

Wales Coastal Ecosystem Group Priority Action

Maritime Hard Cliff Priority Area

Maritime cliff vegetation varies according to a number of physical and biological factors, but most important among these are climate, degree of exposure to sea-spray, geology and soil type, level of grazing, and the amount of seabird activity. In very exposed conditions, maritime influence can extend landward for up to 500 m and its zone of influence can encompass entire islands or headlands, depending on their size. On the seaward fringes, conditions are usually so maritime that the underlying geology has little influence on the soil or vegetation, but in more sheltered situations or further inland, the vegetation will tend to become more distinctly calcicolous, neutral or calcifugous, depending on the geology.

Much of the ungrazed vegetation on hard seacliffs is regulated by the natural environment of the area and can be regarded as a climatic climax and can often be divided into several vegetation zones. Moving landward these typically include a maritime rock crevice/cliff ledge zone, a maritime therophyte zone, a maritime grassland zone, a maritime heath zone and maritime scrub zone. Very sheltered sites, however, may lack any clear zonation.

In terms the National Vegetation Classification (Rodwell 2000) the rock crevice and cliff-ledge communities mainly includes MC1, MC3 and MC4, and the so-called seabird vegetation types MC6 and MC7. Rock crevice communities are the most maritime of terrestrial plant communities in Britain, being restricted mainly to the highly maritime sea-cliffs of south and west coasts. In Wales *Aster tripolium*, *Crithmum maritimum*, *Inula crithmoides*, and *Spergularia rupicola* are the dominant plant species (MC1). Important cliff-ledge communities include those in which *Sedum (Rhodiola) rosea* (MC3) or *Brassica oleracea* (MC4) occur. The former is restricted mainly to the northwest coast of Scotland, but there is a small stand in Pembrokeshire, whilst the latter is confined to a few calcareous sea-cliffs in England and Wales.

Therophyte vegetation largely equates to MC5. This is very short, open turfs community in which *Armeria maritima* and *Cerastium diffusum* are usually dominant and is often very susceptible to damage by grazing. Many but not all stands tend to be inaccessible to grazing stock.

Ungrazed coastal grassland of hard cliffs is usually synonymous with the typical subcommunity of the *Festuca rubra-Armeria maritima* maritime grassland (MC8a). Moving landward this often gives way to a *Festuca rubra-Holcus lanatus* maritime grassland (MC9), and under moderate maritime influence, especially on north-facing, gentle slopes, the less common *Festuca-rubra-Hyacinthoides non-scripta* maritime bluebell community may be present. This latter community is very susceptible to grazing damage. In the case of calcareous sites, a maritime version of calcicolous grassland (*Festuca rubra-Scilla verna* subcommunity of the *Festuca ovina-Carlina vulgaris* grassland, CG1f) (Rodwell, 1992) may be present. This includes, for example, the rare *Draba aizoides* on the Gower Peninsula in South Wales.

Grazed coastal grassland of hard cliffs is typically composed of a short turf community that may be represented by the *Plantago coronopus* sub-community of the *Festuca rubra-Armeria maritima* maritime grassland (MC8e). But where there has been sustained grazing over many years, the *Festuca rubra-Plantago* spp maritime grasslands (MC10) is likely to predominate.

Areas of Major Concern to Conservation

Past and present agricultural activities

Activities such as the use of fertiliser, ploughing, reseeded and silage production have had a major impact on maritime grasslands. Arable crops have often been planted as close to cliff-top edges as possible causing severe truncation and in some extreme cases the complete loss of all natural cliff vegetation (Mitchley & Malloch 1991).

Where natural or semi-natural vegetation persists, lack of appropriate grazing is one of the key adverse factors affecting sites. Over-grazing leads to loss of vegetation structure and the failure of more palatable or vulnerable species to reproduce and maintain themselves. It can also lead to the loss of plant species and associated fauna, and the spread of rank, unpalatable plant species. In extreme cases, very heavy grazing and trampling can lead to exposure of bare soil and erosion. Under-grazing commonly results in scrub encroachment, sometimes accompanied by the spread of invasive species. It is crucial that grazing is undertaken at the right time and at the right intensity.

Routine use of certain veterinary products, particularly the avermectin range of anti-parasitic drugs, can pose a threat to wildlife, particularly dung-feeding invertebrates and their predators.

Tourism, recreation and amenity usage

Coastal areas worldwide are major destinations for tourism and form one of the fastest growing sectors of the global economy. Today, approximately 3 billion people - about half of the world's population - live within 200 kilometres of a coast, and by 2025, that figure is likely to double (Population Reference Bureau). The combined effects of booming population growth and economic and technological development are now a major threat to coastal ecosystems. Pressures from excessive human usage have caused major degradation or destruction of fragile coastal plant communities and can have a major impact of cliff-nesting birds. Dog-walking may cause disturbance of grazing animals and may lead to the removal of important grazing stock.

Coastal development

Many of the world's coasts are becoming increasingly urbanized. To put this in perspective 14 of the world's 17 largest cities are located on the coast. There are many instances of urban and holiday accommodation being built too close to cliff-tops. In addition to the direct damage, built development also prevents cliff-top biological communities from retreating in response to cliff erosion, subjecting them to a form of 'coastal squeeze'.

The impact of invasive species including the spread of bracken

Encroachment by non-native invasive plants such as rhododendron, hottentot fig, sycamore, holm oak and cotoneaster may cause a reduction in the naturalness of some coastal habitats, and may smother or shade out less competitive native plant species. The purple dew plant has been problematic in parts of Wales (Rhind 1995). Bracken can become overly dominant on neglected sites. Bracken in coastal areas can suffer salt damage in high winds but because it dies back naturally in winter leaving just subsurface rhizomes, it is not affected by winter storms when most of the salt damage would occur. Bracken control may be necessary for some sites, but it is often desirable to retain selected patches of bracken in order to enhance habitat diversity especially for invertebrates.

References

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