DEPARTMENT OF THE ENVIRONMENT

DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT MULLAGHBANE, COUNTY ARMAGH. ARTICLE 28 OF THE ENVIRONMENT (NORTHERN IRELAND) ORDER 2002.

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 its geological 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 'Mullaghbane Area of Special Scientific Interest'.

The area is of special scientific interest because of its geology, which is expressed in outcrop at several discrete localities.

The Slieve Gullion volcanic complex, of which Mullaghbane is a part, is the finest example of a Tertiary igneous centre in Ireland and is among the best topographic expression of a ring-dyke system in the British Isles. The rocks found here are of international geological importance, having played an important role in a number of theories related to the development of and interaction between igneous rocks.

The Slieve Gullion complex developed in an area of crustal weakness, previously exploited by the much older Newry granite, around 400 million years old. In Palaeogene times, some 56 - 58 million years ago, it was the site of a major volcano of which there is now little evidence. Subsidence of this central unit was related to a ring fault, some 20 km in diameter, the latter providing a natural weakness exploited by intrusive igneous rocks. This produced the ring-dyke complex which has been exposed, through erosion of the softer surrounding rocks, to reveal the near-circular system known as the Ring of Gullion.

The final phase saw activity return to the central area with apparently layered igneous rocks, both acid and basic in nature. Past debate on the formation of the central complex has been largely resolved. The layered structure apparent today appears to have developed as a series of igneous units intruded or injected into pre-existing rocks, rather than building up as a succession of extruded rock bodies.

The Slieve Gullion complex is historically important as it has featured in a number of major geological debates on the nature of igneous rocks and the processes by which they can be formed.

Mullaghbane consist of three localities which expose a range of rock types found in the Ring of Gullion. The northernmost locality exposes the earliest rocks intruded into the ring. This vent agglomerate provides evidence of the explosive violence of the initial phase of development of the ring dyke, probably associated with degassing. Further outcrops show the contact between the felsite and the porphyritic granophyre of the main intrusion. The locality demonstrates that the granophyre was later because there is clear evidence that it chilled against the felsite with the former rock type also veining the latter.

This section of the site is important because it establishes the age relationships between the two main rock types intruded into the ring and also the relationship with the vent agglomerates.

At the central locality the Newry granodiorite, the host rock into which the ring was intruded, is here inside the ring dyke. The rock is red in colour and much altered by gases or fluids or both, moving through the rock during the period of Slieve Gullion's earliest eruptions. Further sections show porphyritic felsite, the initial rock injected into the ring, which exhibits flow bands of welded volcanic dust, a further indication of the violent nature of this phase of the areas volcanic history.

At the southernmost locality, there is a small, vertical, cylindrical plug of dolerite enclosed in Newry granodiorite. The age of this intrusion is a matter of debate. The dolerite is seamed with granitic veins that have been attributed to the Newry granodiorite, which would make it around 390 million years old. A reinterpretation gives an alternative explanation and a Palaeogene age of around 58 million years.

Taken together these locations provide a fuller understanding of the geological history of the Slieve Gullion Ring complex.

SCHEDULE

The following operations and activities appear to the Department to be likely to damage the geological 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 sand, gravel and peat.

2. The storage or dumping, spreading or discharge of any material.

3. Changes in tree or woodland management, including afforestation, planting, clearing, selective felling and coppicing.

4. Any change in the present annual pattern and intensity of grazing.

5. Construction, removal or disturbance of any permanent or temporary structure including building, engineering or other operations.

6. Alteration of natural or man-made features, the clearance of boulders or stones and grading of rock faces.

7. The following activities undertaken in a manner likely to damage the interest of the area:

    i) educational activities;

    ii) research activities;

iii) recreational activities;

8. Sampling of rocks, minerals, fossils or any other material forming a part of the site, undertaken in a manner likely to damage the scientific interest.

9. Use of vehicles or craft likely to damage the interest of the area.

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.

(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.

MULLAGHBANE

Views About Management
The Environment (Northern Ireland) Order 2002 Article 28(2)

A statement of the Department's views about the management of Mullaghbane Area of Special Scientific Interest ("the ASSI")

This statement represents the views of the Department about the management of the ASSI for nature conservation. This statement sets out, in principle, our views on how the area's special conservation interest can be conserved and enhanced. The Department has a duty to notify the owners and occupiers of the ASSI of its views about the management of the land.

Not all of the management principles will be equally appropriate to all parts of the ASSI and there may be other management activities, additional to our current views, which can be beneficial to the conservation and enhancement of the features of interest. It is also very important to recognise that management may need to change with time.

The management views set out below do not constitute consent for any operation or activity. The written consent of the Department is still required before carrying out any operation or activity likely to damage the features of special interest (see the Schedule on pages 2 and 3 for a list of these operations and activities). The Department welcomes consultation with owners, occupiers and users of the ASSI to ensure that the management of this area maintains and enhances the features of interest, and to ensure that all necessary prior consents are obtained.

MANAGEMENT PRINCIPLES

The earth science interest at Mullaghbane occurs as outcrop exposures and old quarry faces. The Department would encourage the maintenance of the ASSI and its earth science interest.

The geological series

Provided no damaging activities, as set out in the Schedule (pages 2 and 3), are undertaken without consent, the needs of owners, occupiers and the Department can be met. Earth science features such as those at Mullaghbane may require occasional management intervention in order to maintain access to, and exposure of, the geology. This could include selective removal of vegetation or any major build up of loose rock. Retention of grazing over the site will ensure the geological series are easily accessible; this also help maintains the quality of exposure.

Specific objectives include:

Maintain the geological series in an undamaged state.

Maintain access to the geological series.

Sealed with the Official Seal of the
Department of the Environment
hereunto affixed is authenticated
by

G. R. Seymour.

Mr G R Seymour
Senior Officer of the
Department of the Environment

Dated the 27TH of FEBRUARY 2009