

GLA 82 Osterley Park

Grid Reference: TQ 1474 7851, 1478 7847

Site Type: Exposures along lake edge

Site Area (hectares): <1 ha (park 217 ha).

Current use: Public park (grounds of Osterley House)

Site ownership: National Trust (134 ha) inc. exp.

Borough: London Borough of Hounslow

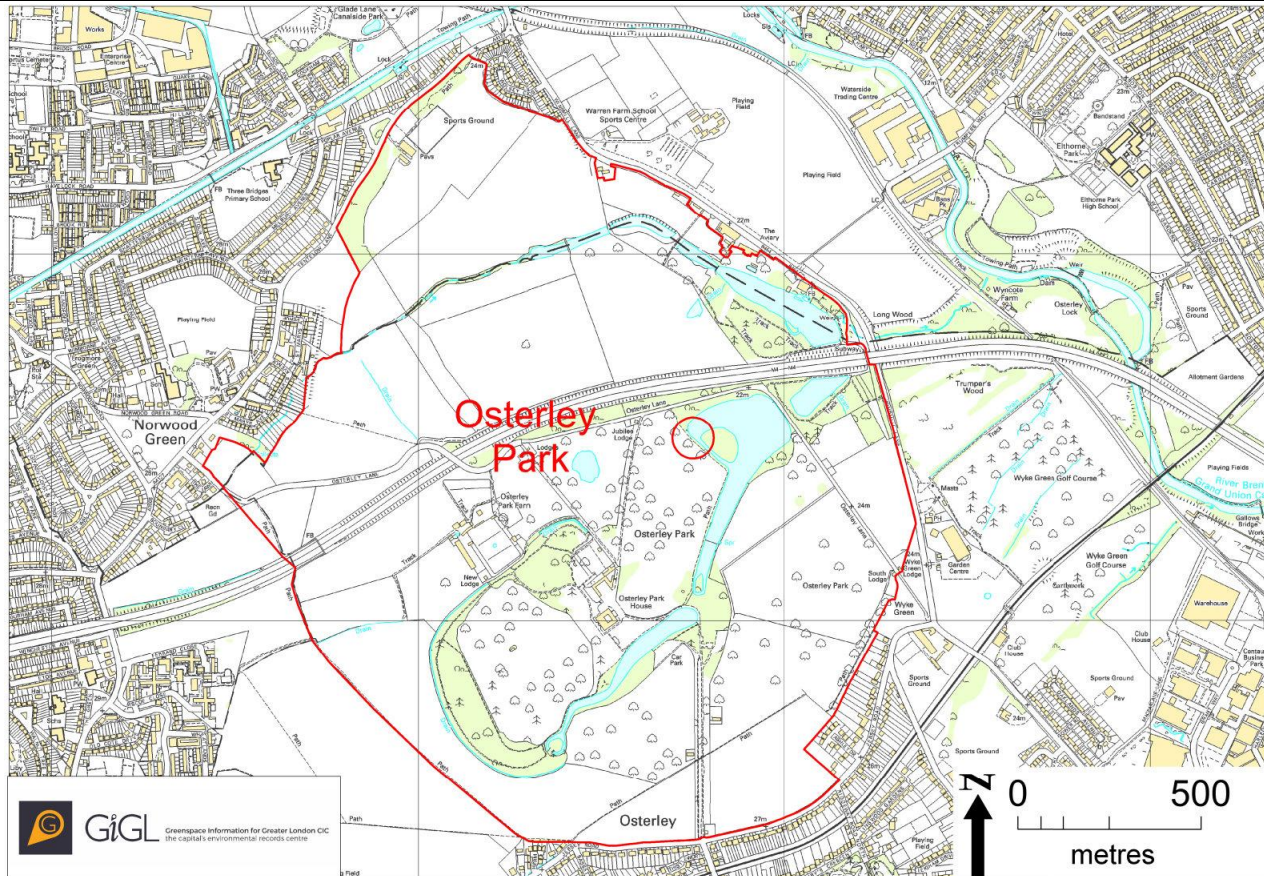
Field surveyors: Allan Wheeler

Date: 30 May 2023

Current geological designations: Proposed LIGS

Other scientific:

Site Map OS Topography © Crown Copyright



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Stratigraphy and Rock Types (at the exposure)

Time Unit: Quaternary (Late Pleistocene, 'Wolstonian' stage, mainly MIS 6)	Rock unit: Taplow Gravel Member (Maidenhead Formation, Thames Catchments Subgroup).
Rock Type: sand & gravel	Details: Flint gravel in a sandy matrix – clasts matrix supported in parts.
Time Unit: Paleogene (Eocene, Ypresian stage)	Rock Unit: London Clay Formation (Thames Group)
Rock Type: Clay	Details: The gravel rests on the London Clay which is not exposed.

Site Description

Osterley Park lies on the Paleogene (Eocene epoch) London Clay Formation (Thames Group); its surface outcrop is confined to areas immediately around the lakes but with no significant exposure. Elsewhere, the London Clay is covered with middle Pleistocene superficial deposits – the Taplow and Lynch Hill Gravel Members of the post-diversion Thames¹. Only the Taplow Gravel is exposed (the subject of this assessment). In the southern part of the park, the gravels are covered with the Langley Silt (Brickearth). The older Lynch Hill Gravel occurs mainly in the NW (surface at ~25-28m AOD) and to the S. The Taplow Gravel surface is ~22-25m AOD. The Taplow and Lynch Hill Gravels are mainly of MIS 6 and MIS 8 age respectively², laid down in cold phases of the 'Wolstonian' stage³. The Langley Silt is MIS 2 (late Devensian⁴) in age and comprises wind-blown loess and silt, some reworked, in places perhaps by water, Derived from then-existing sediments under periglacial conditions up to ~20k years ago.

Assessment of Site Value		
Geodiversity topic: lithostratigraphy, mineralogy, geomorphology		
Access and Safety		
Aspect	Description	
Safety of access	Walking from Osterley and Syon Lane stations (and bus stops) involves crossing roads, including the A4 (signalled crossings) if walking from Syon Lane station. A footway runs alongside the Main Drive into Osterley Park. From the car parks near the end of the straight drive the shortest route is on grass alongside Middle Lake through a gate in fence (R), or longer via the rest of the drive, footpath and grass if wanting first to visit the House, gardens, toilets and/or café. Part of the walk from Syon Lane station (to the N entrance) is on Osterley Lane, also used as a bridleway.	
Safety of exposure	Good.	
Permission to visit	Access is available during park opening hours, i.e. 0900-1700 (Mar-Oct) and 0900-1600 (Nov-Feb). Nearest station is Osterley (Piccadilly Line) close to which bus H91 stops. The park's main gate is on Jersey Road on the southern boundary, reached from the station by turning L along A4 Bath Road then L along Thornbury Road. Leave the Main Drive on a bend to follow the W side of Middle Lake to the exposures (total 1.8 km). The park's N entrance is on Osterley Lane at the Jubilee (North) Lodge, ~100m from the exposures: turn left from Syon Lane South West Rail station along B454, cross A4 at 'Gillette Corner', then after ~1 km leave B454 to take Osterley Lane at the roundabout with Jersey Road (2.7 km). Alternatively take H28 bus from Syon Lane station, alight at Wood Lane railway bridge and walk 1.6 km to the N entrance, turning R on Jersey Road and left into Osterley Lane as above. Two car parks (£ non-NT members) are reached via the Main Drive and are ~700m from the exposures.	
Current condition	Good (as of 20 November 2024).	
Current conflicting activities	People sitting or picnicking on lake edge on fine days especially during weekends, public and school holidays.	
Restricting conditions	As above.	
Nature of exposure	Low bank exposures and where topsoil has worn away; around trees nearby there are good exposures which may be submerged if the lake level rises after wet spells. Exposures are along ~30m of lake edge.	
Culture, Heritage & Economic		
Aspect	Description	Rating
Historic, archaeological & literary associations	National Trust booklet. See https://www.parksandgardens.org/places/osterley-park for further information about the park and a list of historical maps. Archaeological desk-based assessment for the NT by Oxford Archaeology ⁵ . Stones of Osterley House ⁶ by Ruth Siddall.	8-9
Aesthetic landscape	Good with lakes, ponds, trees and open grassland.	7
History of Earth Sciences	Unknown for locality.	
Economic geology	No reference found.	
GeoScientific Merit		
Geomorphology	The park is roughly circular ~1.5 km across (217 ha including farmland, of which 147.4 ha is NT-owned). The M4 cuts off the northern part of the park (farmland with rights of way), accessible via 2 footbridges. The area is flat, mostly on river terraces at 22-29m AOD. Shallow Brent Valley to the E. There are 3 lakes, the Garden Lake (2 ha), the Middle Lake (~5.5 ha) with the exposures, and the Northern Lake (3 ha) cut by the M4.	1
Sedimentology	Depositional environment of sediments.	2-3
Palaeontology	No literature known for locality.	0
Igneous/mineral/ Metamorphic Geology	None	0

Structural Geology	No known structures within the park.	0
Lithostratigraphy	Taplow Gravel unconformable on London Clay, contact not seen	5-6
Potential use	Quite good exposures for a non-quarry location in London: merit a LIGS designation? Could be a geotrail if the stones of Osterley House are included?	
Fragility	No issues except that pedestrian erosion helps keep the exposures visible.	
Current Site Value		
Community	In public park.	10
Education	Local schools and groups + higher education.	4-6
Geodiversity value		
Although Taplow Gravel occurs widely in the middle Thames Valley little is exposed except in quarries with no public access. This is a fairly significant exposure for a public area in London.		4

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Taplow Gravel at the NW corner of the Middle Lake; erosion probably a result of visitor activity.



Gravel exposed by a probable combination of occasional submergence and visitor erosion, ~40-50 metres from the top photo location. *Photos: Allan Wheeler, 30 May 2023.*

References and footnotes

1. Bridgland, D.R. (Eds: Bowen D.Q., Wimbledon W.A.) 1994. Quaternary of the Thames, Joint Nature Conservation Committee, Chapman and Hall, London, 441pp.
 2. MIS 6 (Marine [Oxygen] Isotope Stage 6) is dated 191-130 ka and MIS 8 300-243 ka (from https://www.lorraine-lisiecki.com/LR04_MISboundaries.txt). Even numbered (cold) MIS stages have higher levels of oxygen-18 in sea water due to the removal of regular oxygen-16 to fall as solid precipitation to be locked up in ice ($^{16}\text{O}/^{18}\text{O}$ ratio recorded in deep sea sediment cores).
 3. The British 'Wolstonian' stage (= Saalian in northern Europe) of the middle Pleistocene is a complex stage comprising the glacial cycles of MIS 10, 8 and 6 and the interglacials of MIS 9 and 7.
 4. The Devensian stage (= Weichselian in northern Europe) is the most recent glacial cycle, occurring in the upper Pleistocene, corresponding to MIS 5d*-2 (115-11.7 ka). *MIS 5e represents the last interglacial.
 5. Osterley Park, Hounslow. Archaeological desk-based assessment. Client: National Trust, Oxford Archaeology, May 2020.
https://nationaltrusthbsmr.esdm.co.uk/LLWS/LLFiles/201251/original_201251.pdf (accessed 19 November 2024). Summarises the history of the house and park and documents past archaeological investigations and a 2019 ground walkover survey by OA.
 6. Siddall, R., Urban Geology: <http://ruthsiddall.co.uk/UrbanGeology.html> (accessed 16 January 2025) - <https://ruthsiddall.co.uk/Walks/OsterleyParkHouse.pdf> (please read the notes on the website's homepage about conditions of use of the PDF).
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