

DEPARTMENT OF THE ENVIRONMENT FOR NORTHERN IRELAND

**DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT
CRAIGAHULLIAR, COUNTY ANTRIM. 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 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 'Craigahulliar area of special scientific interest'.

The features of geological interest in Craigahulliar are associated with the volcanic activity experienced by this region during the Tertiary period, some 60 million years ago.

The Tertiary succession exposed in Craigahulliar quarry consists of the lowest member of the Interbasaltic Formation, the red laterites of the Port na Spaniagh Member, representing the weathered surface of the Lower Basalts. This surface had been weathered and eroded to form a north-south trending river valley with a cover of vegetation, before being inundated by renewed volcanic activity producing the flows of the Causeway Tholeiite Member. In a number of localities, these eruptions moved into lakes or shallow rivers and pillow-lava and hyaloclastite deposits formed as a result of the interaction between hot lava and water, including an excellent example of a flow foot breccia. This shows a 2-3m thick deposit of rounded pillow-like masses of chilled basalt in a matrix of palagonite. Palagonite is the clay alteration product derived from the volcanic glass which formed when the hot lava chilled against the water.

Associated with the lava flows are thin deposits of mudstone or siltstone formed as river or lake deposits which contain plant remains. The flow top underlying this sediment shows a remarkable series of small domes and blisters. This occurrence is extremely rare within the Antrim Lava Group as a whole, and this exposure is the first found within the Causeway lavas.

Quarry exposures show good examples of the colonnade and entablature sub-divisions which are typical of the columnar structure found in these basalts. These also show very clear horizontal markings known as 'chisel marks'. The precise origin of these marks is still under discussion but it seems certain that they represent stages in the gradual growth of the colonnade columns as the interior of the lava cooled.

In places the laterite is overlain with thin pockets of blackish lignite containing abundant leaf and bark fragments and imprints. A range of micro- and macro-fossil remains have been recognised from this horizon including cedar, spruce, pine, hazel and alder. A large volume of this lignite was worked commercially by opencast methods during the 1940s while early attempts utilised the adit method of mining. The first flow of the Causeway lavas erupted over this surface and, in places, cavities have formed, probably the result of gases released from the soil and vegetation. These take two main forms being either elongated cylinders, known as pipe vesicles, or more rounded or almond shaped cavities. The former are often lined with crystalline quartz while the latter are often completely filled with the mineral chalcedony; this is very unusual within the Antrim basalts. A range of other minerals have also been recorded from the basalts including the zeolites chabazite and phillipsite.

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 reclamation and extraction of minerals, including rock, sand, gravel and lignite.
2. The storage or dumping, spreading or discharge of any material.
3. Construction, removal or disturbance of any permanent or temporary structure including building, engineering or other operations.
4. Alteration of natural or man-made features, the clearance of boulders or stones and grading of rock faces.
5. The following activities undertaken in a manner likely to damage the interest of the area:
 - i) educational activities;
 - ii) research activities;
 - iii) recreational activities.
6. 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.

7. Use of vehicles or craft likely to damage the geological features of the area.

Sealed with the Official Seal of the
Department of the Environment for
Northern Ireland on 10 March 1998


ROBERT C MARTIN
Assistant Secretary

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.