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Mourne Geology  
and  
Archaeology Group



MGAG

Response to the proposal for a Mourne National Park  
as part of the  
Mourne National Park Working Party's consultation process  
by the  
Mourne Geology and Archaeology Group

30th January 2007

**Q1. A National park has been proposed in the Mourne Area, what are your views?**

a) Do you see benefits in having a National Park in Mourne? If so please state.

*Yes. There are very significant benefits in having a National Park in Mourne.*

The four aims have been summarised in the Mourne National Park Working Party's (MNPWP) consultation leaflet (Aug 06) and in the Mourne National Park Boundary Recommendations Report (Oct 05) (2.5.5).

The Mourne Geology and Archaeology Group (MGAG) agrees with these aims and strongly endorse the view that the key principle unpinning them is the primacy of the landscape and the natural and cultural heritage. The prime aim of National Park designation should be to conserve the outstanding landscape and heritage qualities of Mourne.

In addition, as a group of professional geologists and archaeologists, we would like to emphasise the prime importance of two aspects of the landscape and cultural heritage to Mourne which we believe have not been given the significant priority that they should have been up to now - in either the Mourne National Park Boundary Recommendations Report or in previous Government reports or at MNPWP meetings concerning the National Park ([www.mourneworkingparty.org](http://www.mourneworkingparty.org)).

*These key aspects are the geology and the upland industrial heritage of the Mournes.* Both are mentioned briefly in the Boundary Recommendations Report which alludes to their importance (e.g. section 4.5.6). However, the geology is only briefly referred to as 'significant' (due to the large area covered by the granites) and the industrial heritage in the upland areas is very briefly described in section 4.4.7. Both these aspects are also incorporated into the description of landscape character area (LCA) 75: Mourne Mountains (Appendix 5). Although the aim of the Boundary Report was to establish the areas to be included in or excluded from a new National Park, we nevertheless suggest that *overall* the geology and industrial heritage should be stressed much more emphatically in current debates regarding the establishment of a National Park in this region.

The geology and geomorphology and its rich upland industrial heritage are the foundations on which Mourne is built (Evans, 1967. *Mourne Country*, Dundalgan Press). We provided a short briefing paper to the Mourne Heritage Trust in Aug 06. This is a summary of some of the main aspects of the geology in Mourne, Gullion, Cooley and Newry and is included in the Appendix to this response.



*We also offer the following on the geology and industrial heritage for your information.*

*The Geology* - Geology maps produced by two of us (Hood and Gibson) for our PhD's at Q.U.B. in the 1980's were published in 2004 both by the Geological Survey of Northern Ireland (GSNI) – *The geology of Northern Ireland – Our Natural foundation* and on the reverse of the Ordnance Survey of Northern Ireland's (OSNI) 1:25,000 map *The Mournes*.

Mourne geology still fosters active research and this month a new paper was published on the emplacement of the Eastern Mourne granites by Stevenson et al in the prestigious Journal of the Geological Society, the pre-eminent geological body in the British Isles. This follows on from J.E.Richey's famous 1928 paper on the Mournes which was published in the same journal. Current research on the Mournes is being undertaken by V.Troll and co-workers at TCD.

Last September at the international Geoparks conference in Belfast we presented a proposal for a cross-border Geopark covering Mourne, Cooley and Gullion. This was well received and is now being investigated further by the Mourne Heritage Trust. We hope one day not only to see the designation 'National Park' but also 'European Geopark' applied to the Mournes. Information on the European Geopark movement (linked with UNESCO's Division of Earth Science) and fast becoming a significant world 'brand', can be found at

[www.europeangeoparks.org](http://www.europeangeoparks.org). The designation of European Geopark has particular significance in that it implies that the area has met certain key criteria for sustainable development linked to geo-tourism. In this respect we also presented a poster at the conference on the potential for geo-tourism in the Mournes within a new National Park (copy available to view at the Mourne Heritage Trust, Newcastle).

We also showed a new 1:25,000 geology map combined with topography of the Mournes. This collates all the geological mapping to date in the Mourne area and includes recent field mapping. It provides the basis for a new geology map for a National Park – an educational tool that will be required when the new Park opens – and represents a major step forward from the maps published by the GSNI and OSNI.

*The upland industrial heritage* related to the extinct granite extraction industry is extremely important in the Mourne Mountains. This was described by Evans in *Mourne Country* (chapter 17). Many of the old granite workmen's huts and granite workings remain in the mountains. However, they are not conserved and some of the old tools and fizz troughs that were still there in the 1980's have now been removed by 'treasure hunters'. The whole of the Eastern and Western Mournes are dotted with old workings and workers huts, with concentrations in areas such as Millstone Mt., Rocky Mt. and the southern slopes of Sl.Binnian). They are not just restricted to 'the area above Annalong' (Mourne National Park Boundary Recommendations Report, section 4.4.7). These old workings have left a rich industrial legacy which should be fully documented, conserved and protected before many are lost to vandalism. This cultural heritage provides a direct link with the famous granite geology and will provide a superb educational tool to be used in the new National Park.



b) Do you have concerns about a National Park in Mourne? If so, please state.

*We have several concerns.*

*Adequate protection and conservation of key sites* - geological, geomorphological, archaeological and industrial heritage sites inside and outside the ASSI's, ASI's and proposed ASSI's. Currently, all sites inside ASSI's are documented and protected in law. But the protection is rarely enforced. A few years ago a lot of damage was done to the Diamond Rocks locality (inside the ASSI) but the collectors (who were known) were not prosecuted. Serious consideration should be given to geological conservation codes adopted throughout many ASSI's in England and Scotland and published by the Geologists Association. In many U.S. National Parks collecting of any kind is banned and strictly enforced by the Park authorities. We are not proposing that sampling be banned entirely but suggest that selected collection should be banned at key sites. Many of the old granite workings have been looted of tools and implements in the past 25 years. Granite workmen's huts have been damaged. Both these were of significant educational value. They should be conserved and adequately protected.

*Availability of suitable geological and other educational materials* for the Mournes and Slieve Croob after the Park is opened. As mentioned above our 1:25,000 geology map of the Mournes provides the foundation for a new educational tool but this needs to be expanded to include the interesting suite of igneous rocks at Slieve Croob (NE end of the older Newry granite complex). Collaboration on this work is required from the GSNi and EHS.

*Timing.* Continued development on the Plain of Mourne and around Kilkeel and Annalong ('Kingdom of Mourne' and 'Kilkeel Coast' Landscape Character Areas) needs urgent action and could be proactively addressed through National Park designation. Clearly, the sooner the area is designated a National Park, including these areas, the sooner these issues can be addressed (see answers to Q.3). Some upland geological localities, e.g. Diamond Rocks are probably in need of urgent protection and conservation.

*Upland erosion.* This is already a major issue in some parts of the Eastern Mournes. Massive influxes of walkers into a National Park will further increase the pressure on the landscape. Proper and urgent attention will need to be paid to this issue as early as possible. Temporary exclusion areas and new man-made paths may need to be considered to halt excessive erosion. Restricted access might have an unfortunate impact on educational groups wishing to visit key upland geological and industrial heritage sites.

*Remit and funding of the National Park Management Body.* This body should be established with significant remit and funding to pursue the aims of the National Park and to operate effectively. It will face significant challenges and obstacles in many aspects of landscape preservation, conservation and heritage. It must have adequate powers to quickly react to protect the landscape and natural heritage from threats, e.g. illegal or over-collecting from sites, improper building in sensitive areas, vandalism or tipping.

**Q2 A boundary for the proposed National Park in Mourne has been recommended, what are your views?**

- a) We agree with the proposed boundary ☐  
b) We do not agree with the proposed boundary ☒

If you do not agree say why. What changes to the proposed boundary would you wish to see made?

*We do not agree with the proposed boundary in the following areas:*

The Landscape Character Areas (LCA's) of the 'Kingdom of Mourne' and 'Kilkeel Coast' as per Option 3 (detailed maps 2025/4 and 20254/8 in the Mourne National Park Boundary Recommendations Report and shown on the map in the Proposal for a National Park leaflet. We agree with the proposed National Park boundary elsewhere, though extreme care should be taken to ensure that areas along the northern edge of the proposed park boundary, inside the Area of Outstanding Natural Beauty (AONB) but now considered unsuitable, really do merit exclusion from the National Park.

We note that the parts of the 'Kingdom of Mourne' and 'Kilkeel Coast' LCA's which are considered 'not suitable' for inclusion form a contiguous strip along the coast from Annalong to Cranfield (category 4 areas). This portion of land includes the southern part of the Mourne Coast ASI (from Annalong to Ballykeel Point) and the whole of the Southern Mourne Coast ASI from Kilkeel to Cranfield Point. It also includes the proposed ASSI at Samuel's Port.

This coastal area of Mourne contains significant geological and especially geomorphological/glacial features which are peculiar to this part of Northern Ireland including moraines, tills, gravel ridges and raised beaches. Seven glacial formations, one periglacial and at least two complex marine formations have been identified from the stratigraphic record here (Hannon 1974; Stephens and McCabe 1977). These features are seen along the Mourne coastline from Bloody Bridge to Cranfield but the moraines can also be observed inland as low ridges southwest of Kilkeel, many of which are the sources for the local sand and gravel aggregate industry.

The area has a significant body of geomorphological literature including Derryhouse (1923), Charlesworth (1939 & 1955) and McCabe (1973, 1979, 1978 and 2007). Even the Mourne National Park Boundary Recommendations Report (section 4.5.6) states that 'the landscape [in this area] is of great natural heritage....glacial and deglacial features are also regarded as important in understanding the recent glacial history of Northern Ireland. Notable features include the curvilinear moraine ridges of the Kingdom of Mourne, the Cranfield moraines and Carlingford Lough, Northern Ireland's only true fjord.'

The coastline south of Annalong is also important from a geological point of view. It contains a significant portion (>20 dykes) of the Mourne dyke swarm and this area is included in the proposed ASSI centered on Samuels Port. This would also be excluded under the current boundary proposal.

We note that the ASI on Green and Blockhouse Islands is *not* included in the Park designation. We understand that these islands are part of the combined Carlingford Lough ASSI, Ramsar Site, and Special Protection Area. Although the islands are outside the AONB their omission from National Park designation is a serious one. They are internationally important bird breeding areas (e.g. Sandwich Terns) and an integral part of the north coastline of Carlingford Lough, particularly Green Island which lies only 750m offshore from Greencastle. Setting these islands apart at this stage from a National Park in the hope they will later form some kind of 'Cross-Border Management Area' (Mourne National Park Boundary Recommendations Report – map 2025/7) is, in our view, inadequate. These should be included inside the National Park designated area now.

Elsewhere in the Mourne National Park Boundary Recommendations Report (Section 7.1 Justification Tables, p55; Appendix 5 p85, LCA 73: Kilkeel Coast) it is stated that 'many [coastal] places [along the eastern and southern part of the Kilkeel LCA] lack a strong sense of place and scenic quality' and 'the beaches along the sea coast lack distinction in terms of their size and character.' We disagree. Although access to these areas is somewhat limited by narrow roads, some of which are private and through caravan parks, the beaches south of Kilkeel, particularly south of Nicholson's point are beautiful, unspoilt, clean, sandy and, arguably, compare with the best in the north of Ireland. Furthermore the mountains of Mourne and Cooley can be clearly seen from these beaches. Careful management of these areas within the context of a National Park could provide the opportunity for conservation (wildlife), protection (raised beaches) and improved access with strictly controlled recreational activities.

In addition we note that there are two areas considered to have 'some case for designation with particular scrutiny required' in the 'Kingdom of Mourne' LCA northwest of Annalong and in the Letrim-Attical area (category 3 areas on map 2025/4 in the Mourne National Park Boundary Recommendations Report). We assume these areas will be inside the park as defined by the boundary map in the MNPWP leaflet. Should they be excluded it would be disastrous for the Park – see comments below.

Areas of urban development such as Annalong and Kilkeel could easily be included inside the Park boundary but have a different status with respect to planning regulations and National Park management. It is also possible that they should be included in the Park for socio-economic reasons but this is not discussed here.

Elsewhere, outside Annalong and Kilkeel, we agree that parts of the Plain of Mourne have become rapidly overdeveloped with widespread housing that is not in keeping with the area. To us this provides even more justification to *include* these areas inside the National Park. Excluding large chunks of the 'Kingdom of Mourne' and 'Kilkeel Coast' LCA's is absurd as they have historically (and always will be) considered parts of the 'Kingdom of Mourne'. Furthermore, the current proposal is a recipe for disaster because it will inevitably lead to excessive coastal and inland development along the coast and potentially right up to the southern foothills of the Mournes if the category 3 areas on drawing 2025/4 are excluded from the Park. It will completely ruin the landscape of these LCA's and, more importantly, of both the adjoining 'Mourne Mountains' LCA and the whole southern fringe of the National Park.



We strongly disagree with the conclusions and recommendations of Alison Farmer and Associates and Julie Martin and Associates and the MNPWP (who appear to have accepted their recommendations) that parts of these two LCA's be excluded from National Park designation because they fall into the 'not suitable' category (4). Furthermore, we challenge the 'sequential methodology' adopted by the consultants in which positive 'landscape' and 'recreation' criteria for designation be met *first* and only after these is 'desirability' considered (Mourne National Park Boundary Recommendations Report, section 3.4.7).

Both the two LCA's in question were known to have been subject to recent, rapid, sparse housing development (section 4.6.2) and it was obvious that their landscape and recreation criteria have been somewhat despoiled by these changes thus excluding them de facto from National Park designation. This is unsatisfactory because of *where* these LCA's are located: straddling the coast and the southern Mourne foothills and adjacent to some of the most beautiful landscape in the British Isles. These two LCA's are effectively 'land-locked' by the mountains on one side and 'sea-locked' on the other. Because of their location they should be regarded as special cases and the 'desirability' for including them inside the Park should be the overriding factor. In our view it is highly desirable to include all parts of these LCA's in the National Park.

We strongly disagree with the Report (Section 7.1 Justification Tables, p54 and p55) that 'inclusion of this land [category 4 areas] would not be consistent with the proposed National Park legislation and in effect, would be unlawful.' The National Park legislation could easily be tailored to include these 'special areas' for the reasons stated above. Their inclusion would offer the opportunity for an extensive integrated management programme by a powerful National Park Body (working closely with District Councils and the general public) to address issues like sparse overdevelopment, planning criteria, caravan park expansion, excessive aggregate extraction, appropriate land reclamation and landscaping, conservation of vernacular buildings in preference to new builds, use of local granite and slates for new homes.

Even the Mourne National Park Boundary Recommendations Report itself states (section 4.6.3) in considering the 'huge changes' to the landscape in parts of Mourne that 'urgent action is required to help manage change and conserve key landscape elements and patterns. At least some of these issues can – and indeed must – be proactively addressed through National Park designation.'

*We propose that the National Park boundary be drawn along the coast* (mean low water mark) to encompass the entire Plain of Mourne and to include all parts of the LCA's of the 'Kingdom of Mourne' and 'Kilkeel Coast' as well as Green and Blockhouse Islands for all the reasons given above. This would ensure that two coastal ASI's (Mourne Coast; Southern Mourne Coast) and the proposed ASSI's (Bloody Bridge; Dunmore Head; Green Harbour; Glasdrumman Port; Samuels Port) covering the geologically important Mourne dyke swarm and the important glacial and periglacial features along the coast from Bloody Bridge to Cranfield are included and hence subject to protection inside the National Park. It would also ensure added protection for ecologically important islands just off Greencastle as well as the beaches and flatter landscapes south of Kilkeel. Finally, it would enable proper landscape management procedures to be put in place to address the problems associated with sparse and inappropriate overdevelopment in areas along and back from the coast on the Plain of Mourne.

One final request - please could the National Park Working Party publish a proper, detailed line of the proposed National Park boundary. This would not appear to be in the public domain. The published map on the MNPWP leaflet and map 2025/8 in the Mourne National Park Boundary Recommendations Report both have a dark green line that is approx 200 metres in width – seen when a pdf file of the latter map is enlarged. It is thus impossible to see exactly where the proposed National Park boundary lies relative to field boundaries and roads. One of us (David Hood) contacted both Alison Farmer and EHS and requested this detailed information. But we have been unable to obtain a map from either of these sources that shows the proposed boundary more accurately than the published ones. We believe that a digital file (in ArcGIS format as per other digital files of Protected Areas on the EHS web site) and a map at a minimum scale of 1:25,000 showing the proposed boundary *clearly* should be freely available to the public.

We hope you find these comments and information useful. Should you wish to contact us please email David Hood at [david.n.hood@btinternet.com](mailto:david.n.hood@btinternet.com) or write to 5 Fir Grove Woking, Surrey GU21 7RD

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## Appendix

### THE GEOLOGY OF THE MOURNE- NEWRY- SLIEVE GULLION- CARLINGFORD AREA.

Briefing paper prepared for the Mourne Heritage Trust by Ian G. Meighan, B.Sc., Ph.D., F.G.S. (33 Marlborough Park North, Belfast BT9 6HJ; 02890201468) and D.N.Hood, B.Sc., Ph.D., F.G.S. (5 Fir Grove, Woking, Surrey), August 2006.

The area features outstanding and classic Geology, which continues to interest the international Earth Science community. However, it also provides a magnificent opportunity for the sustained development of geotourism / edu-tourism in terms of (i) its rocks and minerals and their relationship to the Earth's plate tectonic history and (ii) the glacial features/deposits of the last Ice Age. Although this brief summary concentrates on the granites, we consider that the *overall* quality of Mourne geology could be stressed much more emphatically in current debates regarding the establishment of a National Park, etc. in this region.

The following summarises the quality of the Geology in this part of N.E. Ireland:

1. The region illustrates most of the Earth's common minerals (such as quartz and felspar) and also some exciting rarer ones (eg. eudialyte at Carlingford and, for the East Mournes, beryl and topaz at the Diamond Rocks and the olivine fayalite in the G1 granite).
2. The three general rock categories of the Earth's continental crust – igneous, sedimentary and metamorphic - are each well represented.
3. Granites and glaciation are the geological highlights of the area, the latter involving both erosional and depositional features.
4. One of the unique aspects is the presence of two very different types of granite in terms of age, composition, plate tectonic setting, etc. The older Newry granites crystallised approximately 425 million years ago and relate to the closure of an ancient ocean, which once separated Scotland and the north of Ireland from England, Wales and southern Ireland. By contrast, the much younger granites of Mourne (which crystallised 56 million years ago), Slieve Gullion and Carlingford are part of an episode of igneous activity related in time to the opening of the N.E. Atlantic Ocean and the separation of Greenland from Europe.
5. The Mourne Mountains comprise a sequence of five granite intrusions (G1-G5 inclusive), being the first granite complex in the world to which this G-nomenclature (now standard) was applied (1928). Each granite has characteristic features and there are excellent field localities displaying (i) contacts between granite and older, metamorphosed sedimentary rocks (e.g. Bloody Bridge River and Glen River) and (ii) between the different granites themselves (e.g. G1-G2 at the Eagle Rock above Newcastle and G4-G5 at Reid Hall's Hill in the W.Mournes).
6. Whereas the Mourne region is predominantly granitic, at Slieve Gullion and Carlingford there are other igneous rocks, such as dolerite and gabbro, and evidence that granitic and basaltic melts once co-existed. Slieve Gullion also hosts a magnificent example of a ring-dyke intrusion, 'the Ring of Gullion' associated with an ancient volcanic caldera, whereas the E.Mourne coast provides good exposures of many linear, parallel, basaltic dyke intrusions, some of which have brought up fragments of rocks which only exist at depth beneath the Mourne region.
7. The history of granite mapping in the Mournes provides an excellent example of how geological maps change with time, in terms of revision and increasing detail. Similarly, the age dating of the granites from their natural radioactivity continues to yield ever more accurate and more tightly constrained results. Views on the overall geometry of the Mourne granites have also changed with time and are currently controversial (vertical cylinders or ring-dykes as opposed to horizontal sheets with a central, upward bulge).
8. Not only the landscapes but also the Archaeology and Industrial Heritage of the region can be related to its geology. Especially interesting features include (i) the glacially transported, water-rounded cobbles of Newry and Mourne granite, which Neolithic people collected at Carlingford and utilised at the Newgrange Megalithic Tomb in the Boyne Valley; (ii) the use of Mourne Granite G2 for millstones at Nendrum, Co. Down – Europe's earliest tidal mill and (iii) the inclusion of Newry granite in the Albert Memorial in London.



