

BOGS

Bogs are acid peatlands supporting specialised flora and fauna, fed predominantly by rain water. They require water-logging for peat formation and this peat acts as a carbon sink.

UK Priority Habitats covered by this statement:

Blanket bog
Lowland raised bog

Cumbria Biodiversity Action Plan habitats covered by this statement:

Blanket bog
Lowland raised mire



Blanket bog, Rundale Fell © Stephen Hewitt

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Description

Bogs are peatlands that receive their nutrients from rainfall, as opposed to fens which receive their nutrients from ground water. Bogs may have similar vegetation cover to heathland but they have a deeper peat layer (more than 0.5m).

There are two types of bog in Cumbria. **Blanket bogs** are mantles of peat formed in the uplands over gently undulating hills, on plateaux and in hollows. **Lowland raised bogs** differ in that they develop in hollows and shallow lakes on low-lying, level ground, near to estuaries or on the floodplains of rivers, where decaying vegetation has built up to form quite obvious raised mounds of peat.

Bogs require permanently waterlogged conditions for peat to form and accumulate from dead plant material that only partially decomposes. Decomposition is unable to fully take place because the lack of oxygen prevents the action of micro-organisms.

Bog vegetation is characterised by *Sphagnum* bog mosses, Cotton-grasses, Cross-leaved Heath and Heather. Sundews, Bog Rosemary and Cranberry are also common.

Blanket bogs are important for the populations of breeding birds which they support, including Golden Plover, Dunlin, Curlew, Red Grouse, Black Grouse, Short-eared Owl, Hen Harrier and Merlin. Blanket bogs support a variety of invertebrates, including the Northern Dart moth.

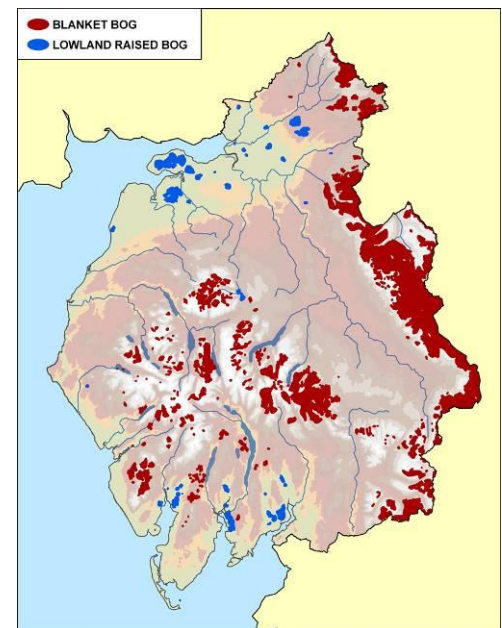
Lowland raised bogs support a unique invertebrate grouping, which includes uncommon species such as the Large Heath butterfly, White-faced Dragonfly or Darter, Downy Emerald dragonfly and the Bog Bush-cricket, as well as a large number of moths. A number of birds are associated with lowland raised bogs, including Curlew and Snipe. Raised bogs provide one of the last refuges for Nightjar in Cumbria.

Distribution and Extent

Very extensive areas of **blanket bog** are found on the North Pennine and Lake District Fells, including Moorhouse and Upper Teesdale National Nature Reserve (NNR), Butterburn Flow NNR, Geltsdale, Skiddaw fells, Haweswater and Shap fells, and Armboth Fell.

Cumbria is one of the most important areas in England for **lowland raised bog**. Large areas are found on the coastal plains of the Solway and Duddon estuaries and around Morecambe Bay. Raised bogs can also be found inland, though usually in more confined and hence smaller sites.

Lowland raised bogs include the South Solway Mosses National Nature Reserve (NNR) and Drumburgh Moss Cumbria Wildlife Trust (CWT) reserve on the Solway Plain. In the south of the county the most extensive sites are Roudsea Wood and Mosses NNR, the Duddon Mosses NNR, and Foulshaw Moss and Meathop Moss CWT reserves.



*Distribution of bogs in Cumbria
(provided for illustrative purposes only)*

Conservation Issues

The most significant threats to bogs come from changes to the hydrology of the peat body as a result of drainage (either of the peat body itself, or of adjacent land) and from direct loss of all or part of the peat body as a result of peat extraction for commercial or domestic use. Agricultural reclamation and forestry planting have also had a significant impact.

Bog surfaces are fragile and activities such as over grazing and burning are likely to have a detrimental effect. Recreational activities such as off-road driving, motorbike scrambling, mountain biking, horse riding and walking can all result in erosion and damage to the surface vegetation, and can also affect the hydrological integrity of the bog.

Tree and scrub encroachment on lowland raised bogs (generally by birch, pine and rhododendron) is a frequent consequence of lowered water tables caused by drainage.

The peat bodies which form lowland raised bogs and blanket bogs are major carbon sinks as they trap carbon in the un-decomposed vegetation. If peat bodies are damaged the peat starts to dry out and carbon is released into the atmosphere contributing to climate change. The maintenance and restoration of bogs is therefore an important action to help reduce climate change impacts.

Planning Considerations

- Any development that may impact upon bog habitat would require an assessment of the likely effects on the habitat and, as necessary, appropriate protection and mitigation measures.
- Lowland raised bogs and blanket bogs take thousands of years to develop and therefore cannot be re-created within acceptable timeframes.
- Peatland is a major carbon sink.
- Any development which leads to the direct loss of peat, the disturbance of peat, the lowering of the water table or increased drainage within the site will be damaging to this habitat. Peat disturbance introduces air which leads to peat breakdown.
- Landscaping and tree planting schemes on bogs are inappropriate.
- Mineral extraction, for deposits under the peat or even at a distance, may impact upon the hydrology of the peatland.
- Wind farm development on blanket bog can impact upon the site's hydrology, cause localised breakdown of peat and surface run-off, and can directly damage the vegetation and reduce habitat availability for breeding and over-wintering birds.
- The majority of lowland raised bogs in Cumbria are Special Areas of Conservation and SSSIs, but some small sites remain outside the statutory designation system. These smaller sites are likely to be designated County Wildlife Sites.
- Many large areas of blanket bog are within Special Areas of Conservation and SSSIs, however large areas are also found outside the statutory designation system, as are many smaller areas of blanket bog.
- Any development that may have a significant effect, directly or indirectly, on a Special Area of Conservation would need to be assessed under the Habitats Regulations.

Enhancement Opportunities

- Bog habitats cannot be created. but existing sites can often be restored in the long term if the hydrology of the bog is restored, for example by blocking drains both on the bog itself and on surrounding land (which may have formed part of the bog in the past), provided that all damaging activities such as peat extraction have ceased. Any trees and scrub should also be removed.
- Promotion of peatland habitat conservation for its additional carbon capture benefit.

Key Species

The following Key Species could benefit from enhancement of this habitat, or be negatively impacted upon by inappropriate developments on or near this habitat (LRB: occurs on lowland raised bog, BB: occurs on blanket bog):

Marsh Saxifrage (BB)	Skylark (LRB & BB)	Merlin (BB)
Large Heath butterfly (LRB)	Short-eared Owl (BB)	Red Grouse (BB)
Argent and Sable moth (LRB)	Nightjar (LRB)	Curlew LRB & BB)
White-faced Dragonfly (LRB)	Dotterel (BB)	Golden Plover (BB)

Viviparous (common) Lizard (LRB)
Adder (LRB)

Hen Harrier (BB)
Reed Bunting (LRB)

Black Grouse (BB)

Further Information

[Cumbria Wildlife Trust. Lowland raised bogs](#)

[Gov.UK Planning and Development](#)

[Water Level Management - Association Of Drainage Authorities](#)

[Planning Practise Guidance The Natural Environment.](#)

[Countryside Stewardship Manual 2016](#)

Contacts

- **Natural England: Cumbria** 0300 060 3900 Email: cumbria@naturalengland.org.uk
- **Cumbria Wildlife Trust**, 01539 816300 Email: mail@cumbriawildlifetrust.org.uk
- **RSPB**, Campfield Marsh Reserve: 01697 351330 Email: campfield.marsh@rspb.org.uk

Current Action in Cumbria

- Restoration of blanket bog and lowland raised bog is occurring on many sites in Cumbria. There is a considerable degree of expertise in this area that has been developed by organisations such as Natural England, RSPB and Cumbria Wildlife Trust.
- The Countryside Stewardship Scheme run by Natural England provides financial incentives to manage land in a way that is sympathetic to its nature conservation interest and includes options for blanket bog (moorland) and lowland raised bog.