



RSB WS/1

Town and Country Planning (Scotland) Act 1997
The Town and Country Planning (Notification of Applications) (Scotland) Direction 2007

**Outline Planning Permission for Golf Course and Resort Development on land at
Menie House, Balmedie, Aberdeen**

PUBLIC LOCAL INQUIRY: Ref CIN/ABS/001

WRITTEN SUBMISSION

of the

**RSPB Scotland
Scottish Wildlife Trust
Botanical Society of the British Isles**

GEOMORPHOLOGY

Purpose of this Submission

1. The purpose of this submission is to contribute further geomorphological information to assist the Inquiry in respect of the interests affected by the proposed development. The RSPB / SWT / BSBI do not consider it necessary to call oral evidence at the Inquiry, bearing in mind the detailed evidence on geomorphology to be called by Scottish Natural Heritage (SNH). Nevertheless, the RSPB / SWT / BSBI have taken a considerable and informed interest in the geomorphological issues.
2. Our objections relate as much to the impacts on geomorphology as to the impacts on wildlife and its habitats. RSPB / SWT / BSBI concur with the SNH Statement of Case in this respect, we concur with the SNH representations about geomorphology made during the consultation stage and endorse the SNH Commissioned Report (**SNH 6**). To submit a precognition specifically on geomorphology would, therefore, clearly lead to duplication of evidence, which the Reporters have asked all parties to avoid. However, as geomorphology is an important aspect of nature conservation, it has been covered in our representations at consultation stage and is covered in the broader context of our objections set out in the precognitions of Dr Auld and Mr Hughes.
3. As part of our preparations for the Inquiry and to ensure that our objections were based on a fully informed understanding of the geomorphological interests of the site, we commissioned, through the Scottish Wildlife Trust, the views of Professor McManus, a leading authority on coastal geomorphology. His advice is attached to this Written Submission and is self explanatory.

The Menie dunes, sand sheet and slacks

I have been asked by the Scottish Wildlife Trust to contribute to its written submissions to the Reporters conducting the public local inquiry into the proposed golf course on the Menie Estate, Aberdeenshire. I am Emeritus Professor John McManus of the School of Geography and Geosciences, University of St Andrews. My principal expertise lies in estuarine, coastal and fluvial geomorphology. I am a former East Areas Board Member, Nature Conservancy Council (Scotland), Scottish Natural Heritage, and Scottish Environment Protection Agency.

I am familiar with both the Foveran and Menie sands. After undertaking a peer review of the report by Dr Hansom of the University of Glasgow on the Menie Sands I revisited the area, having been led to believe that the site might merit classification as a Site of Special Scientific Interest on geomorphological grounds. This confirmed the exceptionally interesting characteristics of the Menie area, which is very dynamic in nature, whereas there is much less active blowing of the sands in the largely vegetated areas north of the partly agricultural Drums Links.

In essence at Menie an area of 600m by 400m of sands have accumulated between the line of ancient sea-cliffs and the present coast. As at Foveran there are remnants of several former dune systems, the crests of which reach up to 35m above OD (heights by DGPS) in the west but are at lower levels further east. Surrounding these remnant structures are the modern mobile sands which form a dome-like structure reaching from the lowest points behind the present dunes at 3m OD up to 25m above OD. The modern sands are fully mobile and bear features that change with the wind direction. To the east, between the sand dome and the present coastal dunes are a series of flat areas. Behind coastal dunes it is normal to find such slacks at a level a few metres above present high water mark. At Menie there are at least three such raised levels at heights of 10.5m, 18.96m to 19.9m, and in the north of the final dune the slack floor is at 22.6m. These will have entrapped some of the modern wind-blown sands, but their distribution suggests that they represent uplifted former dune slacks. Some limited excavation confirmed the presence of sands and buried soil layers, some with plant remains below the surface of these areas. In the low ground near the end of the access track similar darkly coloured layers are exposed on many of the currently eroding sand surfaces. The active sands receive material blown from the beach along access corridors in the south, as do some parts of the Foveran area. Receipt of this material is vital to the integrity of the living dune system. If there is interference with these sand passages the dome and dunes will die and become colonised by plants. Any golf related structure here will receive sand blown into it, so placing tees or greens in such areas would be detrimental to the survival of the active dunes. 'Protecting' the dune surfaces with latex coatings would likewise prevent their active survival.

Erosion on the sides of the remnant 'buttes' of the old dune crests is exposing the original internal features of the dunes. Using material from the soil horizons and the dune sands it would be possible to apply both Carbon 14 and luminescence dating techniques to clarify the historic detail in an area for which there is tantalisingly little evidence available on the evolution of the east coast of Scotland in the last 10-12000 years.

I am a former representative of Scottish Natural Heritage on the Joint Nature Conservancy Council review panel, established in 1998 to monitor progress with assembling details of the Geological Conservation Review sites (the highest quality sites in UK) for the full range of Geomorphological and Geological interests. I have no doubt that the Menie sands represent a truly exceptional series of formations in a scale of development not seen elsewhere in Britain. From a geomorphological viewpoint I believe it to be unique in UK, and as such would fully justify its inclusion as a GCR site. The Menie Sands would therefore more than meet the criteria for SSSI.

John McManus, PhD, DSc C.Geol. FRSE, FRSGS (Hon) 16th May 2008