EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Moor House – Upper Teesdale
Unitary Authority/County:	Cumbria, Durham
SAC status:	Designated on 1 April 2005
Grid reference:	NY799358
SAC EU code:	UK0014774
Area (ha):	38795.99
Component SSSI:	Appleby Fells SSSI, Moor House and Cross Fell SSSI, Upper Teesdale SSSI

Site description:

This large site in northern England consists of an upland complex on limestone and gritstone, with enclosed hay meadows and pastures as well as large tracts of mountain and moorland, with varied and extensive mires and flushes, acid and calcareous grasslands, and dwarf shrub heaths. Other valued habitats present include an upland water body, cliffs and screes of varying chemistry and the largest stands of juniper in England.

The site contains a calcium-rich nutrient-poor water body, Tarn Dub; an upland pool which is impermanent in nature and situated on the slopes of Cronkley Fell. A species-poor flora includes stoneworts *Chara* spp. in the deeper parts, as well as shoreweed *Littorella uniflora*, the aquatic moss *Fontinalis antipyretica* and tubular water-dropwort *Oenanthe fistulosa*.

Moor House – Upper Teesdale includes large swathes of blanket bog dominated by heather *Calluna vulgaris* or cottongrasses *Eriophorum* spp. A few areas display small-scale surface patterning, with distinct bog-moss *Sphagnum* hollows and intervening ridges. Spring-fed flush fens are widespread, often as part of complex vegetation mosaics. An exceptionally important rare plant flora is associated with the flush vegetation, including species such as bird's-eye primrose *Primula farinosa* and Scottish asphodel *Tofieldia pusilla*. On the highest and coldest parts of the site, fen grades into high altitude flush communities where there is surface seepage of base-rich water. The site is a southern outpost for many of the rarer arctic-alpine plants characteristic of this habitat type, with a unique relict mountain flora. Teesdale sandwort *Minuartia stricta* is restricted to Upper Teesdale, and other rare species found in this habitat type include false sedge *Kobresia simpliciuscula*, hair sedge *Carex capillaris* and Scottish asphodel. Tufa springs often occur at the junction between limestone and other, less permeable, rocks at a range of altitudes. The flora associated with them is exceptionally rich and includes rare northern species such as bird's-eye primrose and Scottish asphodel. Round-mouthed whorl snail *Vertigo genesii* lives amongst moss and low-growing sedges at a number of base-rich flushes. The snail is locally abundant at some flushes and dominates the molluscan fauna at many of them. Approximately ten of the flush areas support populations of marsh saxifrage *Saxifraga hirculus*. Individual populations can be large, with several localities supporting thriving populations of many thousands of plants.

Alpine and subalpine heaths occur on an extensive plateau. Characteristically there is an abundance of lichens, especially *Cladonia* species, but on this site there is also an unusual abundance of large clumps of the montane lichen *Cetraria islandica*. At the edge of the plateau bilberry *Vaccinium myrtillus – Cladonia* heath gives way below to a wind-clipped form of heather *Calluna vulgaris* – bilberry heath, which grades into taller heaths of the same

community lower down the slopes. These represent alpine to subalpine transitions.

The summit of Cross Fell has the best-developed and largest area of montane acid grasslands in England. The stiff sedge – woolly fringe-moss *Carex bigelowii – Racomitrium lanuginosum* moss-heath that covers the summit cap has a high cover of woolly fringe-moss. The site supports a large area of semi-natural dry grassland of the blue moor-grass – limestone bedstraw *Sesleria caerulea – Galium sterneri* grassland type. It contains a rich assemblage of relict arctic-alpine species, such as spring gentian *Gentiana verna* and alpine forget-me-not *Myosotis alpestris*. These calcareous grasslands show transitions to a wide range of other vegetation types, including blanket bogs, acid grassland, alkaline fens, mountain hay meadows, limestone pavements, cliffs and base-rich scree. This site also contains grasslands on lead-mine spoil where metal-tolerant species such as spring sandwort *Minuartia verna*, alpine penny-cress *Thlaspi caerulescens* and Pyrenean scurvygrass *Cochlearia pyrenaica* occur, along with lichens such as *Cladonia rangiformis*, *C. chlorophaea* and *Coelocaulon aculeatum*.

Upper Teesdale contains a series of separate fields within several north Pennine and Cumbrian valleys and exhibits a range of variation exhibited by mountain hay meadows in the UK. The grasslands included within the site show very limited effects of agricultural improvement as well as good structure and function. A wide range of rare and local meadow species are contained within the meadows, including globeflower *Trollius europaeus* the lady's-mantles *Alchemilla acutiloba, A. monticola* and *A. glomerulans,*and spignel *Meum athamanticum*. The small white orchid *Pseudorchis albida* is also a diagnostic rarity of this site.

The site contains one of the largest areas of base-rich scree in the UK, consisting of Carboniferous limestone. Communities are diverse and include holly-fern *Polystichum lonchitis*, rigid buckler-fern *Dryopteris submontana*, limestone fern *Gymnocarpium robertianum*, musk thistle *Carduus nutans* and mossy saxifrage *Saxifraga hypnoides*. Hairy stonecrop *Sedum villosum* occurs where scree is flushed by springs. Acidic scree occurs at both high and low altitudes, with diverse plant communities. Cross Fell is a southern outlier of high-altitude gritstone scree, with a flora including rare lichens and widespread montane vascular plants. Ferns including parsley fern *Cryptogramma crispa* and holly fern *Polystichum lonchitis* occur on extensive whin-sill screes at lower altitudes.

Base-rich crevice communities occur on limestone scars. The main community present is characterised by green spleenwort *Asplenium viride* and brittle bladder-fern *Cystopteris fragilis*. Less common species found in this community include hoary whitlowgrass *Draba incana*, alpine cinquefoil *Potentilla crantzii* and holly-fern. The site also supports crevice communities on acidic rocks. Characteristic species present include parsley fern, mountain male-fern *Dryopteris oreades* and northern buckler-fern *D. expansa*. Bearberry *Arctostaphylos uva-ursi* and starry saxifrage *Saxifraga stellaris* also occur. Tall herb communities occur on wet ledges in base-rich rocks, which are inaccessible to grazing livestock. Typical species that occur in these localities include great wood-rush *Luzula sylvatica*, wood crane's-bill *Geranium sylvaticum*, water avens *Geum rivale*, lady's-mantle *Alchemilla glabra*, wild angelica *Angelica sylvestris* and roseroot *Sedum rosea*.

This site has the second most extensive area of juniper *Juniperus communis* scrub in UK and the largest south of Scotland. The main area of juniper scrub grows on the igneous whin-sill, at moderately high altitude. In Upper Teesdale the juniper has developed mainly on heath. There are transitions to dwarf-shrub heath, acidic grasslands and whin-sill cliffs. Small patches of juniper scrub also occur on calcareous soils, including the sugar limestone grassland for which this site is famous. Palaeo-environmental evidence indicates that juniper scrub has been present continuously since the last glacial period.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Alkaline fens
- Alpine and Boreal heaths. (Alpine and subalpine heaths)
- Alpine pioneer formations of the *Caricion bicoloris-atrofuscae*. (High-altitude plant communities associated with areas of water seepage)*
- Blanket bogs*
- Calaminarian grasslands of the *Violetalia calaminariae*. (Grasslands on soils rich in heavy metals)
- Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*). (Base-rich scree)
- Calcareous rocky slopes with chasmophytic vegetation. (Plants in crevices in base-rich rocks)
- European dry heaths
- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. (Calcium-rich nutrient-poor lakes, lochs and pools)
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels. (Tall herb communities)
- *Juniperus communis* formations on heaths or calcareous grasslands. (Juniper on heaths or calcareous grasslands)
- Limestone pavements*
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). (Purple moor-grass meadows)
- Mountain hay meadows
- Petrifying springs with tufa formation (*Cratoneurion*). (Hard-water springs depositing lime)*
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). (Dry grasslands and scrublands on chalk or limestone)
- Siliceous alpine and boreal grasslands. (Montane acid grasslands)
- Siliceous rocky slopes with chasmophytic vegetation. (Plants in crevices on acid rocks)
- Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*). (Acidic scree)

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Marsh saxifrage *Saxifraga hirculus*
- Round-mouthed whorl snail *Vertigo genesii*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0014774
Date of registration: 14 June 2005

Signed: Trevor Salmon

On behalf of the Secretary of State for Environment, Food and Rural Affairs