

Northern Ireland Habitat Guide: Maritime cliff and slope

What is Maritime cliff and slope?

Maritime cliffs and slopes generally comprise gently sloping to vertical faces on the coastline where a break in slope is formed by slippage and / or coastal erosion. Sea cliffs are generally steep slopes (> 15 degrees), but they can show great diversity in form, from very tall vertical or near-vertical cliff faces through long, steep slopes with vertical face restricted to the base, to low cliffs with a great variety of local slope forms above an intertidal rock platform. There appears to be no generally accepted definition of the minimum height or angle of slope which constitutes a cliff, but the zone defined as cliff-top should extend landward to at least the limit of maritime influence i.e. limit of salt spray deposition, which in some exposed situations may continue beyond 500m inland.

Most cliff types can be classified as either 'hard cliffs' or 'soft cliffs', however, there are some intermediate types and there is much local variability, with changing exposures around headlands. The major natural and semi-natural cliff and cliff-top habitats mixtures of bare ground, spray-zone lichen covered rock, rock crevice, cliff ledge, seabird colony, perched saltmarsh, flushes, maritime grassland and maritime heath. Soft cliffs on sheltered coasts can develop under cliff vegetation of woodland, scrub, tall herb and rank grassland, often very close to the sea.

Table 1: Linking Habitat types with N2K features, ASSI features and NI Priority Habitats and Species

Habitat types	Habitat Directive Annex 1 habitats	ASSI features	NI priority habitat	NI priority species
Maritime cliff and slope	H2130 Vegetated sea cliffs of the Atlantic and Baltic coasts	Maritime cliff and slope	Maritime cliff and slope	Chough, Twite, Skylark, Linnets



Definition

Maritime cliff and slope in Northern Ireland is defined as being:

- Gently sloping to vertical faces on the coastline where a break in slope is formed by slippage and/ or coastal erosion.
- Although there is no generally accepted definition of the minimum height or angle of slope which constitutes a cliff, the zone defined as cliff-top should extend landward to at least the limit of maritime influence i.e. limit of salt spray deposition.

Where are they found?

Maritime cliff and slopes occur around much of the Northern Ireland coastline. Hard cliffs occur on the coast of north-east County Derry and County Antrim which are dominated by basalt and chalk cliffs along much of its length and the steeper parts of the County Down coastline. The Giant's Causeway is especially significant for its geological formations which represent volcanic activity of the Tertiary period. The vegetation along the Causeway Coast and the north County Antrim coast is characterised by species rich in maritime cliff-top and cliff-slope grassland and maritime heath communities. In Northern Ireland, small but significant stretches of soft glacial-till cliffs are found to the north of Larne in County Antrim, and there are cliffs of moraine at Killard, and south of Kilkeel in County Down.

DAERA hold priority habitat and species data on the NIEA Natural Environment Map Viewer. See <https://apps.d.aera-ni.gov.uk/nedmapviewer/> (and link to video tutorial). Note that the Map Viewer indicates areas which hold NIEA records of habitat / species data, but does not infer the complete coverage of these environmental assets in Northern Ireland. NIEA will update datasets periodically.

Why are they important to wildlife?

Maritime cliffs are often significant for their populations of breeding seabirds which can reach numbers of international importance. Northern Ireland is important for seabirds in both national and international contexts. There are seabird colonies on many stretches of County Antrim and County Down coasts. The largest and most important site is located on Rathlin Island, which provides nesting sites for nationally important colonies of Guillemot, Kittiwake and internationally important colonies of Razorbill. Several seabird colonies have been formally classified under the EC Birds Directive as Special Protection Areas (SPAs).

There is a wide range of coastal breeding birds other than seabirds associated with Maritime cliff and slope and these include the priority species Chough and Twite.

Soft cliffs are particularly important for invertebrates as they provide a suite of conditions which are rarely found together in other habitats. The combination of friable soils, hot substrates, seepages, springs, pools and open conditions maintained by cliff slippages, offer a range of restricted microhabitats and these support many rare invertebrates which are confined to such sites.

The variety and abundance of flowering plants within semi-natural habitats provide good sources of pollen and nectar for many of our pollinating insects such as bumblebees, hoverflies, butterflies and moths. For further information on habitat management for pollinators, refer to the All-Ireland Pollinator Plan resources: www.pollinators.ie.

Within Northern Ireland, Maritime cliff and slope is used by several species identified as part of the UK action plan programme. These include Skylark and Linnet.

Pressures & Threats

- Erosion – is a highly significant factor in soft cliffs. High rates of erosion do not necessarily imply a loss of cliff resource either in geological or biological terms. Cliff face communities are able to retreat with the cliff line and erosion is vital for constantly renewing geological exposures and recycling the botanical succession of soft cliffs. Cliff-top vegetation may be destroyed where it is squeezed between a receding cliff face and cultivated land.
- Development – there has been an increase in urban and industrial development and holiday accommodation both on former Maritime cliff and slope and adjacent to it. Where the cliffs are subsequently discovered to be eroding, there is often political pressure to put in place appropriate defensive works. Such development also prevents cliff-top biological communities from retreating in response to cliff erosion, subjecting them to a form of ‘coastal-squeeze’.
- Changes in agricultural practices– many former maritime grasslands have been lost to improved grassland or arable use. Maritime grassland is now often limited to a narrow strip just above the high water mark. Localised eutrophication can be caused by fertiliser run-off from intensively farmed land above and this encourages coarse, vigorous ‘weed’ species at the expense of the maritime species. As a consequence, species diversity can be reduced. Agricultural land drains and discharging on the cliff face, may accelerate local erosion. Open maritime grassland vegetation can benefit from traditional low-intensity grazing. However, maritime grassland is heavily impacted by increased stocking densities. Locally this has led to a loss in quality of the habitat. Conversely, lack of grazing leads to the dominance of coarse grass species and scrub encroachment. Where there are no physical constraints, cliff top habitats are often grazed by sheep or cattle.
- Recreational use – an increase in recreational use of the coast by walkers and vehicles can lead to vegetation change for example through trampling / erosion and increased nutrients from dogs. An increase in the number of walkers with dogs, along some coastal footpaths, has also increased livestock worrying and even losses and forced a number of farmers to remove their stock from these sites.
- Introduced species – parts of the coast are heavily developed and can be impacted by a range of introduced plants species from gardens e.g. Hottentot-fig, *Carpobrotus edulis* a species which is able to blanket-out other cliff plants as seen in some parts of England and Wales.
- Quarrying – in the past, extensive quarrying for chalk has damaged certain parts of the County Antrim coast, as at Larry Bane near Ballintoy. However, chalk quarrying is now carried out only on a minor scale at very few sites and abandoned quarries are a valuable habitat for colonisation by wild plants.

Favourable Management of Maritime cliff and slope

These important sites should be protected and maintained where they occur, and should be restored where their condition has declined. Some of our most important Maritime cliff and slopes are protected through National and International legislation. In the wider countryside, Maritime cliffs and slopes are protected from development and increased agricultural productivity through planning policies and legislation such as the Environmental Impact Assessment Regulations.

Maritime cliffs and slopes are best managed by extensive grazing at a low stocking rate; either through all year grazing, or restricted grazing at a slightly higher stocking rate with a no grazing period between 1 May and 31 July.

Encroaching scrub Bracken, and invasive species should be controlled as these can spread at the expense of the priority habitat.

Application of organic and inorganic fertilisers is not permitted as it reduces species-richness and diversity with a loss of nature conservation value.

How do we determine the “health” or condition of Maritime cliff and slope?

The conservation status can be determined by the condition of the habitat. Favourable condition is defined by setting targets or target ranges for a series of different attributes. These are components or characteristics of the vegetation that are relatively easy to measure, but which are reliable indicators of the “health” of the habitat.

NIEA has developed Rapid Condition Assessments for several broad habitat types (grassland, moorland, woodland, coastal and wetlands). These will be made available online in the future. In the interim copies can be requested by contacting NIEA by E-mail: NIEA.EFSHigher@daera-ni.gov.uk.

Appendix 1: Maritime cliff and slope Indicator species

Positive Indicators:

<i>Armeria maritima</i>	Thrift
<i>Calluna vulgaris</i>	Heather
<i>Daucus carota</i>	Wild Carrot
<i>Festuca ovina</i>	Sheep's Fescue
<i>Festuca rubra</i>	Red Fescue
<i>Hyacinthoides non-scripta</i>	Bluebell
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil
<i>Plantago coronopus</i>	Buck's-horn Plantain
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Plantago maritima</i>	Sea Plantain
<i>Potentilla erecta</i>	Tormentil
<i>Rumex acetosa</i>	Common Sorrel
<i>Scilla verna</i>	Spring Squill
<i>Sedum anglicum</i>	English Stonecrop
<i>Silene vulgaris maritima</i>	Sea Campion
<i>Spergularia rupicola</i>	Rock Sea-spurrey
<i>Thymus polytrichus</i>	Wild Thyme
<i>Xanthoria lichens</i>	Lichen

Negative Indicators:

<i>Arrhenatherum elatius</i>	False oat-grass
<i>Bellis perennis</i>	Daisy
<i>Cirsium arvense</i>	Creeping thistle
<i>Cirsium palustre</i>	Marsh thistle
<i>Cirsium vulgare</i>	Spear thistle
<i>Galium aparine</i>	Cleavers
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Lolium perenne</i>	Perennial rye-grass
<i>Plantago major</i>	Greater plantain
<i>Prunus spinosa</i>	Blackthorn
<i>Pteridium aquilinum</i>	Bracken
<i>Ranunculus repens</i>	Creeping buttercup
<i>Rubus fruticosus</i>	Bramble
<i>Senecio jacobaea</i>	Common ragwort
<i>Ulex europaeus</i>	Common Gorse/Whin
<i>Urtica dioica</i>	Stinging nettle

Appendix 2: National Vegetation Classification codes

Maritime cliff and slope in Northern Ireland encompass a range of plant communities that broadly reflect a number of those communities described in the National Vegetation Classification (NVC) of Great Britain (Rodwell, 1991a) where descriptions and codes are given to associations of plants that are characteristic of particular environmental and management conditions.

In Northern Ireland, the main NVC communities which make up Maritime cliff and slope are species-rich variants of:

MC1 - *Spergularia rupicola* Rock Sea-spurrey

MC3 - *Rhodiola rosea*-*Armeria maritima* maritime cliff-ledge community

MC5 - *Armeria maritima*, *Cerastium diffusum* Thrift and Sea Mouse-ear

MC6 - *Atriplex prostrata*, *Beta vulgaris maritima*, Spear-leaved Orache and Sea Beet

MC8 - *Festuca rubra*, Red Fescue

MC9 - *Festuca rubra*-*Holcus lanatus* maritime grassland

H7 - *Calluna vulgaris*-*Scilla verna* heath

A wide range of other NVC types associated with other lowland priority habitats e.g. Lowland meadow, Coastal sand dune, Calcareous grassland, Maritime cliff and slope, Purple moor-grass and rush pasture, Lowland acid grassland and Lowland heathland and more species -poor communities often form part of Maritime cliff and slope.