

Taking Scotland's Geodiversity Charter forward: potential contributions from Local Authorities

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Scotland's Geodiversity Charter was launched in June 2012 by the Scottish Geodiversity Forum - see scottishgeodiversityforum.org/charter/. It sets out why geodiversity is important, and presents a vision where geodiversity is recognised as an integral and vital part of our environment, economy, heritage and future sustainability to be safeguarded for existing and future generations in Scotland. The Charter suggests actions for different stakeholders and includes a range of case studies. It has been well received and supported, with almost 50 organisations signing the Charter and working to support its vision. This paper outlines how Local Authorities and other Land Owners / Managers can implement the Charter. It was prepared by the Charter Working Group, comprising members of the Forum and representatives from the Scottish Government, British Geological Survey, Scottish Natural Heritage and Local Authorities.

Geodiversity is the variety of rocks, minerals, fossils, landforms, sediments and soils, together with the natural processes which form and alter them. It is the foundation of all ecosystems and delivers essential benefits and services for society through its influence on landscape, habitats and species, economic activities, historical and cultural heritage, education and learning, and people's health and well-being. Understanding geodiversity is vital to inform climate change adaptation and sustainable management of Scotland's natural resources, including minerals, the land, river catchments and the coast.

Consideration of geodiversity should not be regarded as an 'add-on' or an extra burden. It has an essential part to play in dealing with today's challenges, such as climate change adaptation and loss of biodiversity, sea-level rise, sustainable economic development and improving people's health and wellbeing. Management of Scotland's geodiversity aligns with, and supports, the Scottish Government's purpose of increasing sustainable economic growth and its five [Strategic Objectives](http://scottishgeodiversityforum.org/charter/strategic-objectives/) (Wealthier and Fairer, Healthier, Safer and Stronger, Smarter and Greener - see scottishgeodiversityforum.org/charter/strategic-objectives/). It also supports the delivery of the [Scottish Biodiversity Strategy](#), [Scotland's Land Use Strategy](#), the [Scottish Soil Framework](#) and [Scotland's Landscape Charter](#). The Geodiversity Charter is a key component of the [UK Geodiversity Action Plan \(UKGAP\)](#).

The key message underpinning the Charter is that the sustainable management and conservation of geodiversity is not simply desirable, but is essential to safeguard the many benefits that geodiversity provides for society. In the current fashion, these can be framed in terms of ecosystem services; for example geodiversity provides:

- provisioning services: fresh water (surface and groundwater), mineral resources (including oil and gas, renewable energy);
- regulating services: carbon sequestration and climate regulation, regulation of erosion and natural hazards such as flooding;
- supporting services: soil formation, geomorphological processes, terrestrial and marine habitats;
- cultural services: aesthetic and inspirational values, landscape character, resource for recreation and outdoor activities, tourism and education.

Geodiversity cannot, therefore, be taken for granted. Its loss or mismanagement, for example through development activities or land-use pressures, not only devalues our geoheritage but also presents real threats to biodiversity and can result in significant economic and social costs. Conversely, the sustainable management and promotion of geodiversity can have very positive social, economic and educational benefits.

Because geodiversity affects our lives in so many different ways, Local Authorities can make an important contribution to delivering the vision and objectives of the Charter, not through a raft of new initiatives, but through ensuring much better integration of geodiversity in a range of existing activities and its recognition in development planning and policy. Examples of potential activities are given in the table below.

Roles	Potential Activities
Chief Executive	<p>Secure a broad base of support for the Charter.</p> <p>Ensure that the Charter is placed at the core of Corporate policy and that departments are “joined up” in terms of an integrated approach to geodiversity.</p>
Planning Service	<p>Carry out an audit of geodiversity sites for potential designation as Local Geodiversity Sites or Local Nature Conservation Sites in Local Development Plans with accompanying adoption of appropriate policies for protection and enhancement. <i>e.g. East Dunbartonshire Council commissioned the British Geological Survey to carry out a geodiversity audit of 36 sites. The project was funded by Scottish Natural Heritage (although please note SNH can no longer fund local authorities to audit local sites) and existing revenue funds.</i></p> <p>Promote geodiversity and management of sites through Development Advice Notes.</p> <p>Capture better GIS information on geodiversity sites and zones through an informed network-based planning approach (<i>e.g. similar to Integrated habitat networks, Glasgow & Clyde Valley Green Network</i>).</p> <p>Include geodiversity sites in Open Space Strategies.</p> <p>Take into account geodiversity sites and associated access points to such sites when commenting on Forestry planting plans and general Planning Applications.</p> <p>When processing Planning Applications, consider impact on geodiversity features and local sites, and whether mitigation measures (or replacement sites) are required.</p> <p>Encourage developers to allow access to temporary exposures to record and sample, and to deposit borehole and other data with the British Geological Survey. <i>e.g. the ASK network, a new data and knowledge exchange network between public and private sectors developed by the BGS and Glasgow City Council.</i></p> <p>When carrying out statutory flood risk assessments, look for opportunities to monitor and enhance natural fluvial and coastal processes to reduce flood risk.</p>
Roads / Transport / Housing	<p>Conduct geodiversity assessments when carrying out Strategy Plans.</p> <p>Ensure that opportunities to enhance geodiversity and access to sites are considered in all relevant proposals, including the potential to create, extend or restore geodiversity interests (e.g. during construction of new routes or upgrade of existing ones, or as part of Housing developments) and that any landscaping (e.g. hydroseeding) or slope grading takes account of geodiversity interests. <i>e.g. A planned new M80 road interchange encroached on a geological SSSI. Discussions at an early stage allowed mitigation and improvement of the overall condition of the site - see Earth Heritage, issue 38 (Summer 2012), pp15-16.</i></p>
Sustainable Development	<p>In planning developments in dynamic environments (e.g. river floodplains and the coast) allow space to accommodate natural processes and take into account the wider effects on natural processes and ecosystems.</p> <p>Ensure that natural flood management is based on a sound understanding of geomorphological processes and where possible delivers multiple benefits for biodiversity and geodiversity.</p> <p>Ensure that developments affecting dynamic coastal environments (including coastal protection) form part of a strategic Shoreline Management Plan.</p>
Education	<p>Encouraging outdoor learning (for schools and adult education) that uses local geodiversity and landscape. Provide maps and support materials that highlight local geodiversity sites, fossils, etc. <i>e.g. Historic Scotland have developed a cross-curricular teachers resource to support outdoor learning in Holyrood Park, Edinburgh.</i></p>

Economic Development / Tourism	<p>Promote opportunities that geodiversity offers for development of local business, in heritage and tourism, and use of local materials.</p> <p>Support and promote Scotland's Geoparks, and consider opportunities for further development of the Geopark network.</p>
Built Heritage	<p>Work with partners including Local Geoconservation Groups to collate and share information on local building stone, and work to ensure that repairs and renovations maintain and enhance the unique local character of our built heritage.</p> <p><i>e.g. see Historic Scotland's advice and resources.</i></p> <p>Promote the importance of building stones, gravestones and local quarry sites as readily accessible examples of local geodiversity.</p>
Greenspace / Countryside Rangers / Natural Heritage Service	<p>Promote the importance of geodiversity sites, with support of Local Geoconservation Groups where they exist.</p> <p>scottishgeology.com has further information and links to Scotland's geoconservation groups and geoparks.</p> <p>Conduct an audit of geodiversity sites, and implement recommendations to enhance the potential of such sites in terms of education, access and environmental quality for public health and recreation.</p> <p>Prioritise the use and management of key sites (particularly sites with strongly integrated biodiversity & geodiversity interests) to enable appropriate targeting of resources for tourism, education, biodiversity support, perhaps through the development of a Local Geodiversity Action Plan.</p> <p>Integrate geodiversity with LBAP and other strategies relating to the environment. Increase biodiversity potential of geodiversity sites where appropriate to help meet LBAP aims.</p> <p>Deliver geodiversity awareness events, leaflets and apps, with support of Local Geoconservation Groups where they exist. Help identify key people in the community and the best ways to encourage community engagement and education.</p> <p>Link geodiversity sites with development of core footpath network, cycleways and complementary signage strategy.</p> <p>Take natural processes into account when managing open space, e.g. give consideration to natural fluvial and coastal processes.</p> <p>Work with local mineral extraction operations to ensure geodiversity information is collected and used.</p>
Social Work / Community Engagement	<p>Assessment of soil for community growing projects and development of allotments.</p> <p>Work with local communities and other Local Authority departments to encourage local appreciation of geodiversity through, for example, arts projects, and encourage maintenance and enjoyment of local sites.</p>

The Scottish Geodiversity Forum aims to promote Scotland's geodiversity, and seeks to widen the profile of geodiversity and influence national and local policies. It is the Scottish national forum for geoconservation groups, geoparks and other related organisations, and interested individuals. The Forum promotes the role and value of geodiversity in education, community involvement and health, the development of tourism and the wider economy.

The Forum is open to all organisations and individuals who are interested in promoting Scotland's geodiversity and the sharing of experience and good practice. Our website is www.scottishgeodiversityforum.org.

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