

HOY SPECIAL AREA OF CONSERVATION (SAC)

CONSERVATION ADVICE PACKAGE



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Site Details

Site name:	Hoy
Map:	https://sitelink.nature.scot/site/8272
Location:	Highlands and Islands
Site code:	UK0012791
Area (ha):	9,501.27
Date designated:	17 March 2005

Qualifying features

Qualifying feature	SCM assessed condition on this site	SCM visit date	UK overall Conservation Status
Vegetated sea cliffs (Vegetated sea cliffs of the Atlantic and Baltic coasts) [H1230]	Favourable Maintained	25 July 2010	Unfavourable - Bad
Acid peat-stained lakes and ponds (Natural Dystrophic lakes and ponds) [H3160]	Favourable Maintained	5 September 2014	Unfavourable - Bad
Wet heathland with cross-leaved heath (Northern Atlantic wet heaths with <i>Erica tetralix</i>) [H4010]	Favourable Maintained	14 August 2004	Unfavourable - Bad
Dry heaths (European dry heaths) [H4030]	Favourable Maintained	14 August 2014	Unfavourable - Bad
Alpine and subalpine heaths (Alpine and Boreal heaths) [H4060]	Favourable Maintained	13 August 2014	Unfavourable - Bad
Blanket bog[7130]*	Favourable Maintained	15 August 2014	Unfavourable - Bad
Hard-water springs depositing lime (Petrifying springs with tufa formation) [H7220]*	Favourable Maintained	26 August 2006	Unfavourable - Bad
Base-rich fens (Alkaline fens) [H7230]	Favourable Maintained	15 August 2014	Unfavourable - Bad
Plants in crevices on base-rich rocks (Calcareous rocky slopes with chasmophytic vegetation) [H8210]	Favourable Recovered	9 September 2015	Unfavourable - Bad

Notes: Assessed condition refers to the condition of the SAC feature assessed at a site level as part of NatureScot's [Site Condition Monitoring \(SCM\)](#) programme.

Conservation status is the overall condition of the feature throughout its range within the UK as reported to the European Commission under Article 17 of the Habitats Directive in 2019.

* Indicates a Habitats Directive Priority Habitat

Overlapping Protected Areas

Hoy SAC overlaps with

- Hoy Site of Special Scientific Interest (SSSI) <https://sitelink.nature.scot/site/798> and the terrestrial part of
- Hoy Special Protection Area (SPA) <https://sitelink.nature.scot/site/8513>

Key factors affecting the qualifying features

Vegetated sea cliffs

This habitat occurs on steep slopes fringing the coast of Hoy and supports a wide diversity of vegetation types with variable maritime influence. Exposure to the sea and wind, and in particular salt spray blown on to the cliff face and cliff top is a key determinant of the type of sea cliff vegetation. The most exposed areas support maritime vegetation dominated by a range of salt-tolerant plants. More sheltered cliffs support communities closely related to those found on similar substrates inland, such as grassland and heath, with only a minor maritime element in the flora.

The profile and stability of the cliff face is one of the major determinants of cliff vegetation. Near-vertical cliffs support specialist crevice communities, while ledges occupied by breeding seabirds may develop specialist nitrophilous communities comprising plant species which are able to cope with heavy guano deposition. On less extreme slopes, species tolerant of exposure to wind and salt spray and of thin soils can find a foothold. The cliff top vegetation included in this habitat comprises maritime grassland and maritime heath.

Environmental factors such as winter storms and summer droughts are key factors affecting this habitat. Grazing levels also affect the vegetated sea cliffs. Near the Old Man of Hoy, there is localised potential for trampling of the habitat by visitors.

Acid peat-stained lakes and ponds

Acid peat-stained lochs and lochans (also known as dubh lochans) occur within the blanket bog on Hoy SAC. This feature includes most of the un-named pool systems and lochans on this site. These water bodies are very acidic and poor in plant nutrients. They usually do not have either inflow or outflow streams and are predominantly rain fed, with the water being held in the pool due to the high water table in the surrounding peat. Their water has a high humic acid content and is usually stained dark brown through exposure to peat. The pools are naturally species-poor often with a peaty bottom.

The health of these lochs is often closely linked with the surrounding bog.

Key requirements for this habitat type are the maintaining of an appropriate hydrological regime and prevention of pollution (from air and surface water).

Wet heathland with cross-leaved heath

Wet heath occurs on acidic, nutrient-poor substrates, such as shallow peats. Wet heaths occur in several types of ecological gradient. At Hoy SAC they occur at low altitude in moderate gradients between dry heath or other dry, acid habitats (which are found on steeper ground) and blanket bogs (which are usually found on flatter ground). Flushed wet heaths also occur as ground water-fed fens, usually in channels within heath or grassland vegetation.

The key management issues affecting this habitat are the nature and extent of grazing/browsing and trampling. Other key factors currently (or potentially) affecting this

habitat include burning, use of vehicles, forestry, non-native species, air pollution and habitat loss for development.

Dry heaths

Dry heaths occur on freely-draining, acidic to almost neutral soils with generally low nutrient content on this site. Ericaceous dwarf-shrubs dominate the vegetation but all heaths vary in their flora and fauna according to altitude, aspect, soil conditions (especially base-status and drainage), maritime influence, and grazing and burning intensity.

Nearly all dry heath is probably semi-natural, being derived from woodland through a long history of grazing and burning. On Hoy, the areas that are now dry heath may have been wooded in prehistoric times, but are thought to have been heathland for thousands of years. Most of the dry heath on this site is managed as extensive grazing for sheep.

The key management issues affecting this habitat are the nature and extent of grazing/browsing and trampling by livestock. Other key factors currently (or potentially) affecting this habitat include burning, use of vehicles, forestry, non-native and invasive species, air pollution and habitat loss for development.

Alpine and subalpine heaths

Alpine and subalpine heaths occur on the high tops of Ward Hill and the Cuilags on Hoy. Exposure or snow-lie suppresses the growth of dwarf-shrubs and favours growth of characteristic lichens and bryophytes. Alpine heaths on Hoy are climax vegetation that develops above the natural tree-line. The areas that are now dry heath on Hoy may have been wooded in prehistoric times, but are thought to have been heathland for thousands of years. Subalpine heaths have developed on lower slopes, where they merge gradually into dry heaths at lower altitude.

Alpine and subalpine heaths that are rich in bryophytes and also juniper-rich heaths are particularly susceptible to disturbance, especially by fire. Similarly, lichen-rich heaths are susceptible to damage by fire or trampling. Rocky ground can be important in protecting heaths from fire.

Other key factors that could potentially affect this habitat include grazing by livestock, air pollution and invasive native and non-native species.

Blanket bog

This Habitats Directive Priority Habitat is found in areas of moderate to high rainfall and a low level of evapotranspiration, allowing peat to develop over large expanses of undulating ground. Blanket bogs are considered active when they are supporting a significant area of vegetation that is peat-forming.

The key management issues are the nature and extent of grazing/browsing and trampling, burning, energy use, changes in the hydrology, use of vehicles, abiotic natural changes, development and air pollution.

Hard water springs depositing lime

Hard-water springs depositing lime occur as small, scattered flushes, and the total area of this habitat type is small. The tufa formation is associated with hard-water springs, where groundwater rich in calcium bicarbonate comes to the surface forming a hard deposit of calcium carbonate (tufa). These conditions occur most often in areas underlain by limestone or other calcareous rocks.

Tufa-forming springs are often associated with alkaline fens, where they may form prominent upwelling masses of short open vegetation around the spring-heads that feed the fen

system. There may also be transitions to a wide range of other habitats, particularly calcareous grassland, acid grassland, heath, limestone pavements, and calcareous cliff and scree.

Key management issues for this habitat type are grazing pressure/trampling and maintenance of the current flows of clean groundwater.

Base-rich fens

Base-rich fen consists of a complex assemblage of vegetation types characteristic of sites where there is tufa and/or peat formation with a high water table and a calcareous base-rich water supply. Base-rich fens have developed where relatively nutrient-rich water from underground comes to the surface forming isolated patches that are damp or wet year round. These patches have vegetation that is markedly different from the surrounding vegetation, sometimes containing distinctive stands of black bog rush *Schoenus nigricans* and sometimes having a high proportion of bare ground with a distinctive whiteish colour (caused by the calcareous deposits). There are a number of small, fragmented patches of base-rich fen in the larger valleys of the upland part of Hoy. The main areas are east and west of the Dwarfie Stane, at Orgil (west of the Hoy outdoor centre) and to the south of Sandy Loch. As base-rich fen is scattered in small patches within other, more extensive, habitats, management of base-rich fen is difficult to separate from that of the surrounding (drier) habitat.

Key factors affecting this habitat type are land use changes/development, pollution to ground or surface water and grazing or trampling pressures.

Plants in crevices on base-rich rocks

On Hoy SAC, this plant community is found on the broken sandstone cliffs of on the north-facing slopes of Cuilags and Ward Hill and the gorge leading from Ward Hill into Nowt Bield. Plants tend to be sparse and scattered due to the limited soil development and harsh and sometimes extreme conditions. Chasmophytic plant species such as these (which grow in the crevices of rocks) are adapted to the stresses of poor soil and drought. They are sensitive to overgrazing and trampling although they are protected by inaccessibility. The base-richness of calcareous rocks may encourage competition from more vigorous native species, or non-native invasive species such as New Zealand willowherb. Some of the plants that grow in this habitat are at the lower limit of their altitudinal range whilst also occurring on the highest parts of this site.

The key management issues for this habitat are the nature and extent of grazing, natural erosion (which may be worsened if climate change causes more frequent heavy rain), trampling and presence of non-native invasive species.

Further information about this SAC's protected habitats can be found [here](#) on the JNCC website.

Conservation Priorities

Blanket bog and hard-water springs depositing lime are both Habitats Directive Priority Habitats. Appropriate management of these habitats should therefore have priority, followed by any features in unfavourable condition, if any conflict between management of different habitats were to arise.

In practice, there is unlikely to be any conflict between management of the differing features of Hoy SAC. Habitat and species distribution is mainly determined by environmental

conditions and all qualifying SAC features would benefit from a low herbivore population in the wider area.

This SAC overlaps with the terrestrial part of Hoy SPA. Any management for Hoy SAC or assessment of plans or projects will also need to take account of the SPA bird interests.

Overarching Conservation Objectives for all features of Hoy SAC

1. To ensure that the qualifying features of Hoy SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status

Favourable Conservation Status (FCS) is considered at a European biogeographic level. When determining whether management measures may be required to ensure that the conservation objectives for this site are achieved, the focus should be on maintaining or restoring the contribution that this site makes to FCS.

When carrying out appraisals of plans and projects against these conservation objectives, it is not necessary to understand the status of the feature in other SACs in this biogeographic region. The purpose of the appraisal should be to understand whether the integrity of the site (see objective 2) would be maintained. If this is the case then its contribution to FCS across the Atlantic Biogeographic Region will continue to be met. Further details on how these appraisals should be carried out in relation to maintaining site integrity is provided by objective 2 (including parts a, b and c). If broader information on the feature is available then it should be used to provide context to the site-based appraisal.

Note that “appropriate” within this part of the conservation objectives is included to indicate that the contribution to FCS varies from site to site and feature to feature.

2. To ensure that the integrity of Hoy SAC is maintained by meeting objectives 2a, 2b and 2c for each qualifying feature.

The aim at this SAC is to maintain all the qualifying habitats in a favourable condition as a contribution to their wider conservation status. Therefore any impacts to the objectives shown in 2a, 2b or 2c below must not persist so that they prevent the achievement of this overall aim. When carrying out appraisals of plans or projects the focus should be on maintaining site integrity, specifically by meeting the objectives outlined in 2a, 2b and 2c. If these are met then site integrity will continue to be maintained. Note that not all of these will be relevant for every activity being considered. Any impacts on the objectives shown in 2a, 2b or 2c below must not persist so that they prevent the maintenance of site integrity. Temporary impacts on these objectives resulting from plans or projects can only be permitted where they do not prevent the ability of a feature to recover and there is certainty that the features will be able to quickly recover.

This objective recognises that the qualifying habitats are exposed to a wide range of drivers of change. Some of these are natural and are not a direct result of human influences. Such changes in the habitats’ extent, distribution or condition within the site which are brought about by natural processes, directly or indirectly, are normally considered compatible with the site’s conservation objectives. An exception to this is when the favourable condition of a habitat is dependent on halting or managing natural succession. An assessment of whether a change is natural or anthropogenic, or a combination of both, will need to be looked at on a case by case basis.

Conservation Objectives for vegetated sea cliffs (vegetated sea cliffs of the Atlantic and Baltic coasts)

2a. Maintain the extent and distribution of vegetated sea cliffs within the site

Accurate measurement of the extent of the vegetated sea cliffs is hard to achieve due to its location on vertical or near vertical slopes as well as the clifftop maritime vegetation that occurs on flatter ground. The figure within the SAC Standard Data Form (approximately 95 ha) is therefore used as a guide, and the objective is that there should be no loss of the habitat within the SAC other than through natural processes.

The extent of this habitat is largely determined by topography, being found partly on vertical or steeply sloping cliffs with exposure to salt spray and the wind. These factors limit the potential for expansion or loss of extent through natural processes.

The extent of the habitat on the SAC is also in part determined by exposure of the cliff top vegetation to salt spray. The zone of maritime influence extends further inland in more exposed places than in more sheltered ones. The cliff top vegetation type is determined by the soil type: maritime heath is found growing on peaty soils whilst the better-drained areas with mineral-based soils support maritime grassland.

Modest changes in the area of the maritime heath component of the vegetated sea cliffs feature as assessed by future surveys may represent changes in survey accuracy rather than change in habitat area.

The overarching objective is for there to be no measurable net reduction in the distribution of vegetated sea cliffs throughout the site or the combined extent of the maritime heath component of vegetated sea cliffs, dry heath and the subalpine component of Alpine and subalpine heaths.

2b. Maintain the structure, function and supporting processes of vegetated sea cliffs

The structure of the vegetated sea cliffs is influenced by the geomorphological processes, degree of exposure to the wind and sea, and the associated salt spray on the cliff face and cliff tops. Exposed stretches of coast support salt-tolerant vegetation, while more sheltered areas support plant communities similar to those found inland such as grassland and heath.

The profile and stability of the cliff face is dependent on whether it is a 'hard' or soft' cliff. 'Hard' cliffs with vertical or very steep faces are characteristic of hard igneous, metamorphic and sedimentary rocks. 'Soft' cliffs have a sloping or slumped profile, often with a distinct 'undercliff'. On Hoy, these occur in areas where there are glacial deposits on top of the bedrock. These areas may be subject to mudslides or landslips.

The structure and function of this habitat are mainly dependent on natural marine processes and weather. The cliff top habitat should be maintained by a low level of grazing, which is mainly by sheep on Hoy. Grazing levels that are too high or too low should be avoided. This is because intensive grazing can prevent plants from flowering and setting seed or create bare ground leading to erosion whilst too low a level of grazing can cause rank vegetation to out-compete the typical species of this habitat.

The habitat is also influenced by the presence of seabirds such as puffin, guillemot and fulmar, whose guano fertilises the soil and promotes lush plant growth.

2c. Maintain the distribution and viability of typical species of vegetated sea cliffs

Maritime cliff vegetation (slope and cliff top) varies according to a number of physical and biological factors, but most important among these are climate, degree of exposure to sea-

spray, geology and soil type, level of grazing, and the amount of seabird activity.

Typical species that colonise the cliff slope on this site include: Red fescue *Festuca rubra*; Thrift *Armeria maritima*; Sea campion *Silene uniflora*; Scot's lovage *Ligusticum scoticum*; Sea plantain *Plantago maritima*; Ribwort plantain *Plantago lanceolata*; roseroot *Sedum rosea* and sea mayweed *Tripleurospermum maritimum*.

The maritime grassland on the clifftop is dominated by red fescue *Festuca rubra*. Other typical species in this habitat include: thift *Armeria maritima*; sea campion *Silene uniflora*; Yorkshire fog *Holcus lanatus*; sea plantain *Plantago maritima*; buckshorn plantain *Plantago coronopus*; wild carrot *Daucus carota*; common sorrel *Rumex acetosa* and spring squill *Scilla verna*.

The maritime heath on the clifftop is dominated by heather *Calluna vulgaris* and/or bell heather *Erica cinerea*. Other typical species in this habitat include: sheep's fescue *Festuca ovina*; sea plantain *Plantago maritima*; common dog violet *Viola riviniana*; birdsfoot trefoil *Lotus corniculatus*; spring squill *Scilla verna*; crowberry *Empetrum nigrum*; wild thyme *Thymus praecox* and tormentil *Potentilla erecta*.

There should be no loss or significant decline in the distribution or abundance of these species.

Colonisation of the vegetated sea cliffs by invasive native species should be avoided as this could result in loss of the typical species.

A low level of grazing and browsing is necessary to maintain this habitat. On Hoy the cliff tops are grazed by sheep as well as rabbits.

Great skua and Arctic skua nest on the cliff top and seabirds also nest on some of the cliff ledges. Guano from seabirds is important in maintaining the distribution of the typical plant species.

Conservation Objectives for acid peat-stained lakes and ponds (natural dystrophic lakes and ponds)

2a. Maintain the extent and distribution of acid peat-stained lakes and ponds within the site

Acid peat-stained lakes and ponds habitat is composed of many relatively small, un-named lochs and lochans scattered throughout the site.

There is no data on the extent of this habitat in the SAC Standard Data Form but its extent should be maintained with no known loss of habitat.

This conservation objective is considered to be met if the conditions to ensure the habitats' long-term existence are in place.

2b. Maintain the structure, function and supporting processes of acid peat-stained lakes and ponds

The structure and function of lochs are strongly influenced by activities within their catchment. Changes in land management or development can affect the integrity of the feature which will manifest itself in changes to the lochs.

Physical Attributes

Surface Area

Changes to surface area can indicate pressures on the structure and function of lochs. Because they tend to be small and rather shallow the surface area of dystrophic lochs may fluctuate naturally more than other lochs. However changes to surface area and the associated change to depth can adversely affect the character of the lochs. Artificial fluctuations to depth from activities such as abstraction, drainage or forestry can adversely affect the vegetation.

Changes to the surface area may also indicate a number of pressures such as abstraction, regulation, construction, excessive sediment deposition and natural succession which may be caused by issues in the catchment.

Hydrological regime

The hydrology of the lochs should be maintained as this affects both water level fluctuations and annual and within year flushing patterns. Flushing is important as it is strongly related to dilution and removal of nutrients and plankton. Changes to the flushing pattern can be caused by factors similar to those affecting area; abstraction, regulation, construction, excessive sediment deposition and natural succession which may occur in the catchment. The habitat is rain fed but may be affected by fluctuations in the water table of the surrounding bog.

Loch substrate character

The type and distribution of sediment particles within the lochs should be maintained as this will affect the biology of the lochs and the availability of habitats. The substrate of the majority of dystrophic lochs is dominated by peat although there are rare examples on more mineral gravels. Changes to the substrate character may be indicative of changes to the area and hydrological regime. Reduction in area or flushing may affect the substrate character as finer sediments become trapped.

Natural sediment load

Accumulation of nutrient-rich sediment may have a strong effect on the water quality and biology of the loch. Enrichment can be caused by the release of nutrients bound to silt. Increases in sediment loading may result from both changes in land management practice in the catchment or on the shoreline and short term events such as construction. Release of sediment from afforested catchments particularly during site preparation and harvesting is a particular issue. Eroding peat within the catchment may also be an issue for this type of loch. Evidence is growing that an increase in storm events associated with climate change may increase the amount of sediment deposited in lochs. Poaching of loch margins and feeder burns may also be important.

Connectivity between the loch and the surrounding area

While a loch is often perceived as a discrete entity the connections between it and the surrounding area are vital to its functioning as part of a natural system. These natural connections can be reduced or changed by, for example, hard engineering works on the shoreline or loch bed and anything that impedes the exchange of water either on the surface or with the underlying water table. Poaching of loch edges can damage or destroy the characteristic edges and marginal vegetation.

Water Quality

Dissolved Oxygen

Dissolved oxygen in loch water is vital for respiration of all aquatic animals. An artificially high biomass caused by increased loadings of organic matter or algal blooms can create a heavy demand which causes low levels of dissolved oxygen. Dissolved oxygen is likely to be lowest in July and August. The target is dissolved oxygen >7.0mg/l during July and August for lochs on this site.

pH

This influences many of the chemical processes in lochs such as the binding of phosphorus. Artificial changes through eutrophication or acidification can therefore have a significant effect. Dystrophic lochs should have pH of less than 5. Careful consideration should be given to afforestation of catchments with low buffering capacity.

Nutrients

Phosphorus (P) is one of the main nutrients required for plant growth and there is strong correlation between total phosphorus (TP) concentration and phytoplankton biomass. The target for TP is based on an annual mean; for deeper lochs (mean depth >3m) 15ugP/l maximum annual mean TP, very shallow (mean depth <3m) 20ugP/l.

Nitrogen is the other main nutrient important in loch ecosystems. Although generally less likely to be limiting than phosphorus it can be limiting either on its own or co-limiting with P and nitrate has been found to adversely affect macrophytes. Both nitrogen and phosphorus should be low. The target for all lochs is that annual mean Total Nitrogen should not exceed 1.5mg/l with no deterioration from baseline.

Filamentous algae

Filamentous algae are a negative indicator associated with high nutrient levels. Some species can form dense floating rafts or coat macrophytes. Filamentous algae should only generally be found at low levels in dystrophic lochs. Presence of *Batrachospermum* sp. filamentous algae is acceptable as this species occurs naturally in pools on this site.

2c. Maintain the distribution and viability of typical species of acid peat-stained lakes and ponds

Acid peat-stained lakes and ponds vary greatly in their macrophyte communities, some having none at all.

Typical species found in this habitat on Hoy SAC are:

<i>Aquatic Sphagnum</i> species	bog moss
<i>Eriophorum angustifolium</i>	common cottongrass
<i>Juncus bulbosus</i>	bulbous rush
<i>Drepanocladus</i> species	moss species
<i>Sparganium angustifolium</i>	floating bur-reed

Species lists for each of the lochs that has been surveyed can be found [here](#) in the Standing Water Database.

There should be no loss or significant decline in the distribution or abundance of these species.

The viability of the typical species is determined by water quality and other conditions that support the plant community such as water clarity. Loss or reduction in frequency of species may therefore be an indicator of deteriorating or changing water quality or some other adverse impact.

Non-native species can have direct effects upon the natural plant communities through competition. They may also have more subtle effects as the niche they fill is different and this may directly or indirectly affect the rest of the ecosystem. A list of high impact species has been agreed as part of the Water Framework Directive. Other species that may also affect the integrity of the site include *Elodea nutallii*, *E. canadensis* and *Crassula helmsii*.

Filamentous algae are indicative of high nutrient levels. This can create dense blankets reducing light and which can cause problems when they die and decay.

In addition, red-throated diver *Gavia stellata* can be found breeding on some of the larger lochans on this site and seabirds use some of the lochs for bathing.

Conservation Objectives for wet heathland with cross-leaved heath (northern Atlantic wet heaths with *Erica tetralix*)

2a. Maintain the extent and distribution of wet heathland with cross-leaved heath within the site

Maintain at approximately 2651 ha. The area figure has been taken from the Standard Data Form, and is an estimate.

Wet heath typically covers large areas, forming complex mosaics with areas of blanket bog, and in dryer areas dry heaths and grassland. Baseline surveys will include smaller areas of other habitats. The vegetation is very variable in composition. Dwarf shrub cover and structure is variable, similar to dry heath in some areas, and to blanket bog in other, usually wetter areas. At higher altitudes wet heath can be found in mosaics with Alpine and subalpine heath, usually in areas with some shelter.

Modest changes in the area of wet heath assessed by future surveys may therefore represent changes in survey accuracy rather than change in habitat area. The overarching objective is for there to be no measurable net reduction in the distribution of wet heath throughout the site or the combined extent of qualifying habitats in the mosaic (i.e., the maritime heath component of vegetated sea cliffs, dry heath, blanket bog and the subalpine component of Alpine and subalpine heaths).

2b. Maintain the structure, function and supporting processes of wet heathland with cross-leaved heath

Wet heathland with cross-leaved heath is sensitive to inappropriate grazing or burning that may affect the habitat structure and function in two main ways. A combination of overgrazing and frequent burning can lead to creation of a grass sward if this is continued over many years. Overgrazing can also result in high levels of nutrient input and trampling. Under grazing or complete lack of burning can lead to the habitat type being colonised by species that are not typical of this habitat (such as bracken) if this management is continued over many years. A light level of grazing is therefore needed to maintain this habitat. Under grazing is unlikely to happen on Hoy as the site is so exposed to wind and salt. Most of the grazing/browsing at Hoy SAC is by sheep although mountain hares are also present.

The wet heath on this site should be maintained. The objectives of this are to:

- maintain the height structure of the vegetation by keeping grazing/browsing by sheep low so that less than 1/3rd of the last complete growing season's shoots of dwarf-shrub species (collectively but excluding dwarf birch *Betula nana* and bog myrtle *Myrica gale*) show signs of browsing.
- maintain the ground cover structure of the heath by minimising trampling by sheep so that less than 10% of ground cover is disturbed bare ground (with an emphasis on 'disturbed' rather than 'bare') and less than 10% of the *Sphagnum* moss is crushed or pulled up.

Additional objectives for the structure of the habitat are:

- The area of disturbed bare ground should not be increased. Activities that might cause this to increase include excessive use of vehicles, introducing heavier livestock such as cattle or increasing use of the habitat by sheep.
- Cover by species that are not typical of this habitat should not increase. Examples of inappropriate species are bracken and non-native species.
- Active drainage should be minimised. No new drains should be dug and existing ones should be blocked.
- Any burning on Hoy SAC should follow the Muirburn Code to avoid damage to the structure, function and supporting processes of wet heath.

2c. Maintain the distribution and viability of typical species of wet heathland with cross-leaved heath

Wet heath is an important habitat for a range of vascular plant and bryophyte species. Generally the vegetation is dominated by mixtures of cross-leaved heath, heather, grasses, sedges and *Sphagnum* bog-mosses.

On Hoy the typical species include

<i>Calluna vulgaris</i>	common heather
<i>Carex</i> spp.	sedges
<i>Drosera</i> spp.	sundews
<i>Empetrum nigrum</i>	crowberry
<i>Erica</i> spp.	heaths
Non-crustose lichens	
<i>Rhynchospora alba</i>	white beak-sedge
<i>Sphagnum</i> spp.	mosses
<i>Trichophorum</i> sp.	deer grass
<i>Vaccinium</i> spp	heaths

There should be no loss or significant decline in the distribution or abundance of these species.

An appropriate level of grazing is needed to maintain this habitat. Most of the grazing on Hoy SAC is by sheep. Under grazing is unlikely to happen on Hoy as the site is so exposed to wind and salt.

In addition, typically associated birds include golden plover, dunlin (schinzii, race) short-eared owl merlin and hen harrier.

Conservation Objectives for dry heath (European dry heaths)

2a. Maintain the extent and distribution of dry heath within the site

Maintain at approximately 1786 ha. The area figure has been taken from the Standard Data Form, and is an estimate based dry heaths forming complex mosaics with other habitats such as grasslands, wet heaths and bogs. Modest changes in area assessed by future surveys may therefore represent changes in survey accuracy rather than change in habitat area.

The overarching objective is for there to be no measurable net reduction in the distribution of dry heath throughout the site or the combined extent of qualifying habitats in the mosaic (i.e., the maritime heath component of vegetated sea cliffs, wet heath, blanket bog and the subalpine component of Alpine and subalpine heaths).

The habitat is found on freely-drained, nutrient-poor, acidic soils. This can determine the extent and distribution of the habitat throughout the SAC, although it is also dependant on heathland management to maintain its extent including:

- light level of grazing.
- avoidance of any loss of habitat through invasion by non-native species or wildfire.

2b. Maintain the structure, function and supporting processes of dry heath

Maintaining dry heath is a fine balance between degrading to grasslands as a result of intensive management, and succession to scrub from too low a level of browsing, grazing or burning. However exposure to wind and salt prevents the widespread growth of trees on Hoy, although scrub might be able to develop in a few sheltered locations. Under grazing of dry heath is therefore unlikely on Hoy. The more important requirement is that grazing levels are low enough to prevent degrading to grassland as a result of intensive management. Sheep are the main herbivores on this site, and appropriate management of their numbers and distribution across the site is important to maintain dry heath habitat and to prevent habitat degradation from overgrazing or trampling. Hares are also present here, but their size and numbers are small enough that they do not have a detrimental effect on the dry heath habitat.

The objectives for maintaining dry heath on this site are to:

- maintain the height structure of the vegetation by keeping grazing/browsing by sheep low so that less than 1/3 of the last complete growing season's shoots of dwarf-shrub species (collectively but excluding dwarf birch *Betula nana* and bog myrtle *Myrica gale*) show signs of browsing.
- maintain the ground cover structure of the heath by minimising trampling by sheep so that less than 10% of ground cover is disturbed bare ground (with an emphasis on 'disturbed' rather than 'bare').

Additional objectives for the structure of the habitat are:

- 25-90% of vegetation should be dwarf shrub heath species. Heather *Calluna vulgaris* should remain the dominant species and should be present in all phases of growth (pioneer, building, mature and degenerative) to provide a wide range of ecological variety and conservation benefit to a variety of species.
- Current levels of disturbed bare ground should not be increased. Activities that might cause an increase include excessive use of vehicles, introducing heavier livestock such as cattle or increasing use of the habitat by sheep.
- Cover by species that are not typical of this habitat should not increase. Examples of inappropriate species are bracken and non-native species.
- Any burning on Hoy SAC should follow the Muirburn Code to avoid damage to the structure, function and supporting processes of dry heath.

2c. Maintain the distribution and viability of typical species of dry heath

Dry heath on Hoy is dominated by heather *Calluna vulgaris*, often mixed with small amounts of cross-leaved heather *Erica tetralix* or bell heather *Erica cinerea*. Parts of the habitat also include *Arctostaphylos* and *Vaccinium* species and small amounts of crowberry *Empetrum nigrum*, woolly fringe-moss *Racomitrium lanuginosum* and creeping willow *Salix repens*.

There should be no loss or significant decline in the distribution or abundance of these species.

This habitat is important for maintaining populations of mountain hares as well as being used for low-intensity livestock grazing. High levels of herbivore use could damage dry heath, but

a low level of grazing and browsing is necessary to maintain this habitat.

In addition, dry heath is important for breeding great skua, Arctic skua, merlin, short-eared owl and hen harrier.

Conservation Objectives for alpine and subalpine heaths (alpine and boreal heaths)

2a. Maintain the extent and distribution of Alpine and subalpine heaths within the site

Maintain at approximately 884 ha. The area figure for this SAC has been taken from the Standard Data Form, and is an estimate based on subalpine heaths grading into other heath types, especially the latter into floristically-similar dry heaths. Modest changes in the area of Alpine and subalpine heaths assessed by future surveys may therefore represent changes in survey accuracy rather than change in habitat area.

The overarching objective is for there to be no measurable net reduction in the distribution of Alpine and subalpine heaths throughout the site or the combined extent of Alpine and subalpine heaths together with dry heath.

Alpine and subalpine heaths are generally found on acid rocks on the high tops of Ward Hill and the Cuilags, with Alpine heath being found on exposed summits and ridges, and subalpine heath on more sheltered slopes. The dominant plants can cope with harsh climatic conditions such as high winds, salt spray and snow cover. These conditions largely determine the extent and distribution of Alpine heath throughout the SAC.

2b. Maintain the structure, function and supporting processes of the Alpine and subalpine heath

Alpine and subalpine heaths are climax vegetation in exposed and extreme conditions on this site. This results in slow growth of plants which are slow to recover from any disturbance.

As with several other habitats at Hoy, maintaining Alpine and subalpine heaths is a fine balance between degrading to grasslands (which tends to happen if grazing/browsing levels are too high) and succession to scrub (which happens if browsing/grazing is too low).

At Hoy, typical heath species composition should be maintained by avoiding overgrazing by sheep and allowing typical plants (listed in 2c) to grow and set seed. Hares are also present here, but their size and numbers are small enough that they are unlikely to have a detrimental effect on the habitat.

Alpine and subalpine heath should not be burnt. Bracken *Pteridium aquilinum* should be kept to less than 10% of the ground cover. Less than 10% of the ground cover should be disturbed bare ground (the emphasis is on 'disturbed' rather than 'bare'.)

2c. Maintain the distribution and viability of typical species of Alpine and subalpine heaths

The Alpine heath on the summit ridges has extensive mats of bearberry *Arctostaphylos uva-ursi* with lesser cover of Mountain bearberry *Arctostaphylos alpinus*. There are also large areas of bare ground in this habitat created by the extreme exposure to wind, salt spray and snow on the hill tops of Hoy.

The dominant plants in subalpine heaths are dwarf-shrubs such as heather *Calluna vulgaris*, crowberry *Empetrum nigrum*, bearberry *Arctostaphylos uva-ursi* and woolly fringe-moss *Racomitrium lanuginosum*.

There should be no loss or significant decline in the distribution or abundance of these species.

An appropriate level of grazing is needed to maintain this habitat. Most of the grazing on Hoy SAC is by sheep.

In addition, this habitat supports mountain hares and is used for hunting by peregrine and merlin.

Conservation Objectives for blanket bog

2a. Maintain the extent and distribution of blanket bog within the site

There should be no measurable net reduction in the extent of the habitat on the site such that the area of blanket bog is maintained at the area stated on the Standard Data Form (approximately 2552 ha).

Blanket bog typically covers large areas, forming complex mosaics with other wetland habitats as well as wet heath and grass habitats in drier areas.

Modest changes in the area of blanket bog assessed by future surveys may represent changes in survey accuracy rather than change in habitat area.

The overarching objective is for there to be no measurable net reduction in the distribution of blanket bog throughout the site or the combined extent of qualifying habitats in the blanket bog-wet heath mosaic.

2b. Maintain the structure, function and supporting processes of blanket bog

The predominant requirement for blanket bog is to be actively forming peat, a process that relies on peat-forming species having suitable conditions to maintain growth. Blanket bog that is degraded through damage or drying is likely to resume active peat-forming function following suitable restoration. A covering of 'active' peat-forming vegetation will protect the peat surface and will be more resilient to climate change.

Blanket bog habitat requires a high water table, and so maintaining appropriate hydrology for blanket bog is critical. This will depend on management to prevent or reduce detrimental effects of drainage, including in the wider surrounding area and potentially at a distance from the habitat.

The objectives for maintaining blanket bog on Hoy SAC are to:

- Maintain the height structure of the vegetation by keeping grazing/browsing by sheep low so that less than 1/3 of the last complete growing season's shoots of dwarf-shrub species (collectively but excluding dwarf birch *Betula nana* and bog myrtle *Myrica gale*) show signs of browsing.
- Maintain the ground cover structure of the bog by minimising trampling by sheep so that less than 10% of ground cover is disturbed bare ground (with an emphasis on 'disturbed' rather than 'bare') or where more than 10% of the Sphagnum moss is crushed or pulled up.
- Restore any significant areas of currently eroding peat by re-establish peat-forming vegetation.

Additional objectives for the structure of the habitat are:

- Current levels of disturbed bare ground should not be increased. Activities that might

cause an increase include excessive use of vehicles, introducing heavier livestock such as cattle or increasing use of the habitat by sheep.

- Cover by species that are not typical of this habitat should not increase. Examples of inappropriate species are bracken and non-native species.
- Active drainage should be minimised. No new drains should be dug and existing ones should be blocked.
- Blanket bog should not be burnt as fire damages the structure, function and supporting processes of this habitat and is contrary to the Muirburn Code.

2c. Maintain the distribution and viability of typical species of blanket bog

Typical species include the important peat-forming species, such as bog-mosses *Sphagnum* species and cotton grasses *Eriophorum spp*, together with heather *Calluna vulgaris*.

Other typical species found in this habitat on Hoy are:

<i>Erica spp.</i>	Cross-leaved heather and bell heather
<i>Empetrum nigrum</i>	crowberry
Non-crustose lichens	lichens
<i>Racomitrium lanuginosum</i>	woolly fringe-moss
<i>Trichophorum sp.</i>	deer grass
<i>Vaccinium spp</i>	bilberry

Conservation measures should aim to maintain conditions suitable for these species.

All characteristic bog species rely on a high water table, and are likely to benefit from measures to improve the bog's hydrological integrity, principally by damming of artificial drainage and erosion gullies.

Healthy bog vegetation relies on light to moderate grazing by livestock and/or mountain hares, sufficient to maintain a diverse open structure but without causing surface damage/erosion or loss of more grazing-sensitive species.

In addition, dunlin, golden plover, hen harrier, merlin, peregrine short-eared owl, great skua and Arctic skua depend upon this habitat for breeding and foraging.

Conservation Objectives for hard water springs depositing lime (*Cratoneurion*) (petrifying springs with tufa formation)

2a. Maintain the extent and distribution of hard water springs depositing lime within the site

There is no data on the extent of hard water springs depositing lime habitat in the Standard Data Form but its extent should be maintained with no losses from where it is known to occur.

The known locations are in association with base-rich fen habitat between the South Burn of Quoys and South Dam north of Ward Hill (approximately 400 m²) and south of the South Dam fen (approximately 600 m²).

2b. Maintain the structure, function and supporting processes of hard water springs depositing lime

Hard water springs depositing lime habitat is associated with base-rich fens, where there are prominent upwelling masses of short open vegetation around the spring-heads that feed the fen system. Minerals that have been brought to the surface by groundwater form a hard

deposit of calcium carbonate (tufa) in contact with the air. A continued flow of naturally calcium-rich groundwater is necessary to maintain this habitat.

This habitat is dominated by mixtures of small sedges and bryophytes with the latter sometimes being completely dominant, particularly around spring-heads. Liverworts and scattered small herbs are often present.

Use by livestock should be low enough to avoid creating a substrate of bare ground (i.e., bare humus, peat, mineral soil, gravel, or soil covered only by an algal mat) that is disturbed by having its surface broken and imprinted by hoof marks, wallows, human foot prints, or vehicle and machinery tracks. The emphasis is on avoiding 'disturbed' bare ground rather than 'bare' ground, as bare tufa can be a typical component of this habitat.

Heavy trampling and/or tracking by horses/ponies, livestock or vehicles should be avoided as this can result in active drainage of the habitat. Drainage should be considered active if it has altered, or is likely to alter, or remove, the original vegetation, and facilitate the removal of water from the site.

The habitat can tolerate a low level of occasional grazing, but grazing is not needed to maintain this habitat on Hoy.

Colonisation of this habitat by vigorous native species (common reed *Phragmites australis* and/or soft rush *Juncus effuses*), tree or scrub growth or invasive non-native species should be avoided as this could led to irreversible habitat loss in the longer term, through conversion to other open-ground habitats or scrub.

2c. Maintain the distribution and viability of typical species of hard water springs depositing lime

Hard water springs depositing lime habitat typically have swelling, yellow-orange mats of the curled hookmoss *Cratoneuron commutatum* and other lime-loving species such as yellow sedge *Carex viridula*, ssp. *brachyrhyncha*.

There should be no loss or significant decline in the distribution or abundance of these species.

Management of grazing livestock should prevent poaching/trampling and subsequent active drainage of this habitat.

Colonisation of the hard water springs depositing lime by invasive native species should be avoided as this could result in loss of the typical species.

Conservation Objectives for base-rich fens (alkaline fens)

2a. Maintain the extent and distribution of base-rich fens within the site

The extent of base-rich fen should be maintained at approximately 9ha (the area given on the Standard Data Form).

This habitat is found in parts of Hoy where relatively nutrient-rich water from underground comes to the surface forming isolated patches that are damp or wet year round. Due to the small extent of each patch, and their fragmentary nature, current baseline estimates of the area of this habitat may not be very precise and any changes in extent as a result of new surveys may represent greater precision rather than real change.

2b. Maintain the structure, function and supporting processes of base-rich fens

Base-rich fen habitat is found where there are springs or seepages, fed by base-enriched waters on both peat and mineral soils. Tufa deposition may sometimes occur.

The appropriate stocking level needed for base-rich fens is a fine balance between too low (which can eventually lead to loss of species-richness through dominance by taller plant species) and too high (which causes loss of more palatable species and/or excessive poaching or damage to fragile tufa formations). Use by livestock should be low enough to avoid creating a substrate of bare ground (i.e., bare humus, peat, mineral soil, gravel, or soil covered only by an algal mat) that is disturbed by having its surface broken and imprinted by hoof marks, wallows, human foot prints, or vehicle and machinery tracks. The emphasis is on avoiding 'disturbed' bare ground rather than 'bare' ground, as bare ground with a semi-mineralised surface that is inhospitable to plants can be a typical component of parts of this habitat.

Heavy trampling and/or tracking by horses/ponies, livestock or vehicles should be avoided as this can result in active drainage of the habitat. Drainage should be considered active if it has altered, or is likely to alter, or remove, the original vegetation, and facilitate the removal of water from the site.

Colonisation of this habitat by vigorous native species (common reed *Phragmites australis* and/or soft rush *Juncus effuses*), scrub growth or invasive non-native species should be avoided as this could lead to irreversible habitat loss in the longer term, through conversion to other open-ground habitats.

2c. Maintain the distribution and viability of typical species of base-rich fens

Base-rich fen habitat has been found near the Dwarfie Stane, at Orgil (west of the Hoy outdoor centre) and to the south of Sandy Loch.

The vegetation is mainly the NVC habitat type M10 with components of M9, M11 and M13. It is dominated by brown mosses (*Bryum pseudotriquetrum*, *Scorpidium scorpioides*, *Drepanocladus* sp. and *Campylium stellatum*), carnation sedge *Carex panicea* and yellow sedge *Carex viridula*. Other typical species include tawny sedge *Carex hostiana*, dioecious sedge *Carex dioica*, flea sedge *Carex pulicaris*, lesser clubmoss *Selaginella selaginoides*, black bog-rush *Schoenus nigricans*, bogbean *Menyanthes trifoliata*, yellow mountain saxifrage *Saxifraga aizoides* and butterwort.

Any grazing/browsing/trampling by horses/ponies and/or livestock should only be occasional as otherwise it is likely to contribute to a deterioration in the habitat structure, leading to a reduction or loss in the typical species for this habitat.

Colonisation of the base-rich fens by invasive native species should be avoided.

In addition, this habitat supports lapwing and snipe.

Conservation Objectives for plants in crevices on base-rich rocks (calcareous rocky slopes with chasmophytic vegetation)

2a. Maintain the extent and distribution of plants in crevices on base-rich rocks within the site

There is no data on the extent of plants in crevices on base-rich rocks habitat in the Standard Data Form but its extent should be maintained from that recorded in the 2015 survey on rocky, north-facing slopes of Cuilags and Ward Hill and the gorge leading from

Ward Hill into Nowt Bield with no losses of known habitat.

2b. Maintain the structure, function and supporting processes of plants in crevices on base-rich rocks

Plants in crevices on base-rich rocks habitat is found in harsh and sometimes extreme conditions with limited soil development. Plants are sparse and scattered, and often limited to where there is some shelter and moisture. Some of the plant species that grow mainly in crevices in rocks are adapted to the stresses of drought.

The base-richness of calcareous rocks may encourage competition from more vigorous native species, such as bracken and/or scattered native trees or scrub; or non-native invasive plants such as New Zealand willowherb *Epilobium brunescens*. Colonisation or shading of this habitat by vigorous native species, tree growth or invasive non-native species can reduce or eliminate cover of indicator species.

This habitat is not particularly attractive to grazing animals such as sheep as the vegetation is sparse and inaccessible due to the steep, rocky ground. However, it is sensitive to over-grazing and trampling damage. Agile herbivores (such as goats) should not be introduced to the site as they would be likely to damage this habitat.

This habitat is very sensitive to muirburn, which should be avoided in these areas.

2c. Maintain the distribution and viability of typical species of plants in crevices on base-rich rocks

Typical plants found in plants in crevices on base-rich rocks habitat on Hoy include flea sedge *Carex pulicaris*; mountain avens *Dryas octopetala*; hawkweed spp *Hieracium spp.*; holly fern *Polystichum lonchitis*; yellow saxifrage *Saxifraga aizoides*; purple saxifrage *Saxifraga oppositifolia*; lesser clubmoss *Selaginella selaginoides*; moss campion *Silene acaulis*; alpine meadow-rue *Thalictrum alpinum* and wild thyme *Thymus polytrichus*.

There should be no loss or significant decline in the distribution or abundance of these species.

New Zealand willowherb has been recorded on Hoy, this species should be controlled.

Agile herbivores such as goats should not be introduced.

Conservation Measures

Hoy SAC is notified as a Site of Special Scientific Interest and management changes described on the SSSI list of Operations Requiring Consent must have prior consent from (SNH) NatureScot.

Current and recommended management for

- acid peat-stained lakes and ponds

Issue	Measure	Responsible party
Water abstraction	Ensure timing and volume of abstraction from any of the lochs or dubh lochans does not alter water levels or the hydrological flushing regime to a damaging extent through discussions with regulator. Ensure that drought plans adequately address the interests of the site.	SEPA, Scottish Water, NatureScot
Afforestation	Ensure that any forestry is not beyond the carrying capacity of the catchment and that design and management strictly follow the Forest and Water Guidelines, and published best practice.	Land Manager, Scottish Forestry, Forestry & Land Scotland, NatureScot
Water quality - enrichment	Implement and maintain monitoring of key water quality parameters.	NatureScot/SEPA
	Any development proposals in the catchment should include appropriate measures to minimise sediment run-off and prevent pollutants from entering the acid peat-stained lakes and ponds.	Orkney Islands Council
	Ensure no adverse impacts from diffuse or point sources e.g. septic tanks. Any significant artificial inputs of nitrogen and phosphorus are likely to lead to undesirable nutrient enrichment. On Hoy, seabirds such as skuas tend to spend considerable amounts of time bathing or resting on lochs, and may contribute to any nutrient enrichment.	Land Manager, SEPA, NatureScot
	In future, greylag geese may need to be controlled on this site as droppings from these birds have the potential to contribute to eutrophication.	Land managers, NatureScot
Sediment load	Activities such as ATV use should be carried out with care so that they do not lead to creation of bare peat that can be washed into lochs or dubh lochans. Any track maintenance, creation or other development proposals should avoid sediment from disturbed ground being washed into the lochs.	Land Manager, Orkney Islands Council, NatureScot, SEPA
Grazing/Trampling	Ensure stocking levels of livestock are	Land Manager,

	sufficiently low to avoid poaching of edges and peat erosion. Avoid activities related to stock management such as fencing and supplementary feeding close to lochs leading to excess nutrient or sediments entering the lochs from poaching, heavy dunging or uneaten fodder.	NatureScot, SGRPID
Development	Ensure any development proposals do not adversely affect lochs and dubh lochans include appropriate measures to minimise sediment run-off and prevent pollutants from entering the lochs.	Land Manager, Orkney Islands Council, NatureScot
Invasive species	Avoid deliberate introduction of invasive species. Maintain surveillance for invasive species and agree action with regulator. All anglers and other water users (such as canoeists, wild swimmers or researchers) should follow the Check, Clean, Dry biosecurity procedures to help prevent the spread of invasive non-native species.	SEPA, NatureScot Land managers, Members of the public, River Board

Current and recommended management for:

- **vegetated sea cliffs**
- **wet heathland with cross-leaved heath**
- **dry heaths**
- **Alpine and subalpine heaths**
- **base-rich fen**
- **hard water springs depositing lime**
- **blanket bog**

Issue	Measure	Responsible party
Herbivore impacts (grazing and trampling)	Ensure light grazing levels by a combination of livestock and hares. Stocking timing and density should be low enough to allow flowering and fruiting of typical species whilst not being so low that the vegetation becomes rank enough to cause loss of smaller and annual plants. Concentrations of animals should be avoided in soft wet habitats (such as blanket bog, base-rich fen or hard water springs depositing lime) particularly susceptible to damage from trampling as use by large numbers of animals is likely to create bare ground.	Land managers, NatureScot

	As a guide to achieving the correct balance the herbivore impact on the features should be no greater than 'low' based on the NatureScot Herbivore Impact Assessment Process.	
Nutrient input (dunging)	Livestock management should avoid encouraging large numbers of animals to concentrate in small areas as the dung can cause significant nutrient enrichment and consequent habitat change.	Land managers, NatureScot
Stock feeding	Stock feeding should not be introduced within the site to prevent concentration of trampling and dunging by livestock or introduction of invasive plant seeds.	Land managers, NatureScot, SGRPID (GEAC)
Muirburn	Any burning should be carried out in accordance with the Muirburn Code, avoiding burning in sensitive areas. Burning should be avoided on the alpine and subalpine heaths as well as the blanket bogs. Consent would be required where muirburning is considered necessary e.g. for wild fire control.	Land manager/NatureScot
Wildfire	Develop a wildfire action plan so that effects upon sensitive habitats can be minimised if wildfire were to start on Hoy.	Land managers
Hydrology	No new drains should be dug and natural hydrology should be restored by blocking existing drains. Re-profiling of hags and gullies in peatland would be beneficial where they are not re-vegetating naturally.	Land manager, Local authority, NatureScot, SEPA
Afforestation/ woodland expansion	Native and non-native tree planting should be avoided.	Land managers, NatureScot, Scottish Forestry
Colonisation by invasive non-native species	Invasive non-native species should not be introduced to the site.	Land managers, NatureScot, Orkney Native Wildlife Project
Habitat damage from vehicle use	Avoid using ATVs or other vehicles in a way that damages habitats and leads to an increase in exposed bare ground. Any vehicles driven on these habitats should have low ground pressure tyres and avoid breaking through the vegetation by avoiding soft wet ground or sharp turns.	Land manager, NatureScot
Recreation	The area near the Old Man of Hoy attracts most visitors, with relatively few people climbing Ward Hill or accessing the part of land south of the Rackwick	Land manager, Local Authority, NatureScot

	<p>road. Although walkers cause some trampling, this is localised and affects only a small proportion of these habitats.</p> <p>Mountain biking has a greater potential to cause erosion. Although very few people take mountain bikes onto the site at present, active management to promote responsible access may be needed in the future.</p>	
Habitat Management	Other than appropriate livestock management, natural processes should be allowed to continue by a policy of non-intervention.	NatureScot, landowners, land managers.

Current and recommended management for

- plants in crevices on base-rich rocks

Issue	Measure	Responsible party
Grazing	<p>Hares are the main herbivore on higher parts of the site, as the majority of this habitat is too steep and rocky to be attractive for sheep grazing.</p> <p>Agile herbivores (such as goats) should not be introduced to the site.</p>	Land managers, NatureScot,
Muirburn	This habitat is very sensitive to burning and should not be burnt.	Land manager
Colonisation by vigorous native and non-native species	<p>Non-native and invasive species should not be introduced to the site.</p> <p>New Zealand willowherb has been recorded on this site, and this should be discouraged from spreading.</p>	Land managers, SISI, NatureScot
Trampling (by hillwalkers and sheep)	Vegetation in this habitat is very sensitive to trampling (either by hillwalkers or sheep). Walkers and sheep do not currently cause measurable damage, as the areas where this feature is found are generally too steep and rocky to be attractive to either sheep or walkers. Walkers and sheep should not be encouraged to use these areas more in future.	Land managers, NatureScot
Habitat damage from vehicle use – particularly ATVs	<p>The obvious practical difficulties of using vehicles in steep rocky areas means that there is currently no vehicle use in these habitats.</p> <p>Vehicles should not be used here as they would cause significant erosion</p>	Land manager

	and crush the fragile vegetation.	
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All habitats

Habitat Management	Maintain plans as required, for example RSPB Reserve plan etc.	RSPB, NatureScot, Landowners, Land managers.
Research and monitoring	To identify emerging impacts on the habitats and their causes in order to understand the long term issues and to inform future management of the habitat across Scotland. Research bodies should have a local contact they can call upon if undertaking field data collection remotely.	NatureScot, University researchers, Land managers
Invasive species - stoats or other mammals not native to Orkney	Stoats, or other animals that are not native to Orkney, have the potential to kill Orkney voles and waterbirds which in turn could affect the habitats in Orkney in unpredictable ways. Stoats should be removed and no new predators introduced.	NatureScot

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