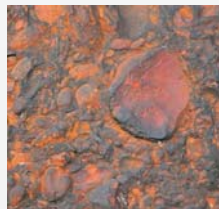


# Information on Rotherham Regionally Important Geological Sites (RIGS)



Selection & Boundary update work 2010

## *Acknowledgements*

*This document has been produced by the Sheffield Area Geology Trust working together with Rotherham MBC, with particular gratitude to members of the Rotherham Local Geological Sites Panel, and external verifiers.*

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Magnesian Limestone stratigraphy and cave, Roche Abbey,  
(Main cover image, smaller images from left to right)  
Rotherham Red sandstone in disused quarry, Canklow Woods  
Magnesian Limestone as a building stone, Roche Abbey Gatehouse.  
Fossil plant impressions, Canklow Woods.  
Mudstone clasts in Rotherham Red sandstone, Boston Park.*

## **Information on the Rotherham Regionally Important Geological Sites (RIGS) selection and boundary update work 2010**

### *Background*

RMBC Forward Planning commissioned geological survey work to provide updated information on areas of significant geological interest in the Borough to inform the environmental evidence base of the Local Development Framework (LDF). It is anticipated that RIGS will be a designation within the LDF and shown on the LDF Proposals Map. The presence of a RIGS designated area within a proposed development site will be capable of being a material consideration.

The LDF Steering Group meeting on 18 June 2010 agreed the aspiration for a Local Sites System encompassing a Local Geological Sites (LGS) System. However, survey and analysis of potential local geological sites under a new written framework and selection guidelines documentation will be required. Regionally Important Geological Sites or RIGS are an existing local planning designation that will remain at least for the anticipated future. It is currently anticipated that RIGS will form part of this future LGS System. It is envisaged that any LGS System would mirror the existing Local Wildlife Sites System currently in operation. In the interim, it is hoped that this paper will give a degree of transparency on current RIGS operation.

The existing series of RIGS were designated in the 1990s and implemented in planning through Rotherham Unitary Development Plan Policy ENV2.2. In 1996 and 1997 potential RIGS were identified from geological memoirs, other literature, existing information and local knowledge. Each site was visited and a record sheet completed to give a description of the geological interest and a range of other site information. The process of agreeing change to this existing series of Rotherham RIGS to inform the LDF is proceeding in a series of stages as follows:

### *The process of agreeing change to the RIGS series in Rotherham*

1. Establishment of Rotherham Local Geological Site Panel (LGSP) – a panel of local experts with experience in geoconservation that meet at least twice a year to oversee the selection, evaluation and deselection of RIGS/LGS.
2. Commissioning of geological survey work in Rotherham by RMBC in 2010. Survey work has provided information on new sites of RIGS quality, has revisited existing RIGS to check the designating interest is still present and has checked that their boundaries are correct (in order to inform the LDF Draft Proposals map). The survey has also identified other areas of geological significance worthy of further exploration.

3. For the 2010 geological survey a range of existing information was analysed to check the designating RIGS interest was still present and that RIGS boundaries were correct. Areas of additional geological significance were also identified. Candidate RIGS information is given at the end of this paper. Existing geological information was obtained from a range of sources including aerial photographs and documents in the public domain.
4. Relevant landowners were contacted regarding permission to access the land. Where this was not obtained information was collected for survey access from public highways or footpaths or remote viewing. New sites of RIGS quality were identified in line with the RIGS selection criteria given below. Notes on RIGS boundary identification methodology is given below in Table 2 at the end of this appendix.
5. The LGSP has approved the proposed new RIGS and the proposals for updating the existing RIGS boundaries. The Panel endorsed the selection criteria for Rotherham RIGS given in Table 1.
6. Report to RMBC Members to seek acceptance of the new RIGS sites and updated boundaries as well as incorporation of the RIGS into the planning framework.
7. Feedback will be released to RIGS landowners who have granted access permission.
8. Future RIGS Monitoring via a rolling program is recommended

**Table 1 Rotherham RIGS selection criteria, based on the 1996 RIGS selection criteria for sites in South Yorkshire, UKRIGS criteria and DEFRA 2006 Local Sites guidelines. Sites may qualify if they meet one or more of the following:**

- Is the geological feature at the site the only one in South Yorkshire?
- Is the site the best example in South Yorkshire of this particular geological or geomorphological feature?
- Is the site above a threshold of local geological or geomorphological importance, or part of a series of linked sites?
- Does the site have high educational value for use by schools, higher education students and researchers?
- Does the site have good public access or could provision for access be made with the permission of the landowner?
- Is the site linked to important advances in geological knowledge or has it other historical value?
- Is the site highly valued by the community because of its amenity and / or beauty?

The validation and approval of the RMBC commissioned geological survey work and its subsequent recommendations was undertaken by the LGSP. (It is noted that Panel recommendations for any future addition or deletion to the series of sites would need to be reported to members by a Committee Report

to the Rotherham Cabinet Member for Regeneration and Environment for its subsequent implementation into the planning framework).

#### *Further work*

1) It is envisaged that further information for landowners on the RIGS selection and de-selection process will probably be required. This information would be drawn up in conjunction with the LGSP and may include information along the following lines.

- Requests for changes to approved RIGS would need to be made to the LGSP
- Landowners may need to understand that a review of the designation and resulting evidence gathering could lead to additional areas being designated and/or the area being assessed on other Local Sites criteria (A proportion of RIGS are also Local Wildlife Sites).
- The landowner would be able to make a request of a review of a RIGS boundary to the LGSP. Up to date valid site information may need to be provided if not available.
- Each site will need to be considered on a site by site basis by the Panel.
- There may be some scope to revise boundaries as they also reflect practical management boundaries, and not always the boundary of the geological, geodiversity and other nature conservation interests.
- In some cases the Panel may advise they have no objection to development proceeding on part of a RIGS, particularly former large quarry areas, providing that overall the development enhances the geodiversity while conserving or enhancing any ecological interest.
- Good practice is usually to provide an adequately drained buffer zone between the base of a quarry face and any development or landscaping that may obscure the face. This should be a minimum of 10m wide. See Geological Conservation - Guide to Good Practice on Natural England website  
<http://naturalengland.etraderstores.com/NaturalEnglandShop/ST118>.

2) Details on the steps towards formation of a Rotherham Local Sites System encompassing a LGS system will be reported in a future paper to Members.

3) A rolling program of RIGS monitoring is recommended subject to funding.

#### **Table 2 Notes on Rotherham RIGS boundary methodology**

- Once a geological site has been assessed as being of RIGS quality, consideration is given to the identification of the boundaries of the designated area.
- Each site area is identified by having a separate designation statement of the main interest within the area.
- The determination of boundaries should be undertaken so as to ensure that the area of land that meets the selection guidelines is included within the site boundary.

- Boundaries have been drawn so that they can be readily located on maps and on the ground, which includes field boundaries and paths.
- Boundaries have been drawn so that they do not include significant areas of land that are outside the area of geodiversity interest and thus place an undue constraint on potential development. They may (and where possible should), however, include areas of nature conservation interest that is of lesser value where it is an integral part of the management unit or provides additional or associated ecological, geological or geomorphological interest.
- For geomorphological and landscape feature sites, it is anticipated that the areas of lesser value will occupy less than 50% of the area of the land parcel under consideration though this percentage restriction may not be applicable to quarry sites
- Site boundaries may be drawn using field evidence, current and historical map evidence, current and historical aerial imagery, publications and data within Rotherham Geological Records currently held by Sheffield Area Geology Trust.

(a) The site boundaries have been determined by readily identifiable practical management areas that include all the area with the designated and associated geodiversity interest, including quarry faces, shale scrapes, spoil tips and natural stone boundary walls.

(b) Where there is an aggregation of separate management subunits based on land use or ownership, that are adjacent to each other the boundary has been drawn to include all management subunit compartments as a single RIGS area. Where RIGS and earth heritage SSSIs are designated on different criteria, they may have adjacent or different overlapping boundaries. Adjacent RIGS may be aggregated into a larger RIGS area for planning purposes.

(c) Where there is a grouping of separate management units of the same type (for example a series of disused quarries) that are in close proximity to each other they may also be referred to by a single RIGS name.

(d) For large areas with only a minority of the area is of geological and/or geomorphological interest, the boundary may be drawn to the nearest mapped feature or a line between two features, or an area enclosing the feature, so that the majority of the area of land identified encloses the RIGS features and associated biodiversity and/or geodiversity interest without including large areas without geodiversity interest.

(e) For RIGS where access from a public right of way is required in order to maintain the access interest of the RIGS, the boundary may be drawn to include the access to the site where the boundary can be readily identified by observable physical boundaries or mapped features. Buffer zones are important for some geological sites, including springs and fluvial and landscape geomorphology areas in order to protect the supply and quality of water and consequently, these buffer zones may warrant inclusion within a RIGS designation for this particular function.

(f) For cave sites the area will include the cave entrance and associated rock outcrop. It is recognised that that the land above areas with caves and

fissures may retain buried interest karst features and preserved soil profiles, particularly if the land has not been previously disturbed. The land above cave sites presents boundary identification difficulties, as the full extent of caves is often unknown. The land above the known or probable extent of caves will be included within the site boundary. The land above cave and fissure areas of unknown extent that is currently identified as woodland and unimproved grassland will be included within the RIGS area. The land identified above caves of possible extent that includes areas with development including housing, recreational grassland and arable fields will not be included within the defined boundary, but may be notified to planning as an area with potential planning constraints, including cuttings, excavations and the construction of below ground level structures that might expose or damage the cave system.

(g) For mixed bedrock, superficial sediment and geomorphology areas, and former quarries, there may be a requirement for different subunit areas to be identified for different interests. RIGS boundaries may be drawn to include all interests or features that can be shown to be important to the maintenance of the interests within the designated site.

(h) For rivers, it is difficult to define static boundaries on what are dynamic systems. Rivers may change course by erosion, thus quickly rendering the RIGS boundaries out of date. In these circumstances the boundary of the site designation upstream and downstream at fixed points should be provided and the riverbank boundaries should be regularly checked and/or determined on the ground as and when required. On other less dynamic rivers the top of the banks bordering the floodplain area can be used to determine the RIGS boundary). It may be appropriate to divide fluvial geomorphology sites into units of 0.5 - 2km in length, using bridges and other mapped features as dividing points.

(l) For quarry or disused quarry sites, the floor of the quarry will ordinarily be included within the site area, as the buried interest is likely to remain close to the land surface. Providing that there are no other ecological or archaeological interests, it may be possible to allow development within the quarry floor providing that access to the quarry faces is maintained, and that the development does not require measures to stabilise the quarry faces that will damage the geodiversity interest. Any permitted buildings within the floor of a quarry will be normally excluded from the site boundary. The land above quarry faces may need to be included within the site boundary in order to ensure the stability of the quarry faces. The width of this required headland is much greater for soft mudstones than for hard limestones and sandstones. As many former quarries were excavated close to the ownership boundaries, the boundary of conservation interest may extend beyond the defined site management boundary as a buffer zone with restrictions on development.

(j) For landscape geomorphology sites, the main geodiversity interest is contained in the natural rock outcrops, and the natural landform features, though these areas may also include disused quarries.

(k) The selection guidelines will not be applied to domestic or industrial (including agricultural) buildings, other than those built of local rocks. Other artificial structures, for example stone walls, mine shafts, tunnels, bridges,

historic monuments, may, however, be considered for designation. Unlike Local Wildlife Sites, RIGS may include natural rock outcrops and former quarry features within domestic gardens.

Field work carried out in 2010 by Sheffield Area Geology Trust has recommended the amendment of a number of existing RIGS boundaries, following the application of the guidance above. In many cases, the original RIGS boundaries were drawn around the main rock outcrops or the main landscape features. Current practice in line with national UKRIGS guidance is to draw the boundary around all the geological interest, including any quarry spoil heaps. Some changes in boundaries were required because of the greater accuracy of the OS master map series compared to the old 6 inch maps used for the original survey work. For active quarry sites, the boundary changes are needed to reflect the current position of the quarry faces, not the position when the map of the area was prepared. Aerial images are particularly useful for undertaking this work.

### *Candidate RIGS Information*

RIGS have geodiversity interest of national, regional and local importance, that may also have public access or easily arranged access. Candidate RIGS have known substantive geodiversity interest that following site assessment are anticipated to pass one or more of the RIGS selection criteria (see Table 1), but currently lack the documented field survey and / or desk based research to enable a full site assessment to be undertaken as part of the designation process. In many cases field geological survey work may require landowner and land manager permission prior to the work being undertaken, for areas away from public access.

Candidate RIGS status will not ordinarily be applied to Geodiversity opportunity site areas where any existing exposed geodiversity interest could be enhanced as part of future development proposals or management work, where the currently exposed geodiversity interest is not anticipated to be sufficient for RIGS designation.

Candidate RIGS will normally undergo a three stage process to progress towards becoming designated RIGS. Potential candidate sites are proposed for consideration by the LGSP. Approval of candidate status is given by the LGSP, and this process may require the submission of supporting field and desktop evidence, including maps. Additional fieldwork is often required in order to fully document the extent and importance of the geological and geodiversity features, and additional desk based evidence may also support the evidence base required for site designation. Once candidate RIGS have sufficient evidence for designation, the schedule or designation statement is prepared together with a boundary map, which is submitted together with supporting evidence that may include field images for formal designation by approval by the geological conservation group panel of geological experts. The details of the approved RIGS are then forwarded to the Local Authority, and any separate Local Planning Authority for incorporation within the evidence base required by planning and green spaces – countryside services, including the Development Plan documents (which include the Unitary



Development Plan (UDP) and Local Development Framework (LDF). In some areas, including RMBC, this process requires acceptance by the Local Authority. The RIGS that were designated in 1996 -97 by the South Yorkshire RIGS Group Panel (the local geological conservation group with approved Natural England responsibility for RIGS and LGS in Barnsley, Doncaster, Rotherham and Sheffield, which is now part of the Sheffield Area Geology Trust) were endorsed by RMBC in 1999. The three RIGS that have been designated / approved for designation by the LGSP in 2010 have been submitted for formal designation (rather than adoption or endorsement) by RMBC in a validation process that is similar to the designation process for Local Wildlife Sites in Rotherham.

## References

- Baker Shepherd Gillespie - Ecological Consultants (April 2007)  
Rotherham Local Wildlife Site System:
  - Part 1: The Framework for Rotherham's Local Wildlife Site System,
  - Part 2: Site Selection Guidelines for Rotherham.
- Defra Local Sites – Guidance on their Identification, Selection and Management (February 2006)
- ODPM Planning Policy Statement 9 – Biodiversity and Geological Conservation (2005)
- ODPM Planning for Biodiversity and Geological Conservation – A guide to Good Practice (ODPM 2005)
- ODPM Planning Policy Statement 12 – Local Development Frameworks (2008)
- RMBC (1999) Policy ENV2.2, Rotherham Unitary Development Plan
- The Natural Environment and Rural Communities (NERC) Act 2006  
CLG National Indicators for Local Authorities and Local Authority Partnerships
- UKRIGS guidance including RIGS handbook chapters available via [www.ukrigs.org.uk](http://www.ukrigs.org.uk) and [http://wiki.geoconservationuk.org.uk/index.php5?title=Downloads#RIGS\\_Handbook\\_Downloads](http://wiki.geoconservationuk.org.uk/index.php5?title=Downloads#RIGS_Handbook_Downloads)

