

COYLES OF MUICK SPECIAL AREA OF CONSERVATION (SAC)

CONSERVATION ADVICE PACKAGE



Site Details

Site name:	Coyles of Muick Special Area of Conservation (SAC)
Map:	https://sitelink.nature.scot/site/8231
Location:	North Eastern Scotland
Site code:	UK0030122
Area (ha):	134.18
Date designated:	17 March 2005

Qualifying Features

Qualifying Feature	SCM assessed condition at this site	SCM visit date	UK overall Conservation Status
Grasslands on soils rich in heavy metals (Calaminarian grasslands of the <i>Violetalia calaminariae</i>) [H6130]	Favourable maintained	3 August 2006*	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.

* Corresponding SSSI feature monitoring done 25 July 2012

Overlapping protected areas

[Coyles of Muick Site of Special Scientific Interest \(SSSI\)](#)
[Cairngorm Massif Special Protection Area \(SPA\)](#)

Key factors affecting the qualifying feature

Grasslands on soils rich in heavy metals

This habitat occurs on soils that have levels of heavy metals, such as lead, zinc, chromium and copper that are toxic to some plant species. The greatest extent of the habitat occurs on artificial sites associated with past mining activities with near-natural examples much more localised. There are three main situations where this habitat type has developed:

- Near-natural, open vegetation of serpentine rock and mineral vein outcrops with skeletal soils
- Stable river gravels rich in lead and zinc and that are near-natural

- Artificial mine workings and spoil heaps

This habitat can be highly variable in composition and structure. The defining characteristic is the substrate, which must be ultra-basic. At Coyles of Muick, the habitat is primarily present on serpentine rock outcrops with skeletal soils.

Key management issues which affect this type of habitat include inappropriate levels of grazing and air pollution leading to eutrophication of the nutrient poor soils. At Coyles of Muick the site is primarily grazed by deer and hare at levels which appear to be appropriate as Site Condition Monitoring has found the site to be in favourable condition.

Further information about grasslands on soils rich in heavy metals can be found [here](#).

Conservation priorities

There are no apparent conflicts between the management requirements for this site and Cairngorms Massif SPA. There are no known eagle nests within the boundary of this site although the area may be used for foraging.

Conservation Objectives for grasslands on soils rich in heavy metals

1. To ensure that the qualifying feature of Coyles of Muick SAC is in favourable condition and makes 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 the SAC is maintained by meeting objectives 2a, 2b and 2c

The aim at this SAC is to maintain the grasslands on soils rich in heavy metals habitat in a favourable condition as a contribution to its wider conservation status. Therefore any impacts on 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 there is certainty that the features will be able to quickly recover.

This objective recognises that the qualifying habitat is 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 habitat's 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.

2a. Maintain the extent and distribution of the habitat within the site

Maintain the habitat to approximately 12.16 ha.

The area figure has been taken from the Standard Data Form, and is an estimate based on the amount and complex, yet often limited, mosaic of several different high altitude communities. Fundamentally however there should be no measurable net reduction in the extent of the habitat and its distribution throughout the site.

At Coyles of Muick this habitat is found on crags and knolls of serpentine, associated areas of fine scree/debris, and extends into some of the sparser areas of grassland.

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

The structure and function of the habitat is most dependent upon the underlying unusual toxic soils and so the characteristics of these soils should be maintained.

For areas of serpentine grassland, appropriate levels of grazing (neither too high, nor too low) should be maintained, that will not negatively affect the structure, function or supporting processes of the habitat.

There should only be low levels of herbivore disturbance, which can be measured as:

- Less than 10% of the ground cover should be disturbed bare ground. Disturbed bare ground is where a substrate of bare humus, bare peat, bare mineral soil, bare gravel, or soil covered only by an algal mat, has its surface broken and imprinted by hoof marks, wallows, human foot prints, or vehicle and machinery tracks. The emphasis is on 'disturbed' rather than 'bare'.
- Less than 10% of the total feature area should show signs of active drainage, resulting from ditches or heavy trampling or tracking. 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 most recent monitoring results have shown that herbivore impacts are at an acceptable level.

Many serpentine plant species that grow on this habitat type are shade intolerant. Therefore anything that will lead to increased shading, such as tree regeneration, is likely to have a negative effect on the habitat so tree cover should be no more than scattered through the site. Although adjacent to, and partly within a forestry plantation, the Coyles of Muick does not appear to be subject to excessive shading by tree regeneration.

2c. Maintain the distribution and viability of typical species of the habitat

The interest at Coyles of Muick is mainly found on rocky outcrop of serpentine associated areas of scree and debris and extends into some of the sparser areas of grassland..

Soils derived from serpentine, a dark green mineral consisting of hydrated magnesium silicate containing more magnesium than calcium along with generally plant-toxic nickel and chromium, have a very distinctive flora. In Scotland they occur in the eastern Highlands and on Shetland.

Coyles of Muick contains the second highest outcrop of serpentine rock in Britain. Although the serpentine here is less toxic (less rich in heavy metals and magnesium) than at other serpentine sites, the vegetation of the outcrops and associated fine scree and debris is characteristically sparse and rich in a number of species typically associated with serpentine rocks, with the addition of some montane or arctic-alpine species. Species associated with serpentine rocks and also with coastal sea cliffs, such as sea campion *Silene uniflora* and thrift *Armeria maritima*, are well represented. Spring sandwort *Minuartia verna* is absent at this site. Montane and arctic-alpine species are mainly ones associated with lime-rich deposits such as northern rock cress *Arabis petraea* and alpine mouse-ear *Cerastium alpinum* but also include mountain crowberry *Empetrum nigrum hermaphroditum* which thrives on lime-poor rocks. Alongside the characteristic herbs, grasses which thrive on infertile and particularly on lime-rich soils such as sheep's fescue *Festuca ovina*, crested hair-grass *Koeleria cristata* and smooth oat-grass *Avenula pratensis* are widespread. Ferns associated with serpentine rocks such as green spleenwort *Asplenium viride* are also widespread in crevices amongst the fine scree and especially on the small crags on the north-facing slopes, where they occur along with smaller amounts of other ferns such as maidenhair spleenwort *Asplenium trichomanes* and oak fern *Gymnocarpium dryopteris*.

On the steeper south-facing slopes, the serpentine scree and debris vegetation is particularly sparse, consisting of a scattering of sheep's fescue and crested hair grass and occasional northern rock cress and sea campion, passing to moderately species-rich grassland characterised by thyme *Thymus polytrichum*, on skeletal soils.

Part of the wider interest at this site are the base-rich species-rich grassland, heath and flushes. These areas are lacking in the key serpentine specialists, but are influenced by the underlying serpentine. Calcicolous (i.e. lime-loving) herbs in the species-rich grassland include lady's bedstraw *Galium verum* (occasional), fairy flax *Linum catharticum* (occasional on south and south-west slopes), and quaking grass *Briza media* (locally frequent along lower south-west margins of serpentine formation), as well as thyme itself. A number of other calcicoles also occur locally, especially adjacent to flushes, including northern bedstraw *Galium boreale*, alpine bistort *Polygonum viviparum* and alpine cinquefoil *Potentilla crantzii*, the latter occurs on serpentine at this site, which it does not tend to elsewhere. Mossy saxifrage *Saxifraga hypnoides*, another calcicole, is locally frequent amongst the summit debris and below crags on north-facing slopes.

The serpentine-influenced dwarf-shrub heath occurs on the west slopes alongside flushes and is rich in herbs that thrive on lime- or base-rich soils, including quaking grass *Briza media*, wild thyme and flea sedge *Carex pulicaris*.

Gravelly flushes around the lower margins of the serpentine have an open cover of sedges and brown mosses, with yellow saxifrage *Saxifraga aizoides* locally frequent in the absence of any arctic-alpines. These springs give rise to extensive grassy small-sedge - brown moss mires on the slopes down to the anonymous tributary of the Girnock, alternating with bands of herb-rich to calcicolous heath and grass-heath.

The measures listed in conservation objective 2b for the maintenance of the habitat are also relevant to maintaining the viability of typical species.

Conservation Measures

Most of Coyles of Muick SAC shares the same boundary as the corresponding SSSI and management activities in this area, which are described on the list of Operations Requiring Consent, must have prior consent from SNH (NatureScot). A small part of the site lies outside of the SSSI boundary.

Current and recommended management

Issue	Measure	Responsible party
Herbivore impacts	The site is currently assessed as being grazed at the appropriate level, neither too high nor too low. Grazing is a positive pressure at this site because under grazing could result in some of the smaller species being shaded out. Livestock are not present in the area and it is currently grazed by deer. Previous monitoring has recorded some trampling but was not judged to be severe.	Land manager
Forestry	Part of the site lies within a forestry plantation. There are trees growing in this part of the SAC but their growth currently appears to be stunted. The habitat should be monitored to ensure that these trees do not begin to cause excess over- shading in future as many of the typical species are shade intolerant.	NatureScot, land manager

Contact details:

NatureScot
 Inverdee House
 Baxter Street
 Torry
 Aberdeen AB11 9QA

Telephone: 01224 266500

Email: tayside_grampian@nature.scot

Approved on 19 June 2020 by:

Greg Mudge	Denise Reed
Principle Advisor	Area Manager
International Designations	Tayside & Grampian

