
1 Introduction, West Lothian geodiversity

1.1 Project aims

Geodiversity, or the variety of rocks, minerals, fossils, landforms, sediments and soils, together with the natural processes which form and alter them, is becoming an increasingly important topic when planning for sustainable development within Scotland. In seeking to take account of geodiversity in the Local Plan and planning applications, planners require baseline information in a readily accessible format to allow the sustainable management of West Lothian's natural heritage.

This pilot project aims to:

- initiate the process of geodiversity auditing and action planning in Scotland and act as a guide to further work in other areas of the country;
- review the component elements of West Lothian's geodiversity, and its relevance to other interests;
- allow incorporation of geodiversity into the planning system through integration with the Local Biodiversity Action Plan (LBAP) process.

The audit was not intended to be a comprehensive survey of all potential geodiversity sites in West Lothian, but rather an evaluation of a representative selection of sites and features of geological and landscape importance. Four sites in West Lothian currently enjoy national recognition and protection as Sites of Special Scientific Interest (SSSIs) for their geological importance and six are non-statutory Regionally Important Geological and Geomorphological Sites (RIGS). Existing conservation designations in West Lothian are listed in Appendix 1.

The study has shown that, whereas the existing network of such sites reflects the most significant elements of the area's Earth heritage in a national or regional context, there is considerable scope to expand the network to provide better coverage at the local level.

1.2 Project background

This project was instigated by the British Geological Survey (BGS) Geology and Landscape North (GLN) programme, based in Edinburgh. A BGS-led bid in 2003 to the Forward Scotland Community Environmental Renewal Scheme (CERS) for a geodiversity audit of the Lothians had been rejected for lack of community involvement, but GLN remained convinced of the merit of geodiversity auditing in Scotland. Other partners in this CERS bid included Lothian and Borders RIGS Group (LaBRIGS) and the four Lothian councils.

The GLN programme has carried out several Geodiversity audits and assisted in the preparation of Local Geodiversity Action Plans (LGAPs) in northern England and, along with LaBRIGS and UKRIGS saw a need to begin this process in Scotland. Scottish Natural Heritage (SNH) were consulted in late 2004 and it was agreed that West Lothian would be a suitable area for a Scottish geodiversity pilot project, particularly as West Lothian Council (WLC) had identified a need for a geodiversity plan in their document 'Planning for Biodiversity Action 2005–2009'.

A proposal for a collaborative project between the BGS, SNH, WLC and LaBRIGS was submitted by the four partners to the Scottish Executive Sustainable Development Directorate in December 2004. A positive response was received, including personal support from Lewis Macdonald MSP, the then Deputy Environment Minister. Funding was awarded from the Scottish Executive Aggregates Levy Fund, with co-funding from the BGS GLN programme and staff-in-kind support from SNH, WLC and LaBRIGS.

The main purpose of the project was to conduct a geodiversity audit in order to provide a resource for the planning process in West Lothian, with the secondary aim of assisting WLC and LaBRIGS designate additional RIGS in West Lothian. A draft West Lothian Geodiversity Action Plan (WLGAP) would be prepared, but completion of a comprehensive

plan and the wider stakeholder consultation required was outside the timeframe and resources of the project.

Key project deliverables were agreed as:

1. Geodiversity data as GIS layers
2. Geodiversity database
3. Project report, including site photographs

Main contacts for the partners in this project are:

- British Geological Survey, Edinburgh (Hugh Barron)
- Scottish Natural Heritage, Edinburgh (John Gordon)
- West Lothian Council (John Sheldon)
- Lothian and Borders RIGS Group (David McAdam)

1.3 Legislative and policy context

The introduction of Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation by the Office of the Deputy Prime Minister (ODPM) has elevated the importance of geodiversity to a new level in England and Wales. In PPS9, the Government's objectives for planning include:

- to promote sustainable development by ensuring that biological and geological diversity are conserved and enhanced as an integral part of social, environmental and economic development, so that policies and decisions about the development and use of land integrate biodiversity and geological diversity with other considerations.
- to conserve, enhance and restore the diversity of England's wildlife and geology by sustaining, and where possible improving, the quality and extent of natural habitat and geological and geomorphological sites; the natural physical processes on which they depend; and the populations of naturally occurring species which they support.

The first of six key principles in the document states:

- Development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas. These characteristics should include the relevant biodiversity and geological resources of the area. In reviewing environmental characteristics local authorities should assess the potential to sustain and enhance those resources.

No equivalent Scottish Planning Policy (SPP) covering geodiversity yet exists; however, three recent developments present opportunities to raise awareness of geodiversity within Scotland:

- The Nature Conservation (Scotland) Act 2004
- Modernising the Planning System White Paper
- Strategic Environmental Assessment (SEA)

1.3.1 Nature Conservation (Scotland) Act 2004

This Act provides the legislative components of a new integrated system for nature conservation in Scotland. It sets out a series of measures which are designed to conserve biodiversity and to protect and enhance the biological and geological natural heritage of Scotland.

The Act supersedes the SSSI provisions of the Wildlife and Countryside Act 1981, providing for the enhanced protection and management of SSSIs. The provisions place a duty on public bodies to further the conservation and enhancement of SSSIs, provide a new offence whereby third parties can be convicted for damaging SSSIs, and enable the making of byelaws for the protection of SSSIs. It also enables Scottish Ministers to make a Nature Conservation Order to protect a nature conservation feature which is of special interest, or which is contiguous with land containing such a feature, to

ensure its protection.

In an effort to limit the damage inflicted on Scotland's fossil resources, the Act also requires SNH to prepare and issue a Scottish Fossil Code setting out recommendations, advice and information relating to fossils. The production of this code is progressing and should be launched in early 2007.

1.3.2 Modernising the Planning System

A key theme in the Scottish Executive's recent White Paper Modernising the Planning System is the role of planning in delivering sustainable development. The modernised system will use the new SEA regime to help deliver sustainable development and will give environmental considerations the attention they deserve. In the current system, 70% of local plans are over 5 years old and around 20% are more than 15 years old. The new system will require all plans to be updated every 5 years. This more regular updating should allow greater attention to be paid to geodiversity.

1.3.3 Strategic Environmental Assessment

In heralding the new Strategic Environmental Assessment (SEA) regime for Scotland, Environment and Rural Development Minister Ross Finnie MSP stated in October 2003 that:

'At a minimum SEA will mean that every public official preparing a strategy, plan or programme will have to think about its environmental effects. If these are significant, the plan will have to undergo an Assessment. This will highlight both the negative and positive environmental impacts across the full range from water, land and air quality, biodiversity and human health to the built and archaeological heritage of Scotland.'

The Environmental Assessment (Scotland) Act 2005 came into force on 20 February 2006. The Scottish Executive states that 'SEA is a key component of sustainable development establishing important new methods for protecting the environment and extending opportunities for participation in public policy decision making. SEA achieves this by:

- systematically assessing and monitoring the significant environmental effects of public sector strategies, plans and programmes;
- ensuring that expertise and views are sought at various points in the process from SNH, SEPA, Historic Scotland and the public; and
- requiring a public statement as to how opinions have been taken into account.'

SNH has a statutory role as an SEA Consultation Authority. It can provide advice on a wide range of topics in relation to the natural environment and will normally give particular attention to biodiversity, landscape and geological features (indicating if appropriate where these are the subject of national or international protection), access and recreational use of the natural heritage and where relevant, the soil, water, and material assets that are necessary to support these environmental features.

BGS is the United Kingdom's premier centre for earth science information and expertise, and as such, BGS can assist SNH by providing authoritative advice on the geology and geomorphology of Scotland, particularly in relation to sites that are not existing SSSIs or included in the Geological Conservation Review (GCR).

1.3.4 West Lothian Local Plan

The 2005 West Lothian Local Plan (WLLP) commits WLC to producing a geodiversity plan to address the planning and conservation needs of geology and geomorphology (see WLLP section 3.20). The plan also includes a strategy to protect and enhance the built and natural heritage of West Lothian by:

1. conserving and enhancing green spaces, rivers, the coastline and water features and promoting the principles of biodiversity;
2. protecting habitats, landscapes, archaeological features and the built heritage from damaging development;

3. rehabilitating the environment where it has been scarred by previous industrial and development activities;
4. improving and, where appropriate, managing native and mixed woodlands; and
5. improving public access to the countryside, coastline and heritage features, in a manner that preserves the quality of those features.

WLC will subject any proposals which affect the integrity or quality of any designated site (including non-statutory sites such as RIGS) to particular scrutiny. There is a presumption against development which could affect any such designated site and in determining such planning applications; WLC will use the precautionary principle where there is uncertainty of the environmental impact.

1.3.5 West Lothian Biodiversity Action Plan

West Lothian Council adopted its first Local Biodiversity Action Plan (LBAP) in 1998 and a revised version was published in 2005. A section on geology, landforms and soils is included in both these documents; the latter refers to the need to prepare a geodiversity plan for West Lothian.

1.3.6 West Lothian Soil Sustainability Report

As part of the review of the West Lothian Biodiversity Action Plan, WLC and SNH commissioned the Scottish Agricultural College (SAC) to prepare a report on the soils of West Lothian. The report provided a number of recommendations, in consultation with WLC and SNH, on the sustainable use of soil in West Lothian. These included:

Local Plan: WLC to implement a policy towards soil sustainability.

Development Control: WLC to initiate a procedure for soil management and sustainability prior to specific developments as part of the Development Control process.

Open Space: soil management plans recommended for new and existing sites.

Environment: encourage buffer zones close to environmentally significant area, prevention of soil pest and weed movement during soil movement.

Biodiversity: LBAP group should consider developing a soil action plan.

Climate Change: as policies on climate change develop the effects on soil should be considered and updated.

Monitoring: establish baseline data on organic matter, pH, P and K levels, topsoil soil structure, topsoil water-holding capacity and earthworm numbers

Raising Awareness: general awareness raising on the value and good management of soil should be undertaken to ensure sustainability in the short and long term.

1.3.7 EU Soil Directive

The EC Soil Thematic Strategy aims to support the evaluation of Community policy and legislation in relation to soil, its functions and related environmental compartments. Through the EU Soil Directive, it will drive well-informed soil protection and soil management activities across all Member States, to provide explicit protection for soils in relation to existing environmental protection legislation. This process is already acting as a stimulus for the development of national soil protection strategies and their evaluation.

1.3.8 Guidance note on Geodiversity to Biodiversity Groups

The Scottish Biodiversity Group (now the Scottish Biodiversity Forum) published a guidance note in 2000 on geodiversity. This is intended to inform local biodiversity groups about the importance of geodiversity and the necessity of linking the

two together (Appendix 2).

1.3.9 Guidance on Local Nature Conservation Site Systems in Scotland

A working group, convened and chaired by SNH, comprising BGS, COSLA, Scottish Environment LINK, RTPi, SNH, SWT and UKRIGS has prepared the document *Guidance on Establishing and Managing Local Nature Conservation Site Systems in Scotland*. This document, published by SNH in March 2006, includes the following recommendations:

- Local Nature Conservation Sites (LNCS) should form part of an overall approach to delivering the Local Biodiversity or Local Geodiversity Action Plan, with the following purpose: To identify biodiversity and geodiversity of at least local importance and to assist efforts to protect and enhance these interests (Para. 3.4).
- Responsibility for introducing, reviewing and managing local biodiversity sites and local geodiversity sites should be taken by the local authority, although this may be delegated. Either way, the work should be carried out with the help of a panel of advisors comprising relevant interests and expertise (Para. 4.3).
- The Local Plan should include an explanation of the purpose of the LNCS designation.

It should set this in the context of other nature conservation policies, including statutory designations, the Local Biodiversity Action Plan, and Local Geodiversity Action Plan (as and when developed). The Local Plan should make available full details of the process followed in selecting sites. Ensuring that LNCS are an effective mechanism requires good communication between development control officers and officers dealing with LNCS. The presence of LNCS should be included early in discussions about the location of development, and planning authorities should consider opportunities to enhance LNCS during development (Para. 5.3).

- Planning policies for the protection of LNCS should be distinct from policies relating to statutory designations, and should be set out in the context of these policies. Where a planning application concerns land selected as a LNCS, the developer should carry out an assessment of the impact of the proposal on the nature conservation interest of the site. Where it is decided, for significant reasons of social and economic importance, that development should go ahead, there should be provision as far as possible for retention of nature conservation interest through planning conditions. Where this is not possible, the loss should be compensated for by habitat creation or site enhancement elsewhere through planning agreements or conditions (Para. 5.4).
- The location of LNCS should be clearly identified on the Local Plan proposals map, and boundaries shown where scale allows. A formal record of the evaluation of the site should also be readily available within the planning process. To this end, Site Statements should be made available as supplementary planning guidance within the Local Plan, and included in the consultation process for the Local Plan (Para. 5.5).
- LNCS may be selected in places where there is already a national or international nature conservation designation. If the local interest for which the LNCS is designated is different to the national interest for which the statutory designation is made, the LNCS should exist alongside the statutory designation. If the interests are the same, there is no need to incorporate the site as part of the LNCS system (Para. 5.14).
- Within Scotland's National Parks, the policies and procedures developed by the Park Authority set out how biodiversity and geodiversity will be protected and enhanced across the Park area. Through the Park Plan, the Park Authority may decide that an approach equivalent to a LNCS system will help prioritise action and assist in decision-making (Para. 5.15).