

# GLA 61 Spring Park, Threehalfpenny Wood & Sparrows Den

Grid Reference: TQ 381 649

Site Type: Natural exposures on scarp slope, springs & sinks

Site Area (hectares): 52.31

Current use: Recreational

Site ownership: Spring Park, Corporation of London;  
Threehalfpenny Wood, London Borough of Croydon;  
Sparrows Den Playing Fields, London Borough of Bromley.

Boroughs: Bromley (Spring Park & Sparrows Den),  
Croydon (Threehalfpenny Wood)

Field surveyor: Paul Rainey

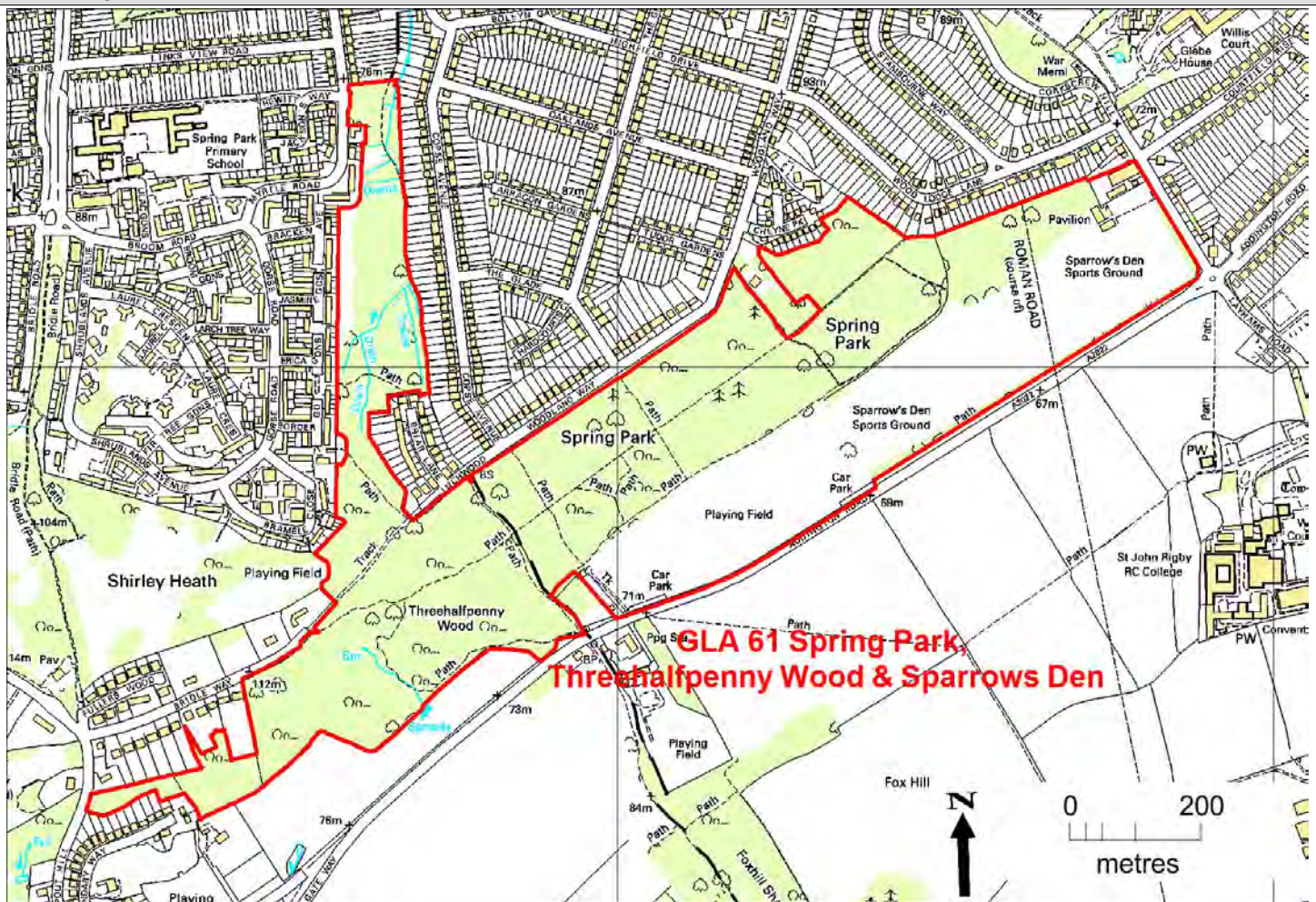
Date: 14/15 February 2014

Current geological designations:

Other scientific: All woodland is a Site of Importance for Nature Conservation (Metropolitan Grade)

## Site Map

OS Topography © Crown Copyright



## Stratigraphy and Rock Types

Time Unit: Eocene	Rock Unit: Blackheath Member, Harwich Formation, Thames Group
Rock Type: Sand and gravel	Details: Sand and pebbles (mostly round, black), with a fragile brackish marine fauna locally. Calclitic conglomerate found at certain horizons.
Time Unit: Paleocene-Eocene	Rock Unit: Upnor, Woolwich and Reading Formations, Lambeth Group
Rock Type: Clay, silt, sand	Details: Glauconitic sands overlain by a unit of blue-grey sand, not observed elsewhere, followed by interbedded grey clays and sands with a well-preserved brackish mollusc fauna.
Time Unit: Paleocene	Rock Unit: Thanet Sand Formation
Rock Type: Clay, silt, sand	Details: Pale yellow-brown fine-grained sand
Time Unit : Cretaceous	Rock Unit: White Chalk Subgroup (not seen, but inferred from sinks)
Rock Type: Chalk	Details: Chalk with flints (not seen)

## Site Description

Spring Park Wood and Threehalfpenny Wood are adjacent sections of a south east facing scarp slope formed by Palaeocene strata overlying the Chalk. Paths in the highest part of Spring Park Wood, towards its NE border, are dominated by Harwich Formation pebbles. The steepest part of the slope is formed of the clayey strata of the Lambeth Group. Thanks to many mole hills the lowest less steep parts of the slope reveal the fine sand of the Thanet Sand Formation.

Groundwater emerges as springs from the base of the Harwich Formation, flows as shallow streams over the Lambeth Group and then sinks into the Thanet Sand. In Spring Park many streams have been artificially joined to fill a pond just below the lower edge of the wood. In Threehalfpenny wood a more natural sink is still visible. Sparrows Den and the lowest part of Spring Park are mainly on the flat valley bottom with gravelly alluvium. In exceptionally wet years (e.g. 2001, 2014) much of Sparrows Den is covered by a spectacular lake formed from springs in the Chalk on the south (Addington Road) side of the site. This is the bourne of the Ravensbourne and was much visited and studied in 1904 and 1916 by the Geologists' Association and others. West Wickham Pumping Station – a Thames Water Chalk borehole with galleries – is immediately to the south of the site.

The London Loop goes through the middle of the site

## Assessment of Site Value

**Geodiversity topic:** geomorphology and groundwater processes

### Access and Safety

Aspect	Description
Road access	
Safety of access	Paths through wood
Safety of exposure	Ancient woodland, steep slopes, seasonally muddy
Permission to visit	Open access, managed by Corporation of London, Croydon & Bromley
Current condition	Gravel, sandy and muddy footpaths
Current conflicting activities	none
Restricting conditions	none
Nature of exposure	Small exposures in woodland, visible spring lines & sink holes

### Culture, Heritage & Economic

Aspect	Description	Rating
Historic, archaeological & literary associations		3
Aesthetic landscape	Attractive woods (rare lime), meadow. Views	5
History of Earth Sciences	Described by Lucas and other pioneers of British Hydrogeology	6
Economic geology	Value/cost of springs, bournes, floods.	4

### GeoScientific Merit

Geomorphology	Springs arising from beneath Harwich pebbles, flowing over Lambeth Group and then sinking into Thanet Sands: the Bourne of the Ravensbourne	5-6
Sedimentology	Daily use by people and moles helps to keep footpaths clear and to reveal geology	2
Palaeontology	None seen	0
Igneous/mineral/ Metamorphic Geology		0
Structural Geology		0
Lithostratigraphy	Harwich Formation, Blackheath Member, Lambeth Group, Thanet Sand Formation.	5-6
Potential use	Points of Interest on London Loop; add geological interest to City of London map	
Fragility	Natural overgrowing, reducing temporary exposures	

### Current Site Value

Community	Local interpretation; London Loop	10
Education	Potential for geomorphology & hydrology study	6

## Geodiversity value

RIGS recommended as three lithologies, which can be seen in temporary exposures, also springs.

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Photos: Paul Rainey



Crest of steep slope.



View downhill showing Harwich pebbles in foreground and springs on Lambeth Group in distance



Sparrows Den lake on 15 February 2014. Spring Park Wood forms horizon