



## DEPARTMENT OF THE ENVIRONMENT FOR NORTHERN IRELAND

### DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT RAMORE HEAD AND THE SKERRIES, 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 delineated and described on the attached map (the area) is of special scientific interest by reason of the fauna and 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 'Ramore Head and The Skerries Area of Special Scientific Interest'.

An occurrence of the igneous rock dolerite of Tertiary age, about 60 million years old (M.y.), has been intruded as a sill into shales of Jurassic, Lower Lias age, some 190 M.y. This has produced a fine grained, dark rock known as hornfels, which contains abundant fossils, particularly ammonites.

Supposedly discovered by Reverend William Richardson, this site was first described in the literature by the Neptunist Kirwan in 1799. With Kirwan's announcement of a find of fossiliferous 'basalt', the 'Portrush Rock' became a critical site in the debate over the origin of igneous rocks. Igneous rocks are now recognised as owing their origin to the crystallisation, or solidification, of molten material. Through the 18th century especially, geological consensus was that these rocks were in fact chemical precipitates from seawater. People holding this view were termed Neptunists while those supporting an igneous origin were known as Vulcanists. By 1771 Nicholas Demarest had recognised the association between basalts and volcanic structures in France and seeing engravings of the Giant's Causeway, had proposed that the Co Antrim basalts were also igneous in origin.

Kirwan's interpretation was therefore of great importance to the Neptunists, as here was a basalt bearing fossils, something clearly impossible if its origins were igneous, but evidently supporting formation in a marine environment. 'Portrush Rock' became known across the entire scientific world of the time.

In 1802 John Playfair correctly identified the 'supposed basalts' as 'stratified stone which had acquired a high degree of induration', namely thermally altered to hornfels. This view was supported by William Conybeare and the Reverend William Buckland in 1816 following a visit to the site. These three persons were amongst the most distinguished geologists of their day.

A final salvo of papers by the Reverend William Richardson between 1803-08, dealing in part with the 'Portrush Rock', was the last offensive of the Neptunists. The increasing weight of evidence from careful field studies throughout Europe, and in particular observations of active volcanoes, inevitably saw the Vulcanists as victors in a major, and often bitter, scientific battle.

The Portrush sill, which forms Ramore Head and The Skerries, is of interest in its own right. The chilled contact between the underlying dolerite and the overlying hornfels is exposed in a number of places, although there are numerous examples of the Lias being partially or fully incorporated into the sill material.

The sill is unusually complex compared to others in Northern Ireland. It shows a range of features not usually seen within a single intrusion. Such features include clear textural and mineralogical divisions within the sill producing distinctive upper, middle and lower layers. Multiple and variable late-stage veining of the sill has also occurred and includes veining by altered sedimentary material. Possible flow channel structures have also been identified.

The nature of the sill is explained in part by fractional crystallisation whereby repeated development of early phase 'solid' minerals leaves a residual magma depleted in certain elements. The upper and lower dolerite layers appear to have cooled and solidified relatively quickly leaving a mobile middle layer depleted in olivine, which is amongst the first minerals of crystallise, and tending towards gabbro, a coarse grained basic igneous rock. Blocks of dolerite in the latter level resulted by units breaking off from the already solid upper mass and settling into the still liquid middle division.

The Skerries support a diverse range of breeding seabirds with the most notable being Kittiwake Rissa tridactyla, Black Guillemot Cephus grylle and Eider Duck Somateria mollissima.

## SCHEDULE

The following operations and activities appear to the Department to be likely to damage the fauna and 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 peat.
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. The release into the area of any animal. 'Animal' includes birds, mammals, fish, reptiles, amphibians and invertebrates.
5. Alteration of natural or man-made features, the clearance of boulders or stones and grading of rock faces.

6. The killing or taking of any 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.
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.

Sealed with the Official Seal of the  
Department of the Environment for  
Northern Ireland on 27 November 1996

*R. Maclellan*  
*Civil Servant in Charge*  
*North Belfast*

*Robert C Martin*  

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**ROBERT C MARTIN**  
**CHIEF EXECUTIVE**

## FOOTNOTES

- (a) Please note the 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.