

Archaeological sites in the landscape

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What are the chief methods used to detect archeological sites in the landscape? Critically assess the pros and cons of the methods you identify utilizing relevant illustrations.

The archeologist uses a scope of techniques to actively detect and turn up archeological sites within the landscape ; these methods are non-invasive and non-destructive and autumn into four wide classes:

* Desk Top Surveys • Surface Surveys

* Geophysical and Geochemical studies • Aerial Surveys (Grant et Al, 2002. p5) .

In add-on to these, some sites may be discovered by opportunity, for illustration when quarrying, dredging and peat film editing or merely out in walking in the landscape. These wide classs all complement each other and the most relevant methods in each instance will depend on the terrain of the country being investigated and the resources and clip available for probe. Besides, the inquiries being asked and the grade of truth required will hold an consequence on how these techniques are used (Greene. 1991. p54) .

Desk Top Surveys:

The desk top study is office based and uses bing paperss such as maps, historical paperss, old archeological records, images and literature, all of which can all supply intimations and mentions to archeological sites. Maps can be used to turn up sites, and are among the most basic resources available to the archeologist. Early sixteenth century maps are non ever to scale but can be really utile, Ordnance Survey started printing maps in the early nineteenth century and, by analyzing a sequence of maps of an

country, much can be learnt from the alterations in usage of the land and edifices. (Grant et Al, 2002. p8) . Old tithe maps and terriers, normally found amongst the workss and documents associating to the ownership and direction of estates and belongings, may offer penetration about forgotten sites (Barker, 1993) . Although the bulk of early records have non survived, there is still a broad scope of available which the archeologist may happen of value. Legal records, including volitions and tribunal records, can supply boundaries of ownership and hints to the maps of edifices. The Domesday Book and other revenue enhancement records and tithe awards can place the economic usage and boundaries of land,

Pictorial records such photographs pictures, and engravings, and descriptive histories written in books, journals and travelogues can all be of value. Of peculiar involvement is the work of William Stukeley (1687 - 1785) , an accurate and observant recording equipment who travelled extensively throughout Britain, and William Camden (1551 - 1623) , whose thorough and elaborate descriptions were published in the first general usher to the antiquities in Britain, ' Britannia ' in 1585 (Greene pp24 - 27) . These records can be freely found in museums, libraries and private aggregations and may offer a rare record of an archeological characteristic. Detailss of any old archeological diggings, discoveries and old study consequences are all held in local SMR and national NMR offices and can offer insight into possible sites for geographic expedition.

There is frequently much truth hidden in the fables and narratives of antiquity and a survey of these may supply a hint to a forgotten or topographic point. Most traditions and myths are founded on existent people

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and topographic points which, over clip, can go overdone and incredible. (Grant et al. 2002. p8) . By sifting the embroidery from these legends the archeologist is frequently left with a helpful factual narration. This is a inexpensive and effectual manner of reaping information, but it can be clip devouring. During interviews with local occupants in Kythera, Greece a huge sum of anecdotal information was generated on the usage of the landscape of the island, its ' forsaking and reuse, and the connexions between people, small towns and churches which all helped to put archeological work into context (Johnson & A ; Wilson. 2003) .

The desk top study is of peculiar value where probes are portion of the planning procedure to determine whether there are likely to be archeological remains which could be lost or threatened as a portion of the edifice and development of the land. (Grant et al 2002. p6) . Many historical records are free to entree and can be found in libraries, museums, County Records and Archives Offices, on the cyberspace, at Local and National Sites and Monuments Records offices and in private aggregations.

Surface Surveys.

These are ocular studies which seek to happen hints of possible sites and are carried out, most normally, on pes. A surface study can be systematic or unsystematic, although the most normally used, is a systematic attack (Renfrew & A ; Bahn. 2008. p78) . The intent is to do a study of archeological discoveries within an country to find if they might indicate to past human activity (Lynch. 2006) . A grid is usually laid out on the land to help function and a squad of Walkers go over each country on the grid, entering sites and discoveries. The overall record of the types and spread of

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the artifacts found can give a good thought of the age of a site and its possible old utilizations (Adkins et al 2008) .

Fieldwalking is an effectual and comparatively inexpensive manner of appraising land and has a critical topographic point in the find of archeological sites. Once the discoveries are identified and analysed, the informations can besides assist to supply information about the day of the month of a site and its possible maps. Consequences are by and large more dependable where the part is walked repeatedly as a long term undertaking (Renfrew & A ; Bahn. 2008. p 79) . It does hold some restrictions in that different fieldwalkers may hold differential types of aggregation across the same sight. Fieldwalking works best on cultivable land, but needs to be carried out at times in the cultivable rhythm when flora is low. (Grant 2002) . Tesseræ found during field walking at Rowler Manor in Croughton, Northamptonshire led to the find in 1991 of a Roman Villa along with a Mosaic paving (Dawson, 2008)

Geochemical and Geophysical Surveys

The activity of worlds significantly alters the geochemical composing of dirt, and the archeologist can utilize chemical testing to find countries of change to the dirt by human activity.

The most common geophysical trial is phosphate analysis. This chemical is present in most living things and the presence of domesticated animate beings, people and workss in a landscape will increase the concentration of phosphates in that landscape. Areas of high impregnation of phosphates can so be explored farther to determine the significance of the activity (Renfrew

& A ; Bahn. 2008. p105) . At Plas Gogerddan, Ceredigion in Wales, geochemical analysis was used to find that entombments on this Early Christian Burial site could be identified utilizing phosphate analysis and possible grave sites of farther entombments were recorded (Murphy 1992) .

Geophysical surveying has developed well over the last few old ages and is used with great success in archeological site prospection. There are two chief methods of geophysical surveying, these are electrical resistivity and magnetometry (Bowden 1999. P 120) .

Resistivity appraising involves going through an electrical current through investigation set into the land, and is based on the ability of sub-surface stuffs to carry on that current, By and large, higher opposition characteristics such as inhumed walls have a limited wet content and infilled ditches and cavities which retain wet will give lower readings. (Reference)

The technique is particularly suited to the find of rock constructions. Its success is affected by local geology and besides the conditions conditions. Very dry or really wet conditions, every bit good as fluctuations in the temperature can impact the quality of the consequences as they affect rate of flow of the electric current. The electric resistance equipment is heavy to utilize and the study can take some clip to finish, but this is a cost effectual method of study.

Magnetised Fe oxides are present in the dirt and past human activity alters and redistributes these, making stronger and weaker responses which can be detected as magnetic anomalously.

It is really portable and good for rapid surveying of land. The consequences produced can be really elaborate and they are really utile for placing inhumed ditches, cavities, kilns and fireplaces. (Reference)

The undersoil of the land can act upon the consequences ; the most antiphonal dirts being are chalks and limestone. Igneous undersoils are the most hard to look into with this technique and the consequences on clay dirts can be fickle.

Electric resistance and magnetometry techniques were used in karstic terrains in County Cork, Ireland, which identified the place of a antecedently unknown cave (Gibson et al, 2004) .

A figure of newer techniques including Ground Penetrating Radar (GPR) and Geographic Information Systems (GIS) are besides available and going popular tools for the archeologist. GPR was developed for usage in defense mechanism and technology. It is an expensive procedure and is of greatest value where buried sedimentations are close to the surface of the dirt. It has the benefit that it can take readings through tarmac surfaces, and hence is utile in urban environments (Grant et al. 2002) . GIS is a powerful computerised function system with the ability to analyze quantitative informations, which is utile for plotting spreads of discoveries and trial hypothesis. GIS was efficaciously used at Tel Shiqmona, Israel, to carry on coastal and marine studies and to measure the potency of Maritime trading with the Phoenicians (Breman. 2003)

Aerial Surveys

The usage of aerial picture taking was pioneered by O G S Crawford, an Archaeologist and Observer in the Royal Flying Corps during World War 1. Crop Marks, dirt Marks and shadow Marks all cause forms which can be observed from the air. Most aerial exposure for archeology usage are taken at an oblique angle which give better positions of a site, although they do falsify the position. It is of import to include a landmark in the exposure in order to supply a fixed point for mapping a site (Riley 1982) .

Aerial Photograph of Crook Laithe Settlement, Linton, Yorkshire.

This technique is most effectual on cultivable land and highland countries, least effectual on to a great extent ploughed land and ineffective on to a great extent built up countries and land with plastic covering over harvests. Aerial picture taking is valuable to the archeologist and an huge figure of archeological finds have been made utilizing this method (Riley, 1982) . In a study in Augacatel, Mexico, where heavy jungle prohibited the economical usage of land studies, 25 exposure were taken uncovering up to 63 possible adult male made constructions (Matheny, 1962)

The conditions conditions are of import and exposures are best taken when the Sun is low in the sky (early forenoon or eventide) on a clear twenty-four hours, as the shadow Marks will demo up best under these conditions (Adkins 2002) . The costs of winging are expensive, but since the equipment and movie are relatively inexpensive and big distances may be covered in one flight, this is an effectual and important technique to use in archeological prospection.

In add-on to these techniques, some sites are discovered rather by opportunity. In 1985, a husbandman found a figure of castanets and a little unit of ammunition lead object on a sandbank in Orkney. After demoing his discoveries to an archeologist, this lead to the find of a Viking boat entombment (Towrie 2010) . Whilst delving a well, some provincials unearthed fragments of terracotta, which lead to the find of arguably, one of the most dramatic finds of the twentieth century, The Terracotta Army of Qin Shi Huang in China (Tianchou 1996) .

The high cost of archeological diggings mean that it is of import for the archeologist to cognize where to delve in order to avoid expensive errors. The techniques outlined above all assist the archeologist in the find of sites in the landscape, so that future diggings can be carried out in the most cost and clip effectual mode.

' It is singular how much can be revealed about a site without digging ' (Greene 1991. P 42) .

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