



DEPARTMENT OF THE ENVIRONMENT

DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT WEST FERMANAGH SCARPLANDS, COUNTY FERMANAGH. ARTICLE 24 OF THE NATURE CONSERVATION AND AMENITY LANDS (NORTHERN IRELAND) ORDER 1985.

The Department of the Environment (the Department), having consulted the Council for Nature Conservation and the Countryside and being satisfied that the area described and delineated 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 "West Fermanagh Scarplands Area of Special Scientific Interest".

The area is of special scientific interest because of the diversity of geological and physiographical features and the wide range of habitats with associated flora and fauna. Geological interest relates to the large exposure of limestone at Knockmore, while the surface karst and cave systems are of geomorphological importance. Biological interest relates to the size, quality and diversity of the habitats in addition to the presence of particular plant and animal species of note. Extending from Sraniff and Kilgarrow in the north to Aghahoorin and Carn in the south, West Fermanagh Scarplands is one of the most important and diverse areas of semi-natural vegetation in Northern Ireland. It encompasses a series of upland plateaux and escarpments with cliffs, scarps, ridges and intervening slopes. This varied landscape supports a unique range of habitats including woodlands, wetlands, grasslands and peatlands.

The rocks of the area are some 335 million years old and date from the Carboniferous period, a time when Ireland lay near the equator. The very extensive Dartry Limestones developed in the sea either from mud mounds, where lime-muds grew to a height of some 120m, or as flanking sediments to these mounds. Knockmore Hill is the type locality for the Knockmore Limestone Member. Up to 130m of core sediments and cover limestones are exposed here. Sandstones, notably the Glenade Sandstone, and shales overlie the Dartry series, while the relatively impermeable Glencar Limestone underlies it.

Upland streams and rivers generally sink underground on reaching the Dartry Limestone and then resurge at the Dartry-Glencar contact. Cave development occurs mostly within the carbonate mudbanks of the Knockmore Limestone Member, a part of the Dartry series. Fracture systems and igneous intrusions have influenced the development of a complex underground drainage system.

Three major cave systems occur within the site, with over 14km of surveyed passage in total. The southernmost is the Reyfad-Pollnacrom-Polltullybrack system, which has a great variety of passage forms and good speleothem deposits. It is a pre- to

interglacial system, with large fossil phreatic trunk passages containing the most extensive subterranean glacial sediment deposits in Northern Ireland. The system is the third longest in Ireland and contains the deepest and longest cave in Northern Ireland. It also has the largest passages and the deepest underground shaft discovered in Ireland to date.

The Noon's Hole-Arch Cave System is located towards the centre of the designated area. The Noon's Hole shaft and the system's resurgence at Arch Cave hold important positions in both speleological and local history. The route from sink to resurgence is regarded as one of the finest in Britain and Ireland. It includes the deepest pothole in Ireland, over one kilometre of large speleothem-rich active streamway, an extensive phreatic section and finally, the resurgence at Arch Cave.

The northernmost system is present at Knockmore and hosts the Pollarafta stream cave. This is the finest example of a fault-controlled cave in Northern Ireland. It has a number of phreatic zones with fossil passage bypasses and there are significant areas of calcite speleothems. Mirabilite occurs in the Pollarafta cave system and represents the only record for this unusual mineral in Ireland.

The Knockmore area supports a range of surface karst topography including some of the finest limestone pavement in Northern Ireland. The pavement is formed by the action of glaciers and subsequent solution of limestone. Chemical erosion has resulted in the enlargement of joints and fractures. This produces the characteristic deep fissures (grikes), the residual limestone blocks (clints) and the gutter-like channels on the clints which drain into the grikes (runnels).

The geology and the physical variation of West Fermanagh Scarplands in addition to other factors such as climate and the maintenance of traditional farming practices, have a major influence on the biological interest. It is this combination that has resulted in the complex and diverse mosaic of semi-natural habitats.

Semi-natural woodlands occur along the lower slopes of the scarps and in river valleys. These include a number of important individual woods, as well as many smaller, scattered stands of trees and scrub. The composition of these woodlands is influenced by climate, slope, aspect and soil-type, in addition to past and present management. These factors have produced a diverse range of woodland plant communities. A few woods to the west of the area occur on sandstone rocks and are characterised by acid-tolerant plants. However, most of the woodlands have developed on the limestone and are base-rich (calicolous) in character. Together, these represent one of the most extensive areas of this woodland type in Northern Ireland.

Soils tend to be freely draining on the slopes, where the canopy is generally dominated by Ash *Fraxinus excelsior*. Hazel *Corylus avellana* is the main species in the understorey and occasionally forms a low canopy where Ash *Fraxinus excelsior* is scarce. Hawthorn *Crataegus monogyna*, Rowan *Sorbus aucuparia* and Holly *Ilex aquifolium* also occur in the understorey. Bramble *Rubus fruticosus* agg., Stone Bramble *R. saxatilis* and a diverse fern community form a characteristic field layer. The species-rich ground flora is often dominated by Meadowsweet *Filipendula ulmaria* and Wood-sorrel *Oxalis acetosella*, with species such as Primrose *Primula*

vulgaris, Barren Strawberry *Potentilla sterilis*, Herb-Robert *Geranium robertianum* and Common Dog-violet *Viola riviniana* frequent. Where the soils are more freely draining, stands of Greater Wood-rush *Luzula sylvatica* occur, while damper locations are carpeted by Bluebell *Hyacinthoides non-scripta*, Wood Anemone *Anemone nemorosa* and Ramsons *Allium ursinum*. Bryophytes (mosses and liverworts) are frequent, forming a dense carpet over soils and exposed rock faces and boulders.

Wet woodlands are more localised and occur on valley floors and along the bases of slopes on soils that are either strongly flushed or waterlogged. Alder *Alnus glutinosa* dominates the canopy, with frequent Downy Birch *Betula pubescens* and Goat Willow *Salix caprea*. The understorey is mainly composed of Hazel *Corylus avellana*. The ground flora on strongly flushed slopes is characterised by species such as Enchanter's-nightshade *Circaea lutetiana*, Bugle *Ajuga reptans*, Water Avens *Geum rivale*, Wood Sedge *Carex sylvatica* and Remote Sedge *C. remota*. In waterlogged conditions, these species give way to Opposite-leaved Golden-saxifrage *Chrysosplenium oppositifolium*, Creeping Buttercup *Ranunculus repens*, Lesser Celandine *R. ficaria*, Soft Rush *Juncus effusus* and Smooth-stalked Sedge *Carex laevigata*.

The woods are particularly rich in rare species including Toothwort *Lathraea squamaria*, Bird's Nest Orchid *Neottia nidus-avis*, Welsh Poppy *Meconopsis cambrica*, Wood Fescue *Festuca altissima*, Thin-spiked Wood Sedge *Carex strigosa* and the lichen Tree Lungwort *Lobaria pulmonaria*. Epiphytic bryophytes (on tree trunks and branches) are well developed throughout the woodlands. Notable species include the moss *Ulota calvescens* and the liverworts *Drepanolejeunea hamitifolia*, *Frullania teneriffae*, *Lejeunea* spp., *Microlejeunea ulicina*, *Plagiochila punctata* and *P. spinulosa*. The woods are also important for their exceptionally rich and diverse mycological (fungal) interest, in particular those species that form mutually beneficial associations with trees. These ectomycorrhizal species are well represented, with many species of the Genera *Russula*, *Lactarius*, *Leccinum*, *Tricholoma* and *Inocybe* common. Fungi of dead wood are also abundant. These include the bracket species *Postia subcaesia*, Blushing Bracket *Daedaleopsis confragosa* and Alder Bracket *Inonotus radiatus*. A number of notable land snails have also been recorded including *Ena obscura*, *Leiostyla anglica* and *Acicula fusca*. These species are restricted to semi-natural woodlands.

The area includes a number of upland lakes. Most occur on peatland overlying sandstone rocks, with waters that are strongly oligotrophic (poor in plant nutrients). As a result, the associated vegetation tends to be rather species-poor, with few aquatic plants and pockets of acid fen dominated by *Sphagnum* mosses occurring as scattered, floating mats around the water's edge. The waters of Lough Namanfin and Lough Nacloyduff are slightly richer in plant nutrients, with more diverse vegetation communities, including an abundance of submerged and floating macrophytes, in addition to more extensive marginal swamp and acid fen. Lough Namanfin is of particular note for its submerged carpets of Quillwort *Isoetes lacustris* and Water Lobelia *Lobelia dortmanna*, while Lough Nacloyduff supports well-developed acid fen. These lakes have an insect fauna typical of upland and base-poor sites including dragonflies such as the Four-spotted Chaser *Libellula quadrimaculata* and Common Hawker *Aeshna juncea*. Notable invertebrates include the water beetles *Stictotarsus multilineatus*, *Ilybius aenescens* and *Gyrinus minutus*, and the water bugs *Glaencorisa*

propinqua, *Sigara scotti* and *Arctocorisa germari*. The rare pond skater *Limnoporus rufoscutellatus* occurs at Loughanquin.

To the north, Doagh Lough occurs partially over limestone at a lower altitude and is a naturally eutrophic lough with moderate levels of enrichment. The Lough supports a rich and widespread growth of floating macrophytes such as Yellow Water-lily *Nuphar lutea*, White Water-lily *Nymphaea alba* and Shining Pondweed *Potamogeton lucens*. The swamp zone is composed of Common Club-rush *Schoenoplectus lacustris*, Bulrush *Typha latifolia* and tall stands of Common Reed *Phragmites australis*. Fen vegetation generally occurs as a narrow band. The most prominent fen community is dominated by Bottle Sedge *Carex rostrata* with a range of associated species including Water Mint *Mentha aquatica*, Sharp-flowered Rush *Juncus acutiflorus*, Branched Bur-reed *Sparganium erectum* and Bogbean *Menyanthes trifoliata*. Areas of Tufted Sedge *Carex elata* fen also occur and are associated with species such as Greater Fen-sedge *Cladium mariscus* and Bulrush *Typha latifolia*. In some places, Common Spike-rush *Eleocharis palustris* and Water Horsetail *Equisetum fluviatile* dominate. Species associated with this community include Marsh Marigold *Caltha palustris* and Marsh Cinquefoil *Potentilla palustris*. The invertebrate fauna associated with Doagh Lough contains lowland species including the leaf beetle *Donacia clavipes* and the dragonflies Brown Hawker *Aeshna grandis* and Hairy Dragonfly *Brachytron pratense*.

West Fermanagh Scarplands also includes a number of rivers. These tend to be typical of upland catchments, with waters that are very poor in plant nutrients. The associated vegetation is dominated by aquatic bryophytes. Atlantic Stream Crayfish *Austropotamobius pallipes* has been recorded in some of these rivers.

Grassland communities are complex and reflect the variation in soils, topography and other environmental factors, in addition to agricultural management. The grasslands range from dry calcareous types, where the limestone is at or near the surface, through to wetter flushed grasslands. They often occur as part of a complex mosaic of different community types.

The driest swards are dominated by the grasses Red Fescue *Festuca rubra* and Sweet Vernal Grass *Anthoxanthum odoratum* with a range of sedges and herbs. On limestone outcrops where soils are more calcareous, calcicolous species such as Blue Moor-grass *Sesleria caerulea* and Glaucous Sedge *Carex flacca* are constant in the sward with Devil's-bit Scabious *Succisa pratensis* also frequent. Additional species that reflect the calcareous conditions include Spring Sedge *Carex caryophyllea*, Lady's Bedstraw *Galium verum*, Wild Thyme *Thymus polytrichus* and Bulbous Buttercup *Ranunculus bulbosus*. Orchids such as Early-purple Orchid *Orchis mascula* and Common Twayblade *Listera ovata* are scattered throughout the sward and Mountain Everlasting *Antennaria dioica* is present on rocky knolls. Small-white Orchid *Pseudorchis albida* also occurs here and the Eyebright *Euphrasia salisburgensis*, which is restricted to limestone grasslands in Ireland, is locally frequent in the area. A notable community on the steeper slopes is the rare calcareous heath characterised by Mountain Avens *Dryas octopetala*. Where soils are particularly thin over limestone pavement, the bryophytes *Breutelia chrysocoma*, *Ctenidium molluscum*, *Tortella tortuosa* and *Frullania tamariscinum* are common and in places abundant.

The Knockmore area displays good examples of limestone pavement, a rare and threatened habitat throughout the British Isles. Limestone pavement has a distinctive flora characterised by shade-tolerant species such as Herb-robert *Geranium robertianum* and the ferns Maidenhair Spleenwort *Asplenium trichomanes* and Hart's-tongue *Phyllitis scolopendrium*. In addition, stunted forms of shrub species such as Blackthorn *Prunus spinosa* and Hazel *Corylus avellana* are often present in the grikes.

The calcareous grasslands are nationally important for grassland fungi. Waxcaps, *Hygrocybe*, are one genus in a range of groups of predominantly grassland fungi that are restricted in their distribution to grasslands that have been traditionally managed. Several uncommon species are present including *Hygrocybe colemanniana*, *H. fornicata*, *H. persistens* and *H. pratensis* var. *pallida*. In addition, the notable Bloxam's Pink-gill *Entoloma bloxamii* and Mousy Pink-gill *E. incanum* have been recorded from calcareous grasslands in the Legland area. The dry calcareous grasslands also support a rich invertebrate fauna with a large number of notable species. These include the land snails *Vallonia excentrica*, *Succinea oblonga*, *Vertigo pygmaea* and *Pyramidula rupestris*, the woodlouse *Armadillidium pulchellum* and the centipede *Geophilus insculptus*. These species are only found on dry, well-drained soils and are rare in most of Northern Ireland. The butterflies Dingy Skipper *Erynnis tages* and Grayling *Hipparchia semele*, which are also limited in their distribution within Northern Ireland, have both been recorded from the calcareous grasslands around Doagh Lough.

Wet flushed grasslands and wet heath cover many of the lower slopes. The calcareous influence is still well marked and in some areas, complex mosaics of wet grassland and wet heath are maintained by grazing. The sward is dominated in places by grassland species such as Sweet Vernal Grass *Anthoxanthum odoratum*, Devil's-bit Scabious *Succisa pratensis*, Tormentil *Potentilla erecta* and Carnation Sedge *Carex panicea*. In other areas, typical wet heath species predominate, such as Cross-leaved Heath *Erica tetralix*, Flea Sedge *Carex pulicaris*, Common Cotton-grass *Eriophorum angustifolium* and *Sphagnum capillifolium*. Further downslope, Purple Moor-grass *Molinia caerulea* is frequent within a sedge and herb-rich sward, which is generally known as fen meadow. Other species commonly associated with this community include Meadow Thistle *Cirsium dissectum*, Marsh Hawk's-beard *Crepis paludosa*, Sharp-flowered Rush *Juncus acutiflorus* and the Yellow Sedges *Carex viridula* ssp. *oedocarpa* and *C. viridula* ssp. *brachyrrhyncha*. The rare land snail *Succinea oblonga* occurs within these wet grasslands.

Springs and flushes represent a notable feature of the area. "Petrifying" springs, where calcium-rich water seeps to the surface, occur occasionally along the base of the limestone cliffs. These springs are marked out by thick growths of the moss *Cratoneuron commutatum*, typically encrusted with calcium deposits (tufa). Many of these springs emerge within woodlands. In other places, springs and seepage lines occur as base-rich (or alkaline) flushes, which are rich in small sedges and brown mosses and support a number of notable species including Grass of Parnassus *Parnassia palustris*, Dioecious Sedge *Carex dioica*, Common Butterwort *Pinguicula vulgaris* and occasional Black Bog-rush *Schoenus nigricans*.

Peatland interest relates to the large area of intact blanket bog, the diversity of structural features on the bog surface and the presence of rare and notable plant species. Intact blanket bog occurs on the upper slopes, extending from Legland in the north, through Reyfad to Aghamore in the south. Where the peat is deep and wet, the vegetation is dominated by flat lawns of Bog Asphodel *Narthecium ossifragum*. Within these areas, occasional pools support a characteristic growth of aquatic *Sphagnum* mosses, dominated by *S. cuspidatum* with occasional *S. auriculatum*. Stands of Bogbean *Menyanthes trifoliata* are also associated with some of the pools. Pool margins and wetter hollows support a low carpet of *Sphagnum papillosum* and *S. magellanicum* with frequent Common Cotton-grass *Eriophorum angustifolium*, Round-leaved Sundew *Drosera rotundifolia* and occasional Great Sundew *D. longifolia*. The vegetation between the pools consists of well-formed hummocks and flat areas of waterlogged peat with dense *Sphagnum* carpets and Bog Asphodel *Narthecium ossifragum*. The larger hummocks are dominated by *Racomitrium lanuginosum*, with the lower hummocks composed of *Sphagnum capillifolium*, topped by Heather *Calluna vulgaris*. The notable hummock-forming *Sphagnum imbricatum* also occurs locally.

On shallower peats, the vegetation is dominated by Heather *Calluna vulgaris* with Hare's-tail Cottongrass *Eriophorum vaginatum* and occasional Cross-leaved Heath *Erica tetralix* and Deergrass *Trichophorum cespitosum*, growing over a rich *Sphagnum* moss carpet. An abundance of the leafy liverwort *Pleurozia purpurea* is notable and the Fir Clubmoss *Huperzia selago* also occurs locally. Many of the larger, moss-topped hummocks are dominated by *Racomitrium lanuginosum* with the lichen *Cladonia portentosa* also present.

Many of the scarps have exposed rocky knolls which support scrub species such as Rowan *Sorbus aucuparia* and more notably Yew *Taxus baccata*, growing over dry heath communities dominated by Heather *Calluna vulgaris* with Bilberry *Vaccinium myrtillus* and Crowberry *Empetrum nigrum*. Cowberry *Vaccinium vitis-idea* is also locally prominent on these ridges.

The limestone cliffs and rocks, calcareous springs and flushes contain a rich bryophyte flora including the rare Appleyard's feather-moss *Brachythecium appleyardiae* which can be found at the base of cliffs at Knockmore and Carrickbeg. Other rare species associated with wet or shaded limestone rocks such as at Kilgarrow include the liverwort *Pedinophyllum interruptum* and the mosses *Mnium marginatum*, *Seligeria acutifolia*, *S. donniana* and *S. patula*.

West Fermanagh Scarplands also provides valuable habitat for birds and mammals. Birds of prey include Sparrowhawk *Accipiter nisus*, Kestrel *Falco tinnunculus* and Hen Harrier *Circus cyaneus*. Red Grouse *Lagopus lagopus* and nesting Golden Plover *Pluvialis apricaria* have been recorded. Badger *Meles meles*, Otter *Lutra lutra* and Irish Hare *Lepus timidus hibernicus* occur in the area.

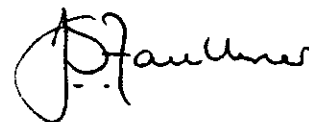
SCHEDULE

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. Any activity or operation which involves the damage or disturbance by any means of the surface and subsurface of the land, including ploughing, rotovating, harrowing, reclamation and extraction of minerals, including rock, sand, gravel and peat.
2. Any change in the present annual pattern and intensity of grazing, including any change in the type of livestock used or in supplementary feeding practice.
3. Any change in the established method or frequency of rolling, mowing or cutting.
4. Any change in the annual pattern of application of manure, slurry or artificial fertiliser.
5. Any change in the application of herbicides, fungicides or other chemicals deployed to kill any form of wild plant, other than plants listed as being noxious in the Noxious Weeds (Northern Ireland) Order 1977.
6. The storage or dumping, spreading or discharge of any material not specified under paragraphs (4) or (5) above.
7. The destruction, displacement, removal or cutting of any plant, seed or plant remains, other than for
 - (i) plants listed as noxious in the Noxious Weeds (Northern Ireland) Order 1977;
 - (ii) normal cutting or mowing regimes for which a consent is not required under (3) above;
 - (iii) normal gardening practices.
8. The release into the area of any animal (other than in connection with normal grazing practice) or plant. 'Animal' includes birds, mammals, fish, reptiles, amphibians and invertebrates; 'Plant' includes seed, fruit or spore.
9. Burning.
10. Changes in tree or woodland management, including afforestation, planting, clearing, selective felling and coppicing.
11. Construction, removal or disturbance of any permanent or temporary structure including building, engineering or other operations.

12. Alteration of natural or man-made features, the clearance of boulders or stones and grading of rock faces.
13. Operations or activities which would affect wetlands both surface and underground (including marsh, fen, rivers, streams and open water), e.g.
 - (i) change in the methods or frequency of routine drainage maintenance;
 - (ii) modification of the structure of any watercourse;
 - (iii) lowering of the water table, permanently or temporarily;
 - (iv) change in the management of bank-side vegetation.
14. The disturbance, killing or taking of any wild animal except where such killing or taking is treated as an exception in Articles 5, 6, 11, 17, 20, 21 and 22 of the Wildlife (Northern Ireland) Order 1985.
15. The following activities undertaken in a manner likely to damage or disturb the interest of the area:
 - (i) Educational activities;
 - (ii) Research activities;
 - (iii) Recreational activities;
 - (iv) Exercising of animals.
16. Changes in game, waterfowl or fisheries management or fishing or hunting practices.
17. Sampling of rocks, minerals, fossils or any other material forming a part of the area both surface and underground, undertaken in a manner likely to damage the scientific interest.
18. Use of vehicles or craft likely to damage or disturb the wildlife or geological features of the area.

Sealed with the Official Seal of the
Department of the Environment 16 JANUARY 2001



DR J S FAULKNER
Senior Officer of the Department
of the Environment

FOOTNOTES

- (a) Please note that consent by the Department to any of the operations or activities listed in the Schedule 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 (Northern Ireland) 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 in the Schedule 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 normally give consent, particularly if there is a long history of the operation being undertaken in that precise location.

