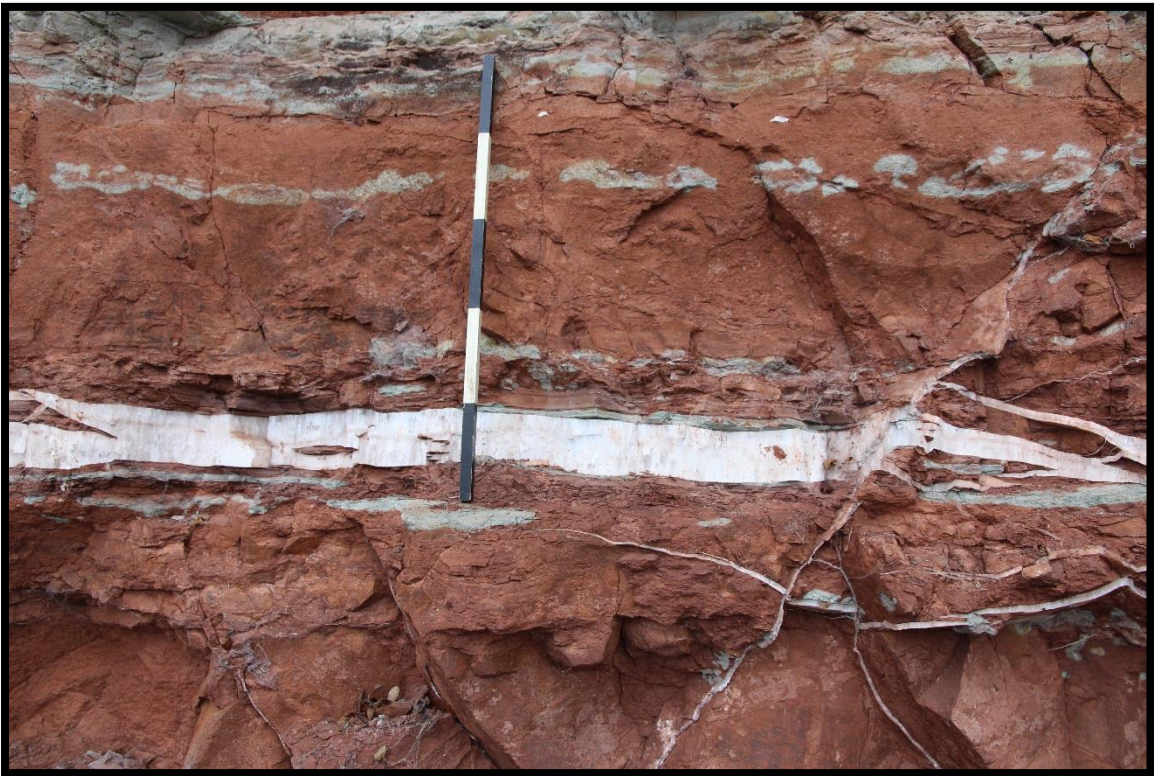


# Nottinghamshire LGS Criteria

## Guidelines for the selection of Local Geological Sites in Nottinghamshire



**Produced by the Nottinghamshire Local Sites Panel**

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# 1. OVERVIEW

## 1.1 INTRODUCTION

This document describes the process for the identification and selection of non-statutory, locally designated sites within Nottinghamshire and the City of Nottingham of geological and geomorphological interest, known as Local Geological Sites (LGSs). This will complement the existing Local Wildlife Site system, which identifies sites of biodiversity importance.

The use of a Local Sites system is a recognised approach at a national level in the *National Planning Policy Framework* (DCLG, 2012) and in *Local Sites – Guidance on their Identification, Selection and Management* (Defra, 2006).

The primary purpose of the Local Site system is to allow the most important wildlife and geodiversity sites in the county (outside statutorily designated SSSIs) to be identified, so that informed decisions can be made about their protection and management, and about changes in land use that may affect such sites.

## 1.2 WHAT ARE LOCAL GEOLOGICAL SITES?

Local Geological Sites (LGSs) are a non-statutory designation based on locally developed criteria, which identifies geological and geomorphological sites of local importance. These sites were previously referred to as Regionally Important Geological Sites (RIGs).

## 1.3 BACKGROUND AND CONTEXT

Historically, as in other counties, there has been no standardised approach to designating regionally important geological and geomorphological sites (RIGs) in Nottinghamshire. The introduction of rigorous new criteria for selecting sites, which will be known as Local Geological Sites (LGS) as recommended by Defra, aims to address this in order to bring consistency and transparency to the selection process.

In 2001 a standardised method for recording, assessing, designating and notifying RIGs was developed on behalf of UKRIGS (now GeoConservation UK (GCUK)) with support from English Nature (now Natural England). This has been supplemented by guidance from DEFRA (2006) which states that LGSs should be selected based on four nationally agreed criteria:

- Value of the site for educational purposes in life-long learning
- Value of the site for study by both professional and amateur Earth scientists
- Historic value of a site in terms of important advances in Earth science knowledge, events or human exploitation

- Aesthetic value of a site in the landscape, particularly in relation to promoting public awareness and appreciation of Earth sciences

## 1.4 NOTTINGHAMSHIRE HISTORY

In 1987, a survey of geology sites in Nottinghamshire commenced with geologists based at the Nottingham Natural History Museum, Wollaton Hall, conducting an initial literature search. Site visits and the recording of the important site information followed.

Geology sites in Nottinghamshire mainly include active and disused quarries, road and railway cuttings and river cliffs. Recording information about geology sites in the county is still ongoing and carried out by the Nottinghamshire RIGS Group, which formed in 1991. The group meets regularly and now comprises representatives from the British Geological Survey, Nottinghamshire County Council and Nottingham Natural History Museum (Nottingham City Council).

Using site records collated at the Nottinghamshire Biological and Geological Records Centre, based at Wollaton Hall, 106 RIGS were selected in 1991 spread across the seven Nottinghamshire districts and the City of Nottingham. Sites were chosen to represent the variety of geology but also to reflect a perceived educational need to have locally accessible sites throughout the county. The process of revisiting sites commenced in 1990's cumulating in a full revisit and re-assessment of sites starting in 2016 using the standard methodology.

## 1.5 NOTTINGHAMSHIRE LGS SYSTEM

The Local Sites system in Nottinghamshire is run by three groups/organisations, the Nottinghamshire Biological and Geological Records Centre (NBGRC), the Nottinghamshire Ecological and Geological Data Partnership (NEGDP), and the Local Sites Panel.

The Nottinghamshire LGS Committee is a technical sub-group of the Local Sites Panel. The primary purpose of the committee is to produce criteria for the selection of LGSs in Nottinghamshire and the City of Nottingham. The committee comprises representatives from Nottinghamshire RIGs Group, Nottingham City Museums, British Geological Survey, Nottinghamshire County Council and Nottinghamshire Biological and Geological Records Centre.

Prior to their adoption, criteria for the selection of LGSs will be consulted upon, and approved by the NEGDP. For further details on the consultation and approval process and other information, please refer to the Nottinghamshire LWS Handbook – Guidelines for the selection of Local Wildlife Sites in Nottinghamshire. Part 1 – An overview of Local Wildlife Sites in Nottinghamshire.

## **2. SITE SELECTION AND EVALUATION**

### **2.1 SURVEY METHODOLOGY**

Field surveys are undertaken by a competent geologist and will be validated by the LGS Committee. Surveyors should aim to record on a site-by-site basis, unless sub-division is appropriate, using the Nottinghamshire LGS Field Record and Site Assessment form provided in Appendix 1. Sub-division may be desirable where the area is particularly large, or where it comprises more than one feature with rapid lateral variation over a short distance. Time spent on site should be noted, as well as any constraints (weather, light quality etc.), to give some idea of the degree of thoroughness of each survey. Any relevant information that may be obtained from the land manager should be recorded, such as past and present management and future intentions.

### **2.2 SITE ASSESSMENT**

As and when site data is available, potential LGSs will be assessed using the criteria contained herein, and the details will be presented to the LGS committee for consideration, of which a quorum of four members must be in attendance. The committee's recommendations will be based on the above criteria to ensure consistency, through impartial use of professional judgement.

The scores that a site achieves under the Scientific, Educational and Cultural criteria provided below will be noted and sites that satisfy the criteria and scoring combinations shown will normally be recommended for selection, providing members have confidence in the site data, the proposed boundary and other relevant factors (such as access and safety). Where a number of geological exposures show similar features that are considered to be worthy of designation, then their geographic proximity and access potential may be taken into account to ensure a representative spread across the county. The potential value of the site will also be taken into consideration (e.g. in terms of recovering the interest of a site where it has scrubbed over or education).

The Local Geological Sites Condition Monitoring Form (contained in Appendix 2) will be used to assess the condition of a site that is already designated as a LGSs. This form will be used as the national standard to independently monitor and record the condition of sites, with minimal subjectivity, in order to achieve a common standard of monitoring and to easily compare sites across the LGS network.

## 2.3 PROCEDURES

The LGS Committee will only recommend that a proposed site be rejected as a LGS if it considers that adequate recent survey has taken place and all other relevant factors have been considered. The rationale will be recorded. A site may be re-assessed after selection/non-selection if its condition changes.

Information on all recommendations made by the LGS Committee, and the reasons for those recommendations, will be clearly documented and held by the Nottinghamshire Biological and Geological Records Centre (NBGRC). The basis for site selection will be transparent to anyone who wishes to understand the rationale behind the decision. In particular:

- A record will be kept of information relating to each LGS, including Field Record and Site Assessment Forms and Condition Monitoring Forms.
- LGSs will be mapped in detail using OS Mastermap® on a GIS system to ensure that accurate spatial information on all sites is held (which is provided to NEGDP partners for planning purposes). The GIS data will include LGS site name, reference number, a brief description of the site interest, size, and date of designation, and will be provided to NEGDP partners at least once every six months, or more frequently if required.
- General locational information is made available to members of the public through the Nottinghamshire Insight Mapping website:  
<http://info.nottinghamcity.gov.uk/insightmapping/#>

Site owners/managers will be informed of the outcome of the LGS Committee assessment and will be given the opportunity to make observations on factors relating directly to the application of site selection criteria. The Nottinghamshire LGS committee will consider the recommendations and any other representation and be the final arbiter on LGS selection. Its decisions will be recorded and held by NBGRC.

A site becomes officially designated once it is added to the Nottingham Insight mapping and notified to relevant the NEGDP through updated mapping layers.

The NBGRC will respond to any enquires from members of the public or from non-commercial interests relating to LGSs. For commercial enquiries, a fee will be applied to cover the costs of administration.



## 2.4 SITE BOUNDARIES

There are no national guidelines regarding the conventions of mapping LGSs and defining unit boundaries. The exposures will be identified using point and polygon data. These can be scale dependent on the GIS if necessary for clear identification of the exposures. Where a selected LGS is a vertical exposure then a standoff distance will be applied to the exposure boundary, assessed on a site-by-site basis.

### **3. LOCAL GEOLOGICAL SITES CRITERIA**

#### **3.1 RATIONALE**

Following consultation of the LGS committee, the selection criteria for the selection of LGS in Nottinghamshire are based on national criteria developed by GCUK, and an adaptation of criteria used by the Lincolnshire Biodiversity Partnerships published in their Local Geological Sites guidelines (2009).

Field Survey (Appendix 4.1) and condition monitoring (Appendix 4.2) forms have been devised for use in the field to make recording swift, comprehensive and consistent and are made up of four themes: Scientific, Educational, Cultural and Access & safety.

For each theme there is a set of criteria for scoring, using the following scores: 0 Not good, 1-2 Very poor, 3-4 Poor, 5-6 Acceptable/useful, 7-8 Good, 9-10 very good/excellent and the following thresholds will be used for site designation for the first three themes:

#### **3.2 SCIENTIFIC THEME**

A site will be considered for designation if it scores:

- $\geq 9$  for at least one Scientific criterion
- $\geq 7$  for two or more Scientific criteria
- $\geq 7$  for one Scientific criterion plus  $> 7$  for at least one Educational or Cultural criterion
- $\geq 6$  for three or more Scientific criteria
- $\geq 6$  for one Scientific criterion plus  $\geq 6$  for at least three Educational or Cultural criterion

#### **3.3 EDUCATIONAL THEME**

A site will be considered for designation if it scores:

- $\geq 7$  for two or more Educational criteria
- $\geq 7$  for one Educational criterion plus  $\geq 7$  for at least one Scientific or Cultural criterion
- $\geq 6$  for three or more Educational criteria
- $\geq 6$  for one Educational criterion plus  $\geq 6$  for at least three Scientific or Cultural criterion

### 3.4 CULTURAL THEME

A site will be considered for designation if it scores:

- $\geq 7$  for two or more Cultural criteria
- $\geq 7$  for one Cultural criterion plus  $\geq 7$  for at least one Scientific or Educational criterion
- $\geq 6$  for three or more Cultural criteria
- $\geq 6$  for one Cultural criterion plus  $\geq 6$  for at least three Scientific or Educational criterion

### 3.5 ACCESS AND SAFETY

The Access and Safety aspects of a site will be recorded as part of the assessment, as potential users, such as field leaders, teachers and researchers, will require this information but sites will not be designated solely on the basis of access. Access and Safety will be taken into account for LGS designation, particularly where it is of high educational value and consideration may be given to not selecting a site if it scores 4 or less for two or more Access and Safety criteria, however the descriptive criteria will be used to support or reject site selection in this case. A site may be designated as a Local Site if 'Permission to Visit' is not routinely given as land owners may change and the value of the other themes will take precedence.

## 4. APPENDICES

## 4.1 NOTTINGHAMSHIRE LGS FIELD RECORD AND SITE ASSESSMENT

Site information			
Site name		Site number	
Grid reference		District	
Surveyed by		Date of survey	
Site status		Locality type/Land use	
Site ownership and tenancy details			
Contact details for permission to visit			
Brief history and present status (SSSI, LWS etc)			
General description of geology/geomorphology (boundary map, field sketches and photographs on separate sheets)			
Likely conservation methods required			

Literature references and other existing records		
Scientific	Comments	Score (circle one)
Surface processes		0 1 2 3 4 5 6 7 8 9 10
Geomorphology		0 1 2 3 4 5 6 7 8 9 10
Sedimentary rocks		0 1 2 3 4 5 6 7 8 9 10
Fossils		0 1 2 3 4 5 6 7 8 9 10
Igneous rocks		0 1 2 3 4 5 6 7 8 9 10
Metamorphic rocks		0 1 2 3 4 5 6 7 8 9 10
Tectonic structures		0 1 2 3 4 5 6 7 8 9 10
Mineralisation		0 1 2 3 4 5 6 7 8 9 10
Stratigraphy		0 1 2 3 4 5 6 7 8 9 10
Educational	Comments	Score (circle one)
Potential illustration of Earth science processes and products		0 1 2 3 4 5 6 7 8 9 10
Levels of presentation, from primary to secondary school age		0 1 2 3 4 5 6 7 8 9 10
Further and higher education projects and research		0 1 2 3 4 5 6 7 8 9 10
Stimulation of variety of interests and levels for family and adult groups		0 1 2 3 4 5 6 7 8 9 10
Geodiversity value, illustrating locally significant features & geological history		0 1 2 3 4 5 6 7 8 9 10
Potential for connecting adjacent sites to form a geological trail		0 1 2 3 4 5 6 7 8 9 10
Cultural	Comments	Score (circle one)
Historical associations		0 1 2 3 4 5 6 7 8 9 10
Earth science associations		0 1 2 3 4 5 6 7 8 9 10
Aesthetic landscapes natural or anthropogenic		0 1 2 3 4 5 6 7 8 9 10
Economic associations		0 1 2 3 4 5 6 7 8 9 10
Past and present activities		0 1 2 3 4 5 6 7 8 9 10

Access and safety	Comments	Score (circle one)
Road access and parking		0 1 2 3 4 5 6 7 8 9 10
Safety of site access		0 1 2 3 4 5 6 7 8 9 10
Nature of exposure		0 1 2 3 4 5 6 7 8 9 10
Safety of exposure		0 1 2 3 4 5 6 7 8 9 10
Protective clothing required		0 1 2 3 4 5 6 7 8 9 10
Permission to visit		0 1 2 3 4 5 6 7 8 9 10
Condition of exposure		0 1 2 3 4 5 6 7 8 9 10
Conflicting activities		0 1 2 3 4 5 6 7 8 9 10
Restricting conditions/activities		0 1 2 3 4 5 6 7 8 9 10
Ratings: 0 Not good, 1-2 Very poor, 3-4 Poor, 5-6 Acceptable/useful, 7-8 Good, 9-10 very good/excellent		

## 4.2 NOTTINGHAMSHIRE LGS CONDITION MONITORING FORM

Site information			
Site name			
Site type		Grid reference	
Date of visit		Local authority	
Surveyor		Land owner	
LGS Designation	Scientific/Educational/Cultural		
Interest Feature(s)			
Previous management and dates (if any)			
Primary Factors			
Bedrock feature	Is (are) the feature(s) exposed		If No, can they practically be re-exposed?
	Is (are) the feature(s) being affected by the following factors?		
	Factor	Y/N	Comments
	Vegetation		
	Scree/mass movement		
	Flooding		
	Dumping/landfill		
	Quarrying/Engineering Works		
	Development		
Other (please define)-			
Superficial deposit feature	Is (are) the feature(s) exposed		If No, can they practically be re-exposed?
	Is (are) the feature(s) being affected by the following factors?		
	Vegetation (Trees/crops)		
	Agricultural practices		
	Quarrying/Engineering		
	Development		
	Other (please define)		
Geomorphology feature	Is (are) the geomorphological feature(s) being allowed to evolve naturally?		
	Is (are) the feature(s) being affected by the following factors?		
	Vegetation		
	River management		
Development			



	Other (Please define)		
<b>Secondary Factors</b>			
Factors that do not directly affect the feature(s) but may need to be managed in order for feature(s) to maintain a desirable condition			
	<b>Factor</b>	<b>Y/N</b>	<b>Comments</b>
<b>Site Access</b>	Are any of the following causing difficulties in accessing the site?		
	Physical obstacles		
	Landowner permissions		
	Protected species/habitats		
	Other (please define)-		
<b>Other features</b>	<b>Are there any other features of interest that should be considered?</b>		
	Biodiversity		
	Historic Environment		
	Other (please define)-		
<b>Site Status</b>			
<b>Overall, is the site in a desirable condition for use(s) of the feature(s) identified?</b>			<b>Yes/No/Uncertain</b>
			Status:
If Yes - what management is required (if any) for the feature(s) to maintain a desirable condition?			
For the above, is the management: Being undertaken / Going to be undertaken / Not going to be undertaken / Not possible			
If Uncertain or No - what management is required for the feature(s) to reach and maintain a desirable condition?			
<b>Are there any secondary factors that need further management</b>			<b>Yes / No / Not applicable</b>
Suggested management in order for the feature(s) to reach/maintain a desirable condition			
<b>Photographs- grid ref. direction of photo</b>			

## 5. GLOSSARY

**Defra** – the Department for Environment, Food and Rural Affairs

**English Nature** – former name of Natural England

**Geodiversity** – the variety of rocks, minerals, fossils, soils and landscapes, together with the natural processes that form them.

**Geology** – the scientific study of the Earth, its materials, structures, processes and history.

**Geomorphology** – the science concerned with understanding the form of the Earth's land surface and the processes by which it is shaped, both at the present day as well as in the

**Local authority** – a public organisation responsible for the delivery of public services in a particular administrative area.

**Local Geological Site (LGS)** – a site of importance for local geodiversity

**Local Geological Site Committee** – a panel of local experts and representatives from various interested bodies.

**Local Site (LS)** – a site of local importance for biodiversity or geodiversity conservation. Also known as Local Wildlife Sites or Local Geological Sites, and previously known in Nottinghamshire as Sites of Importance for Nature Conservation.

**Local Sites Panel** – the Panel is a technical sub-group of the NEGDP made up of local experts. The primary purpose of the Local Sites Panel is to produce criteria for the selection of LWSs in Nottinghamshire (formerly known as the SINC Panel).

**Local Wildlife Site (LWS)** – a site of local importance for the conservation of biodiversity. LWSs receive no legal protection, but are given some degree of protection through the planning system. They are of substantive value for the conservation of biodiversity, and are home to rare and scarce species, or represent the best surviving examples of habitats that were once widespread. Previously known as Sites of Importance for Nature Conservation (SINCs).

**LGS Criteria** – criteria used to identify LGS.

**LWS Criteria** – criteria used to identify LWS.

**National Planning Policy Framework (NPPF)** - a national statement of planning policy in England, which includes policy on biodiversity (and geological conservation).

**Natural England** – government's adviser for the natural environment in England

**Non-statutory site** – a site with no legal protection.

**Nottinghamshire Biological and Geological Records Centre (NBGRC)** – Nottinghamshire's local records centre, which administers the LWS system in the county.

**Nottinghamshire Ecological and Geological Data Partnership (NEGDP) –**

Nottinghamshire’s ‘Local Sites Partnership’, which supports the works of the NBGRC and oversees the work of the Local Sites Panel. Membership of the NEGDP includes all major users of ecological data in the county.

**RIGs** – Regionally Important Geological Site

**RIGs Group** – An organisation interested in local geoconservation

**Single Data List 160** – the single data list is a catalogue of all the datasets that local government must submit to central government. Single Data List 160 (Local nature conservation/biodiversity) looks at the proportion of Local Wildlife Sites where positive conservation management is being achieved.

**Site of Special Scientific Interest (SSSI)** – nationally important and legally protected sites that represent the finest sites for wildlife and natural features in Britain, supporting characteristic, rare and endangered species and habitats.

**Statutory organisation** – an organisation that exists by law.

**UKRIGs** – a national organisation and represents the local face of geoconservation

## 6. REFERENCES

Crouch, N.C. (2017) *Nottinghamshire LWS Handbook – Guidelines for the selection of Local Wildlife Sites in Nottinghamshire. Part 1 – An overview of Local Wildlife Sites in Nottinghamshire*. 2<sup>nd</sup> Edition. Nottinghamshire Biological and Geological Records Centre, Nottingham.

Notes, published online at: <https://www.nottinghamcity.gov.uk/events-markets-parks-and-museums/parks-and-open-spaces/nottinghamshire-biological-and-geological-record-centre-nbgrc/>

DCLG (2012) National Planning Policy Framework. DCLG, London.

DEFRA (2006). *Local Sites - Guidance on their Identification, Selection and Management*. DEFRA, London.

Anon. (2009). *Local Geological Sites - Guidelines for their Identification & Selection in the Historic County of Lincolnshire (Lincolnshire, North Lincolnshire & North East Lincolnshire)*. Lincolnshire Biodiversity Partnership.

UKRIGS (2008) Local Geological Sites / RIGS Condition Monitoring Form v2008 Guidance Notes, published online at:

<http://wiki.geoconservationuk.org.uk/images/e/e6/RIGSConditionMonitoringGuidance.pdf>