



**British  
Geological Survey**  
NATURAL ENVIRONMENT RESEARCH COUNCIL

# Limestone Landscapes: Geodiversity Action Plan 2010-2015

Geology and Landscape England Programme  
Internal Report CR/09/161



Limestone  
Landscapes





BRITISH GEOLOGICAL SURVEY

GEOLOGY AND LANDSCAPE ENGLAND PROGRAMME

INTERNAL REPORT CR/09/161

# Limestone Landscapes: Geodiversity Action Plan 2010-2015

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## *Front cover*

Searching for fossil fish,  
Hepplewhite Quarry near Old  
Quarrington, County Durham.

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## Foreword

This geodiversity action plan for the Magnesian Limestone Natural Area between the Tyne and the Tees is the product of a study by the British Geological Survey (BGS) prepared in collaboration with a number of individuals and organisations with an interest in natural heritage. The interaction between geology, people and the natural world has shaped the landscape in the area giving it a special and distinct character. This action plan will have an important role in informing the Limestone Landscapes Partnership as they seek to conserve the landscape, wildlife and heritage and encourage communities to learn about, enjoy and celebrate their local area.

## Acknowledgements

Many people, too numerous to mention, have contributed to this report and are thanked for their input. The format of the Action Plan in section 3 follows that used by the North Pennines AONB Partnership and their help and encouragement, particularly that of Chris Woodley-Stewart and Elizabeth Pickett, is gratefully acknowledged.

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## Summary

A geodiversity action plan is presented for the area of the Magnesian Limestone Plateau between the River Tyne and the River Tees. A number of specific activities are proposed in order to begin implementation of the plan over the period 2010 to 2015 within the Limestone Landscapes project and following period.

This report develops ideas introduced in the Limestone Landscapes Geodiversity Report (Lawrence, 2009) in the light of feedback obtained at the geodiversity workshop held in October 2009 and other events. The action plan (section 3) and proposed work programme (section 4) are not restricted to projects that might be financed by heritage lottery funding but include ideas to complement such projects, to support the continuation of these projects in future years and for the wider development and integration of geodiversity in the area..

This action plan does not represent an exhaustive list of actions. It is anticipated that other ideas will come forward during the life of this plan and these should be accommodated where time and funds allow. Similarly the plan includes suggestions for partners to take forward each of the actions, but this is in no way intended to be exclusive or to indicate any commitment at this stage.

# 1 Introduction

This action plan develops ideas introduced in the Limestone Landscapes Geodiversity Report (Lawrence, 2009) in the light of feedback obtained at the geodiversity workshop held in October 2009, the Limestone Landscapes Conference of November 2009 at the Stadium of Light and the project steering group. It should be read in conjunction with the geodiversity report, which contains background and supporting information.

## 1.1 PRINCIPAL TASKS:

The principal tasks outlined in the project brief were:

- The production of a Limestone Landscapes Geodiversity Action Plan informed by the proceedings of a workshop for Geodiversity stakeholders in the area.
  
- The provision of a presentation and appropriate materials at the workshop which will guide and inform stakeholders in the identification of suitable projects to be delivered over the next 5 years. Projects should fit with the following objectives;
  - Look at ways in which to conserve and restore geodiversity.
  - Identify ways in which to increase access and learning to geodiversity.
  - Identify ways in which to increase community participation.
  - Identify opportunities for developing training and skills.
  
- The provision of a final report on the proceedings of the workshop, to be provided as A4 format (5 copies) and on CD as a web compatible resource, that includes the following outputs:
  - A table including objectives, actions and suggested lead and partners.
  - Outline details of individual proposed projects and programmes.

## 2 Geodiversity Workshop

The workshop held at Durham County Hall on 15 October 2009 was attended by 15 invited guests with specialist knowledge of, or interest in, geodiversity.

Following presentations on the Limestone Landscapes Project (Ken Bradshaw), Geodiversity Activities in the North Pennines AONB and European Geopark (Elizabeth Pickett) and the Geodiversity of the Limestone landscape area (David Lawrence), the delegates took part in two workshops on the themes of 'Conservation' (David Lawrence) and 'Education and Interpretation' (Chris Woodley-Stewart). Potential activities/projects identified by the delegates were listed on a flip chart and then prioritised by attaching coloured dots. Appendix 1 details the outputs of the two workshops as recorded on flipcharts at the time.

Most people at the workshop were not familiar with the content of the geodiversity report, thus the suggestions that came out were effectively an independent brainstorming exercise. This did show the proposals in the draft action plan in the report were pretty much in line with the flavour that came out from the attendees at the workshop. However, with the exception of one or two high-scorers, it did not really help specific project or site prioritisation, as the highest scoring suggestions tended to be quite general and the coloured dots otherwise fairly evenly distributed.

The following main points came out of the workshop:

- Maximum enthusiasm was for a major geodiversity event to encompass the whole area and kick off the project.
- That best 'quick wins' would be by improving access (in the widest sense - e.g. physical and intellectual) of geodiversity at sites in areas where people already go, sites that are already managed or undergoing improvement for other reasons. Marsden Old Quarry was cited as a good example of how countryside work has transformed what was a very run down location. Other sites should not be ignored, but should be identified for improvement as a second phase. It is not practical to maintain a site properly in the long term unless supported by local group etc. A 'sensory trail' would be best located in an already visited area - perhaps by moving in blocks of stone from elsewhere.
- There was strong support for the creation of places within one or more sites where fossils could be easily seen, examined and possibly collected.
- There is enormous potential and enthusiasm amongst quarry operators to promote geodiversity within the active quarries in the area. A lot of good work is already being done by quarry companies but this should be formalised and expanded as part of the project .
- Museums and others are already involved in small-scale geological projects. They would welcome the opportunity to develop these as part of Limestone Landscapes particularly trying to reach out to the community eg 14-19 diploma new government initiative Sept 2009 (T&W), use this and 19+ schemes to engage 'NEET' (not in Employment/education or training); lifelong learning (University of 3rd age).



### 3 Geodiversity Action Plan

This action plan is intended to guide the work of the Limestone Landscapes Partnership in integrating geodiversity into its landscape projects. The action plan and proposed work programme (section 4) are not restricted to projects that might be financed by heritage lottery funding but include ideas to complement such projects, to support the continuation of these projects in future years and for the wider development and integration of geodiversity in the area.

It is not an exhaustive list of actions – other ideas may come forward during the life of this plan and these should be accommodated where time and funds allow.

<i>Objective</i>	<i>Action</i>	<i>PotentialPartners</i>	<i>Timescale/Target</i>	<i>Priority</i>
1. Raising awareness of the area's geodiversity	1.Hold a series of presentations and workshops with <i>Limestones Landscapes</i> stakeholders, local businesses, community groups etc. to promote the contents of the geodiversity audit and action plan	<b>LL</b> , BGS, museums.	Ongoing	<b>1</b>

**Objective**

Something we want to achieve by 2015

**Action**

Work towards meeting the objective

**Partners**

Not an exclusive list, but proposals for those who might be interested and involved in implementing the action. Suggested **lead in bold**

**Timescale**

When will it be done by (sometimes 'how many' per year or during the life of the plan)

**Priority**

1 High --  
3 lower

<i>Objective</i>	<i>Action</i>	<i>PotentialPartners</i>	<i>Timescale/Target</i>	<i>Priority</i>
1. Raising awareness of the area's geodiversity	1.Hold a series of presentations and workshops with <i>Limestones Landscapes</i> stakeholders, local businesses, community groups etc. to promote the contents of the geodiversity audit and action plan	LL, BGS, museums	Ongoing	1
	2.Establish a group of operators of working quarries. Develop and co-ordinate geodiversity activities already undertaken by companies, e.g. controlled access to and protection of exposed geological features and to continue making available stockpiles of interesting waste material. Establish new opportunities such as viewing areas.	LL,Quarry operators, BGS	2010	1
	3. Prepare a master interpretive policy	LL	2010/2011	1
	4. Carry out a comprehensive analysis of existing interpretation associated with sites and features of geodiversity interest.	LL	2011/2012	2
2. Conserving/ Restoring	1. Undertake consultations to agree priority sites for enhancement and development	LL, BGS	Ongoing	1
	2. Clearing and stabilising faces and improving access at up to 10 sites to conserve and enable access to good quality geological sections that represent the full spectrum of geodiversity in the area.	LL, BGS, local councils, Natural England,Community groups, DWT etc	2010-2015	1 to 3 depends on site
	3. Establish and publicise a clear collecting policy and seek to establish a site (or sites) suitable for collecting by educational and recreational groups drawing on best practice.	LL,BGS, Natural England	Ongoing - by end 2011	2
	4. Monitor local sites and promote active management . ...	Natural England, BGS	2011 onwards	3
	5. Conduct annual geodiversity assessments of active quarries	Quarry operators, RIGS group, BGS	2011 onwards	3

<i>Objective</i>	<i>Action</i>	<i>PotentialPartners</i>	<i>Timescale/Target</i>	<i>Priority</i>
3. Access and Learning	1. Create a sensory rock trail with interpretation for visually impaired - the rocks of the area have possibly the widest textural variation of any in Britain and variations can be easily distinguished by touch. Initially at single location and consider extending to places.	Local Council, BGS, Quarry operators	2010/2011	1
	2. Open days at active quarries - incorporate opportunity to search for fossil fish from stockpiled Marl Slate.	Quarry operators	2011	1
	3. Investigate further links with quarry companies - e.g. establishing viewing area with interpretation	LL, Quarry operators,BGS,	2012	1
	4. Prepare ipod trails, web-based materials to encourage visitors. Include magnificent fossil material from the area some of which is held in local museums. (Preparation could be undertaken by local school or as a community event)	Museums, schools, Durham University, BGS, National Trust, DWT	2011 onwards	2
4. Education	1. Prepare educational and explanatory materials at variety of levels: school, university, U3A.-Lifelong Learning. Could involve RIGS education officer nationally and Tees RIGS group	Museums, schools, Durham University, BGS	2011 onwards	1
	2. Coastal trail and Quarry trail leaflets linked to GPS/mp3 etc.	Museums, schools, BGS, Durham University, Quarry owners, National Trust	2011 onwards	2
	3. Series of talks from 'experts' comparing the past to what we can see in other parts of the world today, e.g. Sand dunes in UAE. Sabkhas in the Arabian Gulf. Investigate twinning with other areas/countries.	University, BGS	?annual	2
	4. Support and widen geodiversity education and outreach activities already being carried out in the area	Durham University, BGS,	2011 onwards	1
	5. Hold geodiversity awareness sessions for those involved in planning, land management and development (could qualify for Continual Professional Development)	Durham County Council	2012	2

<i>Objective</i>	<i>Action</i>	<i>PotentialPartners</i>	<i>Timescale/ Target</i>	<i>Priority</i>
5. Increasing Community Participation	1. Event to celebrate the unusual rocks of the area - opportunities for art and photography - coincide with the launch of sensory trail	All		1
	2. Investigate and celebrate important local people associated with geodiversity in its widest sense	Schools, museums, Local Groups	2011	2
	3. Involvement of community group in cleaning up and explaining a site e.g. reef Limestone at Tunstall Hills.	Sunderland, BGS, LL, Natural England, Local Groups	2010 onwards	1
	4. Quarry open days	Quarry operators	Annual?	1
	5. Establish local children's geology club on the lines of North Pennines 'Rock Detectives' or Geologists' Association 'Rockwatch'.	LL, Museums, Durham University.	2011/2012	2?
	6. Link in with events at Sunderland (and other) museums	<b>Museums</b>	2011 onwards	2
6. Training and skills	1. Provide support and training for heritage bodies and the existing network and new volunteers in understanding and explaining the world class geodiversity of the area..	Durham Uni, LL, Durham wildlife Trust, National Trust, Durham Coast, Architects, building professionals.	2011	1
	2. Provide Information sessions on repair stone sources and repair for local buildings		2012	2
	3. Students on science outreach projects from Durham University) could work with schools/communities.		2011 onwards	2
7. Seek additional funding	1. Investigate additional funding opportunities	<b>LL</b> , All	2010	1

## 4 Proposed Work Programme

Further details of many of these proposed sites and activities can be found in the geodiversity audit (Lawrence, 2009) prepared as the first phase of this study. Costs are approximate and do not include professional geological consultancy fees that would be associated with planning or supervising site works.

Proposed activity	What/where	Partners	Comment	Cost	Timescale
1	Geodiversity 'Rock' Festival for the whole LL area	LL and all	<p>Create an identity, awareness raising, opportunity to get involved. South Tyneside do geological events already, but lack resources and experience.</p> <p>Single location or series of simultaneous events across the area. To coincide with other LL events? At same time as launching a major geodiversity project?</p> <p>Could become annual event (cf NPAONB 'Northern Rocks')</p>	£3-5k	2011
2	<p>Mowbray Park and Quarry</p> <ul style="list-style-type: none"> <li>•Clean up quarry faces</li> <li>•Interpretation.</li> <li>•'Signposts' to other areas</li> <li>•Possible location for introductory easy access sensory trail</li> </ul>	<p><b>Newcastle CC,</b>  <b>Sunderland CC,</b>            Tyne &amp; Wear Archives and museums),            BGS, Friends of Mowbray Park</p>	<p>Quarry faces, quarry spoil heaps</p> <p>Viewpoint to Tunstall Hill</p> <p>Road cutting/faulting</p> <p>Paths etc already in place</p> <p>Geology 'in the field' adjacent to museum and city centre</p>	<p>£2k clean faces</p> <p>Up to £10k interpretation and 'signposts'</p>	2010/2011

Proposed activity	What/where	Partners	Comment	Cost	Timescale
3	<p>Marsden Old Quarry</p> <ul style="list-style-type: none"> <li>•Clean Rock faces</li> <li>•Create access to best geological features</li> <li>•Improve paths</li> <li>•Interpretation?</li> </ul>	<p><b>South Tyneside</b></p> <p>local group?,</p> <p>BGS</p>	<p>Well used and site is managed, excellent links to biodiversity.</p> <p>Improvement work currently in progress. Co-funding may be available.</p> <p>Would link well with trail/interpretive leaflet to Marsden Bay and Marsden Limekiln.</p> <p><b>Local Nature Reserve</b></p>	<p>£2k clean faces</p> <p>£5k leaflet + geotrail</p>	2010
4	<p>Tunstall Hills</p> <ul style="list-style-type: none"> <li>•Improve interpretation</li> <li>•Clean graffiti</li> <li>•Re-excavate and enable safe access to fossil material available</li> </ul>	<p><b>Sunderland CC Natural England,</b></p> <p>BGS, Tunstall Hills Protection Group</p>	<p>A small research excavation was undertaken in 1985, to expose an abundant and diverse fossiliferous succession near the base of the reef to the south of Rock Cottage. In 1986 Sunderland Borough Council extended the outcrop and the locality was fenced and footpaths laid to allow access for geological parties. The site still has good fossil material but is very overgrown, littered and unsafe. It could be cleaned and re-excavated.</p> <p>Good viewpoint</p> <p><b>SSSI &amp; Local Nature Reserve</b></p>	<p>£10k? re-excavate/clean up</p> <p>£5k interpretation</p>	2011/2012

Proposed activity	What/where	Partners	Comment	Cost	Timescale
5	Create and maintain stockpile of Marl Slate at Sustainability Centre Cassop Primary School	Cassop Primary School, Quarry operator.	Opportunity for 'hands on' search for fossil fish in safe and familiar environment.	£2k set up £1k annual maintenance	2010
6	Establish a group of operators of working quarries to develop and co-ordinate geodiversity activities	Quarry Operators	<ul style="list-style-type: none"> <li>•Inception event and open days</li> <li>•Identify areas of potential designation SSSI/LW sites</li> <li>•Formalise agreements for group visits</li> <li>•Annual geological assessments</li> <li>•Links with communities and schools</li> </ul>	??	2010 Projects from 2011 onwards
7	Create sensory rock trail <ul style="list-style-type: none"> <li>•Access and interpretation suitable for physically and visually impaired</li> </ul>	BGS, Sunderland CC, Quarry operators, Natural England	<p>The rocks of the area have the widest textural variation of any in Britain and variations can be easily distinguished by touch. Also very suitable for children and young people's activities. Excellent 'taster' for geodiversity.</p> <p>Best to be in well visited and 'monitored' area such as Mowbray Park.</p>	£15k	2010-2011
8	Hendon Beach <ul style="list-style-type: none"> <li>•Investigate designation to ensure conservation.</li> </ul>	Natural England	Spectacular occurrence of concretionary limestone		2010

Proposed activity	What/where	Partners	Comment	Cost	Timescale
9	<p>Geodiversity trails</p> <ul style="list-style-type: none"> <li>•Linking geology to the built environment - quarries and building stone.</li> <li>•Trail along the reef - extends the length of the area, good viewpoints.</li> <li>•Quarry trails+ products they produce</li> <li>•Trails along coast - Excellent exposures from Trow Point to Marrsden Bay, Seaham and Blachall Rocks.</li> <li>•Town geology e.g. Sunderland and Mowbray Park trail then out to country</li> <li>•Fossil trail Trail with casts/impressions of Permian fossils along the way.</li> </ul>	All	<p>Could lend itself to modern techniques including, mp3 and podcasts. Information could be delivered to mobile phones or ipods etc and linked with GPS. Traditional methods are still important to reach many people.</p> <p>Self led or as guided walks - eg to promote regular programme of healthy walking. Much of the coast is scheduled as a geological <b>SSSI</b></p>	<p>£2k per A3 leaflet (folded to 1/3<sup>rd</sup>)</p> <p>£4k fossil casts etc</p>	<p>2010 onwards</p> <p>One trail per year?</p>
10	<p>Create viewing area accessible to general public without entering quarry operations at one or more active quarries and provide interpretation.</p>	Quarry operators	<p>Coldknuckles (Quarrington - with archaeological evidence of coal mining nearby), and Crime Rigg (<b>SSSI</b>) have excellent exposures of Yellow Sands beneath Magnesian Limestone. Quarrington has archaeological links to coal mining. Thrislington and Raisby (<b>SSSI</b>) provide good views of Magnesian Limestone, Thrislington has well established biodiversity interest.</p>	<p>£20k, creation of safe viewing platform.</p> <p>£3.5K outdoor panel</p>	2011/2012



Proposed activity	What/where	Partners	Comment	Cost	Timescale
12	<p>Promote geodiversity through variety of media</p> <ul style="list-style-type: none"> <li>•Road show</li> <li>•Website - bring all together what to see</li> <li>•network of practitioners website</li> <li>•Activity sessions for children and young people to introduce ideas and concepts</li> </ul>	All	<p>In Tees Valley classes from four schools have visited their local quarry site (including active Hart Quarry) to have a hands on experience of the quarry. They teamed up with a local artist to explore and improve knowledge and understanding of geodiversity, biodiversity and local heritage through a number of exciting creative art forms</p>	<p>£2k portable display banners</p> <p>£2k website design</p> <p>£2k annually activity sessions</p>	2010 onwards
13	<p>Carley Hill/Fulwell Quarries</p> <ul style="list-style-type: none"> <li>•Clear faces to expose best examples of concretionary limestone and improve access</li> <li>•Interpretation</li> </ul>	<p><b>Sunderland CC</b> Natural England, Local community, BGS</p>	<p>Good path system already in place and improvement work currently in progress. Could provide trail and/or interpretation. Building stone link to Fulwell Windmill.</p> <p>[Huge future opportunity to promote geodiversity if England's Football World Cup Bid 2018 is successful]</p> <p><b>SSSI &amp; Local Nature Reserve</b></p>	<p>£8k</p> <p>Clearance &amp; access</p> <p>£5k interpretation</p>	2010/2011
14	<p>Establish Children's club - e.g. on lines of NPAONB rock detectives</p>	<p><b>LL</b>, DWT, Durham Uni?</p>		<p>£5k for 6 events annually</p>	2011 and onwards

Proposed activity	What/where	Partners	Comment	Cost	Timescale
15	Support programme of Great North Museum outreach and Sunderland Museum sessions with schools <ul style="list-style-type: none"> <li>•Trips to quarries.</li> <li>•Touring fossil fish etc. collections - extend service to Hartlepool.</li> <li>•Enhance Sunderland Museum annual programme</li> </ul>	Museums, Quarry operators		£3k annually	2010 and onwards
16	Field-based half day/ day training courses in understanding, interpreting and explaining the geodiversity of the area .	BGS, Durham Uni.	National trust staff and volunteers, coastal rangers, Durham Wildlife Trust . etc	£5k for 4 events including supporting materials	2011and onwards (annual?)
17	Geological book to describe geodiversity in way accessible to general public	BGS, Natural England, partners	Scope and style of book to be decided  Could possibly incorporate in Collin's 'New Naturalist' book for Magnesian Limestone.	£20k-£40k	2011-2012
18	Midridge Quarry <ul style="list-style-type: none"> <li>•Prepare interpretation.</li> <li>• Consider re-exposing unconformity.</li> <li>•Feature on the importance of the area for fossils of international importance-incorporate casts of fossils for examination</li> <li>•Link to a fossil trail</li> </ul>	Natural England, BGS	Exposes rocks from the basal unconformity and breccia up to Ford Formation; here the Marl Slate Formation is world famous for fossil vertebrates, fish and plants.  Archaeological interest alongside in course of original Stockton to Darlington railway.  <b>SSSI</b>	£20 to 30K	2012 onwards

Proposed activity	What/where	Partners	Comment	Cost	Timescale
19	Claxheugh Rock  •Improve access. •Provide interpretation	Natural England, BGS	Popular area, significant local landmark and good viewpoint. Incorporate in trail or explanatory leaflet. Would be a good site for an interpretation board but potential for vandalism. Best exposure of Yellow Sands not associated within a working quarry and Coal Measures can be seen nearby in bank of River Wear. <b>SSSI</b>	Up to £5k	2012/2013
20	Hartlepool Headland  •Trail leaflet to explain geodiversity	<b>Tees Valley RIGS,</b> Hartlepool BC	Link with archaeology information	£3k	2012
21	Ford Quarry  •Re-expose fossiliferous horizons	Natural England, BGS	Upper part of quarry faces still accessible. The reef crest has formerly yielded reasonably abundant specimens. Situated at back of school playing field behind housing.  <b>SSSI</b>	Up to £5k	2013-2014
22	Bishop Middleham Quarry  •Interpretation	DWT	Geodiversity complements biodiversity, provides additional interest for site in winter.  <b>Durham County Geological Site</b>	Up to £5k	2013/2014o
23	Trimdon Grange Quarry  •Interpretation	DWT	Section exposed is similar to Trimdon Quarry  <b>SSSI &amp;Local Nature Reserve</b>	Up to £5k	20/13/2014

## Appendix 1 Workshop Output

### EDUCATION AND INTERPRETATION

Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments
5	Rock festival/celebration create identity,				s Tyneside do geo events - but lack resources/experience
4	Regular programme of healthy walking.				Strong group in South Tyneside  "walking works wonders" new themes
4	linking geology to built environment				
3	Website - bring all together what to see				
3	Great North Museum outreach -				trips to quarries.  Touring fossil fish etc. collections out to people. Extend to Hartlepool.
3	awareness for planners and other professions				

Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments
2	Children's club - eg rock detectives				
2	network of practioners - website				
1	Media connections. e.g. character from primeval like fossil in museum also 'breathing places' courting media through existing programmes etc.				
1	Over-arching leaflet telling the story.				
1	links with arists/sculptors/actors etc audio visual stuff. films, works with older children too				
1	Quarry trails+ products produced				eg walk from quarry to building Prioritise with the companies
1	trails along coast - fresh look				
1	Aural history project of 'Old Quarry men' or miners - what life was like.				Tynw & Wear museums already do this 'culture check' (Tarmac)

Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments
1	Sherburn outreach school-quarry quarry-school				
1	links with university				
1	14-19 diploma new government initiative Sept 2009 (T&W)				
1	Events - Crime Rigg viewing platform (National Stone Centre)				
1	T&W sessions with schools				would like more - in annual programme. Sunderland museums- early years + GCSE stage. - has loan boxes of geological materials
	NEET (not in Employment/education or training )  14-19+ 19+ schemes to engage 'neet'				
	Uni 3rd age (centre for LCC???)				
	lifelong learning				

Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments
	lot of interest - talks etc.				
	town geology eg Mowbray Park trail then out to country				
	Geo book (mid 80's booklet ML of county Durham				
	Business involvement				
	Road show				
	access+ interpretation at key sites (S Tyneside)				

## CONSERVATION AND RESTORING

Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments
6	Mowbray Park and Quarry	Newcastle CC Sunderland CC	TWAM (Tyne & Wear Archives and museums)	Clean up quarry faces Interpretation. 'Signposts' to other areas Possible place for easy access sensory trail? Would need to identify and	Quarry faces, quarry spoil heaps Viewpoint to Tunstall Hill Road cutting/faulting Paths etc already in place

Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments
				transport some high quality blocks of material - eg from loose blocks at Fulwell (what is in current Marsden Quarry?).	Good geology adjacent museum and city centre Varied rocks
6	Whole area -	LLP	all	Mag Limestone major event.	At coast?
5	Active Quarries.		Inception event What can be done All quarries working together	Identify areas of potential designation SSSI/LW sites	
5	Tarmac Quarries		DWT DCC D uni N Uni BGS		Formalise agreements for group visits Annual geological assessments 1600 people on open days.
5	Larfarge - Thrislington, Rough Furze	Larfarge	As above Durham Botanical Gardens Natural England		Also limekilns Existing quarry with biodiversity include Durham Argus. Can visit but np viewing area. Open up viewing areas Near Ferryhill Cutting: Permian sand



Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments
3	Beacon Hill, Humbledon Hill, Ford Quarry	Sinderland/	Natural England	Re-expose faces	Very fossiliferous. Could be vandalised.
2	Carley Hill				Clean face of concretionary limestone 'Restoration blasting'
1	Tunstall Hills	Sunderland CC	Natural England Tunstall Hill Group	Make new fossil material available	Could make new area for fossil collecting by excavating as was done in 1980s.
1	Old Quarrington Quarry	Tarmac		Establish Viewing Point	
	Marsden Old Quarry			Improve access to geodiversity ineterest/ Physical works Clean Rock faces  Improve paths	Well used.  Work in progress - some finance already available for tasks. Incorporate geology better.
	Hart Quarry	Sherburn Stone	Tees RIGS		Dolomite - quality varies.  Need more info. First school visit 13/10/09 (Clavering primary School)
	Hendon Beach -				look at designation ensuring conservation.  Spectacular view of concretionary limestone

Summary of output from geodiversity workshop 15 October 2009					
Value	What/where	Lead	Partners	Outputs	Comments

## References

LAWRENCE, D J D. 2010. Limestone Landscapes: Geodiversity Action Plan 2010-2015. *British Geological Survey Internal Report*, CR/09/161. 27pp