

Objective 1: Audit and record all the geodiversity resources

ACTION STATUS

Priority work/ongoing	
Action underway	
Action to be undertaken	

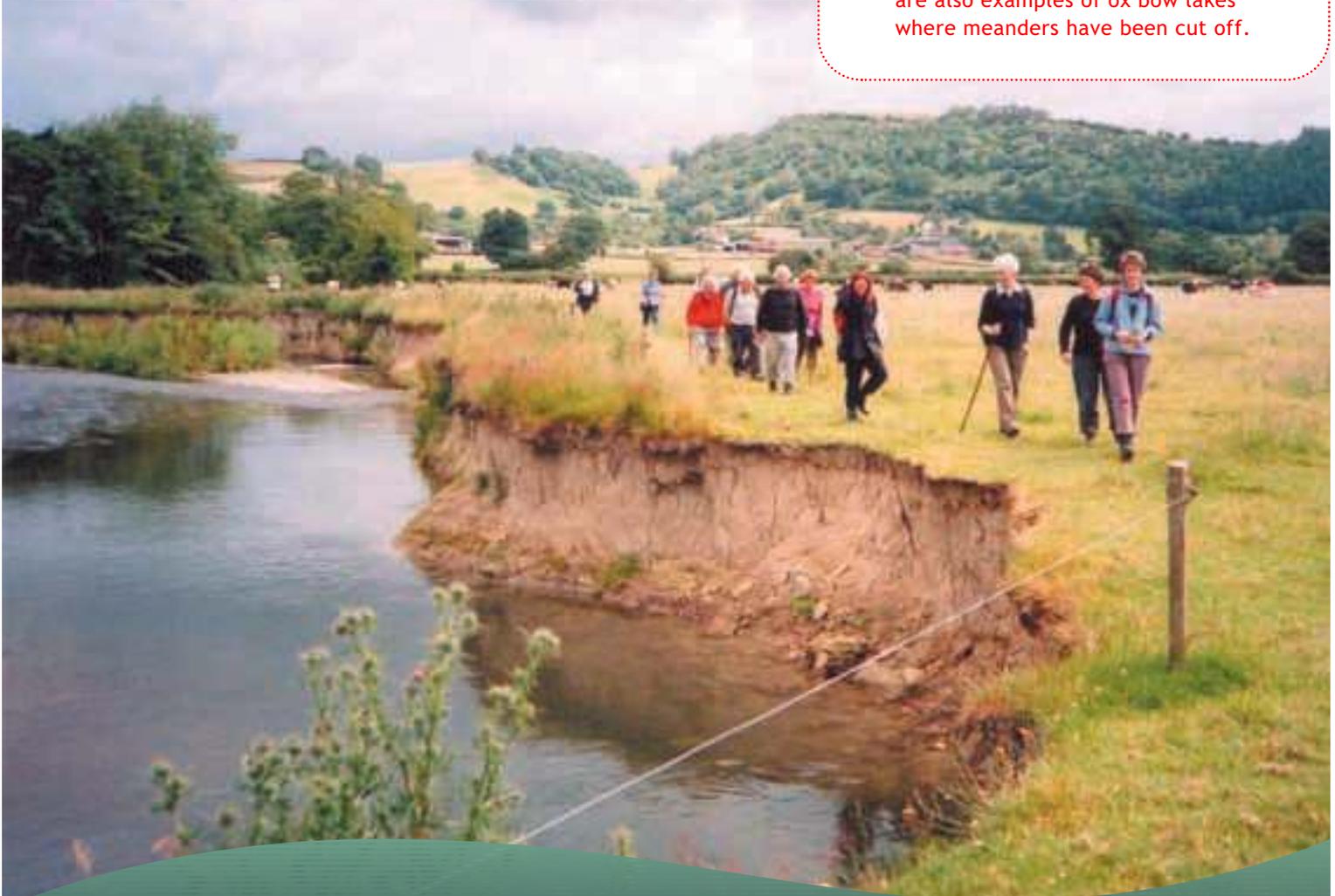
ACTION	ACTION STATUS
Support the work of the Geological Records Centre and ensure data is maintained and updated.	
Carry out an audit of knowledge, information, materials and skills relating to geodiversity in the county.	
Carry out an audit of the geological, geomorphological and landscape features and glacial deposits.	
Identify and record all sources of locally important building stone and seek to safeguard them within the planning system.	
Assemble a rock, mineral and fossil reference collection of the county.	
Carry out an audit of soil and peat sites.	
Encourage the mapping of the north west of Herefordshire which is not yet covered by the British Geological Survey.	
Publish the audit of geodiversity within five years.	

Objective 1: Audit and record all the geodiversity resources



Left: **Glacial moraine.** During the last glacial period about 15,000 years ago, ice which had accumulated on the Welsh hills, travelled eastwards roughly as far as the present A49 trunk road from Leominster to Hereford. The picture shows a ridge of glacial moraine deposited at The Leasows, from which gravels are being extracted.

Below: **The meandering course of the River Lugg near Byton.** The River Lugg meanders across an area of flat land. This was the floor of a lake created when a tongue of the Wye glacier blocked the route of the River Lugg. The present river can be seen to be actively eroding its banks. There are also examples of ox bow lakes where meanders have been cut off.



More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 2: Increase awareness, understanding and appreciation of the county's geodiversity

ACTION STATUS

Priority work/ongoing

Action underway

Action to be undertaken

ACTION

ACTION STATUS

Carry out a programme of geodiversity lectures, talks, walks and fieldtrips for all. Undertake at least four per year.

Improve online geodiversity information on Earth Heritage Trust, West Midlands Geodiversity Partnership and Abberley and Malvern Hills Geopark websites.

Raise awareness of the Earth Heritage Trust activities by identifying and participating in at least five festivals, shows and events per year.

Run and enhance Rock and Fossil Roadshows, such as those for the Overlooking the Wye Project.

Encourage publications relating to local geology and landscape such as the Woolhope Naturalists Field Club Geology Section Book on the geology of Herefordshire.

Identify local community groups and encourage their participation in geodiversity programmes such as site conservation work.

Promote educational opportunities by providing geodiversity information to schools and colleges through identifying safe and accessible sites for field trips and producing education packs.

Working with the owner, encourage the use of Herefordshire sites and specimens for educational purposes, such as the 'Champions' Project sites and museum collections.

Work with universities to develop suitable geodiversity research projects within the county.

Produce, maintain and publicise a list of all the formal and informal geodiversity courses in the county.

Support the development of a permanent natural history display of the county.

Objective 2: Increase awareness, understanding and appreciation of the county's geodiversity



Rock and Fossil Roadshows have been organised for family groups, schools or festivals. Children (and adults alike!) enjoy a variety of activities, which explain geology and past environments. Rock and Fossil Roadshows help to raise awareness of the wonderful and important geology of the county and to promote the geoconservation work of the Earth Heritage Trust.

Left: A Rock and Fossil Roadshow held at Queenswood Country Park. Activities include making casts of fossils, creating a collage of an ancient underwater landscape and fossil painting.

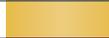
Below: Children examining rocks under the microscope at a Rock and Fossil Roadshow. They can see a range of rocks, fossils and minerals and learn more about them, from sympathetic experts.



More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 3: Ensure that geodiversity is identified and included in regional and local strategies, plans and policies

ACTION STATUS

Priority work/ongoing	
Action underway	
Action to be undertaken	

ACTION	ACTION STATUS
Create a mechanism for Herefordshire Council to update data regularly on LGS/RIGS.	
Ensure that geodiversity is considered in planning decisions by making sure that consultation mechanisms are in place.	
Ensure that geodiversity is included in all relevant regional and local strategies.	
Help the Local Sites Partnership in the work on National Indicator 197 to get sites into positive management for the 2008-2011 Local Area Agreement Local Sites improvement target.	
Respond to the Local Authority and other bodies in order to influence consultations in favour of geodiversity conservation policy.	
Support and engage with geodiversity and geoconservation organisations such as the British Geological Survey, the Geology Trusts, the Association of UK RIGS Groups and the West Midlands Geodiversity Partnership.	
Provide input, where appropriate, to management plans of organisations such as Areas of Outstanding Natural Beauty, Geoparks, the Malvern Hills Conservators, the National Trust and the Forestry Commission.	

Key:

- LGS Local Geological Sites (formerly known as RIGS)
- RIGS Regionally Important Geological/Geomorphological Sites

More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

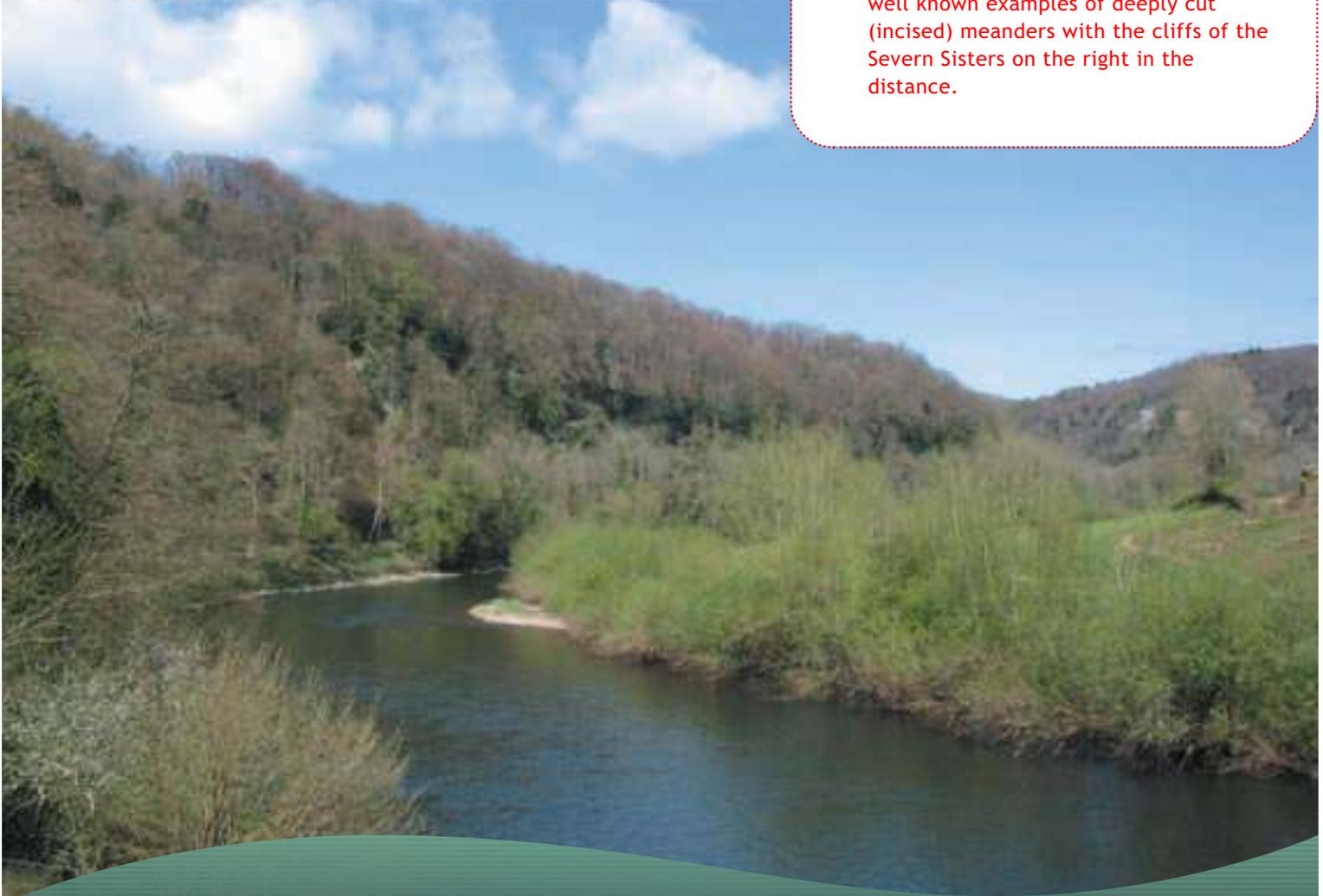
Objective 3: Ensure that geodiversity is identified and included in regional and local strategies, plans and policies



Herefordshire contains parts of two Areas of Outstanding Natural Beauty: Wye Valley AONB and Malvern Hills AONB. These contain the spectacular scenery of the Wye Gorge and the Malvern Hills. The topography reflects the underlying geology and the erosional processes to which the area has been subjected.

Left: Clutters Cave in the Malvern Hills AONB. This is a man made feature cut into Precambrian rocks, which form the steep-sided ridge of the Malvern Hills.

Below: View of the Wye Gorge within the Wye Valley AONB. This is a view, seen from the Biblins footbridge, of the gorge which the Wye has cut into Carboniferous Limestone rocks. Here are well known examples of deeply cut (incised) meanders with the cliffs of the Severn Sisters on the right in the distance.



More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 4: Provide guidance and support to those dealing with geodiversity e.g. local authorities, landowners, organisations and individuals

ACTION STATUS

Priority work/ongoing	
Action underway	
Action to be undertaken	

ACTION	ACTION STATUS
Contact and inform landowners regarding LGS/RIGS and other important geodiversity features in their area.	
Provide advice and engage with planners, landowners etc. in relation to geodiversity.	
Produce a Code of Conduct for visiting public and privately owned geodiversity sites.	
Discuss the potential for a Service Level Agreement between Herefordshire Council and Earth Heritage Trust to supply geodiversity information in order to assist in policy decision making on the natural environment.	
Produce a geodiversity alerts map for the county.	
Provide a workshop on the natural environment (geodiversity and biodiversity) to county planners and elected members of the council.	

Key:

- LGS Local Geological Sites (formerly known as RIGS)
- RIGS Regionally Important Geological/Geomorphological Sites

Objective 4: Provide guidance and support to those dealing with geodiversity e.g. local authorities, landowners, organisations and individuals



Left: Gullet Quarry, a Site of Special Scientific Interest for geology. During the Silurian Period, about 440 million years ago, this was a rocky shoreline. The Precambrian rocks of the Malvern Hills, seen at the top right of the picture, formed cliffs and sea stacks. In the sea, sand and silt were deposited in layers which were originally horizontal and have since been pushed up by earth movements so that they are now tilted steeply to the west.

Below: The former Linton Tile Works site near Bromyard. In this area about 420 million years ago, a soil developed on a dry land surface. This fossil soil can be seen as a softer layer at the bottom of the picture. This is overlain by harder sandstone, formed from material deposited by seasonal streams. An important exposure of Beaconites burrows, trace fossils of one of the first creatures adapted to live on land and not in the sea, has been lost under the adjacent recycling site.



More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 5: Protect, conserve and enhance geodiversity resources

ACTION STATUS

Priority work/ongoing	
Action underway	
Action to be undertaken	

ACTION	ACTION STATUS
Develop a programme for the regular condition monitoring of all LGS/RIGS.	
Identify, survey and designate potential LGS/RIGS, including those recorded in 2008.	
Where possible work with landowners to develop and implement management strategies for LGS/RIGS, three per year.	
Seek opportunities to enhance geodiversity sites and resources, through project work such as the 'Champions' Project.	
Encourage the creation of new geodiversity resources e.g. the retention of features uncovered during road improvements and site developments.	
Assist the monitoring and management programme of all geological SSSIs within the county to help achieve the 95% Public Service Agreement target by 2010.	
Work with quarry operators to include geological and biological conservation in restoration plans.	

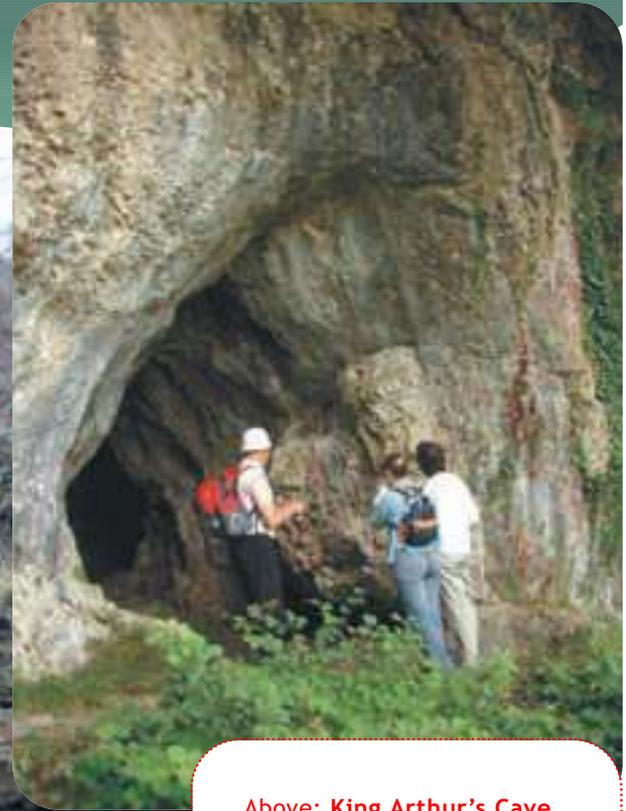
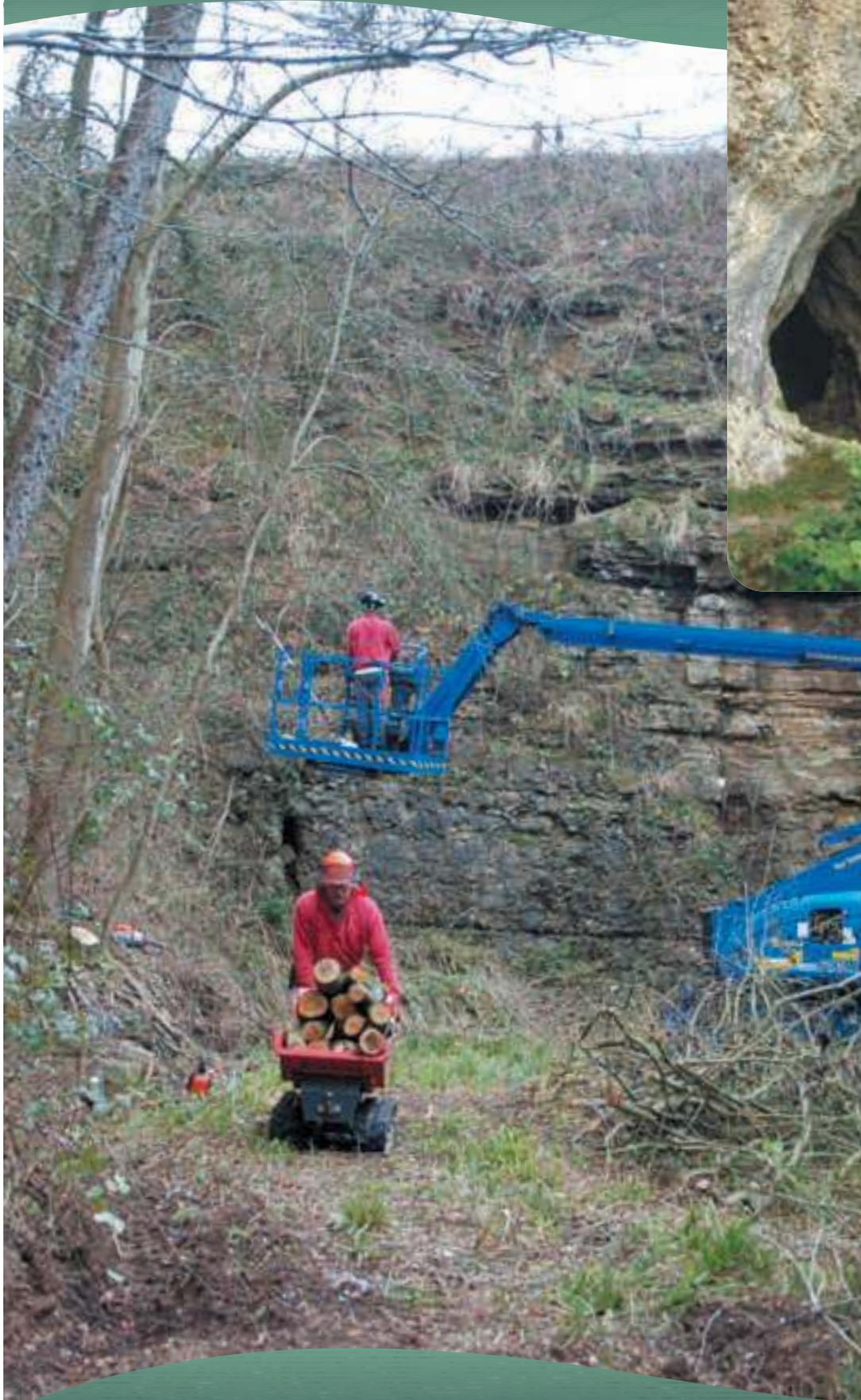
Key:

- LGS Local Geological Sites (formerly known as RIGS)
- RIGS Regionally Important Geological/Geomorphological Sites
- SSSI Site of Special Scientific Interest

More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 5: Protect, conserve and enhance geodiversity resources

GEODIVERSITY ACTION PLAN Herefordshire



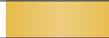
Above: King Arthur's Cave. This natural cave has been formed in Carboniferous limestone. There is a line of limestone cliffs which have been undercut and water-smoothed by a stream which is no longer flowing at this level. This site is a nature reserve and the Herefordshire Nature Trust is working with the Earth Heritage Trust to protect both the biodiversity and geodiversity.

Left: Linton Quarry, a geological Site of Special Scientific Interest. This is one of the sites involved in the Community Earth Heritage Champions' Project. The parish council are having clearance work carried out, funded by Natural England. The local community will be involved in learning about the geology of Linton Quarry and helping to look after it for future generations.

More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 6: Further the opportunities for business involvement in geotourism and geodiversity

ACTION STATUS

Priority work/ongoing	
Action underway	
Action to be undertaken	

ACTION	ACTION STATUS
Support the work of the Abberley and Malvern Hills Geopark in order to promote geodiversity.	
Promote geology and landscape trail guides and other geodiversity literature to visitors through magazine articles and online information.	
Ensure that geodiversity information is more widely available at visitor attractions such as National Trust properties, museums and AONBs.	
Identify businesses, such as quarry operators, with an interest in geodiversity in order to involve them in the GAP.	
Promote the Geopark Way and develop an annual Geopark Day event in order to increase sustainable tourism.	
Take part in Malvern and Herefordshire Walking Festivals and events such as the University of the Great Outdoors, in order to increase sustainable geotourism.	
Work with Herefordshire Tourism to promote geodiversity attractions.	

Key:

- AONB Area of Outstanding Natural Beauty
- GAP Geodiversity Action Plan

More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 6: Further the opportunities for business involvement in geotourism and geodiversity



Left: The gravel pit near Wellington. Gravels are found along the length of the River Lugg. Towards the end of the Ice Age, melt waters carried coarse material down stream. This is found today beneath alluvium laid down by the river in recent times. Extraction has ceased at a former gravel pit near Bodenham and the lakes created by the removal of gravel are now, in part, a nature reserve.

Below: Leinthall Earls Quarry. Limestone is being quarried mainly for aggregates. Here are fine exposures of fossiliferous Silurian Aymestry Limestone, formed in clear tropical seas when this area was south of the equator. There are zones of faulting associated with the Leinthall Earls fault line.



More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 7: Improve and sustain the links between geodiversity, biodiversity, archaeology and landscape

ACTION STATUS

Priority work/ongoing	
Action underway	
Action to be undertaken	

ACTION	ACTION STATUS
Develop partnership working with the biodiversity and historic environment sectors e.g. Herefordshire Nature Trust, Local Biodiversity Action Plan Partnership and Herefordshire Council Archaeology Services, including joint conservation work, walks, talks and other collaborative projects.	
Ensure that the GAP is entered onto Biodiversity Action Reporting System in order to record progress and encourage the integration of the BAP and GAP.	
As appropriate, give guidance and advice on geodiversity, at nature reserves and archaeological sites.	
Audit the county's Special Wildlife Sites for their geodiversity interest.	
Encourage the use of local stone in new construction and in the repair of existing structures, by informing and influencing planning policy.	
Improve the ways by which geodiversity, biodiversity and historic environment record centres share information, through creating memoranda of understanding.	

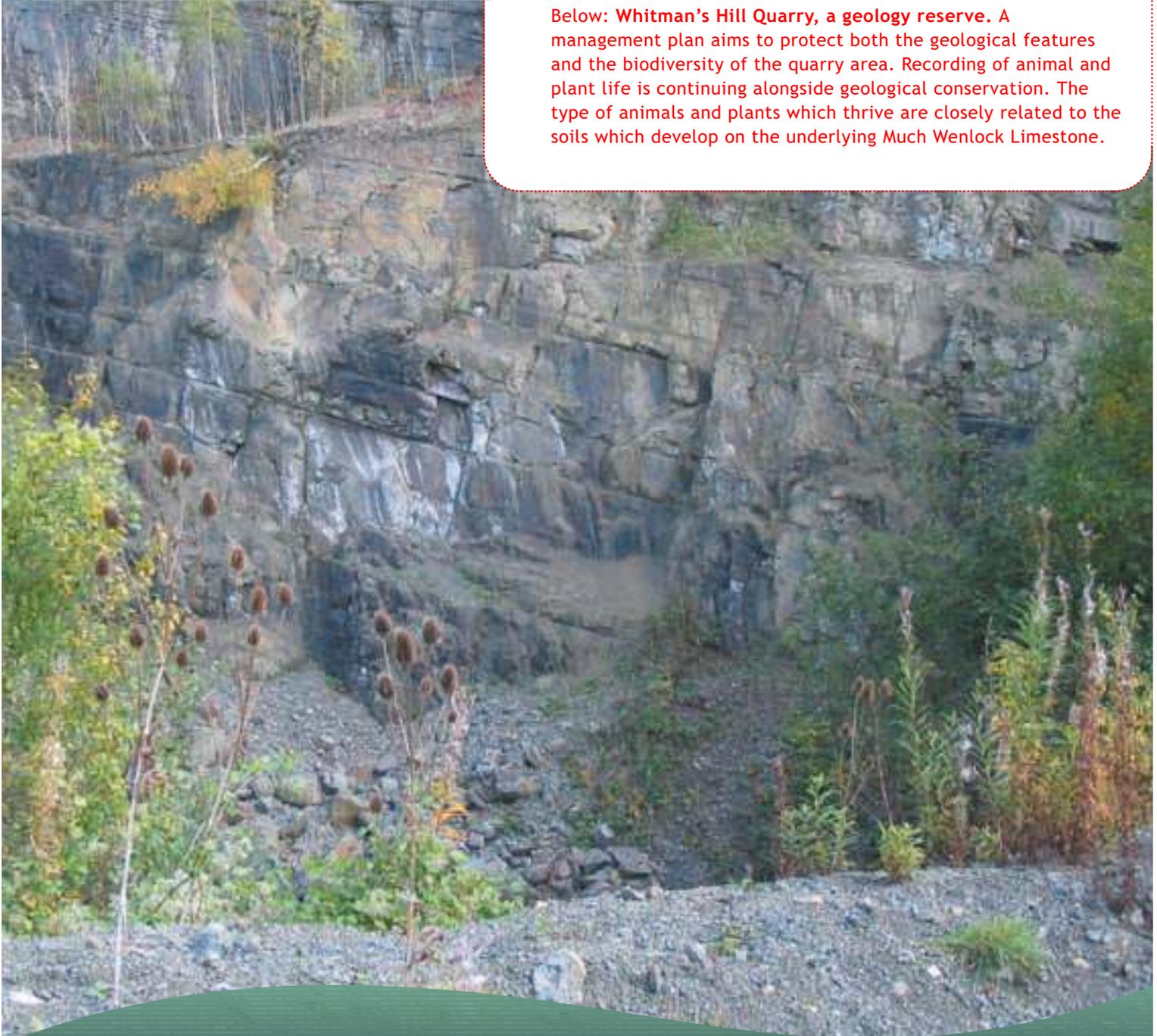
Key:

- BAP Biodiversity Action Plan
- GAP Geodiversity Action Plan

Objective 7: Improve and sustain the links between geodiversity, biodiversity, archaeology and landscape



Left: **Goodrich Castle**. The castle is built of local Devonian sandstones. It is perched on a promontory overlooking the River Wye. The Brownstones Formation sandstones, seen outcropping in the moat, were used as building stones. Archaeological features often make use of the rock found in the local area. An example of this is the recently discovered Rotherwas Ribbon, recorded by Herefordshire Archaeology Service, which used quartz pebbles from the glacial deposits found nearby.



Below: **Whitman's Hill Quarry, a geology reserve**. A management plan aims to protect both the geological features and the biodiversity of the quarry area. Recording of animal and plant life is continuing alongside geological conservation. The type of animals and plants which thrive are closely related to the soils which develop on the underlying Much Wenlock Limestone.

More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk

Objective 8: Secure the continuity, sustainability and effectiveness of geoconservation and the GAP process in Herefordshire

ACTION STATUS

Priority work/ongoing



Action underway



Action to be undertaken



ACTION

ACTION STATUS

Identify sources of funding for all the actions.	Green
Obtain funding for the Geological Records Centre.	Green
Encourage ownership of the GAP by all stakeholders.	Yellow
Create a reporting procedure for the GAP.	Red
Identify new stakeholders, such as schools, colleges, historic buildings teams, naturalists clubs, local history associations and parish councils.	Red
Organise a yearly event for key stakeholders.	Red
Review GAP after five years.	Red
With assistance from key stakeholders identify priority actions within the first year of the GAP.	Red

Key:

GAP Geodiversity Action Plan

Objective 8: Secure the continuity, sustainability and effectiveness of geoconservation and the GAP process in Herefordshire



Left: The Olchon Valley seen from Black Darren. The underlying rock, the Devonian Senni Formation, is found on the northern side of the Black Mountains. It is hard and resistant to erosion. The steep slopes on the edge of the highland area are prone to landslips, as can be seen at Black Darren.

Below: The view from Shucknall Hill across the Frome Valley with the Malvern Hills in the distance on the left. Shucknall Hill and the Woolhope Dome (just out of the picture on the right) are upfolded Silurian limestones and siltstones. The Frome Valley is underlain by upper Silurian mudstones and the Malvern Hills are Precambrian crystalline rocks which formed deep in the Earth's crust.



More details about the actions and the annual targets set to achieve them can be found at:
www.EarthHeritageTrust.org and www.ukbap-reporting.org.uk