Fieldwalking

Fieldwalking involves walking in a straight line across ploughed field surfaces observing the ground for artefacts. The closer together the walkers are placed the more accurate the survey will be and the greater potential to identify sites and assess potential risk. In Northumberland intervals of 2-5 metres have been found to be the most effective. Finds are bagged, numbered and surveyed so that each find can be accurately located on a map.

The most common finds are stone tools and pottery. Therefore, it is particularly useful for identifying Stone Age (Mesolithic, Neolithic) and Early Bronze Age sites, as well as Roman, high medieval and post-medieval sites that sometimes produce large quantities of well-fired pottery. Where sites are identified by aerial photography or geophysics, fieldwalking can be used to assess their date.

Fieldwalking at Akeld near Milfield. Walking at intervals of 2m maximises artefact recovery and accuracy of site location.

Systematic fieldwalking can identify the location of sites unlikely to be identified through aerial photography or geophysical survey.

During the Till-Tweed project over 2,700 stone tools and chips were found allowing the locations of Mesolithic, Neolithic and Early Bronze Age settlements to be identified. The stone tool distribution has also allowed areas of landscape to be characterised according to the different types of activities that took place there and the different periods to which they relate. For example Neolithic sites have been identified at New Bewick and Akeld in the Till valley while Mesolithic sites have been identified at St Cuthbert's Farm and Norham village next to the Tweed.

Neolithic and Early Bronze Age flint arrowheads discovered during fieldwalking over the site of a proposed gravel quarry in the Milfield Plain.

Fieldwalking is a rapid, cost-effective and relatively inexpensive technique which allows for 'broad-brush' archaeological prospection and landscape characterisation over large areas. It is most commonly employed in the archaeological evaluation stage of the planning process. It is particularly effective for locating Stone Age archaeology when undertaken at close-spaced intervals.

Test-Pits

Test-pitting is often used in conjunction with other forms of archaeological investigation to test for the presence of sub-surface archaeology. In areas where it is not possible to fieldwalk, such as fields under permanent pasture, regularly spaced test-pits allow the ploughsoil to be sampled for the presence/absence of artefacts, while also allowing for the identification of buried deposits. Test-pitting is different to evaluation trenches as test-pits are usually hand dug, and much smaller, with the entire contents of each pit usually being passed through a sieve.

Test-pitting being used to examine an area that produced a large quantity of Mesolithic flints as a result of field-walking and resulting in the identification of buried features.

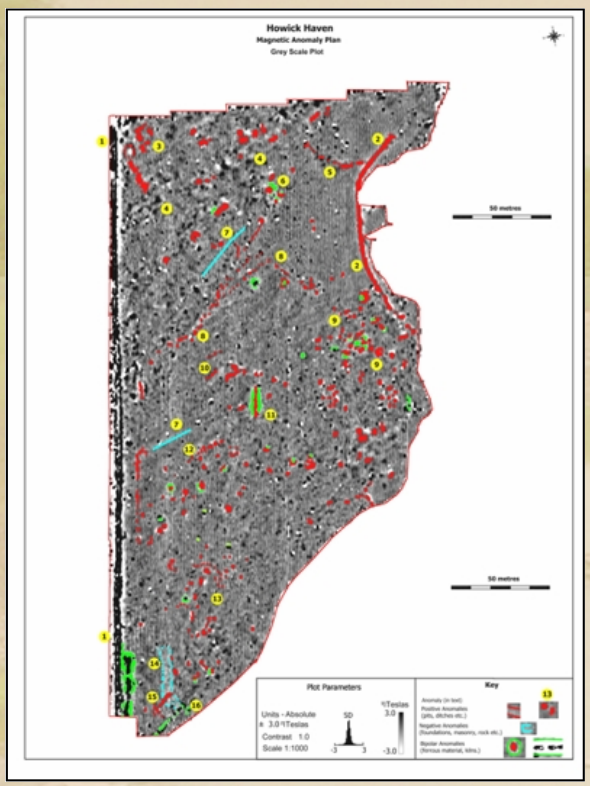
Test-pits can vary in size from 1m and 2m squares to 5m squares. They are usually excavated in a grid pattern and the contents of each pit are sieved to maximise finds recovery. Test-pitting was successfully used during the Till-Tweed project to test whether artefact scatters identified during fieldwalking had buried remains surviving below them. At a site near Akeld a pit feature was discovered below a cache of Neolithic blade tools indicating the presence of preserved deposits below the ploughzone.

A test-pit from Akeld which revealed a pit below the cache of flints found on the surface.

Test-pitting provides a way of sampling non-ploughed areas as well as testing fieldwalking data for the presence of sub-surface remains. It is an inexpensive-medium expense technique that demands significant human labour depending on the size of the area being investigated, and the sample interval required. Test-pits also provide a section through sediments and this additional information can be helpful in understanding whether or not remains will survive in the area, as well as how the landform and soil cover has formed.

Geophysical Survey

Geophysical survey offers a non-intrusive method of archaeological prospection which can aid the discovery of sub-surface archaeology. The main methods of geophysical survey are magnetometry and resistivity. Ground Penetrating Radar (GPR) is being used with increasing regularity but usually in a more targeted fashion than the two former techniques. Although GPR is expensive, on some sites it may be the only method that can be used because of its ability to give linear profiles, or 'slices', through buried sediments. If sufficient profiles are taken this technique can provide three-dimensional images of sub-surface features.



An example of a geophysical magnetometer survey over till and sand geology showing a number of 'anomalies'.

With risk minimisation a key concern for most developers, geophysical survey can offer a relatively inexpensive and cost-effective way of testing large areas for the presence of sub-surface remains. However, geophysical survey can work with varying degrees of success depending on the type of geology, thickness of overlying sediments, soil-moisture conditions present, and whether results are hindered by the presence of services, underground pipes and other modern disturbance. Sandy soils, clays and alluvium can all give productive results but it is also dependent on the size and type of fill of archaeological features. Small features such as post holes and small pits are unlikely to be revealed and for those features with fills similar to their surrounding geology recognition is also hindered.

Geophysical survey requires the use of specialist equipment and computer software and is undertaken by specialist staff. The quality of geophysical results is also affected by other factors such as data collection intervals, and use of appropriate methods of data processing and presentation.

Geophysical surveys work very well in some situations and less well in others. To maximise the benefit of geophysics, it is best to employ a range of techniques, usually starting with magnetometry, as different techniques reveal different information about buried deposits. It is an inexpensive-medium expense technique that does not require large amounts of labour but does require the use of specialist equipment and staff.