

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 © 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**, which are mantles of peat formed in the uplands over gently undulating hills, on plateaux and in hollows; and **lowland raised bogs**, which 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.

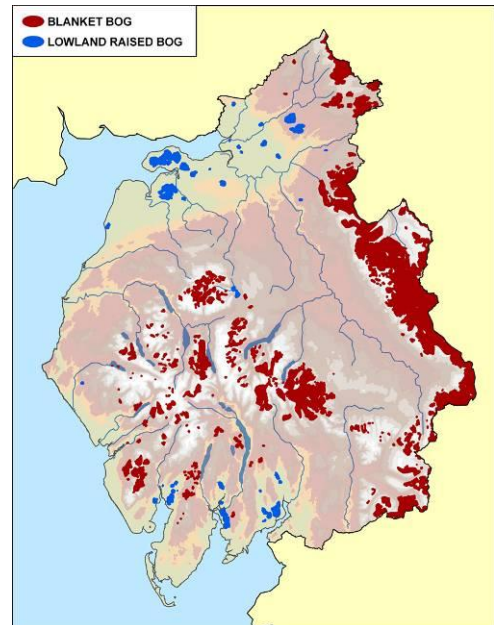
Lowland raised bogs support a unique invertebrate grouping, which includes uncommon species such as the Large Heath butterfly, White-faced Dragonfly or Darter, Downy Emerald dragonfly and the Bog Bush-cricket, as well as a large number of moths. A number of birds are associated with lowland raised bogs, 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 (either 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, burning, 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

- PPS9 states that local authorities should conserve important natural habitat types (priority habitats and habitats of principal importance in England), and identify opportunities to enhance and add to them.
- 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

- Bogs 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 benefits.

Habitat Targets

- Habitat targets for Cumbria can be found in a separate document "Habitat Targets, Planning Considerations and Enhancement Opportunities" available from www.lakelandwildlife.co.uk or by clicking [here](#)

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)	Hen Harrier (BB)	Black Grouse (BB)
Adder (LRB)	Reed Bunting (LRB)	

Further Information

[UK BAP blanket bog](#)

[UK BAP lowland raised bog](#)

[Habitats of principal importance in England](#) Section 41 NERC Act list

[Cumbria BAP blanket bog](#)

[Cumbria BAP lowland raised mire](#)

[Peat formation information](#)

[Blanket Bog information](#) from Wales

[Buglife: habitat management advice: blanket bog](#)

[Buglife: habitat management advice: lowland raised bogs](#)

[RSPB: management advice on moorland gripping](#)

[RSPB: Spatial Planning Guide for on-shore wind farm developments in Cumbria](#) (Wind Turbines and Sensitive Bird Populations, and the alert map showing deep peat soils)

[Cumbria Wildlife Trust Reserves](#), Drumburgh, Foulshaw and Meathop Mosses

[Environmental Stewardship](#) and [HLS handbook](#)

Contacts

- **Natural England**, Juniper House, Murley Moss, Oxenholme Rd, Kendal, Cumbria, LA9 7RL, Tel: 0300 060 2122, cumbriaplanning@naturalengland.org.uk
- **Cumbria Wildlife Trust**, Tel: 01539 816300, mail@cumbriawildlifetrust.org.uk
- **RSPB**, Campfield Marsh Reserve: Tel: 01697 351330, campfield.marsh@rspb.org.uk.

Current Action in Cumbria

- Restoration of blanket bog and lowland raised bog is occurring on many sites in Cumbria and 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 Environment Agency in conjunction with partners is producing Water Level Management Plans for key sites aims to provide a framework for the preservation of the hydrological regimes of these sites.

- The Environmental 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.
- [North Pennines AONB Peatscapes Project](#) which aims to conserve and enhance the peatland resource of the AONB
- Natural England, RSPB, Cumbria Wildlife Trust, Environment Agency, Forestry Commission, The National Trust, Cumbria Tourism and Lancashire and Blackpool Tourism have set up a project to enhance the network of wetland sites around Morecambe Bay by securing and restoring existing wetland sites in the Lyth Valley and the restoration of 60ha lowland raised bog at Witherslack Mosses.
- The South Solway Mosses is one of the last remaining areas of lowland raised bog in England. Natural England, Cumbria Wildlife Trust, RSPB, Solway Coast AONB and the Environment Agency are working together in the “Solway Wetlands Project” to restore the natural wealth of Cumbria’s raised peatbogs. The project aims to restore the correct hydrological conditions for peat to start growing again, over all the degraded parts of the bog, as well as encouraging changes in the land management practices outside the boundary to protect the hydrology of the system as a whole.