

“The Brecks from Above: Aerial Archaeology in the Breckland Wilds.”

Talk given on the 11th November, 2017 by :

Sophie Tremlett, Senior Air Photo Interpretation Officer, Norfolk Historic Environment Service.

Summary: This talk will focus on recent work in Breckland using aerial photographs and Lidar (laser scanning of the ground surface) to discover and map the region's fascinating wealth of prehistoric and historic sites.

Historic England have been financing their National Mapping Programme since 1988, and about 50% of the country had been covered by late 2016. Unfortunately most of Suffolk and Norfolk were not so well covered. About 40% of Norfolk and only 20% of Suffolk is so far included

Norfolk's air photo team have been in place since 2001, using existing air photographs from a wide variety of sources. Google Earth is now included, and LIDAR is the latest technique to be used. This involves an aircraft typically flying at 800 metres, scanning a circa 600 metre strip below it with a laser scanner.

When the Breaking New Ground project received Heritage Lottery Funding, it was able to commission a LIDAR scan of the forested parts of the project area. The big advantage of LIDAR scanning over photography is the ability to apparently strip away tree cover to reveal surface features otherwise hidden from the air. The BNG survey was flown in early Spring to reduce the leaf cover of deciduous trees, although evergreen coniferous forest remains an issue. The Heritage Lottery Fund also paid for an air photo interpretation survey covering 75 sq km, to which Historic England added additional funding and the loan of photographs from their archive. This brought the work up to National Mapping Programme standard and allowed an additional 21 sq km to be covered. This air photo interpretation survey – which started as 'Brecks from Above' and has become the Breckland NMP survey – has covered the central forested area from west of Brandon to the eastern edge of Thetford, and from Grimes Graves to Elveden; coverage of an additional area to the north (in Norfolk) and Kings Forest and West Stow to the south awaits further funding from Historic England.

So, with a combination of aerial photographs, Google Earth and LIDAR scans available to them, the team have re-examined many known sites. Although no spectacular new discoveries have been made, it has been possible to identify much additional detail at already known ancient monuments, and identify many new examples of typical Breckland sites.

In the environs of Grimes Graves, possible new evidence of Neolithic flint mining shafts has been tentatively identified on Google Earth and other images. Numerous new examples of possible Bronze Age funerary barrows have also been identified across the project area, and an extensive funerary landscape has been identified north of the River Ouse. In places, it can

be difficult to distinguish barrows and ring ditches from natural phenomena such as 'patterned ground', a phenomenon arising from the soil freezing and thawing during glacial conditions.

Evidence of activity in the Iron Age (or non-funerary activity in the Bronze Age) is not particularly visible on the sources. Extensive and complex multi-period sites visible along the valley of the Little Ouse may hide Bronze Age and Iron Age features that cannot easily be recognised from aerial sources alone. At Hockwold, a known Roman settlement comprising numerous post-built structures could feasibly have links with a possible focus in the area on grain processing in the later Roman period.

Anglo-Saxon remains have also been difficult to identify, but sites of the medieval period are more visible. They include the moated manorial site of Weeting Castle, which is surrounded by an extensive landscape of what are thought to be associated features, including a group of probable fishponds. A second moat may also be visible to its south.

Rabbit warren boundaries are clearly visible, including evidence of enclosures within the warrens. Very few 'pillow mounds' – used elsewhere to house and manage the rabbits – are thought to have existed in Breckland.

Some areas show signs of ridges, reminiscent of ridge and furrow, but the origins of which are obscure. They may indicate periodic arable cultivation of heathland areas, or the growing of forage crops for rabbits, or the use of ridges for early plantations.

An important feature seen along the Little Ouse east of Brandon is evidence of water meadows, where a central channel has a herringbone pattern of subsidiary channels to control water flows. Some features are near to Santon Downham Hall, where they may have advertised the landowner's investment in agricultural 'improvements'.

The post medieval and modern gun flint mines at Ling Heath, Brandon, are clearly visible, and there are several other sites where evidence of mining can be seen. As well as the circular vertical mine shafts surrounded by a 'horseshoe' shaped mound of spoil regarded as typical of such sites, many of the sites have evidence for linear gullies. These are presumed to also be associated with mining, but whether they represent a different, or earlier, form of the industry is not clearly understood. Although thought to date mostly to the post medieval period, such mining persisted on a small scale up to the 1950s.

The air photo and LIDAR interpretation work has also included sites of 20th century military activity. Another Breaking New Ground project, the Twentieth Century Military History project, has also made use of aerial sources. Relic trenches from the WWI Elveden Explosives area can still be detected on the LIDAR, even though they were filled in after use in 1917 and survive only as very low earthworks.

In conclusion, features from across the passage of time can be seen from the air, and although there has so far been no spectacular new discoveries, there has been a mass of detailed new information discovered by such "aerial archaeology" in the Breckland. This is directly

contributing to our knowledge and understanding of its heritage sites, and to their future protection.