Title: The Pits in Stansted Forest, the mystery solved?

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Summary: Stansted forest is an 'ancient forest' - it was used by Henry II, Richard the Lionheart and King John for hunting; it forms part of the Stansted estate which is about 1,700 acres in size. Now the odd thing about Stansted forest is that it contains over 200 pits of varying sizes and shapes. They appear to be spread randomly through the woods, have you ever wondered how old these actually are and what they were used for? Read about the astounding findings of a field survey exploring one of the pits which had been spotted on LiDAR imagery.

This report is the work and views of the author from research undertaken in the Record Offices by volunteers of the Secrets of the High Woods project. South Downs National Park Authority is very grateful to the volunteers for their work but these are not necessarily the views of the Authority.

The Pits in Stansted Forest - by Mark Seaman

Stansted forest is an ‘ancient forest’ - it was used by Henry II, Richard the Lionheart and King John for hunting. It forms part of the Stansted estate which is about 1,700 acres in size. It is centered on Stansted House which dates from 1900, the previous house, built in 1688, having burnt down. For hundreds of years, sweet chestnut has been grown in Stansted forest. At one time, hundreds of thousands of fencing stakes were produced each year by an army of coppice workers. There are also many ‘ancient yews’ apparently randomly spread through Stansted. Of course, the terms ‘ancient forest’ and ‘ancient yew’ do not mean that these trees have been growing there forever. LiDAR in the Secrets of the High Woods has categorically proven that they did not.

Stansted forest has steep wooded escarpments or “hangers” to the north, but slopes gently down to the south. The main house has distant views over to the Isle of Wight and the English Channel. This view is illustrated in Kip’s 18th century engraving, although the channel is actually a lot further away than it appears.

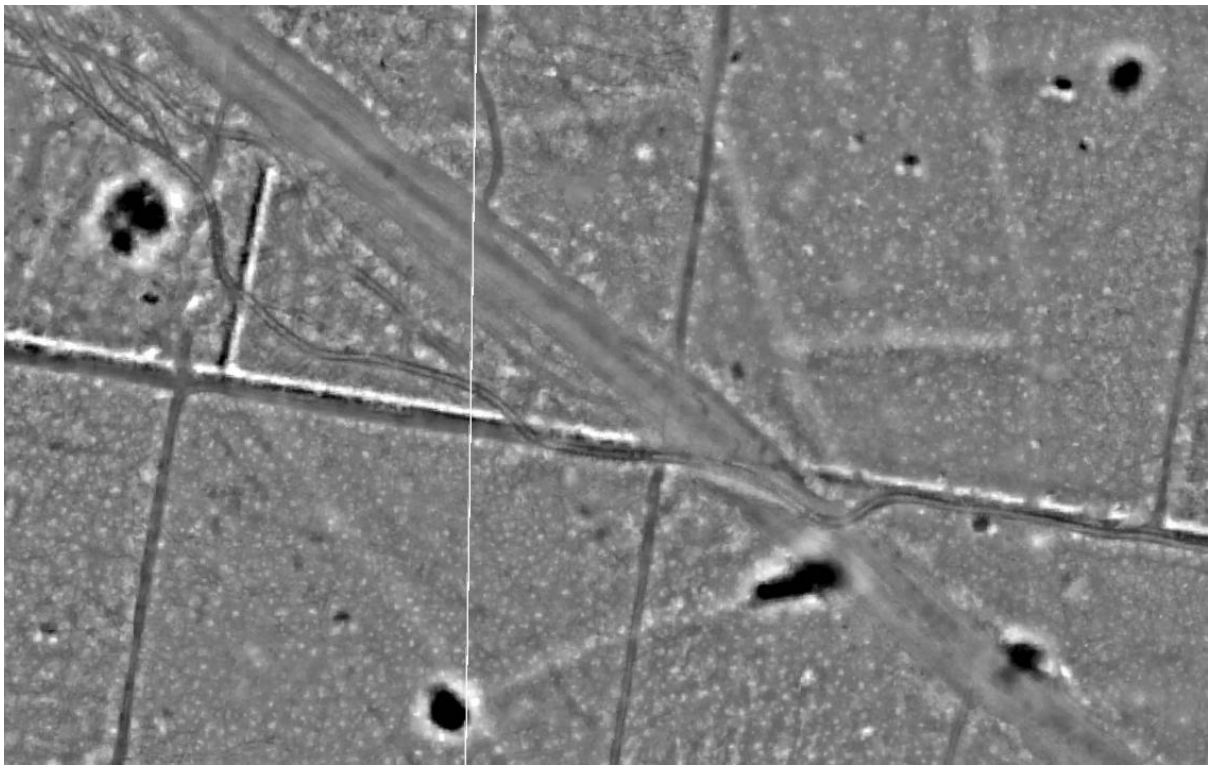
"Stansted in the County of Sussex" by Kip, 1724

Now the odd thing about Stansted forest is that it contains over 200 pits of varying sizes and shapes. They appear to be spread randomly through the woods. I've often wondered how old these actually are and what they were used for. The National Mapping Project (Historic England) considers that they date from the post-medieval period. But I am not so sure. Stansted has been woodland since at least Saxon times when "Stanestede" as it was then called formed part of the forest of Bere. So why dig pits in a forest?

It is true that some of these pits are probably quite recent; they have steep or nearly sheer sides consisting of chalk from just below the surface. These are known to be for extracting chalk, typically for use in lime burners or lime kilns. We know of one locally at Warren Down. However the majority look quite different. They are shallow and saucer shaped.

One day I realised the dating of these pits was more complicated than first considered. I was on a field survey exploring one of the pits which had been spotted on LiDAR imagery. I felt really privileged. For the first time for hundreds of years we were able to see the ancient field boundaries that crisscrossed Stansted forest. At some time in its past, we all realised that Stansted had been a network of open fields and not woodland. It was one of those penny-dropping moments.

That was certainly a big discovery. But there was more. I noticed that there was an ancient field boundary that ran from this particular pit. I followed this and it lead to another pit. Another field boundary led off from the second pit which I followed and that too led to another pit. So it suddenly dawned on me that the pits were not randomly spread through Stansted but were in carefully selected positions associated with the old field boundaries. I also noticed that the yew trees, rather than being randomly spread throughout Stansted as originally thought, also lay along field boundaries.



A LiDAR image of some of the pits at Stansted. The pits show up as black. The field boundaries show up as ghostly white lines, forming a rough rectangle around the three pits

In order to check whether the association between the pits and the boundaries was purely random or coincidental, I examined an area of woodland at

Stansted using LiDAR. This area was bounded to the south by The Main Avenue, a broad cleared track which runs from Rowlands Castle to Stansted House, and to the east by Broad Walk, the road running south from Forestside. This area comprises about 60% of Stansted forest and is a little less affected by modern woodland operations than the remainder. I analysed all the pits greater than about three metres in diameter - about 122 pits in total. I found 66% were associated with a field boundary and 11% had no apparent association. 23% were in an area where there had been heavy forestry work and field boundaries were not visible so I was unable to determine which category they fell into. What could I deduce from these percentages?

I concluded that there was an association between the pits and the ancient field systems. The field boundaries are dated as late prehistoric - i.e. any time from the Bronze Age through to the Roman period. Could the pits be of a similar age?

Another taxing if obvious question was the function of the pits? Were they all used for the same purpose? Received opinion was that they were used to extract chalk or flints and that is certainly true for some pits, particularly at the bottom of the north-facing escarpments where chalk is close to the surface. However, the soil seems very different on top of the Downs. I was discussing this issue with Michael Sutton, a forester who has worked in the woods for nearly 50 years. He said he had dug into a number of pits and found that a few contained sand whilst other contained marl. None contained straight chalk. Now marl is a naturally occurring mixture of clay, chalk and some sand and has been recognised as an excellent fertiliser for thousands of years. Spread over a field, a single application would improve yields for 28-30 years.

This was the connection I was hoping for. The pits must have been associated with ancient farming. Even the position of the pits in the corners of the fields makes sense - a farmer would not place them in the middle of a field and have to plough round them, no matter how rudimentary the plough. And if we examine the pits carefully, we can see that one edge always has less of a slope. This is where the marl would have been dragged out, by animal or human power. Nevertheless the marl must still have been dug manually. It must have been back-breaking work.

The pits are much more complicated and intriguing than we first thought. Stansted has a variety of pits and they may well have been dug over a long period of time from late prehistoric through to late medieval. Not all of them had the same purpose. More precise dating and confirmation of their uses will have to wait until one, more likely several, can be excavated. But for now LiDAR had done its job. We had new theories to evaluate. And I had fresh pit-related questions to wonder about.

Volunteers on a field survey at Stansted