

DEPARTMENT OF THE ENVIRONMENT FOR NORTHERN IRELAND**DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT EASTERN MOURNES, COUNTY DOWN. ARTICLE 24 OF THE NATURE CONSERVATION AND AMENITY LANDS (NORTHERN IRELAND) ORDER 1985.**

The Department of the Environment for Northern Ireland (the Department), having consulted the Council for Nature Conservation and the Countryside and being satisfied that the area delineated and described on the attached map (the area) is of special scientific interest by reason of the flora, fauna, geological and physiographical features and accordingly needs to be specially protected, hereby declares the area to be an area of special scientific interest to be known as the 'Eastern Mournes Area of Special Scientific Interest'.

The area is of special scientific interest because of its geological and physiographical features, and its heathland and upland flora and fauna. The Mourne Mountains consist of a compact range of mountains forming the highest ground in Northern Ireland. Twelve summits extend to over 600 metres (m), with Slieve Donard rising to 852m. The White Water river lies in a major valley which extends southward from Deers Meadow, dividing the Eastern Mournes from the more low-lying Western Mournes. The Mourne Mountains are significant as being one of the sites where the theory of pulsed granitic emplacement was developed. They are the largest outcrop of tertiary granites in the British Isles, covering some 150 sq km.

Granite emplacement occurred some 56 million years ago, the major peripheral dyke swarm predates this, while composite and multiple intrusion dykes within the granite bodies are clearly younger. Five granitic intrusions are represented in exposure. Basic xenoliths of cumulative gabbros in early dykes support geophysical evidence for a large mass of basic rock at depth. The origin of the magma involved both melting of crustal rocks and fractionation of a mantle-derived parent magma. The granites were emplaced by repeated and asymmetrical subsidence on outward dipping ring faults. Successive injections occurred at two centres. The earlier eastern area has three distinct and progressively younger granites - G1 granite (feldspathic, hornblende), G2 granite (quartz rich) and G3 granite (aplitic, fine grained).

There are a number of notable deviations from the typical granite mineralogy. Late phase crystallisation of volatile rich melts has produced 'drusy' granites at Diamond Rocks, exhibiting notably large, smoky quartz, feldspar and mica crystals, together with rarer topaz, aquamarine and tourmaline; occurrence here is in a contact zone between earlier and later phases of G2 emplacement. Mica, topaz, quartz, feldspar fluor spar and stilbite occur in green veins at Lindsay's Leap. Eagle Rock also has drusy cavities in G2 lined with fayalite, magnetite, quartz, feldspar and mica. Pneumatolysed G3 resulting in greisen veining is evident near the Silent Valley Dam.

The Silurian roof to the laccolithic ring dyke tops is still evident in many places, showing low grade thermal hornfelsing, as at Thomas's Mountain. The presence of the roof proves high crustal emplacement of the granites, although these did not reach the surface. Steeply dipping outer contacts between the granites and the Silurian country rock are well exposed at Bloody Bridge, Ballagh Bridge and in the Trassey and Glen Rivers. At the latter, the hornfels are spectacularly striped.

In the eastern centre, bounding walls and roofs of the granites are evident in places, showing their arrangement within each other, as at Slieve Binnian, Doan

and Ben Crom. Contact margins indicate that earlier granites were sufficiently cool to chill those succeeding. There is no evidence of extensive uplift of the country rocks, and the abrupt turn of wall into roof in the case of each intrusion suggests that the successive emplacements were due to the subsidence of a block of the country rock bounded by a ring fracture and separated from the roof by a cross fracture. Magma was then intruded from below into the ever-widening fissure and the roof space. In general, the lack of tectonic deformation of the country rock during emplacement of the granites is remarkable.

Numerous aplitic sheets throughout the granites represent the intrusion of late-crystallising fractions of the magma into cracks in the consolidated granites, as at the Ben Crom Dam. The nature of the aplite is closely controlled by the variety of granite into which it was intruded, but sometimes older granites are invaded by later aplites near the contacts with younger granites. The mainly post-granitic age of the dyke swarm is indicated by the discovery of petrologically equivalent dykes within the G2/G3 granites during the cutting of the Slieve Binnian tunnel. However, there are also marginal dykes cut by the granites, indicating a pre-granite age.

While grus (deeply decayed granite resulting in sand, gravel and clay deposits) profiles have been used to suggest intensive erosion under humid tropical conditions, recent evidence indicates that development under humid temperate interglacial conditions is more likely.

Topographical evidence has been used to suggest that higher relative sea-levels during the late Tertiary resulted in planation surfaces developing through river and other erosion forces. Ten such surfaces have been tentatively identified.

The Mourne Mountains owe much of their scenic attraction to intense erosion by independent centres of ice dispersion during repeated cold stages of the Quaternary. The overall rounded form of the main mountains indicates that they have been over-ridden by thick ice masses, while moraine patterns show late ice retreat into the mountains, westerly to Carlingford Lough and northerly along the eastern flank of the Mourne. During the Late Midlandian (last phase of ice activity), much of the upland block was ice-free, with the exception of isolated snow and ice fields on north and east facing slopes. Classic features of upland glaciated terrain are present, including corries at Pot of Legawherry and Pot of Pulgarve and glaciated valleys with lateral and terminal, often cross-valley, moraines. The Bloody Bridge lateral moraine represents a late deglacial event and is probably one limit of the Drumlin substage in south County Down.

Exposed rock was affected by the intense cold, producing shattered peaks, block fields and screes and ice-plucked cliffs. The summit tors are thought to owe their form to periglacial action on the deeply rotted granites, as at Slieve Binnian and The Castles of Commedagh. Contemporary processes include river and slope development. While there is some evidence of the continuing importance of freeze-thaw action on exposed summit and cliff surfaces, weathering is predominantly arenaceous. Extensive gullying and flow forms are present in areas with deeper peat.

Biological interest relates to the size, quality and diversity of the habitats within the area, in addition to the presence of particular plant and animal species of note. Heathland is a scarce and scattered resource and the Eastern Mourne support the most extensive tracts in Northern Ireland. Upland communities are notable, as the area is the highest upland block in Northern Ireland. Blanket bog and grasslands are also represented, producing a varied and diverse mosaic of habitats. These habitats support an array of associated flora and fauna, including a number of rare plants and a significant upland bird community, including the rare Ring Ouzel Turdus torquatus.

The heathland communities are very variable and depend upon local environmental conditions. They exhibit a well defined altitudinal sequence from lowland through to upland heath. Transitional communities throughout this gradation contribute to the overall interest of the area.

Below 250m in height, particularly along the eastern coastal margins of the Mourne, the heath is often characterised by the abundance of Western Gorse Ulex gallii. This type of vegetation is generally restricted to the warm, oceanic (comparatively mild and wet) regions of lowland Britain, and its extensive occurrence so far north is notable.

This heath gives way upslope to vegetation in which Heather Calluna vulgaris and Bell Heather Erica cinerea are the dominant elements, forming the most widespread heath community in the Eastern Mourne. Unlike similar communities in Great Britain, the oceanic species Erica cinerea tends to be overwhelmingly dominant, reflecting the mild climate of the region.

At higher altitudes, transitional communities with such species as Bilberry Vaccinium myrtillus and Crowberry Empetrum nigrum are occasionally present, although these are generally restricted to the cooler, shaded slopes. More commonly, the dwarf-shrub heaths pass directly into montane summit heaths, often dominated by grasses, such as Sheep's-fescue Festuca ovina and the Bents Agrostis spp., with the moss Racomitrium lanuginosum prominent. Evidence suggests that this bryophyte-dominated Racomitrium heath was once more widespread in the Mourne, but it appears to be largely confined now to the highest, north-facing scree slopes, where grazing is light. This is a scarce vegetation type in Northern Ireland, and indeed, is generally confined to the north of the British Isles. The rare Alpine Clubmoss Diphasiastrum alpinum is locally frequent here. In the tightly grazed sward on the summit of Slieve Donard, the highest point in the Mourne, there is an abundance of Dwarf Willow Salix herbacea, a scarce montane species.

On the lower, north-facing slopes, the damp microclimate allows wet heaths to develop. This community is characterised by the prominence of Cross-leaved Heath Erica tetralix, Deer-sedge Trichophorum cespitosum, Purple Moor-grass Molinia caerulea, Carnation sedge Carex panicea and Sphagnum bog-mosses. This community is somewhat unusual in containing a high proportion of Bell Heather Erica cinerea, which is generally associated with more freely draining soils. It is also remarkable for the abundance of the rare northern Atlantic moss Campylopus setifolius.

Unimproved grassland is widespread throughout the area, often dominated by Mat-grass Nardus stricta with Common Bent Agrostis capillaris, Sheep's Fescue Festuca ovina, Sweet vernal Grass Anthoxanthum odoratum and Heath Bedstraw Galium saxatile. These grasslands frequently form complex mosaics with the dwarf shrub heaths, often indicating the degradation and fragmentation of former heath habitat as a result of persistent sheep grazing. Small pockets of calcareous grassland, with species such as Wild Thyme Thymus polytrichus, and marshy grasslands dominated by Purple Moor-grass Molinia caerulea, rushes Juncus spp. and sedges Carex spp., provide additional habitat diversity.

With the high rainfall in the area, different types of spring and flush vegetation have developed. Of particular note at lower altitudes are the frequent stands of Black Bog-rush Schoenus nigricans. In eastern parts of the British Isles, this species is generally indicative of base-rich flushes, but in the Mourne it grows alongside more calcifuge species in acid and neutral flushes. This reflects the more oceanic climate of north-west Britain.

Associated species include Many-stalked Spike-rush Eleocharis multicaulis, White Beak-sedge Rhynchospora alba, Pale Butterwort Pinguicula lusitanica and Dioecious Sedge Carex dioica. Springs dominated by lower plants are conspicuous in the Eastern Mourne by their bright green colour and spongy mat appearance. The moss Philonotis fontana typically forms swelling mounds around seepages, with scattered rosettes of the scarce Starry Saxifrage Saxifraga stellaris, although the latter is notably absent at lower altitudes. Frequent associates of this community include Blinks Montia fontana and the mosses Polytrichum commune and Sphagnum auriculatum. These springs often give rise to acid flushes dominated by Common Cottongrass Eriophorum angustifolium and Sphagnum spp.

Relicts of broadleaved woodland are largely confined to rocky ledges and small gorges with occasional Downy Birch Betula pubescens, Holly Ilex aquifolium, Rowan Sorbus aucuparia and Hazel Corylus avellana. In other places which are free from grazing, such as cliff-ledges and block fields, a community dominated by Bilberry Vaccinium myrtillus, Great Wood-rush Luzula sylvatica and ferns such as Broad Buckler Fern Dryopteris dilatata may be found. Racomitrium lanuginosum is also frequently associated with these inaccessible rocks.

Two reservoirs and a number of base-poor, upland lakes occur within the mountain range. The natural water bodies have clear waters and are generally devoid of aquatic plants. Exceptions include Binnian Lough and Blue Lough, which are characterised by the presence of Quillwort Isoetes lacustris and Water Lobelia Lobelia dortmanna. The marginal vegetation associated with these water bodies tends to be sparse and restricted, and consists of a scattered swamp and poor acid fen fringe.

In addition to some of those listed above, a number of rare and notable plants have been recorded for the Eastern Mourne, including Irish Lady's-tresses Spiranthes romanzoffiana, Parsley Fern Cryptogramma crispa, Beech Fern Phegopteris connectilis, Cowberry Vaccinium vitis-idaea and Stiff Sedge Carex bigelowii. Rare bryophytes include the mosses Rhabdoweissia crenulata and Glyphomitrium daviesii and the liverworts Bazzania tricrenata, Lepidozia pearsonii, Harpalejeunea ovata and Sphenolobopsis pearsonii.

The breeding birds are typical of uplands in Northern Ireland, being rather limited in terms of diversity, but with a number of specialist species present. Red Grouse Lagopus lagopus are linked to areas with heather and successfully breed. The scree slopes provide habitat for Wheatear Oenanthe oenanthe and a few Ring Ouzel Turdus torquatus. High cliffs with ledges hold breeding Peregrine Falcon Falco peregrinus and Raven Corvus corax.

Heathland is a particularly important habitat for the Common Lizard Lacerta vivipara and the species is well-represented in the Eastern Mourne.

The heathlands in the Mourne support a variety of invertebrate communities. Some of those found in the upland heath, flushed heath and dry heath appear to be restricted to this part of Northern Ireland.

A number of southern invertebrate species are found in the Eastern Mourne but are otherwise absent or very rare in other parts of Northern Ireland. The presence of these species is due to a combination of factors, including the favourable micro-climate of the sheltered, generally south-facing heaths, the presence of well-drained soils and the open structure of the heathland vegetation. The Bloody Bridge Valley is a particularly important area and its lowland heathland fauna has been studied most intensively. Within the valley

there are extensive colonies of solitary Hymenoptera, and records of a number of heathland specialists. Individual species include the heteropteran Alydus calcaratus at its only Irish site, the hoverflies Metasyrphus latilunulatus, Chrysotoxum arctuatum and Chrysoqaster virescens, and the tiger beetle Cicindela campestris. More generally distributed heathland species include the Dark Green Fritillary Argynnis aglaja and the Grayling Hipparchia semele, which have their largest inland populations in Northern Ireland in this area.

The summit heaths, especially on the best-studied summit of Slieve Donard, support one of the largest species assemblages of specialist montane invertebrates so far recorded in Ireland. Species of note include the predatory ground beetles Notiophilus aesthuans and Miscodera arctica and the dwarf willow-feeding sawfly Pontania crassipes; all three species have only recently been recorded and Slieve Donard is their only known Irish site. Older records of a number of uncommon beetles species confirm the importance of this summit for these specialist fauna. The records include the rove beetles Stenus geniculatus, Anthopagus alpinus and Ocyusa hibernica.

Within the heathland, areas of flushing add to the invertebrate diversity and support their own specialist fauna. Many of these flush species are confined to, or are most commonly found within Northern Ireland, in the Mourne heaths. These include the aquatic Coleoptera Laccobius atratus, L. atrocephalus and Paracymus scutellaris, the craneflies Tipula montana, Orimarga virgo and Limosa aquosa, and the dragonfly Orthetrum coerulescens.

Due to their oligotrophic nature, the lakes support few invertebrate species. Nevertheless they do contain some uncommon upland species, including the beetle Potamonectes griseostriatus, which has been found in several of the lakes and the water bug Glaenocorisa propinqua, which is present in Lough Shannagh.


Schedule

The following operations and activities appear to the Department to be likely to damage the flora, fauna, geological and physiographical features of the area:

1. Cultivation, including ploughing, rotovating or re-seeding.
2. Increase in grazing intensity or change either in the type of livestock used or in feeding practices.
3. Introduction of mowing or other methods of cutting vegetation.
4. Application of manure, slurry, fertiliser or lime.
5. Application of pesticides, herbicides, fungicides or other chemicals deployed to kill, selectively or non-selectively, any form of animal, plant or other living organism.
6. Dumping, spreading or discharge of any matter.
7. Burning.
8. The release into the area of any wild, feral or domestic animal, plant or seed. "Animal" includes any mammal, reptile, amphibian, bird, fish or invertebrate, but excludes livestock and animals used in controlling livestock.

9. The destruction, displacement, removal or cutting of any plant, seed or plant remains, or the disturbance, killing or removal of any wild animal in a manner likely to affect the continued existence of the species within the area except as provided for under the terms of the Wildlife (Northern Ireland) Order 1985.
10. The introduction of tree or woodland management, including afforestation or planting.
11. Drainage, including peat drainage or the use of mole, tile, tunnel or other artificial drains.
12. Modification of the structure of water courses, including their banks and beds as by realignment, regrading or dredging.
13. Management of aquatic and bank vegetation.
14. The alteration of water levels or water tables or the utilisation of water including storage or extraction, but excluding water used for domestic requirements.
15. Infilling of ditches, drains, ponds, pools, marshes or lakes.
16. Reclamation of land from bog, marsh, river or lake.
17. Extraction of minerals including peat, sand, gravel, topsoil or subsoil.
18. Construction, removal or destruction of roads, tracks, walls, fences, hard-standings, banks, ditches and other earth works or the laying or removal of pipelines or cables, above or below ground.
19. Storage of materials.
20. Use of craft or vehicles likely to damage the vegetation.
21. Erection of permanent or temporary structures or the undertaking of building, engineering or other operations, including drilling.
22. Recreational, educational or research activities likely to damage the vegetation or disturb the wildlife.
23. Excessive sampling of rocks, minerals or any other material forming a part of the site.
24. Changes in game or fisheries management or fishing or hunting practices.

Sealed with the Official Seal of the
Department of the Environment for
Northern Ireland on 24 March, 1995



J CROWTHER
Assistant Secretary

ASI95035/CWB

M. Cunningham
CIVIL SERVANT OF
CLARENCE COURT, BELFAST.

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FOOTNOTES

- (a) Please note that consent by the Department to any of the above operations or activities does not constitute planning permission. Where required, planning permission must be applied for in the usual manner to the Department under Part IV of the Planning (NI) Order 1991. Operations or activities covered by planning permission are not normally covered in the list of Notifiable Operations.

- (b) Also note that many of the operations and activities listed above are capable of being carried out either on a large scale or in a very small way. While it is impossible to define exactly what is large and what is small, the Department would intend to approach each case in a common sense and practical way. It is very unlikely that small scale operations would give rise for concern and if this was the case the Department would give consent, particularly if there is a long history of the operation being undertaken in that precise location.