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## **Integrating geodiversity and biodiversity conservation: Strategic and site-based approaches**

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The development of geological and geomorphological conservation, as part of broader environmental concerns, has not been easy – not least due to an all too frequent friction with established ecological and species conservation practice and organisations. The reasons for this lack of understanding are many, but tend to stem from a fundamental misunderstanding amongst many ecological conservationists about the significance and context of geological heritage in the natural environment (something which is undoubtedly fuelled by a frequent inability of geologists to adequately communicate themselves...). These problems are compounded by the all-too-common development of parallel conservation systems, including at the level of both legislation and administration.

In the UK, however, the process of geological conservation has always been linked to ecological conservation within the structure of national natural heritage conservation laws, from the first applied legislation in 1949 (Page and Wimbledon 2009). However, this has not always meant that a site-level, actual conservation management has been appropriately integrated, and there are many cases where operations designed to enhance or safeguard a biological feature have seriously – but avoidably – impacted on a geological feature (and vice-versa of course). Ironically, with the development of regional NGO geoconservation initiatives (typical through voluntary RIGS, i.e. Regionally Important Geological Site, groups), this problem, rather than being overcome, has often continued to develop. Indeed, with the establishment of a new, but fragmented, national administrative hierarchy, NGO-driven geoconservation in the UK all-too-often seems to run with little contact, even apparent awareness, of parallel initiatives for ecological conservation.

Uniquely, however, in the County of Devon in SW England, a system through which geological and biological conservation initiatives can be integrated has been developed and promoted by the regional governmental authority, Devon County Council (Page 2008; Page et al. 2008). The Devon Biodiversity Action Plan was first established in 1998, following the implementation of the ambitions of the Rio Earth Summit of 1992. The Devon 'BAP' uses 'Habitat' Action Plans to set priorities for the management of a range of site types, crucially identifying geological and geomorphological, as well as ecological aims and objectives ([http://www.devon.gov.uk/devon\\_biodiversity\\_action\\_plan.htm](http://www.devon.gov.uk/devon_biodiversity_action_plan.htm)).

The 'BAP', now subtitled '*The Nature of Devon – A Biodiversity and Geodiversity Action Plan*', was developed as a partnership between a wide range of governmental and NGO conservation and land-managing organisations, including Devon Wildlife Trust, English Nature (now Natural England) and the Devon RIGS Group. The 'BAP' was extensively revised between 2005 and 2009 and now provides integrated action plans for 40 of Devon's key habitats and species which include geoconservation and biological objectives as appropriate, the key 'HAPs' for geoconservation purposes being:

- *Caves, karst and limestone habitats;*
- *Cities, towns and villages;*
- *Dynamic coastal landforms and habitats;*
- *Estuaries;*
- *Mines and mineral waste tips;*
- *Periglacial landscapes;*
- *Pits, quarries and cuttings;*
- *Rivers, streams, floodplains and fluvial systems;*
- *Rocky foreshore;*
- *Rocky seabed;*
- *Sea-cliff and slope.*

Each Action Plan was developed through consultation with a range of organisations and presents a review of issues, threats, and proposes positive initiatives and sets objectives and targets for future work within the following sections: 1. *Definition*; 2. *Why an Action Plan?*; 3. *Characteristic wildlife*; 4. *Special species*; 5. *Special geodiversity features*; 6. *Distribution in Devon*; 7. *Current extent*; 8. *Current problems for the 'habitat'*; 9. *Recent changes in number and extent*; 10. *Current site protection*; 11. *Current positive initiatives for the 'habitat' in Devon*; 12. *Biodiversity planning context*; 13. *Biodiversity objectives and targets for the 'habitat'*; 14. *Wider benefits from pursuing these objectives*; 15. *Priority or Indicative Actions for the 'habitat'*.

The 'BAP' is intended to guide local and national governmental policy and action for Nature Conservation across the historical County of Devon – which is now subdivided into a range of local government authorities of different statuses. The methodology is particularly powerful where geomorphological processes underpin important ecosystems, such as within the HAP for *Active River Systems*, but is equally valuable where the primary features may be geological (e.g. for *Pits, Quarries and Cuttings*), but may be associated with national rare or protected species such as lichens and birds of prey. Remarkably, as partners in the 'BAP' process, national and regional nature conservation organisations such the Royal Society for the Protection of Birds and the Devon Wildlife Trust have signed up to supporting geological

conservation in Devon, whereas elsewhere in the UK such groups are often notable for their ‘disinterest’ in such issues.

The ‘BAP’ can be especially useful for spatial planning as its policies can be invoked to help protect non-statutory geological heritage sites, as well as to help safeguard features even where they have not been formally designated. Crucially, as the principles of the Devon ‘BAP’ also inform the natural heritage conservation strategies of the component local governmental authorities (e.g. Page 2004), this provides an important way in which it can be implemented at ‘ground level’. Inevitably, however, due to changing governmental priorities and economic drivers, the implementation of strategies such as the Devon ‘BAP’ have suffered in recent years but, perhaps somewhat ironically, with the implementation of the Natural Environment and Rural Communities Act 2006, ‘Priority Habitats’ and ‘Priority Species’ do actually have a *strengthened* legal status.

Crucially, however, the recent development of Local Nature Partnerships has enabled the strategic integration of geodiversity and biodiversity interests in Devon to continue to be promoted. The Devon LNP, in particular, has taken a conscious decision to recognise and embrace all aspects of the natural world (i.e. to adopt a broad definition of ‘Nature’), rather than equating this purely to wildlife ([www.naturaldevon.org.uk](http://www.naturaldevon.org.uk)). Currently, however, the profile of geoheritage and geoconservation within activities of the Devon LNP remains low, but with the long-established guiding principles of the Devon ‘BAP’ still very much part of the regional conservation infrastructure, this situation can only improve.

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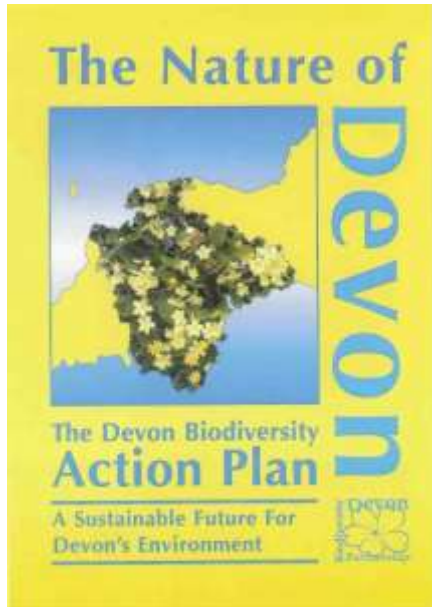


Figure 1: The cover of the Devon 'BAP': *The Nature of Devon – A Biodiversity and Geodiversity Action Plan*