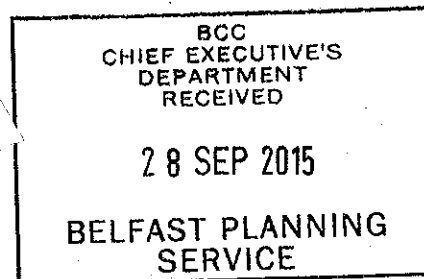


Mr Clifford Mcllwaine
Belfast Planning Service, Belfast City Council
Cecil Ward Building
4-10 Linenhall Street
BELFAST
BT2 8BP



Direct Tel No: 028 90569518

Our Ref: ASSI417

25 September 2015

Dear Mr Mcllwaine

**CONFIRMATION OF BELLEVUE AREA OF SPECIAL SCIENTIFIC INTEREST ARTICLE
28(6) OF THE ENVIRONMENT (NORTHERN IRELAND) ORDER 2002**

Date of declaration: 31 March 2015
Council Area: Belfast City Council
County: Co. Antrim
Irish Grid Reference: IJ 326 809

The Department of the Environment, having not received any objections or representations regarding the above declaration, hereby gives notice that it has confirmed the declaration of Bellevue Area of Special Scientific Interest (ASSI) as previously notified to you.

An amendment has been made to the wording in footnote (a) to the Schedule to reflect changes to planning legislation following the transfer of planning functions to local councils on 1 April 2015. The reference to the Planning (Northern Ireland) Order 1991 has been replaced with reference to the Planning Act (Northern Ireland) 2011.

As you will be aware from the citation documents received at the time of declaration, the above Area of Special Scientific Interest (ASSI) has been afforded legal protection against specified operations or activities that may damage its scientific features.

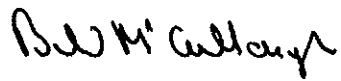
I refer you to the attached Schedule that lists those operations and activities which the Department considers may cause damage to the features of this ASSI and would



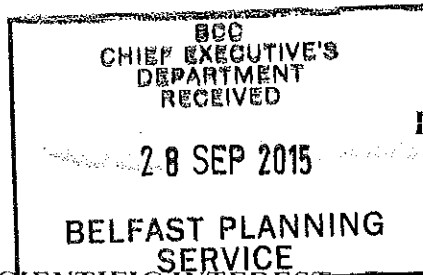
remind you of the requirement to apply for written consent/assent from the Department **before** carrying any of them out.

Northern Ireland Environment Agency (NIEA) has a statutory responsibility to manage and protect ASSIs and it wishes to work in a cooperative way with landowners and occupiers to secure the scientific features of those areas. Given this responsibility NIEA is also obliged to consider any damage to an ASSI as a serious matter and it is a criminal offence under Article 46 of The Environment (Northern Ireland) Order 2002 to cause damage to these lands.

Yours sincerely



B W McCULLOUGH
Authorised Officer



DEPARTMENT OF THE ENVIRONMENT

DECLARATION OF AREA OF SPECIAL SCIENTIFIC INTEREST AT BELLEVUE, COUNTY ANTRIM. 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 'Bellevue Area of Special Scientific Interest.'

Bellevue is of importance because of its geology. It is one of a series of sites that describes the Clay-with-Flints (CwF), a unique deposit whose exposure is mostly confined to the margins of the Antrim Plateau. Stratigraphically, at most localities, the deposit occurs between older white chalk of the Late Cretaceous Ulster White Limestone Formation (83 to 72 million years old) below, and lava flows of younger black basalt of the early Palaeogene Antrim Lava Group (63 to 60 million years old) above. The period of time within which the CwF formed spans about 10 million years of the Late Cretaceous and Early Palaeogene.

Following the uplift of the former seabed and associated marine limestones (the Ulster White Limestone) the limestone surface underwent a prolonged period of weathering, including karstification. This dissolution of the limestone by acidic surface and ground water produced a topographically varied karstic surface on which the CwF horizon was developed. While the limestone could be easily weathered, the more robust flints accumulated, being very resistant to erosion.

The highly varied palaeotopography exhibited by the karstified land surface at sites exposing the CwF series, has provided evidence to inform the debate about the relative compaction and hardness of the Ulster White Limestone (UWL) when compared to similarly aged limestone in Britain. It was generally thought that the UWL owed its character from either thermal alteration and/or compaction resulting from the enormous thickness of the overlying Palaeogene Antrim Lava Group. No equivalent igneous rock series overlies the Cretaceous limestone in Britain. The nature of some of the karstic features found at these sites in Northern Ireland suggests that the limestone was already hardened and more compact prior to the development of the CwF series.

The origin of the CwF has been a subject of debate for generations of geologists both in Ireland with regard to the contemporaneous deposit in England. It was initially thought by most scientists that the origins of the CwF and its two main components, clay and flint nodules, were as a result of sub-aerial weathering and dissolution of the underlying chalk. With respect to the flint content of the deposit this is clearly correct. However, the origins of the clay component have been much more difficult to demonstrate conclusively.

There have been many proposals for the origins of the clay. These have included

being an autochthonous by-product of weathering of the chalk and originating from an external volcanic source, eruptions linked to the opening of the Atlantic Ocean, but preceding the main period of basaltic volcanism in the north of Ireland. Most recently, new evidence suggests that the origin of the clay may have been derived from the remobilization of clays from volcanic deposits, by high-density mudflows at local and regional scale.

Bellevue consists of a line of disused quarries exposing both the Ulster White Limestone and the Antrim Lava Group. Just over 6m of chalk of Campanian age (Late Cretaceous) Ulster White Limestone is visible at the main cliff face, represented by the Ballymagarry Chalk Member. CwF is exposed at a number of places along the section – its presence and thickness being determined by the palaeotopography of the chalk surface. Basalt lava flows form the upper part of the disused quarry face and belong to the Lower Basalt Formation of the Palaeogene Antrim Lava Group.

At the south end of the section, two Palaeogene dykes offset and cross cut both the underlying Ulster White Limestone and the CwF.

The topography of the plane of unconformity between the chalk and the CwF varies from being relatively flat, to one with depressions (karstified hollows) at least 2m deep in the chalk. Due to this, the thickness of the CwF varies from only a few centimetres, to at least 2m where it fills in depressions.

Unusually there are two main divisions in the CwF at Bellevue. A lower unit composed of a soft, pale brown clay matrix with scattered pisoliths (small, rounded concretions), surrounds small to large flint nodules that are clast-supported. While most of the nodules are whole, they show evidence of internal fracturing due to compaction. Internally, the flint nodules are grey in colour. At the location of the palaeo-doline (depression) this layer is confined to the lower part of the hollow. The upper unit is characterised by compact, dark brown to red clay matrix with abundant pisoliths. Small fragmentary to very large flint nodules, some up to 40cm long, form a clast-supported framework that in places appears to be reverse graded (the size of nodules increases upwards). All flint nodules in the upper unit show vivid internal staining in shades of purplish-red to red and pink.

At Bellevue there is an additional sub-layer found at the very top of the upper division of the CwF consisting of a dark grey to green clay that contains localised plant fragments. This layer resembles lignite and is 5 to 10cm thick.

The two contrasting lithologies seen at Bellevue support the concept that the CwF is the product of a two-stage process. The lower lithologies formed by in-situ accumulation of insoluble flint nodules during karstic weathering of the exposed chalk landscape. The upper lithology is more difficult to interpret but field observations suggest that the clay was deposited by high density mudflows associated with contemporaneous volcanism. The presence of a layer of lignite-like deposits would indicate that there has been a period of quiescence prior to the eruption of the Antrim Lava Group, allowing for the development of soils supporting plant material.

In this section, the variable thickness of the CwF and the distribution of the lower of the two divisions were controlled by the pre-existing topography that formed as a result of karstic weathering. The upper unit is interpreted to have formed by later episodes of reworking of the lower division by coeval volcanism which also resulted in the introduction of large volumes of ash and volcanic debris.

SCHEDULE

The following operations and activities appear to the Department to be likely to damage the geological interest 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 and gravel.
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. Changes in tree or woodland management, including afforestation, planting, clearing, selective felling and coppicing.
5. Alteration of natural or man-made features, the clearance of boulders or stones and grading of rock faces.
6. The following activities undertaken in a manner likely to damage the interest of the area:
 - i) educational activities;
 - ii) research activities;
 - iii) recreational activities.
7. 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.
8. 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 council or the Department under Part 3 of the Planning Act (Northern Ireland) 2011. 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.

BELLEVUE ASSI

Views About Management

The Environment (Northern Ireland) Order 2002 Article 28(2)

A statement of the Department's views about the management of Bellevue 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 3 & 4 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 Bellevue occurs as a series of disused quarries at either end of the car park at Belfast Zoo. The Department would encourage the maintenance of the ASSI and its earth science interest. The majority of the site is obscured by trees however at the north and south end of the car park there is good exposure that is currently fenced off and / or protected by gabions. With minimal management this should not detract from its geological importance or adversely affect the ASSI.

The geological series

Provided no damaging activities, as set out in the Schedule, are undertaken without consent, the needs of owners, occupiers and the Department can be met. Earth science features such as those at Bellevue 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. The means of and responsibility for delivering any ASSI management actions will be through discussion between the landowner and the Department.

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



HELEN ANDERSON
Senior Officer of the
Department of the Environment

Dated the 25th of SEPT' 2015