Open Mosaic Habitat
on
Previously Developed Land

by

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What is an Open Mosaic Habitat (OMH)?

Simply, an open mosaic habitat (OMH) is an area where there is a patchwork (mosaic) of unvegetated (bare) or very sparsely covered substrate; these between other patches that are more densely vegetated.


Workington
Disused industrial rail track

The particular importance of the bare or sparsely vegetated patches is that they provide a substrate suitable to those plants and lichens that are early colonisers, namely those that are less able to compete against more robust species.

In the animal taxa these bare or sparsely covered areas can provide basking areas (e.g. reptiles, invertebrates) as well as sites for egg-laying (e.g. bees, wasps).

The substrate(s) could include concrete, rubble, soil, sand, gravel, furnace slag, limestone waste, pulverised fly ash, coal waste, etc.

The structure of the substrate can be varied; from almost solid (partly broken concrete), to rubble, to finely ‘powdered’ (PFA, sand). As the substrate is weathered, infiltrated by roots or damaged in other ways, it becomes usable by a greater number of individuals of a species and by a greater range of species.


Barrow Slag Banks
OMH on a post-industrial site

Carlisle

Not an OMH. Substrate currently too intact. However, small cracks are beginning to form in the tarmac and mosses starting to colonise surface.

Such substrate will also be low in nutrients and not likely to hold water, thus being more suited to those plants that are able to thrive under nutrient poor conditions and which are drought tolerant. These tend to be annuals and short-lived perennials which are able to grow, flower and set seed in a short time under these harsh conditions.

The pH and toxicity of the substrate will also be a determinant in which species will be able to use it.

Stress tolerant annuals – annual plants that are adapted to low nutrient availability, such as thyme-leaved sandwort *Arenaria serpyllifolia*, common centaury *Centaurium erythraea*, fairly flax *Linum catharticum* or hare's-foot clover *Trifolium arvense*. Where these occur with greater than 20% grasses they should be included in the appropriate grassland community.

The stress tolerant annuals thyme leaved sandwort *Arenaria serpyllifolia* (top), sun spurge *Euphorbia helioscopia* (bottom left) and shepherd's purse *Capsella bursa-pastoralis* (bottom right).

Some areas of a brownfield site might comprise areas of water retention, either permanently (reedbed, pond, marsh) or seasonally (ephemeral pond). These areas provide further diversity in habitat availability.

Inundation vegetation or seasonally wet areas – areas that are subject to periodic inundation or seasonal flooding of fresh water. They therefore contain plants that are adapted to periodic wetting or submergence, such as knotgrasses *Polygonum* spp., bistorts *Persicaria* spp., bulbous rush *Juncus bulbosus*, bur-marigolds *Bidens* spp., creeping bent *Agrostis stolonifera* and marsh foxtail *Alopecurus geniculatus*.

This range of habitat patches means a wide variety of plants, animals, fungi, lichens etc can thrive in a relatively small area.

Between 12% and 15% of all nationally-rare and nationally-scarce insects are recorded from OMH sites including 30 UK Biodiversity Action Plan (BAP) invertebrate species, especially bees, wasps and beetles.

Often the plants include a mix of native and introduced species and can often provide a long flowering season, which is ideal for a wide range of insects such as beetles, bees and other pollinators. The plant communities of OMHs are often currently unrecognised by the National Vegetation Classification (NVC) system.

The value of OMH has been shown, and is now recognised as a UK Priority Habitat.

To be classified as an OMH

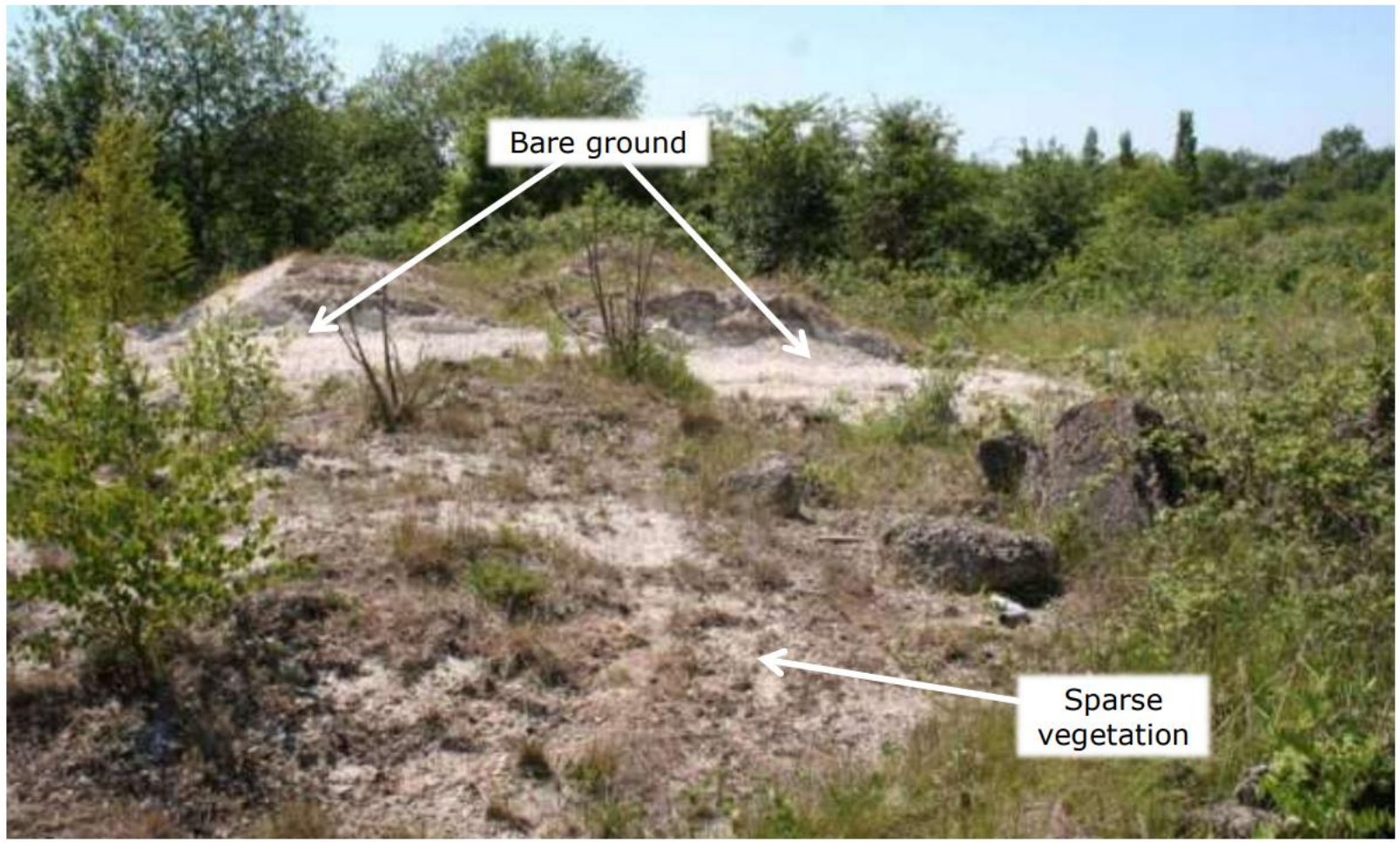
the following criteria need to be met…

Each of these 5 criteria must be met to be Open Mosaic Habitat on Previously Developed Land:

1. The area of open mosaic habitat is at least 0.25ha (2,500 m^2 or 50m x 50m) in size.
2. Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added.
3. The site contains some vegetation. This will comprise early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low soil nutrient status or drought). Early successional communities are composed of (a) annuals, or (b) mosses/liverworts, or (c) lichens, or (d) ruderals, or (e) inundation species, or (f) open grassland, or (g) flower-rich grassland, or (h) heathland.
4. The site contains unvegetated, loose bare substrate and pools may be present.
5. The site shows spatial variation, forming a mosaic of one or more of the early successional communities (a)–(h) above (criterion 3) plus bare substrate, within 0.25ha.

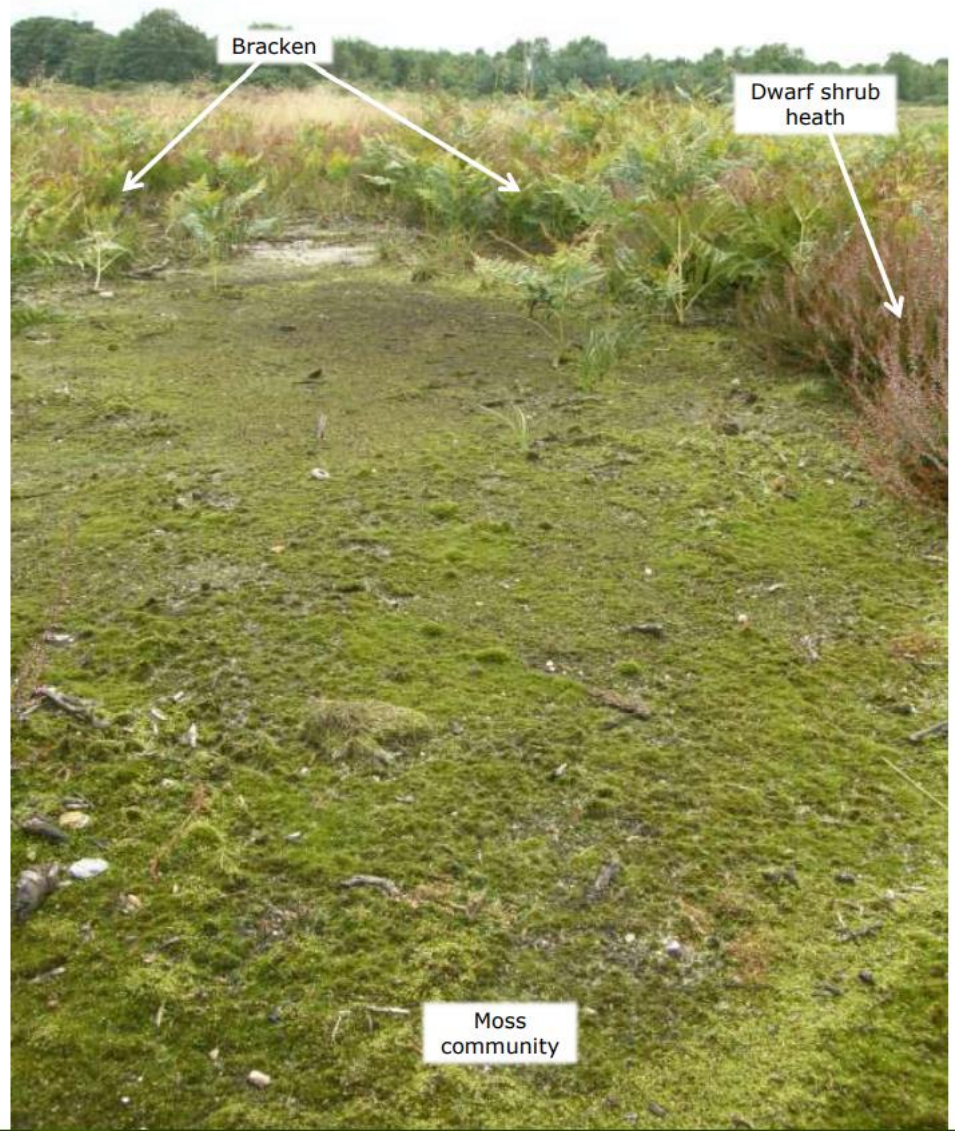
D.1 Early successional vegetation

Bare ground – larger (over 50 cm by 50 cm) areas of bare ground, either soil or other substrates.



Sparse vegetation – plants of various kinds interspersed with smaller (less than 50 cm by 50 cm) areas of bare ground. Sparse stress tolerant annuals, mosses or liverworts and lichens should be included in the following categories.

Moss or liverwort communities – areas dominated by mosses or liverworts with few or no other plants, but excluding lichen and bryophyte heaths.



Lichen/bryophyte heath – lichen (often *Cladonia* species) and bryophyte communities on acid substrates where there is less than 30% cover by vascular plants. It is generally found in association with other heathland or acid grassland vegetation.

Thanks for watching and listening,

Stuart

A project hopes to improve the evidence we have on Open Mosaic Habitat ('Brownfield') sites in Cumbria

It is a collaborative project involving local authorities, Cumbria Local Nature Partnership, Cumbria Biodiversity Data Centre (CBDC), National Trust, Cumbria Wildlife Trust, Butterfly Conservation and University of Cumbria to improve the information we have about Open Mosaic Habitat (OMH). This will help to ensure that data we have is up-to-date and fit for purpose, to help support the Local Nature Strategy, Cumbria Nature Recovery Network and local authority work.