

Coastal Mosses

Location

This sub type is found around the head of the Duddon Estuary and to the north and west of Carlisle. The sub type also occurs in the Lake District national park and is classified as sub type B2 – Coastal Mosses in the Lake District National Park Landscape Character Assessment.

Key Characteristics

- Lowland raised mosses
- A mosaic of heath, Willow Carr, Birch scrub woodland and pasture
- High ecological value
- Field shapes vary, bounded by hedges and fences
- Some woodland around the Duddon Estuary
- Picturesque backdrop of the Lakeland Fells/open flat panoramic views
- Distinct raised edges
- Sense of remoteness and tranquility

Physical character

Lowland raised mosses (peat bogs or raised mires) have formed by peat accumulation in poor draining alluvial or boulder clay basins. The mosses rise up to three metres above surrounding levels. These are often associated with post glacial drumlins that form local features in the adjacent landscapes. They are usually found close to the coastal edge or in areas of drained land.

Land cover and land use

These comprise a mosaic of moss, willow carr or birch scrub woodland and pasture. The woodland scrub often forms distinctive edges, particularly in the Solway. Enclosure may be by trimmed hedges or overgrown gapped hedges and fences. Woodland is limited to the upper mosses around the Duddon Estuary.

Field shapes range from the small and irregular in undulating areas to large rectangular fields on flat open mosses.

Settlement is sparse, though some vernacular farm buildings lie on the fringes of the mosses. Large scale peat extraction can be found in places around the Solway. The distinctiveness of the mosses is being weakened and fragmented by encroaching pasture and peat extraction.

Ecology

This is a landscape of great ecological importance, dominated by lowland raised bogs of international and national significance. Most of the remaining raised mire in England lies in Cumbria. Whilst many of the mires have been subjected to peat extraction and drainage there are still extensive areas of relatively intact raised mire and these support communities dominated by Sphagnum mosses and cotton-grasses, whilst drier areas of mire are often dominated by heather or birch and Scot's pine woodland. The drained margins of these mires can support large areas of rush and purple moor-grass pasture. Lowland raised mire supports a range of uncommon and rare species, including the large heath butterfly, variable dragonfly, reed bunting, skylark and redshank.

Historic and cultural character

The mosses have a rich cultural heritage and contain evidence of reclamation, particularly in areas north of the county in the areas held by Holme Abbey. Within the field systems is the preserved evidence of former peat rooms in long narrow enclosures. In general there is good boundary preservation and evidence of both traditional field patterns consisting of small irregular enclosures and later larger more regular enclosures.

Where the mosses are not degraded they have the potential to preserve waterlogged organic archaeological deposits including wood. Consequently, they may contain evidence of prehistoric trackways or other features that do not survive in normal terrestrial environments. They are also important for preserving pollen which allows the past environment and climate to be interpreted and they have previously produced skeletal evidence of past fauna both wild and domesticated.

Perceptual character

This is a rare landscape in both national and Cumbrian terms. The open remnant patches of moss provide a rich note of interest in surrounding agricultural landscapes. The variety of moss plants is colourful and rough textured, contrasting with the smoother improved pasture fields. Despite some peat extraction the mosses are generally peaceful backwaters. The small, yet open and undeveloped nature of the mosses contributes to broader seascape views across the Solway Firth and along the Duddon Estuary. The Duddon Mosses have the benefit of the backdrop of the Lakeland Fells and uninterrupted views along the Duddon Estuary. In the Solway views tend to be limited and discrete, and the remaining uninterrupted views to the sea are important to the sense of remoteness associated with these landscapes. The experience of these landscapes is influenced by the seasons and weather with a calm and tranquil feeling sometimes giving way to a wilder feeling when winds rise and skies darken.

Sensitive characteristics or features

Changes in drainage around the moss land could affect the simple balance of the mosaic landscapes and habitat. The sense of remoteness and naturalness, the rich habitats and presence of birds, and the flat dark and open areas that contrast with green farmland, large skies and seaward views could be sensitive to significant changes in land management and large scale infrastructure development.

Vision

The mosses will be conserved and restored creating a landscape enriched with ecological diversity. Detailed management and restoration projects will extend the mosses and allow their visual and wildlife interest to flourish creating much more diverse landscape and habitat. The small-scale pattern of carr woodland will be retained and proposals for the extraction of peat and extensive commercial woodland planting will face strong opposition ensuring the protection of the hydrology of the peat body and retaining a sense of tranquility.

Changes in the Landscape

Over the next 10 – 20 years this landscape could be subject to the following changes or issues:

Climate Change and Coastal Processes

- Increased rainfall could provide opportunities to improve the condition of existing areas and reinstate areas of moss. Active mosses can help with carbon sequestration and mitigate against climate change.
- Those that are found close to the coastline could be susceptible to periodic inundation from sea water if sea levels rise significantly.

Management Practices

- Agricultural reclamation and improvement has traditionally been the main pressure on this rare landscape. Even where the moss is not directly removed, adjacent drainage works can cause the edges to dry out encouraging scrub development with a consequent risk of fire. Dessication can also cause land shrinkage, drops in height and road deformation.
- Large-scale peat cutting and coniferous planting also weaken the character of this landscape by obscuring or destroying mosses. A number of Cumbria's lowland mosses are still subject to commercial peat extraction, especially around the Solway.
- Unmanaged burning can damage the surface vegetation and the overall hydrological integrity of the bog.

Development

- The introduction of energy infrastructure and associated tall and vertical structures such as pylons and large scale wind turbines can impact greatly on the character of these expansive open areas. The introduction of pylons with regard to the grid upgrade could act as an incentive to developers looking to site tall structures which could obscure important views.

Access and Recreation

- The planned implementation, over the next decade, of enhanced access to the whole of the English coast could result in some disturbance to wildlife in sensitive locations at certain times of the year.
- Coastal access will be improved to support the coastal open access programme. Space will be needed to allow the route to shift in this dynamic area and in response to any future coastal erosion.

Guidelines**Climate Change and Coastal Processes**

- Strategic projects should be developed to ensure the carbon sequestration potential of the raised mires is enhanced. Development, in and around the landscape, that could significantly reduce this potential should be avoided.
- Adopt environmentally sensitive management of the mosses including maintenance of a high water table, phased cutting and burning of heather, preventing damage to moss growth by overgrazing and poaching, control of scrub encroachment, restricting liming, fertilizer, and herbicide and pesticide treatments.
- Allow drained and managed mossland to revert back to semi-natural wetland. This may include 'blocking' of adjacent drainage systems, restricting grazing, appropriate wetland planting or seeding, removal of hedgerows and scrub.
- Resist improvement or introduction of drainage systems that might threaten the dampness of the mosses.

Management Practices

- Protect the mosses from further commercial peat cutting and agree schemes to ensure worked areas are restored to wetland.
- Resist burning as a management measure as this can damage the integrity of the peat body.

- Manage existing birch and alder carr woodland by a mixture of natural regeneration and coppicing, excluding stock, and thinning to prevent shading of water areas.
- Restrict new planting, particularly conifer woodlands to maintain an open semi-natural character.
- Remove tree and shrub growth where appropriate to support the restoration of the mosses.

Cultural Features

- Manage hedgerows in a traditional way involving a cycle of hand laying and trimming.
- Restore fenced boundaries to hedgerows involving replanting and renovation of gappy overgrown hedges. Discourage introduction of fences to replace or 'gap up' hedgerows.

Development

- Protect the small-scale open character of the mosses from inappropriate development, specifically large vertical developments such as large scale wind turbines and pylons.
- Avoid fragmentation of the natural patterns of the mosses and wildlife links by infrastructure development.

Access and Recreation

- In areas where coastal access will introduce new routes, appropriate access management may be needed in sensitive locations at certain times of the year to minimise disturbance to wildlife.
- Support the roll out of coastal access and encourage sensitively sited coastal access and recreational infrastructure. Coastal access footpaths, areas and facilities should be improved and developed to be compatible with the undeveloped and natural character of this sub type. In line with the Marine and Coastal Access Act consideration should be given to routing coastal access footpaths along appropriate sea defence structures.