# The Dorset Local Geodiversity Action Plan



Including the Dorset and East Devon World Heritage Site







#### THE DORSET LOCAL GEODIVERSITY ACTION PLAN

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www.dorsetlgap.org.uk



A walk around Abbotsbury with the Dorset Important Geological Sites Group. (DIGS)

To draw together existing information and ongoing projects concerned with the geology, geomorphology, soils and landscapes of Dorset and the East Devon Coastal Corridor, and to initiate further actions that will lead to:

- The conservation and enhancement of the geological resource.
- Providing guidance to the planning authorities on sustainable policies in the geological context.
- Increasing appreciation and understanding of the geological heritage of the area.

A Local Geodiversity Action Plan (LGAP) is an action plan underpinning work relating to geodiversity within a local region.

It provides opportunity to:

- influence policy and planning on a county and local level
- focus on actions



Corfe Castle, Isle of Purbeck



Colmer's Hill, a prominent landscape feature



An ammonite from the Lower Jurassic

#### What is Geodiversity?

Geodiversity is the range of rocks, fossils, minerals, soils, landforms and natural processes that go to make up the Earth's landscape and structure.

Geodiversity can be protected for its

- intrinsic value
- ecological value
- scientific value
- heritage value
- educational value

#### **Geodiversity underpins Biodiversity**

Geodiversity links people, culture, landscape and biodiversity. It underpins all our activities from farming to engineering, gardening to waste management, recreation to industry.

All aspects of our daily lives are touched by geology even if we are often unaware of it. The range and diversity of earth science features, the geodiversity of the area, is just as important a part of our heritage as wildlife and culture. In an area rich in landscape value, geodiversity is key to integrated management and conservation.

There is a need for policies to reflect this. This is already starting to happen with aspects of earth heritage in our AONB and World Heritage Site plans. Our aim reflects this need to widen the audience and make people more aware of geodiversity.

#### **Issues**

Across the county geodiversity is something planners, developers and community groups should keep in mind alongside biodiversity. Our recent Dorset AONB Management Plan includes a policy framework for earth heritage identifying key issues. This is good news!







These are just three examples of ways our activities effect geodiversity. Can you think of others? Loss of individuality in soil types from agricultural impact? The list goes on.

#### Local character local stone.

New buildings like this one at Bridport show the way forward for developers. Designs in sympathy with older local buildings using materials that are local or reflect local character have been used to great effect.

The flint facing and ham stone walls on this estate hide the fact that it is a new homes development.

#### Tipping and infill of old quarries

A pile of rusty barbed wire fencing in an abandoned Forest Marble quarry. Old quarries are havens for wildlife providing diverse habitat. They also provide educational resources and access to rock exposures away from the coast. The threat is obvious.

#### Coastal Sea Defences

Much of our coast is designated for its geodiversity and sea defences may obscure or destroy important sites.

Where coastal defence schemes are agreed through the relevant coastal strategy, careful choice of building stone and loose cobbles can ensure the geodiversity of our coastline is maintained.

These cobbles at Sidmouth are the wrong rock type and so reduce the geodiversity of the area. While compromises have to be reached between engineering mechanics, cost and environmental impact, thought should also be given to impact on local geodiversity.

#### The Boundary

This LGAP covers the County of Dorset and extends into East Devon, where the Dorset and East Devon Coast World Heritage Site and East Devon AONB Coast Path corridor are also included.

Devon already has a geological content within it's comprehensive Biodiversity Action Plan and this LGAP will be developed with this and other action plans in mind.

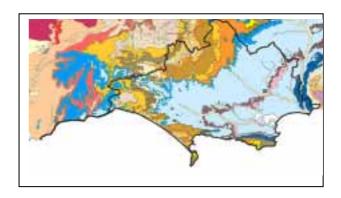
With action plans being developed for 3 AONBs, The World Heritage Site and two very active RIGS groups within the counties, the area covered by this LGAP has a wealth of expertise to call upon. The area has been well documented by the British Geological Survey and other researchers and has a history of over 200 years of geological investigation.

With cross county interests, such as the Cranborne Chase AONB, the LGAP will, we hope, develop with input from Somerset, Wiltshire and Hampshire.

#### The geology and geomorphology

The geology of this LGAP region includes the Mesozoic and Cenozoic Eras of Earth history, a period spanning 250 million years.

This vast expanse of time saw many changes in depositional environment recorded in the rock succession. In East Devon terrestrial red beds deposited in the hot desert climate of the Triassic are overlain unconformably by later marine sediments of the Cretaceous. During the late Triassic the sea transgressed across the low lying deserts creating a marine environment. Much of West Dorset is formed from Jurassic sediments that record changing marine conditions and contain an exceptional fossil record. Cretaceous Chalk and sands lie unconformably across the



The LGAP region



Research dig at Frogden, an inland SSSI in the Inferior Oolite



Heathland at Stephen's Castle, Verwood SSSI & RIGS



Chalbury Hill Fort with old Portland & Lower Purbeck quarry workings in the foreground.SSSI



Rocket Quarry, Portesham. RIGS Site



Poppies growing on a spoil heap on Portland

central swathe of Dorset covering much of the Jurassic outcrop. In the east more recent deposits of the Cenozoic, sands, gravels and clays overlie the Cretaceous rocks, These deposits give rise to important heathland habitats.

Along the south Dorset coast, Jurassic rocks of the Portlandian supply the world with building stone and the Purbeck beds record the transition into the Cretaceous revealing dinosaur footprints and a fossil forest.

In the north and west of Dorset the distinctive Inferior Oolite was widely quarried for local building stone.

This diverse geology gives rise to landforms which in turn provide us with a diverse geomorphology, range of soil types, natural landscape, biodiversity and wealth of nature. The importance of these features in Dorset is reflected in the designation of over half the county as Areas of Outstanding Natural Beauty (AONBs).

Chesil Beach, protecting the inland water known as The Fleet is one of the worlds finest barrier beaches and is of international importance for birds and wildlife. The structural ridges and up turned strata of the Isle of Purbeck and the Weymouth anticline lead to a dramatic landscape.

In East Devon and West Dorset, landslides provide an outdoor classroom for students but can also threaten coastal towns like Lyme Regis.

Dorset and east Devon's coastline has 66 Geological Conservation Review Sites all of national and international importance within Earth science. Many SSSI's in Dorset & East Devon are listed for geological interest.

#### **Working Group**

The following organisations have representatives on the LGAP working group. This partnership is key to the development of actions within this document.

Dorset County Council
Devon County Council
DIGS (Dorset RIGS)
DGAG Dorset Geologists' Association Group
The National Trust
Charmouth Heritage Coast Centre
East Devon AONB
Dorset AONB
English Nature
British Geological Survey
Dorset Wildlife Trust
Dorset Museums
Devon Museums
West Dorset Fossil Collecting interest

The following organisations form a wider consultative network and receive information from the working group.

Devon Wildlife Trust
Devon RIGS Group
South Wessex Environment Agency
Bournemouth Borough Council

To apply to join the working group or wider consultative network, send details of your organisation to c.m.pamplin@dorsetcc.gov.uk



Working together, British Trust for Nature Conservation Volunteers, DIGS and local government officers clearing access to an Inferior Oolite quarry face in Quarr Local Nature Reserve.





A Hedge Brown butterfly and calcareous loving Bedstraw next to Upper Greensand rock

## Table of objectives, targets and actions

January 2005

To draw together existing information and ongoing projects concerned with the geology, geomorphology, soils and landscapes of Dorset and the East Devon Coastal Corridor, and to initiate further actions that will lead to:

- The conservation and enhancement of the geological resource.
- Providing guidance to the planning authorities on sustainable policies in the geological context.
- Increasing appreciation and understanding of the geological heritage of the area.

Objective	Target	Action	Potential Partners	Timescale	Potential funding route
1.An audit of local geodiversity resources	1.1. Audit of geological sites, and their recording on a database.	A. Identify all existing sources of information – BGS, DERC, Dorset Bibliography, Museum collections. Investigate a method of co-ordinating the information.	Earth Science Advisor DIGS Devon RIGS Local community groups DERC	Funding needs investigation 05	Miro Aggregate Levy Sustainability Fund Local Heritage Initiative
		B. Engage the interest of the local community by involving them in historical and field research to identify sites of geological interest - thus encouraging them to take part in conservation	Earth Science Advisor	Funding needs investigation 05	

In both these activities the advice and assistance of experienced geologists, from the World Heritage Site Team, Dorset Geologists' Association, Dorset County Museum, Open University Geological Society, Bournemouth University and the wider geological community in Universities and Museums throughout the UK, will be required.

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Objective	Target	Action	Potential	Time scale	Potential funding
,			Partners		route
1.An audit of local geodiversity resources	1.1. Audit of geological sites, and their recording on a database.	C. Update the Bibliography and Index of Dorset Geology, Thomas & Ensom 1989, published by the Dorset County Museum.	Dorset County Museum. RAM Post required	Funding needs investigation 05	Miro Aggregate Levy Sustainability Fund DCC Geological Society
		D.Audit of working quarries, using information from the Minerals officers in Dorset County Council	Dorset County Council	Funding needs investigation 05	Miro Aggregate Levy Sustainability Fund DCC
		E. Review all the above information, confirm with fieldwork where necessary, and record all conservation sites on a database in DERC*.	DERC	Funding needs investigation 05	

<sup>\*</sup>The original DERC survey was undertaken by a total of 6 geologists, working two at a time, between 1983 and 1987. Since that time much work has been carried out by BGS.

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Objective	Target	Action	Potential Partners	Time scale	Potential funding route
1.An audit of local geodiversity resources	1.2. Identify all relevant ongoing projects	Undertake a desk based study and develop communications #	Earth Science Advisor	05	Existing funding
	1.3 Audit of Museum collections relating to the Jurassic Coast	Local survey of specimens and associated literature and artefacts relating to the WHS #	Museums co- ordinator Museums working group	Ongoing	Funding needs investigation 05
	1.4 Develop an agreed Strategy to establish an appropriate network of sites for geo-conservation	Agree strategy after above audits	All partners	05 onwards	Funding needs investigation 05

#These actions are taken from the World Heritage Site Museums group action plan

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Objective	Target	Action	Potential Partners	Time scale	Potential funding route
2. To have geodiversity included in policy of all Dorset and East Devon region local authorities by 2006	2.1. Review existing policy documents from local authorities and partnerships to determine whether appropriate policies exist to safeguard geodiversity.	Earth Science Advisor to meet with representatives of local authorities and partnerships	Earth Science Advisor Dorset County Council  Local authorities Partnerships  Dorset Buildings Group	Immediate and ongoing	Existing post funding DCC, EN
	2.2. Provide support and advice to enable policy changes to safeguard geodiversity	A.Produce 'model' policies and circulate to relevant organisations.	Earth Science Advisor Dorset County Council Local authorities Partnerships	Ongoing	Existing post funding DCC, EN

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2. To have geodiversity included in policy of all Dorset and East Devon region local authorities by 2006		B. Produce a Built Environment Character Assessment and Building Design Guide for the Dorset AONB	Lead Dorset AONB team	3 years	
	2.3 Raise awareness	Develop a series of fact sheets to distribute to planners and policy makers	Earth Science Advisor to lead DIGS, Devon RIGS	Immediate and ongoing	Funding needs investigation 05
2.4 Raise awareness of the link between geodiversity and the built Heritage	Organise a series of workshops to inform planners and policy makers	Earth Science Advisor to lead DIGS, Devon RIGS, AONB's Historic Buildings Officers DCC and district Dorset Buildings group National trust	Ongoing	Funding needs investigation 05	

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Objective	Target	Action	Potential Partners	Time scale	Potential funding route
2. To have geodiversity included in the policies of all Dorset and East Devon region local authorities 2006	2.5 Monitor success of embedding geodiversity awareness in policies	A.Develop a monitoring system B.Complete the recording of building materials used in historic buildings and research a method of transferring information on to a database	Earth Science Advisor to lead DIGS, Devon RIGS Dorset Buildings Group	05 onwards	Funding needs investigation 05
	2.6 To provide specialist site specific advice to County and Local Planning Authorities in relation to individual planning applications that raise issues in relation to geological conservation	Raise awareness that this advice is available.	Earth Science Advisor	Ongoing	Funding should not be an issue

D.C.C. conducted a pilot survey 1992-4 and Dorset Buildings Group is continuing a survey. A database would require an appointment.

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3. Raise awareness of geodiversity in the following audiences	3.1 Raise awareness with policy makers planners and developers (see target 2.3 & 2.5)	Take a regional approach working with other LGAP regions	Earth Science Advisor	Ongoing	Funding should not be an issue
	3.2 Raise awareness with landowners & farmers	Develop a series of fact sheets, both locally & nationally	Earth Science Advisor to lead DIGS, Devon RIGS, AONB Historic Buildings Officers for DCC and district. Dorset Buildings group National trust	05 onwards	Funding needs investigation 05

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3. Raise awareness of geodiversity in the following audiences	3.3 Raise awareness in the education sector	Organise inset training for teachers with World Heritage Earth Science theme	Education Co- ordinator & WHS Education working group	Sept 04-05	Core activity within WHS team
	3.4 Raise awareness with the general public, local community groups	Produce an LGAP web site	Earth Science Advisor	2005	DCC, EN

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3. Raise awareness of geodiversity in the following audiences	3.5 Raise awareness with the general public, local community groups	A. Produce a series of geological walks leaflets	DIGS Devon RIGS DGAG	Sept 04-05	Local Heritage Initiative Curry Fund of GA
		B. Produce a range of Earth Science publications for the Jurassic Coast	World Heritage Coast Trust	Ongoing	World Heritage Coast Trust
		C. Improve signage to Jurassic Coast	WHS Team	Ongoing	WHS core activity
		D. Maintain and improve on-site interpretation	Dorset Countyside/WH S/EN/DIGS	Ongoing	investigate
		E. Provide temporary geological exhibitions	Museums DGAG	Ongoing	WHS, Lottery
		F. Provide talks and walks programmes (See 1.1 A & B)	DIGS DGAG WHS Team Dorset County	Ongoing	WHS

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Objective	Target	Action	Potential Partners	Time scale	Potential funding route
4. Develop data storage systems	4.1 Create a GIS map based layer for geodiversity data on Planweb	Continue to develop the geo- opportunity map as a GIS layer.	Earth Science Advisor	Ongoing	DCC
	4.2 Investigate database for recording building materials	Investigate	DERC	2005	English Heritage
	4.3 Use RIGS standard data base records to record sites	Convert all existing information to new system, following audit (see1.1E)	DERC	Ongoing?	English Nature British Geological Survey

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Objective	Target	Action	Potential Partners	Time scale	Potential funding route
5. Maintain and enhance the Earth heritage of Dorset	5.1 No loss of important rock exposures without adequate replacements with good access	A.Compile an inventory of geological SSSIs (and/or geological interest features on biological SSSIs) indicating the latest condition assessments by March 2005.  B. Identify geological SSSIs that require direct management to prevent obstruction of geological features and prepare a programme of works to ensure favourable condition.  Programme of works to be prepared by March 2005  Favourable condition by 2010.	English Nature	ongoing	English Nature
	5.2 Identify those RIGS where access should be improved and where works should be targeted over a five year period?.	Identify suite of sites by Sept 2005 Programme of works to be agreed by Dec 05 Works complete by March 2010?	RIGS/DIGS	ongoing	Investigate

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Objective	Target	Action	Potential Partners	Time scale	Potential funding route
	5.3 Further opportunities for education and conservation within working quarries	Work with Minerals Industry to establish a group of working quarry operators and encourage them to consider controlled access, interpretation and protection of geological features	Earth Science Advisor DCC Minerals	05	Miro
5. Maintain and enhance the earth heritage of Dorset	5.4. Improve geological interpretation within the EN Axmouth to Lyme Regis National Nature reserve	Develop interpretation within the site and discuss enhancing geological opportunities within the NNR	English Nature World Heritage team Geological Consultant R.Gallois	Immediate and ongoing	English Nature Devon County Council WHS
	5.5 Geological audit of wildlife sites	Develop closer links with BAP's, Assess each site for potential geo-diversity interpretation	Earth Science Advisor DCC Natural Environment team. Devon equivalent.	Immediate and ongoing	Investigate new funding

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6. World Heritage Site conservation objectives	6.1 To monitor all GCR sections on a 6 year rolling cycle	A. Fixed point photography survey of the GCR sites and recording on a web site     B. Action Plans	Lead, WHT Earth Science Manager SCAG/SCAN English Nature	Ongoing	WHT
	6.2 Develop work with Shoreline Management Plan monitoring programme	A. Co-ordinate work on WHS monitoring with work by the Channel Coast Observatory & Lyme Bay/South Devon Group#	Lead, WHT Earth Science Manager SCAG/SCAN	Ongoing	WHS Team core activity

#Continue ongoing work with the Coast Forum and other coastal organisations involved in conservation.

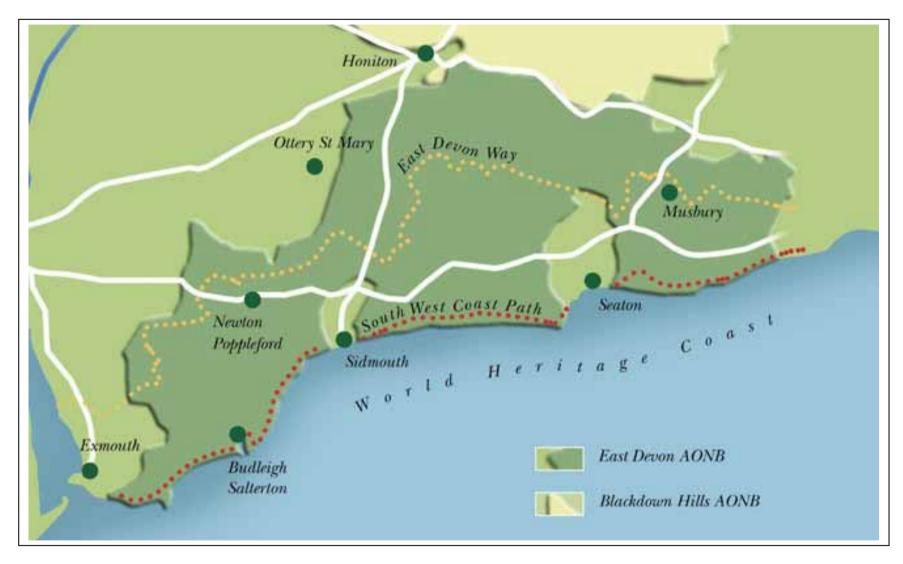
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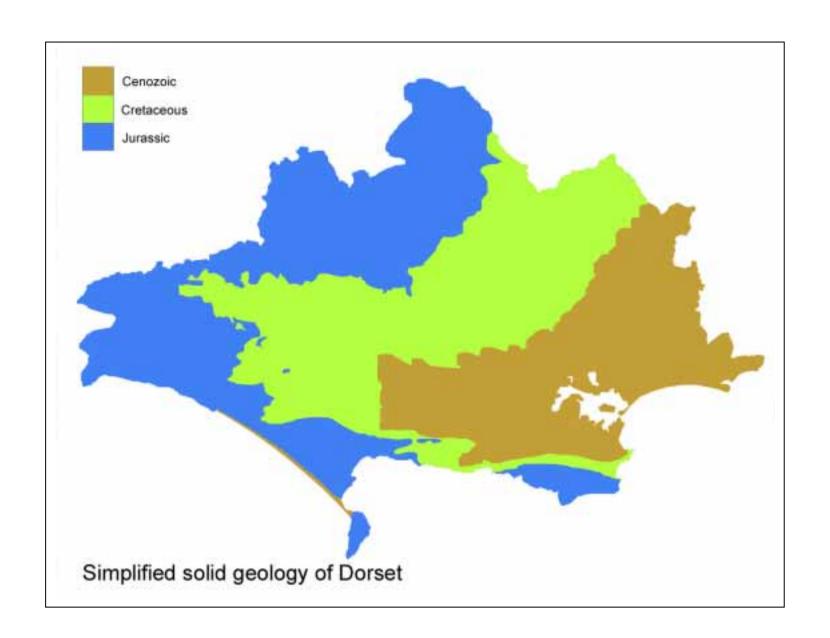
Objective	Target	Action	Potential Partners	Time scale	Potential funding route
	6.2 Develop work with Shoreline Management Plan monitoring programme	Engage with forthcoming round of 'Identifying Biodiversity Opportunities' workshops for Lyme Bay to Start Point Natural Area and the South Dorset Coast Natural Area. Identify areas where geological/geomorphological enhancements or restoration of dynamic processes may be possible. Engage in the second generation Shoreline Management Plans for East Devon and Dorset Coast, due to commence Autumn 2005.	English Nature WHS	Ongoing	WHS Team core activity
6. World Heritage Site conservation objectives	6.3 Promote the West Dorset Fossil Collecting Code of Conduct.	Raise awareness of the code with collectors and the general public visiting the area.  Maintain a dialogue with collectors and advertise the code through leaflets, websites and education	WHT Fossil Collectors Land owners Visitor Centres	Ongoing	WHS

Continue ongoing work with the Coast Forum and other coastal organisations involved in conservation.

Acrony	Acronyms used in this action plan		
AONB's	Areas of Outstanding Natural Beauty (East Devon, Dorset, Cranbourne)		
BGS	British Geological Survey		
DERC	Dorset Environmental Records Centre		
DGAG	Dorset Geologists' Association Group		
DIGS	Dorset Important Geological Sites Group (See also RIGS)		
DCC	Dorset County Council		
EN	English Nature		
GA	Geologists' Association		
GCR	Geological Conservation Review		
GIS	Geographical Information System		
Miro	Mineral Industry Research Organisation		
RAM	Royal Albert Museum and Art Gallery Exeter		
RIGS	Regionally Important Geological Sites Group		
SCAG	Science and conservation advisory group for the Dorset & East Devon Coast World Heritage Site		
SCAN	Science and conservation advisory network for the Dorset & East Devon Coast World Heritage Site		
WHS	World Heritage Site - Dorset & East Devon Coast World Heritage Site		



The Dorset LGAP extends to cover the Coastal Corridor of the East Devon AONB and The Jurassic Coast World Heritage Site



#### Useful documents and further reading

Nature Conservancy Council, Earth science conservation in Great Britain 1990,1991 ISBN 0 86139 689

East Devon Area of Outstanding Natural Beauty, Management Strategy 2004-2009, Making the landscape work

Chanborne Chase and West Wiltshire Downs Area of Outstanding natural Beauty, Management Plan 2004-2009

A Framework for the Future of the Dorset Area of Outstanding Natural Beauty Management Plan 2004-2009, Working together for Dorset's Outstanding Countyside. Produced by Dorset AONB Partnership. March 2004

Dorset Biodiversity Strategy, Dorset Biodiversity Partnership

#### **Useful references on the World Wide Web**

www.dorsetlgap.org.uk

www.english-nature.org.uk/ pubs/publication/pdf/LGAPs.pdf

www.dorsetaonb.org.uk

www.ccwwdaonb.org.uk

www.eastdevonaonb.org.uk

www.jurassiccoast.com

Devon Biodiversity Action Plan: www.devon.gov.uk/devon biodiversity action plan

Dorset Biodiversity Strategy: www.ukbap.org.uk/lbap.aspx?id=469