

London Geodiversity Action Plan 2025-2029



A framework for understanding, conserving and using the unique wealth of geodiversity resources found within our capital, so that social, economic and environmental benefits are provided to London's urban communities and many visitors.



The centre of the London Basin syncline
St Paul's Cathedral and the City of London from Hungerford Bridge 2019

<http://londongeopartnership.org.uk/>



Published on 10 February 2026

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What is geodiversity and why is it important?

The diversity of geological and geomorphological heritage across London provides an invaluable natural resource that underpins many aspects not only of London's natural environment, but also of society, economy and where and how people live. 'Geodiversity' is found beneath our feet and in the built environment, it shapes the landscape around us, has contributed to our industrial past, underpins biodiversity and influences art, architecture and design.

Geodiversity has been defined as: *"The natural range (diversity) of geological (rocks, minerals, fossils), geomorphological (landform and processes), soil and hydrological features. It includes their assemblages, structures, systems and contributions to landscapes"*¹.

Amongst the wider services that geodiversity provides are: training, education and lifelong learning; a contribution to 'sense of place'; recreation and geo-tourism; aesthetic qualities and well-being.

Developing a good understanding of London's geodiversity and the services it provides also contributes to the sustainable management of natural resources (such as groundwater, brick clay, chalk for cement and gravel for aggregates) and the earth's changing natural systems (such as mitigating against natural subsidence, unstable ground and responding to climate change).

It is for all these reasons that the geodiversity of London should be understood, managed and used for the benefit of the present generation and conserved for future generations.

What is special about London's geodiversity?

London has a large population, receives many visitors and is linked together by a dense transport network. In this way it is very unlike a rural area. The 'rocks' may be less evident, but there is nevertheless a unique wealth of geodiversity resources. These resources are also available and accessible to a large number of people, including local communities, tourists and those travelling on business.

The continual evolution of the city means that there are ongoing opportunities to view and understand the geology beneath our feet and identify the influence of natural processes on where we live. Where appropriate a geodiversity focus may also be included within the final design of a new development.

London's geodiversity:

- Is available and accessible to a large number of people;
- Comprises a unique wealth of resources; and,
- Has shaped the development of a major world city.

Museum and art collections in London are vast and internationally outstanding, containing artefacts and images of relevance to geodiversity that can be promoted and used for life-long learning.

Greenspace is exceedingly important within an urban area and the underlying geology has shaped many of the open places of London's landscapes² (such as the Hampstead Ridge). In addition, Geodiversity activities (such as geowalks, building stone trails and 'hands-on' experiences for children) provide ways of experiencing the 'outdoors' and contributing to health and well-being.

Just some of the many other contributions geodiversity has made to London are described below.

¹ Gray, M. (2013) *Geodiversity: Valuing and conserving abiotic nature*, 2nd edition, Wiley Blackwell, Chichester

² *London's Natural Signatures: The London Landscape Framework*, January 2011 prepared for Natural England can be found at <http://publications.naturalengland.org.uk/publication/6540238365130752>

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How has geodiversity influenced the development of London?

The geodiversity of London has greatly contributed to its development, providing both opportunities and constraints that need to be understood and managed. The list below identifies just some of these. More detailed descriptions of London's geodiversity heritage is found within the *London's Foundations* Supplementary planning guidance³ and the BGS Special Memoir '*Geology of London*'⁴.

- The River Thames and its tributaries and the associated gravels provided the initial focus for Palaeolithic and later habitation including the developing City of London, supplying water and forming a major route-way;
- The Chalk aquifer at depth beneath London, controlled by the structural geology of the region, now provides much of the population's water supply and has allowed for the greater expansion of the city;
- Mineral springs formerly existed in London, derived in gravels but absorbing salts when passing through the underlying London Clay. Similar springs just outside London at Epsom gave rise to the term 'Epsom Salts';
- The structure and wide presence at depth of the London Clay Formation allowed the extensive development of the London Underground tube network, particularly in north London;
- The presence of the River Thames and the low-lying basin of London, again controlled by the structural geology contributes to the need to protect London from sea level rise;
- Characteristic landscapes are shaped by the underlying geology and subsequent geomorphological processes. These include dry valleys within chalk downlands (particularly in south London) and river terraces, forming long flat areas, separated by steeper slopes (particularly in north London);
- Chalk for cement, clay for bricks, glass sand and flint for building have all been extracted in London and evidence of past and current industry remains today;
- Most aggregate and building stone resources have been supplied from elsewhere, meaning London now contains a wider geodiversity than that simply found *in situ*. The building stone resource in London is vast. They include:
 - Kentish Ragstone and Reigate Stone have been used since Roman times.
 - Wren resigned London after the Great Fire of 1666 with Portland Stone shipped in from Dorset.
 - The Victorians used granite from Scotland and south-west England.
 - Today cladding techniques have greatly increased the range of rock types utilised with sources now from across the world.
 - Leicestershire, the Peak District and the Mendips provide three major sources of aggregates, which have greatly contributed to the development of London.

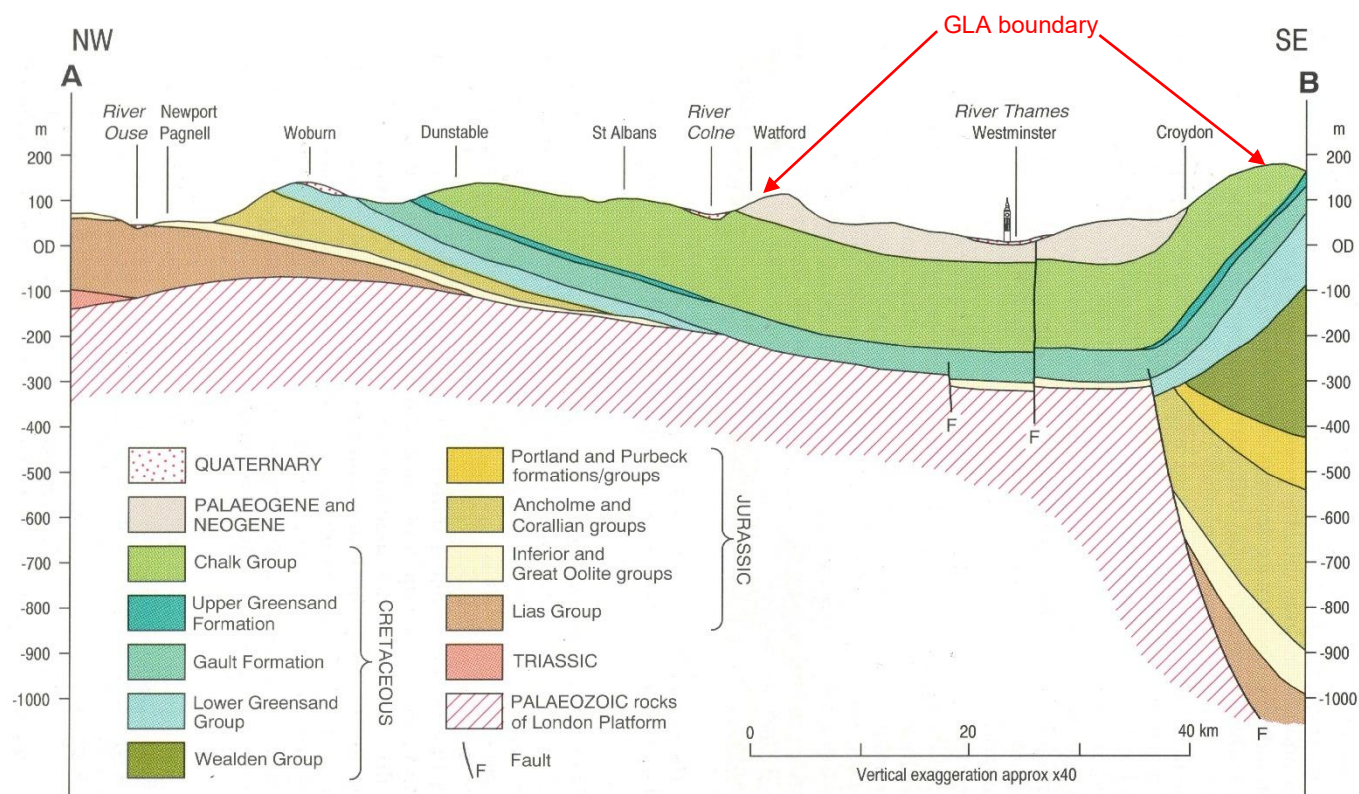
It is important that the link is recognised and maintained between geology and landscape, soil, habitats and species. Soil is derived from the underlying rocks, which influences the biodiversity of the area. Therefore both work together to produce an understanding of the environment.

³ Greater London Authority (March 2012) *Green infrastructure and open environments: London's Foundations: protecting the geodiversity of the capital*, Supplementary planning guidance London Plan 2011 implementation framework, Greater London Authority, ISBN: 978 1 84781 503 3.

⁴ Ellison, R. A. *etc. al.* (2004) *Geology of London*, Special Memoir for 1:50 000 Geological sheets 256 (North London), 257 (Romford), 270 (South London) and 271 (Dartford) (England and Wales), British Geological Survey, ISBN: 0 85272 478 0.

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Geological section showing the London Basin syncline



From Sumbler, M.G. (1996) *British Regional Geology: London and the Thames Valley*, 4th Edition, British Geological Survey (Reproduced as Figure 8 in 'London's Foundations' 2012)

What recognition is given to geodiversity?

Geodiversity is recognised as an important aspect of nature conservation in its own right and it is a material consideration within planning decisions. This is reflected in national planning policy (*National planning policy framework*⁵ - NPPF) and related legislation (*Wildlife & Countryside Act 1981*, *Countryside & Rights of Way Act 2000*). In particular, the planning system should protect and enhance valued landscapes, geological conservation interests and soils;

Recognition for sites of importance for geodiversity

In Great Britain, key sites of national geological importance were identified through the Geological Conservation Review (GCR), an audit mainly completed between 1977 and 1990 to provide a representation of the great diversity of British geology. GCR sites were selected on the basis of their scientific value and the majority of these sites have since been designated SSSIs by the relevant country statutory nature conservation agency and receive legal protection.

The *Countryside & Rights of Way Act* (2000) strengthened existing protection for SSSIs with a stronger emphasis on management as well as conservation and with third party damage to such sites now being a prosecutable offence. Natural England is responsible for the network of SSSIs in England. The 'best' SSSIs for public enjoyment may also be designated National Natures Reserves (NNRs).

⁵ *National planning policy framework*, updated December 2024 (with corrections in February 2025) is online at <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

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There are seven geological SSSIs within Greater London, which are:

GLA 1	Abbey Wood	Bexley	GLA 33	Elmstead Pit	Bromley
GLA 14	Gilbert's Pit	Greenwich	GLA 34	Harefield Pit	Hillingdon
GLA 18	Harrow Weald	Harrow	GLA 35	Wansunt Pit	Bexley
GLA 19	Hornchurch Cutting	Havering			

Non-statutory designations currently include Local Geological Sites. This term has been generally adopted to follow the recommendations within Defra guidance⁶, local sites being selected on four national criteria:

- The value of a site for educational purposes in life-long learning;
- The value of a site for study by both professional and amateur Earth scientists;
- The historical value of a site in terms of important advances in Earth science knowledge, events or human exploitation;
- The aesthetic value of a site in the landscape, particularly in relation to promoting public awareness and appreciation of Earth sciences.

Significantly, the guidance produced by Defra on local sites gives the same weighting to geological and geomorphological sites as it does to wildlife (species and habitats) sites. In contrast to GCR sites, a wider range of criteria is taken into consideration in selecting local sites, including the value of the site for education, life-long learning, history and aesthetics; with consideration also given to access and safety issues. Defra guidance indicates that: '*local site systems should select all areas of substantive value including both the most important and the most distinctive*'. Local sites with a high degree of natural interest and/or of a high value for education may also be declared and managed as a Local Nature Reserve (LNR) by local authorities and are then afforded legal protection (as amended by the *Natural Environment and Rural Communities Act 2006*).

In London, Sites of Importance for Nature Conservation (SINCs) distinguishes those of London-wide importance from local borough-wide and from local importance. The designation of geological sites in London is a similar approach. RIGS are Regionally Important Geological or Geomorphological Sites at the London region level while LIGS are Locally Important Geological and Geomorphological Sites at the borough level.

The site system is managed by local partnerships with the London Geodiversity Partnership having responsibility for the identification, designation and promotion of management of London's RIGS and LIGS.

An initial geodiversity audit for London was reported in the first *London's Foundations*⁷, with fourteen candidate RIGS and fifteen candidate LIGS identified. Further potential sites were also identified. This was updated in 2012 with a revised *London's Foundations* (see footnote 3 above) as supplementary planning guidance by the GLA with the assistance of the London Geodiversity Partnership and fourteen further RIGS were proposed, with nine LIGS being deleted after re-evaluation and a further nine being proposed.

Since then a further four RIGS and eighteen LIGS have been added giving a total 30 RIGS and 35 LIGS.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) of December 2024 is the latest revision (see footnote 5 above). It includes reference to further guidance being provided in Circular 06/2005: *Biodiversity and Geological conservation – Statutory obligations and their impact within the planning system*, which has not been withdrawn⁸.

⁶ Defra (2006) *Local Sites Guidance on their Identification, Selection and Management*: <https://webarchive.nationalarchives.gov.uk/20130402204735/http://archive.defra.gov.uk/rural/documents/protected/localsites.pdf>

⁷ Greater London Authority (March 2009) *London's Foundations: Protecting the Geodiversity of the Capital*,

⁸ <https://www.gov.uk/government/publications/biodiversity-and-geological-conservation-circular-06-2005>

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The NPPF indicates that planning policies should aim to prevent harm to geological conservation interests; recognising the hierarchy of international, national and locally designated sites. Paragraph 187 states that *Planning policies and decisions should contribute to and enhance the natural and local environment by:*

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

NPPF continues in paragraph 192 to *protect and enhance biodiversity and geodiversity, plans should:*

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁹; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation¹⁰; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

Recognition for geodiversity within London

This London GAP suggests a process for designating these sites, enabling them to be formally recognised by the local boroughs and become a material consideration in planning decisions. Therefore, once RIGS and LIGS are designated in London, the management of these sites can be monitored.

The *London Plan 2021* is the current plan for Greater London. The geodiversity policy (G9) and explanatory paragraphs are:

Policy G9 Geodiversity

A In Development Plans, boroughs should:

- 1) establish clear goals for the management of identified sites to promote public access, appreciation and interpretation of geodiversity
- 2) ensure geological sites of European, national or regional conservation importance are clearly identified.

B Development proposals should

- 1) make a positive contribution to the protection and enhancement of geodiversity
- 2) protect Regionally Important Geological Sites (RIGS)
- 3) give Locally Important Geological Sites (LIGS) the level of protection commensurate with their importance.

8.9.1 Geodiversity is a fundamental cornerstone of our everyday lives. Geology affects where we build, how we construct buildings and how we deliver associated services. It influences the design and layout of infrastructure, filters our drinking water and underpins the landscape around us. Geodiversity cannot be replaced or recreated (other than on geological timescales).

⁹ Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

¹⁰ Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.

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- 8.9.2 London's geodiversity sites are shown in Figure 8.3. Geodiversity sites with existing or proposed European or national designations are Sites of Special Scientific Interest and subject to statutory protection. Boroughs should protect and enhance RIGSs and LIGSs through their Development Plans. The Mayor will continue to work with the London Geodiversity Partnership to promote geodiversity and will prepare updated Supplementary Planning Guidance as necessary.
- 8.9.3 Geodiversity sites should be recognised for their importance in providing **habitats for biodiversity** and in allowing delivery of ecosystem services.
- 8.9.4 Where appropriate, access should be provided to geodiversity sites, although it is recognised that this is not always desirable. Geological sites will require appropriate **maintenance regimes** to ensure that these assets are properly protected and managed.

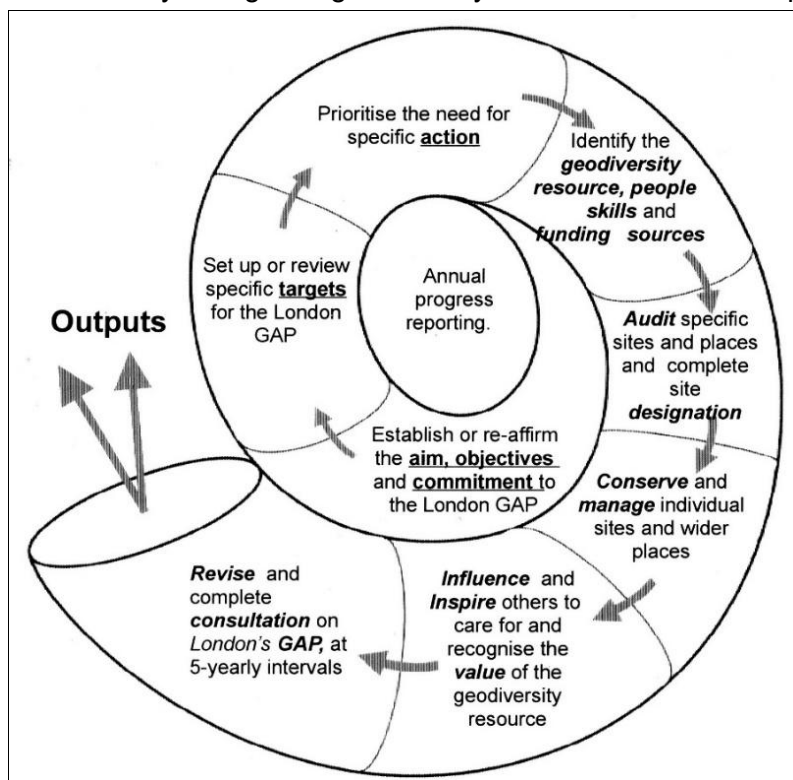
It is uncertain when *London's Foundations* will be updated. LGP amended the original sites in 2021 adding three new RIGS and seventeen new LIGS since the 2012 version. The Greater London Authority has agreed to signpost the latest site assessments, which are on the LGP and GiGL websites. One new RIGS and LIGS have been added in 2024. More are very likely to be added during the life of this LGAP.

What is a Local Geodiversity Action Plan (LGAP)?

An action plan breaks down large complex initiatives into an aim, objectives, targets and achievable actions. It assists in focussing on tasks that matter; in the case of an LGAP, on activities that are going to assist with understanding, conserving and sustainably using the geodiversity resource. Partnership working, including a lead organisation, is critical to the success of an LGAP. An English Nature (now Natural England) research report¹¹ provides the rationale for LGAPs, drawing on the experience of Local Biodiversity Action Plans and suggesting models for LGAPs. A guidance note was published based on this work and a seminar held in 2004.

Whilst it is important to set targets and actions within a timeframe, many actions are part of ongoing activities such as:

- auditing geodiversity sites and places;
- designating sites;
- contributing to management plans;
- undertaking management and conservation activity; and
- influencing and inspiring others to value, care for and make use of the geodiversity resource.



The diagram illustrates this cyclical nature of an LGAP and the need to monitor progress, report on activity and revise the LGAP at suitable intervals. An annual report on progress is suggested with a complete review of the London GAP taking place at 5-yearly intervals.

¹¹ Burek, C. & Potter, J. 2006. Local Geodiversity Action Plans - Setting the context for geological conservation. *English Nature Research Reports*, No 560, ISSN 0967-876X. (<http://publications.naturalengland.org.uk/file/127017>)

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Why develop a London GAP?

Three London GAPs were developed by the London Geodiversity Partnership in 2009-2013, 2014-18 and 2019-2024 to raise the value placed on the geodiversity resource in London and ensure its sustainable use in keeping with policy. The Partnership has reported annually on progress with its implementation and this revision takes the London Gap forward over the years 2025-2029. A summary of the progress achieved during 2019-2024 is contained in Annex 2. In addition, a national 'driver' has been developed – the UK Geodiversity Action Plan (the UKGAP)¹², which provides a shared context and direction for geodiversity action and a means of celebrating success. The London GAP contributes towards the aims and objectives of the UKGAP.

What is the role of the London Geodiversity Partnership?

The London Geodiversity Partnership has taken the lead in developing and co-ordinating the London GAP. However, delivering the London GAP across a broad spatial scale cannot be achieved without the collaborative work of stakeholder organisations. Geodiversity partnerships seek to share good geodiversity practice, influence regional policy and establish cross-regional working for geodiversity. Whilst the geodiversity partnerships are all developing their own ways of working, they do have a number of common functions which are:

- To provide a regional network for organisations, groups and individuals involved in geodiversity;
- To provide a regional voice and profile for geodiversity;
- To influence regional planning, policy development and practice;
- To share good practice; and,
- To work to find opportunities for cross-regional activities.

One of the important ways that LGP has developed is the process of enshrining RIGS and LIGS into Borough development plans. The flow diagram on the next page illustrates this process. The diagram is part of the fuller description that is given on the LGP website: <https://londongeopartnership.org.uk/wp/wp-content/uploads/2022/04/LGP-Planning-Framework-and-Designation-revised-2022-03.pdf>. This will be updated when the next London Plan is adopted (probably in 2027).

Who can we contact to find out more?

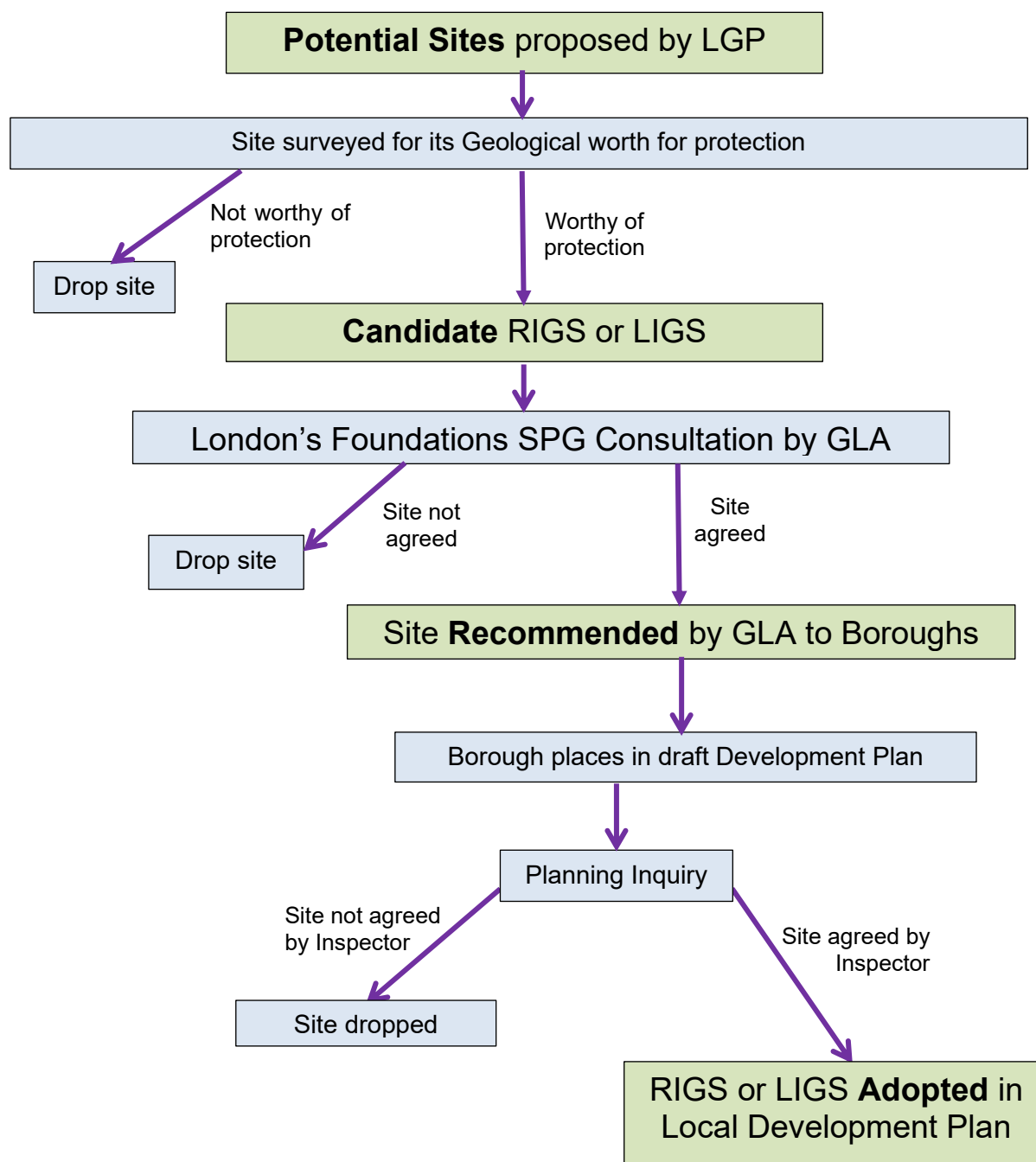
For further information, please contact: info@londongeopartnership.org.uk.

¹² The current UKGAP can be viewed at: <http://www.ukgap.org.uk/downloads/ukgap.pdf>

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London Geodiversity Partnership Site Designation

The approach below builds on *London's Foundations* (London Plan Guidance, March 2012)

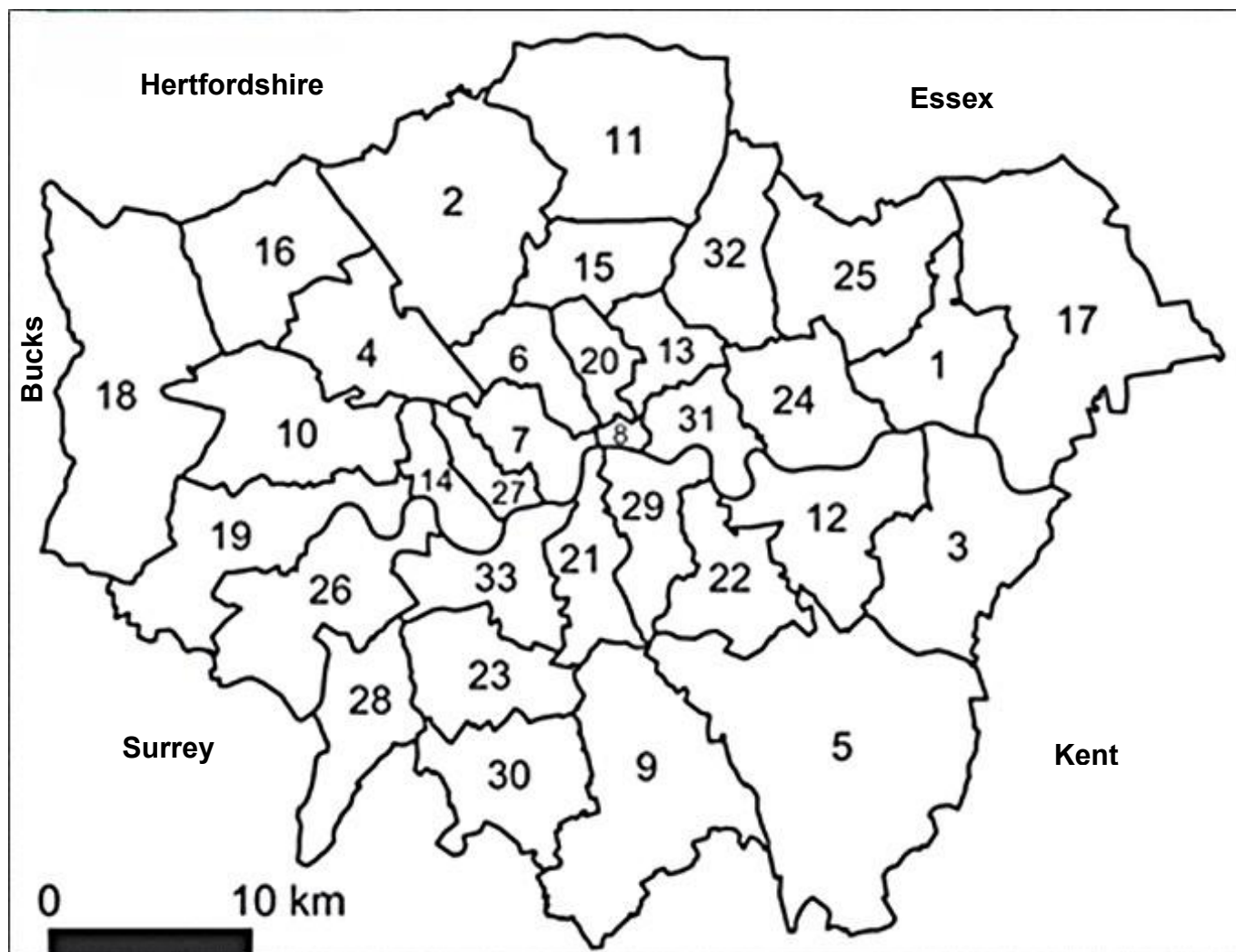


There are four stages of designating a site: **potential**, **candidate**, **recommended** and **adopted**. The flow chart refers to the process from potential to a borough adopting a local plan.

Approach agreed 2 September 2015
Updated to clarify 28 April 2021

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The London GAP covers the London Boroughs



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1 Barking & Dagenham	9 Croydon	17 Havering	25 Redbridge
2 Barnet	10 Ealing	18 Hillingdon	26 Richmond
3 Bexley	11 Enfield	19 Hounslow	27 Kensington & Chelsea
4 Brent	12 Greenwich	20 Islington	28 Kingston upon Thames
5 Bromley	13 Hackney	21 Lambeth	29 Southwark
6 Camden	14 Hammersmith & Fulham	22 Lewisham	30 Sutton
7 City of Westminster	15 Haringey	23 Merton	31 Tower Hamlets
8 City of London	16 Harrow	24 Newham	32 Waltham Forest
			33 Wandsworth

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The aim and objectives of the London GAP

To provide a framework for understanding, conserving and using the unique wealth of geodiversity resources found within our capital, so that social, economic and environmental benefits are provided to London's urban communities and many visitors.

The UKGAP provides six themes, which between them set the focus for all the actions generally undertaken as part of an LGAP. These UKGAP themes have been tailored to the requirements of the London Region. In this way, the contribution the London GAP makes to national understanding and sustainable use of geodiversity can be directly measured and successes easily identified. Targets and actions within this third edition of the London GAP (shown on pages 11 to 15) are grouped under the six objectives.

The objectives in summary

Objective 1: Increase understanding of the geodiversity of London

Encourage a better understanding of all aspects of geodiversity (geology, geomorphology, hydrology and soils) and the wider role that geodiversity plays in our environment, through research, audit and review, ensuring that geology is linked through soils to the ecology and hydrology of London.

Objective 2: Manage and conserve the geodiversity of London

Support the identification and designation of geodiversity places and support the management and conservation of geodiversity within the context of the wider environment.

Objective 3: Deliver sustainable social, economic and environmental benefits for London

Encourage better utilisation and understanding of geodiversity benefits, widening the value and relevance people place on geodiversity. Encourage the better use of geodiversity in understanding natural processes and helping make decisions on future environmental management.

Objective 4: Promote and care for London's geodiversity

Support the wider involvement of people in geodiversity through accessible life-long learning, geo-tourism and conservation activities.

Objective 5: Sustain geodiversity activities in London

Increase resources available to support geodiversity-related activities and encourage the development of the London GAP.

Objective 6: Influence London-wide and Borough planning and environmental policies

Encourage the development, implementation and sharing of geodiversity policies at all levels and to achieve much greater integration of geodiversity into existing and future policies. Be an active part of the Local Nature Recovery Network.

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How to read this action plan

The plan is presented as tables showing the targets that have been set under each of the six objectives and the corresponding actions. Also note that there is no priority order implied by the order of the six objectives but there are priorities within each objective.

OBJECTIVE	TARGETS	ACTIONS
The objectives of the London GAP are generic and would generally remain consistent from one revision of the plan to the next, providing the means to realising the London GAP aim. They provide the framework for the rest of the plan; the core principles behind the work that is proposed	Targets relate directly to the objectives under which they are placed (although there are often links to other objectives). They describe the end result; what is wanted to be achieved. They provide a means of monitoring progress.	Actions identify the work that needs to be completed to meet each target. An action may contribute to more than one target and where that is the case, cross references are provided. Some actions may need to be completed before others can commence. Again, where that is the case, cross references are provided. Actions are colour coded according to priority, those of highest priority (largely ongoing actions) are in red type, those of medium priority are in brown type and those of lowest priority are in green type

OBJECTIVE 1

Increase understanding of the geodiversity of London

TARGETS	ACTIONS
1.1. Extend the audit of London's geodiversity places to identify sites of local, national and international importance in addition to those identified in <i>London's Foundations</i> .	1.1a. Continue fieldwork and desk study research to extend the selection of geodiversity sites in London, particularly in those parts currently lacking in them (e.g. Central and South-west London). 1.1b. Update and disseminate the report on the audit of London's geodiversity (<i>London's Foundations</i> and LGP website).
1.2. Complete an audit of geodiversity archives and resources, including: Government institutions, national and borough collections In museums, libraries, archive centres, galleries and educational institutions; bibliography; ongoing projects; and a network of people with key skills	1.2a. Continue contacting relevant departments and organisations to establish national and local borough geodiversity archives and resources. 1.2b. Include historical and geological publications, websites, photographic imagery, paintings and artefacts, specimens, bibliography, ongoing projects and their available use; and people with key skills. 1.2c. Establish and maintain a register of 'geodiversity archives and resources'
1.3. Complete research to understand better the building stones resource within London's buildings.	1.3a. Update and disseminate reports on <i>Building London</i> on the Partnership's website as they become available.

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OBJECTIVE 2

Manage and conserve the geodiversity of London

TARGETS	ACTIONS
2.1. Formally designate the sites recommended in <i>London's Foundations</i> (2012) along with any further sites identified and assist in increasing their protection from the adverse effects of development	2.1a. Publish any necessary updates to proposed sites through the Partnership website. 2.1b. Attend forums in London for parks, biodiversity and local nature recovery partnerships as required, promoting designation of RIGS and LIGS and giving advice on sites. (See also objective 6 on planning and environmental policies.) 2.1c. Update the information on geodiversity sites at Greenspace Information for Greater London (GiGL), the capital's environmental records centre.
2.2. Establish a set of accessible and suitable geodiversity places for use by local communities and visitors for leisure, education and research; and that are integrated with other places of interest.	2.2a. Inspect and report on all recommended sites at least once during the period of the action plan to identify any cause for concern with regard to the accessibility or visibility of the features of geodiversity interest. 2.2b. Promote improvement of site condition by an appropriate body at any London SSSI in an unfavourable condition. 2.2c. In partnership with the owners and boroughs concerned assist in producing a management plan for each of the geodiversity places where action is needed. This should include a risk assessment, appropriate information boards and displays and a code of conduct for visitors. 2.2d. Promote and contribute to necessary conservation activities (shrub clearance, access arrangements and provision of information) at geodiversity sites found to be in poor condition. 2.2e. Involve local groups in conservation and educational activities 2.2f. Identify suitable views from or of geodiversity sites across London, including those from iconic buildings. 2.2g. Identify suitable links between geodiversity sites such as along bus and tube routes and the River Thames.

OBJECTIVE 3

Deliver sustainable social, economic and environmental benefits for London

TARGETS	ACTIONS
3.1. Utilise and promote the social health and well-being benefits of geodiversity through developing geotrails in partnership with other organisations	3.1a. Identify other organisations, together with specific key staff willing to be involved in developing geotrails, e.g. the U3A "Bus-pass geology" project or at and with parks.

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TARGETS	ACTIONS
	3.1b. Develop further walks, making use of geodiversity sites, the available building stone resource and links to history, geomorphology, landscape and archaeology. 3.1c. Identify the potential of adding geodiversity to the attractions of existing walking routes, such as the Capital Ring, the London LOOP, the Thames Path and the Green Chain Walks, the Hillingdon Trail, Dollis Valley Greenway, Lea Valley Walk..
3.2. Encourage 'geotourism' by promoting London's geodiversity, including its national collections, art galleries and building stone architecture, as a visitor attraction.	3.2a. Using the <i>Building London</i> report and the report on park and garden design, promote and develop greater awareness of building stone trails, geotrails and geological exhibitions. 3.2b. Lead geotrails and building stone walks and in conjunction with other bodies, e.g. London Natural History Society, Friends of parks, City of London, Geologists' Association and U3A groups. 3.2c. Advertise geological events via the LGP website.
3.3. Encourage the consideration of 'geodiversity gain' within the development planning process, particularly for large-scale projects. 'Geodiversity gain' could include recording of temporary exposures and/or geodiversity end-uses within the completed development or quarry restoration.	3.3a. Identify opportunities to work with local communities, major developers and mineral operators to promote the consideration of geodiversity (e.g. continue contacts with the Thames Tideway Tunnel and London Underground Ltd). 3.3b. Ensure the London Geodiversity Partnership provides a consultation response to proposed major development and infrastructure projects, and mineral extraction sites in London.

OBJECTIVE 4

Promote and care for London's geodiversity

TARGETS	ACTIONS
4.1. Promote London's geodiversity and its importance to London boroughs and local nature partnerships by making geodiversity data available; and, by explaining how key geodiversity assets might be utilised.	4.1a. For each London Borough identify an appropriate geodiversity focus and key geodiversity assets. 4.1b. Make use of the register of geodiversity archives and resources to update the gazetteer including site-specific information on the SSSIs, RIGS, LIGS and Sites of geological interest (SGI). Make it available on the LGP website.
4.2. Manage the London Geodiversity Partnership website	4.2a. Update the website as additional resources and information become available. In particular, update the gazetteer of geodiversity sites in London and the overview of London geology. 4.2b. Promote the information on LGP website with local organisations. 4.2c. Identify other websites where links could be made to promote the site, including tourist pages. Link to other geoconservation websites and members of the partnership.

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TARGETS	ACTIONS
4.3. Encourage the sharing of good practice and engage a wide audience in the conservation of geodiversity features in London.	4.3a. Contribute to the London Wildlife Site Board, London Friends of Greenspaces Network and London Nature Recovery Strategy to share and promote geoconservation good practice with those involved in biodiversity and parks management. 4.3b. Contribute to the London National Park City to ensure that geodiversity becomes an integral part.
4.4. Encourage greater use of existing geodiversity places for life-long learning.	4.4a. Identify key people within education including London's outdoor learning contacts, Earth Science Teachers' Association and Rockwatch. Using assets already identified, make use of these people and materials to create and promote events for all ages. 4.4b. Identify key geomorphological sites, such as river restoration projects where the local community (including schools) can observe and monitor change in their local environment.
4.5. Develop and utilise links between geodiversity, landscape, history, art, architecture and archaeology.	4.5a. Include geodiversity-themed photos, paintings or exhibits within trails and link these to places of interest. 4.5b. Identify supportive local artists and photographers, and art galleries to engage in developing geodiversity aspects to exhibitions and activities.

OBJECTIVE 5 Sustain geodiversity activities in London

TARGETS	ACTIONS
5.1. Maintain and continue to grow the London Geodiversity Partnership to ensure links to the building stone resource and geodiversity recording activities are represented	5.1a. Identify appropriate organisations that could contribute usefully and invite them to join the Partnership
5.2. Continue to develop links with other partners	5.2a. Identify organisations with which the Partnership can work and establish appropriate working relationships.
5.3. Gain funding so that other actions in this GAP can be progressed.	5.3a. Maintain contacts with Natural England and the Heritage Lottery Fund to identify funding opportunities. 5.3b. Maintain a list of funders and potential resources for geodiversity activities and prepare applications for funding. 5.3c. Approach the corporate sector to fund specific events and activities.
5.4. Monitor and report on progress, sustainability and success of the London GAP	5.4a. Continue to develop the annual reporting procedure and the mechanism for a 5-yearly review of the London GAP.

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OBJECTIVE 6

Influence London-wide and Borough planning and environmental policies

TARGETS	ACTIONS
6.1. Support and influence the geodiversity policy within the London Plan and the London Nature Recovery Strategy (LNRS)	6.1a. Engage with planning consultations on the London Plan, its associated London Plan Guidance (LPG), such as <i>London's Foundations</i> and development of LNRS. Work on investigating new sites and submitting them to revisions of LPG, updating the LGP website with a link from the GLA website.
6.2. Influence national planning and environmental policies	6.2a. Respond to national consultations on planning and environmental policies that affect geodiversity.
6.3. Influence geodiversity policy within London borough development plans.	6.3a. Maintain contact with London boroughs to recommend and conserve statutory sites. 6.3b. Scrutinise London borough planning documents to identify the existence or lack of geodiversity policies and designated local geological sites. 6.3c. Provide a consultation response to relevant regional and local plans and policies and planning applications.
6.4 Influence geodiversity policy within other plans and strategies affecting London.	6.4a. Contribute to consultation on the Mayor's other policy documents, such as the <i>London Environment Strategy</i> . 6.4b. Identify other plan-making organisations such as the regional health and economic bodies as well as Nature Partnerships and Nature Improvement Areas.

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ANNEX 1: Regionally and locally important geological and geomorphological sites in London

The first two tables below list RIGS and LIGS set out in *London's Foundations*, (2012).

Table 3 gives the Candidate RIGS and LIGS agreed by LGP since 2012. It is proposed that they are incorporated in the next version of *London's Foundations*.

Table 4 lists the Sites of Geological Interest that have been identified.

Table 1: RIGS at 2012			
No.	Name	Status	Borough
GLA 3	Beckenham Place Park	Recommended	Lewisham
GLA 4	Chelsfield Gravel	Recommended	Bromley
GLA 6	Croham Hurst	Recommended	Croydon
GLA 7	Crystal Palace Geological Illustrations	Recommended	Bromley
GLA 8	Dog Rocks	Adopted	Greenwich
GLA 17	Happy Valley	Recommended	Croydon
GLA 20	Horsenden Hill	Recommended	Ealing
GLA 22	Keston Common	Recommended	Bromley
GLA 26	Riddlesdown Quarry	Recommended	Croydon
GLA 29	The Gravel Pits, Northwood	Recommended	Hillingdon
GLA 30	Cray Valley Golf Course Sand Pit	Recommended	Bromley
GLA 31	North End Pit (in Erith Park development.)	Recommended	Bexley
GLA 32	High Elms Dene Hole	Recommended	Bromley
GLA 36	Pinner Chalk Mines	Recommended	Harrow
GLA 37	Marks Warren Farm, Romford	Recommended	Barking & Dagenham
GLA 38	Chalky Dell, Lesnes Abbey Woods	Recommended	Bexley
GLA 39	Erith Submerged Forest and Saltings	Recommended	Bexley
GLA 40	Chislehurst Caves	Recommended	Bromley
GLA 41	Klinger Pit, Foots Cray	Recommended	Bromley
GLA 42	Kenwood House Quarry	Recommended	Camden
GLA 43	Springfield Park	Recommended	Hackney
GLA 44	Highgate Wood & Queens Wood	Recommended	Haringey
GLA 45	Bedfords Park, Havering Ridge	Recommended	Havering
GLA 46	Rainham Submerged Forest	Recommended	Havering
GLA 47	South Hall Farm/Spring Farm Complex	Recommended	Havering
GLA 48	Thames Foreshore, Isleworth	Recommended	Hounslow
GLA 49	Fairlop Quarry Complex (Hainault Quarry)	Recommended	Redbridge
GLA 50	Knighton Wood	Recommended	Redbridge

RIGS as shown in *London's Foundations* (2012), figures 25, 26 and 26b

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Table 2: LIGS at 2012

No.	Name	Status	Borough
GLA 2	Avenue House	Recommended	Barnet
GLA 5	Chingford Hatch	Recommended	Waltham Forest
GLA 9	Dry Valley natural landform	Adopted	Sutton
GLA 12	Finsbury Gravel	Recommended	Islington
GLA 15	Hainault Forest Country Park	Recommended	Redbridge
GLA 24	Old Gravel Pit, Blackheath (Eliot Pit)	Recommended	Lewisham
GLA 25	Putney Heath	Recommended	Wandsworth
GLA 51	Parish's Pit, Erith	Recommended	Bexley
GLA 52	Bromley Palace Park, Pulhamite & St. Blaise's Well	Recommended	Bromley
GLA 53	Charmwood Farm Chalk Mine	Recommended	Bromley
GLA 54	Sundridge Park Manor Pulhamite grotto	Recommended	Bromley
GLA 55	Trent Park	Recommended	Enfield
GLA 56	Bleak Hill Sandpit	Adopted	Greenwich
GLA 57	Wickham Lane Brick works Complex	Adopted	Greenwich
GLA 58	Coldfall Wood	Recommended	Haringey
GLA 59	Pole Hill	Recommended	Waltham Forest

LIGS as shown in *London's Foundations* (2012) Figures 27 & 28

Table 3: Candidate RIGS and LIGS agreed by LGP since 2012

No	Name	Borough	Type
GLA 60	Bourne Wood Thanet Sand Quarry	Bromley	RIGS
GLA 61	Spring Park, Threehalfpenny Wood, Sparrows Den	Bromley and Croydon	RIGS
GLA 62	Sipson Lane complex	Hillingdon	RIGS
GLA 63	Barn Hill, Wembley	Brent	LIGS
GLA 64	Waterlow Park	Camden	LIGS
GLA 65	Blackheath Pits (Vanbrugh Pit)	Greenwich	LIGS
GLA 66	Tripcock Ness	Greenwich	LIGS
GLA 67	Summerhouse Lane Chalk Pit	Hillingdon	LIGS
GLA 68	Bedfont Lakes	Hounslow	LIGS
GLA 69	Wanstead Flats	Redbridge	LIGS
GLA 70	Richmond Park	Richmond	LIGS
GLA 71	Hollow Ponds, Leyton Flats (Snaresbrook Park)	Waltham Forest	LIGS
GLA 72	Monken Hadley Common	Barnet	LIGS
GLA 73	Greenwich Park	Greenwich	LIGS
GLA 74	Springwell Farm	Hillingdon	LIGS
GLA 75	Watt's Common	Hillingdon	LIGS
GLA 76	Rockingham Anomaly	Southwark	LIGS
GLA 77	Park Hill Chalk Pit	Sutton	LIGS
GLA 78	Wimbledon Common	Merton	LIGS

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Table 3: Candidate RIGS and LIGS agreed by LGP since 2012

No	Name	Borough	Type
GLA 79	Buckthorne Cutting	Lewisham	LIGS
GLA 80	Gunnersbury Park	Ealing	LIGS
GLA 81	Evolution Garden, Natural History Museum	Kensington & Chelsea	RIGS
GLA 82	Osterley Park	Hounslow	LIGS

Table 4: Sites of Geological Interest

Nº	Site	Borough
SGI 1	Whalebone Lane ice wedge polygons	Barking & Dagenham
SGI 2	Barnet Physic Well	Barnet
SGI 3	Lesnes Abbey	Bexley
SGI 4	Grange Brick & Tile Works, Willesden Green	Brent
SGI 5	Gordon Square sarsen	Camden
SGI 6	University College Hospital Monolith & Shadows	Camden
SGI 7	Memorial to Siege of Malta	City of London
SGI 8	Hanger Hill Park	Ealing
SGI 9	Hanwell Sarsen	Ealing
SGI 10	Shooters Hill	Greenwich
SGI 11	Thames Barrier	Greenwich
SGI 12	Blackwall Drift Filled Hollow	Greenwich and Tower Hamlets
SGI 13	Pinner Hill Golf Course	Harrow
SGI 14	Caledonian Park	Islington
SGI 15	Brick and tile kiln, Walmer Road, Notting Hill	Kensington & Chelsea
SGI 16	Ladywell	Lewisham
SGI 17	New Cross Gate Cutting Nature Reserve	Lewisham
SGI 18	Bow Creek Meanders	Newham and Tower Hamlets
SGI 19	City of London Cemetery, Wanstead	Newham
SGI 20	Fairlop Waters Country Park	Redbridge
SGI 21	The Ilford Mammoth	Redbridge
SGI 22	Burgess Park lime kiln	Southwark
SGI 23	Rockingham Anomaly (<i>Candidate LIGS – GLA 76</i>)	Southwark
SGI 24	<i>Walking the Dog</i> sculpted glacial erratic	Southwark
SGI 25	Carshalton Park: Water features	Sutton
SGI 26	Tooting artesian parish pump	Wandsworth
SGI 27	Tooting Bec Common fossilised tree	Wandsworth
SGI 28	Fossils of Trafalgar Square	Westminster
SGI 29	York Watergate	Westminster
SGI 30	William Smith's House, 15 Buckingham Street	Westminster
SGI 31	Bromley Millennium Rocks	Bromley

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Table 4: Sites of Geological Interest		
Nº	Site	Borough
SGI 32	Millennium Stone Circle	Lewisham
SGI 33	Regent's Park Fossil Trees	Camden
SGI 34	Landline, Hanover Square	Westminster
SGI 35	Shri Sanatan Hindu Mandir	Brent
SGI 36	The Whetstone & The Griffin Public House	Barnet
SGI 37	Reinstatement of Constable's Branch Hill Pond	Camden
SGI 38	Harrow Sarsen Boulders	Harrow
SGI 39	Ruislip and Eastcote Sarsen Boulders	Hillingdon
SGI 40	'Swivel' St Giles Square	Camden
SGI 41	Harmondsworth Great Barn	Hillingdon
SGI 42	Sarsen Boulder in Lampton Park	Hounslow
SGI 43	Pulhamite Rockwork, Battersea Park SW11 4NJ	Wandsworth

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ANNEX 2: Progress in implementing the London GAP

Journey to the new Action Plan

London's Foundations, the London Plan Implementation Report, was published in March 2009 and officially launched in October 2009 by the London Geodiversity Partnership at an event at Charlton House and Gilbert's Pit. Following this, London's Geodiversity Action Plan was developed during 2009/10 by Capita Symonds on behalf of the Partnership. Consultation on a draft was undertaken in early 2010 and the Action Plan for 2009-13 was launched by the Partnership at Kenwood House in October 2010. The Action Plan was reviewed by the Partnership and revised versions produced in 2011 and 2012.

A successful workshop "*Overground – Underground: London's geodiversity for London's people*" was held in February 2013 at the Horniman Museum. This led to the Action Plan for 2014-18. A second workshop was held in September 2018 at University College London, when people from a large variety of groups discussed the achievements and how to advance Geodiversity in London. This appendix summarises what has been achieved by the Partnership to meet the objectives of the Action Plan 2019-2024.

In September 2024, another successful workshop was held, this time at Lesnes Abbey Lodge, which has led to this plan for 2025-2029.

Summary of progress since 2018

Objective 1: Increase our understanding of the geodiversity of London

- Identified and visited a new RIGS and four LIGS (GLA 78 to 82 in Appendix 3) to become Recommended sites for the next version of *London's foundations*.
- Identified and visited twelve new Sites of Geological Interest (SGI 31 to 43 in Appendix 4)
- An updated Appendix 5 of London's Foundations has been placed on LGP website. This is now linked from the GLA website <https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/london-plan-guidance-and-spgs/londons-foundations>
- The Partnership's website has been kept up-to-date to include all geological sites identified in London.
- Information on geodiversity updated on the GiGL website, including all the new RIGS and LIGS, in reports to enquiries from developers, consultants and planning authorities.

Objective 2: Manage and conserve the geodiversity of London

- The London Wildlife Sites Board and GiGL Advisory Panel have been regularly attended; LGP has been involved in development of London Nature Recovery Strategy (LNRS).
- Undertaken conservation days at Gilbert's Pit SSSI (GLA 14), Harefield SSSI (GLA 34) and at Riddlesdown (GLA 26), with the involvement of local groups.
- Most of the SSSIs, RIGS and LIGS have been visited in the last five years to ascertain their condition and any need for conservation work.
- Liaised with Friends of Crystal Palace throughout their conservation work on the dinosaurs.
- Leaflets have been produced with the boroughs and local groups for Springfield Park (GLA 43) in Hackney, for Lesnes Abbey Woods (GLA 1 and 38) in Bexley and Coldfall Wood (GLA 58) in Haringey.
- Produced information boards and panels that are reproduced on the LGP website
- Continued liaison with London Natural History Society (LNHS), the Geologists' Association, the City of London Corporation, the Royal Parks, the London Wildlife Trust and other organisations.
- Undertake an annual walk with LNHS at one of the sites to develop the links between geology, soils and biodiversity of the area.
- Develop and lead geotrails with local groups in numerous parts of London, many of which are published on the LGP website.

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Objective 3: Deliver sustainable social, economic and environmental benefits for London

- Published geotrails on the LGP website in Waltham Forest and Sydenham to Dulwich. Various involved the Royal Parks, City of London, local Friends groups and LNHS.
- Identified geological points of interest on Green Chain Walk, Capital Ring and London Loop.
- Promoted the Partnership at the GA Festival of Geology with a stall and led walks organised for the Festival, at the GiGL Day of Nature, at Lesnes Abbey, with Friends Groups at Highgate Woods, Lauderdale House (Waterlow Park).
- Led walks in Earth Science (October) week and GeoWeek (May)
- Led walks for Heath Hands on Hampstead Heath, Friends of Queens Wood, Coldfall Wood, Abbey Wood

Objective 4: Promote and care for London's Geodiversity

- SSSI's, RIGS and LIGS separately identified on Partnership website's map of sites. The 43 SGI's also posted on the website.
- Articles in the GA quarterly magazine on events of LGP
- Articles in the GiGLer newsletter on the work of London Geodiversity Partnership
- Exhibited at the annual Geologists' Association Festival of Geology at Geological Society of London, Burlington House.
- SGI information sent to relevant bodies identified for each site.
- Website updated when appropriate and now have a Bluesky account.
- Articles published in the GA magazine on 'Art and Geology in the Wandsworth Climate Hub', The 'Visit by South Bank students to Gilbert's Pit', 'Westbourne Source Geotrail', 'Geotrail around Lesnes Abbey Wood'

Objective 5: Sustain geodiversity activities in London

- Developed a gazetteer of sites of geodiversity importance, which will be accessed via an interactive map on Partnership website.
- Active with GeoconservationUK and contributed a number of articles to its quarterly Newsletter.
- Contributed to English Geodiversity Forum and its charter.
- Worked with Natural England.

Objective 6: Influence London-wide and London borough planning and environmental policies

- Continued to liaise with GLA on preparation of the London Plan and London's Foundations.
- Representations made on various planning applications that affect geological sites
- Commented on developments to National Planning Policy Framework (NPPF).
- Commented on Boroughs' Local Plans when being renewed.
- Attended meetings of London Wildlife Sites Board and GiGL Advisory Panel.

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Consultation on the London Geodiversity Action Plan

A workshop was held on 6th September 2024 at Lesnes Abbey Lodge. There followed consultation on a draft of the action plan in January to April 2025. Both have influenced this final London Geodiversity Action Plan for 2025-2029

The London Geodiversity Partners

Amateur Geological Society, Birkbeck College alumni, Core Sample Project, Croydon Natural History and Scientific Society, Earth Science Education Forum, Environment Agency, GeoEssex, Geologists' Association, Greenspace Information for Greater London, Harrow and Hillingdon Geological Society, Historic England, Horniman Museum, Natural England, Natural History Museum, Open University Geological Society (London Branch), Quaternary Research Association, Tertiary Research Group, Trinity College Dublin, University College London

Associated Groups

British Geological Survey, GCG Consultants, Greater London Authority, London Natural History Society, London Wildlife Trust, Royal Parks

Images used in the plan

The iconic image of London on the Front Cover and range of images within the Banner have been used to illustrate the wealth of London's geodiversity (including the range of underlying rocks and deposits, recent 'finds' *in situ* and within museum collections, London-based geological resources, together with imported aggregates and building stones, geomorphological features, significant publications and engagement with people). Descriptions of these images and credits are given below.

Front Cover Image: City of London Skyline, including St Pauls, the newer buildings of London's City and the River Thames, the focus for London's initial development (Laurie Baker)

Banner Images: Blackheath Pebbles on Plumstead Common; Front cover of the 'London's Foundations' Supplementary Planning Guidance of 2012, with photo of Riddlesdown Chalk Quarry; Erith Fossil Forest; Ilford Mammoth; Pupils of Thorntree Primary School enjoying 'hands-on' activities at Gilbert's Pit; London Stock brick; Gilbert's Pit exposure at top of steps; Harefield geoconservation; Thames Barrier; Pulhamite at Battersea Park. (All photos taken by members of LGP.)

