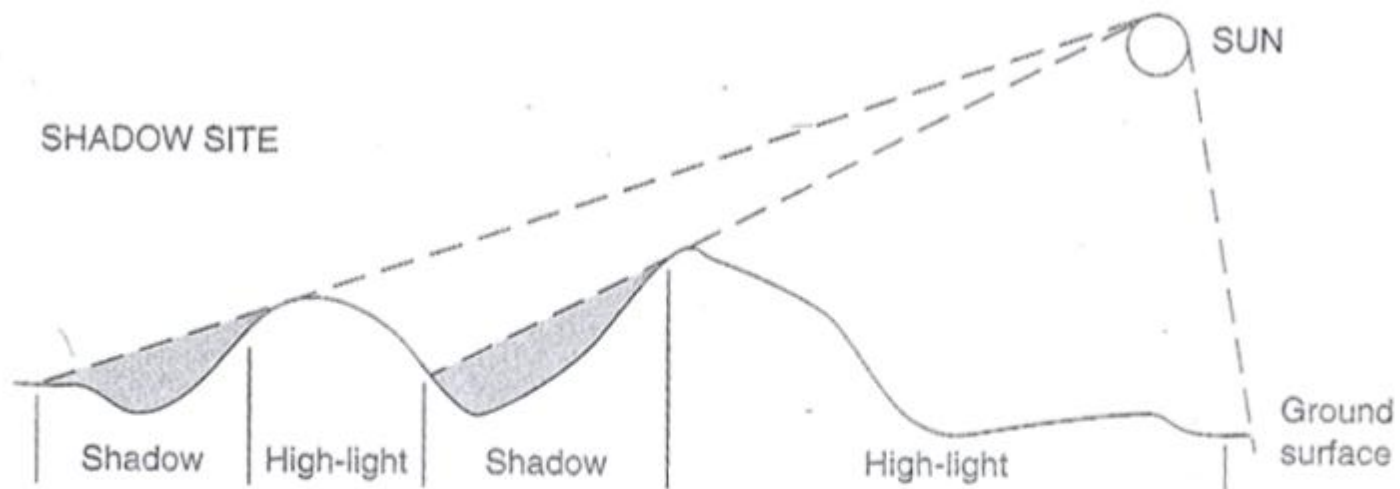


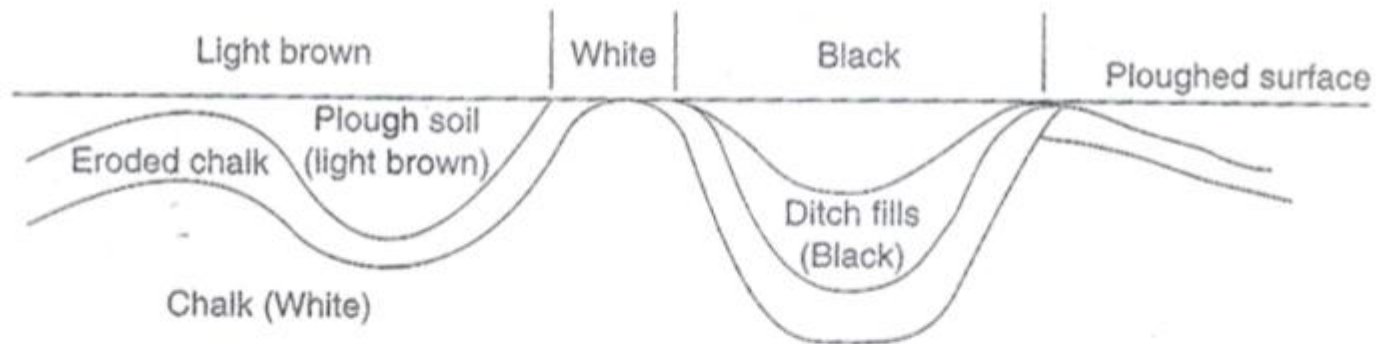
Physical Resources

Types of sites prospected by aerial photography

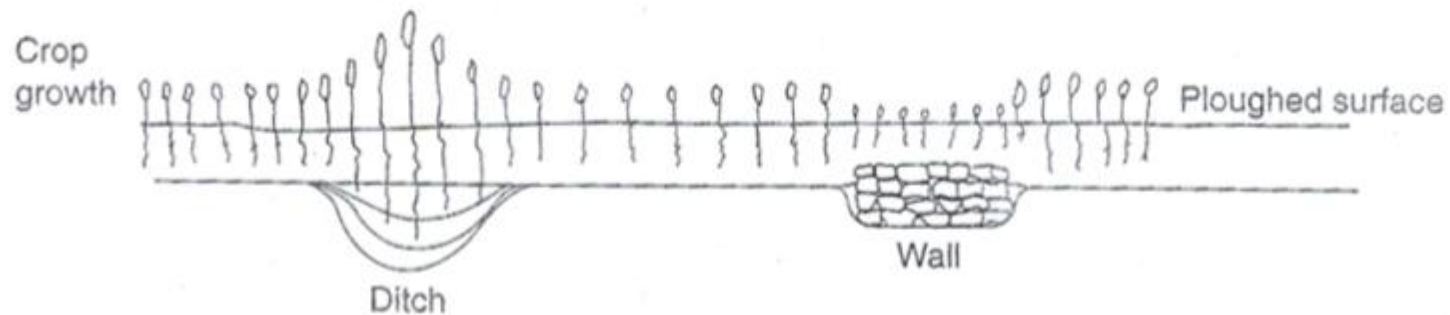
1. **Earthworks** (upstanding or 3D remains).
2. **Crop Marks** (differing growths over ditches, walls etc).
3. **Soil Marks** (disturbed by ploughing, frost marks etc).



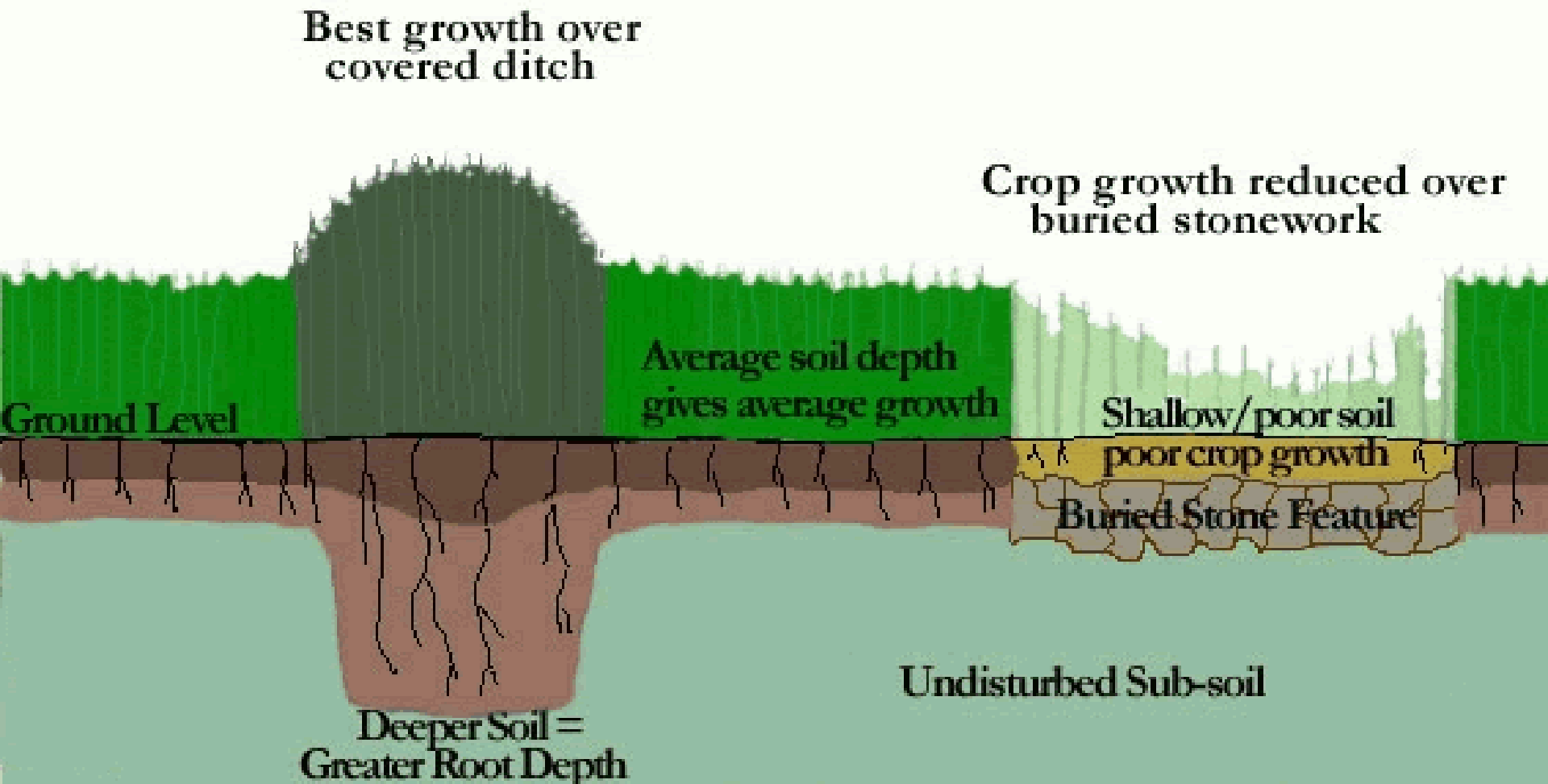
SOIL MARK SITE



CROP MARK SITE



How Crop marks are Caused: by Underlying Archaeology



An oblique aerial photograph of a rural landscape in Llanfair, Llandysul. The image shows a large, light-colored rectangular field in the upper left, bordered by a dark line of trees. Below this, a winding path or road cuts through a field. In the lower left, a cluster of buildings, likely a farm or small village, is visible, surrounded by trees. The overall scene is a mix of open fields, wooded areas, and a small settlement.

Oblique aerial photography

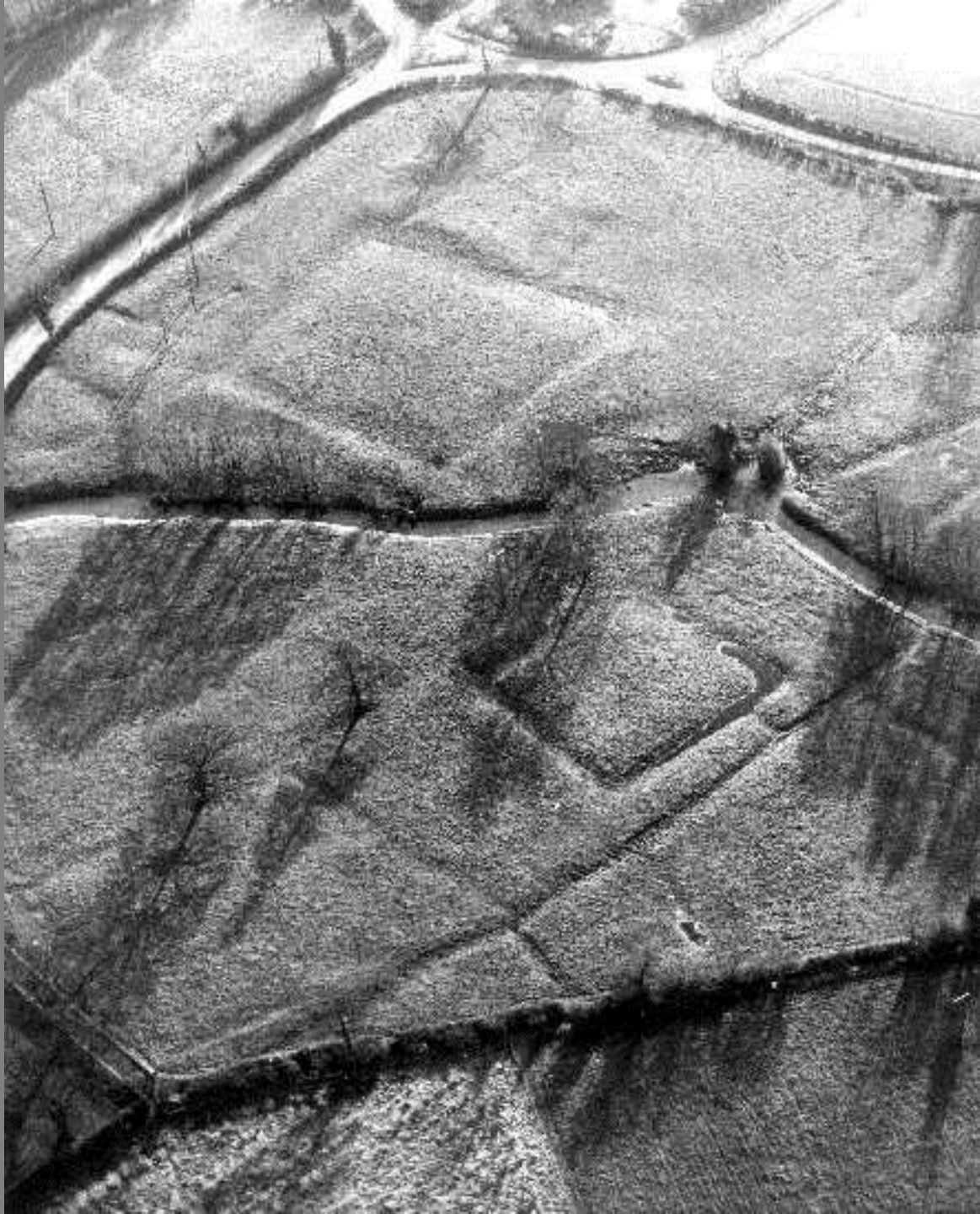
Llanfair, Llandysul

**Troed y Rhiw,
Andrew Fleming, UWL and Louise Barker, RCAHMW**

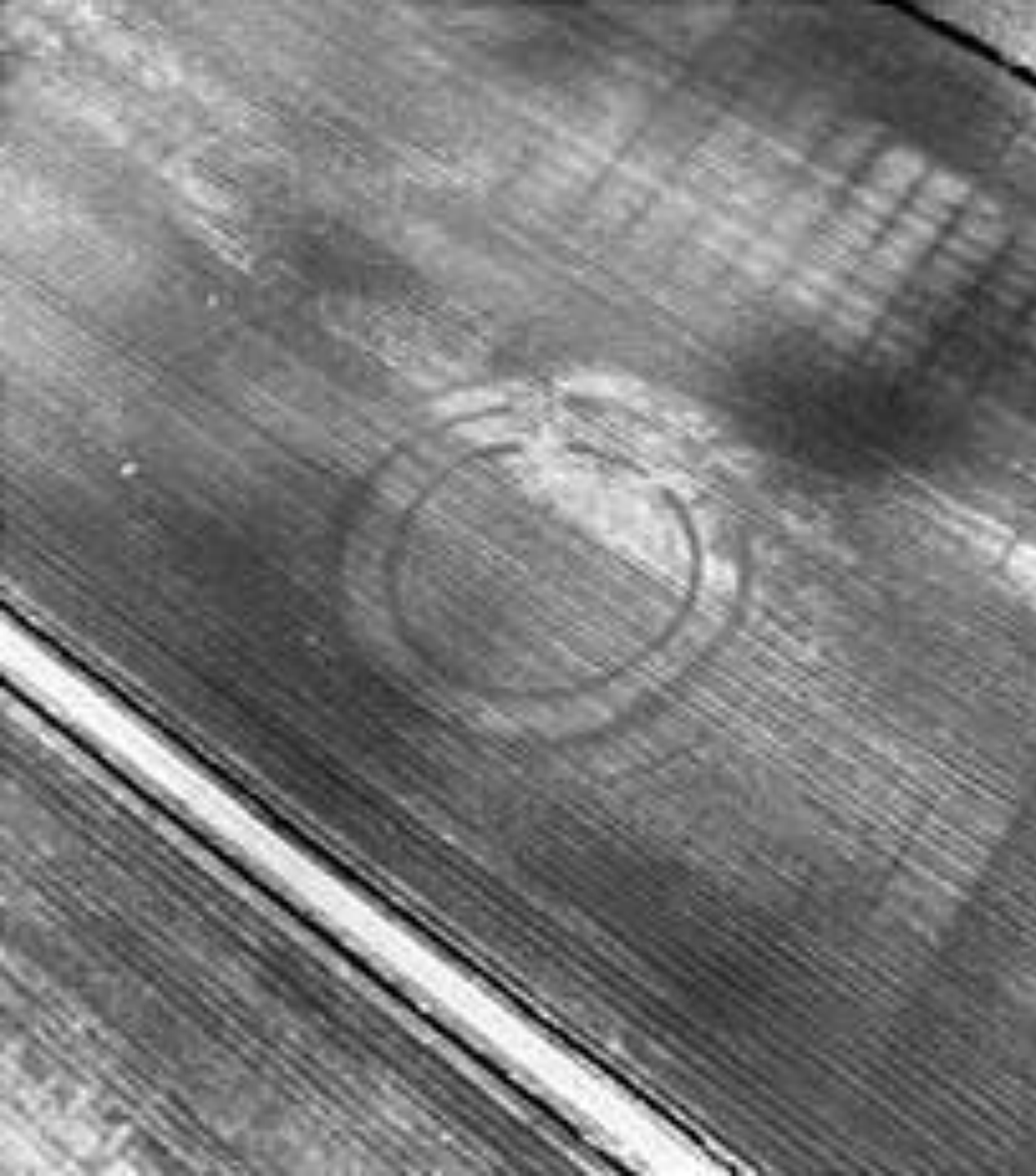




Copyright Reserved: Royal Commission on the Ancient and Historical Monuments



Moats at
Attleborough,
Norfolk



Soil Marks
Created by
ploughing
Carperstane,
East Lothian



Comisiwn Brenhinol Henebion Cymru

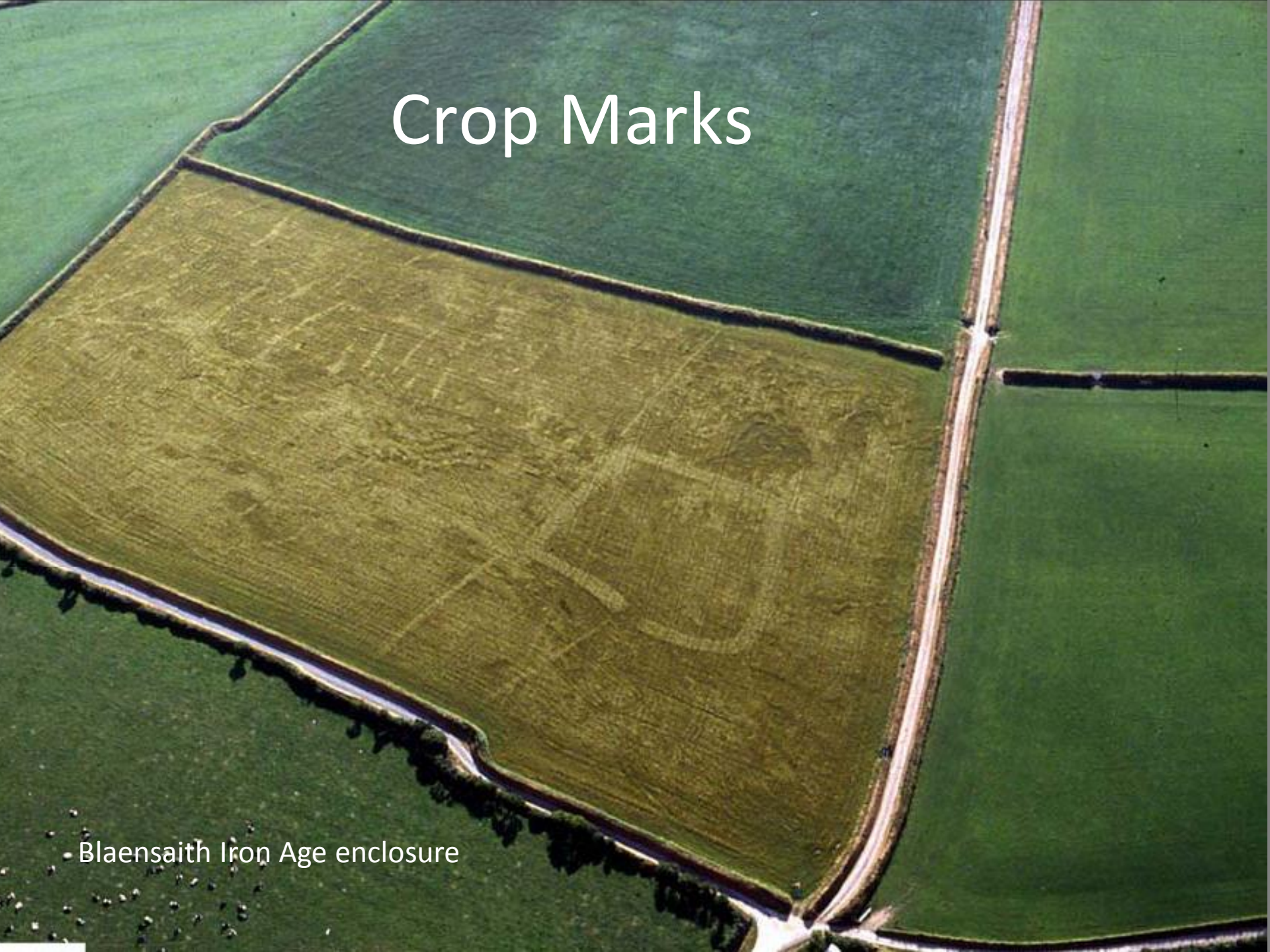
Royal Commission on the Ancient and Historical Monuments of Wales

Frost and snow marks – differential thawing over subsurface features – also
earthworks



Bracken covered field systems – Gray Hill

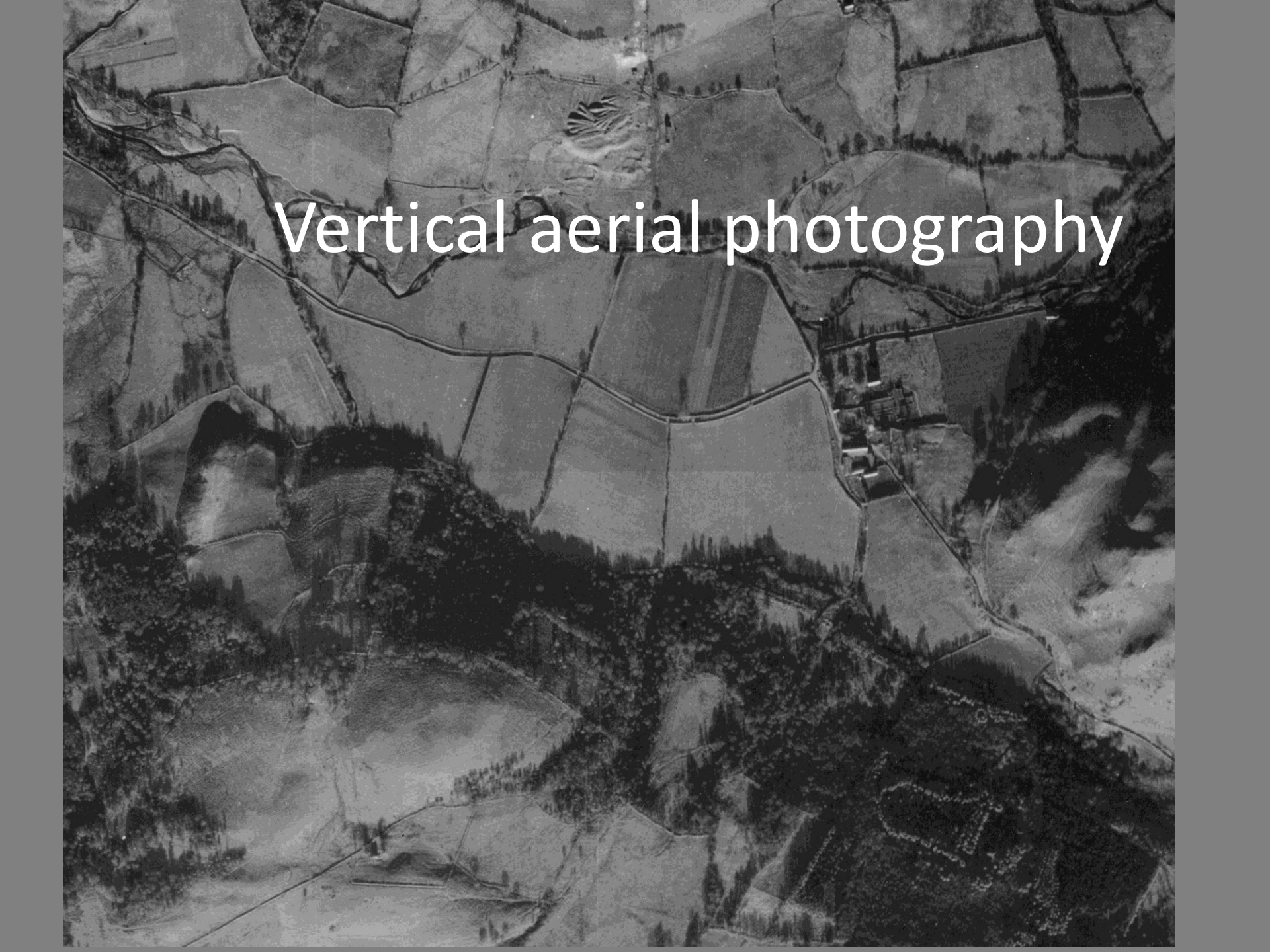
Crop Marks



Blaensaith Iron Age enclosure



North Stoke, Oxfordshire

A black and white aerial photograph showing a patchwork of agricultural fields, some of which are rectangular and others irregular. The fields are separated by thin lines representing fences or roads. There are large areas of dark, dense forest, particularly in the lower half of the image. A winding road or path is visible on the left side. The overall scene is a typical rural landscape from a high-angle perspective.

Vertical aerial photography



West Deream Abbey. Norfolk

GEOPHYSICS

4 MAIN TYPES

1. Electrical resistance survey
 2. Magnetic Survey (fluxgate or caesium vapour)
 - 3. Ground penetrating radar survey**
- **Magnetic Susceptibility survey**
 - Clark, Anthony J. (1996). *Seeing Beneath the Soil. Prospecting Methods in Archaeology*. London, United Kingdom: B.T. Batsford Ltd..
 - Gaffney, Chris; John Gater (2003). *Revealing the Buried Past: Geophysics for Archaeologists*. Stroud, United Kingdom: Tempus.

RESISTIVITY

Electrical resistance survey of
Whitland Abbey, Pembs

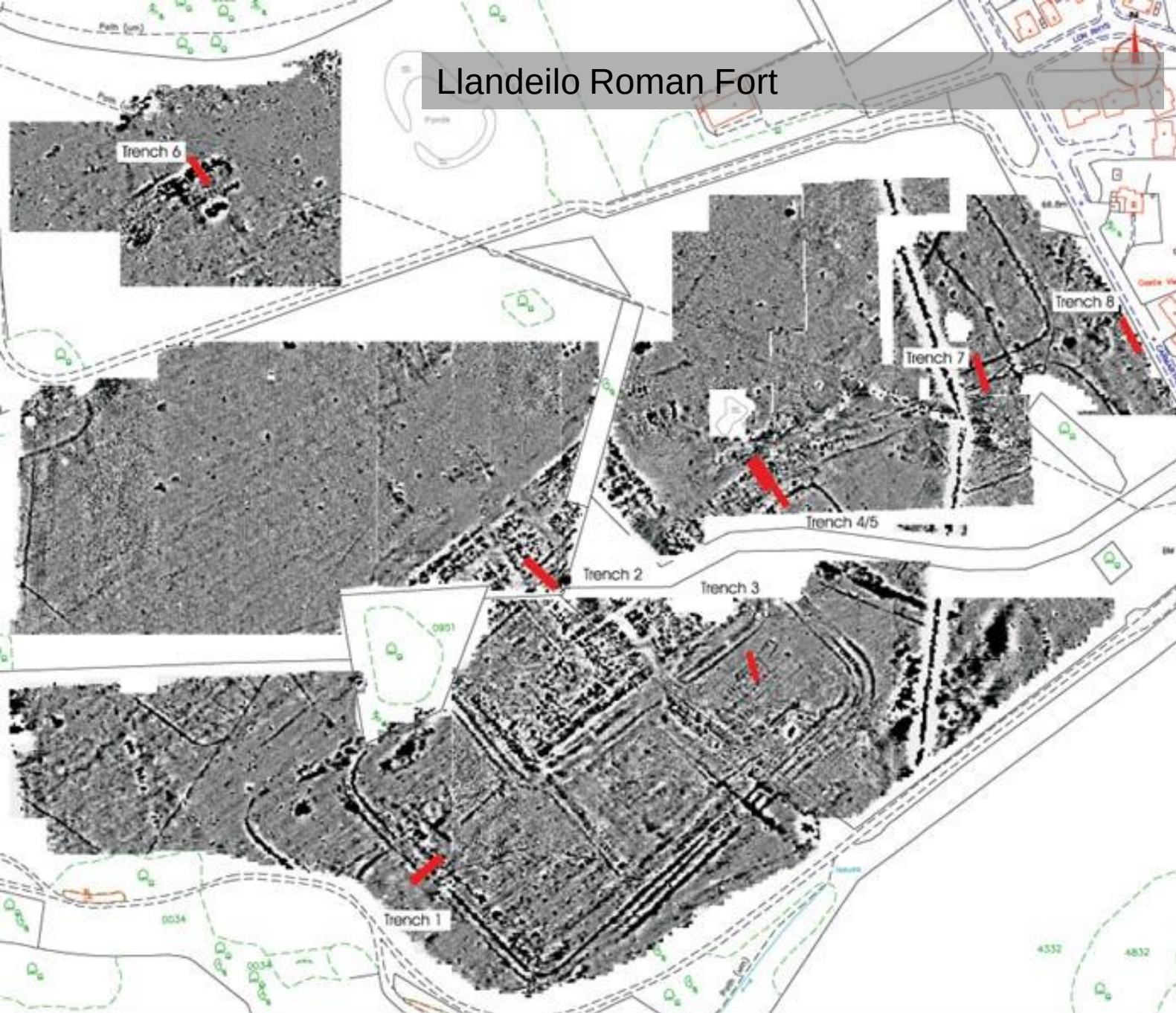


FLUXGATE GRADIOMETRY
OR
MAGNETOMETRY
(TIME TEAM!)

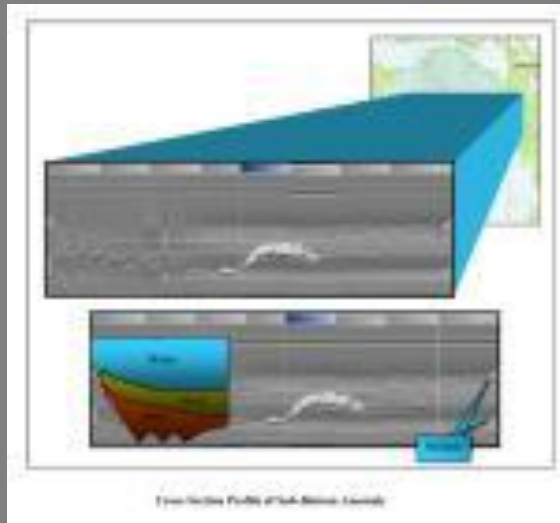
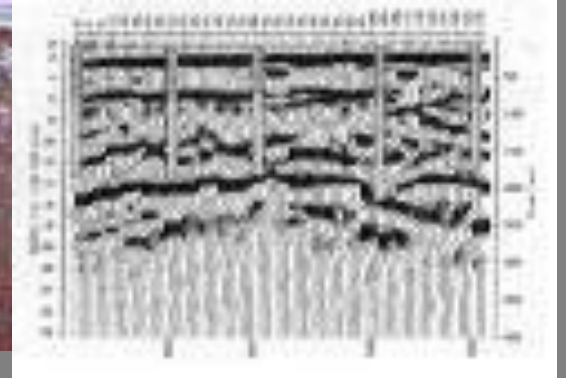




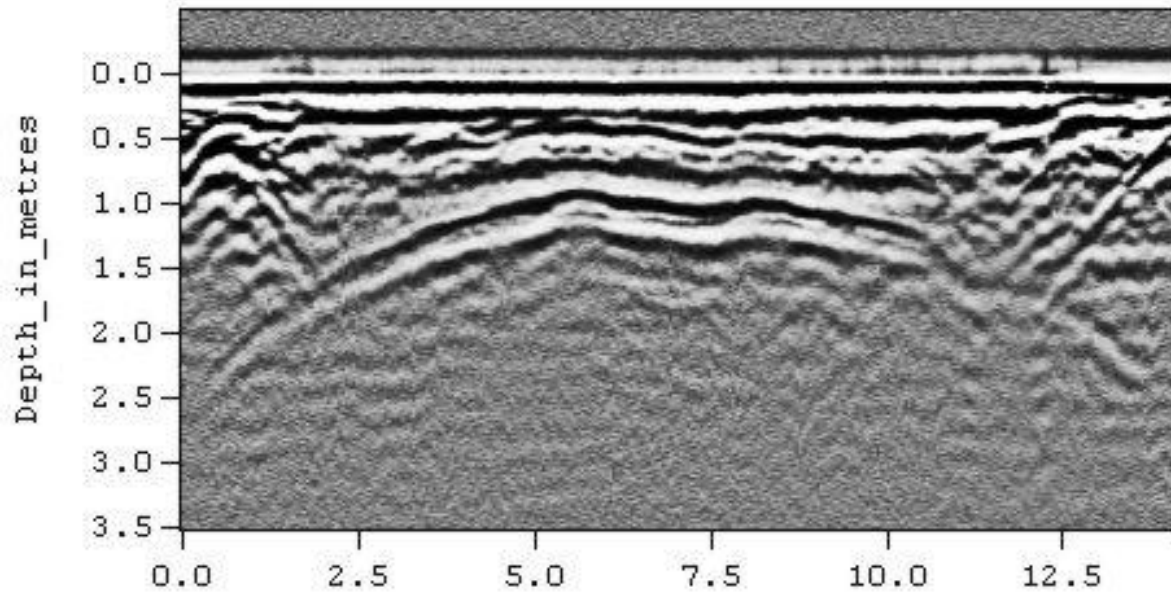
Llandeilo Roman Fort



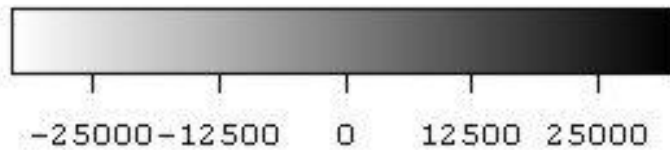
GROUND PENETRATING RADAR



_23_Depth_Section

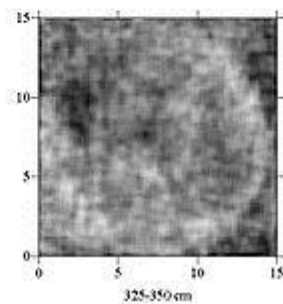
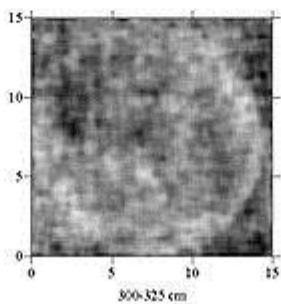
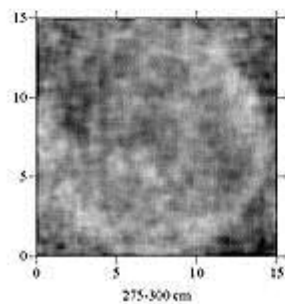
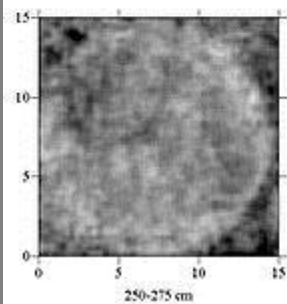
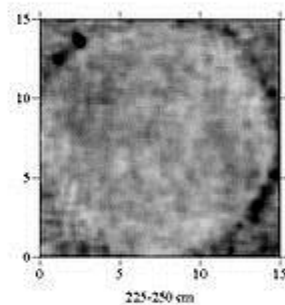
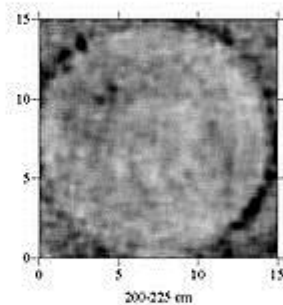
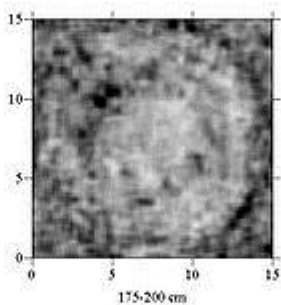
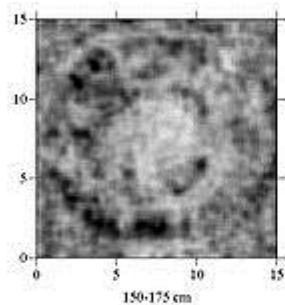
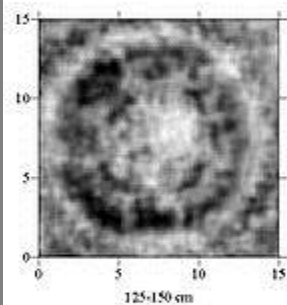
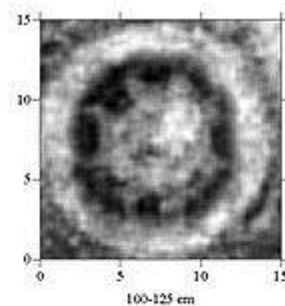
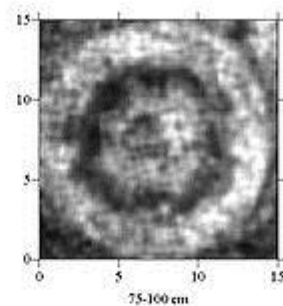
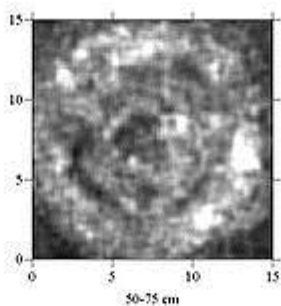
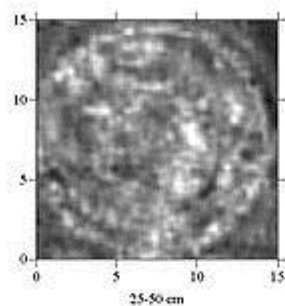
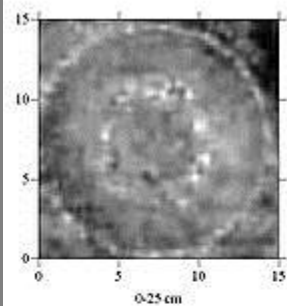


Position_in_metres



_23_Depth_Section

GPR survey
showing depth
slice through
domed roof of
crypt.

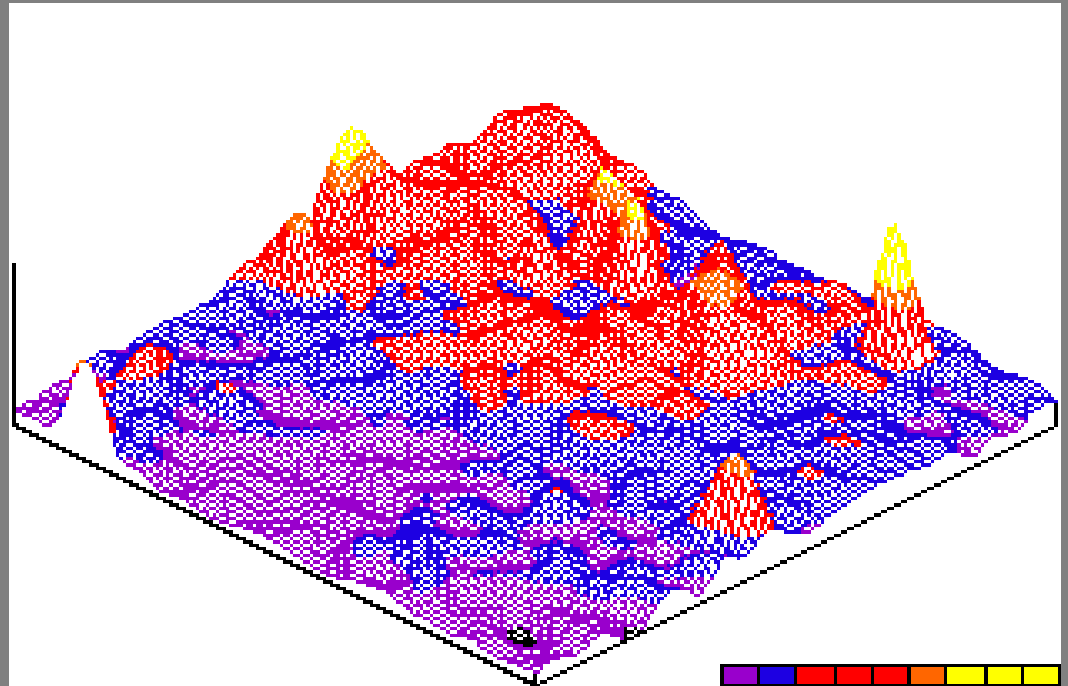


Average amplitude depth slices
Estimated signal velocity 0.1 m/ns
black=high/white=low
horizontal scale in meters



GEOCHEMISTRY

Magnetic Susceptibility

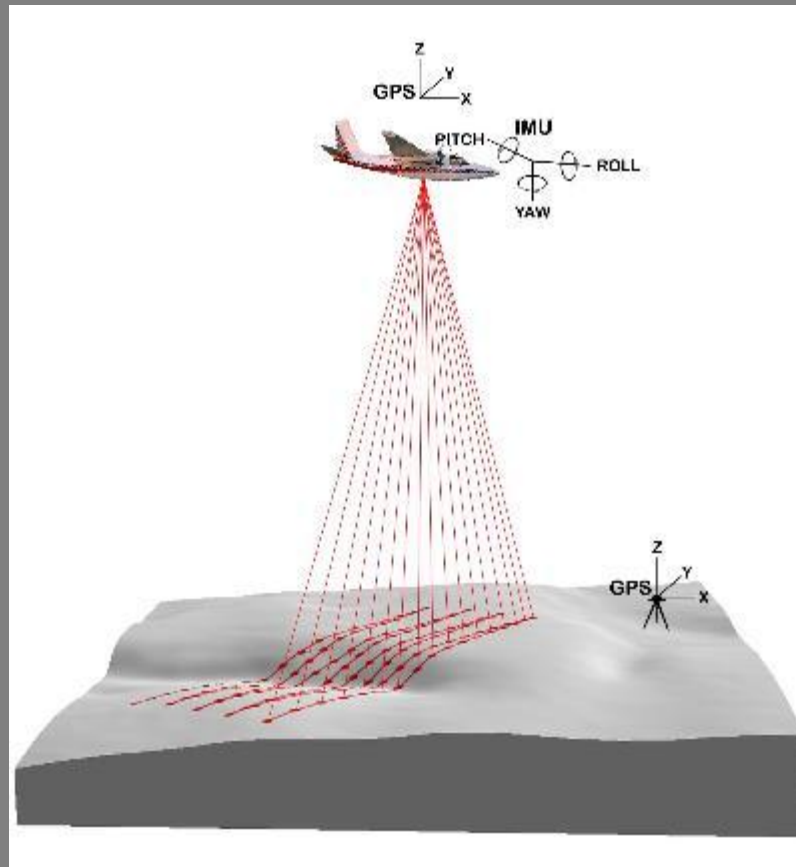


THERE ARE OTHER METHODS

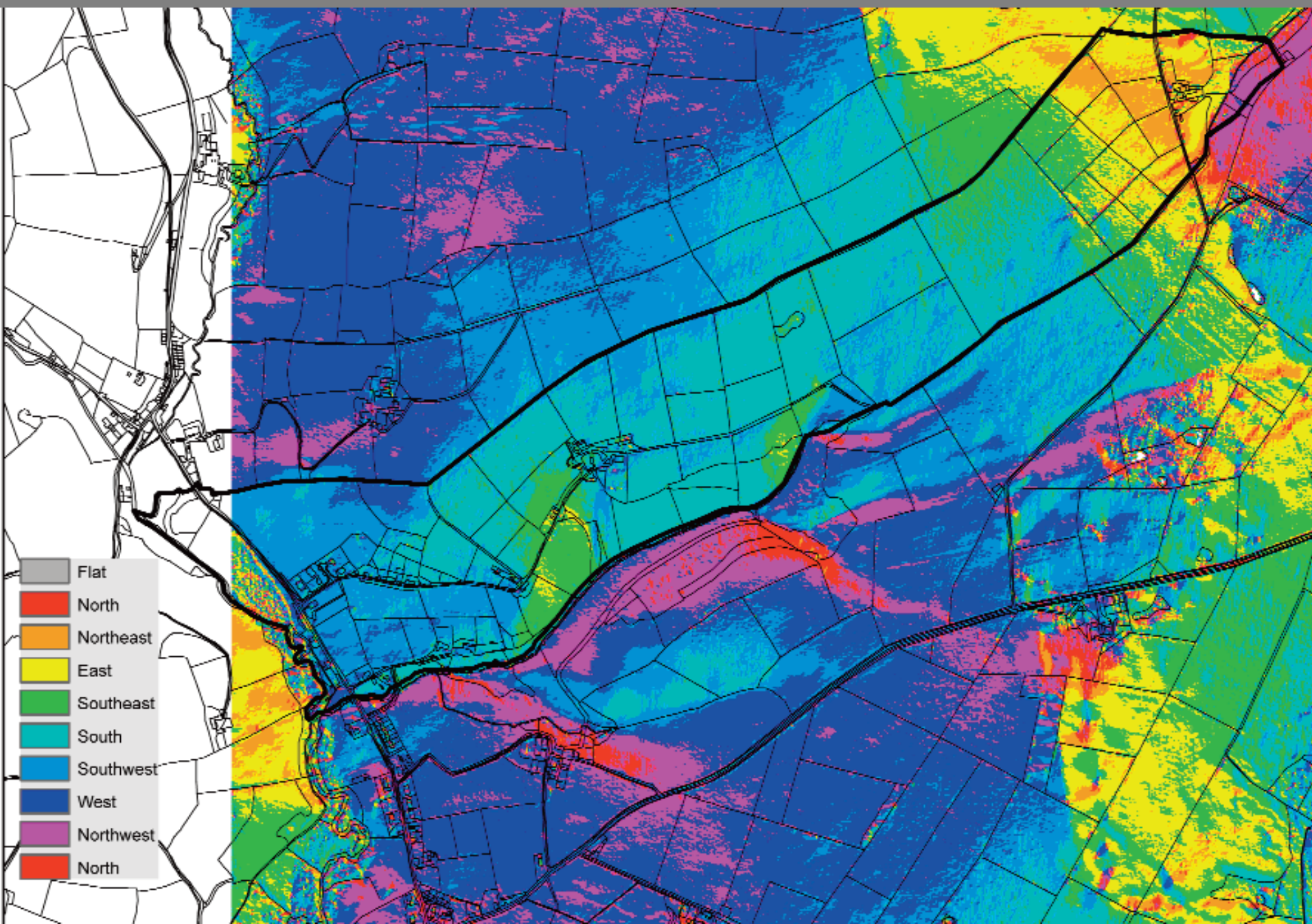
- **DOWSING**
- **ELECTROMAGNETIC PROFILING**
- **ELECTRICAL IMAGING SURVEY**
- **SEISMIC REFRACTION SURVEY**
- **Electromagnetic Conductivity (EM)**

Lidar

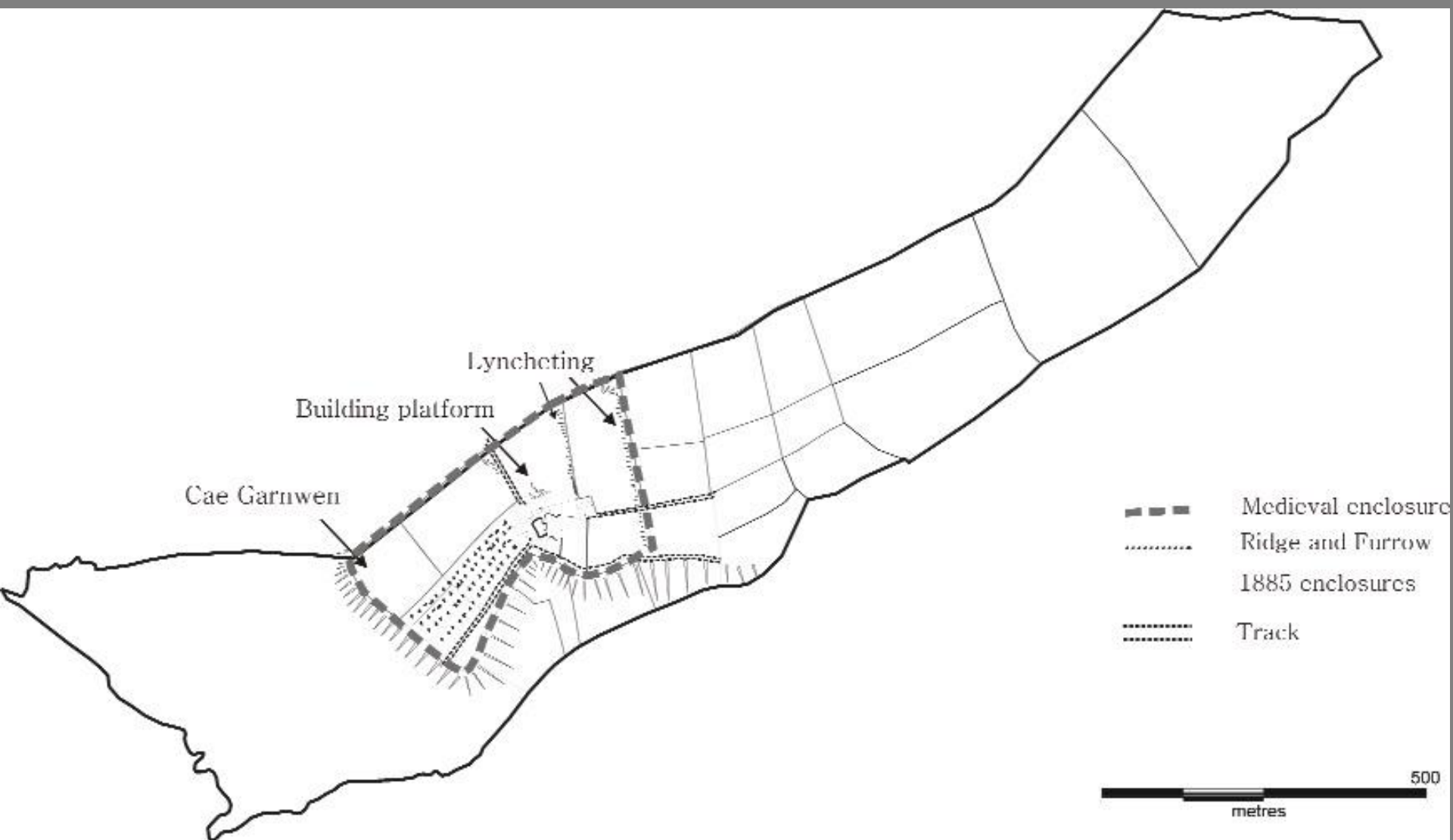
- Light Detection and Ranging



Moelhedog, Lidar data – aspect analysis

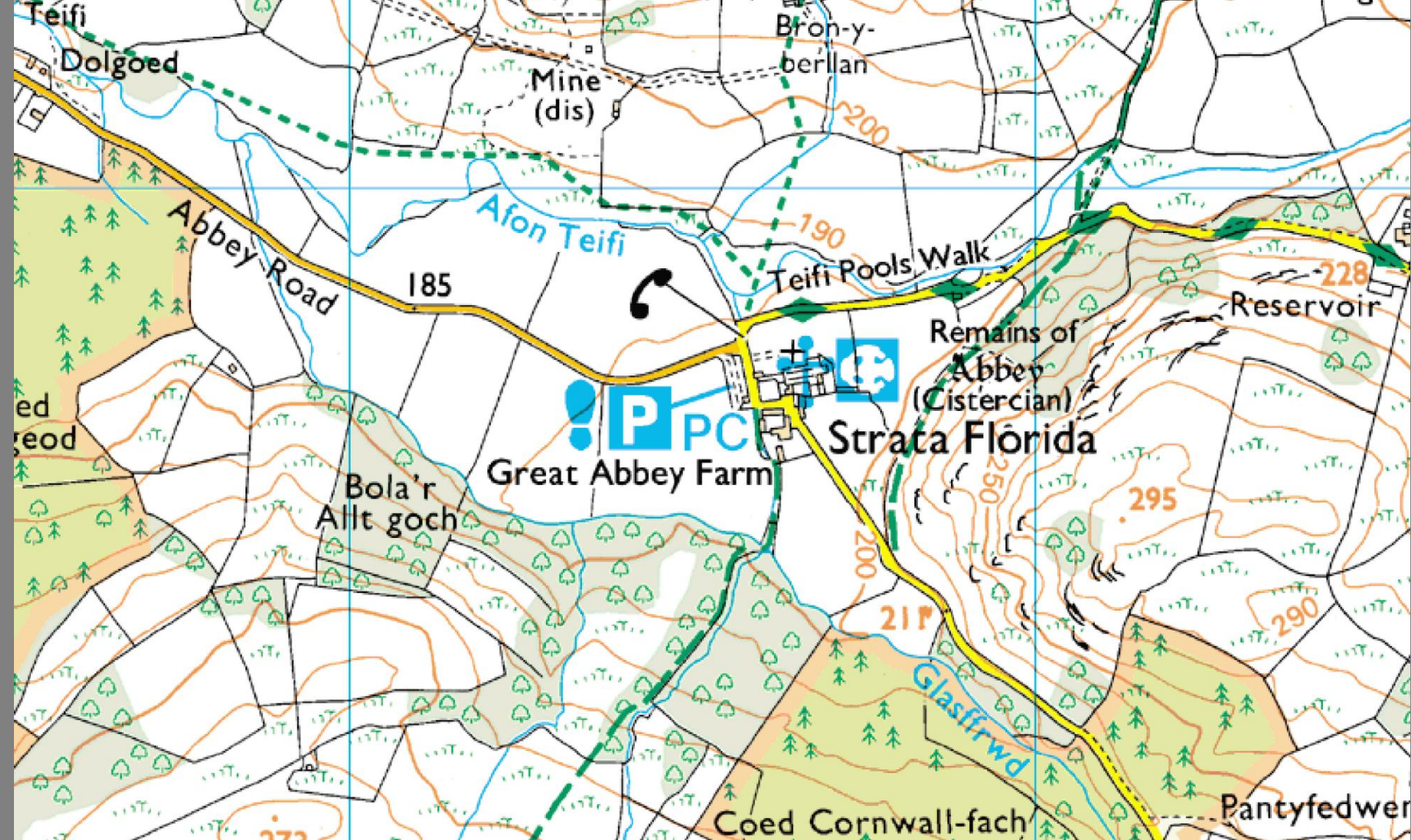


Moelhedog, Lidar earthwork mapping

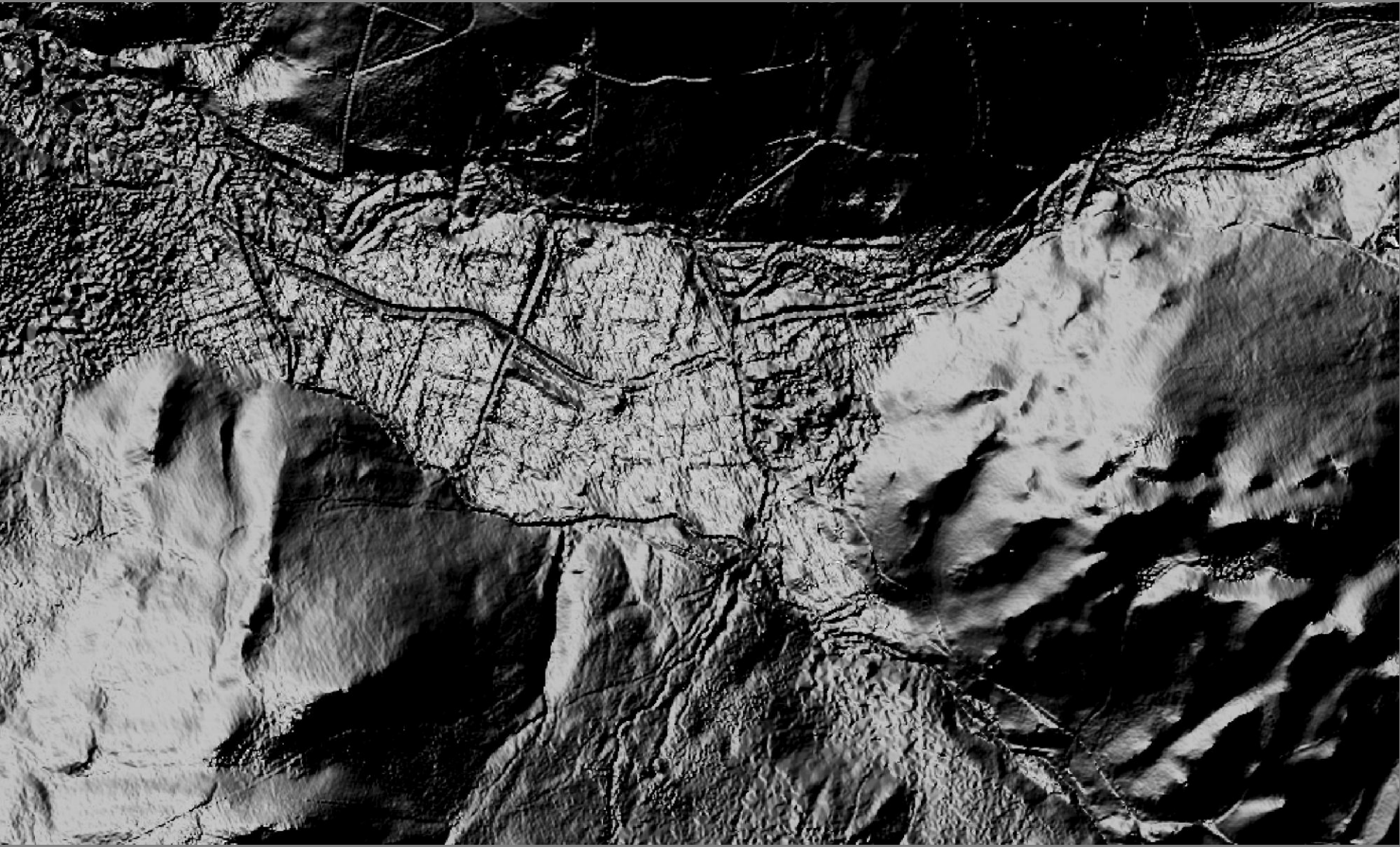




12th century Castell Hywel estate

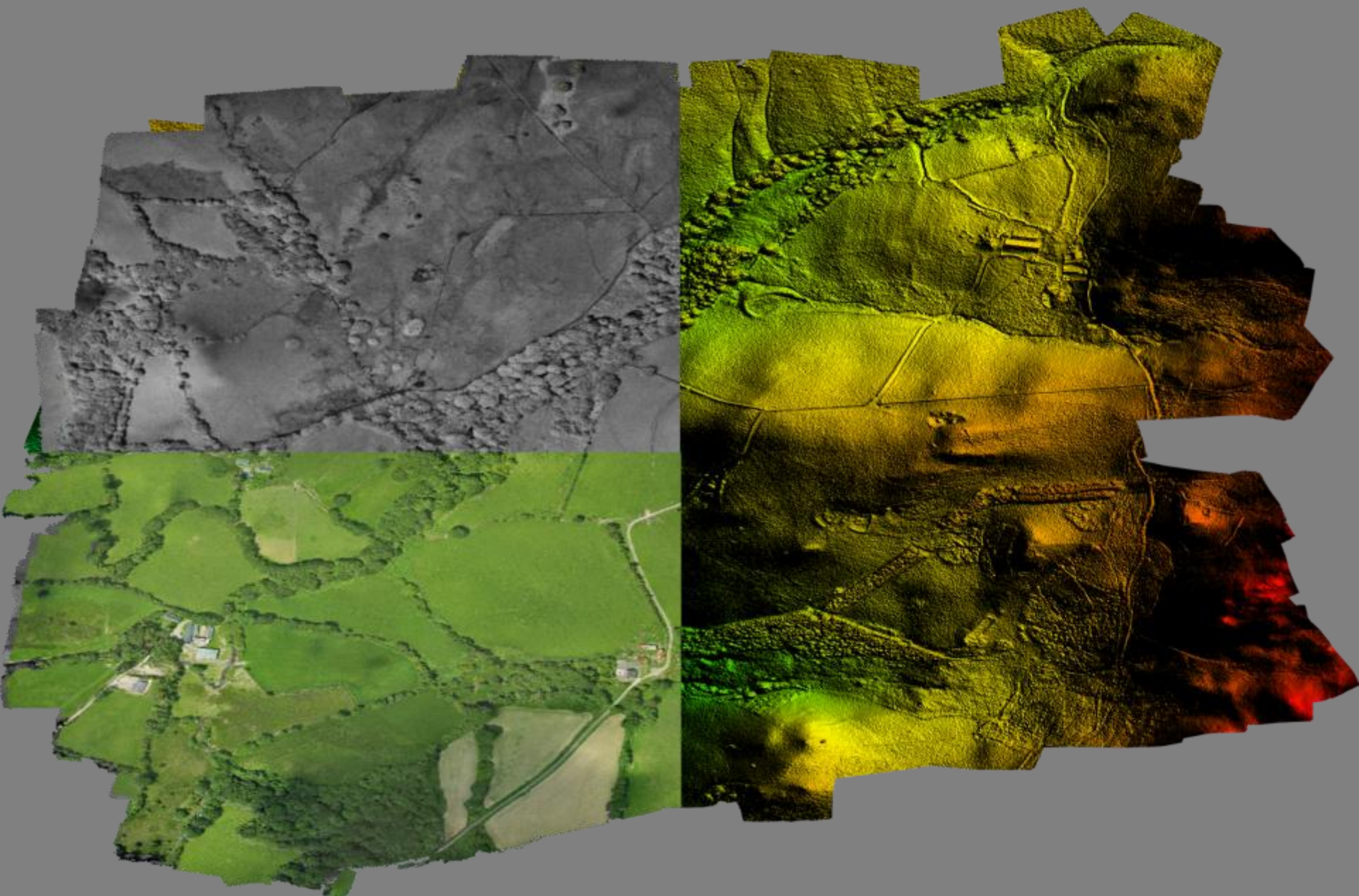


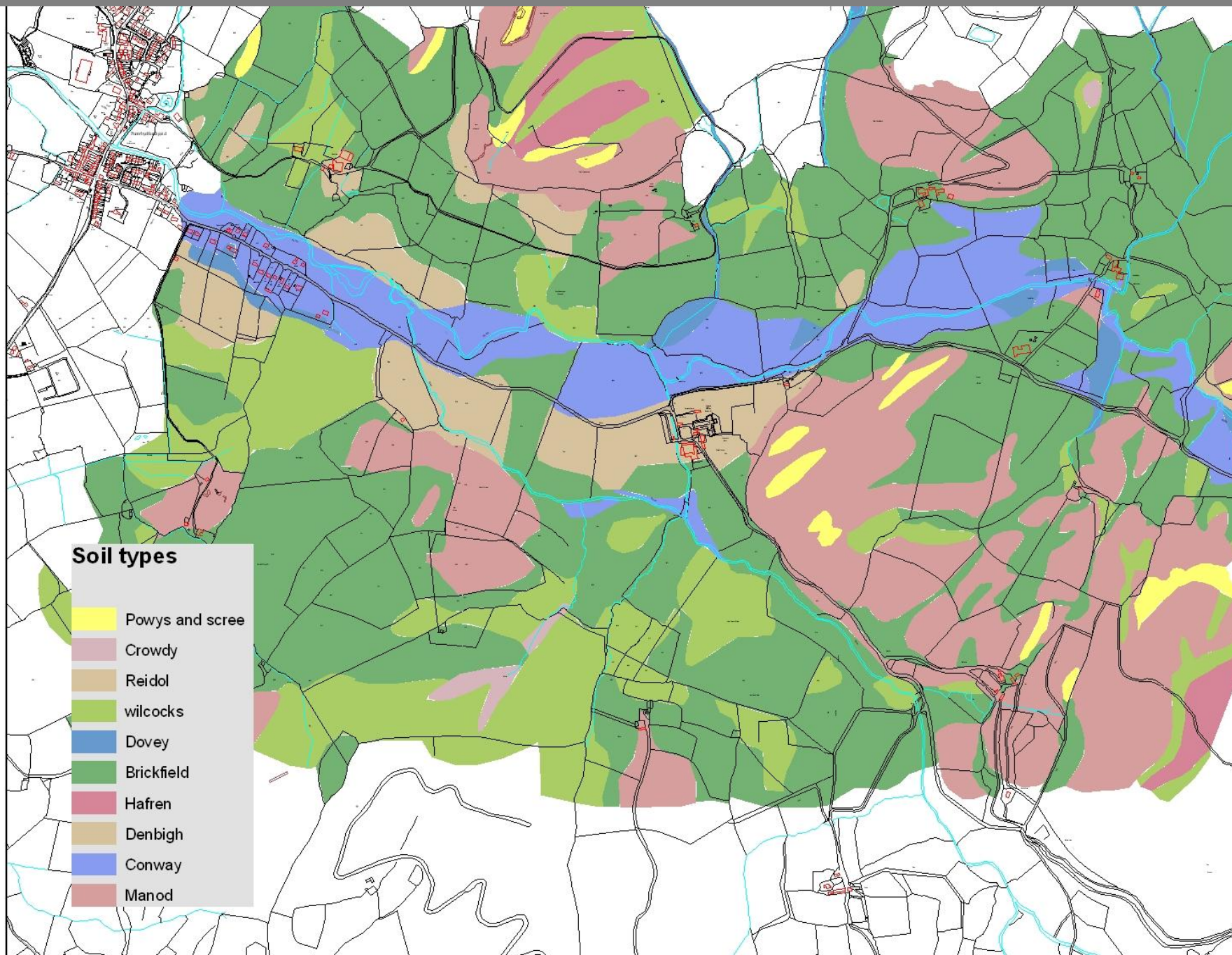
Strata Florida Abbey OS 1:25 000



Lidar at Strata Florida Abbey, supplied by Environment Agency at 2m resolution.







U:\Strata Florida\Strata Florida June 2011\Examples
(Low Resolution)

U:\ATEACHING\AH4004 Research Experience
Community, Locality and Heritage\2010\Research
Experience\archaeology\CCW Landmap









U:\Strata Florida\Strata Florida June 2011\Examples
(Low Resolution)

U:\ATEACHING\AH4004 Research Experience
Community, Locality and Heritage\2010\Research
Experience\archaeology\CCW Landmap



PLATE XV. THE IRON-AGE BRONZE OF THE BRONZE AGE.