

**Site Name:** West Pennine Moors      **Unitary Authority/County:** Lancashire; Blackburn with Darwen; Bolton; Bury

**District:** Chorley; Hyndburn; Rossendale

**Status:** Site of Special Scientific Interest (SSSI) notified under section 28C of the Wildlife and Countryside Act 1981

**Local Planning Authority:** Lancashire County Council; Greater Manchester Combined Authority; Blackburn with Darwen Borough Council; Bolton Council; Bury Council; Chorley Council; Hyndburn Borough Council; Rossendale Borough Council

**Ordnance Survey 1:50,000 sheets:** 103, 109      **National Grid reference:** SD687183

**Notification date:** 17 November 2016      **Area:** 7,615.49 ha

### Reasons for notification

The West Pennine Moors SSSI supports an extensive mosaic of upland and upland-fringe habitats. It is of special interest for the following nationally important features that occur within and are supported by the wider habitat mosaic:

- blanket bogs;
- wet and dry heathlands;
- acid and lime-rich flushes;
- rush pastures and mire grasslands;
- acid grasslands;
- neutral hay meadows and pastures;
- wet and dry broadleaved woodlands and scrub;
- diverse assemblages of upland moorland, in-bye and woodland breeding birds;
- breeding black-headed gulls *Chroicocephalus ridibundus*, Mediterranean gulls *Larus melanocephalus* and grey herons *Ardea cinerea*; and
- populations of starry lady's-mantle *Alchemilla acutiloba*, large-toothed lady's-mantle *A. subcrenata* and floating water-plantain *Luronium natans*.

### General description

The West Pennine Moors comprise three distinct areas of moorland bordered by major roads to the west and east, stretching from Horwich and Bolton in the south to Darwen in the north and to Haslingden and Ramsbottom in the east. Whilst geologically a continuation of the Millstone Grit series of the main Pennine range of uplands, it is physically separated from the South Pennines by the Irwell Valley. The area still retains the traditional Pennine character of open moorlands, from which streams descend into wooded cloughs, pastures and meadows, whilst being distinctive in character as a result of its western-oceanic influence and lower altitudes.

Once the major source of income, agriculture is now fragmented by the built environment, industry and housing. This is a landscape of upland livestock farming and traditional field boundaries on large estates set against the strong urban character of many densely-populated nearby towns. The high rainfall and numerous streams running from the uplands made the area important as a supply of drinking water to the nearby conurbation of Greater Manchester. The many rivers and streams also led to the area's prominence in the industrial revolution, with the valleys supporting many textile and other mill industries, as well as mining and quarrying. Industrialisation has left its mark on the West Pennine Moors, most noticeably the chain of reservoirs nestling between the moorland blocks, which now provide key habitat for birds, and the legacy of historic air pollution that has left many of the upland habitats lacking in species diversity.

### Upland habitats

The Millstone Grit geology of the region is a hard rock which impedes drainage and has given rise to the development of large flat-topped plateaus covered with deep peat above 400m altitude. The blanket bogs occur over almost 4,000 ha of the West Pennine Moors on Withnell, Anglezarke and Rivington Moors in the west, and Darwen and Turton Moors, Haslingden, Oswaldtwistle and Holcombe Moors further east.

The principal vegetation of the blanket bogs is a community of hare's-tail cottongrass *Eriophorum vaginatum* with heather *Calluna vulgaris*, common cottongrass *E. angustifolium* and purple moor-grass *Molinia caerulea*. Where the water table is close to the bog surface, bog-mosses, including flat-topped bog-moss *Sphagnum fallax*, fringed bog-moss *S. fimbriatum*, red bog-moss *S. capillifolium* and lustrous bog-moss *S. subnitens*, are commonly found in the understorey. Less commonly encountered species have a patchier distribution, such as the population of lesser cow-horn bog-moss *Sphagnum inundatum* on the southern flanks of Winter Hill. The blanket bog on Withnell Moor is typical of lower elevations within the West Pennine Moors.

More species-rich blanket bog occurs in patches but is more prevalent on Turton Moor. Flowering plants associated with these communities are bilberry *Vaccinium myrtillus*, crowberry *Empetrum nigrum*, cranberry *Vaccinium oxycoccos*, bog-rosemary *Andromeda polifolia* and, very locally, royal fern *Osmunda regalis*. As a result of previous management and/or wildfire, some areas are dominated by purple moor-grass. This community can contain dense patches of bog-mosses (including the peat-forming papillose bog-moss *Sphagnum papillosum*) below the thick grass canopy.

On the shallower soils of the lower slopes there are small distinctive patches of wet heath containing cross-leaved heath *Erica tetralix* and bog-mosses. Larger expanses of dry heath are often found in association with disused mine workings where, as a result of previous grazing and burning management, the dominant species is heather. More species-rich areas also support bilberry, tormentil *Potentilla erecta*, heath bedstraw *Galium saxatile* and wavy hair-grass *Deschampsia flexuosa*. The heathland at Haslingden Grane is particularly important for its small population of adders *Vipera berus*.

Blanket bog and heath are less common in the Ramsbottom to Ogden Reservoir area where very species-poor acid grassland dominated by mat-grass *Nardus stricta* is more frequently recorded, often related to the steeper sloping topography of this moorland area.

Acid flushes are an important component of the blanket mire landscape. Many support species such as round-leaved sundew *Drosera rotundifolia*, sedges, including common sedge *Carex nigra*, and mosses which may otherwise be scarce across the peatland areas. Oak Field provides the best example of the area's acid flushes, including species infrequently encountered elsewhere, such as bog asphodel *Narthecium ossifragum*, white sedge *Carex canescens*, marsh arrowgrass *Triglochin palustris* and marsh violet *Viola palustris*.

Of greater rarity is the suite of lime-rich flushes, such as Belmont Head Flush, and that at White Coppice Flush, where the spring water is so rich in lime that calcareous deposits are forming. The springs contain carpets of lime-loving bryophytes in which curled hook-moss *Palustriella commutata* is characteristic and conspicuous. Around the springs are the insectivorous plants round-leaved sundew and common butterwort *Pinguicula vulgaris*, as well as other lime-rich flush vegetation, such as greater tussock-sedge *Carex paniculata*, long-stalked yellow-sedge *C. lepidocarpa* and tawny sedge *C. hostiana*.

The open moorland and adjacent moorland fringe or in-bye support a diverse assemblage of upland breeding birds including teal *Anas crecca*, red grouse *Lagopus lagopus*, merlin *Falco columbarius*, peregrine *F. peregrinus*, curlew *Numenius arquata*, short-eared owl *Asio flammeus*, wheatear *Oenanthe oenanthe*, raven *Corvus corax* and twite *Linaria flavirostris*. The higher areas of blanket bog with shorter vegetation and pools are important for nesting golden plover *Pluvialis apricaria* and dunlin *Calidris alpina*. Other species require a mosaic of extensive habitats for successful nesting and foraging, nesting on the unenclosed moorland whilst often foraging elsewhere, including wet grassland and rush pastures in the in-bye fields below the moorland line. Breeding lapwing *Vanellus vanellus* nest and forage on the in-bye areas of the SSSI.

### Moorland fringe grasslands

Throughout the lower slopes of the moorland blocks and the enclosed in-bye land are areas of rush pasture and mire grassland. While the majority of these communities tend to be species-poor, the more species-rich stands are dominated by blue-green sedges such as star sedge *Carex echinata* and common sedge, with sweet vernal-grass *Anthoxanthum odoratum*, red fescue *Festuca rubra*, cuckooflower *Cardamine pratensis* and a thick carpet of brown mosses.

Although small in area, the meadows and pastures of the in-bye are some of the most species rich areas within the West Pennine Moors. The majority of these grasslands on the lower slopes are acid in nature, with some of these communities extending on to the lower slopes of the moorland blocks. Of special note are the grasslands, both traditional hay meadows and pastures, of Bradley's Farm. The dominant grass of these communities is common bent *Agrostis capillaris*, with mat-grass, sheep's-fescue *Festuca ovina* and heath-grass *Danthonia decumbens* in frequent association with tormentil, heath bedstraw, selfheal *Prunella vulgaris*, cat's-ear *Hypochaeris radicata* and autumn hawkbit *Scorzoneroides autumnalis*. These fields also support a population of the locally rare grass purple small-reed *Calamagrostis canescens*.

The more limited number of unimproved neutral hay meadows are equally significant, especially those at Sunnyhurst in the north-west of the site where populations of the Nationally Rare starry lady's-mantle *Alchemilla acutiloba* and large-toothed lady's-mantle *A. subcrenata* occur within the traditionally managed grasslands. Among other species, these grasslands support frequent sweet vernal-grass and red fescue, with pignut *Conopodium majus*, common mouse-ear *Cerastium fontanum*, meadow vetchling *Lathyrus pratensis*, yellow-rattle *Rhinanthus minor* and red clover *Trifolium pratense*. Additionally, a remnant pasture in the Belmont area supports an outstanding population of globeflower *Trollius europaeus*. In addition to their flowering plants, traditionally managed grassland fields in the West Pennine Moors also support a rich diversity of fungi, the area being good for waxcaps in particular. Of significance is the pink waxcap *Hygrocybe calyptriformis* var. *calyptriformis* which is found at three locations within the site.

### Woodland

The West Pennines Moors include a number of woodlands along steep-sided cloughs and some water courses. Typically, these are upland oak woods with a species-poor heathy understorey interspersed with a mosaic of other, generally wet woodland and scrub types, which often provide a transition to more open moorland habitats.

Stronsey Bank, Lead Mine's Clough, Dean Wood, Tiger's Clough, Hall Wood and Longworth Clough are ancient woodlands, with a predominance of sessile oak *Quercus petraea* or pedunculate oak *Q. robur* in the canopy, alongside abundant downy birch *Betula pubescens*, silver birch *B. pendula* and rowan *Sorbus aucuparia*. Holly *Ilex aquifolium* and hazel *Corylus avellana* are common in the understorey. On the ground, wavy hair-grass is interspersed with ferns, such as hard-fern *Blechnum spicant* or lemon-scented fern *Oreopteris limbosperma*, bilberry and wood-sorrel *Oxalis acetosella*.

The woodland within Longworth Clough is the most diverse, with a mosaic of woodland, scrub, heathland and grasslands. There is a well-developed shrub layer in places, including bird cherry *Prunus padus*, hawthorn *Crataegus monogyna* and guelder-rose *Viburnum opulus* on the wet, lime-rich ground. Within the many flushes of this woodland is also an area of an uncommon wet woodland type with alder *Alnus glutinosa* and greater tussock-sedge.

Smaller stands of trees are scattered across the upland massifs, many of which are unfenced and grazed with the wider moorland habitats. These woodlands have thinner canopies than the dense woodland blocks and, as a result, support a richer ground flora. For example, the wet woodland at Owshaw Clough, interspersed with numerous species-rich flushes, has frequent marsh hawk's-beard *Crepis paludosa*, greater bird's-foot-trefoil *Lotus pedunculatus* and meadow vetchling, as well as marsh valerian *Valeriana dioica* and many blue-green sedges.

The woodlands are also important because they support a diverse assemblage of woodland breeding birds, including scarce and/or rapidly declining species such as tree pipit *Anthus trivialis*, wood warbler *Phylloscopus sibilatrix*, spotted flycatcher *Muscicapa striata*, pied flycatcher *Ficedula hypoleuca* and willow tit *Poecile montana*. Some species, including buzzards *Buteo buteo* and

ravens, nest in the woodlands and hunt for food over the adjacent moorland and in-by. Tree pipits require more open areas, particularly in the transition from woodland to moorland and grassland.

#### Flowering plants

In addition to the lady's-mantles in the meadows mentioned above, one of the water-bodies within Troy Quarry is home to an important population of the Nationally Scarce floating water-plantain *Luronium natans*.

#### Breeding birds

As well as the upland moorland, in-by and woodland breeding bird assemblages described above, the SSSI supports important breeding populations of gulls and herons. Belmont Reservoir and the surrounding area supports nationally important numbers of breeding black-headed gulls *Chroicocephalus ridibundus* and Mediterranean gulls *Larus melanocephalus*, which nest together throughout the spring and early summer. Upland breeding birds, including large numbers of lapwing and curlew, also use the open water and, reservoir margins, as well as nearby pasture-land, for breeding, foraging, and roosting. In addition to its breeding birds, Belmont Reservoir supports an exceptional population of common toad *Bufo bufo*.

Other bird species also benefit from the man-made water bodies within the area, including grey heron *Ardea cinerea* which nests in a large heronry in plantation woodland on the banks of Turton and Entwistle Reservoir.