



Views About Management

Wildlife and Countryside Act 1981 Section 28(4)

A statement of Natural England's views about the management of West Penwith Moors and Downs (Hallow ha Gonyow Pennwydh West) Site of Special Scientific Interest (SSSI)

This statement represents Natural England's views about the management of the SSSI for nature conservation. It sets out, in principle, our views on how the site's special conservation interest can be conserved and enhanced. Natural England has a duty to notify the owners and occupiers of SSSI of its views about the management of the land.

Not all of the management principles will be equally appropriate to all parts of the SSSI. Also, there may be other management activities, additional to our current views, which can be beneficial to the conservation and enhancement of the features of interest.

This statement does not constitute consent for any of the 'operations requiring Natural England's consent'. The written consent of Natural England is required before carrying out any of those operations. Natural England welcomes consultation with owners, occupiers and users of the SSSI to ensure that the management of this site conserves and enhances the features of interest, and that all necessary prior consents are obtained.

Background

West Penwith Moors and Downs SSSI comprises a mosaic of lowland heathland, fen (including valley mires, marshy grassland, and transitions to wet woodland), lowland dry acid grassland, bracken, scrub, granite outcrops and artificial habitats such as ponds and old trackways. This mosaic of habitats supports rare and scarce plants, lichens, invertebrates, and breeding Dartford warbler.

The importance of the site is a function of its large extent across a number of parcels in close proximity and the juxtaposition of and transitions between habitats.

For centuries, the moors and downs have been maintained by traditional management using extensive livestock grazing and cutting. This has depleted the thin acid soils of nutrients and kept the land mostly free of scrub and trees. This management in combination with natural variations in soil conditions and drainage has created a rich diversity of habitats.

Management principles

All of the habitats require management to maintain their suitability for the interest features. The most important principles are to maintain or restore water quality and quantity and maintain relative proportions of woodland, scrub, fen, heathland, and grassland habitats and connectivity for mobile species. In many cases the habitats and species they support rely on similar management. Cultivation, the application of pesticides, fertilisers (including manures) and lime to semi-natural habitats and wetland (mire) catchments can be damaging and should be avoided within the semi natural habitats. Where there are existing applications to productive farmland within the wetland (mire) catchments Natural England will consider the likely impact of continuing application upon the mires, based on best-available evidence.

Natural England's view is that appropriate management of the valley mires for conservation will require significant changes to some of the farming activities within the SSSI. However immediately ceasing established farming activities could have immediate, abrupt, and

significant impacts on farm businesses. Further, ceasing these activities immediately is not essential to the achievement of favourable condition of the SSSI in the long term. Natural England's view is that, having regard to its general duties and when exercising its consenting function, the continuation of certain of the activities for a period of five years will be appropriate and proportionate in the circumstances.

Lowland heathland

On this site the majority of the lowland heathland is 'humid' heath which results from the wet oceanic climate of west Cornwall and unimpeded drainage. Heathland occurs in mosaics with and/or transitions to other habitats such as mires, acid grassland, bracken, and scrub.

Heathland supports the greatest diversity of plants and animals where management maintains its open nature and promotes a varied structure of uneven-aged stands of native heathers and other characteristic plants such as Western gorse. It is generally beneficial if all stages of the heather life cycle are present. Without such management, heathland becomes progressively dominated by bracken, European or western gorse and, on wetter ground, purple moor-grass tussocks. Eventually scrub and trees may invade. The precise management requirements will vary both between and within sites according to the needs of the different heathland interests present and site conditions.

Low intensity grazing is a suitable means of managing dry heath. By grazing selectively in different areas and on different plants, free-roaming livestock help to maintain variation in the vegetation composition and structure. They can also suppress scrub encroachment and provide some light poaching to create small pockets of bare peat and sandy ground that are of benefit to a variety of specialised plants, invertebrates, and reptiles. Cattle grazing is an acceptable method of management, but hardy ponies may also be used, although care must be taken to avoid damage to the heather by trampling. An appropriate stocking rate should take into account local conditions and the timing and length of grazing, but an off-take of between 30-40% of the current growth increment is desirable. Heavy grazing should be avoided on wet heath as it can lead to a decline in characteristic dwarf shrub cover in favour of grass and sedge species, as well as excessive poaching and erosion of the underlying peat.

Cutting or mowing may also be useful options where varied structure with a mosaic of patches of heather and other dwarf shrubs of different ages is desired. The cut material must be removed to avoid nutrient accumulation and allow the cut plants to re-sprout successfully. Burning can be damaging to wet and humid heath by destroying the structure of peat soils and preventing the build-up of peat-forming mosses. It can also adversely affect populations of reptiles, small mammals, ground-nesting birds, and lichens. For these reasons heathland management should primarily be achieved through livestock grazing and/or cutting or mowing. However, burning can be useful to bring neglected sites back into management and facilitate grazing or in target locations for the management of particular species such as pale dog-violet *Viola lactea*. Burning should be carefully planned as part of a wider habitat management plan. Individual burns should be small in extent (e.g. no greater than 2 ha) and the Heather and Grass Burning Code must always be followed. Some areas of mature heath should be retained to help provide the full range of dwarf-shrub ages and habitat for species which require mature heath such as dodder *Cuscuta epithimum* and Dartford warbler.

The heathlands of West Penwith Moors and Downs support a diverse assemblage of invertebrates, which is reliant on a varied physical structure of vegetation, particularly when found in a patchwork of intimate mosaics. A range of structural stages or 'surfaces' should be present to provide as many niches as possible from short, pioneer heathers, through areas of 'building' and mature heather and gorse to patches of scattered scrub and trees, along with small, scattered patches of bare soil throughout. Heathland vegetation is further enhanced for invertebrates when unsurfaced paths and tracks supporting a range of flowering plants from spring to early autumn are present. Large areas of single-aged, uniform

heathland support far less invertebrate diversity and management should aim to gradually diversify the structure of such areas through cutting, grazing and, where appropriate, carefully managed patch-burning.

In areas where pale dog-violet, a rare and declining plant of acid soils, is known to be present or to have been present in the past there are significant opportunities for population expansion and recolonisation. Areas of open, low heathland vegetation should be maintained or created by cutting, small controlled burns and/or targeted grazing. This plant requires open conditions with little competition from heathers, gorse or tall grasses.

Retaining some scattered individual trees and small patches of scrub is beneficial to wildlife. However, some additional management may be required to remove any dense bracken or scrub invasions or to control tree encroachment where this begins to impact on the open nature of the heath. This can be achieved either by mechanical control or manual cutting (depending on ground conditions) followed by the careful application of a suitable herbicide where necessary.

Where European gorse is present, scattered stands with a bushy structure rather than large continuous blocks are of greater benefit to the characteristic bird and invertebrate species associated with gorse scrub. For example, Dartford warbler require areas of open heath (less than 25 trees per hectare) with over 50% cover of mature heath (preferably over 30 cm tall) and patches of dense, compact, mature gorse bushes (0.5-3m tall). Winter cutting of 'leggy' stands of European gorse and the removal of cut material will maintain gorse at different stages of re-growth and avoid nutrient accumulation in the soil. At this site, however, the relative abundance of Western gorse is not necessarily an indication that it is badly managed.

Management should ensure that necessary measures are taken to control recreational and other activities that can be damaging to heathland habitats and species, such as lighting fires or vehicle scrambling. Suitable measures may include a system to allow for the effective control of fires, such as firebreaks, access for fire-fighting vehicles and emergency water, and the careful management of public access.

Old trackways may support populations of coral-necklace, a rare and declining plant. West Penwith Moors and Downs is one of the few remaining strongholds for this species. The site provides significant opportunities for the recolonisation of areas where this species has historically been recorded and also for new populations to become established. Coral-necklace requires open conditions with gravel or sandy surfaces, usually flushed by shallow, clear water from springs or stream-sides. Such trackways should be kept open through light and occasional use by livestock and/or machinery. Abandonment of use leads to the establishment of shading trees, shrubs, coarse grasses, and herbage with which coral-necklace cannot compete. However, the habitat may be made unsuitable for coral-necklace if heavily disturbed, artificially surfaced or if natural hydrology is altered through drainage.

Fens: including valley mires and transitions to wet woodland and marshy grassland

Fen often develops within valleys and the origins and movement of the water within the fen give rise to a number of different vegetation zones. The variety of plant and animal life in the valley mire is closely linked to the number and type of zones it contains. There may be flushes and springs with a characteristic sward of short herbs and mosses on the valley sides and floor where groundwater breaks out at the surface, but these may be overlain by silt or peat on the valley bottom. Valley mires have catchments which provide groundwater which percolates through fissures in the acid rock. These catchments may be extensive and include areas of farmland as well as natural and semi-natural vegetation. In many valleys, there is a central stream intercepting water from the sides and carrying it away from the wetland. A rich variety of other habitats are frequently associated with valley mires including areas of damp and drier grassland, wet heath, natural pools, runnels, seepages, ditches,

willow scrub and wet woodland, all of which add to the diversity of the habitats and species supported.

The maintenance of the characteristic composition and diversity of valley mires is therefore dependent on a number of factors operating both at the surface and below ground. The quantity and quality of the groundwater must be maintained, though the quantity is not likely to be naturally constant throughout the seasons or between wet and dry years. The groundwater comes from aquifers, and these may become depleted due to abstraction or failure to recharge. They may be contaminated by agricultural chemicals such as fertilisers, or by pollution from waste disposal sites. When this occurs the characteristic fen vegetation will be replaced by rank grasses, reeds, and nettles.

Grazing is important in the management of valley mires. Animals help to break up tussocks of rank grasses such as purple moor-grass and open the sward up to a greater variety of plants. The precise timing and intensity of grazing will vary according to local conditions and requirements. Some trampling is necessary to create open soil for invertebrates, mosses, and seedling establishment. Grazing also limits the spread of willow and other trees, which naturally tend to develop around the central watercourse and should be restricted to this area, other than isolated clumps elsewhere for the benefit of birds and invertebrates. Spread of rushes and fast-growing rank vegetation is likely to be an indication of nutrient enrichment and/or overgrazing, the cause of which should be investigated and addressed to maintain or restore the characteristic vegetation communities.

Supplementary livestock feeding should not take place within valley mires or within the vicinity of valley mires, including land grazed alongside valley mires. This is to ensure the mire vegetation does not become enriched by nutrients from animal feed/dung or affected by concentrated disturbance (poaching) of soils.

Natural hydrological systems give rise to the most resilient and diverse mires/wetlands. Modifications to the natural hydrological function of wetlands and their catchments, including ditches, drains and deepening of natural water courses, are generally damaging to mires and their component species. No new drainage should be installed, and existing artificial drainage should be removed or disabled unless required for protection of infrastructure or safety. Within the mire the application of materials that modify the natural background nutrient status and soil/water chemistry (other than the carefully targeted spot application of certain herbicides to cut stumps) would be damaging and should be avoided.

Excessive or long-term application of fertilisers (including slurry and manure), lime and other soil improvers within the catchments of the mires may percolate into the groundwater and reach the valley mire altering its ecology, often to the detriment of characteristic flora and fauna. It is important that activities which add nutrients, lime or other pollutants within the mire catchments do not lead to concentrations in groundwater that are not compatible with maintaining or restoring the valley mires.

In some locations the open fen vegetation transitions to wet woodland usually characterised by willow. Whilst small in size, these woodlands add significantly to the diversity of flora and fauna. They benefit from minimum intervention and are best left undisturbed. This allows the development of old stands where individual trees reach maturity and collapse naturally to create gaps in the canopy, leading to a diverse woodland structure. Some dead and decaying wood such as fallen logs or old hollow trees is essential for providing habitats for fungi and dead wood invertebrates. Areas of tussocky fen and undisturbed wet woodland should be retained to provide habitat for shade-loving plants such as Cornish moneywort.

Lowland dry acid grassland

Free-draining, acidic soil is the key requirement of the grassland communities at this site, but their maintenance also depends on active management. If neglected, the sward becomes dominated by tall, vigorous grasses or bracken which, together with an associated build-up

of dead plant matter, suppresses less vigorous species and reduces botanical richness. Traditionally, management has consisted of stock grazing, and this remains the most appropriate management tool. Grazing, through the removal of plant matter and nutrients, helps to maintain an open sward of small tussocky grasses. It also, through disturbance and trampling, creates areas of open ground suitable for colonization by lichens, ephemeral plants and invertebrates which are often characteristic of this type of grassland. However, rabbit grazing, though difficult to control, can also be a useful management tool in some situations. Occasional management of invasive scrub and bracken may be necessary, but no other management should be routinely required.

In areas where pale dog-violet, a rare and declining plant of acid soils, is known to be present, or to have been present in the recent past, areas of low turf should be maintained or created by cutting and/or targeted livestock grazing. This plant requires open conditions with little competition from tall grasses or other herbage.

Lichens

The assemblage of lichens at West Penwith Moors and Downs grows on exposed granite outcrops which are well lit by natural sunlight and have good air quality. Lichens are highly sensitive to changes in environmental and substrate conditions. The key management principles are to ensure that granite outcrops are not removed or subject to increased or unnatural levels of erosion e.g. through rock climbing or footfall and that management ensures maintenance of high levels of sunlight and minimises nutrient enrichment.

The important lichen species on the granite outcrops require open, sunny conditions which would be threatened by the growth of shading scrub or other vegetation. Examples include shrubs e.g. gorse, small trees e.g. willow, ivy, bracken, bramble or non-native shrubs e.g. cotoneaster or berberis. In addition, increased shade can cause luxuriant growth of mosses which overgrow and outcompete lichens. The growth of scrub is often a consequence of little or no management of the surrounding land. Cutting and physical removal of scrub around granite outcrops may be necessary whilst livestock grazing will help maintain open conditions.

Nutrient enrichment is another serious threat to lichens. In addition to background air pollution, local impacts can result from ammonia due to inorganic fertilisers, slurry or manure applications on adjoining land, the installation of nearby pig or poultry units, or high concentrations of livestock or game birds on/around the granite outcrops. Such activities can be damaging to lichens and should be kept as far from granite outcrops as possible, particularly when their source is upwind of the lichens. Generally, the use of herbicides should also be avoided, though some carefully planned application may be helpful in the control of scrub provided it is applied in a targeted manner.

Lichens on rocks may be vulnerable to physical disturbance from recreational walking or climbing. Where this proves to be problematic carefully targeted measures to manage access might be necessary in some areas e.g. popular viewpoints. However, occasional and light levels of disturbance may help maintain open conditions.

Ponds supporting pillwort

Both natural and artificial ponds can support a wide range of scarce and threatened aquatic plants, such as pillwort. Ponds often require periodic management to prevent a build-up of plants and silt which reduce water depth and increase nutrient levels. Silt and plant material should only be removed from a portion of the pond at any one time, allowing sufficient time for recovery before other areas are dredged. Exposed muddy margins should be retained.

The relatively small area and water volume of ponds means they are particularly vulnerable to pollution events and accidental spillages may affect a whole pond. Increased nutrients may cause a loss of aquatic plants and increase algal growth, whilst silt inputs may smother

diminutive plants and lead to rapid infilling. Management of the pond and the surrounding areas should aim to maintain good water quality by limiting inputs of silt and nutrients.

The introduction of bottom feeding coarse fish, which uproot plants and disturb pond sediments, may also cause a loss of aquatic plants, and increase algal growth. Ponds are also susceptible to invasion by non-native aquatic plants such as Australian swamp stonecrop and parrot's feather. These species are able to grow rapidly, taking up available habitat and smothering other plants. They should be controlled or removed where practicable. Some native species such as duckweed are also able to take over in this way, but such growths are usually exacerbated by increased nutrients in the water.

Changes to the use of surrounding land can alter the amount of water reaching the pond, often resulting in the pond drying out. Ponds may be particularly vulnerable where large volumes of groundwater are abstracted nearby.

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