

CITATION

**EASTERN CAIRNGORMS
SITE OF SPECIAL SCIENTIFIC INTEREST**
Aberdeenshire, Moray

Site code: 593

NATIONAL GRID REFERENCE: NJ100000

OS 1: 50 000 SHEET NO : Landranger Series 36 & 43
1: 25 000 SHEET NO : Explorer Series 404

AREA : 16 503.4 hectares

NOTIFIED NATURAL FEATURES

Geological	: Quaternary geology and geomorphology	: Quaternary of Scotland
	Geomorphology	: Fluvial geomorphology
Biological	: Woodlands	: Native pinewood
	: Freshwater	Dystrophic and oligotrophic lochs
	: Upland habitats	: Upland assemblage
	: Birds	: Breeding bird assemblage
	: Fish	: Arctic charr <i>Salvelinus alpinus</i>
	: Vascular plants	: Vascular plant assemblage
	: Non-vascular plants	: Bryophyte assemblage
		: Lichen assemblage
		: Fungi assemblage
	: Invertebrates	: Invertebrate assemblage

DESCRIPTION

The Eastern Cairngorms are located to the north of Braemar. The site comprises the two easternmost mountains of the Cairngorms range, Beinn a' Bhuird (1196 m), and Ben Avon (1171 m), together with Glens Lui and Quoich and parts of Glens Luibeg, Avon and Derry. The Cairngorm mountains are a granite massif, surrounded by schists and other metamorphic rocks that form the lower surrounding hills. The principal hills have extensive summit plateaux containing corries, cliffs, high lochs, streams and rocky gorges. The Cairngorms include the greatest extent of high land in Britain, and this, combined with their relatively continental position, makes low winter temperatures, cool summers and a short growing season notable features of the environment. As such the Cairngorms may be regarded, climatically, geomorphologically and biologically, as the most extensively arctic-like area in Britain. A wide range of plant and animal species and communities are found here including many which are rare or scarce nationally, and the area is of considerable international importance. The Eastern Cairngorms includes extensive areas of high plateau and snow-bed habitats which are amongst the finest in Britain. The Eastern Cairngorms is an area of high conservation interest in itself and also as part of the Cairngorms as a whole.

GEOLOGY

Quaternary Geology and Geomorphology

The Cairngorm mountains is one of most outstanding geomorphological areas in Britain, internationally recognised for its exceptional assemblage of landforms. These are

important for scientific research and education, providing insights into long-term processes of mountain landscape evolution and environmental change in a maritime, mid-latitude setting in the northern hemisphere.

Relict landforms which originated before the Ice Age, or during its earlier phases, are unusual for their scale of development in a glaciated mountain area; they include tors, weathered bedrock and plateau surfaces. These features stand in sharp contrast to glacial troughs, glacially breached watersheds and corries. Together they form an outstanding example of a landscape of selective glacial erosion. The adjacent glens support a diverse assemblage of glacial meltwater features and glacial deposits, notably channels, eskers, kames, kettle holes, terraces, lake deposits and moraines. Periglacial landforms, illustrating the effects of cold climate conditions on the bedrock and soil, are extensively developed on the high slopes and plateau surfaces and add further to the landform diversity, as do several rock slope failures.

A variety of slope landforms, river terraces and gravel-bed rivers reveals the pattern of postglacial landscape changes. The history of climate and change and vegetation development during the final part of the Ice Age and in the subsequent postglacial period is contained in the records of plant remains and pollen grains preserved in lochs and peat bogs.

Many of the individual features are classic examples of their type. It is however, the scale and total assemblage of features, developed in a relatively compact area, which makes the site so remarkable.

Fluvial Geomorphology

In the Eastern Cairngorms, the lower Quoich fan provides a classic example of the impact of reduced channel slope and confinement of channel platform. The river debouches from a long rock controlled section within schist bedrock through which sediment is funnelled during floods. Recent research has demonstrated a complex history of planform adjustment. Of particular interest is the response to the catastrophic 1829 flood event (estimated recurrence interval of 300-500 years), when the whole fan surface became totally disrupted and vast amounts of sediment were deposited. Subsequent adjustment from this state of disequilibrium caused the planform to adopt a dense reticulate pattern. The rate and pattern of post-flood recovery over the last 150 years has been analysed with deviations from an equilibrium condition. It is rare that channel adjustment can be studied in detail over such a timespan.

BIOLOGY

Ranging from 300-1196 m in altitude the Eastern Cairngorms contains a superlative range of montane and sub-montane plant communities from native Scots pine woodland through a variety of mires, grasslands, heathlands, lochs and streams. Many individual habitats and species are of national and/or international importance in their own right, but the value of the site is accentuated by the overall assemblage distributed according to natural factors such as altitude, aspect and soils.

As the bedrock and associated glacial drift is primarily acidic granite, the vegetation of the Cairngorms is dominated mainly by acid-tolerant plant species. The Moine Schists contrast with the granite in giving soils of higher base-status and fertility, and outcrop along the southern and eastern margins of the site. Calcareous habitats and species are present only very locally, most notably on the broken cliffs and in the grasslands and

flushes associated with the outcrop of calcareous schist (lime-rich metamorphic rock), on Craig an Dail Bheag (826 m), by Ben Avon.

The summit plateaux and broad watersheds give rise to a considerable land mass above 1100 m. This in turn allows prolonged snow cover in a variety of situations and there is a greater range and extent of late snow-influenced vegetation than in any other mountain system in Britain.

Alpine moss-heath and related vegetation

The Cairngorms has the largest tracts of alpine moss-heath and related communities in Britain, comprising the full range of types. The community characterised by three-leaved rush *Juncus trifidus* is particularly well developed, with the full range of subtypes and with the largest areas in Britain, on Beinn a' Bhuid and Ben Avon. Where the granite in the Slochd Mor area has locally been impregnated with the mineral epidote, interesting transitions to species-rich moss-heath are marked by the abundant occurrence of moss campion *Silene acaulis*. Areas of the plateau where snow lies a little deeper and/or longer hold beds of dense, short mat-grass *Nardus stricta* and/or stiff sedge *Carex bigelowii*.

Alpine heath

The site has the full range of subalpine and alpine heaths characteristic of the Eastern Highlands and the most extensive tracts of such in Britain. Beinn a' Bhuid and Ben Avon are particularly notable for dwarfed heath dominated by common heather *Calluna vulgaris*, with fine examples of wind-pruned and patterned lichen-rich areas. Snow-bed heaths are also finely developed.

Scree

Areas of scree on granite are extensive at a range of altitudes in the Cairngorms and support diverse and representative examples of high-altitude siliceous scree communities. Of particular interest is the flora of high-altitude screes in the snowy corries, with parsley fern *Cryptogramma crista* and alpine lady-fern *Athyrium distentifolium*). In the Slochd Mor corrie there are interesting transitions to less acidic scree vegetation with an abundance of alpine lady's mantle *Alchemilla alpina* and scurvy-grass *Cochleria officinalis*.

High-altitude vegetated crevices

High-altitude crevice habitats on the granites of the Eastern Cairngorms are generally acidic and poor in vascular plants. A more base-rich influence is seen where the granite outcrops are locally impregnated with epidote in the Slochd Mor Corrie. Here, alpine speedwell *Veronica alpina*, alpine meadow-grass *Poa alpina* and tufted saxifrage *Saxifraga cespitosa* are found.

Base-rich flushes at high altitudes

Although of very restricted distribution, base-rich flushes are present at Craig an Dail Beag and Slochd Mor, and these support a number of arctic-alpines, including sheathed sedge *Carex vaginata*, three-flowered rush *Juncus triglumis* and Scottish asphodel *Tofieldia pusilla*. Similar vegetation is also found very locally by the Feith Laoigh and in Glens Lui and Luibeg.

Late snow-beds

Dwarf-willow, sedge, grass and moss-dominated communities of late snow beds are well-developed, and support a number of rare bryophytes and arctic-alpine herbs such as starwort mouse-ear *Cerastium cerastoides*,

The associated montane bryophyte spring communities are also finely developed and support the rare liverwort *Gymnomitrium concinatum*.

Alpine calcareous grassland

A small area of calcareous grassland is found on and above the crags of Craig an Dail Bheag. This has the largest colony in Britain of alpine milk-vetch *Astragalus alpinus*, along with mountain avens *Dryas octopetala*, mossy campion *Silene acaulis* and rock sedge *Carex rupestris*.

Alpine willow scrub

Although of very restricted distribution, bushes of whortle-leaved willow *Salix myrsinites* on Craig an Dail Bheag and at Slochd Mor form small patches of alpine willow scrub.

Blanket bog

Blanket bog occurs extensively at a range of altitudes. Moine Bhealaidh is a large area of high-level blanket bog. Saddle bogs are present at a range of altitudes and are locally sphagnum rich. Those at the head of Glen Gairn support small cranberry *Vaccinium microcarpum* and dwarf birch *Betula nana*.

Woodland

Native pine forests are found in Glens Lui, Derry, Luibeg and Quoich, along with a small area near the Linn of Avon. They were once part of a continuous tract of Caledonian pine woodland over much of highland Scotland but are now the most local of all major forest types in Britain. The woodland is mostly open and contains many ancient trees. The pines themselves support a number of rare lichen species which are characteristic of these ancient woods. As well as the native Scots pine *Pinus sylvestris* var. *scotica*, birch (mainly *Betula pubescens*), is widespread in the lower parts of the woods, particularly in Glen Quoich and in Doire Bhraghaid in Glen Lui. In and around open areas within the woods, there are interesting transitions to heathland, grassland and particularly peatland vegetation.

Small areas of bog are quite widespread on terraces within the woods, the one below Doire Bhraghaid in Glen Lui supporting the largest area of wooded bog. These forest bogs support bog plants such as small cranberry, few-flowered sedge *Carex pauciflora*, dwarf birch and the mosses *Sphagnum fuscum* and *S. affine*.

Small areas of juniper scrub are also found.

Dry heath

The site supports the full range of submontane heaths characteristic of the Cairngorms, and the eastern Highlands as a whole, including extensive areas of damp heath, areas rich in bearberry, and snow bed forms of blaeberry heath, the Cairngorms having the largest extent of dry heath in Britain.

Wet heath

Wet-heath characterised by species such as cross-leaved heath *Erica tetralix*, and the moss *Sphagnum compactum* is widespread in Glens Avon, Quoich and Derry in the upper reaches of the submontane zone, on seasonally waterlogged, shallow peaty soils on moderate slopes, often in close association with blanket bog on less steeply sloping ground. Smaller areas of wet-heath are also present in the lower reaches of the montane zone, as on the upper margins of Moine Bhealaidh. The wet-heath in the eastern Cairngorms forms part of the largest extent of this habitat in North-east Scotland.

Lochs

The site includes a number of lochs and lochans, at various altitudes, with either clear or peat-stained oligotrophic or dystrophic types waters. The mountain plateau and corrie lochs such as Lochan na Gabhar (765m), the Dubh Lochan of Beinn a' Bhuid (935m), and Lochan Beinn a' Chaorainn (945m), have very poor nutrient levels and an impoverished fauna and flora, mainly phytoplankton with a few zooplankton and invertebrates, but no aquatic plants (macrophytes). Fish are not generally present at these higher altitudes. Exceptionally, brown trout *Salmo trutta* in the Dubh Lochan of Beinn a' Bhuid possibly form the highest self-sustaining fish population in Britain. At lower altitudes, Loch Builg (485m), has higher nutrient levels and, whilst it is not accessible to migratory fish, supports Arctic charr *Salvelinus alpinus*, as well as brown trout.

Plants

The Eastern Cairngorms is of national importance for its assemblages of vascular plants, bryophytes, lichens and fungi.

The colonies of alpine milk-vetch *Astragalus alpinus* and tufted saxifrage *Saxifraga cespitosa*, on Creag an Dail and at Slochd Mor, are of particular importance. The mountain summits are a stronghold of the curved wood-rush *Luzula arcuata*. A large number of nationally scarce species are also found.

Rich communities of lichens with rare species are found in a number of habitats. *Flavocetraria nivalis*, *Alectoria ochroleuca* and *A. sarmentosa* are found in alpine heaths. Rocks in late snow-beds support species species such as *Lecanora formosa*, *Rhizocarpon jemtlandicum*, *Catillaria contristans*, *Frutidella caesioatra* and *Micarea turfosa*. The rare arctic-alpine lichen *Catolechia wahlenbergii* has recently been found on Beinn a' Bhuid. The native pine forest is another important habitat for lichens with rare species such as *Xerotrema megalospora* and *Pertusaria borealis* on standing and fallen dead wood.

Over 370 species of bryophytes have been recorded in the Eastern Cairngorms, more than one third of all Scottish species. These include some species new to Britain, for example the recently recorded moss *Dicranum spadiceum*, the very rare liverworts *Gymnomitrium apiculatum* and *Marsupella sparsifolia* and a large number of nationally scarce species, such as the moss *Polytrichum sexangulare* (syn. *norvegicum*), and the liverwort *Marsupella brevissima*. The calcareous schists of Creag an Dail Beag are important for bryophytes, with species such as *Hypnum bambergeri*, *Oncophorus wahlenbergii*, *Hygrohypnum smithii* and *Gymnomitrium corallioides*.

Fungi

Grassy flats in Glen Lui support a high diversity of grassland fungi, including at least twenty species of waxcaps (*Hygrocybe*) and six species of earthtongue (Geoglossaceae), many of which are rare. The adjacent pinewoods of Mar Lodge are also important areas for stipitate hydroid 'tooth' fungi (*Bankera*, *Hydnellum*, *Phellodon* and *Sarcodon*).

Birds

The Cairngorms, of which the Eastern Cairngorms is an integral part, is of outstanding importance for birds of woodland and moorland, together with the best example of a montane bird community in Britain. Many typical and rare montane birds are found including important populations of dotterel and snow bunting. The Cairngorms also supports nationally important populations of ptarmigan and raptors such as golden eagle, merlin and peregrine.

The Eastern Cairngorms pinewoods contribute to nationally important populations of Scottish crossbill, capercaillie and black grouse.

Invertebrates

Many invertebrate species occur in the Eastern Cairngorms including rare flies, moths, butterflies, beetles and ants. One species restricted to high ground is the fungus gnat *Macrocera zetterstedti*. The delicate craneflies *Rhabdomastix inclinata* and *R. laeta* have been recorded along the River Avon and Lui Water. Two colonies of the rare mountain burnet moth *Zygaena exulans* are found along with the northern dart *Xestia alpicola*, both of which feed on crowberry in the mountains. The nationally declining pearl-bordered fritillary *Boloria euphrosyne* is found by Glen Lui. Several beetles were first recorded in Britain from the Eastern Cairngorms: *Corticarina latipennis*, the wood-boring beetle *Ostoma ferugineum* and the dung beetle *Cercyon alpinus*. The rare ant *Formica exsecta* has been recorded in Doire Bhraghaid by Glen Lui.

NOTIFICATION HISTORY

First notified under the 1949 Act: 1971.

Re-notified, under the 1981 Act, 1 December 1988. with a 4300 ha increase in area.

Notification reviewed under the 2004 Act: 29 March 2012.

REMARKS

Measured area of site corrected (from 16 441 ha).

The Eastern Cairngorms SSSI is part of the Cairngorms Special Area of Conservation (SAC) designated for the European habitats and species listed below and is also part of the Cairngorms Special Area of Protection (SPA) designated for the birds listed below.

Habitats: Acid peat-stained lakes and ponds
Acidic scree
Alpine and subalpine heaths
Blanket bog
Bog woodland
Caledonian forest

Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels
Dry grasslands and scrublands on chalk or limestone
Dry heaths
Hard-water springs depositing lime
High-altitude plant communities associated with areas of water seepage
Juniper on heaths or calcareous grasslands
Montane acid grasslands
Mountain willow scrub
Plants in crevices on acid rocks
Plants in crevices on base-rich rocks
Species-rich grassland with mat-grass in upland areas
Tall herb communities
Very wet mires often identified by an unstable 'quaking' surface
Wet heathland with cross-leaved heath

Species: Green shield-moss *Buxbaumia viridis*
Otter *Lutra lutra*

Birds: Capercaillie *Tetrao urogallus*, breeding
Dotterel *Charadrius morinellus*, breeding
Golden eagle *Aquila chrysaetos*, breeding
Merlin *Falco columbarius*, breeding
Osprey *Pandion haliaetus*, breeding
Peregrine *Falco peregrinus*, breeding
Scottish crossbill *Loxia scotica*, breeding

Part of the Eastern Cairngorms SSSI is also part of the Cairngorms Massif SPA designated for the following bird species.

Golden eagle *Aquila chrysaetos*, breeding

Part of the Eastern Cairngorms SSSI is also part of the River Dee SAC designated for European species listed below.

Species Atlantic salmon *Salmo salar*
Freshwater pearl mussel *Margaritifera margaritifera*
Otter *Lutra lutra*

Part of the Eastern Cairngorms SSSI is part of the River Spey SAC designated for the species listed below.

Species Atlantic salmon *Salmo salar*
Freshwater pearl mussel *Margaritifera margaritifera*
Otter *Lutra lutra*
Sea lamprey *Petromyzon marinus*

//;