two sub-sites (Table 71).

Table 71 Positive impacts affecting *2170 Dunes with creeping willow*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Non-intensive grazing		2		2	2.17	3

Three neutral impacts were recorded across four sub-sites (Table 72), each affecting less than 1% of the habitat area. These comprised medium-intensity activities, including fencing, grazing, walking, and scrub encroachment.

Table 72 Neutral impacts affecting *2170 Dunes with creeping willow*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Fencing and grazing			1	1	0.10	< 1
PF05	Walking on designated paths and tracks			1	1	0.10	< 1
PM07	Encroachment	1		2	3	0.36	1

Seven negative impacts affecting *2170 Dunes with creeping willow* were recorded across five sub-sites (Table 73). Undergrazing and overgrazing were the principal pressures, affecting four and two sub-sites respectively, and 25% and 23% of the total habitat area. Other significant pressures included long-established conifer plantation acting as seed source, recreational activities, including camping, offroad driving and walking and invasion of problematic native species.

Table 73 Negative impacts affecting *2170 Dunes with creeping willow*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA05	Undergrazing and lack of management	1	2	1	4	15.49	25
PA07	Overgrazing and trampling	1		1	2	14.24	23
PA25	Offroad driving			1	1	0.02	< 1
PB01	Conifer plantation	1			1	0.22	< 1
PF03	Camping	1			1	0.55	1
PF05	Walking		1	1	2	1.10	2

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PI03	Problematic native species			1	1	0.30	1

Future Prospects were assessed as *Favourable* at three field-surveyed sub-sites (37.5%), *Unfavourable–Inadequate* at three sub-sites (37.5%) and as *Unfavourable–Bad* at two sub-sites (25%) (Appendix II).

Regarding impacts identified through the desk study (Table 74), agricultural and recreational activities were recorded at two different sub-sites, affecting approximately 1% of the total area. No pressures were identified at sub-site 29 North Inishowen.

Table 74 Impacts affecting 2170 Dunes with creeping willow, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA25	Vehicle tracks (agriculture)	1	0.03	1
PF05	Golf	1	0.02	1

3.11.4 Overall Conservation Assessment

At sub-site level, the overall *Conservation Assessment* was completed for seven sub-sites (Table 75, Appendix II) The habitat was assessed as *Favourable* at two sub-sites (28.6%), 20.01 Rinclevan dunes and 25.01 Rossguill Peninsula, as *Unfavourable–Inadequate* at three sub-sites (42.8%), 5.01 Aghleam, 9.02 Strandhill and 26.01 Lough Nagreaney, and as *Unfavourable–Bad* at two sub-sites (28.6%), 10.01 Strandhill and 13.01 Maghera Strand. Failures were primarily associated with lack of grazing, recreational activities and the spread of native species not characteristic of this Annex I habitat.

The trend is stable at two *Unfavourable–Inadequate* sub-sites, improving at 20.01 Rinclevan dunes and deteriorating at 10.01 Strandhill, 13.01 Maghera Strand and 26.01 Lough Nagreaney.

Table 75 Sub-site level assessment results of habitat 2170 Dunes with creeping willow.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	8	2	3	2
Unfavourable - Inadequate	0	3	3	3
Unfavourable - Bad	0	2	2	2
Not assessed (NA)	0	1	0	1

3.12 2190 Humid dune slacks

Habitat 2190 *Humid Dune slacks* was recorded at 19 sites distributed across the survey area (Figure 25, Table II). These comprised 13 field-surveyed sub-sites and 12 desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for 13 sub-sites.

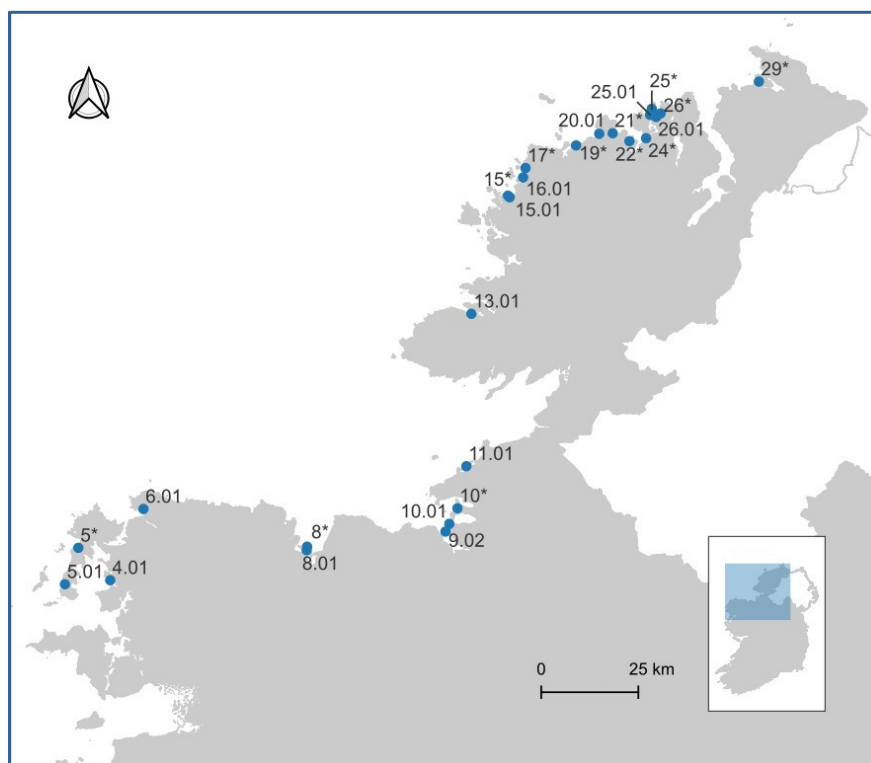


Figure 25 Distribution of CHNW sub-sites supporting 2190 *Dune slacks* (* indicates desk study sub-sites).

3.12.1 Area and distribution

The total mapped extent of 2190 *Dune slacks* within the CHNW sites is 132.48 ha. Of this, 89.24 ha were recorded within field-surveyed sub-sites and 43.24 ha within desk study sub-sites (Table 76). *Area* was assessed at 13 sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall increase of 7.57 ha (6.1%) since the baseline survey. This increase was the result of differences in mapping methodology and habitat interpretation.

Table 76 Total area of 2190 *Dune slacks* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	81.68	43.23	124.91
CHNW Area (ha)	89.24	43.24	132.48

A loss of 1.81 ha attributable to natural processes has occurred since the baseline survey within the field-surveyed sub-sites (Table 77). No area loss attributable to anthropogenic activities was recorded during CHNW.

Table 77 Loss in area of 2190 Dune slacks within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	0.00	0.00	0.00
Loss due to natural processes	1.81	0.00	1.81
Total Result	1.81	0.00	1.81

The Area parameter was assessed as *Favourable* at all 13 sub-sites, with a stable trend. No sub-site was assessed as *Unfavourable-Inadequate* or *Unfavourable-Bad* (Appendix II).

3.12.2 Structure and Functions

2190 Dune slacks was recorded and assessed at 13 sub-sites. In total, 89.24 ha (67.4% of the total area mapped during the CHNW) were included in the *Structure and Functions* assessment.

Five criteria failed the *Structure and Functions* assessment. Presence of positive indicator species, cover of Creeping Willow *Salix repens*, presence of negative indicator species and damage due to disturbance each failed at separate sub-sites, while cover of scrub failed at two sub-sites. All other assessed criteria met the target at all sub-sites (Table 78).

Table 78 *Structure and Functions* assessment criteria for the 13 CHNW sub-sites where 2190 Dune slacks was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	12 (92%)
2. Bryophytes	13 (100%)
3. Cover of <i>Salix repens</i>	12 (92%)
4. Negative indicator species	12 (92%)
5. Non-native species	13 (100%)
6. Cover of scrub	11 (85%)
7. Forb:grass ratio (mean)	13 (100%)
8. Bare ground	13 (100%)
9. Notable/rare species	13 (100%)
10. Interference with the sediment dynamics	13 (100%)
11. Damage due to disturbance	12 (92%)

Nine sub-sites (69.2%) were assessed as *Favourable*, three sub-sites (23.2%), 16.01 Derrybeg dunes, 25.01 Rossguill Peninsula and 26.01 Lough Nagreaney, as *Unfavourable-Inadequate* and one sub-site (7.7%), 10.01 Strandhill, as *Unfavourable-Bad*. The trend is generally stable, however it is increasing at *Favourable* sub-sites 5.01 Aghleam and 6.01 Garter Hill, and decreasing at sub-site 10.01 Strandhill (Appendix II).

Overall, 84.62 ha (94.8%) of the area assessed for *Structure and Functions* was found to be in good condition. Dune slacks at sub-site 10.01 Strandhill were notably poorer than at other sub-sites, with 25% of the habitat area assessed as being in good condition (Appendix II).

3.12.3 Future prospects

Future Prospects were assessed at 13 sub-sites where 2190 Dune slacks was recorded during CHNW. No pressures were identified at sub-site 8.01 Bartragh Island.

One positive impact (Table 79), non-intensive grazing, was recorded at three sub-sites.

Table 79 Positive impacts affecting *2190 Dune slacks*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Non-intensive grazing		1	2	3	3.48	4

Two neutral impacts were recorded (Table 80). These comprised medium-intensity activities including grazing, affecting 17% of the habitat area, and scrub encroachment, affecting 6% of the habitat area across six different sub-sites.

Table 80 Neutral impacts affecting *2190 Dune slacks*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Grazing		1	1	2	14.95	17
PM07	Encroachment, Natural succession	1	3	2	6	5.20	6

Seven negative impacts affecting *2190 Dune slacks* are presented in Table 81. Undergrazing and overgrazing were the principal pressures, affecting four separate sub-sites and approximately 2% and 3% of the total habitat area respectively. Other significant pressures included agricultural and recreational activities (camping, offroad driving and walking) each affecting less than 1% of the habitat.

Table 81 Negative impacts affecting *2190 Dune slacks*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA05	Undergrazing and lack of management		2		2	2.17	2
PA07	Overgrazing		2		2	2.85	3
PA19	Agricultural waste	1			1	0.14	< 1
PA22	Drainage	1			1	0.26	< 1
PA25	Offroad driving			2	2	0.34	< 1
PF03	Camping	1			1	0.09	< 1
PF05	Offroad driving and walking	1		1	2	0.04	< 1

Future Prospects were assessed as *Favourable* at seven field-surveyed sub-sites (53.8%), *Unfavourable–Inadequate* at four sub-sites (30.8%) and as *Unfavourable–Bad* at two sub-sites (15.4%) (Appendix II).

Regarding the impacts identified through the desk study (Table 82), agricultural and recreational activities were recorded across five sub-sites in total, affecting less than 1% of the total habitat area.

Table 82 Impacts affecting 2190 Dune slacks, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA25	Vehicle tracks (agriculture)	2	0.06	< 1
PF05	Offroad driving and walking	1	0.11	< 1
PL02	Drainage	2	0.18	< 1

3.12.4 Overall Conservation Assessment

At sub-site-level the overall *Conservation Assessment* was completed for 13 sub-sites (Table 83, Appendix II). The habitat was assessed as *Favourable* at six sub-sites (46.1%), as *Unfavourable–Inadequate* at five sub-sites (38.5%), and as *Unfavourable–Bad* at two sub-sites (15.4%). *Unfavourable* assessments were primarily attributable to recreational pressures (including caravan sites, offroad driving and walking), as well as undergrazing and drainage. The trend is stable, with the exception of sub-site 10.01 Strandhill, where it is deteriorating.

Table 83 Sub-site level assessment results of habitat 2190 Dune slacks.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	13	9	7	6
Unfavourable - Inadequate	0	3	4	5
Unfavourable - Bad	0	1	2	2
Not assessed (NA)	0	0	0	0

3.13 *21A0 Machairs

Habitat *21A0 *Machairs* was recorded at 14 sites distributed across the survey area (Figure 26, Appendix II). These comprised eight field-surveyed sub-sites and 10 desk study sub-sites. An overall sub-site level *Conservation Assessment* was completed for eight sub-sites.

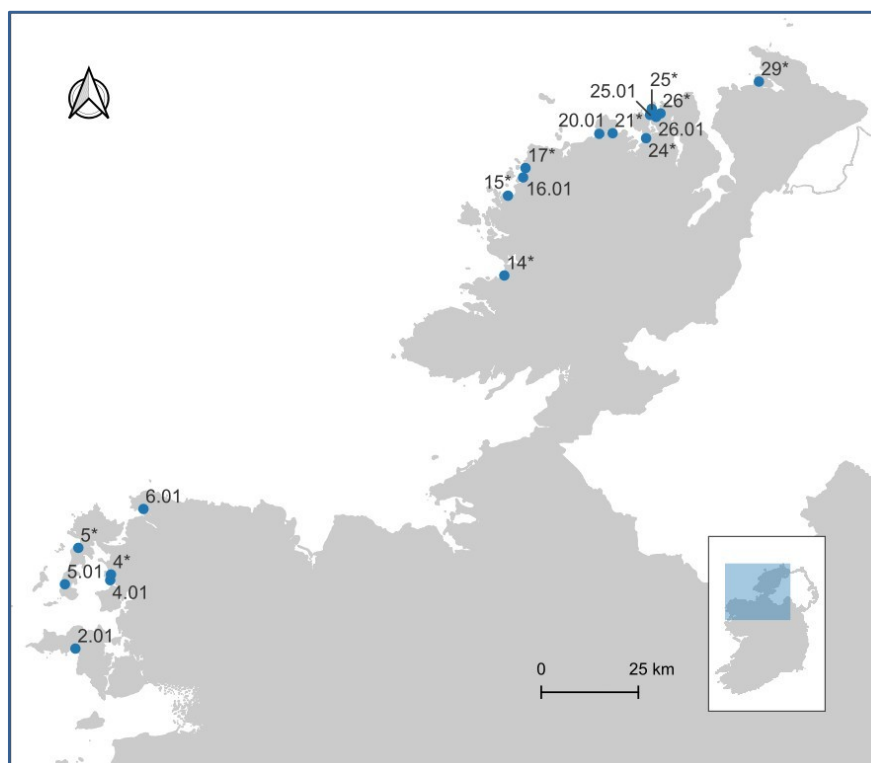


Figure 26 Distribution of CHNW sub-sites supporting *21A0 *Machair* (* indicates desk study sub-sites).

3.13.1 Area and distribution

The total mapped extent of *21A0 *Machair* within the CHNW sites is 1570.05 ha. Of this, 785.94 ha were recorded within field-surveyed sub-sites and 784.11 ha within desk study sub-sites (Table 84). *Area* was assessed at eight sub-sites where the habitat was confirmed as present (Appendix II).

Comparison with the baseline mapping indicates an overall increase of 36.99 ha (2.4%) since the baseline survey. This increase primarily reflects differences in mapping methodology as well as natural dynamics. At sub-site 20.01 Rinclevan dunes, the increase resulted from reclassification of an area previously mapped as *2130 *Fixed dunes (grey dunes)*.

Table 84 Total area of *21A0 *Machair* within the field-survey and desk study sub-sites.

	Surveyed Area (ha)	Desk study area (ha)	Total area (ha)
Baseline Area (ha)	744.94	788.12	1533.06
CHNW Area (ha)	785.94	784.11	1570.05

An anthropogenic loss of 8.50 ha was recorded during CHNW (Table 85). Losses occurred both prior to and following previous monitoring cycles. Of the total loss, 3.73 ha occurred within field-surveyed sub-sites and 4.77 ha across desk study sub-sites. This anthropogenic loss is primarily attributable to construction of buildings and roads, quarrying activities and infrastructure associated with grazing and recreational use.

Natural losses were also recorded and were associated with succession to wet grassland and scrub encroachment.

Table 85 Loss in area of *21A0 *Machair* within the CHNW sub-sites.

	Surveyed area loss (ha)	Desk study area loss (ha)	Total area loss (ha)
Loss due to anthropogenic factors	3.73	4.77	8.50
Loss due to natural processes	0.42	0.14	0.56
Total Result	4.15	4.91	9.06

The *Area* parameter was assessed as *Favourable* at two sub-sites (25%), as *Unfavourable-Inadequate* at five sub-sites (62.5%) and as *Unfavourable-Bad* at one sub-site (12.5%). The trend is stable at sub-sites assessed as *Favourable* and decreasing at those assessed as *Unfavourable* (Appendix II).

3.13.2 Structure and Functions

*21A0 *Machair* was recorded and assessed at eight sub-sites. In total, 785.94 ha (50% of the total area mapped during CHNW) were included in the *Structure and Functions* assessment.

Five criteria failed the *Structure and Functions* assessment at sub-site level. Presence of bryophytes failed at 50% of sub-sites, while presence of positive indicator species, presence of negative indicator species, sward height and damage due to disturbance each failed at a separate sub-site (12%). All other criteria passed at all of the sub-sites (Table 86).

Table 86 *Structure and Functions* assessment criteria for the eight CHNW sub-sites where *21A0 *Machair* was assessed.

Assessment criteria	Number (%) of sub-sites passing criteria
1. Positive indicator species	7 (88%)
2. Bryophytes	4 (50%)
3. Negative indicator species	7 (88%)
4. Non-native species	8 (100%)
5. Flowering or fruiting of positive indicator species	8 (100%)
6. Sward height	7 (88%)
7. Bare ground	8 (100%)
8. Notable/rare species	8 (100%)
9. Interference with the sediment dynamics	8 (100%)
10. Damage due to disturbance	7 (88%)

Three sub-sites (37.5%) were assessed as *Favourable*, with an increasing trend, and five sub-sites (62.5%) as *Unfavourable-Inadequate* with a stable trend. No sub-sites were assessed as *Unfavourable-Bad* (Appendix II).

Overall, 661.21 ha (84.1%) of the area assessed for *Structure and Functions* was found to be in good condition (Appendix II).

3.13.3 Future prospects

Future Prospects were assessed at eight sub-sites where *21A0 *Machair* was present during CHNW.

One positive impact, non-intensive grazing, was recorded at three sub-sites (Table 87).

Table 87 Positive impacts affecting *21A0 *Machair*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Non-intensive grazing			3	3	112.97	14

Five neutral impacts were recorded (Table 88). These comprised medium-intensity pressures including grazing, affecting 23% of the total habitat area, and natural erosion, succession and encroachment, affecting 9% of the habitat area across five sub-sites. Drainage and recreational activities (walking) each affected less than 1% of the habitat area. Long-established coastal defence structures were also recorded, however, it was not possible to determine the total extent of habitat influenced by these structures.

Table 88 Neutral impacts affecting *21A0 *Machair*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA08	Grazing	1	1	1	3	178.50	23
PA22	Drainage		1	2	3	4.85	1
PF05	Walking and pedestrian tracks		1		1	0.56	< 1
PF15	Coastal defences			1	1	Unknown	Unknown
PM07	Natural erosion, natural succession and encroachment		1	4	5	73.67	9

Seventeen negative impacts affecting *21A0 *Machair* are presented in Table 89. Overgrazing and trampling were the principal pressures, affecting seven sub-sites and approximately 33% of the total habitat area. Recreational activities (offroad driving and walking) affected a further 10% of the habitat area. Additional pressures included agricultural activities (reseeding, farming infrastructure, waste deposition and offroad driving), recreational activities (camping and waste deposition), spread of ornamental non-native and invasive native species, and drainage. Each of these impacts affected less than 1% of the habitat area.

Table 89 Negative impacts affecting *21A0 *Machair*, the number of sub-sites (where the habitat occurs) which were affected, the intensity of impact and the area of the habitat affected.

Impact code	Impact description	Number of sub-sites affected				Area affected (ha)	Area affected (%)
		High	Low	Medium	Total		
PA01	Reseeding			1	1	8.58	1
PA05	Undergrazing		1		1	3.19	< 1
PA07	Overgrazing and trampling	1	2	4	7	257.78	33
PA10	Farming structure	1			1	0.24	< 1
PA19	Agricultural waste	1			1	1.51	< 1
PA25	Offroad driving (agriculture)	6		3	9	10.06	1
PD06	Trellis/Repeater	1			1	0.75	< 1
PE01	Road	3			3	1.75	< 1
PF03	Camping	1			1	1.41	< 1
PF05	Offroad driving and walking	2	1	2	5	76.85	10
PF06	Deposition and burning of waste	1		2	3	1.83	< 1
PF17	Aqueduct			1	1	0.24	< 1
PI	Ornamental species	1			1	0.12	< 1
PI02	Non-native species	2			2	2.06	< 1
PI03	Problematic native species	1			1	0.35	< 1
PK05	Asbestos heap	1			1	0.24	< 1
PL02	Drainage canal			1	1	0.06	< 1

Future Prospects were assessed as *Favourable* at one field-surveyed sub-site (12.5%), as *Unfavourable–Inadequate* at four sub-sites (50%) and as *Unfavourable-Bad* at three sub-sites (37.5%) (Appendix II).

Regarding impacts identified through the desk study (Table 90), agricultural activities were recorded at eleven sub-sites, affecting 30% of the habitat area and presence of rabbits at seven sub-sites, affecting 5% of the habitat area. Additional pressures included agricultural activities (land reclaiming, farming infrastructure, waste deposition and offroad driving), recreational activities, constructions of roads and buildings, drainages and natural erosion or succession. Each of these impacts affected less than 1% of the habitat area.

Table 90 Impacts affecting *21A0 *Machair*, the number of desk study sub-sites (where the habitat occurs) which were affected, the area of the habitat affected

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA01	Conversion into agricultural land	1	7.21	1
PA06	Mowing or cutting of grassland	5	34.16	4
PA07	Overgrazing and trampling	9	236.10	30
PA10	Structure for livestock	2	0.76	< 1
PA19	Silage bales stocking	1	0.35	< 1

Impact code	Impact description	Number of sub-sites affected	Area affected (ha)	Area affected (%)
PA25	Vehicle tracks (agriculture)	11	17.93	2
PE01	Road	4	3.64	< 1
PF01	Housing	3	0.50	< 1
PF03	Stone write	1	0.02	< 1
PF05	Offroad driving and walking	4	0.50	< 1
PF06	Deposition of waste	1	1.44	< 1
PI02	Rabbits	7	42.46	5
PL02	Drainage	2	4.16	1
PM07	Natural erosion and natural succession	5	4.68	1

3.13.4 Overall Conservation Assessment

At sub-site level, the overall *Conservation Assessment* was completed for eight sub-sites (Table 91, Appendix II). The habitat was assessed as *Favourable* at one sub-site (12.5%), 20.01 Rinclevan dunes. Four sub-sites (50%), namely 4.01 Doo Lough, 6.01 Garter Hill, 16.01 Derrybeg dunes and 26.01 Lough Nagreaney, were assessed as *Unfavourable-Inadequate*, mainly due to agricultural pressures. Three sub-sites (37.5%), 2.01 Trawmore, Keel, 5.01 Aghleam and 25.01 Rossguill Peninsula, were assessed as *Unfavourable-Bad* primarily due to overgrazing, trampling and recreational activities.

The trend is stable at five sub-sites, improving at 20.01 Rinclevan dunes and deteriorating at 4.01 Doo Lough and 25.01 Rossguill Peninsula.

Table 91 Sub-site level assessment results of habitat *21A0 Machair.

	Area	Structure and Functions	Future Prospects	Overall assessment
Favourable	5	3	1	1
Unfavourable - Inadequate	2	5	4	4
Unfavourable - Bad	1	0	3	3
Not assessed (NA)	0	0	0	0

4 Discussion

4.1 Overview of habitat condition in the northwest region

The CHNW survey provides an updated *Conservation Assessment* of Annex I coastal habitats across a representative range of coastal systems in counties Donegal, Sligo and Mayo. This project, together with other recent national surveys, represents the first comprehensive assessment of coastal habitats as an integrated system, rather than as separate habitat groups, thereby enabling a more comparative and integrated evaluation of coastal ecosystem functioning, as previously recommended (Martin *et al.*, 2017).

Habitats associated with highly dynamic coastal environments generally displayed patterns consistent with natural coastal processes. Strandline, shingle, *Salicornia* mud and embryonic dune habitats were typically confined to narrow zones influenced by recent storm activity and sediment redistribution. Their spatial variability between sub-sites and monitoring cycles reflects the inherently dynamic nature of these systems and, in most cases, does not indicate deterioration in conservation condition.

In contrast, habitats characterised by more developed and stable vegetation structure, including inland dune habitats and saltmarshes, exhibited greater variability in conservation condition. These habitats are less directly controlled by short-term coastal dynamics and are more strongly influenced by land-use practices, particularly grazing, as well as by localised disturbance, including anthropogenic activities.

Mobile dune habitats represent an intermediate system within this gradient. Due to their transitional nature, they remain strongly influenced by natural coastal processes, which generally do not negatively affect conservation condition. However, they are also more susceptible to anthropogenic pressures than the more dynamic habitats, particularly in areas where recreational use or grazing are concentrated.

Across the survey area, *unfavourable* assessments were typically associated with localised pressures rather than widespread habitat degradation. In several cases, specific pressures—such as grazing imbalance, recreational disturbance or interference with sediment dynamics—were sufficient to influence habitat structure, ecological functioning and future condition, resulting in an *unfavourable conservation assessment*, despite the overall habitat remaining extensive in terms of area.

Overall, the results suggest that while coastal habitats in the northwest remain broadly intact, their condition is shaped by the interaction between natural processes and site-specific pressures, the relative importance of which varies across the coastal habitat gradient.

4.2 Strandline and shingle

1210 Drift lines and *1220 Vegetated shingle* represent the most dynamic components of the coastal habitat mosaic, being strongly dependent on sediment deposition, wave action and storm-driven processes. These habitats occur at the land–sea interface and are inherently transient, with their distribution and composition closely linked to short-term coastal dynamics.

The overall *conservation assessment* indicates that both habitats are generally in *favourable* condition across the northwest region. For 1210, eight out of 11 sub-sites were assessed as *Favourable*, while for 1220, seven out of 10 sub-sites were assessed as *Favourable*. These results indicate that, despite localised pressures, both habitats retain a high level of ecological functionality.

This pattern reflects their strong dependence on natural coastal processes and is consistent with previous national assessments (Delaney *et al.*, 2013; Martin *et al.*, 2017). Strandline

communities respond rapidly to storm events and redistribution of organic material, while vegetated shingle vegetation is closely linked to substrate stability and sediment supply.

Unfavourable assessments were generally associated with localised anthropogenic pressures. For both habitats, these were primarily linked to the presence of coastal defences, which, although often pre-dating the CHNW survey, continue to influence sediment dynamics and strandline development. This highlights the long-term legacy effects of such structures on highly dynamic habitats.

Recreational activities were also recorded across several sub-sites. Walking was typically neutral, whereas off-road vehicle use was identified as a negative pressure where present, due to localised disturbance of vegetation and substrate.

Natural erosion and redistribution of strandline material were widely recorded and are intrinsic to the functioning of both habitats. The generally stable or improving trends observed across most sub-sites, together with the predominance of *favourable* assessments, indicate that these habitats remain resilient where natural processes are maintained.

4.3 Dune systems

Coastal dune systems within the CHNW survey area comprise a sequence of habitats representing different stages of dune development, from embryonic and mobile dunes to more stable inland dune habitats. These systems are shaped by the interaction between sediment supply, wind processes, vegetation dynamics and land use, particularly grazing.

A clear gradient in conservation condition is evident across dune habitats. Early successional habitats remain largely in *favourable* condition with *2110 Embryonic shifting dunes* was assessed as *Favourable* at 11 of 13 sub-sites. This habitat is strongly linked to active sediment processes and appear resilient where these processes remain intact.

2120 Marram dunes (white dunes) also shows relatively positive results, with 9 of 17 sub-sites assessed as *Favourable*. *Unfavourable* assessments were generally associated with localised disturbance and exposure. At sub-site 9.02 Strandhill, for example, high visitor pressure combined with exposure to open Atlantic conditions has resulted in significant erosion, illustrating the interaction between natural vulnerability and anthropogenic pressure.

In contrast, **2130 Fixed dunes (grey dunes)* shows the poorest conservation condition, with only one of 17 sub-sites assessed as *Favourable*, compared to 8 *Unfavourable-Inadequate* and 8 *Unfavourable-Bad*. This reflects the strong dependence of this habitat on appropriate management. Both overgrazing and undergrazing were identified as key pressures. At sub-site 5.01 Aghleam, intensive grazing was widespread, while at 1.01 Bartraw Strand, lack of grazing combined with recreational pressure has led to extensive areas being in *unfavourable* condition.

Other dune habitats present intermediate patterns. *2190 Dune slacks* were assessed as *Favourable* at six of 13 sub-sites and appear to be less influenced by grazing pressure, although some localised impacts from recreational activities were recorded. **2150 Dune heath* and *2170 Dunes with Creeping Willow* are generally in *favourable* or moderately *unfavourable* condition, with pressures primarily related to grazing imbalance and associated encroachment. **21A0 Machair* shows a more *unfavourable* pattern, with one of 8 sub-sites assessed as *Favourable*, and failures largely linked to vegetation composition and grazing pressure.

Across dune systems, grazing emerges as a dominant ecological driver, with both excessive and insufficient grazing negatively affecting habitat condition. Recreational pressures and invasive species also contribute to habitat degradation, although typically over limited spatial extents. However, their effects become more pronounced in sites subject to sustained or concentrated use.

Coastal defences appear to be less influential on inland dune habitats overall, but their effects can be pronounced in specific cases. At 10.01 Strandhill, for example, significant erosion of fixed dunes has occurred in proximity to coastal protection structures, with impacts further amplified by direct exposure to high-energy Atlantic conditions.

Trends indicate a mixed pattern, with improvement at some sites (e.g. sub-sites 2.01 Trawmore, Keel and 11.01 Trawgar to Dernish Island) and deterioration at others (e.g. sub-sites 5.01 Aghleam and 19.01 Dooley), reflecting the interaction between management and site-specific pressures. These findings are consistent with the framework observed for Irish dune systems (Delaney *et al.*, 2013).

4.4 Saltmarshes

Saltmarsh habitats within the CHNW survey area show relatively stable extent but variable conservation condition, reflecting the interaction between natural processes and land-use pressures.

Pioneer saltmarsh (1310 *Salicornia mud*) exhibited an even distribution in conservation condition, with four of eight sub-sites assessed as *Favourable*. *Unfavourable* assessments were primarily associated with the presence of *Spartina anglica*, recorded in four of the 14 surveyed sub-sites. Although not currently widespread in the northwest region, this species represents the principal pressure on the habitat due to its capacity to modify both vegetation composition and sediment dynamics. Trampling was also recorded across a number of sub-sites. However, it was generally of low intensity and is considered to have had a secondary influence on overall habitat condition.

Pioneer saltmarsh follows a pattern similar to that observed in strandline, shingle and embryonic dune habitats, in that its distribution and condition are largely governed by natural coastal processes. However, in this case the presence of *Spartina anglica* represents a key factor influencing both the current condition and the likely future development of the habitat. In contrast, more established saltmarsh communities show a stronger dependence on land-use practices, particularly grazing, in a manner comparable to inland dune habitats.

Habitat 1330 *Atlantic salt meadows* display a predominantly *unfavourable* conservation pattern, with 2 of 24 sub-sites assessed as *Favourable*, compared to 16 *Unfavourable-Inadequate* and 6 *Unfavourable-Bad*. The main factors influencing these assessments relate to vegetation structure, notably reduced sward height and low species diversity, both indicative of sustained grazing pressure.

The influence of grazing is particularly evident at sub-sites such as 1.02 Rosmurrevagh and 1.05 Annagh Island, where prolonged intensive grazing has resulted in extensive areas of degraded habitat. In contrast, at sub-site 14.01 Gweebarra River salt marshes, a shift in grazing regime appears to have facilitated a recovery in vegetation structure, underlining the responsiveness of this habitat to changes in management.

Habitat 1410 *Mediterranean salt meadows* were generally in favourable condition, with 14 of 18 sub-sites assessed as *Favourable*. In contrast to 1330 *Atlantic salt meadows*, grazing does not appear to exert a strong influence on overall habitat condition. Its effects are more localised and are primarily expressed through trampling, particularly by cattle, resulting in disturbance around *Juncus* stands rather than widespread structural degradation. *Unfavourable* assessments were mainly linked to localised disturbance, including trampling and off-road driving, which can affect vegetation structure at a fine scale but are generally limited in extent.

Additional anthropogenic pressures associated with agricultural activities were also recorded across the saltmarsh system, including off-road driving and land reclamation. Although generally limited in spatial extent, these pressures contribute to localised degradation and may act cumulatively with grazing to further influence habitat condition.

In general, natural processes such as sediment accretion, erosion and succession play a fundamental role in shaping saltmarsh habitats. However, grazing and invasive species remain key pressures, consistent with previous national assessments (Brophy *et al.*, 2019).

4.5 Main drivers of conservation condition across coastal habitats

The results of the CHNW survey highlight a consistent set of interacting drivers influencing conservation condition across coastal habitats, the relative importance of which varies along the coastal habitat gradient from highly dynamic systems to more stable, managed environments.

Natural coastal processes, including sediment transport, erosion, accretion and storm-driven disturbance, underpin the structure and functioning of all habitat groups. Their influence is most evident in strandline, shingle and early dune habitats, where vegetation patterns are closely linked to recent deposition and redistribution of material. In these systems, spatial variability and short-term changes in extent are characteristic features and do not in themselves indicate negative trends. As such, these habitats tend to remain in *favourable* condition where natural processes operate without constraint.

However, the role of sediment dynamics becomes more complex where these processes are altered by coastal infrastructure. Interference with sediment transport, particularly through coastal defence structures, was identified as a key factor influencing habitat condition in both vegetated shingle and dune systems. While such impacts are often localised, they can be significant where the interaction between coastal protection measures and high-energy exposure may result in pronounced erosion of dune habitats. This highlights the sensitivity of coastal systems to even localised modifications of geomorphological processes.

Moving along the coastal gradient, the influence of land-use practices becomes increasingly important. Grazing emerges as the dominant ecological driver in more established habitats, particularly inland dunes and saltmarshes. The results clearly demonstrate that both overgrazing and undergrazing can lead to *unfavourable* conditions, albeit through different mechanisms. Excessive grazing results in vegetation damage, reduced sward height and loss of species diversity, while insufficient grazing promotes encroachment and changes in community structure. In contrast, grazing plays a more limited role in dynamic habitats and in certain saltmarsh types, where its effects are generally localised and primarily expressed through trampling and poaching rather than structural change. This variation highlights the need to consider habitat-specific responses when evaluating the role of grazing across coastal systems.

Recreational activities represent a secondary but locally important pressure across multiple habitat groups. While generally limited in spatial extent, their effects can become significant in areas subject to sustained or concentrated use. This is particularly evident in dune systems, where trampling and off-road driving can contribute to vegetation damage and erosion, especially when combined with natural exposure. The interaction between recreational pressure and natural vulnerability is therefore a key factor in determining local habitat condition.

Invasive and problematic species constitute an additional pressure with variable expression across habitats. Although currently limited in extent within the CHNW survey area, species such as Sea-buckthorn *Hippophaë rhamnoides*, Chilean rhubarb *Gunnera tinctoria* and Common cordgrass *Spartina anglica* have the potential to significantly alter habitat ecology. Their influence is most evident in specific habitat types, notably *Spartina* in pioneer saltmarsh, where it represents a primary driver of *unfavourable* condition despite the otherwise dynamic and resilient nature of the habitat.

Overall, the CHNW results demonstrate that conservation condition across coastal habitats is determined by the interaction between natural processes and anthropogenic pressures, with a clear shift in dominant drivers along the coastal gradient. Highly dynamic habitats are primarily

controlled by natural processes and tend to be resilient unless these processes are constrained, while more stable habitats are increasingly dependent on appropriate management, particularly grazing, and are therefore more susceptible to anthropogenic pressures. This reinforces the conceptual framework established in previous national monitoring, whereby the balance between process-driven and management-dependent systems is central to understanding coastal habitat condition.

4.6 Constraints of the methodology

As with previous national coastal habitat monitoring programmes, the methodology adopted for the CHNW survey is subject to inherent constraints. These primarily reflect the dynamic nature of coastal systems, the combined use of field-based and desktop-based approaches, and the need for methodological continuity with earlier monitoring programmes to ensure comparability across Article 17 reporting cycles.

4.6.1 Spatial and temporal variability

Coastal habitats are highly dynamic, with changes in extent, structure and species composition occurring over short timescales in response to natural processes such as erosion, accretion, storm events and vegetation succession. Field survey results therefore represent a temporal snapshot rather than a long-term condition. This is particularly relevant for mobile habitats such as *1210 Drift lines*, *1220 Vegetated shingle* and *2110 Embryonic shifting dunes*, where natural variability may exceed changes attributable to anthropogenic pressures, complicating the interpretation of trends.

Seasonal factors also influence the results. Although surveys were undertaken within the optimal field season, phenological variation may affect the detectability of some diagnostic or typical species, with potential implications for assessments of *Structure and Functions*.

4.6.2 Field survey and access limitations

Access to some sites and sub-sites was constrained by terrain, tidal conditions, weather or land ownership. As a result, survey coverage may have been uneven in places, and logistical constraints limited the number of monitoring stops that could be recorded within extensive or complex sites. Consequently, fine-scale habitat heterogeneity may not always have been fully captured, particularly within structurally diverse habitats such as fixed dunes and machairs.

4.6.3 Implications of desk study

A proportion of CHNW sub-sites were assessed through desk analysis rather than full field survey. While this approach was necessary to achieve broad spatial coverage and continuity with previous datasets, it inherently limits the scope of assessment. Desk reviews are effective in identifying major changes in habitat area, obvious physical modification and large-scale pressures; however, they do not allow for direct assessment of habitat *Structure and Functions* or for a detailed evaluation of *Area* and *Future Prospects*. As a result, *Conservation Assessments* for these sub-sites did not lead to a complete habitat condition assessment, even though data on habitat area, pressures and threats were employed to inform the *National Conservation Assessment*.

4.6.4 Habitat definition and expert judgement

Despite methodological refinements, some uncertainty remains in delineating boundaries between adjacent Annex I habitats, particularly within transitional zones and habitat mosaics. This is most evident in dune systems, where boundaries between mobile, fixed and slack habitats are often diffuse. Although standardised definitions and decision rules were applied,

a degree of professional judgement remains unavoidable and may influence boundary placement and area calculations.

Similarly, while explicit criteria were applied for *Area, Structure and Functions* and *Future Prospects*, certain aspects—such as sediment dynamics, long-term effects of coastal defences and legacy pressures—require expert judgement. Thresholds aligned with national and EU guidance may not fully reflect natural habitat variability, occasionally resulting in *Unfavourable* assessments despite largely functional ecological conditions.

4.6.5 Methodological updates and refinements

Survey and assessment largely followed the methodologies established by Delaney *et al.* (2013), Martin *et al.* (2017) and Brophy *et al.* (2019). A limited number of refinements were introduced to align the CHNW survey with the updated guidelines for the current Article 17 reporting cycle (DG Environment, 2023a), particularly in relation to the classification of pressures, threats and conservation measures. For the first time, the timing of impacts was systematically recorded, unlike in previous monitoring projects.

Habitat mapping adopted a full-coverage, field-validated approach, with most field-surveyed sub-sites walked in their entirety and previously mapped habitat boundaries validated on the ground. This approach was applied to habitats *1210 Drift lines*, *1220 Vegetated shingle* and *2110 Embryonic shifting dunes* and *2120 Marram dunes (white dunes)*, which had often been mapped using shoreline-perpendicular transects in earlier surveys. While improving spatial accuracy, this may reduce direct comparability with earlier datasets.

In addition, habitats *1210 Drift lines*, *1220 Vegetated shingle* and *2110 Embryonic shifting dunes* were mapped only where positive indicator species were recorded, increasing confidence in habitat identification but potentially resulting in smaller mapped extents compared to earlier surveys.

For sand dune habitats, habitat mosaics were rarely used. Polygons previously mapped as dune habitats—particularly *2130 Fixed dunes (grey dunes)*—but found to be dominated by woodland, scrub, bracken or grassland were reassigned in their entirety to the most appropriate Fossitt (2000) habitat, reflecting a stricter application of habitat definitions.

With regard to *Structure and Functions*, most monitoring stops were recorded at previously surveyed locations, particularly for saltmarsh habitats. However, the total number of stops was calculated at site level and subsequently applied at sub-site level, which in some cases resulted in a reduced number of plots. For habitat *1330 Atlantic salt meadows*, only the standard deviation target under Criterion 2 (Vegetation height) was applied, while the average height target was not considered for the *Structure and Functions* assessment.

4.6.6 Implications for interpretation

These constraints do not undermine the overall robustness of the CHNW dataset but should be considered when interpreting sub-site level and regional results. In particular, caution is required when comparing results across monitoring cycles, interpreting changes in habitat area arising from methodological refinements, or attributing short-term variations solely to management or pressure-related factors. The combined effects of natural coastal dynamics, survey limitations, desk study assessments and targeted methodological updates should therefore be considered when evaluating trends. Continued long-term monitoring, supported by consistent methodology and complementary use of remote sensing and targeted field surveys, remains essential to improve confidence in Annex I habitat *Conservation Assessments*.

4.7 Other Annex I habitats which may occur in northwest Ireland

In addition to the 13 coastal habitats documented in this report, two further Annex I habitats may occur in northwest Ireland: *2180 Wooded dunes of the Atlantic, Continental and Boreal region* and **2250 Coastal dunes with Juniperus spp.* (Delaney *et al.*, 2013). During CHNW, native woodland, already observed by Delaney *et al.* (2013), was noted within or adjacent to fixed sand dunes at sub-site 29.3 Crummies Bay (SDM site 175). Formations of Juniper *Juniperus communis* occurring on *2120 Marram dunes (white dunes)*, **2130 Fixed dunes (grey dunes)* and **21A0 Machairs* have previously been included under habitat *5130 Juniperus communis formations on heaths or calcareous grasslands* (Cooper *et al.*, 2012). However, it is possible that some of these occurrences could be more appropriately assigned to **2250 Coastal dunes with Juniperus spp.* Recognising these habitats in Ireland would support the management of woodlands and juniper scrub in a sand dune context, considering the specific pressures and ecological processes affecting dune systems.

Finally, consideration was also given to the potential occurrence of other Annex I habitats in the northwest of Ireland. The presence of Sea-buckthorn *Hippophaë rhamnoides* in coastal dune systems could, in principle, suggest the occurrence of habitat *2160 Dunes with Hippophaë rhamnoides*. However, as this species is considered alien in Ireland, the associated habitat is not recognised nationally and was therefore not included in the current assessment.

Similarly, habitat *1420 Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)* was not recorded in northwest Ireland during either the current CHNW survey or previous national monitoring projects; however, this habitat was recorded during the CHES survey at sites 13 Ballyteige and 14 Bannow Bay in 2023 (NPWS, in prep.).

4.7.1 Non-coastal Annex I habitats observed in CHNW sites

As outlined above, the current CHNW survey was focused on the *Conservation Assessment* of coastal Annex I habitats. However, during fieldwork carried out at several CHNW sites, additional Annex I habitats not targeted by the present survey were observed and recorded. These habitats were not mapped or assessed in detail, but their occurrence was noted where relevant.

At site 16.1 Derrybeg dunes, within the Gweedore Bay and Islands SAC (001141), a series of small standing water bodies was recorded within the dune system, characterised by submerged vegetation including *Chara* spp. Similarly, at site 2.1 Trawmore, Keel, within the Keel Machair/Menaun Cliffs SAC (001513), shallow waterbodies supporting Pondweed *Potamogeton* spp. were observed. Although, on floristic grounds, these features show affinities with certain freshwater Annex I habitat—namely *3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoëto-Nanojuncetea*, *3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.*, and *3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation* (Roden *et al.*, 2020; NPWS, 2025), their geomorphological context and hydrological setting within active dune systems indicate that they are fully referable to *2190 Dune slacks*, in accordance with the Interpretation Manual of European Union Habitats (European Commission, 2023). These standing waters therefore represent wet dune slack features rather than discrete freshwater lake habitats.

In addition, a number of CHNW sites occur in close proximity to non-coastal Annex I habitats, particularly wet heath and blanket bog. This is notably the case at site 6.1 Garter Hill, which lies within the Glenamoy Bog Complex SAC (000500), where extensive areas of *4010 Northern Atlantic wet heaths with Erica tetralix* and *7130 Blanket bogs (* if active)*, occur adjacent to the surveyed coastal features. These habitats were outside the remit of the current survey but form an important part of the wider ecological context of several CHNW sites.

5 Bibliography & Relevant Literature

- Boorman, L., Londo, G. & Van Der Maarel, E. (1997). Communities of dune slacks. In: *Dry Coastal Ecosystems*, part C. *Ecosystems of the World* (E. Van der Maarel, Ed.), 275-295. Elsevier, Amsterdam.
- Brophy, J.T., Perrin, P.M., Penk, M.R., Devaney, F.M. & Leyden, K.J. (2019). Saltmarsh Monitoring Project 2017-2018. Irish Wildlife Manuals, No. 108. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- Cooper, F., Stone, R. E., McEvoy, P., Wilkins, T., & Reid, N. (2012). The conservation status of juniper formations in Ireland. Irish Wildlife Manuals, No. 63. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin.
- Curtis, T. G. F. (1991). The flora and vegetation of sand dunes in Ireland. A guide to the sand dunes of Ireland, 42, 66.
- Dargie, T. (1995). Sand dune vegetation survey of Great Britain: a national inventory. Part 3: Wales. Joint Nature Conservation Council, Peterborough.
- Delaney, A.M., Devaney, F.M., Martin, J.M. and Barron, S.J. (2013). Monitoring survey of Annex I sand dune habitats in Ireland. Irish Wildlife Manuals, No. 75. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.
- Devaney, F. M. (2007). The Alder Marsh: Ecohydrology and Restoration Prospects of a Desiccating Dune Slack (Doctoral dissertation, University College Dublin).
- DG Environment (2023a). Reporting under Article 17 of the Habitats Directive: Guidelines on concepts and definitions – Article 17 of Directive 92/43/EEC, Reporting period 2019-2024. Brussels. https://cdr.eionet.europa.eu/help/habitats_art17/Reporting2025/Final%20Guidelines%20Art.%2017_2019-2024.pdf/
- DG Environment (2023b). List of pressures and threats for the period 2019-2024 (last updated 24/05/2023). https://cdr.eionet.europa.eu/help/habitats_art17/Reporting2025/List%20of%20pressures%20and%20threats%20for%20reporting%2019-2024%20v1.1.xlsx
- DG Environment (2023c). List of conservation measures for the period 2019-2024 v1.1 (last updated 26/01/2024) https://cdr.eionet.europa.eu/help/habitats_art17/Reporting2025/List%20of%20conservation%20measures%20for%20the%20period%2019-2024%20v1-1.xlsx
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. (1992). Official Journal of the European Communities, L 206, 7–50. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043&qid=1769100415070>
- European Commission (2006). Assessment, monitoring and reporting under Article 17 of the Habitats Directive: Explanatory Notes & Guidelines October 2006 <https://circabc.europa.eu/ui/group/173a90fc-40bf-492d-a3a9-df99c4aa8807/library/2c12cea2-f827-4bdb-bb56-3731c9fd8b40/details>
- European Commission (2007). Interpretation manual of European Union habitats – EUR 27. http://ec.europa.eu/environment/nature/legislation/habitatsdirective/docs/2007_07_im.pdf.
- European Commission (2013). Interpretation manual of European Union habitats. EUR 28. European Commission, DG Environment.
- Evans, D., & Arvela, M. (2011). Assessment and reporting under Article 17 of the Habitats Directive. Explanatory Notes & Guidelines for the period 2007–2012. European Commission, Brussels.
- Fossitt, J. A. (2000). A guide to habitats in Ireland. The Heritage Council, Kilkenny.
- Gallagher, M.C. & Crushell, P. (in prep.). Monitoring Survey of coastal habitats in the south-west of Ireland. Unpublished report submitted to National Parks and Wildlife Service, Dublin.
- Gaynor, K. (2006). The vegetation of Irish machair. In *Biology and Environment: Proceedings of the Royal Irish Academy* (Vol. 106, No. 3, pp. 311-321). Royal Irish Academy.
- Gaynor, K. (2008). The phytosociology and conservation value of Irish sand dunes (Doctoral dissertation, University College Dublin).
- JNCC (2004a) Common standards monitoring guidance for lowland heathland. Joint Nature Conservation Council, Peterborough.
- JNCC (2004b) Common standards monitoring guidance for sand dune habitats. Joint Nature Conservation Council, Peterborough
- JNCC (2004c). Common Standards Monitoring Guidance for Saltmarsh Habitats. Joint Nature Conservation Committee, Peterborough
- Martin, J.R., Daly, O.H. and Devaney F.M. (2017). Survey and assessment of vegetated shingle and associated habitats at 30 coastal sites in Ireland. Irish Wildlife Manuals, No. 98. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Ireland

- McCorry, M., & Ryle, T. (2009). Saltmarsh Monitoring Project 2007-2008. Volume 1, Final Report (2009). Research Branch, National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin.
- Moore, D., & Wilson, F. (1999). National shingle beach survey of Ireland 1999. Unpublished report to the National Parks and Wildlife Service, Dublin.
- NPWS (2008). The status of EU protected habitats and species in Ireland. A report by the National Parks and Wildlife Service, Dublin.
- NPWS (2013). The status of protected EU habitats and species in Ireland. Overview Volume 1. Unpublished Report, National Parks & Wildlife Services.
- NPWS (2025). The status of EU Protected Habitats and Species in Ireland. Volume 1. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- NPWS (in prep.). Monitoring Surveys of coastal habitats in the east and west of Ireland. Unpublished report submitted to National Parks and Wildlife Service, Dublin.
- O'Neill, F. H., Martin, J. R., Devaney, F. M., McNutt, K. E., Perrin, P. M., & Delaney, A. (2010). Irish seminatural grasslands survey Annual Report No. 3: Counties Donegal, Dublin, Kildare and Sligo. Unpublished report for National Parks and Wildlife Service, Dublin.
- Perrin, P.M. (2018). Irish Vegetation Classification. Accessed on 28/09/2018 at <http://www.biodiversityireland.ie/projects/national-vegetation-database/iris-h-vegetation-classification/>
- Radley, G. P. (1994). Sand dune vegetation survey of Great Britain-Part 1. England. Joint Nature Conservation Committee, Peterborough.
- Roden, C., Murphy, P., Ryan, J., & Doddy, P. (2020). Marl Lake (Habitat 3140) Survey and Assessment Methods Manual. Irish Wildlife Manuals, No. 125. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.
- Rodwell, J. S. (1991). British plant communities: Volume 5, Maritime communities and vegetation of open habitats (Vol. 5). Cambridge University Press.
- Ryle, T., Murray, A., Connolly, K., & Swann, M. (2009). Coastal Monitoring Project. National Parks and Wildlife Service, Dublin, Ireland.

Appendix I - Site and sub-site surveyed during CHNW

Site no.	Site name	Sub-site no.	Sub-site name	County	SAC code	Previous survey ID
1	Westport Bay to Mulranny	1	Bartraw Strand	Mayo	001482	CMP111, VSM007
1	Westport Bay to Mulranny	2	Rosmurrevagh	Mayo	001482	CMP112, SMP0013
1	Westport Bay to Mulranny	3	Caraholly	Mayo	001482	SMP0017
1	Westport Bay to Mulranny	4	Killadangan	Mayo	001482	SMP0018
1	Westport Bay to Mulranny	5	Annagh Island	Mayo	001482	SMP0019
1	Westport Bay to Mulranny	Desk study		Mayo		
2	Keel	1	Trawmore, Keel	Mayo	001513	CMP113, VSM006
3	Tullaghan Bay to Doonagh	1	Doona	Mayo	004037	CMP117, SMP0110
3	Tullaghan Bay to Doonagh	2	Tullaghan Bay	Mayo	004037	SMP0112
3	Tullaghan Bay to Doonagh	3	Aughness	Mayo	004037	SMP0111
4	Blacksod	1	Doo Lough	Mayo	004037, 000470	CMP120, SDM120
4	Blacksod	Desk study		Mayo		
5	The Mullet Peninsula	1	Aghleam	Mayo	004227, 000470	CMP124, SDM124
5	The Mullet Peninsula	Desk study		Mayo		
6	Garter Hill and Ross Port	1	Garter Hill	Mayo	004037, 000500	CMP128, SDM128
6	Garter Hill and Ross Port	Desk study		Mayo		
7	Lackan	Desk study		Mayo		
8	Killala Bay	1	Bartragh Island	Mayo	004036, 000458	CMP131, SDM131, SMP0023
8	Killala Bay	2	Rusheens	Mayo	004036, 000458	SMP0025
8	Killala Bay	Desk study		Mayo, Sligo		
9	Ballysadare	1	Ballysadare Bay	Sligo	004129, 000622	SMP0117
9	Ballysadare	2	Strandhill	Sligo	004129	CMP133, SDM133, SMP0118
9	Ballysadare	Desk study		Sligo		

Site no.	Site name	Sub-site no.	Sub-site name	County	SAC code	Previous survey ID
10	Sligo Bay	1	Strandhill	Sligo	004035, 000627	CMP133, SDM133
10	Sligo Bay	2	Cummeen Strand	Sligo	004035, 000627	SMP0119
10	Sligo Bay	3	Garavoge Estuary	Sligo	004035, 000627	SMP0140
10	Sligo Bay	Desk study		Sligo		
11	Streedagh	1	Trawgar to Dernish Island	Sligo	001680	CMP137, VSM005
11	Streedagh	Desk study		Sligo		
12	Glen Bay	1	Glen Bay Inner area	Donegal	000190	CMP146, SMP0126
12	Glen Bay	Desk study		Donegal		
13	Maghera to Ardara	1	Maghera Strand	Donegal	004150, 000190	CMP147, SDM147
13	Maghera to Ardara	Desk study		Donegal		
14	Lettermacaward to Clooney	1	Gweebarra River salt marshes	Donegal	000197	CMP151, SMP0152
14	Lettermacaward to Clooney	2	Roshin Point	Donegal	000197	CMP150, SMP0128
14	Lettermacaward to Clooney	Desk study		Donegal		
15	Gweedore	1	Kincaslugh	Donegal	001141, 004150	CMP155, SDM155
15	Gweedore	2	Keadew	Donegal	001141	CMP153, SMP0129
15	Gweedore	Desk study		Donegal		
16	Derrybeg	1	Derrybeg dunes	Donegal	001141, 004150	CMP157, SDM157
16	Derrybeg	Desk study		Donegal		
17	Lunniagh	1	Lunniagh salt marshes	Donegal	001141, 004150	SMP0151
17	Lunniagh	Desk study		Donegal		
18	Port Ui Chuireain to Bunaniver	1	Port Ui Chuireain to Bunaniver shingle	Donegal	001141	VSM004
19	Ballyness Bay	1	Dooley	Donegal	001090, 004149	CMP160, SDM160, SMP0130
19	Ballyness Bay	Desk study		Donegal		
20	Rinclevan	1	Rinclevan dunes	Donegal	000147, 004194	CMP162, SDM162
20	Rinclevan	Desk study		Donegal		
21	Dunfanaghy	Desk study		Donegal		
22	Ards to Marble Hill	Desk study		Donegal		
23	Creelough	Desk study		Donegal		
24	Rosapenna	Desk study		Donegal		

Site no.	Site name	Sub-site no.	Sub-site name	County	SAC code	Previous survey ID
25	Tranarossan to Melmore	1	Rossguill Peninsula (Tranarossan)	Donegal	000194, 002159, 004194	CMP167, SDM167, VSM003
25	Tranarossan to Melmore	Desk study		Donegal		
26	L. Nagreaney to Gortnatraw	1	Lough Nagreaney	Donegal	000164, 002159, 004194	CMP169, SDM169
26	L. Nagreaney to Gortnatraw	Desk study		Donegal		
27	Mulroy	Desk study		Donegal		
28	Swilly	1	Rathmelton	Donegal	002287, 004075	SMP0028
28	Swilly	2	Green Hill	Donegal	002287, 004075	SMP0029
28	Swilly	3	Lower Lough Swilly	Donegal	002287, 004075	SMP0030
28	Swilly	4	Fahan	Donegal	002287	CMP174, SMP0031
28	Swilly	Desk study		Donegal		
29	North Inishowen	1	Whitestrands Bay - Culoort	Donegal	002012, 004034, 004146	CMP180, VSM001
29	North Inishowen	2	Tullagh Bay and Tullagh Point	Donegal	002012	VSM002
29	North Inishowen	3	Crummies Bay	Donegal	002012	CMP175, SDM175
29	North Inishowen	4	Trawbreaga Bay	Donegal	002012, 004034	SMP0150
29	North Inishowen	Desk study		Donegal		

Appendix II - Sub-site data

1210 Drift Lines

Sub-site assessment results of habitat 1210 Drift lines

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
1.01 Bartraw Strand	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
4.01 Doo Lough	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
6.01 Garter Hill	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
8.01 Bartragh Island	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
9.02 Strandhill	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)
10.01 Strandhill	Unfavourable-Bad (Decreasing)	Favourable (Stable)	Favourable	Unfavourable-Bad (Stable)
11.01 Trawgar to Dernish Island	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
15.01 Kincaslugh	Unfavourable-Bad (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Bad (Deteriorating)
16.01 Derrybeg dunes	Unfavourable-Inadequate (Decreasing)	Favourable (NA)	Favourable	Unfavourable-Inadequate (NA)
19.01 Dooley	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
20.01 Rinclevan dunes	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
25.01 Rossguill Peninsula	Favourable (NA)	NA (NA)	Favourable	NA (NA)

Area of 1210 Drift lines on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
1.01 Bartraw Strand	0.12	0.07
4.01 Doo Lough	0.23	0.08
5.01 Aghleam	0.06	0.00
5 The Mullet Peninsula *	0.03	0.03
6.01 Garter Hill	0.00	0.40
8.01 Bartragh Island	4.55	0.80
9.02 Strandhill	0.00	0.17
10.01 Strandhill	0.12	0.44
10 Sligo Bay *	0.02	0.02
11.01 Trawgar to Dernish Island	0.00	0.40
14 Lettermacaward to Clooney *	4.16	3.94
15.01 Kincaslugh	0.09	0.02
15 Gweedore *	0.53	0.53
16.01 Derrybeg dunes	0.02	0.05
17 Lunniagh *	0.05	0.05
19.01 Dooey	0.52	0.80
20.01 Rinclevan dunes	0.00	0.11
22 Ards to Marble Hill *	0.005	0.005
24 Rosapenna *	0.44	0.44
25.01 Rossguill Peninsula	0.07	0.06
28 Swilly *	0.46	0.46
29.03 Crummies Bay	0.00	0.00
29 North Inishowen *	0.25	0.25

Structure and Functions sub-site level assessment for the 11 CHNW sites where 1210 Drift lines was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
1.01 Bartraw Strand	6		Favourable
4.01 Doo Lough	6		Favourable
6.01 Garter Hill	6		Favourable
8.01 Bartragh Island	6		Favourable
9.02 Strandhill	6		Favourable
10.01 Strandhill	6		Favourable
11.01 Trawgar to Dernish Island	6		Favourable
15.01 Kincaslugh	6	1	Unfavourable-Inadequate
16.01 Derrybeg dunes	6		Favourable
19.01 Dooley	6		Favourable
20.01 Rinclevan dunes	6		Favourable

The total area assessed for *Structure and Functions* and percentage of area of 1210 Drift lines in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
1.01 Bartraw Strand	0.07	100	0.07
4.01 Doo Lough	0.08	100	0.08
6.01 Garter Hill	0.40	100	0.40
8.01 Bartragh Island	0.80	100	0.80
9.02 Strandhill	0.17	100	0.17
10.01 Strandhill	0.44	100	0.44
11.01 Trawgar to Dernish Island	0.40	100	0.40
15.01 Kincaslugh	0.02	75	0.02
16.01 Derrybeg dunes	0.05	100	0.05
19.01 Dooley	0.80	95	0.76
20.01 Rinclevan dunes	0.11	90	0.10

1220 Vegetated shingle

Sub-site assessment results of habitat 1220 Vegetated shingle

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
1.01 Bartraw Strand	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
4.01 Doo Lough	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
5.01 Aghleam	Favourable (Stable)	Favourable (NA)	Favourable	Favourable (NA)
9.02 Strandhill	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)
10.01 Strandhill	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)
11.01 Trawgar to Dernish Island	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
15.01 Kincaslugh	Favourable (NA)	NA (NA)	Favourable	NA (NA)
18.01 Port Ui Chuireain to Bunaniver	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Improving)
19.01 Dooley	Favourable (Stable)	NA (NA)	Favourable	NA (NA)
25.01 Rossguill Peninsula	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
29.01 Whitestrand Bay - Culoort	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
29.02 Tullagh Bay and Tullagh Point	Unfavourable-Inadequate (Decreasing)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Improving)

Area of 1220 Vegetated shingle on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
1.01 Bartraw Strand	0.87	0.85
4.01 Doo Lough	0.42	0.18
5.01 Aghleam	0.03	0.20
5 The Mullet Peninsula *	0.42	0.42
9.02 Strandhill	0.03	0.21
10.01 Strandhill	0.76	0.84
11.01 Trawgar to Dernish Island	0.00	0.36
13 Maghera to Ardara *	0.08	0.08
14 Lettermacaward to Clooney *	0.33	0.33
15.01 Kincaslugh	0.00	0.05
15 Gweedore *	0.02	0.02
18.01 Port Ui Chuireain to Bunaniver	2.30	2.17
19.01 Dooley	0.00	0.02
25.01 Rossguill Peninsula	0.04	0.04
29.01 Whitestrand Bay - Culoort	2.79	2.10
29.02 Tullagh Bay and Tullagh Point	2.04	1.92
29.04 Trawbreaga Bay	0.00	0.02
29 North Inishowen *	1.32	1.32

Structure and Functions sub-site level assessment for the 10 CHNW sites where 1220 Vegetated shingle was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
1.01 Bartraw Strand	7		Favourable
4.01 Doo Lough	7		Favourable
5.01 Aghleam	7		Favourable
9.02 Strandhill	7		Favourable
10.01 Strandhill	7		Favourable
11.01 Trawgar to Dernish Island	7		Favourable
18.01 Port Ui Chuireain to Bunaniver	7	1	Unfavourable-Inadequate
25.01 Rossguill Peninsula	7		Favourable
29.01 Whitestrand Bay - Culoort	7	2	Unfavourable-Inadequate
29.02 Tullagh Bay and Tullagh Point	7		Favourable

The total area assessed for *Structure and Functions* and percentage of area of 1220 *Vegetated shingle* in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
1.01 Bartraw Strand	0.85	100	0.85
4.01 Doo Lough	0.18	100	0.18
5.01 Aghleam	0.20	100	0.20
9.02 Strandhill	0.21	100	0.21
10.01 Strandhill	0.84	100	0.84
11.01 Trawgar to Dernish Island	0.36	100	0.36
18.01 Port Ui Chuireain to Bunaniver	2.17	75	1.63
25.01 Rossguill Peninsula	0.04	100	0.04
29.01 Whitestrand Bay - Culoort	2.10	75	1.57
29.02 Tullagh Bay and Tullagh Point	1.92	90	1.73

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1310 Salicornia mud

Sub-site assessment results of habitat 1310 *Salicornia mud*

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
1.04 Killadangan	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)
1.05 Annagh Island	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
8.01 Bartragh Island	Favourable (Stable)	NA (NA)	Favourable	NA (NA)
9.01 Ballysadare Bay	Favourable (Stable)	NA (NA)	Favourable	NA (NA)
9.02 Strandhill	Favourable (Stable)	NA (NA)	Favourable	NA (NA)
10.02 Cummeen Strand	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
10.03 Garavoge Estuary	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
15.02 Keadew	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
17.01 Lunnagh salt marshes	Favourable (Stable)	NA (NA)	Favourable	NA (NA)
19.01 Dooley	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
28.01 Rathmelton	Favourable (Stable)	NA (NA)	Unfavourable-Inadequate	NA (NA)
28.02 Green Hill	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
28.03 Lower Lough Swilly	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
29.04 Trawbreaga Bay	Favourable (Stable)	NA (NA)	Favourable	NA (NA)

Area of *1310 Salicornia mud* on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
1.02 Rosmurrevagh	0.02	0.00
1.03 Caraholly	0.01	0.00
1.04 Killadangan	0.01	0.01
1.05 Annagh Island	0.03	0.03
3.01 Doona	0.03	0.00
3.02 Tullaghan Bay	0.00001	0.00
5 The Mullet Peninsula *	0.02	0.02
8.01 Bartragh Island	0.03	0.27
8 Killala Bay *	0.29	0.29
9.01 Ballysadare Bay	0.002	0.35
9.02 Strandhill	0.03	0.10
10.02 Cummeen Strand	0.03	0.32
10.03 Garavoge Estuary	0.02	0.24
10 Sligo Bay *	0.04	0.04
15.02 Keadew	0.04	0.13
17.01 Lunniagh salt marshes	0.01	0.64
19.01 Dooley	2.61	3.11
23 Creeslough *	21.49	21.49
27 Mulroy *	0.01	0.01
28.01 Rathmelton	1.12	1.11
28.02 Green Hill	0.59	1.48
28.03 Lower Lough Swilly	0.32	0.37
29.04 Trawbreaga Bay	0.10	0.40

Structure and Functions sub-site level assessment for the eight CHNW sites where *1310 Salicornia mud* was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
1.04 Killadangan	6		Favourable
1.05 Annagh Island	6		Favourable
10.02 Cummeen Strand	6		Favourable
10.03 Garavoge Estuary	6		Favourable
15.02 Keadew	6		Favourable
19.01 Dooley	6		Favourable
28.02 Green Hill	6	1	Unfavourable-Inadequate
28.03 Lower Lough Swilly	6	1	Unfavourable-Inadequate

The total area assessed for *Structure and Functions* and percentage of area of *1310 Salicornia mud* in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
1.04 Killadangan	0.01	100	0.01
1.05 Annagh Island	0.03	90	0.02
10.02 Cummeen Strand	0.32	100	0.32
10.03 Garavoge Estuary	0.24	100	0.24
15.02 Keadew	0.13	100	0.13
19.01 Dooey	3.11	95	2.96
28.02 Green Hill	1.48	75	1.11
28.03 Lower Lough Swilly	0.37	75	0.27

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1330 Atlantic salt meadows

Sub-site assessment results of habitat 1330 Atlantic salt meadows

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
1.02 Rosmurrevagh	Favourable (Stable)	Unfavourable-Bad (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
1.03 Caraholly	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
1.04 Killadangan	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
1.05 Annagh Island	Favourable (Stable)	Unfavourable-Bad (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
3.01 Doona	Favourable (Stable)	Unfavourable-Bad (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
3.02 Tullaghan Bay	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
3.03 Aughnass	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
8.01 Bartragh Island	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
8.02 Rusheens	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
9.01 Ballysadare Bay	Unfavourable-Inadequate (Decreasing)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
9.02 Strandhill	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
10.02 Cummeen Strand	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
10.03 Garavoge Estuary	Unfavourable-Inadequate (Decreasing)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
12.01 Glen Bay Inner area	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
14.01 Gweebarra River salt marshes	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
14.02 Roshin point	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
15.02 Keadew	Unfavourable-Inadequate (Decreasing)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
17.01 Lunnagh salt marshes	Favourable (Stable)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
19.01 Dooley	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
28.01 Rathmelton	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Increasing)	Unfavourable-Bad	Unfavourable-Bad (Stable)
28.02 Green Hill	Favourable (Stable)	Unfavourable-Bad (Decreasing)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
28.03 Lower Lough Swilly	Unfavourable-Inadequate (Decreasing)	Unfavourable-Bad (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
28.04 Fahan	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
29.04 Trawbreaga Bay	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)

Area of 1330 Atlantic salt meadows on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
1.02 Rosmurrevagh	6.62	7.56
1.03 Caraholly	1.67	2.11
1.04 Killadangan	1.63	1.84
1.05 Annagh Island	3.92	4.43
1 Westport Bay to Mulranny *	31.18	31.18
3.01 Doona	8.75	8.73
3.02 Tullaghan Bay	26.66	26.33
3.03 Aughness	2.94	3.42
4 Blacksod *	51.73	51.70
5 The Mullet Peninsula *	17.98	17.98
6 Garter Hill and Ross Port *	4.88	4.88
7 Lackan *	32.99	32.99
8.01 Bartragh Island	28.10	28.26
8.02 Rusheens	1.37	1.34
8 Killala Bay *	20.50	20.50
9.01 Ballysadare Bay	36.66	36.70
9.02 Strandhill	1.53	1.98
9 Ballysadare *	0.05	0.05
10.02 Cummeen Strand	9.13	7.53
10.03 Garavoge Estuary	10.28	10.77
10 Sligo Bay *	17.78	17.78
11 Streedagh *	0.06	0.06
12.01 Glen Bay Inner area	3.06	4.98
13.01 Maghera Strand	NS	0.10
13 Maghera to Ardara *	20.70	20.73
14.01 Gweebarra River salt marshes	5.36	5.36
14.02 Roshin point	2.43	2.55
14 Lettermacaward to Clooney *	3.29	3.29
15.02 Keadew	8.61	8.55
15 Gweedore *	17.96	17.90
17.01 Lunniagh salt marshes	26.22	24.10
19.01 Dooley	10.15	9.94
19 Ballyness Bay *	5.66	5.67
20 Rinclevan *	4.65	4.65
21 Dunfanaghy *	0.66	0.66
22 Ards to Marble Hill *	19.14	19.14
23 Creeslough *	19.92	19.93
24 Rosapenna *	10.47	10.50
27 Mulroy *	4.08	4.06
28.01 Rathmelton	9.60	9.66
28.02 Green Hill	13.19	9.40

Site name	Baseline Area (ha)	CHNW Area (ha)
28.03 Lower Lough Swilly	8.46	7.16
28.04 Fahan	7.79	7.64
28 Swilly *	13.44	12.91
29.04 Trawbreaga Bay	48.28	48.27
29 North Inishowen *	2.89	2.89

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Structure and Functions sub-site level assessment for the 24 CHNW sites where *1330 Atlantic salt meadows* was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
1.02 Rosmurrevagh	10	3	Unfavourable-Bad
1.03 Caraholly	10	1	Unfavourable-Inadequate
1.04 Killadangan	10	2	Unfavourable-Inadequate*
1.05 Annagh Island	10	3	Unfavourable-Bad
3.01 Doona	10	3	Unfavourable-Bad
3.02 Tullaghan Bay	10	2	Unfavourable-Inadequate*
3.03 Aughnass	10	1	Unfavourable-Inadequate
8.01 Bartragh Island	10	1	Unfavourable-Inadequate
8.02 Rusheens	10	1	Unfavourable-Inadequate
9.01 Ballysadare Bay	10		Favourable
9.02 Strandhill	10		Favourable*
10.02 Cummeen Strand	10		Favourable*
10.03 Garavoge Estuary	10		Favourable*
12.01 Glen Bay Inner area	10	1	Unfavourable-Inadequate
14.01 Gweebarra River salt marshes	10		Favourable
14.02 Roshin point	10		Favourable
15.02 Keadew	10		Favourable*
17.01 Lunniagh salt marshes	10		Favourable
19.01 Dooley	10	1	Unfavourable-Inadequate
28.01 Rathmelton	10	1	Unfavourable-Inadequate
28.02 Green Hill	10	5	Unfavourable-Bad
28.03 Lower Lough Swilly	10	3	Unfavourable-Bad
28.04 Fahan	10	2	Unfavourable-Inadequate*
29.04 Trawbreaga Bay	10	1	Unfavourable-Inadequate

The total area assessed for *Structure and Functions* and percentage of area of 1330 Atlantic salt meadows in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
1.02 Rosmurrevagh	7.56	0	0.00
1.03 Caraholly	2.11	75	1.58
1.04 Killadangan	1.84	75	1.38
1.05 Annagh Island	4.43	0	0.00
3.01 Doona	8.73	15	1.31
3.02 Tullaghan Bay	26.33	75	19.75
3.03 Aughness	3.42	75	2.56
8.01 Bartragh Island	28.26	75	21.20
8.02 Rusheens	1.34	75	1.01
9.01 Ballysadare Bay	36.70	95	34.87
9.02 Strandhill	1.98	98	1.94
10.02 Cummeen Strand	7.53	90	6.77
10.03 Garavoge Estuary	10.77	95	10.23
12.01 Glen Bay Inner area	4.98	80	3.99
14.01 Gweebarra River salt marshes	5.36	100	5.36
14.02 Roshin point	2.55	99	2.53
15.02 Keadew	8.55	95	8.12
17.01 Lunniagh salt marshes	24.10	90	21.69
19.01 Dooey	9.94	75	7.46
28.01 Rathmelton	9.66	75	7.24
28.02 Green Hill	9.40	20	1.88
28.03 Lower Lough Swilly	7.16	20	1.43
28.04 Fahan	7.64	75	5.73
29.04 Trawbreaga Bay	48.27	85	41.03

1410 Mediterranean salt meadows

Sub-site assessment results of habitat 1410 Mediterranean salt meadows

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
1.03 Caraholly	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
1.04 Killadangan	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
1.05 Annagh Island	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
3.01 Doona	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
3.02 Tullaghan Bay	Favourable (Stable)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
3.03 Aughnass	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
8.01 Bartragh Island	Favourable (Stable)	NA (NA)	Favourable	NA (NA)
8.02 Rusheens	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
9.01 Ballysadare Bay	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
10.02 Cummeen Strand	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
10.03 Garavoge Estuary	Unfavourable-Inadequate (Decreasing)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
12.01 Glen Bay Inner area	Favourable (Stable)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
14.01 Gweebarra River salt marshes	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
14.02 Roshin point	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
15.02 Keadew	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
17.01 Lunnagh salt marshes	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
19.01 Dooley	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
28.01 Rathmelton	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
28.04 Fahan	Favourable (Stable)	NA (NA)	Favourable	NA (NA)
29.04 Trawbreaga Bay	Unfavourable-Inadequate (Stable)	Favourable (Stable)	Favourable	Unfavourable-Inadequate (Stable)

Area of 1410 Mediterranean salt meadows on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
1.02 Rosmurrevagh	0.00	0.002
1.03 Caraholly	0.14	0.11
1.04 Killadangan	3.50	2.94
1.05 Annagh Island	4.04	3.57
1 Westport Bay to Mulranny *	9.25	9.25
3.01 Doona	0.26	0.38
3.02 Tullaghan Bay	20.52	23.19
3.03 Aughness	0.33	0.35
4 Blacksod *	6.45	6.45
5 The Mullet Peninsula *	21.63	21.63
6 Garter Hill and Ross Port *	4.36	4.36
7 Lackan *	63.03	63.04
8.01 Bartragh Island	0.13	0.11
8.02 Rusheens	1.61	1.61
8 Killala Bay *	8.97	8.97
9.01 Ballysadare Bay	36.62	36.23
10.02 Cummeen Strand	2.14	2.27
10.03 Garavoge Estuary	1.80	1.78
10 Sligo Bay *	15.74	15.75
12.01 Glen Bay Inner area	9.46	6.98
13.01 Maghera Strand	NS	0.08
13 Maghera to Ardara *	24.03	24.04
14.01 Gweebarra River salt marshes	4.04	3.51
14.02 Roshin point	4.51	4.39
14 Lettermacaward to Clooney *	0.05	0.05
15.02 Keadew	0.47	1.04
15 Gweedore *	8.97	8.91
17.01 Lunniagh salt marshes	3.32	4.34
19.01 Dooey	0.19	0.19
19 Ballyness Bay *	7.14	7.15
20 Rinclevan *	2.41	2.41
22 Ards to Marble Hill *	6.66	6.66
23 Creeslough *	6.06	6.06
24 Rosapenna *	4.93	4.93
27 Mulroy *	2.62	2.60
28.01 Rathmelton	0.63	0.69
28.03 Lower Lough Swilly	0.01	0.0001
28.04 Fahan	0.04	0.08
29.04 Trawbreaga Bay	11.91	12.66

Structure and Functions sub-site level assessment for the 18 CHNW sites where 1410 Mediterranean salt meadows was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
1.03 Caraholly	8		Favourable
1.04 Killadangan	8		Favourable
1.05 Annagh Island	8		Favourable
3.01 Doona	8		Favourable
3.02 Tullaghan Bay	8		Favourable
3.03 Aughness	8		Favourable
8.02 Rusheens	8		Favourable
9.01 Ballysadare Bay	8		Favourable
10.02 Cummeen Strand	8		Favourable
10.03 Garavoge Estuary	8		Favourable
12.01 Glen Bay Inner area	8		Favourable
14.01 Gweebarra River salt marshes	8		Favourable
14.02 Roshin point	8		Favourable
15.02 Keadew	8		Favourable
17.01 Lunniagh salt marshes	8		Favourable
19.01 Dooley	8		Favourable
28.01 Rathmelton	8	1	Unfavourable-Inadequate
29.04 Trawbreaga Bay	8		Favourable

The total area assessed for *Structure and Functions* and percentage of area of 1410 Mediterranean salt meadows in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
1.03 Caraholly	0.11	100	0.11
1.04 Killadangan	2.94	100	2.94
1.05 Annagh Island	3.57	100	3.57
3.01 Doona	0.38	100	0.38
3.02 Tullaghan Bay	23.19	99	22.95
3.03 Aughness	0.35	100	0.35
8.02 Rusheens	1.61	99	1.59
9.01 Ballysadare Bay	36.23	95	34.41
10.02 Cummeen Strand	2.27	100	2.27
10.03 Garavoge Estuary	1.78	90	1.60
12.01 Glen Bay Inner area	6.98	95	6.63
14.01 Gweebarra River salt marshes	3.51	100	3.51
14.02 Roshin point	4.39	100	4.39
15.02 Keadew	1.04	100	1.04
17.01 Lunniagh salt marshes	4.34	100	4.34
19.01 Dooey	0.19	100	0.19
28.01 Rathmelton	0.69	75	0.52
29.04 Trawbreaga Bay	12.66	100	12.66

*2110 Embryonic shifting dunes*Sub-site assessment results of habitat *2110 Embryonic shifting dunes*

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
4.01 Doo Lough	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
5.01 Aghleam	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
6.01 Garter Hill	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
8.01 Bartragh Island	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (NA)
9.02 Strandhill	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
10.01 Strandhill	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
11.01 Trawgar to Dernish Island	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
15.01 Kincaslugh	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
16.01 Derrybeg dunes	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
19.01 Dooley	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
20.01 Rinclevan dunes	Favourable (NA)	NA (NA)	Favourable	NA (NA)
25.01 Rossguill Peninsula	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)
26.01 Lough Nagreaney	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
29.03 Crummies Bay	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)

Area of 2110 Embryonic shifting dunes on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
4.01 Doo Lough	2.53	0.83
4 Blacksod *	0.46	0.46
5.01 Aghleam	0.92	1.82
5 The Mullet Peninsula *	1.57	1.57
6.01 Garter Hill	0.00	0.15
7 Lackan *	0.07	0.07
8.01 Bartragh Island	0.00	2.72
8 Killala Bay *	0.81	0.81
9.02 Strandhill	1.08	1.22
10.01 Strandhill	0.25	0.28
10 Sligo Bay *	33.74	33.75
11.01 Trawgar to Dernish Island	0.15	0.54
12 Glen Bay *	0.13	0.13
13.01 Maghera Strand	4.75	0.00
13 Maghera to Ardara *	0.43	0.44
14 Lettermacaward to Clooney *	5.30	4.63
15.01 Kincaslugh	0.14	0.10
15 Gweedore *	3.14	3.14
16.01 Derrybeg dunes	0.69	3.49
19.01 Dooey	4.81	6.97
19 Ballyness Bay *	2.26	2.26
20.01 Rinclevan dunes	0.00	0.03
21 Dunfanaghy *	1.24	1.25
22 Ards to Marble Hill *	0.31	0.31
24 Rosapenna *	3.08	3.07
25.01 Rossguill Peninsula	0.18	0.16
25 Tranarossan to Melmore *	0.10	0.10
26.01 Lough Nagreaney	0.61	0.71
28 Swilly *	1.51	1.51
29.03 Crummies Bay	0.15	0.09
29.04 Trawbreaga Bay	0.00	0.08
29 North Inishowen *	0.52	0.51

Structure and Functions sub-site level assessment for the 13 CHNW sites where 2110 *Embryonic shifting dunes* was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
4.01 Doo Lough	7		Favourable
5.01 Aghleam	7		Favourable
6.01 Garter Hill	7		Favourable
8.01 Bartragh Island	7		Favourable
9.02 Strandhill	7		Favourable
10.01 Strandhill	7		Favourable
11.01 Trawgar to Dernish Island	7		Favourable
15.01 Kincaslugh	7		Favourable
16.01 Derrybeg dunes	7		Favourable
19.01 Dooley	7	1	Unfavourable-Inadequate
25.01 Rossguill Peninsula	7		Favourable
26.01 Lough Nagreaney	7		Favourable
29.03 Crummies Bay	7		Favourable

The total area assessed for *Structure and Functions* and percentage of area of 2110 *Embryonic shifting dunes* in Favourable (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
4.01 Doo Lough	0.83	100	0.83
5.01 Aghleam	1.82	100	1.82
6.01 Garter Hill	0.15	90	0.13
8.01 Bartragh Island	2.72	100	2.72
9.02 Strandhill	1.22	100	1.22
10.01 Strandhill	0.28	100	0.28
11.01 Trawgar to Dernish Island	0.54	100	0.54
15.01 Kincaslugh	0.10	100	0.10
16.01 Derrybeg dunes	3.49	90	3.14
19.01 Dooley	6.97	75	5.22
25.01 Rossguill Peninsula	0.16	100	0.16
26.01 Lough Nagreaney	0.71	100	0.71
29.03 Crummies Bay	0.09	100	0.09

IWM 1xx (2023) Monitoring of Coastal Habitats in the Northwest
2120 Marram dunes (white dunes)

Sub-site assessment results of habitat 2120 Marram dunes (white dunes)

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
1.01 Bartraw Strand	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
2.01 Trawmore, Keel	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Improving)
4.01 Doo Lough	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
5.01 Aghleam	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Favourable	Unfavourable-Inadequate (Deteriorating)
6.01 Garter Hill	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
8.01 Bartragh Island	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
9.02 Strandhill	Favourable (Increasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
10.01 Strandhill	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
11.01 Trawgar to Dernish Island	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)
13.01 Maghera Strand	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
15.01 Kincaslugh	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Improving)
16.01 Derrybeg dunes	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
19.01 Dooley	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
20.01 Rinclevan dunes	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
25.01 Rossguill Peninsula	Unfavourable-Bad (Decreasing)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Bad (Deteriorating)
26.01 Lough Nagreaney	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
29.03 Crummies Bay	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)

Area of 2120 Marram dunes (white dunes) on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
1.01 Bartraw Strand	0.17	0.15
2.01 Trawmore, Keel	1.28	1.05
4.01 Doo Lough	3.56	4.89
4 Blacksod *	4.06	4.06
5.01 Aghleam	3.85	2.88
5 The Mullet Peninsula *	7.54	7.54
6.01 Garter Hill	2.13	5.61
7 Lackan *	2.82	2.82
8.01 Bartragh Island	9.28	3.94
8 Killala Bay *	5.23	5.23
9.02 Strandhill	5.47	6.79
10.01 Strandhill	0.00	0.27
10 Sligo Bay *	1.10	1.10
11.01 Trawgar to Dernish Island	3.75	2.05
12 Glen Bay *	0.88	0.88
13.01 Maghera Strand	7.11	10.52
13 Maghera to Ardara *	0.50	0.50
14 Lettermacaward to Clooney *	11.24	9.59
15.01 Kincaslugh	1.59	1.22
15.02 Keadew	NS	0.02
15 Gweedore *	5.65	5.65
16.01 Derrybeg dunes	3.96	3.77
17 Lunniagh *	3.68	3.68
19.01 Dooey	8.98	13.34
19 Ballyness Bay *	14.15	14.15
20.01 Rinclevan dunes	4.08	4.35
21 Dunfanaghy *	2.20	2.20
22 Ards to Marble Hill *	1.49	1.49
24 Rosapenna *	5.85	5.82
25.01 Rossguill Peninsula	1.94	1.75
25 Tranarossan to Melmore *	2.66	2.66
26.01 Lough Nagreaney	1.05	0.70
26 L. Nagreaney to Gortnatraw *	1.09	1.03
28 Swilly *	1.16	1.16
29.03 Crummies Bay	0.38	0.29
29.04 Trawbreaga Bay	0.00	0.04
29 North Inishowen *	8.31	8.31

Structure and Functions sub-site level assessment for the 17 CHNW sites where 2120 Marram dunes (white dunes) was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
1.01 Bartraw Strand	7		Favourable
2.01 Trawmore, Keel	7	1	Unfavourable-Inadequate
4.01 Doo Lough	7		Favourable
5.01 Aghleam	7	1	Unfavourable-Inadequate
6.01 Garter Hill	7		Favourable
8.01 Bartragh Island	7		Favourable
9.02 Strandhill	7	1	Unfavourable-Inadequate
10.01 Strandhill	7		Favourable
11.01 Trawgar to Dernish Island	7		Favourable
13.01 Maghera Strand	7		Favourable
15.01 Kincaslugh	7		Favourable
16.01 Derrybeg dunes	7	1	Unfavourable-Inadequate
19.01 Dooey	7		Favourable
20.01 Rinclevan dunes	7		Favourable
25.01 Rossguill Peninsula	7		Favourable
26.01 Lough Nagreaney	7		Favourable
29.03 Crummies Bay	7		Favourable

The total area assessed for *Structure and Functions* and percentage of area of 2120 Marram dunes (white dunes) in *Favourable (Good)* condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
1.01 Bartraw Strand	0.15	95	0.14
2.01 Trawmore, Keel	1.05	80	0.84
4.01 Doo Lough	4.89	100	4.89
5.01 Aghleam	2.88	80	2.30
6.01 Garter Hill	5.61	90	5.05
8.01 Bartragh Island	3.94	95	3.74
9.02 Strandhill	6.79	75	5.09
10.01 Strandhill	0.27	100	0.27
11.01 Trawgar to Dernish Island	2.05	100	2.05
13.01 Maghera Strand	10.52	100	10.52
15.01 Kincaslugh	1.22	100	1.22
16.01 Derrybeg dunes	3.77	85	3.21
19.01 Dooey	13.34	90	12.01
20.01 Rinclevan dunes	4.35	95	4.13
25.01 Rossguill Peninsula	1.75	95	1.66
26.01 Lough Nagreaney	0.70	100	0.70
29.03 Crummies Bay	0.29	100	0.29

Sub-site assessment results of habitat *2130 Fixed dunes (grey dunes)

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
1.01 Bartraw Strand	Favourable (Increasing)	Unfavourable-Bad (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
2.01 Trawmore, Keel	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
4.01 Doo Lough	Favourable (Stable)	Unfavourable-Bad (Decreasing)	Unfavourable-Inadequate	Unfavourable-Bad (Deteriorating)
5.01 Aghleam	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
6.01 Garter Hill	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)
8.01 Bartragh Island	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
9.02 Strandhill	Unfavourable-Inadequate (Increasing)	Unfavourable-Inadequate (Increasing)	Unfavourable-Bad	Unfavourable-Bad (Stable)
10.01 Strandhill	Unfavourable-Bad (Decreasing)	Unfavourable-Inadequate (Increasing)	Unfavourable-Bad	Unfavourable-Bad (Stable)
11.01 Trawgar to Dernish Island	Favourable (Stable)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Improving)
13.01 Maghera Strand	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
15.01 Kincaslugh	Unfavourable-Inadequate (Decreasing)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
16.01 Derrybeg dunes	Favourable (Stable)	Unfavourable-Bad (Decreasing)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
19.01 Dooley	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
20.01 Rinclevan dunes	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
25.01 Rossguill Peninsula	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
26.01 Lough Nagreaney	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)

29.03 Crummies Bay	Favourable (Stable)	Unfavourable- Inadequate (Stable)	Unfavourable- Inadequate	Unfavourable- Inadequate (Improving)
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Area of *2130 Fixed dunes (grey dunes) on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
1.01 Bartraw Strand	11.28	11.05
2.01 Trawmore, Keel	6.39	8.42
4.01 Doo Lough	46.35	44.19
4 Blacksod *	19.74	19.74
5.01 Aghleam	294.42	294.12
5 The Mullet Peninsula *	588.56	587.58
6.01 Garter Hill	111.05	111.29
7 Lackan *	103.32	102.65
8.01 Bartragh Island	116.44	111.17
8 Killala Bay *	143.71	143.66
9.02 Strandhill	57.03	58.46
10.01 Strandhill	32.50	33.68
10 Sligo Bay *	81.46	81.45
11.01 Trawgar to Dernish Island	82.22	78.45
12 Glen Bay *	13.26	12.92
13.01 Maghera Strand	23.06	22.19
13 Maghera to Ardara *	2.78	2.78
14 Lettermacaward to Clooney *	174.90	174.57
15.01 Kincaslugh	82.11	79.34
15 Gweedore *	114.06	113.80
16.01 Derrybeg dunes	30.80	30.27
17 Lunniagh *	186.61	186.19
19.01 Dooey	97.04	95.57
19 Ballyness Bay *	88.78	88.81
20.01 Rinclevan dunes	277.96	261.80
21 Dunfanaghy *	30.34	30.35
22 Ards to Marble Hill *	43.12	43.03
24 Rosapenna *	222.01	220.64
25.01 Rossguill Peninsula	35.88	38.05
25 Tranarossan to Melmore *	20.47	19.97
26.01 Lough Nagreaney	8.72	9.13
26 L. Nagreaney to Gortnatraw *	26.31	26.32
28 Swilly *	12.28	12.34
29.03 Crummies Bay	11.95	11.57
29 North Inishowen *	495.82	494.75

Structure and Functions sub-site level assessment for the 17 CHNW sites where *2130 Fixed dunes (grey dunes) was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
1.01 Bartraw Strand	11	3	Unfavourable-Bad
2.01 Trawmore, Keel	11		Favourable
4.01 Doo Lough	11	3	Unfavourable-Bad
5.01 Aghleam	11	1	Unfavourable-Inadequate
6.01 Garter Hill	11	1	Unfavourable-Inadequate
8.01 Bartragh Island	11	2	Unfavourable-Inadequate
9.02 Strandhill	11	2	Unfavourable-Inadequate
10.01 Strandhill	11	2	Unfavourable-Inadequate
11.01 Trawgar to Dernish Island	11		Favourable
13.01 Maghera Strand	11	1	Unfavourable-Inadequate
15.01 Kincaslugh	11		Favourable
16.01 Derrybeg dunes	11	4	Unfavourable-Bad
19.01 Dooley	11	2	Unfavourable-Inadequate
20.01 Rinclevan dunes	11	1	Unfavourable-Inadequate
25.01 Rossguill Peninsula	11	2	Unfavourable-Inadequate
26.01 Lough Nagreaney	11	1	Unfavourable-Inadequate
29.03 Crummies Bay	11	2	Unfavourable-Inadequate

The total area assessed for *Structure and Functions* and percentage of area of *2130 Fixed dunes (grey dunes) in *Favourable (Good)* condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
1.01 Bartraw Strand	11.05	0	0.00
2.01 Trawmore, Keel	8.42	90	7.57
4.01 Doo Lough	44.19	70	30.93
5.01 Aghleam	294.12	80	235.29
6.01 Garter Hill	111.29	75	83.47
8.01 Bartragh Island	111.17	75	83.38
9.02 Strandhill	58.46	75	43.84
10.01 Strandhill	33.68	75	25.26
11.01 Trawgar to Dernish Island	78.45	95	74.53
13.01 Maghera Strand	22.19	85	18.86
15.01 Kincaslugh	79.34	95	75.37
16.01 Derrybeg dunes	30.27	40	12.11
19.01 Dooey	95.57	75	71.68
20.01 Rinclevan dunes	261.80	85	222.53
25.01 Rossguill Peninsula	38.05	80	30.44
26.01 Lough Nagreaney	9.13	80	7.30
29.03 Crummies Bay	11.57	85	9.84

**2150 Dune heath*Sub-site assessment results of habitat **2150 Dune heath*

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
5.01 Aghleam	Favourable (Stable)	Favourable (NA)	Favourable	Favourable (NA)
6.01 Garter Hill	Favourable (NA)	Unfavourable-Inadequate (NA)	Unfavourable-Inadequate	Unfavourable-Inadequate (NA)
13.01 Maghera Strand	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)

Area of **2150 Dune heath* on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
5.01 Aghleam	3.29	4.37
5 The Mullet Peninsula *	6.20	6.20
6.01 Garter Hill	Not surveyed	3.97
13.01 Maghera Strand	12.77	13.64
22 Ards to Marble Hill *	1.26	1.26
26 L. Nagreaney to Gortnatraw *	0.003	0.003

Structure and Functions sub-site level assessment for the three CHNW sites where **2150 Dune heath* was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
5.01 Aghleam	11		Favourable
6.01 Garter Hill	11	1	Unfavourable-Inadequate
13.01 Maghera Strand	11	2	Unfavourable-Inadequate

The total area assessed for *Structure and Functions* and percentage of area of **2150 Dune heath* in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
5.01 Aghleam	4.37	90	3.93
6.01 Garter Hill	3.97	75	2.98
13.01 Maghera Strand	13.64	75	10.23

*2170 Dunes with creeping willow*Sub-site assessment results of habitat *2170 Dunes with creeping willow*

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
5.01 Aghleam	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
9.02 Strandhill	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
10.01 Strandhill	Favourable (Stable)	Unfavourable-Bad (Decreasing)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
13.01 Maghera Strand	Favourable (Stable)	Unfavourable-Bad (Decreasing)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
15.01 Kincaslugh	Favourable (NA)	NA (NA)	Favourable	NA (NA)
20.01 Rinclevan dunes	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
25.01 Rossguill Peninsula	Favourable (NA)	Favourable (NA)	Favourable	Favourable (NA)
26.01 Lough Nagreaney	Favourable (Stable)	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Deteriorating)

Area of *2170 Dunes with creeping willow* on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
5.01 Aghleam	39.43	35.55
9.02 Strandhill	0.16	0.31
10.01 Strandhill	10.83	10.94
13.01 Maghera Strand	3.12	2.98
15.01 Kincaslugh	0.03	0.02
15 Gweedore *	0.94	0.94
20.01 Rinclevan dunes	9.04	9.82
25.01 Rossguill Peninsula	0.00	0.71
26.01 Lough Nagreaney	1.83	1.96
26 L. Nagreaney to Gortnatraw *	2.56	2.56
29 North Inishowen *	0.18	0.18

Structure and Functions sub-site level assessment for the seven CHNW sites where 2170 Dunes with creeping willow was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
5.01 Aghleam	10	1	Unfavourable-Inadequate
9.02 Strandhill	10	1	Unfavourable-Inadequate
10.01 Strandhill	10	3	Unfavourable-Bad
13.01 Maghera Strand	10	3	Unfavourable-Bad
20.01 Rinclevan dunes	10		Favourable
25.01 Rossguill Peninsula	10		Favourable
26.01 Lough Nagreaney	10	1	Unfavourable-Inadequate

The total area assessed for *Structure and Functions* and percentage of area of 2170 Dunes with creeping willow in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
5.01 Aghleam	35.55	80	28.44
9.02 Strandhill	0.31	75	0.23
10.01 Strandhill	10.94	50	5.47
13.01 Maghera Strand	2.98	30	0.89
20.01 Rinclevan dunes	9.82	100	9.82
25.01 Rossguill Peninsula	0.71	100	0.71
26.01 Lough Nagreaney	1.96	75	1.47

2190 Dune slacks

Sub-site assessment results of habitat 2190 Dune slacks

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
4.01 Doo Lough	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
5.01 Aghleam	Favourable (Stable)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
6.01 Garter Hill	Favourable (Stable)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
8.01 Bartragh Island	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
9.02 Strandhill	Favourable (Stable)	Favourable (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
10.01 Strandhill	Favourable (Stable)	Unfavourable-Bad (Decreasing)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
11.01 Trawgar to Dernish Island	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
13.01 Maghera Strand	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
15.01 Kincaslugh	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
16.01 Derrybeg dunes	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
20.01 Rinclevan dunes	Favourable (Stable)	Favourable (Stable)	Favourable	Favourable (Stable)
25.01 Rossguill Peninsula	Favourable (NA)	Unfavourable-Inadequate (NA)	Unfavourable-Bad	Unfavourable-Bad (NA)
26.01 Lough Nagreaney	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Favourable	Unfavourable-Inadequate (Stable)

Area of 2190 Dune slacks on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
4.01 Doo Lough	0.54	1.24
5.01 Aghleam	24.85	28.47
5 The Mullet Peninsula *	2.58	2.58
6.01 Garter Hill	5.88	6.63
8.01 Bartragh Island	1.67	1.99
8 Killala Bay *	3.87	3.87
9.02 Strandhill	1.71	1.27
10.01 Strandhill	0.17	0.19
10 Sligo Bay *	0.24	0.24
11.01 Trawgar to Dernish Island	1.11	2.14
13.01 Maghera Strand	1.10	1.08
15.01 Kincaslugh	1.09	0.84
15 Gweedore *	0.72	0.72
16.01 Derrybeg dunes	0.19	2.78
17 Lunniagh *	5.68	5.68
19 Ballyness Bay *	16.26	16.26
20.01 Rinclevan dunes	42.57	41.62
21 Dunfanaghy *	1.23	1.23
22 Ards to Marble Hill *	0.20	0.20
24 Rosapenna *	3.65	3.65
25.01 Rossguill Peninsula	0.08	0.26
25 Tranarossan to Melmore *	0.05	0.05
26.01 Lough Nagreaney	0.72	0.75
26 L. Nagreaney to Gortnatraw *	0.76	0.76
29 North Inishowen *	7.99	7.99

Structure and Functions sub-site level assessment for the 13 CHNW sites where 2190 Dune slacks was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
4.01 Doo Lough	11		Favourable
5.01 Aghleam	11		Favourable
6.01 Garter Hill	11		Favourable
8.01 Bartragh Island	11		Favourable
9.02 Strandhill	11		Favourable
10.01 Strandhill	11	3	Unfavourable-Bad
11.01 Trawgar to Dernish Island	11		Favourable
13.01 Maghera Strand	11		Favourable
15.01 Kincaslugh	11		Favourable
16.01 Derrybeg dunes	11	1	Unfavourable-Inadequate
20.01 Rinclevan dunes	11		Favourable
25.01 Rossguill Peninsula	11	1	Unfavourable-Inadequate
26.01 Lough Nagreaney	11	1	Unfavourable-Inadequate

The total area assessed for *Structure and Functions* and percentage of area of 2190 Dune slacks in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
4.01 Doo Lough	1.24	100	1.24
5.01 Aghleam	28.47	90	25.62
6.01 Garter Hill	6.63	95	6.29
8.01 Bartragh Island	1.99	95	1.89
9.02 Strandhill	1.27	95	1.21
10.01 Strandhill	0.19	25	0.05
11.01 Trawgar to Dernish Island	2.14	100	2.14
13.01 Maghera Strand	1.08	90	0.97
15.01 Kincaslugh	0.84	90	0.76
16.01 Derrybeg dunes	2.78	75	2.08
20.01 Rinclevan dunes	41.62	100	41.62
25.01 Rossguill Peninsula	0.26	75	0.19
26.01 Lough Nagreaney	0.75	75	0.56

Sub-site assessment results of habitat **21A0 Machairs*

Sub-site	Area	Structure and functions	Future Prospects	Overall assessment
2.01 Trawmore, Keel	Unfavourable-Bad (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Bad	Unfavourable-Bad (Stable)
4.01 Doo Lough	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
5.01 Aghleam	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
6.01 Garter Hill	Unfavourable-Inadequate (Decreasing)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
16.01 Derrybeg dunes	Unfavourable-Inadequate (Decreasing)	Favourable (Increasing)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)
20.01 Rinclevan dunes	Favourable (Stable)	Favourable (Increasing)	Favourable	Favourable (Improving)
25.01 Rossguill Peninsula	Unfavourable-Inadequate (Decreasing)	Unfavourable-Inadequate (Stable)	Unfavourable-Bad	Unfavourable-Bad (Deteriorating)
26.01 Lough Nagreaney	Favourable (Stable)	Unfavourable-Inadequate (Stable)	Unfavourable-Inadequate	Unfavourable-Inadequate (Stable)

Area of *21A0 *Machairs* on the baseline maps and the CHNW maps (* indicates desk studied sub-sites)

Site name	Baseline Area (ha)	CHNW Area (ha)
2.01 Trawmore, Keel	87.60	82.77
4.01 Doo Lough	63.19	63.74
4 Blacksod *	69.37	69.36
5.01 Aghleam	151.98	150.70
5 The Mullet Peninsula *	344.31	344.28
6.01 Garter Hill	222.79	238.55
14 Lettermacaward to Clooney *	72.27	71.91
15 Gweedore *	38.38	38.40
16.01 Derrybeg dunes	93.80	115.30
17 Lunniagh *	42.79	42.77
20.01 Rinclevan dunes	41.42	55.73
21 Dunfanaghy *	2.22	2.22
24 Rosapenna *	30.75	29.05
25.01 Rossguill Peninsula	75.62	70.56
25 Tranarossan to Melmore *	21.86	21.82
26.01 Lough Nagreaney	8.54	8.58
26 L. Nagreaney to Gortnatraw *	20.09	20.09
29 North Inishowen *	146.09	144.19

Structure and Functions sub-site level assessment for the eight CHNW sites where *21A0 *Machairs* was assessed

Subsite name	Number of criteria assessed	Number of criteria failed	Structure and functions assessment
2.01 Trawmore, Keel	10	2	Unfavourable-Inadequate
4.01 Doo Lough	10	1	Unfavourable-Inadequate
5.01 Aghleam	10	1	Unfavourable-Inadequate
6.01 Garter Hill	10		Favourable
16.01 Derrybeg dunes	10		Favourable
20.01 Rinclevan dunes	10		Favourable
25.01 Rossguill Peninsula	10	2	Unfavourable-Inadequate
26.01 Lough Nagreaney	10	2	Unfavourable-Inadequate

The total area assessed for *Structure and Functions* and percentage of area of *21A0 Machairs in *Favourable* (Good) condition in 2022/2023

Site name	Total area (ha)	Area in Good condition (%)	Area in Good condition (ha)
2.01 Trawmore, Keel	82.77	75	62.08
4.01 Doo Lough	63.74	75	47.81
5.01 Aghleam	150.70	80	120.56
6.01 Garter Hill	238.55	90	214.70
16.01 Derrybeg dunes	115.30	90	103.77
20.01 Rinclevan dunes	55.73	95	52.94
25.01 Rossguill Peninsula	70.56	75	52.92
26.01 Lough Nagreaney	8.58	75	6.44

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Appendix III – Assessment cards

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1210 Annual vegetation of drift lines

Monitoring stop data																Habitat assessment at site level						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)		
1. Positive indicator species (✓ if present)	Presence															1. Positive indicator species	% frequency	At least 1 species occurs with a frequency of at least 40% of stops <u>AND</u> another species occurs with a frequency of more than 20% of stops				
<i>Atriplex</i> spp.																→ <i>Atriplex</i> spp.						
<i>Beta vulgaris</i> ssp. <i>maritima</i>																→ <i>Beta vulgaris</i>						
<i>Cakile</i> <i>maritima</i>																→ <i>Cakile</i> <i>maritima</i>						
<i>Galium</i> <i>aparine</i>																→ <i>Galium</i> <i>aparine</i>						
<i>Honckenya</i> <i>pepoides</i>																→ <i>Honckenya</i> <i>pepoides</i>						
<i>Polygonum</i> <i>oxyspermum</i>																→ <i>Polygonum</i> <i>oxyspermum</i>						
<i>Salsola</i> <i>kali</i>																→ <i>Salsola</i> <i>kali</i>						
<i>Tripleurospermum</i> <i>maritimum</i>																→ <i>Tripleurospermum</i> <i>maritimum</i>						
2a. Negative indicator species (% cover)	Record cover (%)															2a. Negative indicator species	% frequency	% of habitat	No neg. species occurs at a frequency of more than 60% of stops <u>AND</u> combined cover of all negative indicators across the habitat is 5% or less <u>AND</u> highest % cover of any neg. species within any stop is 25% or less			
<i>Arrhenatherum</i> <i>elatus</i>																→ <i>Arrhenatherum</i> <i>elatus</i>						
<i>Cirsium</i> <i>arvense</i>																→ <i>Cirsium</i> <i>arvense</i>						
<i>Cirsium</i> <i>vulgare</i>																→ <i>Cirsium</i> <i>vulgare</i>						
<i>Lolium</i> <i>perenne</i>																→ <i>Lolium</i> <i>perenne</i>						
<i>Senecio</i> <i>jacobea</i>																→ <i>Senecio</i> <i>jacobea</i>						
<i>Urtica</i> <i>dioica</i>																→ <i>Urtica</i> <i>dioica</i>						
Other:																→ Other:						
2b. Highest % cover score at each stop																2b. Highest % cover score across all stops						
3. Non-native species (% cover)	Record cover (%)															3. Non-native species	% frequency	No individual species occurs at a frequency of more than 20% of stops				
<i>Centranthus</i> <i>ruber</i>																→ <i>Centranthus</i> <i>ruber</i>						
Other:																→ Other:						
																	→ 4. Notable/rare species	% frequency	No evidence of population loss post designation; LIST			
																→						
																	→ 5. Interference with the sediment dynamics (presence/absence)		Absent or unchanged since 1994 and not adversely affecting the habitat			
																→						
																	6. Damage due to disturbance (e.g. trampling, vehicle damage, removal of substrate) affecting the habitat (% of habitat)		Signs of disturbance observed in no more than 20% of the habitat			
Notes : 2. No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad																				No. of criteria failed		
																				Habitat assessment		

General site observation

1220 Perennial vegetation of stony banks

Monitoring stop data																	Habitat assessment at the site level				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)	
1. Shingle habitat	Fossitt code																→	1. Shingle habitat		No evidence of decline in 1220 community diversity over time. Ideally both pioneer and more stable 1220 communities (e.g. grassland on shingle) are present	
List Fossitt code for 1220 community																					
2. Native species (list species present)	Record % cover																→	2. Native plant species		No evidence of a decline over time in the diversity of typical species within 1220 communities present. Consider additional typical species observed outside stops	
																	→				
																	→				
																	→				
																	→				
																	→				
3. Notable species	Record % cover																→	3. Notable species		No evidence of decline in number of individuals over time. Individuals both within and outside stops should be counted; LIST NOTABLE/RARE SPECIES AT EACH SITE	
<i>Crambe maritima</i>																	→	<i>Crambe maritima</i>			
<i>Glaucium flavum</i>																	→	<i>Glaucium flavum</i>			
<i>Lathrus japonicus</i>																	→	<i>Lathrus japonicus</i>			
<i>Mertensia maritima</i>																	→	<i>Mertensia maritima</i>			
Other:																	→	Other:			
4. Negative indicator species	Record % cover																→	4. Negative indicator species		No neg. species occurs at a frequency of more than 60% of stops AND combined cover of neg. species in any stop is 25% or less	
<i>Cirsium arvense</i>																	→				
<i>Cirsium vulgare</i>																	→				
<i>Lolium perenne</i>																	→				
<i>Pteridium aquilinum</i>																	→				
<i>Senecio jacobaea</i>																	→				
<i>Urtica dioica</i>																	→				
Other:																	→				
5. Non-native species (% cover)	Record % cover																→	5. Non-native species		No species occurs at a frequency of more than 20% of stops AND combined cover in any stop is 1% or less AND cover across whole site is 1% or less	
<i>Centranthus ruber</i>																	→				
Other:																	→				
Notes :																	→	6. Interference with the sediment dynamics		Absent or unchanged since 1994 and not adversely affecting the habitat	
Calculate % of habitat by averaging % cover scores for stops																	→	7. Damage due to disturbance		Signs of disturbance observed in no more than 20% of the habitat	
No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad																	→			No. of criteria failed	
																	→			Habitat assessment	
																	→				

1310 *Salicornia* and other annuals colonizing mud and sand

Monitoring stop data																	Habitat assessment at site level				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)	
1. Positive indicator species (no. of plants)	Number of plants per sq m																1. Positive indicator species			Combined density >10 plants per sq m at 75% of stops or more.	
<i>Salicornia</i> agg.																	→ <i>Salicornia</i> agg.				
<i>Suaeda maritima</i>																	→ <i>Suaeda maritima</i>				
<i>Sagina maritima</i>																	→ <i>Sagina maritima</i>				
Combined density																	→ Combined density				
2. Negative indicator species (% cover within 5 m radius of stop centre)	Record cover (%)																2. Negative indicator species			% <i>Spartina</i> spp. cover within 5 m radius of stop less than/equal to SMP baseline at 75% of stops or more. Do not include stops which have been moved from baseline location	
<i>Spartina</i> spp.																	→ <i>Spartina</i> spp.				
Other (including non-natives):																	→ Other (not assessed)				
3. Signs of negative activities, e.g. infilling, reclamation, turf-cutting, pollution (present/absent)																	→ 3. Signs of negative activities e.g. infilling, reclamation, turf-cutting, pollution			None recorded	
																	→ 4. Occurrence of human disturbance to hydrology (including impacts on creeks and pans)			No disturbance relative to SMP baseline	
																	→ 5. Presence of site-specific target species			No evidence of decline or loss of target species; LIST TARGET SPECIES FOR THE SITE	
																	→ 6. Presence of <i>Spartina</i> spp. within vicinity of habitat			Not present where not recorded by SMP baseline, otherwise NA	
																				No. of criteria failed	
																				Habitat assessment	

Note:

No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad

General site observations

1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Monitoring stop data																	Habitat assessment at site level			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria	Habitat assessment score	Required to pass	Result (pass/fail)
1. Positive indicator species (✓ if	Presence																1. Positive indicator species	Presence	At least 12 species recorded across all plots	
Agrostis stolonifera																	→ Agrostis stolonifera			
Armeria maritima																	→ Armeria maritima			
Aster tripolium																	→ Aster tripolium			
Atriplex littoralis																	→ Atriplex littoralis			
Atriplex portulacoides																	→ Atriplex portulacoides			
Atriplex prostrata																	→ Atriplex prostrata			
Beta vulgaris																	→ Beta vulgaris			
Carex extensa																	→ Carex extensa			
Cochlearia spp.																	→ Cochlearia spp.			
Elytrigia atherica																	→ Elytrigia atherica			
Elytrigia repens																	→ Elytrigia repens			
Festuca rubra																	→ Festuca rubra			
Glaux maritima																	→ Glaux maritima			
Juncus gerardii																	→ Juncus gerardii			
Limonium humile																	→ Limonium humile			
Plantago maritima																	→ Plantago maritima			
Puccinellia maritima																	→ Puccinellia maritima			
Salicornia agg.																	→ Salicornia agg.			
Spergularia marina																	→ Spergularia marina			
Spergularia media																	→ Spergularia media			
Suaeda maritima																	→ Suaeda maritima			
Triglochin maritimum																	→ Triglochin maritimum			
Tripleurospermum maritimum																	→ Tripleurospermum maritimum			
2. Vegetation height (cm)	Median of maximum height (cm)																→ 2. Vegetation height (cm)		Standard deviation of median plant height >5	
Median of maximum leaf height from four quadrants of 2m × 2m stop																	→ 2a. Standard deviation of median of maximum leaf height from four			
																	→ 2b. 20-30% of stops with average height greater than 15 cm, the remainder shorter.		20-30% of stops with average height greater than 15 cm, the remainder shorter	

3. Negative indicator species (% cover within 5 m radius of stop centre)	Record cover (%)																→	3. Negative indicator species		% <i>Spartina</i> spp. cover within 5 m radius of stop less than/equal to SMP baseline at 75% of stops or more. Do not include stops which have been moved from baseline location	
<i>Spartina</i> spp.																	→	<i>Spartina</i> spp.			
Other (including non-natives):																	→	Other:			
4. Cover of disturbed ground (%)																	→	4. Cover of disturbed ground (%)		<5% disturbed ground at 75% of stops or more	
5. Signs of negative activities, e.g. infilling, reclamation, turf-cutting, pollution (present/absent)																	→	5. Signs of negative activities e.g. infilling, reclamation, turf-cutting, pollution.		None recorded	
																	→	6. Occurrence of human disturbance to hydrology (including impacts on creeks and pans)		No disturbance relative to SMP baseline	
Note: No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad																	→	7. Natural transitions to semi-natural terrestrial habitats on landward margin		No loss of natural transitions relative to SMP baseline	
																	→	8. Presence of <i>Spartina</i> spp. within vicinity of habitat		Not present where not recorded by SMP baseline, otherwise NA	
																	→	9. Presence of site-specific target species		No evidence of decline or loss of target species; LIST TARGET SPECIES FOR THE SITE	
																	→	10. Number of zones (SM2, SM3, SM4, SM6BCD, SM7/driftline) covering 1% or more of 1330 area		Site-specific target; STATE WHAT THE TARGET IS FOR EACH SITE	
																				No. of criteria failed	
																				Habitat assessment	

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1410 Mediterranean salt meadows (*Juncetalia maritimi*)

Monitoring stop data																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Positive indicator species (✓ if	Presence															
<i>Aster tripolium</i>																
<i>Cochlearia</i> spp.																
<i>Glaux maritima</i>																
<i>Juncus acutus</i>																
<i>Juncus maritimus</i>																
<i>Juncus gerardii</i>																
<i>Leontodon autumnalis</i>																
<i>Oenanthe lachenalii</i>																
<i>Plantago maritima</i>																
<i>Triglochin maritimum</i>																
2. Negative indicator species (% cover within 5 m radius of stop centre)	Record cover (%)															
<i>Spartina</i> spp.																
Other (including non-natives):																
3. Cover of disturbed ground (%)																
4. Signs of negative activities, e.g. infilling, reclamation, turf-cutting, pollution (present/absent)																

Habitat assessment at site level			
Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)
1. Positive indicator species	% frequency	At least 6 species recorded in the habitat AND at least 2 species occur at a frequency of at least 25% of plots (excluding <i>Juncus maritimus</i>)	
→ <i>Aster tripolium</i>			
→ <i>Cochlearia</i> spp.			
→ <i>Glaux maritima</i>			
→ <i>Juncus acutus</i>			
→ <i>Juncus maritimus</i>			
→ <i>Juncus gerardii</i>			
→ <i>Leontodon autumnalis</i>			
→ <i>Oenanthe lachenalii</i>			
→ <i>Plantago maritima</i>			
→ <i>Triglochin maritimum</i>			
2. Negative indicator species		% <i>Spartina</i> spp. cover within 5 m radius of stop less than/equal to SMP baseline at 75% of stops or more. Do not include stops which have been moved from baseline location	
→ <i>Spartina</i> spp.			
→ Other:			
3. Cover of disturbed ground (%)		<5% disturbed ground at 75% of stops or more	
→			
4. Signs of negative activities e.g. infilling, reclamation, turf-cutting, pollution		None recorded	
→			

															5. Occurrence of human disturbance to hydrology (including impacts on creeks and pans)		No disturbance relative to SMP baseline	
Note: No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad															6. Natural transitions to semi-natural terrestrial habitats on landward margin		No loss of natural transitions relative to SMP baseline	
No. of criteria failed															8. Presence of site-specific target species (indicators of local distinctiveness)		No evidence of decline or loss of target species; LIST TARGET SPECIES FOR THE SITE	
Habitat assessment															9. Presence of <i>Spartina</i> spp. within vicinity of habitat		Not present within vicinity of habitat where not recorded by SMP baseline, otherwise NA**	

2110 Embryonic shifting dunes

Monitoring stop data																	Habitat assessment for the site				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria	Habitat assessment scores		Required to pass	Result (pass/fail)
1. Positive indicator species (✓ if present)	Presence																1. Positive indicator species	% frequency		At least 1 species occurs with a frequency of more than 40% of stops	
<i>Elytrigia juncea</i>																	→ <i>Elytrigia juncea</i>				
<i>Leymus arenarius</i>																	→ <i>Leymus arenarius</i>				
2a. Negative indicator species (% cover)	Record cover (%)																2a. Negative indicator species	% frequency	% of habitat	2a. No neg. species occurs at a frequency of more than 60% of stops <u>AND</u> combined cover of all negative species across the habitat is 5% or less <u>AND</u> 2b. highest % cover of any neg. species within any stop is 25% or less	
<i>Arrhenatherum elatius</i>																	→ <i>Arrhenatherum elatius</i>				
<i>Cirsium arvense</i>																	→ <i>Cirsium arvense</i>				
<i>Cirsium vulgare</i>																	→ <i>Cirsium vulgare</i>				
<i>Lolium perenne</i>																	→ <i>Lolium perenne</i>				
<i>Senecio jacobea</i>																	→ <i>Senecio jacobea</i>				
<i>Urtica dioica</i>																	→ <i>Urtica dioica</i>				
Other:																	→ Other:				
Other:																	→ Other:				
2b. Highest % cover score at each stop																	→ 2b. Highest % cover score across all stops				
3. Non-native species (% cover)	Record cover (%)																3. Non-native species	% frequency		No non-native species occurs at a frequency of more than 20% of stops	
Name of species:																	→ Name of species:				
Name of species:																	→ Name of species:				
4. Green shoots/flowering of target species (✓ if present)																	→ 4. Flowering or fruiting of positive indicator species (% frequency)	% frequency		Observed in more than 40% of stops	
Notes :																	→ 5. Notable/rare species	% frequency in habitat		loss post designation; LIST NOTABLE/RARE SPECIES AT EACH	
No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad																	→				
																	→ 6. Interference with the sediment dynamics	presence/absence		Absent or unchanged since 1994 and not adversely affecting the habitat	
																	→ 7. Damage due to disturbance (e.g. trampling, vehicle damage,	% of habitat		Signs of disturbance observed in no more than	
																				No. of criteria failed	
																				Habitat assessment	

2120 Shifting dunes along the shore with *Ammophila arenaria* (white dunes)

Monitoring stop data																	Habitat assessment for the site				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)	
1. Positive indicator species (✓ if present)	Presence																1. Positive indicator species	% frequency		At least 1 individual species occurs at a frequency of more than 40% of stops	
<i>Ammophila arenaria</i>																	→ <i>Ammophila arenaria</i>				
<i>Elytrigia juncea</i>																	→ <i>Elytrigia juncea</i>				
<i>Leymus arenarius</i>																	→ <i>Leymus arenarius</i>				
2a. Negative indicator species (% cover)	Record cover (%)																2a. Negative indicator species	% frequency	% of habitat	2a. No neg. species occurs at a frequency of more than 60% of stops <u>AND</u> combined cover of all negative species across the habitat is 5% or less <u>AND</u> 2b. highest % cover of any neg. species within any stop is 25% or less	
<i>Arrhenatherum elatius</i>																	→ <i>Arrhenatherum elatius</i>				
<i>Cirsium arvense</i>																	→ <i>Cirsium arvense</i>				
<i>Cirsium vulgare</i>																	→ <i>Cirsium vulgare</i>				
<i>Lolium perenne</i>																	→ <i>Lolium perenne</i>				
<i>Senecio jacobea</i>																	→ <i>Senecio jacobea</i>				
<i>Urtica dioica</i>																	→ <i>Urtica dioica</i>				
Other:																	→ Other:				
Other:																	→ Other:				
2b. Highest % cover score in stop																	→ 2b. Highest % cover score across all stops				
3. Non-native species (% cover)	Record cover (%)																3. Non-native species	% frequency		No non-native species occurs at a frequency of more than 20% of stops	
Name of species:																	→ Name of species:				
Name of species:																	→ Name of species:				
4. Green shoots/flowering of target																	4. Flowering or fruiting of positive	% frequency		40% of stops	
Notes : No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad																	→ 5. Notable/rare species	% frequency		No evidence of population loss post designation; LIST	
																	→ 6. Interference with the sediment dynamics	presence/absence		Absent or unchanged since 1994 and not adversely affecting the habitat	
																	→ 7. Damage due to disturbance (e.g. trampling, vehicle damage, removal of substrate)	% of habitat		Signs of disturbance observed in no more than 20% of the habitat	
																				No. of criteria failed	
																				Habitat assessment	

*2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)																
Monitoring stop data																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1a. Positive indicator species (✓ if present)	Presence															
<i>Aim praecox</i>																
<i>Anthyllis vulneraria</i>																
<i>Carex arenaria</i>																
<i>Carex flacca</i>																
<i>Cladonia</i> spp.																
<i>Crepis capillaris</i>																
<i>Daucus carota</i>																
<i>Erodium cicutarium</i>																
<i>Euphrasia officinalis</i> agg.																
<i>Festuca rubra</i>																
<i>Galium verum</i>																
<i>Hypochaeris radicata</i>																
<i>Linum catharticum</i>																
<i>Lotus corniculatus</i>																
<i>Luzula campestris</i>																
<i>Ononis repens</i>																
<i>Peltigera</i> spp.																
<i>Phleum arenarium</i>																
<i>Pilosella officinarum</i>																
<i>Plantago lanceolata</i>																
<i>Poa pratensis</i> sens. lat.																
<i>Rhinanthus minor</i>																
<i>Sedum acre</i>																
<i>Thymus polytrichus</i>																
<i>Trifolium repens</i>																
<i>Veronica chamaedrys</i>																
<i>Viola canina</i>																
<i>Viola riviniana</i>																
<i>Viola tricolor</i>																
<i>Agrostis capillaris</i>																
<i>Carex pilulifera</i>																
<i>Festuca ovina</i>																
<i>Galium saxatile</i>																

Habitat assessment for the site			
Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)
1a. Positive indicator species	% frequency	1a) At least 8 of the positive species occur with a frequency of more than 20% of stops AND 1b) every stop contains at least 4 positive species	
→ <i>Aim praecox</i>			
→ <i>Anthyllis vulneraria</i>			
→ <i>Carex arenaria</i>			
→ <i>Carex flacca</i>			
→ <i>Cladonia</i> spp.			
→ <i>Crepis capillaris</i>			
→ <i>Daucus carota</i>			
→ <i>Erodium cicutarium</i>			
→ <i>Euphrasia officinalis</i> agg.			
→ <i>Festuca rubra</i>			
→ <i>Galium verum</i>			
→ <i>Hypochaeris radicata</i>			
→ <i>Linum catharticum</i>			
→ <i>Lotus corniculatus</i>			
→ <i>Luzula campestris</i>			
→ <i>Ononis repens</i>			
→ <i>Peltigera</i> spp.			
→ <i>Phleum arenarium</i>			
→ <i>Pilosella officinarum</i>			
→ <i>Plantago lanceolata</i>			
→ <i>Poa pratensis</i> sens. lat.			
→ <i>Rhinanthus minor</i>			
→ <i>Sedum acre</i>			
→ <i>Thymus polytrichus</i>			
→ <i>Trifolium repens</i>			
→ <i>Veronica chamaedrys</i>			
→ <i>Viola canina</i>			
→ <i>Viola riviniana</i>			
→ <i>Viola tricolor</i>			
→ <i>Agrostis capillaris</i>			
→ <i>Carex pilulifera</i>			
→ <i>Festuca ovina</i>			
→ <i>Galium saxatile</i>			

[illegible]

[illegible]

2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)

Monitoring stop data																	Habitat assessment for the site					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria		Habitat assessment score		Required to pass	Result (pass/fail)
1. Typical species (% cover)	Record cover (%)																1. Typical species				Not assessed. Surveyors will use key to determine if 2140 habitat present. If it is, typical species are assumed to be present.	
<i>Calluna vulgaris</i>																	→	<i>Calluna vulgaris</i>				
<i>Erica cinerea</i>																	→	<i>Erica cinerea</i>				
<i>Erica tetralix</i>																	→	<i>Erica tetralix</i>				
<i>Empetrum nigrum</i>																	→	<i>Empetrum nigrum</i>				
<i>Carex arenaria</i>																	→	<i>Carex arenaria</i>				
<i>Festuca rubra</i>																	→	<i>Festuca rubra</i>				
<i>Agrostis capillaris</i>																	→	<i>Agrostis capillaris</i>				
<i>Deschampsia flexuosa</i>																	→	<i>Deschampsia flexuosa</i>				
<i>Cladonia</i> spp.																	→	<i>Cladonia</i> spp.				
Other macro lichen spp.																	→	Other macro lichen spp.				
1b. Notable/rare species	Record cover (%)																1b. Notable/rare species					
i.																	→	i.				
ii.																	→	ii.				
iii.																	→	iii.				
2. Signs of browsing on last complete growing season's shoots of ericoids and <i>Empetrum nigrum</i> (% of shoots). Assess a minimum sample of 10 shoots distributed across the plot																	→	2. Browsing			Last complete growing season's shoots of ericoids and <i>Empetrum nigrum</i> showing signs of browsing collectively <33%	
3. <i>Calluna vulgaris</i> growth phases	% of total <i>Calluna</i> cover																3. <i>Calluna vulgaris</i> growth phases		Presence	Calculation	All growth phases of <i>Calluna</i> occur throughout AND ≥10% of <i>Calluna</i> cover in mature phase. NOTE: Not applicable if <i>C. vulgaris</i> is not present.	
Not applicable if <i>C. vulgaris</i> is not present																						
3a. Pioneer < 10 cm																	→	3a. Pioneer < 10 cm				
3b. Building 10-30 cm																	→	3b. Building 10-30 cm				
3c. Mature > 30 cm																	→	3c. Mature > 30 cm				
4a. Negative indicator species (% cover)	Record cover (%)																4a. Negative indicator species		% frequency	% of habitat	4a, No neg. species occurs at a frequency of more than 60% of stops AND combined cover of all negative species across the habitat is 5% or less AND 4b. highest % cover of any neg. species within any stop is 25% or less	
<i>Cirsium arvense</i>																	→	<i>Cirsium arvense</i>				
<i>Cirsium vulgare</i>																	→	<i>Cirsium vulgare</i>				
<i>Lolium perenne</i>																	→	<i>Lolium perenne</i>				
<i>Pteridium aquilinum</i>																	→	<i>Pteridium aquilinum</i>				
<i>Senecio jacobea</i>																	→	<i>Senecio jacobea</i>				
<i>Urtica dioica</i>																	→	<i>Urtica dioica</i>				
Other:																	→	Other:				
4b. Highest % cover score of negative species in stop																	→	4b. Highest % cover score across all stops				

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5. Non-native species (% cover)	Record cover (%)																5. Non-native species	% frequency		No non-native species occurs with a frequency greater than 20% of stops			
<i>Centranthus ruber</i>																	→	<i>Centranthus ruber</i>					
Other:																	→	Other:					
6a. Trees and scrub other than <i>Juniperus</i> in the plot (% cover)																	→	6. Cover of trees and scrub	% frequency	% of habitat	Frequency of trees and scrub in monitoring stops is no greater than 60% <u>AND</u> combined cover across the habitat is 5% or less <u>AND</u> total cover of trees and scrub within 20m of the stop is no more than 20%.		
6b. Cover of trees and scrub within c. 20m of the plot (% cover)																	→						
7. Cover of dwarf shrubs, excl. <i>Rosa</i> spp. and <i>Salix</i> spp. (% cover)																	→	7. Cover of dwarf shrubs			Cover of dwarf shrubs within the dune heath habitat at the site 25-90%		
8. Bare sand (% cover)																	→	8. Bare sand	% from stops	% from map*	Present in the habitat but covering no more than 10% of the area (plots and mapping)		
																	→						
9. Disturbance (% cover within 20m)																	→	9. Disturbance			Signs of disturbance observed in no more than 20% of the habitat		
																	→	10a. Pre-designation Coastal defences currently affecting the habitat	Presence/absence	Absent			
																	→	10b. Post-designation anthropogenic impacts on substrate/mobility of the	Presence/absence	Absent			
																	→				No. of criteria failed		
																	→				Habitat assessment		
Notes : No failures = Favourable, 1-2 failures = Unfavourable - Inadequate, 3+ failures = Unfavourable - Bad *Calculate the area of bare ground within the habitat at a site level by totalling the areas mapped as bare ground																	General site observations *						

2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenaria*)

Monitoring stop data																	Habitat assessment for the site					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria		Habitat assessment score		Required to pass	Result (pass/fail)
1a. Positive indicator species (✓ if present)	Presence																1a. Positive indicator species	% frequency		1a. At least 2 species occur with a frequency of more than 40% of stops <u>AND</u> another 2 species occur with a frequency of more than 20% of stops <u>AND</u> 1b. every stop has at least two species		
<i>Carex arenaria</i>																	→ <i>Carex arenaria</i>					
<i>Carex flacca</i>																	→ <i>Carex flacca</i>					
<i>Euphrasia officinalis</i> agg.																	→ <i>Euphrasia officinalis</i> agg.					
<i>Festuca rubra</i>																	→ <i>Festuca rubra</i>					
<i>Holcus lanatus</i>																	→ <i>Holcus lanatus</i>					
<i>Lotus corniculatus</i>																	→ <i>Lotus corniculatus</i>					
<i>Ononis repens</i>																	→ <i>Ononis repens</i>					
<i>Pilosella officinarum</i>																	→ <i>Pilosella officinarum</i>					
<i>Rhynchospora alba</i>																	→ <i>Rhynchospora alba</i>					
<i>Scleropodium purum</i>																	→ <i>Scleropodium purum</i>					
<i>Salix repens</i> ssp. <i>argentea</i>																	→ <i>Salix repens</i> ssp. <i>argentea</i>					
1b. Number of positive indicator species in stop																	→	1b. Lowest number of positive indicator species in a stop				
2a. Negative indicator species (%)	Record cover (%)																2a. Negative indicator species	% frequency	% of habitat	2a. No neg. species occurs at a frequency of more than 60% of stops <u>AND</u> combined cover of all negative species across the habitat is 5% or less <u>AND</u> 2b. highest % cover of any neg. species within any stop is 25% or less		
<i>Cirsium arvense</i>																	→ <i>Cirsium arvense</i>					
<i>Cirsium palustre</i>																	→ <i>Cirsium palustre</i>					
<i>Cirsium vulgare</i>																	→ <i>Cirsium vulgare</i>					
<i>Lolium perenne</i>																	→ <i>Lolium perenne</i>					
<i>Pteridium aquilinum</i>																	→ <i>Pteridium aquilinum</i>					
<i>Senecio jacobaea</i>																	→ <i>Senecio jacobaea</i>					
<i>Urtica dioica</i>																	→ <i>Urtica dioica</i>					
Other:																	→ Other:					
2b. Highest % cover score in stop																	→	2b. Highest % cover score across all stops				
3. Non-native species (% cover)	Record cover (%)																3. Non-native species	% frequency		No non-native species occurs with a frequency greater than 20% of stops		
Name of species:																	→ Name of species:					
Name of species:																	→ Name of species:					
4. Rank grasses (% cover)	Record cover (%)																4. Rank grasses	% of habitat		Total cover of <i>Dactylis glomerata</i> , <i>Arrhenatherum elatius</i> less than 10%		
<i>Arrhenatherum elatius</i>																	→ <i>Arrhenatherum elatius</i>					
<i>Dactylis glomerata</i>																	→ <i>Dactylis glomerata</i>					

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[illegible]

2190 Humid dune slacks

Monitoring stop data																	Habitat assessment for the site				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)	
1a. Positive indicator species (✓ if present)	Presence																→ 1a. Positive indicator species	% frequency	1a. At least 4 species to have frequency of more than 40% of stops <u>AND</u> another 2 species to have frequency of more than 20% of stops <u>AND</u> 1b. at least three species present in every stop		
<i>Anagallis tenella</i>																	→ <i>Anagallis tenella</i>				
<i>Bryum pseudotriquetrum</i>																	→ <i>Bryum pseudotriquetrum</i>				
<i>Calliergon cuspidatum</i>																	→ <i>Calliergon cuspidatum</i>				
<i>Campylium stellatum</i>																	→ <i>Campylium stellatum</i>				
<i>Carex arenaria</i>																	→ <i>Carex arenaria</i>				
<i>Carex flacca</i>																	→ <i>Carex flacca</i>				
<i>Carex nigra</i>																	→ <i>Carex nigra</i>				
<i>Dactylorhiza</i> spp.																	→ <i>Dactylorhiza</i> spp.				
<i>Epipactis palustris</i>																	→ <i>Epipactis palustris</i>				
<i>Equisetum</i> spp.																	→ <i>Equisetum</i> spp.				
<i>Galium palustre</i>																	→ <i>Galium palustre</i>				
<i>Hydrocotyle vulgaris</i>																	→ <i>Hydrocotyle vulgaris</i>				
<i>Juncus articulatus</i>																	→ <i>Juncus articulatus</i>				
<i>Lotus corniculatus</i>																	→ <i>Lotus corniculatus</i>				
<i>Mentha aquatica</i>																	→ <i>Mentha aquatica</i>				
<i>Potentilla anserina</i>																	→ <i>Potentilla anserina</i>				
<i>Prunella vulgaris</i>																	→ <i>Prunella vulgaris</i>				
<i>Ranunculus flammula</i>																	→ <i>Ranunculus flammula</i>				
<i>Sagina nodosa</i>																	→ <i>Sagina nodosa</i>				
<i>Salix repens</i> ssp. <i>argentea</i>																	→ <i>Salix repens</i> ssp. <i>argentea</i>				
<i>Agrostis stolonifera</i>																	→ <i>Agrostis stolonifera</i>				
<i>Festuca rubra</i>																	→ <i>Festuca rubra</i>				
1b. Number of positive indicator species at each stop																	→ 1b. Lowest number of positive indicator species in a monitoring stop				
2. Cover of bryophytes (% cover)																	→ 2. Bryophytes	% frequency	Present in more than 20% of stops		
3. Cover of <i>Salix repens</i> (%)																	→ 3. Cover of <i>Salix repens</i>	% of habitat	Less than 40% of habitat		
4a. Negative indicator species (% cover)	Record cover (%)																→ 4a. Negative indicator species	% frequency	% of habitat	2a. No neg. species occurs at a frequency of more than 60% of stops <u>AND</u> combined cover of all negative species across the habitat is 5% or less <u>AND</u> 2b. highest % cover of any neg. species within any stop is 25% or less	
<i>Arrhenatherum elatius</i>																	→ <i>Arrhenatherum elatius</i>				
<i>Cirsium arvense</i>																	→ <i>Cirsium arvense</i>				
<i>Cirsium palustre</i>																	→ <i>Cirsium palustre</i>				
<i>Cirsium vulgare</i>																	→ <i>Cirsium vulgare</i>				
<i>Lolium perenne</i>																	→ <i>Lolium perenne</i>				
<i>Pteridium aquilinum</i>																	→ <i>Pteridium aquilinum</i>				
<i>Senecio jacobea</i>																	→ <i>Senecio jacobea</i>				
<i>Urtica dioica</i>																	→ <i>Urtica dioica</i>				
Other:																	→ Other (specify)				
4b. Highest % cover score in stop																	→ 4b. Highest % cover score across all stops				

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5. Non-native species (% cover)	Record cover (%)																5. Non-native species	% frequency	No non-native species occurs with a frequency greater than 20% of stops			
Name of species:																	→	Name of species:				
Name of species:																	→	Name of species:				
6. Cover of scrub (% cover within 20m radius)																	→	6a. Cover of scrub (% frequency)		Scrub present in no more than 40% of stops AND combined cover of 5% or less		
																→	6b. Cover of scrub (% of habitat)					
7. Forb:grass ratio (% cover forbs:% cover grasses)																	→	7. Forb: grass ratio (mean)		Forb cover over 30% <u>AND</u> grass cover below 70%		
8. Bare ground (% cover)																	→	8a. Bare ground (% of habitat from stops)		Present but total area not more than 5%		
																→	8b. Bare ground (% of habitat from map)					
Notes :																	General site observations	9. Notable/rare species	% frequency	No evidence of population loss post designation; LIST NOTABLE/RARE SPECIES AT EACH SITE		
No failures = Favourable, 1-2 failures = Unfavourable- Inadequate, 3+ failures = Unfavourable- Bad.																		→				
Calculate the area of bare ground within the habitat at a site level by totalling the areas mapped as bare ground.																		→				
For the total area at each stop covered by forbs and grasses, estimate the % of that area covered by each component. Values should total 100%. For example, 40:60.																		→	10. Interference with the sediment dynamics	presence/absence	Absent or unchanged since 1994 and not adversely affecting the habitat	
																		→	11. Damage due to disturbance (e.g. trampling, vehicle damage, removal of	% of habitat	No more than 20% of habitat	
																				No. of criteria failed		
																		Recorded but not assessed:		Habitat assessment		
																		Embryonic slacks present? (Y/N)				
																		Algal mats present? (Y/N)				

***21A0 Machairs**

Monitoring stop data																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1a. Positive indicator species (✓ if present)	Presence															
<i>Agrostis stolonifera</i>																
<i>Aira praecox</i>																
<i>Bellis perennis</i>																
<i>Carex arenaria</i>																
<i>Carex flacca</i>																
<i>Carex nigra</i>																
<i>Cerastium fontanum</i>																
<i>Crepis capillaris</i>																
<i>Euphrasia officinalis</i> agg.																
<i>Festuca rubra</i>																
<i>Galium verum</i>																
<i>Hydrocotyle vulgaris</i>																
<i>Linum catharticum</i>																
<i>Lotus corniculatus</i>																
Orchid spp.																
<i>Plantago lanceolata</i>																
<i>Potentilla anserina</i>																
<i>Prunella vulgaris</i>																
<i>Rhinanthus minor</i>																
<i>Sedum acre</i>																
<i>Thymus polytrichus</i>																
<i>Trifolium repens</i>																
<i>Viola canina</i>																
<i>Viola riviniana</i>																
<i>Viola tricolor</i>																
1b. Number of positive indicator species in each stop																
2. Cover of bryophytes (% cover)																

Habitat assessment for the site			
Habitat assessment criteria	Habitat assessment scores	Required to pass	Result (pass/fail)
1a. Positive indicator species	% frequency	1a. At least 6 species present in more than 20% of stops <u>AND</u> 1b. at least three species present in every stop	
→ <i>Agrostis stolonifera</i>			
→ <i>Aira praecox</i>			
→ <i>Bellis perennis</i>			
→ <i>Carex arenaria</i>			
→ <i>Carex flacca</i>			
→ <i>Carex nigra</i>			
→ <i>Cerastium fontanum</i>			
→ <i>Crepis capillaris</i>			
→ <i>Euphrasia officinalis</i> agg.			
→ <i>Festuca rubra</i>			
→ <i>Galium verum</i>			
→ <i>Hydrocotyle vulgaris</i>			
→ <i>Linum catharticum</i>			
→ <i>Lotus corniculatus</i>			
→ Orchid spp.			
→ <i>Plantago lanceolata</i>			
→ <i>Potentilla anserina</i>			
→ <i>Prunella vulgaris</i>			
→ <i>Rhinanthus minor</i>			
→ <i>Sedum acre</i>			
→ <i>Thymus polytrichus</i>			
→ <i>Trifolium repens</i>			
→ <i>Viola canina</i>			
→ <i>Viola riviniana</i>			
→ <i>Viola tricolor</i>			
1b. Lowest number of positive indicator species in a monitoring stop			
→ 2. Cover of bryophytes (minimum % cover)		Over 1% in every stop	

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3a. Negative indicator species (% cover)	Record cover (%)																3a. Negative indicator species	% frequency	% of habitat	3a. No neg. species occurs at a frequency of more than 60% of stops AND combined cover of all negative species across the habitat is 5% or less AND 3b. highest % cover of any neg. species within any stop is 25% or less				
<i>Arrhenatherum elatius</i>																→ <i>Arrhenatherum elatius</i>			4. Non-native species			% frequency	No non-native species occurs with a frequency greater than 20% of stops	
<i>Cirsium arvense</i>																→ <i>Cirsium arvense</i>								
<i>Cirsium vulgare</i>																→ <i>Cirsium vulgare</i>								
<i>Senecio jacobea</i>																→ <i>Senecio jacobea</i>								
<i>Urtica dioica</i>																→ <i>Urtica dioica</i>								
<i>Lolium perenne</i>																→ <i>Lolium perenne</i>								
<i>Phleum pratense</i>																→ <i>Phleum pratense</i>			4. Non-native species	% frequency	No non-native species occurs with a frequency greater than 20% of stops			
<i>Pteridium aquilinum</i>																→ <i>Pteridium aquilinum</i>								
Other (include native invasive species):																→ Other:			3b. Highest % cover score across all stops					
3b. Highest % cover score in each stop																								
4. Non-native species (% cover)	Record cover (%)																4. Non-native species	% frequency		No non-native species occurs with a frequency greater than 20% of stops				
Name of species:																→ Name of species:			4. Non-native species			% frequency	No non-native species occurs with a frequency greater than 20% of stops	
Name of species:																→ Name of species:								
5. Flowering and fruiting of any positive indicator species (✓ if present)	Record cover (%)																5. Flowering and fruiting of any positive indicator species	% frequency		Observed in more than 40% of stops				
6. Height of vegetation (cm)																→ 6. Sward height (mean)			5. Flowering and fruiting of any positive indicator species			% frequency	Observed in more than 40% of stops	
7. Bare ground (% cover)																→ 7a. Bare ground (% of habitat from stops				6. Sward height (mean)				
																→ 7b. Bare ground (% of habitat from map			7a. Bare ground (% of habitat from stops				Present but total area not more than 5% of habitat	
																→ 8. Notable/rare species				8. Notable/rare species	% frequency			
																→ 9. Interference with the sediment dynamics (presence/absence)			9. Interference with the sediment dynamics (presence/absence)			presence/absence	Absent or unchanged since 1994 and not adversely affecting the	
																→ 10. Damage due to disturbance (e.g. trampling, vehicle damage, removal of				10. Damage due to disturbance (e.g. trampling, vehicle damage, removal of	% of habitat			
																			No. of criteria failed					
																				Habitat assessment				
		</																						

Appendix IV – List of pressures and threats

List of pressures and threats for the period 2019-2024 (DG Environment, 2023b).

Pressure/threat code 2019 - 2024	Pressure/threat name 2019-2024
PA	Agriculture related practices
PA01	Conversion into agricultural land (excluding drainage and burning)
PA02	Conversion from one type of agricultural land use to another (excluding drainage and burning)
PA03	Conversion from mixed farming and agroforestry systems to specialised (e.g. single crop) production
PA04	Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.)
PA05	Abandonment of management/use of grasslands and other agricultural and agroforestry systems (e.g. cessation of grazing, mowing or traditional farming)
PA06	Mowing or cutting of grasslands
PA07	Intensive grazing or overgrazing by livestock
PA08	Extensive grazing or undergrazing by livestock
PA09	Burning for agriculture
PA10	Livestock farming (without grazing)
PA11	Soil management practices in agriculture (e.g. ploughing)
PA12	Harvesting of crops and cutting of croplands
PA13	Application of natural or synthetic fertilisers on agricultural land
PA14	Use of plant protection chemicals in agriculture
PA15	Use of other pest control methods in agriculture (excluding tillage)
PA16	Introduction and spread of new organisms (including GMOs)
PA17	Agricultural activities generating pollution to surface or ground waters (including marine)
PA18	Agricultural activities generating air pollution
PA19	Agricultural activities generating soil pollution
PA20	Livestock farming generating pollution
PA21	Active abstraction of water for agriculture
PA22	Drainage for use as agricultural land
PA23	Physical alteration of water bodies (including dams, channels, etc.)
PA24	Agricultural crops for renewable energy production
PA25	Agriculture activities not referred to above
PB	Forestry related practices
PB01	Conversion to forest from other land uses, or afforestation (excluding drainage)
PB02	Conversion from one type of forestry land use to another
PB03	Introduction and spread of new species for forestry purposes (including GMOs)
PB04	Abandonment of traditional forest management
PB05	Logging without replanting or natural regrowth
PB06	Logging or thinning (excluding clear cutting)
PB07	Removal of dead and dying trees (including debris)
PB08	Removal of old trees (excluding dead or dying trees)

Pressure/threat code 2019 - 2024	Pressure/threat name 2019-2024
PB09	Clear-cutting, removal of all trees
PB10	Illegal logging
PB11	Exploitation of forestry products (excluding logging)
PB12	Burning for forestry
PB13	Suppression of fire for forestry
PB14	Forest management reducing old growth forests
PB15	Wood transport
PB16	Application of natural or synthetic fertilisers in forestry
PB17	Use of plant protection chemicals in forestry
PB18	Use of other pest control methods in forestry (e.g. physical plant protection)
PB19	Forestry activities generating pollution to surface or ground waters (including marine)
PB20	Forestry activities generating air pollution
PB21	Forestry activities generating soil pollution
PB22	Forestry activities generating noise pollution
PB23	Physical alteration of water bodies for forestry (including dams)
PB24	Drainage for forestry
PB25	Forest plantations for renewable energy production
PB26	Other forestry activities, excluding those relating to agro-forestry
PC	Extraction of resources (minerals, peat, non-renewable energy resources)
PC01	Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell)
PC02	Extraction of salt
PC03	Extraction of oil and gas (including infrastructure)
PC04	Coal mining
PC05	Peat extraction
PC06	Dumping/depositing of inert and dredged materials from terrestrial and marine extraction
PC07	Geotechnical surveying
PC08	Extraction activities generating pollution to surface or ground waters
PC09	Extraction activities generating marine pollution
PC10	Extraction activities generating soil pollution
PC11	Extraction activities generating noise, light or other forms of pollution
PC12	Abstraction of surface and ground water for resource extraction
PC13	Mining and extraction activities not referred to above
PD	Energy production processes and related infrastructure development
PD01	Wind, wave and tidal power (including infrastructure)
PD02	Hydropower (dams, weirs, run-off-the-river and respective infrastructure)
PD03	Solar power (including infrastructure)
PD04	Geothermal power generation (including infrastructure)
PD05	Development and operation of energy production plants (including infrastructure)
PD06	Transmission of electricity and communications (cables)
PD07	Oil and gas pipelines

Pressure/threat code 2019 - 2024	Pressure/threat name 2019-2024
PD08	Energy production and transmission activities generating pollution to surface or ground waters
PD09	Energy production and transmission activities generating air pollution
PD10	Energy production and transmission activities generating marine pollution
PD11	Energy production and transmission activities generating noise pollution
PD12	Energy production and transmission activities generating light, heat or other forms pollution
PD13	Abstraction of surface and ground water for energy production (excluding hydropower)
PD14	Energy production and transmission activities not referred to above
PE	Development and operation of transport systems
PE01	Roads, paths, railroads and related infrastructure
PE02	Shipping lanes and ferry lanes transport operations
PE03	Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging)
PE04	Flight paths of planes, helicopter and other non-leisure aircrafts
PE05	Land, water and air transport activities generating pollution to surface or ground waters
PE06	Land, water and air transport activities generating air pollution
PE07	Land, water and air transport activities generating marine pollution
PE08	Land, water and air transport activities generating noise, light and other forms of pollution
PE09	Land, water and air transport activities not referred to above
PF	Development, construction and use of residential, commercial, industrial and recreational infrastructure and areas
PF01	Conversion from other land uses to built-up areas
PF02	Construction or modification (e.g. of housing and settlements) in existing built-up areas
PF03	Creation or development of sports, tourism and leisure infrastructure
PF04	Development and maintenance of beach areas for tourism and recreation
PF05	Sports, tourism and leisure activities
PF06	Deposition and treatment of waste/rubbish from built-up areas
PF07	Residential and commercial activities and structures generating pollution to surface or ground waters
PF08	Industrial activities and structures generating pollution to surface or ground waters
PF09	Residential, commercial and industrial activities and structures generating air pollution
PF10	Residential, commercial and industrial activities and structures generating marine pollution
PF11	Residential, commercial and industrial activities and structures generating soil pollution
PF12	Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution
PF13	Drainage, land reclamation and conversion of wetlands, marshes, bogs, etc. for built-up areas
PF14	Modification of flooding regimes, flood protection for built-up areas

Pressure/threat code 2019 - 2024	Pressure/threat name 2019-2024
PF15	Modification of coastline, estuary and coastal conditions for built-up areas
PF16	Construction or development of reservoirs and dams for built-up areas
PF17	Active abstraction of water for built-up areas
PG	Extraction and cultivation of biological living resources (other than agriculture and forestry)
PG01	Marine fish and shellfish harvesting causing reduction of species/prey populations and disturbance of species (professional)
PG02	Marine fish and shellfish harvesting causing reduction of species/prey populations and disturbance of species (recreational)
PG03	Marine fish and shellfish harvesting activities causing physical loss and disturbance of seafloor habitats
PG04	Marine fish and shellfish processing
PG05	Marine plant harvesting
PG06	Freshwater fish and shellfish harvesting (professional)
PG07	Freshwater fish and shellfish harvesting (recreational)
PG08	Hunting
PG09	Management of fishing stocks and game
PG10	Harvesting or collecting of wild plants, fungi and animals on terrestrial land
PG11	Illegal shooting/killing
PG12	Illegal harvesting, collecting and taking of plants and fungi
PG13	Bycatch and incidental killing (due to fishing and hunting activities)
PG14	Poisoning of animals (excluding lead poisoning)
PG15	Use of lead ammunition or fishing weights
PG16	Modification of coastal conditions for marine aquaculture
PG17	Active abstraction of water bodies for aquaculture
PG18	Physical alterations of water bodies for aquaculture (including channels, weirs and dams)
PG19	Marine aquaculture generating marine pollution
PG20	Freshwater aquaculture generating pollution to surface or ground waters (including marine)
PG21	Introduction and spread of new species in aquaculture (including GMOs)
PG22	Abandonment of aquaculture
PG23	Other activities related to aquaculture and extraction or cultivation of biological living resources not referred to above
PH	Military action, public safety measures, and other human intrusions
PH01	Military, paramilitary or police exercises and operations on land and freshwater
PH02	Military, paramilitary or police exercises and operations in the marine environment
PH03	Abandonment of terrestrial military or similar exercises (loss of open habitats)
PH04	Vandalism or arson (incl. human-introduced wild fire)
PH05	Tree surgery, felling/removal of roadside trees and vegetation for public safety
PH06	Closure or restricted access to site/habitat
PH07	Intrusive and destructive research and monitoring activities
PH08	Other human intrusions and disturbance not mentioned above

Pressure/threat code 2019 - 2024	Pressure/threat name 2019-2024
PI	Alien and problematic species
PI01	Invasive alien species of Union concern
PI02	Other invasive alien species (other than species of Union concern)
PI03	Problematic native species
PI04	Plant and animal diseases, pathogens and pests
PJ	Climate change
PJ01	Temperature changes and extremes due to climate change
PJ02	Permafrost thawing due to climate change
PJ03	Changes in precipitation regimes due to climate change
PJ04	Sea-level rise due to climate change
PJ05	Saline intrusion
PJ06	Wave exposure changes due to climate change
PJ07	Cyclones, storms, or tornados due to climate change
PJ08	Soil degradation and erosion due to climate change
PJ09	Landslides, subsidence and solifluction due to climate change
PJ10	Change of habitat location, size, and / or quality due to climate change
PJ11	Desynchronisation of biological / ecological processes due to climate change
PJ12	Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
PJ13	Change of species distribution (natural newcomers) due to climate change
PJ14	Other climate related changes in abiotic conditions
PK	Mixed source pollution
PK01	Mixed source pollution to surface and ground waters (limnic and terrestrial)
PK02	Mixed source marine water pollution (marine and coastal)
PK03	Mixed source air pollution, air-borne pollutants
PK04	Atmospheric N-deposition
PK05	Mixed source soil pollution and solid waste (excluding discharges)
PK06	Non-chemical mixed source pollution
PL	Human-induced changes in water regimes
PL01	Abstraction from groundwater, surface water or mixed water (mixed or unknown drivers)
PL02	Drainage (mixed or unknown drivers)
PL03	Old barriers or other obsolete infrastructures (mixed or unknown drivers)
PL04	Development and operation of dams (mixed or unknown drivers)
PL05	Modification of hydrological flow (mixed or unknown drivers)
PL06	Physical alteration of water bodies (mixed or unknown drivers)
PM	Geological events, natural processes and catastrophes
PM01	Storm or cyclone
PM02	Flooding
PM03	Natural wild fires
PM04	Earthquake and volcanic activity
PM05	Avalanches, landslides and collapse of terrain
PM06	Other natural catastrophes

Pressure/threat code 2019 - 2024	Pressure/threat name 2019-2024
PM07	Natural processes without direct or indirect influence from human activities or climate change
PX	Unknown pressures, no pressures and pressures from outside the Member State
PX01	Threats and pressures from outside the EU territory
PX02	Threats and pressures from outside the Member State
PX03	Unknown pressures or threats
PX04	No pressures or threats
PX05	No information on pressures or threats

Appendix V – List of conservation measures

List of conservation measures for the period 2019-2024 (DG Environment, 2023c).

Measure code 2019 - 2024	Crosswalk with measure 2013 - 2018	Measure name 2019-2024
MA	CA	
MA01	CA01	Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land
MA02	CA02	Restore small landscape features on agricultural land
MA03	CA03	Maintain existing extensive agricultural practices and agricultural landscape features
MA04	CA04	Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures
MA05	CA05	Adapt mowing, grazing and other equivalent agricultural activities (e.g. burning)
MA06	CA06	Stop mowing, grazing and other equivalent agricultural activities e.g. burning (incl. restore or improve habitats)
MA07	CA07	Restoration of Annex I agricultural habitats (incl. re-establish and improve)
MA08	CA08	Adapt soil management practices in agriculture
MA09	CA09	Manage the use of natural and synthetic fertilisers as well as chemicals in agricultural for plant and animal production
MA10	CA10, CA11, CA13	Reduce/eliminate point or diffuse source pollution to surface or ground waters (including marine) from agricultural activities
MA11	CA12	Reduce/eliminate air pollution from agricultural activities
MA12	CA14	Reduce/eliminate soil pollution from agricultural activities
MA13	CA15	Manage agricultural drainage and water abstraction (incl. the restoration of drained or hydrologically altered habitats)
MA14	CA16	Other measures related to agricultural practices
MB	CB	
MB01	CB01	Prevent conversion of (semi-) natural habitats into forests and of (semi-) natural forests into intensive forest plantation
MB02	CB02	Maintain existing traditional forest management and exploitation practices
MB03	CB03	Reinstate forest management and exploitation practices
MB04	CB04	Adapt/manage reforestation and forest regeneration
MB05	CB05	Adapt/change forest management and exploitation practices
MB06	CB06	Stop forest management and exploitation practices
MB07	CB07	Measures to combat illegal logging
MB08	CB08	Restoration of Annex I forest habitats (incl. re-establish and improvement)
MB09	CB09	Manage the use of natural and synthetic fertilisers, liming and pest control in forestry
MB10	CB10, CB12	Reduce diffuse or point source pollution to surface or ground waters (incl. marine) from forestry activities
MB11	CB11	Reduce air pollution from forestry activities

Measure code 2019 - 2024	Crosswalk with measure 2013 - 2018	Measure name 2019-2024
MB12	CB13	Reduce other types of pollution from forestry activities (such as noise and soil pollution)
MB13	-	Burning of forests for nature conservation
MB14	CB14	Manage drainage and water abstraction for forestry (inc. restoration of drained or hydrologically altered habitats)
MB15	CB15	Other measures related to forestry practices
MC	CC	
MC01	CC01	Adapt/manage extraction of non-energy resources
MC02	CC02	Adapt/manage exploitation of energy resources
MC03	CC03	Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities)
MC04	CC04	Reduce impact of hydropower operation and infrastructure (incl. the restoration of freshwater habitats)
MC05	CC05	Adapt/manage fossil energy installation, facilities and operation
MC06	CC06	Reduce impact of service corridors and networks
MC07	CC07	Habitat restoration/creation from resources, exploitation areas or areas damaged due to installation of renewable energy infrastructure
MC08	CC08, CC09	Manage/reduce/eliminate point or diffuse source pollution to surface or ground waters from resource exploitation and energy production
MC09	CC10	Manage/reduce/eliminate air pollution from resource exploitation and energy production
MC10	CC11	Manage/reduce/eliminate marine pollution from resource exploitation and energy production
MC11	CC12	Manage/reduce/eliminate pollution types related to resource exploitation and energy production, (including but not limited to noise, light, thermal, and soil pollution).
MC12	CC13	Manage water abstraction for resource extraction and energy production
MC13	CC14	Other measures related to extraction and energy exploitation activities
ME	CE	
ME01	CE01	Reduce impact of transport operation and infrastructure
ME02	CE02	Manage/reduce/eliminate pollution to surface or ground water from transport
ME03	CE03	Manage/reduce/eliminate air pollution from transport
ME04	CE04	Manage/reduce/eliminate marine pollution from transport
ME05	CE05	Manage/reduce/eliminate noise, light and other forms of pollution from transport
ME06	CE06	Habitat restoration of areas impacted by transport
ME07	CE07	Other measures related to transport
MF	CF	
MF01	CF01	Managing the impacts of converting land for construction and development of infrastructure

Measure code 2019 - 2024	Crosswalk with measure 2013 - 2018	Measure name 2019-2024
MF02	CF02	Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructure, operations and activities
MF03	CF03	Reduce impact of outdoor sports, leisure and recreational activities (incl. restoration of habitats)
MF04	CF04, CF05	Reduce/eliminate pollution to surface or ground waters from commercial, residential and recreational areas and activities, and from industrial activities and structures
MF05	CF06	Reduce/eliminate air pollution from industrial, commercial, residential and recreational areas and activities
MF06	CF07, CF08	Reduce/eliminate marine pollution from industrial, commercial, residential and recreational areas and activities (incl. contamination with litter)
MF07	CF09	Reduce/eliminate pollution (incl. noise, light, heat, soil pollution) from industrial, commercial, residential and recreational areas and activities
MF08	CF10	Manage changes in hydrological and coastal systems and regimes for construction and development (incl. restoration of habitats).
MF09	CF11	Adapt the management of water abstraction for public supply and for industrial and commercial use to reduce negative impacts on habitats and species (incl. restoration of habitats)
MF10	CF12	Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities
MG	CG	
MG01	CG01	Management of professional/commercial fishing, shellfish and seaweed harvesting (incl. restoration of habitats)
MG02	CG02	Management of hunting, recreational fishing, and the recreational or commercial harvesting or collection of plants and fungi (incl. restoration of habitats)
MG03	CG03	Reducing the impact of (re-) stocking for fishing and hunting, of artificial feeding and predator control
MG04	CG04	Control/eradication of illegal killing, fishing and harvesting of wild plants, fungi and animals
MG05	CG05	Reduce bycatch and incidental killing of non-target species
MG06	CG06	Reduce impact of lead poisoning
MG07	CG07	Manage changes in coastal conditions for marine aquaculture
MG08	CG08	Reduce/eliminate diffuse and point source pollution from marine aquaculture
MG09	CG09	Other measures to reduce impacts from aquaculture infrastructures and operation
MG10	CG10	Manage water abstraction and modification of hydrological conditions for marine and freshwater aquaculture
MG11	CG11, CG12, CG13, CG14	Reduce/eliminate point and diffuse source pollution to surface waters from freshwater aquaculture
MG12	-	Restoration of habitats to address modifications of hydrological conditions for marine and freshwater aquaculture
MG13	CG15	Other measures related to exploitation of species
MH	CH	

Measure code 2019 - 2024	Crosswalk with measure 2013 - 2018	Measure name 2019-2024
MH01	CH01	Reduce impact of military installations and activities
MH02	CH02	Adapt/maintain military activities
MH03	CH03	Reduce impact of other specific human activities
MH04	-	Habitat restoration of areas related to military installations and activities and other specific human activities.
MI	CI	
MI01	CI01	Early detection and rapid eradication of invasive alien species of Union concern
MI02	CI02	Management, control or eradication of established invasive alien species of Union concern
MI03	CI03	Management, control or eradication of other invasive alien species
MI04	CI04	Restoration of habitats affected by invasive alien species (incl. of Union concern and others)
MI05	CI05, CI06	Management of problematic native species
MI06	CI07	Controlling and eradicating plant and animal diseases, pathogens and pests
MJ	CN	
MJ01	CN01	Implement climate change mitigation measures
MJ02	CN02	Implement climate change adaptation measures
MK	CJ	
MK01	CJ01	Reduce impact of mixed source pollution
MK02	CJ02	Reduce impact of multi-purpose hydrological changes
MK03	CJ03	Restoration of habitats impacted by multi-purpose hydrological changes
MK04	CJ04	Other measures related to mixed source pollution.
MK05	CJ05	Other measures related to multi-purpose human-induced changes in hydraulic conditions.
MM	CL	
MM01	CL01	Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes that occur without direct or indirect influence from human activities or climate change
MM02	CL02	Minimise/prevent impacts of geological and natural catastrophes
MM03	CL03	Restoration of habitats following geological and natural catastrophes
MM04	CL04	Other measures related to natural processes
MS	CS	
MS01	CS01	Reinforce populations of species from the directives
MS02	CS02	Reintroduce species from the directives
MS03	CS03	Restoration of habitat of species from the directives
MS04	CS04	Manage native species (incl. non-Directive species)
MX	CX	
MX01	CX01	Support conservation measures in another EU Member State
MX02	CX02	Support conservation measures in countries outside the EU

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