

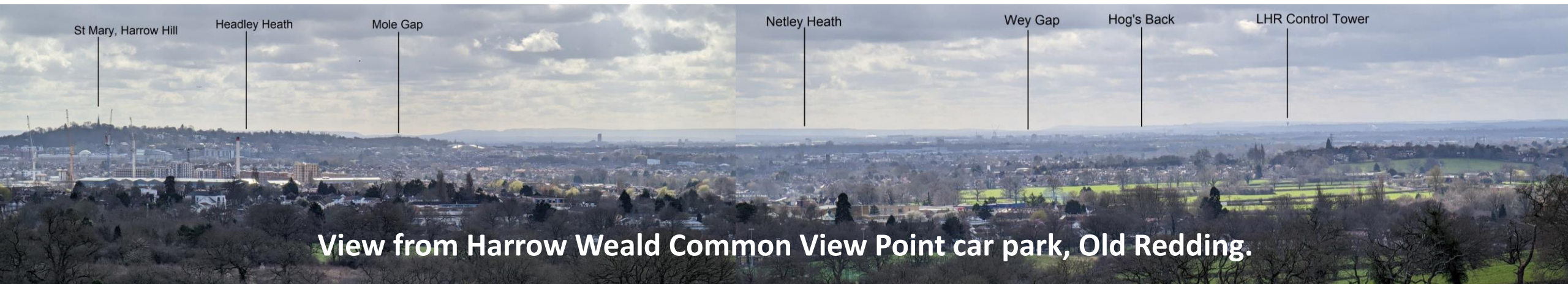


Harrow & Hillingdon Geological Society  
1973 - 2023 Celebrating 50 years

# Stanmore Gravel Project

Investigating the gravel in the vicinity of Harrow Weald geological SSSI

Project Aim	Specific Aim	Works needed
1. To provide a clear description of the gravel at the SSSI on Harrow Weald Common	Measure the thickness of the gravel at various locations to check depth	Identify locations where the deposit may remain relatively undisturbed. Site visits with trowels to remove topsoil. Use hand augur to collect samples digging into the surface vertically and/or horizontally
	Drill a small vertical borehole to find what lies beneath the gravel	a) Using a mechanical drill rig b) Using hand augurs
2. To locate and examine an original in-situ deposit of Stanmore Gravel	Cut a vertical section through the gravel deposit to observe depositional features (ideally make use of an existing bank as this avoids the need to dig a pit down from a flat surface)	Cut steps each 1m deep (min) Preferred width 2-3m Depth depends on the thickness of the deposit (believed to be 3m in this area) <del>Using a mechanical digger</del> Using hand tools and volunteers
3. To examine a sample of the gravel and conduct tests to analyse its content	Having found suitable sites considered to be at the original surface of the deposit and relatively undisturbed, remove samples for analysis	a) collect samples of pebbles for lithological analyses, minimum of 400 clasts per size being counted b) collect samples of 500g for heavy mineral analysis, SEM surface grain analysis, microfossil analysis



View from Harrow Weald Common View Point car park, Old Redding.

Harrow & Hillingdon  
Geological Society  
Field Trip to Harrow  
Weald Common SSSI  
and surrounding area  
24<sup>th</sup> August 2022

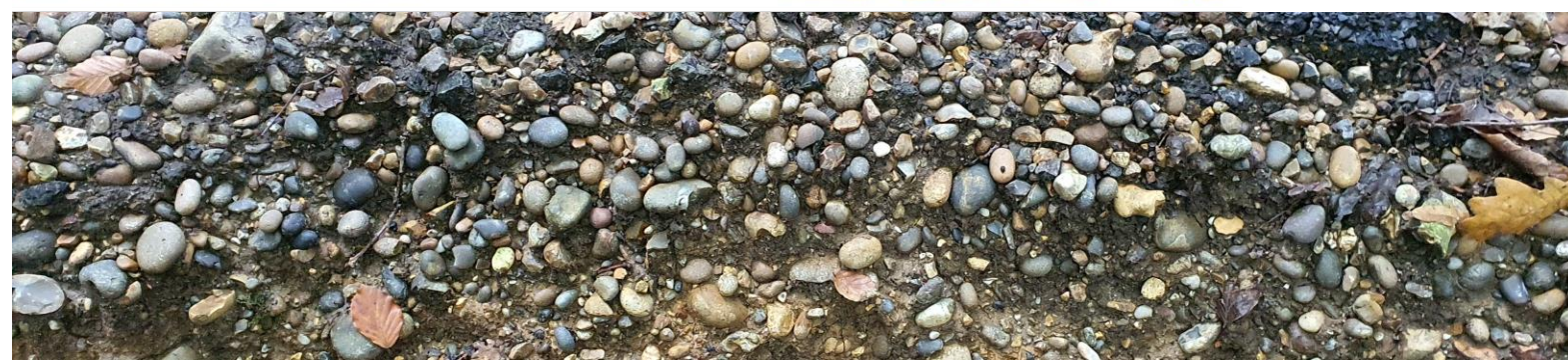


Examples of the  
large pebbles  
found in the  
Stanmore Gravel  
deposit. Most  
pebbles are less  
than half the size  
of these.



Diana Clements preparing the Harrow Weald Common geotrail  
for her 2nd edition of "The Geology of London"

The entire Common is uneven and pitted  
where gravel has been removed for  
hundreds of years. Since 1899, Conservators  
have been responsible for preventing the  
removal of gravel.





We also collected gravel from spoil heaps on the north of the Common following pond-digging and flood management measures. May 8<sup>th</sup> 2023: Gravel of specific grain sizes were collected and stored for clast analysis (can only be indicative of Stanmore Gravel)



**We are grateful to the warden and volunteers on the Common for supporting us that day.**



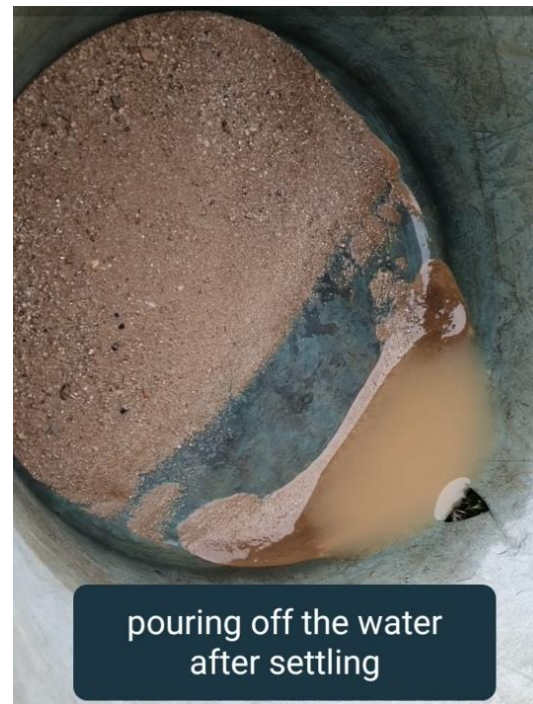


A small amount of gravel from the spoil heaps was washed and sorted for use in our exhibitions and has been shown at our Discovery Sessions at Brunel University. Two fragments of glass emerged during sorting showing a certain amount of recent contamination.

**These spoil heap samples can only be taken as indicative of gravel content.**







Large cobble collected from same spoil heap





# LOCATION Y

Near Old Redding London Loop entrance to HW Common [16]



Fence to garden centre. Former gravel or clay pit. Top of bank is at the height of the road and footpath.



Base of pit: Gravel in tree root has sandy matrix



Top of ridge: Gravel has clayey matrix



Mottled Clay exposed in bank





**LOCATION Y**  
Harrow Weald Common  
Site investigations 14.8.23





**LOCATION Y**



When we removed the leaves we found large pebbles over the surface with clay immediately beneath. There was no gravel layer in this part of the bank. The clay is an intense orange colour with greenish-white mottling. The orange parts are more silty while the greenish-white parts seem to have a higher clay content. The clay pellets we took at depth from the auger were the greenish-white type.



Bucket auger was used to collect 7 samples from ~40cm to 76cm



Screw auger was used for the final sample from 76cms



[Collecting samples of Stanmore Gravel from Harrow Weald Common - YouTube](#)



There were 3 pebbles in the screw augur sample from below 76cm in the pale clay



Close-up of clay sample when dry. For use in public engagement events.



1p for scale

Bagged samples to be sent for analysis. The rest was returned to backfill the hole.





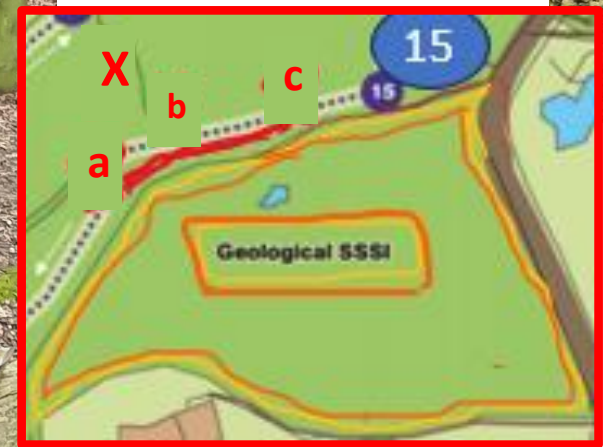
# LOCATION X

6 September 2023

Xa

We examined the bank at 3 points (a,b,c) along the section at X. Height was from 2-3m. At the top of each was a flat surface inside the SSSI. Gravel was present on the Common side wherever the bank was exposed.

Xc



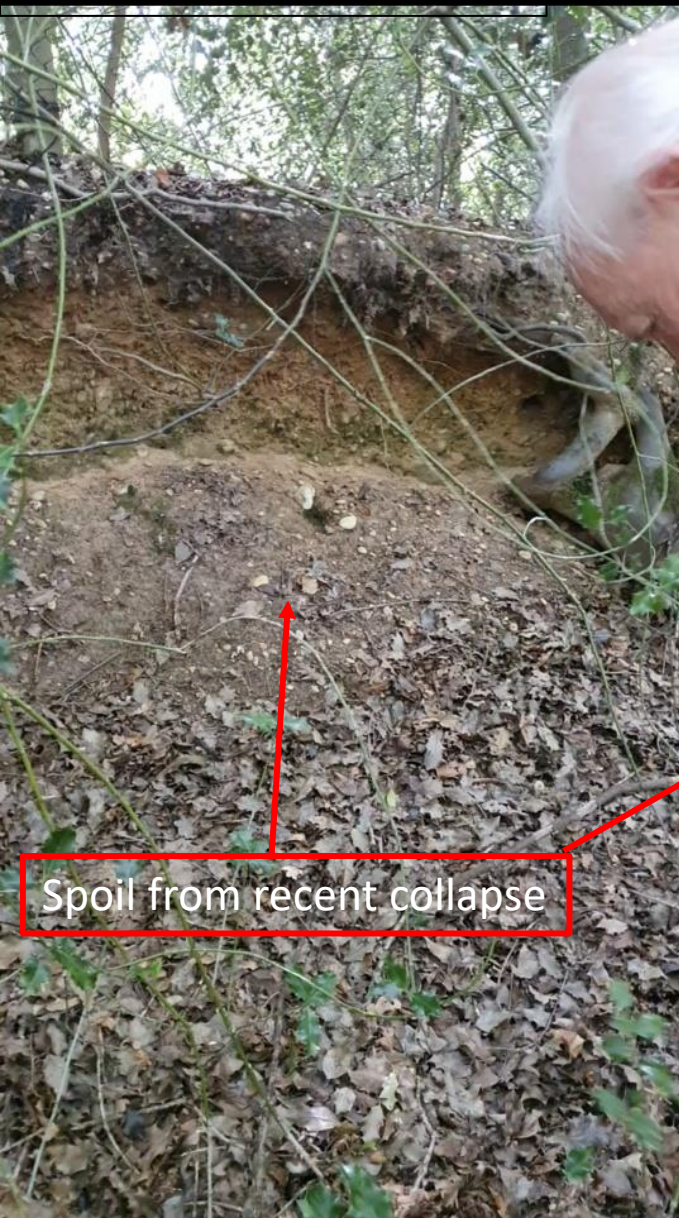
Xa



Xa, Xb and Xc could all be suitable sites for digging a section into the bank.

Xc

# LOCATION Xb



Spoil from recent collapse



Collapsed bank reveals gravel

[\(see video\)](#)



At Xb, immediately to the left of the “waterfall” pipe, there has been a recent collapse of the top of the bank. We could see a nice exposure of apparently in situ gravel with some alignment of pebbles. We made a plan to remove the spoil and dig a section by hand in 2 separate steps each approx. 1m deep and 2m wide.



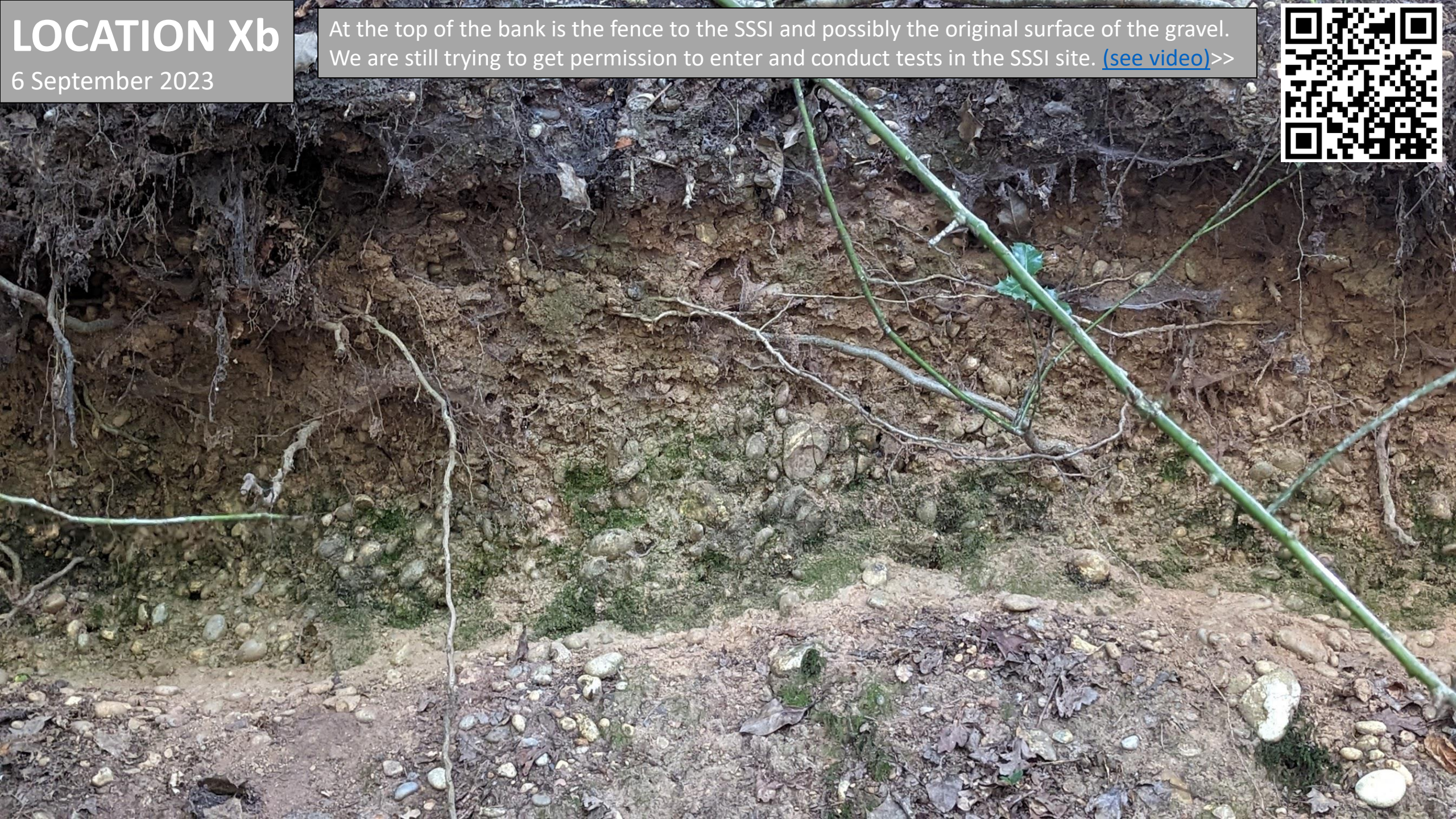
The Waterfall Pipe, Oct '23



# LOCATION Xb

6 September 2023

At the top of the bank is the fence to the SSSI and possibly the original surface of the gravel.  
We are still trying to get permission to enter and conduct tests in the SSSI site. [\(see video\)>>](#)





# LOCATION Xb

6 September 2023

View from the top of the bank looking into the SSSI. At this point there is an extensive flat surface which is close to the bank which was examined in 2011. This video shows what we could see from the Common side:

<https://youtu.be/BqFCUb7AY8M> . We are still trying to get permission to enter and conduct tests in the SSSI site.



# LOCATION Xb

19 April 2024

At **Section X1**, the lower part of the bank was tallus – we didn't reach a clean exposure of gravel.

At **Section X2**, the top of the bank had previously collapsed leaving the bank exposed but not clean. It was not possible to cut this upper part back further.

We observed a slight colour difference between the 2 sections. Samples were collected from both sections.

Phil Collins established 4 temporary benchmarks and the basal elevation of Section X1.

3 lead researchers and 10 volunteers excavated 2 vertical sections to expose higher and lower gravel. See video: <https://youtu.be/XxuoKz-56kw> Samples were removed for later analysis.



**Section X1 on left**



**X1 and X2**, shown by arrows, are approx. 10m apart for reasons of slope stability.



**Section X2 on right**



**Large clasts** above 32mm were found throughout both sections. Clast sizes were found to be extremely varied and distribution was irregular. Many of the large clasts were brittle and fractured very easily. All were flint. Some were not fractured but not rounded as would be expected of marine pebbles. They were examined on site and interesting examples were kept.





## Sample collection

A bulk sample was taken from each section.

Other samples were collected for later analysis:

- 11.2mm – 16mm clasts
- 16mm – 32mm clasts
- Approx. 2kg of the finer material from the sieve pans from both sections X1 and X2

Clasts larger than 32mm were checked and some kept.

