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**JOINT NATURE CONSERVATION COMMITTEE**

**EARTH HERITAGE WORK WITHIN JNCC - A FORWARD LOOK TO 2004**

**Paper by Tony Weighell and Neil Ellis**

**1. Introduction**

1.1 The scope and purpose of Earth heritage work within JNCC has been regularly discussed by Committee. In September 2000 a paper was presented (JNCC 00 P18) which reviewed the position at that time. The paper proposed future work to take account of the need to maintain the GCR site series in good standing, widely disseminate the large amount of information contained in the GCR volumes and pursue an active international strategy. The work of the Soils Lead Agency was also touched on briefly but was the subject of a dedicated paper submitted to Committee in March of this year.

1.2 The September 2000 paper identified a number of potential work areas but recognised that further planning or consultation was needed before a final work programme could be proposed. The current paper follows up on the issues raised and discussed in the September 2000 paper and, drawing on the additional information now available, makes specific proposals for work in all of the key areas. This paper therefore constitutes a strategic proposal to guide Earth heritage work through to 2004, and in some respects beyond.

**2. The Geological Conservation Review**

*Current position*

2.1 Twenty-three volumes of the 42-volume series have been published to date; publication is now 'in-house' and the books are produced using desktop publishing and digital printing methods. All of the texts for the planned books have been commissioned and it is intended that the production of the books in press or in preparation will be completed in the calendar year 2003. In the reporting year 2001/02 we intend to publish 7 volumes (22-28) with 8 more volumes in reporting year 2002/03 (volumes 29-37). The last 6 volumes will be published in 2003.

2.2 There are currently three staff engaged in GCR publications work; it is expected that three staff will be needed from now to the end of the publication programme (at the end of calendar year 2003). The external costs for GCR writing and scientific editing reduce significantly in the next two reporting years since more than 15 texts for forthcoming books are more than 80% complete. Cartographic and printing costs remain fairly constant over the remaining term of the project. Some income will continue to be generated

from book sales after all the books have been produced (an estimated income of £50 000 is expected, over the next 5 years).

### ***Future work programme***

- 2.3 With the end of the publication phase now in sight, detailed planning is in progress to ensure that the GCR site networks remain up to date, and that the information in the 42 volume series will be widely available in formats other than the published book form. This work is co-ordinated through the Inter-Agency Earth Heritage Working Group. JNCC has also developed, through the Working Group, Common Standards guidelines for Earth science site monitoring. These guidelines have been field tested by the country agencies and JNCC will continue to assess and review progress in this area.

### ***Site Series revisions***

- 2.4 It was agreed by an Inter-agency Earth Heritage Working party, and confirmed by Chief Scientists, that the GCR Site Series would need to be updated on a systematic basis and according to scientific principles. The entire Series should be reviewed on a 10/15 year cycle.
- 2.5 The proposed project would begin while the GCR publications project was drawing to a close – i.e. the site series revision project would start up in 2003. Initially, we will need to re-affirm and validate the ‘GCR Protocols’ – the standard procedures and evaluation mechanisms that we use to assess the Earth science conservation value of proposed GCR sites. Additionally, some time needs to be spent in specifying explicitly the detailed scientific context and rationalisation for GCR site selection within each of the 100 GCR ‘Blocks’ (site selection categories). This information is contained within the GCR volumes, but needs to be extracted and unified (earlier GCR volumes are less explicit in their site selection rationale than later volumes).
- 2.6 With a more detailed site evaluation protocol agreed between the agencies, and with a clearer understanding of each site’s context in its GCR ‘network’ of related sites, site re-evaluation work can begin. The main aims will be to identify those sites that fall below GCR standards, and to seek out any significant omissions from the GCR ‘coverage’. *It is expected that this review will not result in a large-scale overhaul of the GCR ‘register’, with perhaps more than 95% of the extant GCR localities continuing to retain GCR status, and with only 200 ‘new’ localities likely to be proposed for addition to the GCR ‘register’ over the 10/15year review cycle.*
- 2.7 The task of site evaluation can be done to varying timescales and by different methods depending on available resources. There may well be evaluation contracts issued to experts or groups of experts (such as those within universities and the BGS) as well as written and oral consultations; we may decide to advertise the current GCR lists in the geological press and invite comments; ‘workshop’ meetings may prove useful. We can also vary the level of activity – changing the frequency of review or number of GCR ‘Blocks’ under revision per year as necessary. Wherever possible, original

GCR workers and site network co-ordinators will be involved to maintain the integrity of the updated site networks and to maintain the philosophical/scientific approach underpinning site selection.

- 2.8 In terms of deciding which 'Blocks' to tackle first in the review process, the Inter-Agency Earth Scientists' Working Group proposes that vulnerable/dynamic site types (e.g. minerals/active geomorphology) should be targeted first (these are most subject to change and or susceptible to damaging operations), followed by areas of the GCR 'register' known to be the oldest or thought to most likely to be out of date in the light of modern developments in the science. A trial review of a GCR block will be undertaken to help us to refine the cost estimates for this work, which are currently provisional.

### *Information Management*

- 2.9 The current Inter-Agency Earth Science Database (IAESD) contains brief descriptions of the geological interest of individual GCR sites intended for use in SSSI notification. By mid 2003 JNCC will also possess electronic text for the majority of GCR volumes. This information has the potential to be reformatted to enable presentation in a variety of ways, including mounting on CD, use in web sites or inclusion in databases. This approach can be applied to the entire 42 volume set or any subset of the sites described. Based on external and internal technical advice JNCC has chosen the XML format (Extensible Markup Language) to develop a demonstration of how the GCR volumes may be reformatted for flexible electronic dissemination. This demonstration will show how the 42 volumes could be moved into an electronic block of information from which information can be obtained across the whole publication and site series.
- 2.10 The XML demonstration will be evaluated during 2002 by consultation with potential internal and external users. Following internal consultations the work has been done by external contractors but as part of the evaluation exercise the Support Unit will identify how ongoing JNCC IT projects could contribute to the use of XML in the future, both in terms of the GCR work in particular and in respect of other JNCC publications. Assuming that the evaluation of the demonstration is positive, work could begin in 2003 to 'XML' the entire GCR series, this to be done in phases. The JNCC Corporate Plan includes funding for this project.

## **3. Advisory work**

- 3.1 Earth heritage advisory work is focussed on international issues where JNCC is acting on behalf of the country agencies, providing advice to DEFRA, DCMS and the devolved administrations or working directly with international organisations such as UNESCO or the IUCN. JNCC's international policy has been structured to assist - wherever possible and using the UK's experience in this area - the development of a coherent framework of international initiatives to promote Earth heritage conservation.

### ***Current position***

#### 3.2 Current international Earth heritage initiatives include:

- i. *The World Heritage Convention* - this recognises geological, biological and cultural conservation issues, and JNCC is providing support to the DCMS which represents the UK at World Heritage Committee meetings.
- ii. *The International Union of Geological Sciences Geosites* programme promotes the development of science based site selection procedures and includes an active European component. JNCC and the country agencies are maintaining contact with this programme (in particular with the UK proponents) to ensure that Geological Conservation Review/Earth Science Conservation Review sites provide the basis for any UK sites selected.
- iii. *European Geoparks* programme, driven by local initiatives (i.e. not government driven) establishing geotourism activities in park areas. These programmes do not necessarily have a strong science base, but are seeking to link the recognition of geology/ geomorphology to tourist activities and rural regeneration projects. The Geoparks group holds annual meetings and JNCC was represented at the most recent of these to ensure we and the country agencies are aware of developments. *The UNESCO Geoparks programme* is currently on hold pending high level decisions as to the programme's future.

### ***Future work programme***

#### 3.3 During the coming three years JNCC will focus on the following:

- i. *World Heritage* - JNCC will continue to support the DCMS in its routine work. The UK has recently been elected to the World Heritage Committee giving our work here a higher profile. JNCC has also agreed with the IUCN (advisors to UNESCO) to chair a global consultation process to establish the role and purpose of geological and geomorphological sites within the World Heritage List. The consultation will be internet based with a limited number of UNESCO hosted meetings in Paris. JNCC will also seek to introduce the theme of Earth heritage/World Heritage into other events which are expected in the next two years, including geoconservation conferences in Ireland and Malaysia. This work also presents an opportunity to establish closer links between the disparate international Earth heritage programmes.
- ii. *Bern Convention* - a proposal has been made to include geological sites within the Emerald network of nature conservation sites within Europe. JNCC is advising DEFRA on the scope and purpose of such an initiative, including the possibility of supporting the European

activities of the Geosites programme through this convention. We see value in existing GCR sites/SSSIs having a Geosites tag provided this is for information only and does not bring any obligation to act, and in particular to designate sites.

- iii. *The International Union of Geological Sciences Geosites programme* - maintain contact this programme, including the British Institute for Geological Conservation.
  - iv. *Geoparks* - JNCC will maintain contact with the European and UNESCO Geoparks programmes.
  - v. *Overseas Territories* - channel information on Earth heritage conservation objectives and techniques into JNCC's strategic work for the FCO.
  - vi. *A UK hosted international conference* - JNCC is planning to participate in and help organise a proposed Earth heritage conference that will have a strong international emphasis. This is likely to take place in Dorset, in the spring of 2004. The objectives of the conference will be to:
    - a. Publicise and promote the completion of the GCR publication series and the use of JNCC's electronic Earth heritage database in policy and planning decisions. This may involve a short celebratory publication (in paper or electronic format) designed to place the GCR work in its current national and international context.;
    - b. Draw to a close the JNCC chaired international consultation process on World Heritage geological sites, and bring together international scientists involved in the various Earth heritage conservation programmes;
    - c. Use the Devon/Dorset coast to demonstrate Earth heritage conservation best practice. If the coast is inscribed on the World Heritage List in December of this year this recognition will significantly raise the profile of the area and make it an ideal venue for the proposed conference.
- 3.4 Dorset County Council have indicated strong interest in supporting a conference and the Geological Society of London's Geoconservation Commission will also be involved. UNESCO have indicated they will provide support for attendees coming from countries that might not normally be able to afford T&S costs.
- 3.5 The timing of the conference will allow the UK's own domestic efforts to be juxtaposed against international work with JNCC providing the link between the two. A final decision on conference venue and themes will be made in

February 2002 after UNESCO has announced its decision on the Devon/Dorset nomination.

#### **4. Soils Lead Agency**

##### *Current position*

4.1 Current soils work is co-ordinated through a Soils Lead Agency (SLA) and work can be divided into 'advisory' and 'research' work. A number of experts were commissioned to provide background ideas on key areas of soil research and thinking that impinge on nature conservation. These include:

- i. Soil biodiversity and nature conservation;
- ii. Soils and ecosystem function;
- iii. Soil indicators.

4.2 This background work is to establish the basic principles that should underpin agency soil work and is being used to provide guidance on which issues should be pursued and by what means.

##### *Advisory work*

4.3 The SLA has contributed to a number of non-agency soil initiatives over the last year, in particular:

- i. Environment Agency partnership project to develop a set of national soil indicators where input has been to ensure the inclusion of natural heritage interests and the value of including protected sites in the monitoring network;
- ii. National soil strategy development, in particular the English strategy on which detailed comments have been submitted. Welsh and Scottish strategies are expected to be developed.

4.4 The key importance of such advisory work is that it makes clear that the conservation agencies have an important interest in soil issues and ensures that nature conservation interests are fully represented. Nature conservation input, and our ability to contribute advice, to these national programmes is now accepted as important by the organisations concerned.

4.5 During the period to 2004, SLA priorities will be to:

- i. review draft soil strategies for Wales and Scotland to ensure nature conservation interests are represented;
- ii. facilitate contributions to further development of the English strategy;
- iii. contribute to follow-up work by the EA on soil indicators.

*Research work*

- 4.6 New research has been initiated by the SLA through an inventory project to map the distribution of soils within protected areas in the Moray Firth. The results of this work have now been analysed and will be used to develop a similar research project in Snowdonia. A seminar was held on October 4<sup>th</sup> to discuss the results of ongoing research and advisory work. This seminar identified the following priorities for future work to 2004:
- i. Development of criteria for evaluating the conservation importance of soils - which soils are of conservation importance and why?;
  - ii. Prepare short report to define the ecosystem values of soils for nature conservation;
  - iii. Implement the Snowdonia soil inventory project;
  - iv. Review existing soil information in the context of a sample of NNRs;
  - v. Implement a research programme at Moor House in the Pennines;
- 4.7 The Moor House project will be undertaken by Reading University Department of Soil Science and the Centre for Agri-Environmental Research (CAER) through a research studentship funded by JNCC or NERC. The project will look at the functional aspects of soils in an upland area and in the context of practical nature conservation objectives within the area. A series of annual seminars will be held to promote the importance of soils in a nature conservation context. These will be used as a showcase for the Moor House and other research projects.
- 4.8 An updated forward look for soil conservation work will be presented to Committee in March 2002 as a separate paper. This will include discussion on how to integrate Northern Ireland into the SLA work.

**5. Summary**

- 5.1 The coming two years will see the completion of the GCR publication series and the establishment of an effective and flexible database for updating and disseminating Earth heritage information held by JNCC on behalf of the country agencies. This will constitute a major milestone in the development of Earth heritage conservation in Great Britain, and internationally.
- 5.2 In parallel with completion of the GCR publication series, JNCC's international strategy is expected to mature with the various strands drawn effectively together. This will in part be accomplished through the JNCC chaired IUCN consultation process on the role of Earth heritage in the World Heritage Convention, and in part through our support for a conference in 2004 which will have a strong international component.

- 5.3 The proposed 2004 conference will provide a good opportunity to demonstrate what is best in Earth heritage in the UK and to learn from what is happening around the world. It will also provide an opportunity to draw the different strands of JNCC's Earth heritage work more closely together, juxtaposing our domestic and international work to the benefit of both.
  
- 5.4 The Soils Lead Agency will continue to deliver a programme of advisory and research work related to the natural heritage interests of soils. The need to conserve soils for conservation gain rather than agricultural objectives will be positively promoted.