2.2 Upland Heathland

2.2.1 Habitat Description

Upland heathland is a priority UK Biodiversity Action Plan habitat and is represented in the Biosphere by dry dwarf shrub heath and wet dwarf shrub heath, both of which are listed on the Annex 1 of the Habitats Directive. Upland heath is an important habitat that supports a number of priority species including some of the High Focus species identified for the Biosphere such as black grouse, curlew, golden eagle, and golden plover.

Upland heathland is characterised by nutrient poor mineral soils, peaty podsols or shallow peat (less that 0.5m deep) and the presence of dwarf shrubs, notably heather (*Calluna vulgaris*). Species associated with dry dwarf shrub heath, which is found on free draining acid to neutral soils, include blaeberry, crowberry, and bell heather, while those on wet dwarf shrub heath, where heather is less frequent, include cross-leaved heath, deer grass, purple moor grass, sedges, lichens and mosses, notably Sphagnum species.

This is a significant habitat within the Biosphere, with Dumfries and Galloway containing the most extensive area of upland wet heath in the UK south of the Highlands (Map 2). Upland heath is found at Merrick-Kells Hills (SAC/SSSI) and in the Glen App and Galloway Moors (SPA/SSSI). Other areas include Cairnsmore of Fleet (SSSI/NNR), Laughenghie and Airie Hills (SSSI), Artfield Fell, Glenquicken Moor, Auchenroy and Glenmount Upland, Afton Uplands, Black Clauchrie.

The condition of upland heathland in the Biosphere is only known within the Merrick Kells SAC and SSSI, where the mosaic of upland habitat is described as being in favourable maintained condition although heath habitat has been heavily impacted by grazing.

2.2.2 Conservation Objectives

The main conservation objectives for upland heathland are to:

- Establish the condition and extent of areas outwith designated sites
- Restore, extend and enhance upland heaths as part of upland mosaics
- Identify opportunities for restoration in Forest Design Plans and restocking proposals
- Encourage measures that reverse habitat fragmentation
- Use demonstration sites to provide advice on best management and restoration practices for upland heaths

2.2.3 Management

The management prescriptions for upland heath differ according to the type of heathland. Dry heaths are associated with shallow peat or mineral soils, while wet heaths are transitional habitats between dry heaths and blanket bogs. The suggested actions given in the following sections are intended to

indicate the measures that can be adopted. Particular funding schemes may have their own guidance and prescriptions that should be adhered to (eg. agri-environment schemes).

The main management prescriptions for upland heathland are:

- Grazing
- Burning
- Swiping

2.2.3.1 Grazing Management

Historically, sheep grazing on upland heathland suppressed heather by overgrazing, particularly in the winter when the young heather shoots are favoured in the absence of grass. Other species, notably *Molinia caerulea* (purple moor grass) which is less palatable, have then increased and suppressed other vegetation. Cattle are better able to digest purple moor grass than sheep and are proving a beneficial tool in restoring these historically overgrazed sites. Setting the right stocking densities for grazing of heath is crucial in retaining a diverse plant structure. Conversely, undergrazing can lead to an increase in mature stands of ageing, leggy heather, reducing structural diversity and habitat quality and enabling the undesired encroachment of scrub. Wet heath is also vulnerable to trampling and erosion, especially in winter.

Suggested Actions:

- Assess current condition then identify appropriate grazing levels, stock type and timings for the site. Where grazing is having a detrimental impact on vegetation, it would be beneficial to remove stock over winter and/or reduce flock numbers. These management actions may be supported through agri-environment funding (eg. moorland management, stock disposal, away wintering).
- Typically on dry heath in poor condition, grazing at a maximum year round stocking rate of 0.075-0.1 LU/ha or 0.5-0.67 ewes/ha is advisable. Once good condition is achieved the annual grazing density can be increased to 0.075 – 0.22LU/ha; (0.5-1.5 ewes/ha).
- Wet heath, which is usually poorer grazing and more susceptible to trampling, can typically only support 0.037 to 0.075 LU/ha (0.25 to 0.5 ewes per ha).
- Where Molinia is suppressing other vegetation, consider introducing cattle during the spring and summer. This may be supported through agri-environment funding.
- Removing all stock, particularly cattle, from wet heaths in autumn and winter will reduce damage by trampling.

2.2.3.2 Muirburn

Muirburn, which must adhere to the strict restrictions set out in the Scottish Government's Muirburn Code[3], is carried out to regenerate heather, improve grazing and create a mosaic of heather heights.

[3] http://www.scotland.gov.uk/Resource/Doc/355582/0120117.pdf

This increases structural diversity and provides a range of habitats suitable for moorland species such as black or red grouse and hen harrier. Leggy heather is used for nesting and protecting chicks from the elements while shorter heather provides forage. Burning should be avoided on wet heath and in areas where dry heath is already regenerating and there is a good mix of age and structure in the heather.

Suggested Actions:

- For conservation purposes muirburn should be carried out on long rotations, to ensure there are always areas of mature heather, with the time between burns dictated by the habitat. Additional guidance is given in the Supplement to the Muirburn Code: A Guide to Best Practice[4].
- Burning should be done in a patchwork of scattered small areas, i.e. strips approximately 30m wide and not exceeding 0.5-1ha (SRDP Agri Environment and Climate Scheme 2014-2020 stipulates areas no larger than 1ha should be burned).
- The intensity of the burn should be controlled to achieve a burn which does not penetrate the peat and retains the bases of the heather stems from which heather can regenerate.
- Following the burn, grazing densities should be carefully managed to prevent congregation of stock on burnt patches and should not typically exceed 1.5 ewe/ha. This will allow heather to regenerate more successfully.

2.2.3.3 Swiping

Swiping is carried out to achieve the same outcomes as muirburn and is often used when muirburn is unsafe, for example at sites close to forestry or when weather is unsuitable for muirburn. Swiping, however, can be impractical in rocky or more inaccessible areas. Swiping can be used to create a firebreak prior to burning. Swiping should not be used after the 15th April, and throughout the summer months, when ground-nesting birds will be present (further guidance is given in the Muirburn Code).

Suggested Actions:

- Swiped areas should not exceed 1ha in size and 30m in width
- Heather stems should be cut to 10cm height above ground
- Low ground pressure vehicle should be used to carry out swiping to prevent damage to peaty substrate
- Cut heather litter should be removed or finely mashed to assist heather regeneration

2.2.4 Example Projects

- Further information on projects specific to black grouse is given in Section 4.1.

[4] http://www.gov.scot/resource/doc/355571/0120116.pdf

- The Black Grouse Recovery Project, led by RSPB, involves heathland restoration and enhancement for key black grouse leks in Galloway and Nithsdale.

- Black Grouse Conservation in Southern Scotland Project overseen by the Game and Wildlife Conservation Trust which will be developing a regional strategic conservation plan for Black Grouse.

2.2.5 Considerations

- Appropriate grazing levels as well as timing should be established.
- Need for addressing any conflicts in management priorities eg. forestry, wind farms, grassland for farming/short heather for grouse moors, mixed heather heights for biodiversity.
- Lack of knowledge of current condition of habitat.
- Need for skilled personnel and man power in management, particularly when carrying out muirburn.
- Risk of wildfire/loss of control of muirburn (always follow best practice guidance).
- The effect of heather beetle and bracken encroachment on the heather condition/extent.

2.2.6 Opportunities

- Agri-environment funding is usually available for a range of management options eg. away wintering, muirburn, bracken control, summer cattle grazing.
- Working with land owners to host land management good practice events and training to demonstrate techniques and outcomes.
- The possibility of linking existing areas by restoring and extending management over adjacent sites using agri-environment scheme funding.

2.2.7 Further Information

A Guide to Upland Habitats: Surveying Land Management Impacts - Volume 1 (SNH):
http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=2094

A Guide to Upland Habitats: Surveying Land Management Impacts – Volume 2 (SNH):
http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=116

Technical Note TN586 Conservation Grazing Of Semi-Natural Habitats (SRUC):
http://www.sruc.ac.uk/downloads/download/473/tn586_conservation_grazing_of_semi-natural_habitats

The Muirburn Code (Scottish Government): http://www.gov.scot/Publications/2011/08/09125203/0

Supplement to The Muirburn Code (Scottish Government): http://www.gov.scot/Publications/2011/08/09125113/0