

**Draft 24 June 2002**

## **STATEMENT OF IMPORTANCE**

### **North Harris**

#### **Introduction**

These hills are among the most rugged in Britain with a large extent of gently-sloping rock outcrops together with lesser extents of crags, scree and boulder fields. The landscape shows much evidence of glaciation in the well-developed corries, over-steepened slopes and truncated spurs with overhanging cliffs. Drifts of hummocky moraine occur on the lower ground. The hills are not exceptionally high compared with the Highlands. The altitudinal range is from sea-level to 729m on Uisnaval Mor. Steep slopes predominate at higher levels and moderately steep to steep slopes generally occur on all aspects with smaller areas of gentle slopes. There are many water bodies ranging from small lochans to moderately sized lochs.

The geology is uniform and these hills are formed of Lewisian Gneiss with veins of granite. The vegetation suggests that the majority of the rocks and soils are acidic but with small, scattered base-rich outcrops and flushes. One of the most notable base-rich localities is around Creag Nioscar.

The main points of conservation interest of North Harris are the rich oceanic (Atlantic) bryophyte flora, the development of internationally important oceanic plant communities and moorland breeding birds, notably golden eagle.

#### **Upland habitats**

NVC Classes gives a list of NVC types currently known from North Harris. The low altitude of the highest hills (Uisnaval Mor 729m, Teilesval 697m, Tirga Mor 679m and Ullaval 659m), the virtual absence of base-rich rock at high altitudes and the lack of really prolonged snow cover in the mild climate limits the diversity of the montane plant communities. Those that are developed are relatively extensive for the height of the hills because montane communities descend to around 350m on exposed spurs. Above about 500m *Carex bigelowii*-*Racomitrium lanuginosum* moss-heath (NVC U10) covers the summits and ridges. Only in hollows where snow tends to lie does the *Carex-Racomitrium* moss-heath give way to *Nardus stricta*-*Carex bigelowii* grass-heath (U7). The extent of *Carex-Racomitrium* moss-heath is surprisingly high with the fifth largest extent on SSSI (fourth largest on SAC). North Harris has the largest extent in the North-west Highlands and Islands, but the habitat is almost wholly species-poor and the flora is not as rich as on Beinn Dearg or Beinn Eighe. *Carex bigelowii* is generally abundant and some *Alchemilla alpina*, *Armeria maritima* and *Silene acaulis* occurring locally, together with the montane lichen *Cetraria islandica*. On solifluction terracing and in other rocky areas, open, stony ground may have a richer flora with abundant *Salix herbacea* and *Plantago maritima*, *Persicaria vivipara*, *Thymus drucei*, *Silene acaulis* and the lichen *Ochrolechia frigida*.

The most extensive montane community is *Nardus stricta*-*Galium saxatile* community, *Racomitrium lanuginosum* sub-community (U5e). Montane forms of this

sub-community are frequent in the western Highlands but are only extensive in the north-west. The grassland is oceanic being characterised by the carpets of *Racomitrium lanuginosum* and the Atlantic liverwort *Pleurozia purpurea* and sometimes *Mylia taylorii* and other Atlantic bryophytes on favourable aspects. Montane plants are sparse except for *Huperzia selago*, which is frequent.

All other montane communities are of small extent. Prostrate *Calluna* heath belonging to the north-western *Calluna vulgaris-Racomitrium lanuginosum* heath (H14) occurs very locally on lower exposed summits and ridges. The extent is only moderate and larger extents are developed on many other upland sites in the north-west and on Shetland. Bryophyte springs occurring in the montane zone are *Anthelia julacea-Sphagnum auriculatum* springs (M31) and *Philonotis fontana-Saxifraga stellaris* springs (M32).

In summary the montane habitats are notable for the large extent of *Carex-Racomitrium* moss-heath and *Racomitrium*-rich *Nardus* grassland. The site is not comparable in diversity with either the higher western hills with base-rich rocks and late-snow lie such as Ben Lui and Beinn Dearg or with the more acid Beinn Eithe and Foinaven with extensive development of characteristic north-western montane dwarf-shrub heaths. Only a small extent of the characteristic north-western *Calluna-Racomitrium* heath is represented on North Harris.

In the sub-montane zone wet heath and blanket mire predominates. The western *Scirpus cespitosus-Eriophorum vaginatum* blanket mire (M17) is the most extensive kind of blanket mire and covers most of the lower to mid altitude ground on the gentler slopes. The large red liverwort *Pleurozia purpurea* is prominent and frequent together with the black *Campylopus atrovirens*, both Atlantic species. *Menyanthes trifoliata* and *Schoenus nigricans* occur in wet channels. The extent of *Scirpus-Eriophorum* blanket mire on North Harris is the third largest extent on upland SSSI, although the Lewis Peatlands SAC exceeds the area.

*Calluna vulgaris-Eriophorum vaginatum* mire (M19) also occurs on higher ground but is not extensive. Unusually, the *Calluna-Eriophorum* mire occurs in an oceanic form that has frequent Atlantic bryophytes such as *Mylia taylorii* and *Pleurozia purpurea* together with the usual hypnaceous mosses like *Hylocomium splendens* and *Rhytidiadelphus loreus*.

*Scirpus cespitosus-Erica tetralix* wet heath (M15) is also extensive occupying a variety of slopes on shallow peat up to moderately steep slopes of over 30 degrees. An extreme oceanic version of wet heath is represented on North Harris with a high cover of *Racomitrium lanuginosum* and, unusually *Erica cinerea*. The strictly Atlantic moss *Campylopus shawii* is abundant in channels in the wet heath along with the sub-Atlantic *Campylopus atrovirens*. Also in the heath generally the Atlantic liverwort *Pleurozia purpurea* is abundant and *Herbertus aduncus* is also present on north and east facing slopes.

Soligenous tracks within the wet heath are occupied by the *Carex panicea* sub-community (M15a). These are characterised by abundant Carices such as *Carex viridula* ssp. *oedocarpa*, *Carex panicea*, *Carex echinata* and other species

characteristic of soligenous mire such as *Sphagnum auriculatum*, *Pinguicula vulgaris*, *Selaginella selaginoides* and *Juncus articulatus*. There is the third largest extent of wet heath on SSSI (after Arran Northern Mountains and Merrick Kells) and the second largest extent on upland SAC, similar to Rum and Hoy.

*Calluna vulgaris-Vaccinium myrtillus-Sphagnum capillifolium* heath (H21) occurs on steep north to east facing slopes. Two sub-types occur. The *Calluna vulgaris-Pteridium aquilinum* sub-community (H21a) is extensive with the second largest extent on SSSI. The flora of the *Calluna-Pteridium* sub-community is rich in *Sphagnum capillifolium* and hypnaceous mosses. A few of the commoner Atlantic bryophytes occur such as *Breutelia chrysocoma*, *Scapania gracilis* and *Mylia taylorii*. Atlantic bryophytes become much more abundant in the *Mastigophora woodsii-Herbertus aduncus* ssp. *hutchinsiae* sub-community (H21b), which is generally confined to the steeper, more shaded slopes or boulder fields. The Atlantic species include *Herbertus aduncus*, *Mastigophora woodsii*, *Mylia taylorii*, *Plagiochila carringtonii*, *Breutelia chrysocoma*, *Plagiochila spinulosa*, *Scapania gracilis*, *Bazzania tricrenata* and *Lepidozia pinnata*, forming elements of the Northern Atlantic hepatic mat which is confined to north-west Scotland. There is also an unusual abundance of Atlantic filmy fern *Hymenophyllum wilsonii*. The extent of this Atlantic bryophyte rich community is the third largest on SSSI, though much less than on the Torridon Forest SSSI or the Loch Maree Complex SAC.

The extent of the drier forms of heath is not exceptional. This is similar to many western sites where wet heath and blanket bog predominates except on the steepest slopes. *Calluna vulgaris-Erica cinerea* heath (H10) is the main kind of heath on the steep, southerly facing slopes. The coastal slopes have *Calluna vulgaris-Scilla verna* heath (H7). Further inland but perhaps with some maritime influence species-rich *Calluna-Erica* heath occurs with *Primula vulgaris*, *Thymus polytrichus*, *Viola riviniana*, *Plantago maritima* and *Armeria maritima*.

Soligenous mires are fairly frequent but are not extensive. They range from acidic to mildly base-rich. The acidic types include *Scirpus-Erica* wet heath, *Carex panicea* sub-community (M15a), *Carex echinata-Sphagnum recurvum/auriculatum* mire (M6) and *Carex rostrata-Sphagnum recurvum* mire (M4). The richest floristically are the mildly base-rich *Carex dioica-Pinguicula vulgaris* mires (M10). These are local and characterised by *Carex demissa*, *C. pulicaris*, *C. panicea*, *Pinguicula vulgaris*, *Selaginella selaginoides*, *Thalictrum alpinum* and basicolous mosses such as *Scorpidium scorpioides*, *Drepanocladus revolvens* and *Campylium stellatum*.

Grassland appears to have replaced *Calluna*-dominated heath on some sheltered slopes due to grazing. The grassland is usually a species-poor *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland (U4) with an unusual abundance of hypnaceous mosses *Rhytidiadelphus loreus*, *Hylocomium splendens* and *Plagiothecium undulatum*. Atlantic bryophytes such as *Herbertus aduncus*, *Plagiochila spinulosa* and the filmy fern *Hymenophyllum wilsonii* persist in the shelter of boulders on these grassy slopes but the flora of the heather covered slopes appears to be richer.

Acidic grasslands include *Nardus-Galium* grassland (U5), other than the exceptional *Racomitrium lanuginosum* sub-community (U5e). This is extensive kind of grassland

on upland SSSI and the area on North Harris is not exceptionally large. There is a larger extent of *Juncus squarrosus-Festuca ovina* grassland (U6). This grassland is probably derived from the grazing and trampling of blanket mire communities favouring *Juncus squarrosus* at the expense of more palatable *Calluna*, *Scirpus cespitosus* and *Eriophorum vaginatum*.

Strone Ulladale and other cliffs have banks of *Luzula sylvatica* (*Luzula sylvatica-Vaccinium myrtillus* community, U16). There is also a sparse occurrence of tall herbs such as *Angelica sylvestris* and *Trollius europaeus*. A few plants such as *Sedum rosea*, *Oxyria digyna* and *Asplenium trichomanes* grow in crevices in the rocks but the rock flora is not rich.

There is no woodland on North Harris but there are a number of scattered bushes on crags including *Sorbus aucuparia*, *Populus tremula* and *Salix* spp.

In summary the sub-montane vegetation is most notable for the large extent of highly oceanic wet heath, blanket mire and dry heath characteristic of a mild oceanic climate on acid rocks in north-west Scotland. The communities are associated with an outstanding flora of Atlantic bryophytes, especially the dry heath. However, the prevailing acidic rocks, the too rugged topography and lack of woodland means that the site lacks the vegetational diversity of similar oceanic north-western sites such as Beinn Eighe and Foinaven.

### **Qualifying Annex I Habitats**

North Harris qualifies as a Special Area of Conservation (SAC) for 10 habitats (6 upland, 2 peatland and 2 freshwater habitats, SAC Recommendation).

The most important of the upland habitats is **Northern Atlantic wet heaths with *Erica tetralix*** which provides examples of the most extreme oceanic forms of wet heath in the UK and possibly Europe. The NVC type is *Scirpus cespitosus-Erica tetralix* community (M15). Characteristics of the extreme oceanic form of the wet heath include the abundance of woolly fringe-moss *Racomitrium lanuginosum* and bell heather *Erica cinerea* (usually characteristic of dry heath). Atlantic mosses and liverworts are unusually frequent. Flushed channels in the wet heath have an abundance of the rare Atlantic moss *Campylopus shawii*.

There is also extensive development of **Siliceous and alpine boreal grassland**. Two NVC types are represented (U10 *Carex bigelowii-Racomitrium lanuginosum* moss-heath and U7 *Nardus stricta-Carex bigelowii* grass-heath), representing respectively the chionophobic and chionophilous aspects of the habitat in the Outer Hebrides. The mat-grass *Nardus* snow-bed is only moderately extensive, being limited by the mild climate on this extreme western, oceanic site. However, *Carex-Racomitrium* moss-heath has one of its largest extents outside of the Cairngorms, demonstrating its dominance at higher levels in the windy but mild, oceanic climate.

European dry heaths are represented by the NVC types *Calluna vulgaris-Erica cinerea* heath (H10) and *Calluna vulgaris-Vaccinium myrtillus-Sphagnum capillifolium* heath (H21). These heaths are representative of the Outer Hebrides. The main special interest is the extent of the Atlantic-liverwort rich heath with its rich

flora of Atlantic bryophytes, especially the species of the Northern Atlantic hepatic mat. This habitat is one of the major loci for Atlantic bryophytes on the site.

**Alpine and boreal heaths** are not extensive and qualify under the EC Habitats largely as a north-western extreme oceanic outlier on a site where they are not especially favoured but occur as small, scattered stands. The main NVC type represented is *Calluna vulgaris-Racomitrium lanuginosum* heath (H14).

**Blanket bog** is represented by *Scirpus cespitosus-Eriophorum vaginatum* blanket mire (M17) and *Calluna vulgaris-Eriophorum vaginatum* blanket mire (M19). The oceanic and western *Scirpus-Eriophorum* blanket mire predominates. The mire is representative of an extreme oceanic form in which *Racomitrium lanuginosum* is abundant and there is a representation of Atlantic bryophytes such as *Pleurozia purpurea* and *Mylia taylorii* and oceanic vascular plants including *Drosera anglica*, *D. intermedia* and *Schoenus nigricans*.

Associated with the **Blanket bog** is another Annex I habitat **Depressions on peat substrates of the *Rhynchosporion*** occupying bog pools in the deeper peat.

**Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*)** is represented by the screes of Lewisian gneiss. Floristically these are little known but boulder fields have a flora of Atlantic bryophytes including species of the Northern Atlantic hepatic mat favoured by the sheltered microclimates of the rocks.

**Siliceous rocky slopes with chasmophytic vegetation** are not especially species-rich but on northerly- to easterly-facing slopes they favour a flora of Atlantic bryophytes.

### **Vascular plant flora**

On North Harris the predominance of acid rocks, the low altitude of the ground and the limited extent and range of montane habitats limits the montane flora. The flora may also lack some species due to island biogeographical factors.

Base-rich crags occur locally such as at Creag Nioscar where there is a limited calcicolous flora including *Alchemilla alpina*, *Oxyria digyna*, *Saxifraga oppositifolia*, *Sedum rosea*, *Thalictrum alpinum* and *Silene acaulis*.

Only five vascular plants are nationally rare (Red Data Book Entry). These are all Nationally Scarce and include two upland species *Arabis petraea* and *Euphrasia frigida* and a peatland species of the blanket bogs *Hammarbya paludosa*. The other two are *Euphrasia* species of coastal habitats.

There are only 24 montane and sub-montane and northern species on North Harris compared with a total of 167 in Britain and Ireland (Ratcliffe 1991). Only three of these species (*Arabis petraea*, *Alchemilla alpina* and *Asplenium viride*) which occur on North Harris SSSI are confined to the mountains of North Harris (some also occur on the Clisham as well). In addition to these there are two species (*Vaccinium vitis-*

*idaea* and *Luzula spicata*) which are restricted to just the odd locality outside North Harris.

## Lower plants

### Mosses, liverworts and lichens

There are 13 Nationally Scarce species of bryophyte on North Harris (5 mosses: *Campylopus shawii*, *C. schwarzii*, *Myurium hochstetteri*, *Bryum riparium* and *Rhabdoweisia crenulata* and 7 liverworts: *Colura calyptrifolia*, *Herbertus stramineus*, *Sphenolobopsis pearsonii*, *Mastigophora woodsii*, *Plagiochila carringtonii*, *Radula aquilegia* and *Bazzania personii*) all Atlantic species (Strictly Atlantic and Sub-Atlantic). Most of these are associated with upland and moorland habitat. The internationally important oceanic assemblage includes 42 Atlantic species made up of 27 Strictly Atlantic and 15 Sub-Atlantic species.

The Western Isles is the European headquarters of the Strictly Atlantic mosses *Myurium hochstetteri* and *Campylopus shawii*. *M. hochstetteri* is scarce in the Inner Hebrides, in mainland NW Scotland and is known from one site in mid-W Ireland and elsewhere only from the Azores, Madeira and the Canary Islands. In the British Isles it grows on rock, soil and peat at low altitudes, mainly near the sea. *C. shawii* is frequent on Skye (in smaller quantity than in the Western Isles), very rare elsewhere in the western Highlands and in western Ireland and is otherwise known only from the Azores and the Caribbean Islands of Jamaica, Cuba, Hispaniola and Puerto Rico. In the British Isles, as on North Harris, it grows mainly on wet peat, particularly in wet heath and blanket mire (mainly NVC types *Scirpus cespitosus-Erica tetralix* wet heath, *Carex panicea* sub-community: M15a and *Scirpus cespitosus-Eriophorum vaginatum* blanket mire: M17a). North Harris is the most important SSSI for these species.

There is a good representation of the characteristic liverworts making up the Northern Atlantic hepatic mat. These are mostly Strictly Atlantic or Sub-Atlantic species, but include a couple of Western British species. Ten out of the total of 16 of these species of the hepatic occur on North Harris.

*Geocalyx graveolens* is a Nationally rare (RDB vulnerable) species of liverwort and is also on Schedule species 8 of the Wildlife & Countryside Act. This species occurs only in a few localities near the sea on the north-west coast of Scotland. On North Harris it is found at Husival Beag, Huishinish.

The Western Isles is one of the few areas where plant species adapted to cold and warm temperatures grow close together. This appears to be a result of the very equable temperature regime, and is found only in the Faroes, the western Highlands and western Ireland. Some of these thermophilous species that reach their northern limit in the Western Isles include the small Strictly Atlantic moss *M. hochstetteri* and the liverworts *Colura calyptrifolia*, *Drepanolejeunea hamatifolia* and *Harpalejeunea ovata*.

A small calcicolous element is represented. On Creag Nioscar the calcicolous bryophytes includes *Ctenidium molluscum*, *Fissidens adianthoides* and *Marchantia polymorpha* (local in north-west Scotland) and a few calcicolous species are represented in the base-rich mires.

In summary the flora is of value chiefly for the species of Atlantic distribution, mainly the bryophytes. There are also southern species which reach their northern limit and are of interest as an example of northern and southern species growing near to each other. The site also provides a habitat for certain local species in the Outer Hebrides.

## **Birds**

### **Special Protection Area**

North Harris is an SPA for breeding golden eagle *Aquila chrysaetos*. According to the Management Statement there are six home territories within the site. The site holds one of the highest density populations in Britain and also has a high breeding productivity for the west coast of Scotland.

### **SSSI**

There is a good breeding assemblage of other upland and northern birds known from the site including black-throated diver *Gavia arctica*, red-throated diver *Gavia stellata*, merlin *Falco columbarius*, red grouse *Lagopus lagopus* and golden plover *Pluvialis apricaria*. Other birds known from the site include great northern diver *Gavia immer* dunlin *Calidris alpina*, raven *Corvus corax*, wheatear *Oenanthe oenanthe* and stonechat *Saxicola torquata*.

The song thrush *Turdus philomelos* seems to occupy the habitat of the ring ouzel on these hills and may be found singing up to about 400m.

## **Mammals**

Mountain hare *Lepus timidus* occur on the site. Red deer *Cervus elephus* occur in numbers.

Otter *Lutra lutra* is a qualifying species under the EC Habitats Directive and is on Schedule 5 of the Wildlife & Countryside Act.

## **Invertebrates**

Little appears to be known about most of the major groups of invertebrates such as Diptera, Hymenoptera, Lepidoptera and Arachnida.

## **Site status**

North Harris is an SAC and an SPA.

## **Management and land-use issues**

A single estate owns the land and crofters use the ground. The major land-uses are red deer stalking and grazing for sheep. A few cattle are also kept on the low ground. Red grouse are shot by walking up. Some areas of blanket mire or wet heath on the low ground have been improved. Peat cutting takes place near the road.

Some localised burning takes place in dry heath but much of the blanket mire and wet heath is not burnt.

Heavy grazing is suppressing and resulting in the death of *Calluna*, especially in the dry heaths on sheltered slopes. Many areas of the damper *Calluna-Vaccinium-Sphagnum* heath (including stands with Atlantic bryophytes) are being grazed out and replaced by a mossy *Agrostis-Festuca-Galium* grassland (U4). The characteristic Atlantic bryophytes are not found in the grassland but may persist among the shelter of boulders if these are present. Heavy grazing therefore is a threat to the maintenance of populations of the rarer bryophytes.

There is also localised heavy grazing and trampling in the blanket bogs resulting in the development of areas of bare, wet peat.

The few small areas of palatable vegetation that occur on the site such as *Juncus acutiflorus* in stony flushes are heavily chewed down. Sheep will make great efforts to reach the remaining patches of tall, ungrazed vegetation on the crags and frequently fall off providing carrion for the golden eagles.

There is a small amount of hill walking and climbing with one annual event organised. There appears to be no problem with erosion due to trampling currently.

## **References**

David Horsfield  
24 June 2002