

Simpsons Fromus Valley Nature Reserve - survey of meadows central to the site of the Bigods' medieval deer park at Kelsale, Suffolk

REPORT ON GEOPHYSICAL SURVEY, 2014 to 2016

John Rainer, on behalf of the Suffolk Archaeological Field Group



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1.1 SUMMARY

- 1.1.1 A magnetometer survey of meadows within Simpsons Fromus Valley, Kelsale, Suffolk was carried out to evaluate two hypotheses relating to the medieval park landscape within which the reserve is situated.
- 1.1.2 The reserve sits at the centre of a park created by the Bigod Earls of Norfolk. The earliest dating reference of the park is to the late 12th century. After Bigod ownership of the park ended in the early 14th century, it was owned by successive Dukes of Norfolk until disparkment in the mid to late 16th century. It contains a 200m long earth dam that once held back a pond 550m long and up to 200 metres wide. Records indicate the park was used for the hunting of deer and the production of freshwater fish.
- 1.1.3 The first objective was to establish whether there was any evidence of features in a meadow where there are some landscape indicators that it might be associated with hunting. These indicators are described in more detail later.
- 1.1.4 The second objective was to survey a meadow at the entrance of the reserve where over the years, small fragments of medieval pottery had been found in molehills within it. Although just outside the likely park boundary, there is a route from this meadow to both the meadow described in 1.1.3 above and to the large pond that once formed the centrepiece of the park.
- 1.1.5 The survey found a D-shaped set of posthole-like responses in the meadow, here hypothesized as being associated with hunting, as in para 1.1.3. These are of a size (at least 0.5m diameter) consistent with supports for a timber structure. The D-shape, approximately 20m wide and 10m deep is fronted by a smaller apse-shaped feature with post hole-like features along its edge but confidence in this assessment is much lower than for the main D-shape. Adjacent to the D-shape, a curving line of similar sized post-hole like responses was found. These are larger than required for simple fencing. They are consistent with known methods of hunting using nets suspended between posts but their size suggests possibly something more substantial. This could be a walkway platform, perhaps for a hunting activity, or for use as part of a cattle or deer herding 'crush' for the capture of animals or their routine slaughter. No actual excavation of the responses has yet been carried out, so the dating, form and function of them is speculative.
- 1.1.6 Within the meadow at the entrance to the reserve, a 44m x 17m ditched rectangular enclosure was found with much magnetic noise suggestive of fired areas such as hearths and possibly a kiln. Although not the subject of this report, a subsequent 2m x 3m excavation within this feature found a rough cobbled surface embedded with pottery and butchered bone fragments, including a deer 'point from antlers' and other deer bone. Although yet to be confirmed, the pottery has been initially dated as 12th to 14th century, consistent with the Bigod era of park ownership. The presence of deer bone indicates that this area was probably associated with the park.

1.2 CONTRIBUTORS

- 1.2.1 Field work was conducted and assisted by John Rainer, Mary Pereira, Alison Brown, Pat Stewart, Lynda Bradley, Ann Dodds and Mike Theobald of the Suffolk Archaeological Field Group (SAFG). The SAFG is a sub-group of the Suffolk Institute of Archaeology and History.

1.3 ACKNOWLEDGEMENTS

1.3.1 The author wishes to thank the Suffolk Flora Preservation Trust for granting access to the reserve and Dr Michael Lynch for access to adjacent land. Thanks are also due to Suffolk County Council Archaeology Service for their extensive support and advice.

1.4 DATE OF FIELDWORK AND REPORT

1.4.1 The fieldwork was carried out in stages from 2014 to 2016.

1.5 SUFFOLK HER SITE REFERENCE

HER Parish Code: KCC 050 Event Number: ESF23647

1.6 CONTACT DETAILS

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2. INTRODUCTION TO THE SITE

2.1 Site description and background

2.1.1 Simpson's Fromus Valley Reserve is owned by the Suffolk Flora Preservation Trust and sits at the centre of the site of Kelsale Medieval Park. The earliest known reference to the park is from a charter of 1189-1217. It relates to an exchange to legitimise the existing incorporation of a parcel of land within it, indicating the park was probably already established by then. An early 12th century date is possible and would be consistent with Kelsale being the principal manor of the Bigods at that time.

2.1.2 Two maps of the park site exist from the era shortly after likely disparkment in the 16th century, dated 1611 and 1638. Although these post-date the operation of the park as a fully enclosed deer park, their boundaries follow existing features in the landscape and are of a length consistent with that recorded in an Extent of Kelsale Manor in 1307. They are straightforward to project onto modern mapping using ditch lines and field/wood boundaries.

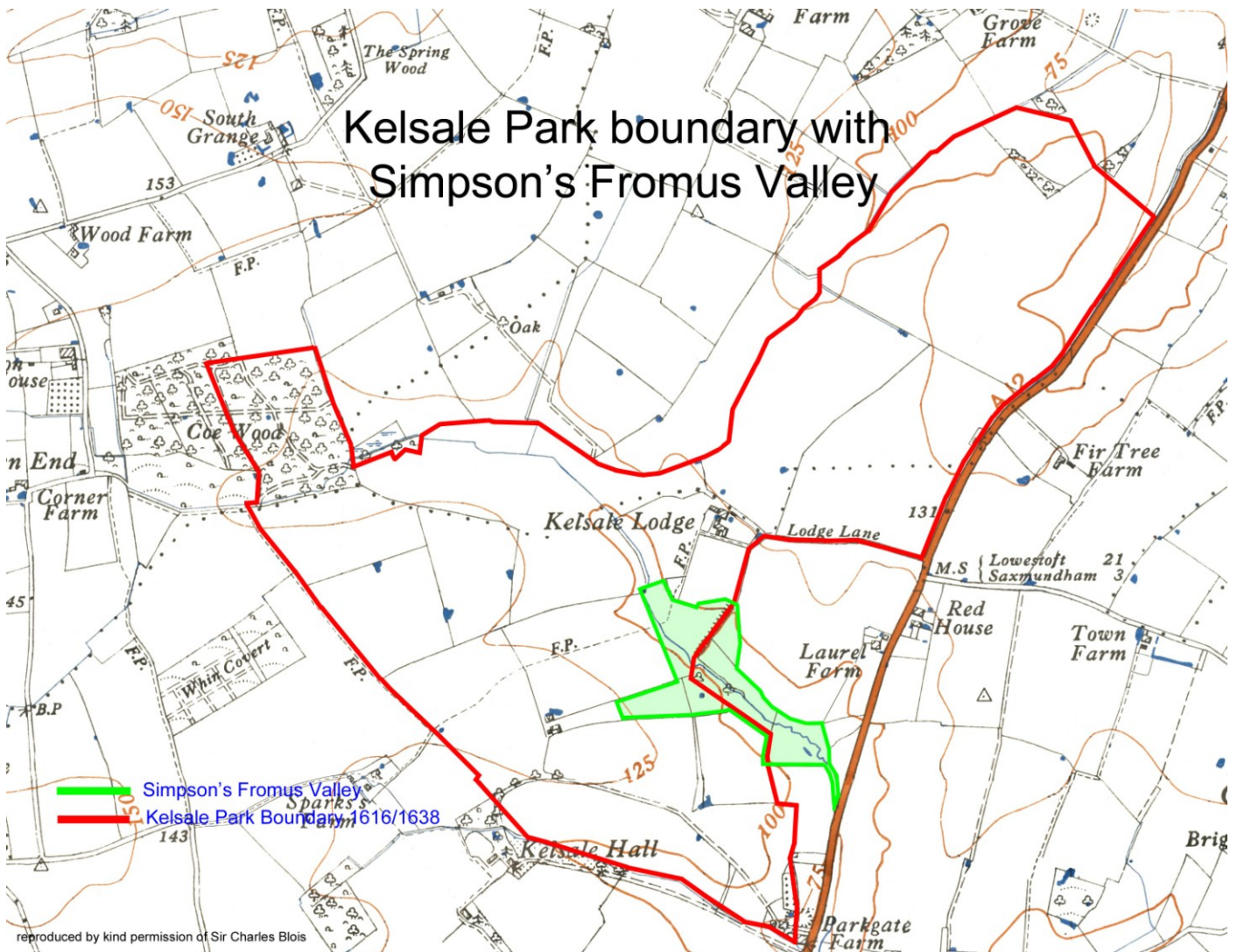


Figure 1: The park boundary and reserve area projected onto 1950s Ordnance Survey mapping

2.1.3 The park is an unusual shape. Parks of this type and era tended to have well-rounded corners to minimise the length of park pale in relation to their area and hence keep maintenance costs to a minimum. The park's north-eastern lobe is probably a 1293 extension, for which a record exists of

new pale fencing that roughly corresponds to its perimeter length. Kelsale Lodge is a much rebuilt and altered building and probably sits on the site of the original park lodge. It would have looked out across the shallow river valley to the southwest.

2.1.4 The park was used for the hunting of deer, with references to the park being robbed of deer, the keeping of dogs, the purchase of salt for salting venison and, in its later years, the supply of deer to Framlingham Castle. Parks had many other functions but it is primarily deer hunting that gives focus to the survey. However, the interpretation of survey results must have regard to other activities that might have been present, such as cattle management and the production of wood and timber.

2.1.5 Within the Reserve, straddling the river course as it once was, is a 200m long earth bank with a maximum height of around 3m high. Lidar modelling shows that it would have held back a pond 550m long. The bank is illustrated on the cover of this report. Its site is visible in Figure 2, just to the south of Kelsale Lodge.

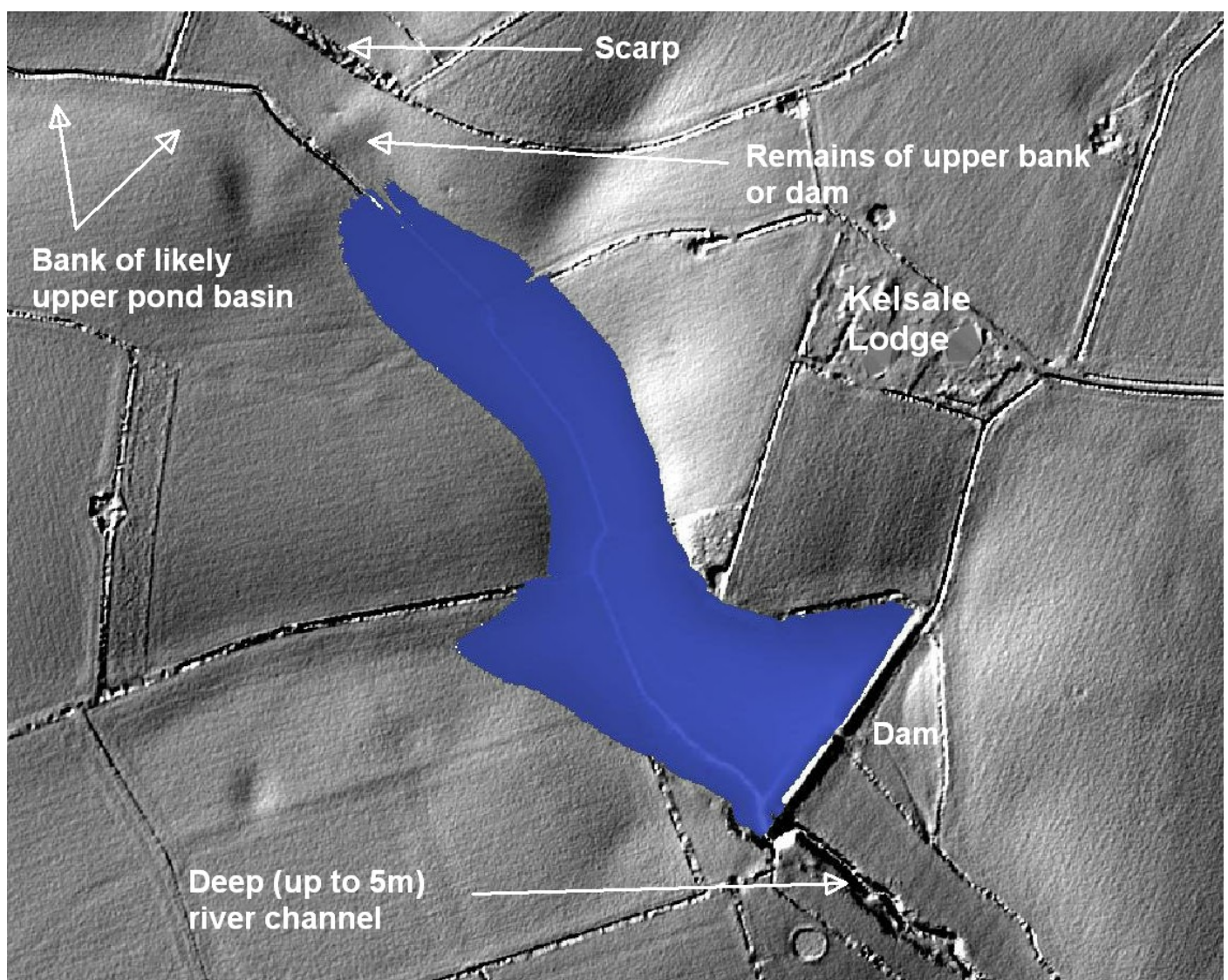


Figure 2: Modelled pond extent using Lidar-derived water height layer

2.1.6 In Figure 2, the earth dam is at the southeast end of the modelled pond shown in blue. At the northwest end is a faint bank that corresponds to where a farmer, sometime in the 20th century, removed a bank of similar size to the existing dam (recorded by Norman Scarfe). This would have provided depth to the end of the pond and may well have held back a second pond whose

maximum depth would have been around 2m behind a dam 2.5m to 3m high. The basin of a second pond is visible in the Lidar imagery in Figure 2 and the height to fill it can be measured. The main pond probably reached as far upstream as the second dam but pond silting and bulldozing of the latter has raised the ground level there.

2.1.7 The source of material for the main dam was probably the excavation of the deep river channel shown in Figure 2. The second dam position is adjacent to a scarp slope and it is possible that this was created by the removal of soil from the hillside to build the second dam. The base of this feature is not only perfectly level but also corresponds to the level of the modelled pond there.

2.1.8 The main dam within the reserve catastrophically failed at some point pre-1616, the resultant flood leaving a 5m deep channel at its southern end and removing a substantial amount of soil from the hillside. If the dam top was used as an access route from the lodge into the park, it would have been impassable after this event.

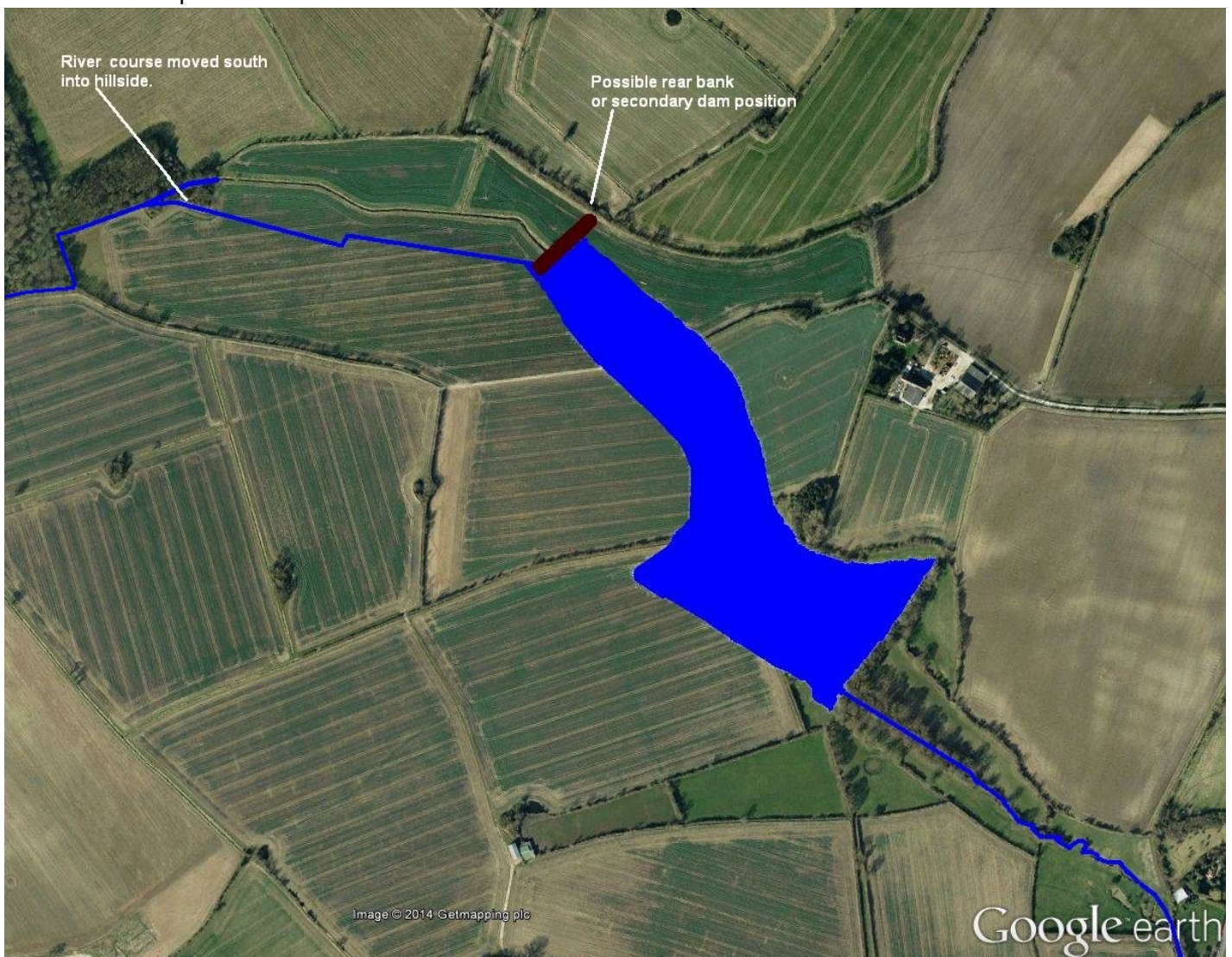


Figure 3: The likely original pond extent overlaid on aerial imagery.

2.1.9 Figure 3 shows how the pond would have looked in the landscape. It can be seen by comparison with Figure 1 that it effectively bisects the park. A consequence of this bisection is that in order to access the main park for hunting, the occupants of the lodge would have to have crossed over the dams to get there. One alternative would have been to leave the park to the east, join the road there and to enter the park again from the southeast at Parkgate Farm (Figure 1).

2.1.10 The main dam is likely to have been the principal crossing as it accesses the park centre from the lodge at its closest point. It also has, close to it, two ponds cut into the hillside whose surface level when full would have corresponded to the surface level of the main pond. They are not full today as both have a channel cut through their banks, where water from the main pond could have filled them. They could well be the stews where catches from the main pond were placed prior to netting of individual fish for consumption at the lodge.

2.1.11 The issue of the ponds is discussed here in some depth because of its bearing on the operation of the park and the siting of the magnetometry survey. The pond landscape results in particular attention being paid to what might have been going on in the area of the park adjacent to the dam's southern end. If this was where hunting parties entered the main body of the park from the lodge (which prior to the park's north eastern extension was in an isolated position commanding the main area of park to its west), where might they have gone?



Figure 4: The reserve in close-up, showing the funnel feature approaching it from the south.

2.1.12 In Figure 4, a funnel feature can be seen entering the meadow adjacent to the dam end. It has been thought to be a stock funnel. Its age is not known and today it cannot function for stock movement as there is a pond at its mouth. The park's 1638 map, a badly faded photostat copy of a lost

original, shows small fragments of it and a second funnel leading into its mouth. The 1616 map does not show the funnel at all but this is not diagnostic of a post 1616 date for the funnel. The two maps straddle a transition period in cartography and are very different in style, accuracy and content.

2.1.13 What is intriguing about the funnel is its alignment, which is precisely on the dam's southern end. If it is related to anything to do with the dam, even just for moving stock across it, then it must be pre-1616, as the dam failure made it impossible to cross the dam top after the failure date, whenever that may have been.

2.1.14 This then raises the possibility of it being an early park feature, perhaps associated with hunting rather than simple movement of stock (or both, of course). Parks of Kelsale's size were associated with 'bow and stable' hunting, where deer would be driven by men on horseback and dogs, directed by lines of men (the 'stable') into the paths of archers, crossbow men and hunters with spears. Archers and their colleagues could be on the ground behind trees, on walkways around tree trunks or on platforms. Deer could be driven into nets suspended between posts, where they were killed with spears and swords. There are also accounts of platforms for spectators and huntsmen.

2.1.15 If the funnel was a hunt feature, then deer may have been driven through it from fields from the far ends of the park and out through its apex into the main hunt arena. The meadow layout there in 1638 was slightly different from today, with the funnel opening into the centre of a meadow.



Figure 5: The funnel and meadow layout, with its boundary, as depicted in 1616 and 1638 park maps.

2.1.16 The first survey objective was therefore to cover the area outlined in white in Figure 5 and its environs to see if there was any evidence of structures there. Hopes were not high as it was likely that only timber structures would have been present, if at all. However, the Reserve trustees had been told at the time they had purchased the land that there was no known ploughing of any of the park meadows which, if true, could mean that background magnetic noise levels might be low.

2.1.17 The second objective related to the reserve entrance meadow (Figure 5). This area has a history of medieval pottery fragment finds in molehills, although nothing of a size or form to be diagnostic. It was not known if this activity was park-related or not. However, if the hunt area hypothesis were to be true for the meadow in 2.1.15, then it was apparent that anyone living or working within the reserve entrance meadow would have direct access to it by the land strip to the northwest. The site itself is outside the probable park boundary, suggesting that if it was park-related then it was not desirable or of a status for it to be located within the park itself but nevertheless having easy access to the key areas of it. One possibility, therefore, was that the entrance meadow might have activity for processing and salting deer and fish removed from the pond and hypothesized hunt area. This meadow would therefore also be subject to magnetometer survey.

2.2 Survey areas

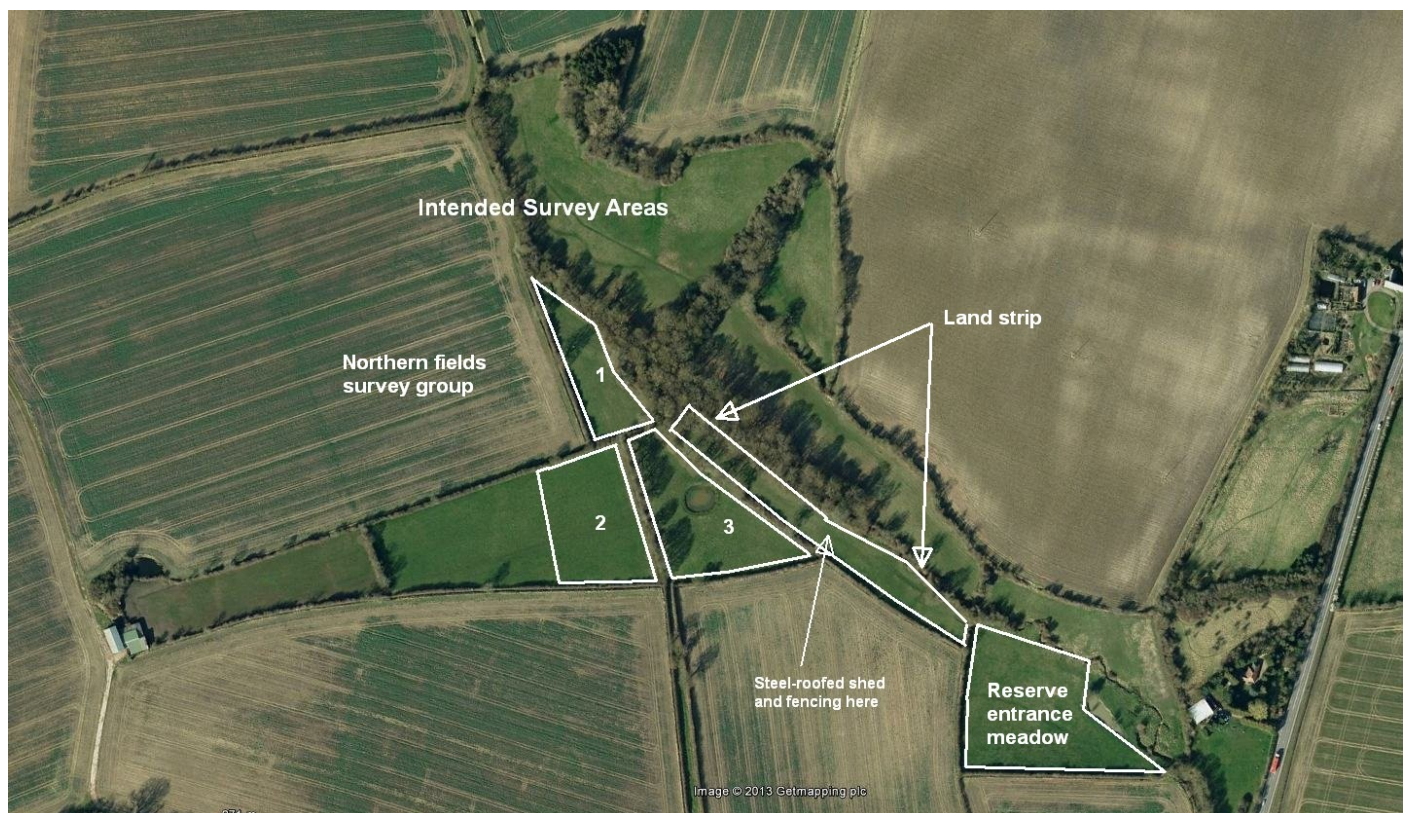


Figure 6: The survey areas delineated and referenced.

2.2.1 A small part of one survey area, in the centre of the land strip, was not surveyable, owing to a corrugated iron roofed shed and steel fencing built there since the aerial image was taken.

3. METHOD

3.1 Overview

3.1.1 Magnetometer survey was carried out over the designated areas The survey was carried out on 30m grids for the entrance meadow and on 20m grids elsewhere. Areas were gridded out by tapes and the results overlaid onto Google Earth images that were georeferenced to Lidar data.

3.1.2 Grids were walked mainly in zig-zag mode except for a handful of narrow border areas.

3.2 Equipment

3.2.1 A Bartington Grad601 single boom gradiometer was used, set to 100nT range. Gradiometer balancing was carried out at single points within each area where low noise levels were identified. Grids were walked at 1m intervals, 4 samples per metre, 1.5 or 1.3m/s pace, with sampling approximately 20cm above the ground surface.

3.3 Results processing

3.3.1 Data was downloaded from the meter and analysed using Snuffler geophysics software.

3.4 Plotting

3.4.1 All results were recorded in QGIS geographic information software using georeferenced images. All overlays have been produced by production of georeferenced images or import of georeferenced raster layers.

3.4.2 The co-ordinate reference system used for all results was:

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"+proj=tmerc +lat_0=49 +lon_0=-2 +k=0.9996012717 +x_0=400000 +y_0=-100000 +ellps=airy +towgs84=375,-111,431,0,0,0,0 +units=m +no_defs"
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4. RESULTS AND ANALYSIS

4.1 Overview of all results



Figure 7: The results shown on aerial imagery.

4.1.1 Figure 7 is included to give an overview of all the survey areas. These are discussed in more detail below.

4.2. Northern meadows adjacent to the dam

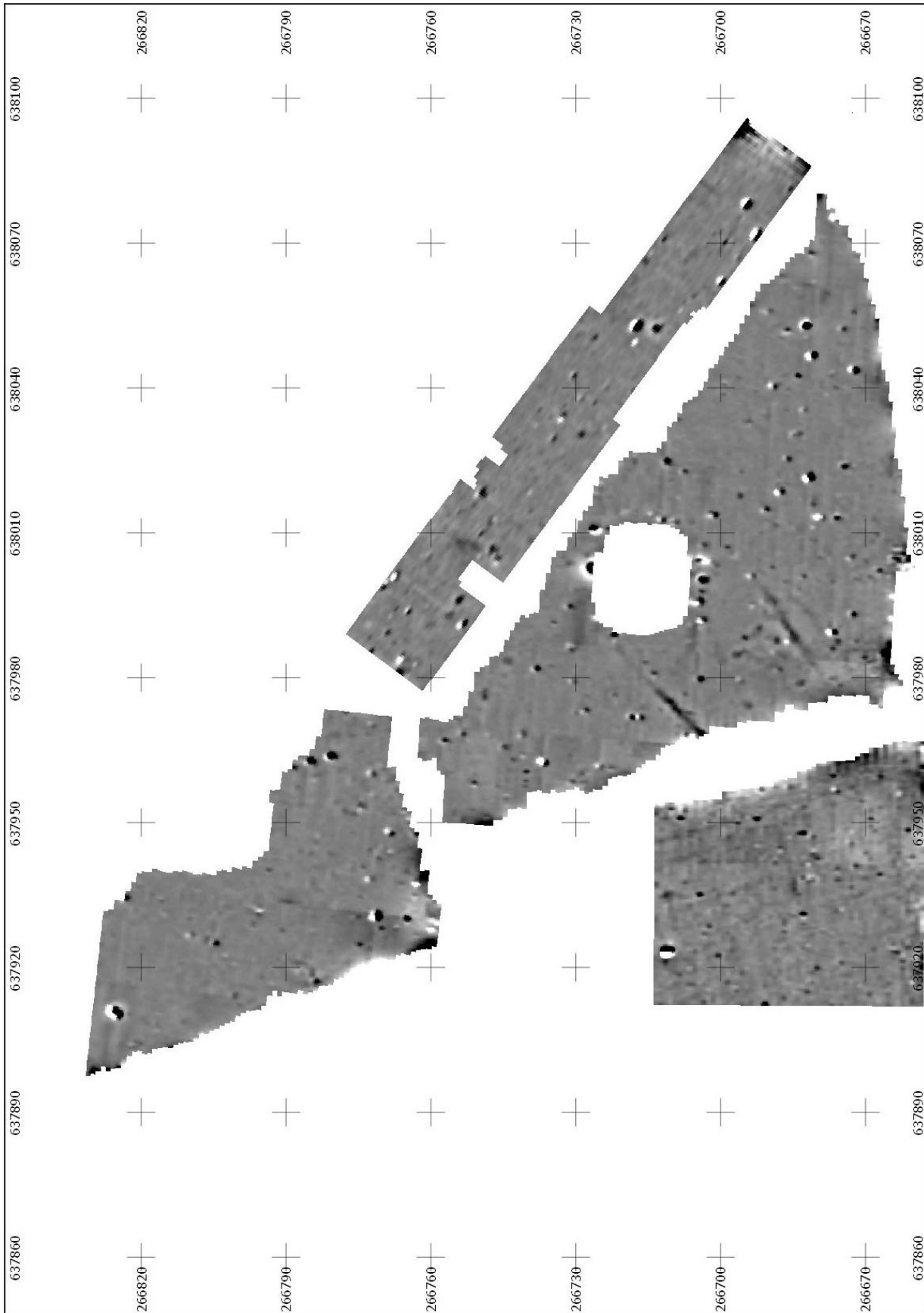


Figure 8: Northern group of meadows by dam end, clipped to $\pm 2\sigma$



Figure 9: Northern group of meadows by dam end, georeferenced to aerial imagery, clipped to +2mT

- 4.2.1 With the exception of field 2, fields 1, 3 and the land strip showed extremely low levels of noise and no plough striping. In contrast, field 2 showed clear plough lines. While it was not possible to complete this field, it was evident that any continuation of features from field 3 was either not present or destroyed by ploughing.
- 4.2.2 The northern end of the land strip showed nothing other than minor ferrous debris , as did field 1 where the survey finished at what was once the pond bank. This left field 3 where the funnel enters at its southeast corner. It has a small circular pond
- 4.2.3 At first sight, field 3 appears to have just a couple of linear ditch-like features but thanks to the low background noise levels, more can be made out than initially appears to be there. A 3D plot is more revealing.

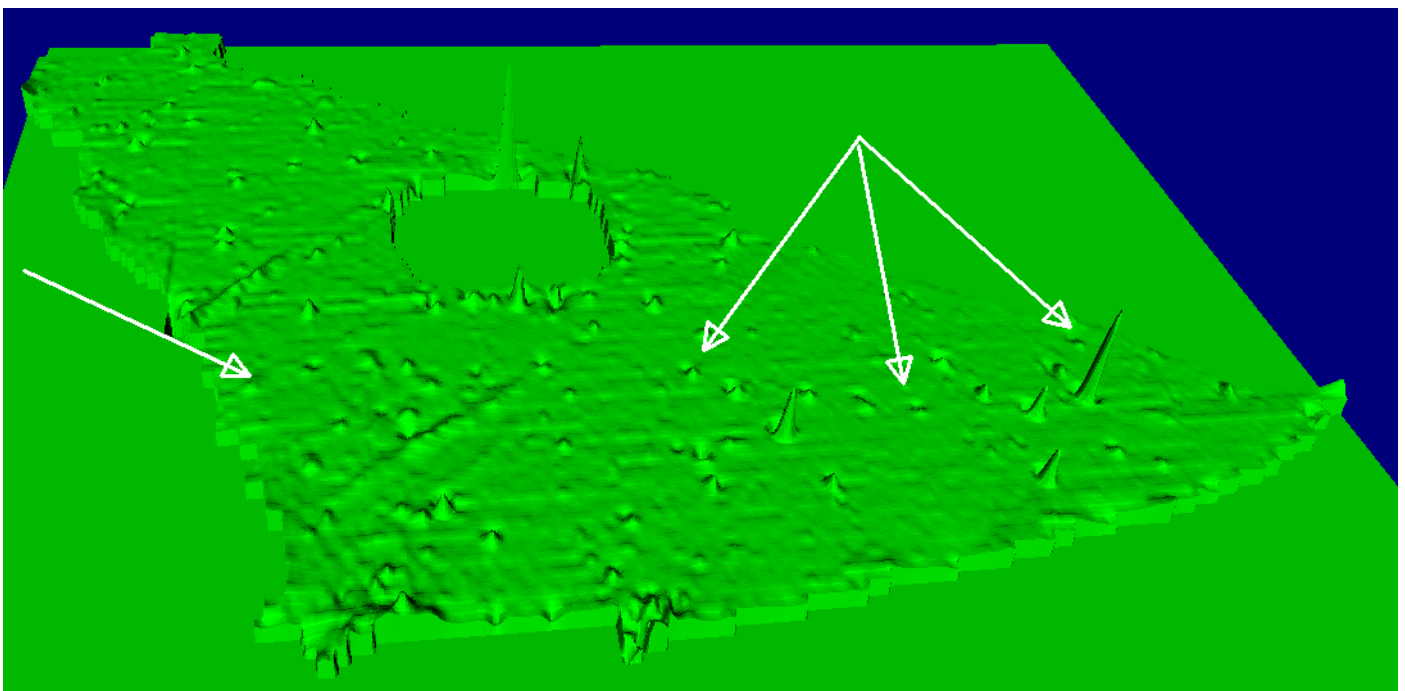


Figure 10: 3D plot of the hypothesised hunt meadow, using Snuffler VRML output.

- 4.2.4 In Figure 10, a pair of linear features run to either side of the circular pond. It is not known what these are but one interpretation is that the circular pond has been created by infilling of a larger one. Alternatively, small ditches may have once extended from the pond to enlarge its use for drinking water by livestock. Neither explanation is satisfactory.
- 4.2.5 The most important features are arrowed. One is a D-shaped set of responses with a near circular apse-like front that is angled at 45 degrees to the funnel exit. Confidence in the apse-like front as a feature is lower than the main D because it is part obscured by the linear feature that crosses it. Off to one side is a curving row of responses, all of low magnitude. The high response spikes within the meadow are ferrous responses, most of which subsequently proved to be horseshoes. If this is not clear to the reader then the responses are highlighted in the next figure.

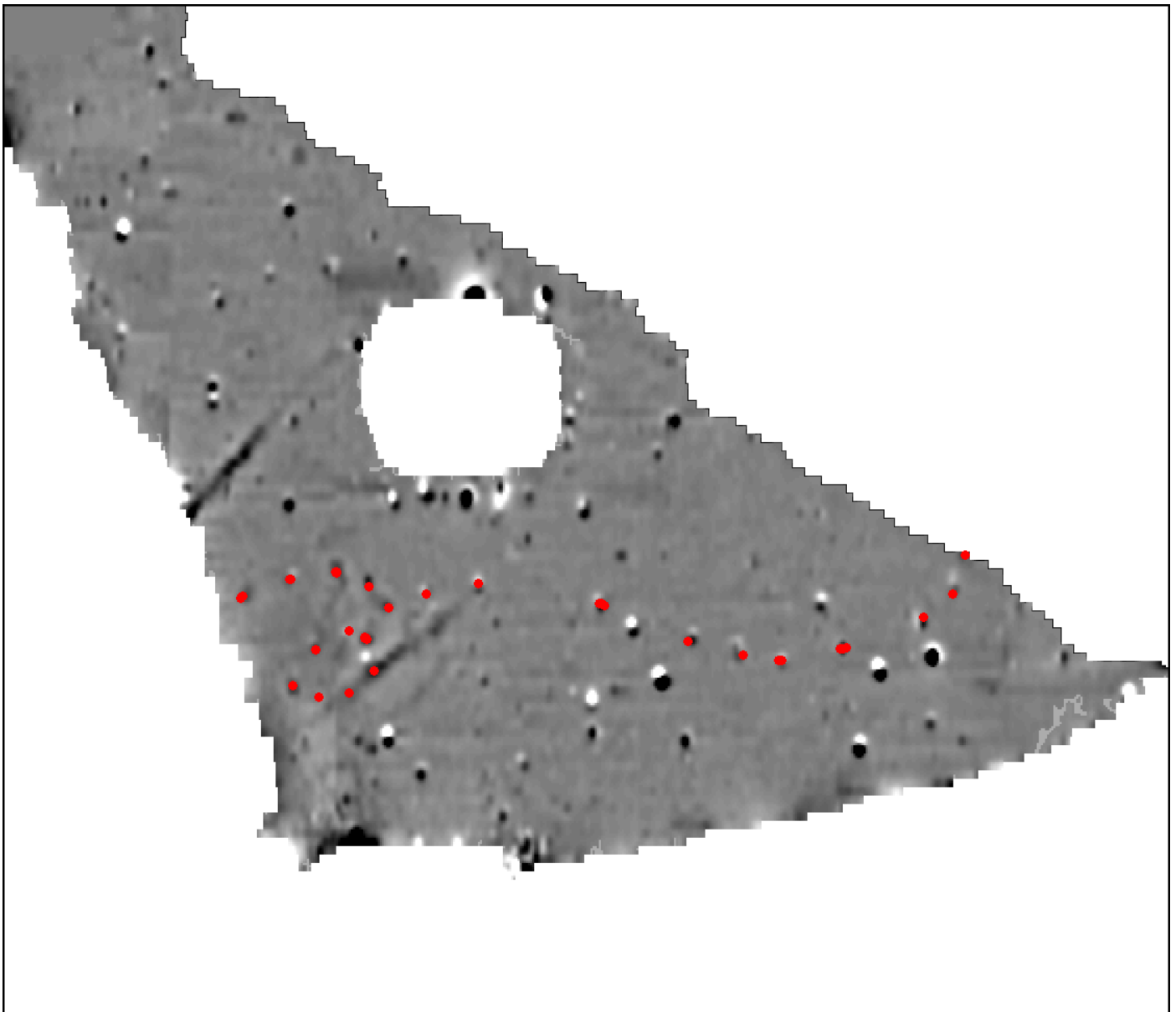


Figure 11: Highlighted responses within the hypothesised hunt meadow.

- 4.2.6 These responses are probably the sites of post holes. Without excavation, this assessment cannot be confirmed but confidence in this is high. The response areas are a meter across. Allowing for some depth and how the magnetic field may open out on the surface, the timbers could have been around 0.5m in diameter. It seems unlikely that these were fence posts and they probably are the remains of supports for a timber structure.
- 4.2.7 The greatest width of the D-shape is around 20m and its depth is 10m. The front projection is 9m across. This is a substantial structure close to the apex of the funnel and angled at 45 degrees across it. If it is hunt-related, perhaps with the posts as supports for a platform for spectators, hunters or both then it is perfectly sited for that.
- 4.2.8 To the east of the semi-circular feature is a curving line of similar sized likely post-hole responses. Again, these seem too big to simply be fence posts. They are large enough to support a walkway or possibly be part of a timber cattle crush to help restrain cattle before slaughter. If it is a hunt feature then it may be a walkway for huntsmen to pick off deer not killed at the main platform, a guide fence to help route the deers' path or a line of posts as supports for netting and slaughtering deer.

4.2.9 Without excavation, the above interpretation is speculative. The two sets of features may not be contemporary, other explanations for them may be possible and neither of them are dated. However, they are the type of features that the survey was intended to find evidence for, and warrant further investigation given their park context.

4.3 The entrance meadow and southern section of land strip

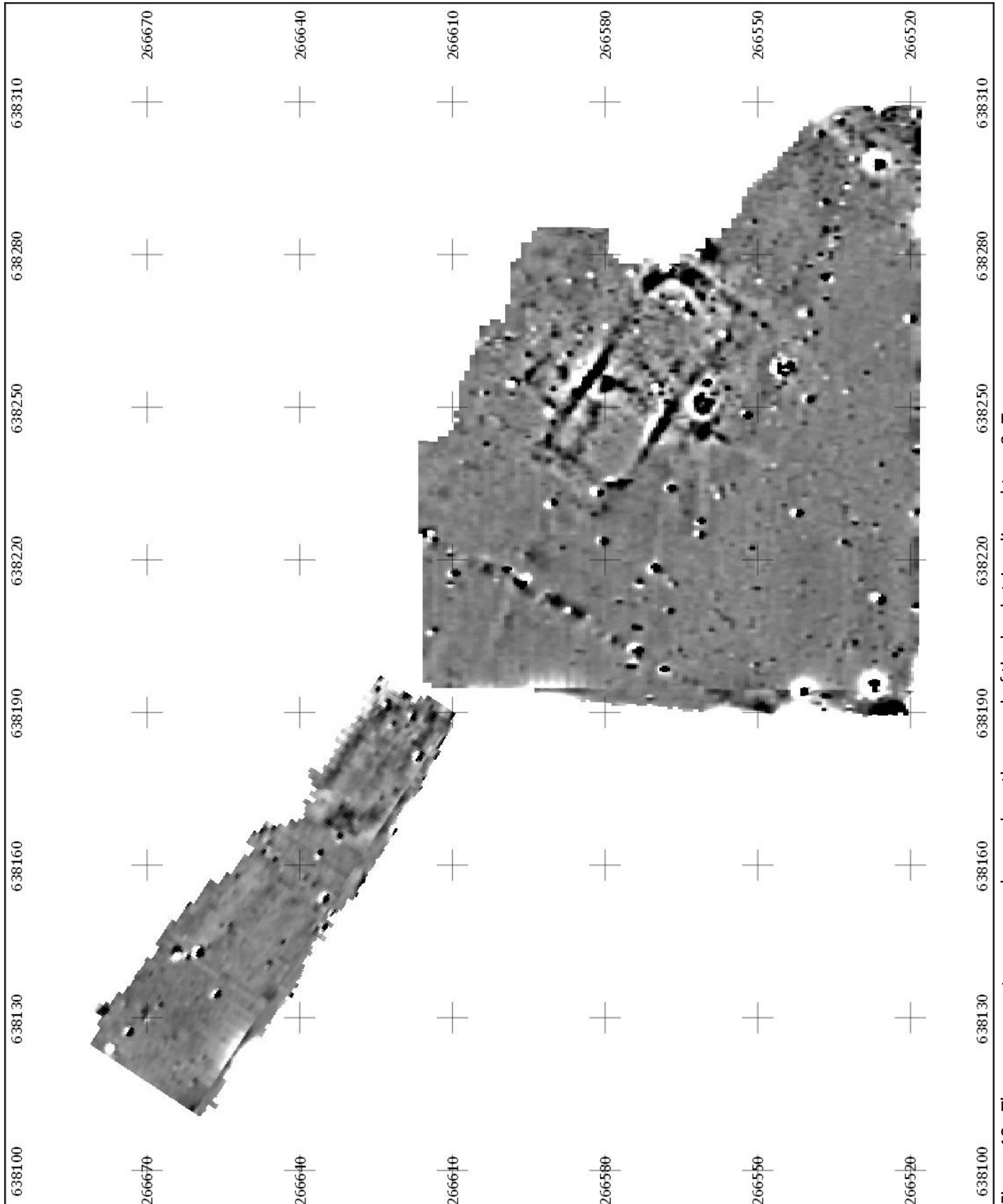


Figure 12: The reserve entrance meadow and southern end of the land strip, clipped to +-3mT.



Figure 13: The reserve entrance meadow and southern end of the land strip.

- 4.3.1 The land strip is showing some response areas at its south western end. However, the broad line running north to south corresponds to a ditch that once drained to the river there and the line to the north east side is by a track. While it is possible that there was an enclosure there, confidence in this is not high.
- 4.3.2 The reserve entrance meadow contains a very well defined 44m x 17m ditched enclosure whose fill suggests considerable activity close by. There is a possible kiln along with hearths and perhaps the remains of structures on the side facing the river. Subsequent to the magnetometry survey, a small excavation to date the feature was carried out. This excavation is not the subject of this report but a short summary of it is given in para. 1.1.6. Finds were consistent with the butchery of deer and other animals, with pottery initially assessed as from the 12th to 14th century.
- 4.3.3 A linear feature is running through the western side of the reserve entrance meadow. This corresponds to a soil mark running through the field to the south that is visible in 2007 Google Earth imagery (Figure 14). This does not have the appearance of an ancient feature but it cannot be ruled out. One possibility is that it is a branch of the North Sea gas terminal pipeline to Bacton that runs through the reserve to the west. The Trust is not aware of anything recorded in the deeds for the land, though, and it is probably worthy of (careful) investigation.



Figure 14: Soil mark corresponding to linear in the entrance meadow magnetometry.

- 4.3.4 The reserve entrance meadow is known colloquially by the Trust as the 'lumps and bumps' meadow due to its uneven surface. It was expected that these areas would correspond to structures or other features to explain the activity there that the pottery sherds were clearly showing. However,

the magnetometry results showed no correlation at all of the enclosure found with the elevated areas there. The author considers it more likely that the uneven surface is down to the dam failure flood and flood eddies on the inside bend of the water flow at that time.

5. Bibliography

Sources

- 5.1 Aston (ed.)- Medieval Fishponds. 1988.
- 5.2 Various manorial records transcribed by Dr Rosemary Hoppitt, plus Patent Roll and other records including Sibton Abbey Cartularies (ed. Brown):
- 1189 to 1217 A charter for land exchange involving the park's owner, Roger Bigod II, and Sibton Abbey.
- 1230 to 1240 A land transaction was recorded for granting to Sibton Abbey an acre of land in Kelsale in two parcels, described as 'abutting towards the south on the way that goes from the house of Fulk up to the park'
- 1268 An Account Roll of Kelsale manor records that a kennel was being roofed, at a cost of 2d for the two days work of one man. Two men worked for three days, mending the paling around the park. Salt was bought for salting venison.
- 1281 (June) From the Patent Rolls, "to enquire who hunted in the parks and warrens of Roger le Bygot, earl of Norfolk and marshal of England, at Lopham, Ersham, Fremlingham, Keleshale and Stouhe in the counties of Norfolk and Suffolk, and fished in his stews of Bungay, Framelingham, Keleshale and Stowe".
- 1281 (Dec.) From the Patent Rolls, concerning "the persons who broke the park of Roger le Bygod, earl of Norfolk and marshal of England, at Framelingham, Keleshal and Stowe, co. Suffolk, hunted therein and carried away deer, and fished in his stews in the said towns and at Bungeye".
- 1293 Patent Rolls, concerning "the persons who entered the parks of Roger le Bygod, earl of Norfolk and marshal of England, of Framelyngham, Keleshale, Stowe, Ersham, and Lopham, hunted deer therein and carried them away".
- 1293 Account Roll records for the erection of 300 perches (about 2000 yards) of new palings around the park at a cost of £2/17/0d. The wages of Geoffrey the fisherman were 5/11d while Henry of Todenham took 2/7½d for coming to catch fish.
- 1306 An Extent of Kelsale Manor' records a park 'with deer' and a fishpond worth 2/-. Robert Wafre is recorded as the park keeper (also keeper of other parks held by the Bigods). The boundary of the park is described as two leagues long.
- 1327 to 1329 An account for Kelsale that mention various people working within the manor including Hugh Aylnoth, parker and John Wilkin, keeper of the pond.
- 5.3 Norman Scarfe - The Suffolk Landscape. 1987 edition (p171/172).
- 5.4 Liddiard (ed.) - The Medieval Park - New Perspectives. 2007.

5.4 Mileson - Parks in Medieval England. 2009.

5.5 Fletcher - Gardens of Earthly Delight - The History of Deer Parks. 2011.

5.6 McDonnell - Inland Fisheries in Medieval Yorkshire 1066 -1300. 1981.

More Reading:

Neave - Medieval Parks of East Yorkshire. 1991.

Rotherham (ed.) - The History, Ecology and Archaeology of Medieval Parks and Parklands.

Morris - The Bigod Earls of Norfolk in the Thirteenth Century. 2005.