

GLA 5 Chingford Hatch, LIGS

London Borough of Waltham Forest, TQ 382 925; What3Words: crops.feed.itself
Ownership: Local Authority. Public open space.

The geology

The site is a London Clay hillock in woodland (Larks Wood) near Chingford Hatch, with a capping of Woodford Gravel. London Clay is the c.50 million-year bedrock that underlies most of London. Being a clay it is fairly easily eroded and, although it underlies much of the surface soil, it is often difficult to spot except in temporary excavations. It is often termed a 'blue' clay from its appearance at depth but when it is close to the surface it tends to be a more orange colour as the iron within it becomes oxidized. The hillock has been protected somewhat by its capping of Woodford Gravel. This gravel is confined to a corridor either side of the River Roding and has been interpreted as the river terrace deposits of a south-bank tributary of the ancestral Thames which, before the big Anglian glaciation that reached London 450,000 years ago, flowed on a course north of London to reach the east coast near Clacton. The gravel consists of angular flint (83%), rounded flint (14%), quartz (1%) and Lower Greensand Chert (1%). The presence of the Greensand Chert implies that the gravel originated in the Weald to the south of London and that the ancient river flowed right across what is now the Thames Valley within the last two million years.

Formation of the landscape

The ice sheet only reached as far as north London and glacial till dumped by the receding glacier can still be found at Hornchurch (GLA 19) and Finchley (GLA 2 and 58) and more extensively further north through Hertfordshire and Essex. As the ice melted great lakes were formed that eventually burst their banks pushing the Thames more or less into its present course, eroding the London Clay and younger sediments in its path. During subsequent ice ages glaciers never reached as far as London but melting of frozen ground had the same effect of eroding the soft clay. Ridges remain where the clay was capped by gravel but even here subsequent erosion has left a line of isolated hillocks. Buckhust Hill is another such hillock along the Woodford Gravel ridge and probably the best exposure is around the edge of the lake in Knighton Wood (GLA 50).

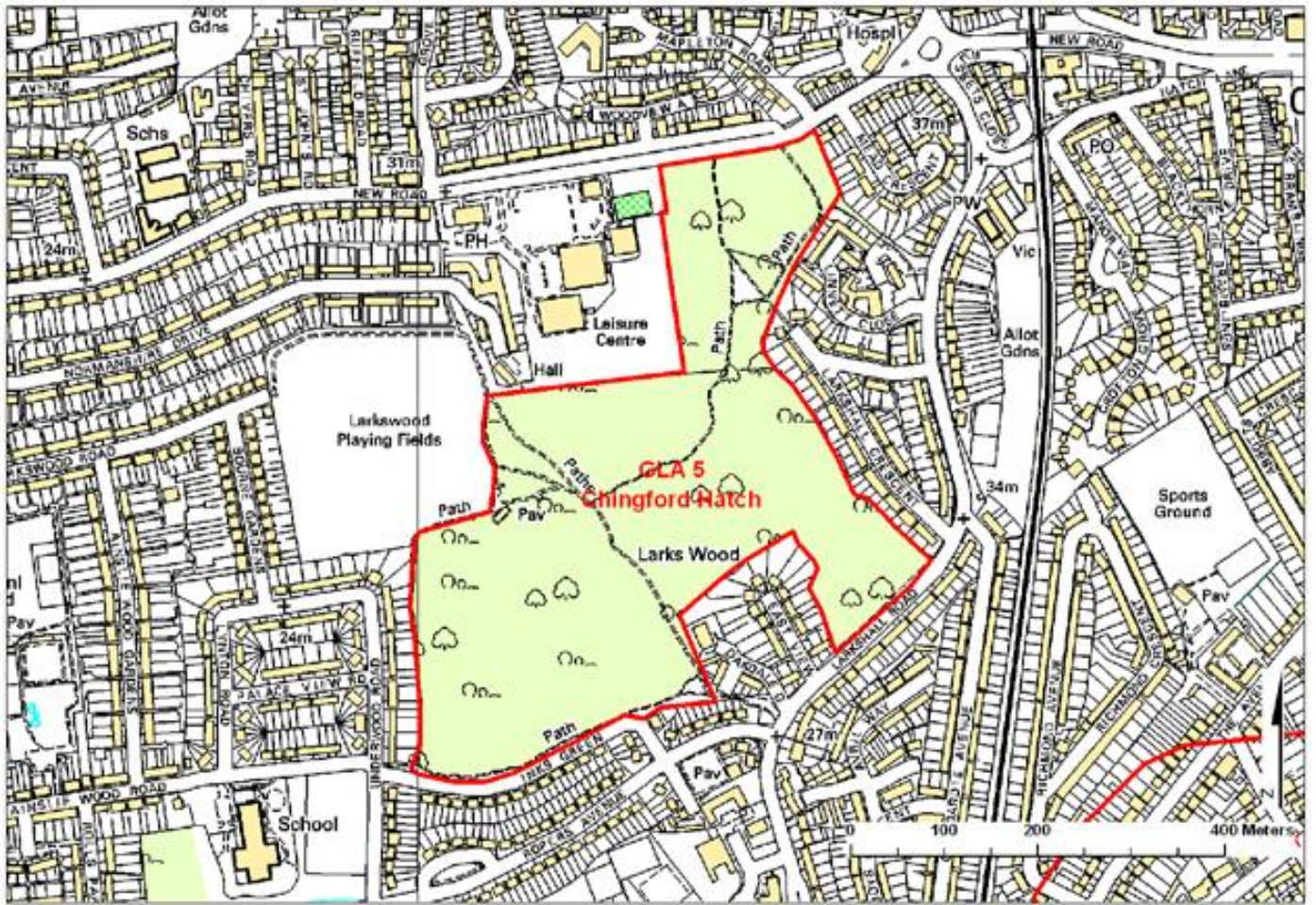
What to look for

The vegetation at Chingford Hatch makes it difficult to find exposures of either Woodford Gravel or London Clay so the underlying geology may best be interpreted by indirect means. Where the permeable gravels meet impervious clay, springs can be found, particularly after continuous wet weather. In drier times, reeds and water-loving plants such as water pepper and even profusions of buttercups provide clues to the junction. Beech has a preference for sandy and gravelly soils whilst oak is most often found on clays. Badgers, mountain bikes, and upturned trees can be the geologist's friend when looking for exposures but be aware that the gravel is only 3-4 m thick and so any outcrops are restricted to the top of the hill. Gravel found further down the slope will have been eroded and slowly worked its way to the bottom by gravity.



Chingford Hatch with detail of London Clay and pebbles (right)

Photos D. Clements



Site Map

Source: London's Foundations (2012), page 129

OS Topography © Crown Copyright