PROGEO REYJAVIK 2015: KEYNOTE SPEECH ROGER CROFTS

PUTTING GEOHERITAGE CONSERVATION ON ALL AGENDAS

I will take as my theme getting geodiversity and specifically geoheritage conservation on the nature and wider agendas. I shall address why geodiversity plays a minor role compared to biodiversity at all geographical scales, and why, in particular, geoheritage conservation in protected areas is a poor relation of protecting species and habitats and cultural landscapes. And, throughout my talk, I will make suggestions on what we as the geo community should be doing about it.

The question is beyond the local and national issues that we have identified for purposive discussion at this conference as I consider that these are symptoms of a wider set of issues which we have to address if we are to improve the status and standing of geodiversity and specifically geoheritage conservation at site level.

Fundamental issues

I want to ask a series of questions, deliberately challenging to all of us in the geo community. But as there is no point in leaving it as a negative, I shall also suggest what we can and should do to address them and therefore improve the situation. That way I hope it will prove sufficiently debatable and stimulating to get us deep into the big issues from the outset of the conference.

Let's address three fundamental questions and identify the point at issue and the action counterpoint needed to address each one.

1. Why is biodiversity ahead and why does geodiversity not figure along side it as integral part of the nature conservation agenda?

Why has biodiversity captured the public imagination? Animals especially are seen as cuddly and furry but also as rulers of a natural world largely lost. They are revered for their evolutionary traits and their survival prowess. The post World War 2 conservation movement was built on concern about species survival and the new lobbies focused on iconic species, none more so than the giant panda (despite the fact, as I discovered in a recent visit to China, it is on a genetic dead end course and captive breeding will not result in its survival in the wild).

Why has biodiversity achieved international status? The main reason is because environmental campaigners and thinkers saw the connection with the future of life of earth, and that essential connection between people and nature. From that premise were developed ground breaking strategies, such as the *World Conservation Strategy* and *Caring for the Earth,* as precursors to the Rio Earth Summit. The leaders of these strategies knew how to lobby and link shier thinking to international concerns of the day.

What can we learn from these two simple approaches by the biodiversity community to help us promote our cause? I have nine suggestions for you to discuss.

First, we must have clarity in the definition of terms. Surely, we should be adopting those by Gray, ProGEO and Sharples on geodiversity, geoheritage and geoconservation respectively.

Second, we need to think strategically in a wider context than just geodiversity and geoconservation: all of nature and the human and cultural environments in which geoheritage exists.

Third, we should be linking our approach with other parts of the nature conservation agenda, particularly the interconnections and dependencies between bio and geo, sometimes termed biotic and abiotic nature.

Fourth, if we are to achieve the second and third points, we need to interact with the rest of the nature community as well as wider communities of interest, such as business and economic development and most of all civil society.

Fifth, we need to communicate in a way that relates to people and societal agendas now and in the future, rather than obscure past times which people have difficultly relating to. For example the 5 reasons for geoconservation developed by John Gordon and myself are a simple attempt to get over fundamental messages in everyday language to a range of audiences. The five reasons are: g*eoconservation for its own sake, as a scientific and educational resource, for their cultural and aesthetic vales, as the complement to biodiversity, and for the provision of environmental goods snd ecosystems services.*

Next (sixth), we need to put more effort into celebrating the iconic places and points of time in a meaningful way to current generations on the ground and through use of modern media.

At a technical level, seventh, we should deb developing and reporting on develop indicators of loss and gain of geoconservation interest, to mimic the Aichi targets of the Biodiversity 2020 agenda and the newly established IUCN Green List of Protected Areas.

In Europe, we must make sure that we participate in the fitness check of Natura 2000 which I shall refer to later.

And, finally and the ninth point, we should develop national NGOs that are people centric and encourage participation by none experts. So why not broaden the membership base of ProGEO to show leadership and set up national chapters in key countries around Europe?

Before I leave the lessons from biodiversity, we also need to address, specifically why does the world's leading nature conservation organisation, IUCN, focus almost exclusively on biodiversity? I ask this question because ProGEO is a member, Landvernd another of the organisers of this conference is a member, and many of us in the audience are involved especially through the World Commission on Protected Areas. The main reason is that IUCN was established by bio folk concerned with species survival, and that focus has remained led by the major NGOs that are bio focussed, such as WWF, Birdlife, TNC and CI.

But we have begun to change the focus. I applaud the efforts of ProGEO and especially Enrique Diaz-Martinez and colleagues, which has brought recognition of geodiversity through passing of formal Resolutions by the General Assembly of the IUCN in 2008 and 2012. And because a lapsed geomorphologist (myself) argued, successfully, for the substitution of the the word 'biodiversity' by the word 'nature' in the IUCN definition of a protected area; as a result geoheritage conservation has achieved full recognition in protected areas. To drive these changes forward, the top brass in the WCPA have agreed to the formation of the WCPA Geoheritage Specialist Group. We now need you to become individual members, actively helping to form the agenda and provide linkages with the bio community, and to deliver the work programme including inputting to the Best Practice Guideline on Geoheritage Conservation in Protected Areas which we are preparing. Enrique Diaz-Martinez and John Gordon can help you sign up.

And at the intellectual level, we need to promote the new concepts which link geodiversity and biodiversity: such as 'preserving the stage' on which biological conservation is maintained; in other words, plants and animals are the actors on the geodiversity stage which they depend on to survive and to thrive.

2. Why is geoheritage low on international agenda?

In parallel to the first question, and partly related to it, is the issue of why geodiversity and geoheritage conservation is low on the international agenda.

Part of the problem is that we do not link it to the sustainable development agenda so that geodiversity conservation is not part of the emerging Sustainable Development Goals to be approved by UN Member States in September 2015. Of the 17 Goals proposed, 6 are particularly connected to proper functions of the Earth's natural systems and their protection, conservation and sustainable use: *ending poverty, ending hunger and achieving food security, ensure healthy lives, promote education and lifelong learning opportunities, combatting climate change, conserve the oceans, and protecting, restoring and promoting sustainable use of terrestrial ecosystems including halting and reversing land degradation and halting biodiversity loss*. The linkages are surely obvious - water, soils, minerals, as well as the natural processes which sustain life. Geoconservation has a major role to play in the natural goods and services produced from geodiversity and are therefore a vitally important component of sustainable development in the correct Brundtland meaning (as opposed to modern economic hi-jacking of the term, such as sustainable economic development which neatly ignores the fundamental natural and societal components). The geoconservation community must make these points abundantly clear by providing objective evidence to support the arguments and forms of words to be used in the emerging protocols and indicators.

We are only too well aware that there is no inter-governmental agreed protocol for geodiversity, unlike those for desertification, climate change and biological conservation. Surely, we missed a trick here a quarter if a century ago! I know that a case can probably be made, as our Australian colleague, Margaret Brocx, did so eloquently at the First International Conference on Geoheritage Conservation in China recently. And I have referred to the possibility last year in my article published in the PGA on what lessons can we learn from biodiversity. But it is probably too late to argue effectively for a new convention and much better to argue for geoheritage conservation in form and function to be included in the protocols and practices of the all of the other conventions. For this, we need to develop and agree formal principles and statements that others in the international nature community will be able to sign up to.

In our global world, the current post economic crash paradigm is about resource use (really meaning exploitation without defining boundaries of acceptable levels or effects on the functioning of the natural systems). But, if we are to protect existing sites and to ensure that new sites are developed in a more environmentally sensitive way we need to develop some new tools for evaluating impact. Saying 'no' boxes us into a corner, saying 'yes' is easier but destroys our credibility. So defining how to measure the limits of activity and of acceptable change and the thresholds which determine unacceptable levels of interruption to natural systems (to borrow concepts from biodiversity conservation and recreational impact assessment) are needed to be developed further by Earth scientists. In this, we need to decide whether the so-called exploiters, the mining and energy companies, are our friends or our enemies. A bit of both I suspect. But some companies are changing. I recall listening to senior bosses from Rio Tinto talk about their new corporate strategy embracing environmental systems and processes and protecting these as part of their operations at an IUCN meeting in 2012. A sea change from decades ago!

Turning to Europe, you will be aware that there is an important EU strategy for nature: *Our life insurance, our natural capital: an EU biodiversity strategy to 2020.* But it does not adequately cover all of the ecosystem goods and services which we in the geodiversity community consider that it should. Rather than demanding a Geodiversity Strategy, I recommend that the geodiversity community engage yet againt hrough Environment Directorate-General at the top with the EU Commissioner Karmenu Vella and his Chef de Cabinet Patrick Costello and with the Head of the Directorate-General Karl Falkenberg. Also contact should be made with the Natural Capital group, Direc-

torate B, headed by Pia Bucella and within that the heads of the units dealing with agricultural, forests and soils, biodiversity and nature. I know that you have made attempts in the past, but rarely do new ideas and approaches get through first time, so I strongly recommend that you try again and use the good offices of the IUCN team in Brussels who knew the people and modes of operation.

Although the proposals for a Soil Framework Directive have been formally withdrawn, the challenge of soil degradation is recognised in the EU Seventh Environmental Action Programme which came into force at the beginning of 2014. Backing for our involvement can be supported through our IUCN colleagues in the Commission on Environmental Law, especially Ben Boer and Ian Hannam who have been working on these aspects for a long time. All of these policies and the resultant actions are ones which geodiversity can contribute towards and hence my recommendation that contacts in the Environment Directorate-General should be renewed.

In the EU also, as most of you will know, there is specific action in relation to species and habitats through the Natura 2000 programme of site protection: the largest regional programme in the world. To achieve the holy grail of the underpinning Habitats and Species Directive of 'favourable conservation status' requires input from the geodiversity community to demonstrate in principle and especially in practice what needs to be done and how the geoconservation community can help. This is all the more important as the Natura scheme, along with many other EU environmental instruments, is being subject to a periodic 'fitness check'. Many of us in nature conservation are concerned that this may result in dilution of nature protection. So ProGEO needs to add its voice in the deliberation. Specifically, you can join the IUCN WCPA group reviewing the position which I have been asked to chair and with Andrej Sovinc and Boris Erg as the secretaries.

3. Why is geoheritage conservation low on the local political agendas and why is there not more public support?

Third, I want to turn our attention to the local level.

One of our problems is that I feel that we are still playing to our own internal agenda too much. Whilst the Geoparks approach has revolutionised our focus and is running hard and successfully in some countries, like China, it cannot be the whole solution. We do need to retain our scientific basis, but not make it too obscure and too internalised. I know that chrono-stratigraphical sites and sites important in the evolution of intellectual development about the Earth, for example, are vitally important, but let's make sure that we tell others in their language. Otherwise, if we take an outmoded agenda of sites for their scientific reason and fail to communicate and enthuse others, we will have politicians and the public saying 'this is not for us'. This approach, in part, was the downfall of the government nature conservation agency in Great Britain in the late 1980s and the establishment of broader based bodies to succeed them with a new philosophy of engagement and communication without ignoring the objective scientific basis of conservation. There is nothing wrong with the scientific approach in principle, otherwise how can protected sites be justified. But, we need to have strategic frameworks which are made meaningful to others and link to wider conservation agendas, as I have argued earlier.

Another issue is that we do not take a sufficiently systematic approach to geoheritage conservation. In Britain, we developed the Geological Conservation Review, a systematic approach developed by the top scientists and geoconservation experts. Although there were numerous attempts by the statutory overseeing committee to stop the work, wiser counsels of common sense executive bosses prevailed.

Related to this point, we do not get geoconservation in the environmental plans and strategies that determine the place and pace of development of land and other natural resources. This means that

geoconservation does not figure in debates about development and infrastructure projects, for example, to the extent that it should.

And let's not forget the audience for our efforts. We need to do more to interest, inspire and enthuse people about our geoheritage and its contribution to 'the wonders of nature'. So promoting the iconic sites, providing people focussed interpretation and ensuring good management are all needed. We have the skills and capabilities within our community, but we all too often have an inward rather than an outward focus. And, we make it too complex and difficult to understand and we do not sell it well enough. We should be recruiting and training geo communicators. The first TV programme on Earth evolution in the UK, I recall, was by an evolutionary biologist and the geologists were furious; but he could communicate and they could not. Now we have the first Professor of Geocommunication Iain Stewart at Plymouth University who's highly regarded by the media and TV viewers, but not by pukka academics.

The four topics for discussion

So how does all of this argument relate to the four specific questions we are all asked to address at this conference? Let's deal with each in turn.

1. How to secure the integrity of geosites under threat?

My message is that we have to communicate the importance of these sites for the benefit of the pubic and communicate this information in understandable ways to the public and to politicians and their advisers, none of whom are likely to have had any Earth science training. And, we need to make clearer links with biodiversity on sites that are protected for species and habitat conservation as they are the basis for nature conservation in most countries. So, in this conference, we should develop an agenda which the geoconservation community should pursue, comprising a set of model policies nationally linking for example in to the developing ideas in natural capital, as was recently done in Scotland and a set of criteria to assess impacts on geoheritage as a guide to decision makers.

2. What is sustainable use of a geosite?

To me this is quite clear and is based on a view of sustainably that the critical features and natural processes which are the rationale for the site must be conserved. Some features may need strict protection. Others may be amenable to modification, especially if that modification, naturally or human induced, enables more knowledge to be gathered and communicated to the public. Some may be dynamic sites anyway as they reflect natural processes in operation. For all of these types, the system applied in the UK by defining sites as exposure sites (for example, active or disused exposed sections), integrity sites (for example, caves and karst sites, and active process sites), and finite sites (for example, mineral and fossil sites) could deb a useful guiding framework. As a conference outcome, I suggest we aim to define what we mean by sustainable use and precisely how it would apply to different types of sites.

3. How to incorporate geoheritage in Environmental Impact Assessment?

There is a great deal of existing material, for example by Lars Erikstad and colleagues. I suggest that, as a conference outcome, you agree to produce guidance on this topic with colleagues in the European Federation of Geologists, and CIWEM to give the approaches broader professional credibility and recognition among practitioners.

4. Is mining and quarrying compatible with geoconservation?

Yes and no as it depends on the purpose of geoconservation at the site and in the wider area. It may be permissible if it allows new exposures and therefore new knowledge to be gathered. It is unlikely to be compatible if it destroys or damages the features of interest. And it is unlikely to be compati-

ble if it interferes with the natural processes that the site depends on for its continuing existence. A conference output therefore should be guidelines on geoconservation and the extractive industries. In drawing these up, you should bear in mind the work already done jointly between IUCN and the International Council for Mining and Minerals (ICMM)
https://www.iucn.org/about/work/programmes/business/bbp_work/by_engagement/bbp_mining/news/library/

At this conference, I hope most of all is to have a series of positive outcomes which will lead towards geodiversity, and specifically geoheritage conservation in protected areas, being of more fundamental significance in local, national and international agenda for nature and sustainable development, and the basis of conserving natural geo features, systems and processes will be enhanced.