Biggar Archaeology group

Bringing the past to the present

Engaging in archaeological fieldwork in Scotland by voluntary groups

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Introduction

This paper is given as an aid and encouragement to people considering engaging with archaeology in the field. It is not a comprehensive statement but rather a brief introduction as to what will be required by the volunteer, in terms of knowledge and equipment to get started. The information and equipment required to operate safely, legally and responsibly will depend on what one wishes to do or participate in

Numerous books are available on the subject with a more complete explanation of the role of an archaeologist, both professional and volunteer, but see Ward 2013.

The reason for this paper is the realisation that the archaeological heritage in Scotland is being eroded and lost without record, and at an alarming and increasing rate. The experience of the Biggar Archaeology Group (BAG) over the last three decades has shown that without their voluntary intervention, a considerable corpus of archaeological data would have been lost, much of that being of national importance.

This work does not include coastal or estuary work as that is beyond the experience of the writer, the principal fields of operation discussed here are unimproved uplands, arable fields, reservoirs and forests.

Although BAG make use of metal detecting in certain circumstances, that subject is not covered here, except to say that such activity and participants of it should make themselves aware of the Law in Scotland, and in particular Treasure Trove Law (App II and below). Nor does this report deal with geophysics although some amateur societies conduct such work with great success.

Responsibility

The Countryside Code in all respects should be adhered to when engaging in archaeological fieldwork.

Archaeology should be considered as a great adventure, a voyage of discovery, and participation in it will give a sense of achievement and satisfaction to the volunteer when discoveries are inevitably made. However, archaeology is a finite resource and the presumption should always be on preservation, rather than disturbance. For that reason excavation should only be entered into with considerable thought regarding the outcome.

There are two principal reasons to excavate; to salvage something which will be destroyed anyway, in which case everything is to be gained and nothing lost, or to engage in research work where the site is under no particular threat, and in this case minimal work should be planned in order to achieve the greatest outcome. If in any doubt, advice should be sought, and some organisations are listed below (App II) which will be able to supply information.

In other types of fieldwork such as upland survey and arable field walking, there should be no reason for criticism by the 'profession', providing proper records are made of the results. In the case of survey work, if mistakes are made, the work can be re done by the same participants or others and no detriment to the sites will be caused. As far as arable fieldwalking is concerned, it can be shown (Ward 2013) that objects within plough soils are increasingly at risk from modern cultivation practices, all that is required here is for objects to be accurately recorded for location within the field, the records made public and the proper procedures followed for the disposal of finds, all of which is given below.

Working in areas such as reservoirs and forests requires a deal of safety consciousness and responsibility and at all times the safety of participants is paramount to any other considerations.

Health and safety

Whether operating as an individual or in groups, health and safety awareness is the key to successful projects. Organised groups such as societies will most likely take out insurance for personal and or public liability, and this is a good precaution which will add a degree of comfort and confidence to those allowing work on their land. Depending on what work is to be undertaken advice should be sought regarding health and safety issues and the Law, and in some cases a written method statement and risk assessment should be made.

The most valuable tool for safety for the volunteer is common sense.

Appropriate clothing is also essential for fieldworkers, boots, waterproofs and warm clothing are a must, and nothing will spoil a day more than getting soaked or cold. Gloves, knee pads, safety glasses (for dusty work) should be part of the kit, along with a basic First Aid Box.

Awareness of the safety of others when using hand tools should be instilled in all who participate.

Permission to operate

It is essential that permission from landowners is sought and granted before any work proceeds on any land, such as in unimproved pasture, arable fields, reservoirs or forests. Invariably such permission will be granted if the correct approach is made, explaining in detail what, why and when the fieldworkers wish to do the work. Respect for land use operators is paramount and arrangements must be put in place as to when and when not a project may commence, for example fields must be walked before crops are planted, surveys should not be attempted during lambing time or during shooting, and work in forests should not be done while forest operations are ongoing. Safety factors should be considered in advance for reservoir and forestry projects. Basic rules of respect and safety should be drawn up and adhered to. Such preliminary planning will reap huge benefit and enhance the pleasure in carrying out the project work.

Law

The Law in Scotland is quite clear and unambiguous (unlike that of England) regarding objects found in the ground and around the coasts. In a nut shell, anything found and which cannot be attributed a legal owner, belongs to the Crown as Treasure Trove. The Law of Bona Vacantia (ownerless goods) applies in Scotland and it is important to understand that land owners do not own objects which cannot legally be proven as theirs, even though found on their property. A leaflet explaining the Treasure Trove Law in Scotland is obtainable from the National Museum of Scotland. The law in Scotland covers all objects and materials found, and in this it is dissimilar to the Law in England where certain categories only are regarded as Treasure Trove. Therefore objects of antiquity are unlikely to have any legal owner in Scotland other than the Crown.

The principal of 'finders keepers' does not apply and any objects or materials found should never be retained in private hands, they must be reported to a local museum, the police or the National Museums, where arrangement should be made by the finder to transfer objects to these organisations. The procedure is for the Treasure Trove Panel to decide the ultimate fate of objects, which if significant will be claimed by a registered museum, and if not – returned to the finder – as their legal property.

Treasure Trove Law allows for discretionary awards to be made to finders of some objects, therefore it is in the interest of finders who make casual discoveries to report them punctually; retaining found objects in Scotland is illegal and can have serious consequences, not the least of which is – no reward! Bona fide searches for objects by voluntary archaeologists as is discussed here will not be subject to awards, as the presumption is that such activity is done for the greater good.

Familiarisation with the relevant Law of Scotland is necessary and this should also be explained to landowners who grant permission for a project to proceed. None of which is an onerous task.

Equipment and tools

This will depend entirely on the type of project; the two main areas of work may be surveying and excavation.

For surveying the list may include measuring tapes of different lengths, ranging rods, magnetic compass, optical prism and possibly a GPS recorder (Global Positioning Satellite), drawing boards with water proof film, scale rulers, notebook and camera.

For excavation all of the above will be needed, but obviously hand tools will be required such as trowels and hand shovels, spades, digging forks, pick, hoes, buckets, possibly sieves, finds bags, drawing frames, wheel barrow, and a multitude of small items as required.

Suppliers of tools and equipment will be available from Archaeology Scotland (Appendix II).

Upland surveying

The upland and unimproved landscape of Scotland (Pl's 1 & 2) provides a golden opportunity for voluntary archaeology, quite simply because this category of land has seen little or no interference or disturbance of the ground by people perhaps since pre-historic time, although part of the thrust of this paper is to intimate that this is changing rapidly (Ward 2013 ibid). The entire landscape of Britain is the product of human management (Pl 3) and as a consequence, archaeology is everywhere (Pl 4).

Archaeological sites of all periods may be found and many of these manifest themselves as visible features on the ground, for example pre historic cairns, burnt mounds and post medieval building outlines, and even as changes of vegetation. Ancient field systems are often still visible with boundaries and features such as rig and furrow, all of these indicate the past presence of people – who lived and died on the landscape, somewhere, the sites of their houses and burials must exist nearby.

The experience of BAG in the relatively tiny part of the Southern Uplands of Scotland where they work (Pl 5) has reaped a vast amount of previously unrecorded surveyed data (eg Ward 1992 & 2004). The ability to draw scaled plans is most helpful, but written descriptions lodged in the National Monuments Records of Scotland (NMRS) will secure the information.

The fact that previous archaeological enquiries have taken place on a particular patch of ground should never be taken as 'everything has been found', this is seldom the case, as seasonal, weather and vegetation factors mean that sites will become invisible at certain times of the year. Lighting alone can cause sites to stand out dramatically – or disappear.

Plate 1 View of the Lowther Hills in the Southern Uplands of Scotland

Plate 2 View of Daer valley in the Southern Uplands of Scotland

Plate 3 View of heather burnt landscape in Lowther Hills

Plate 4 Two burnt mounds discovered in Daer valley

The optimum time to do upland survey is the winter months between October and March because the vegetation will be at its lowest level, allowing for the most subtle features to be seen (Pl 6), (remember NO GO lambing time (April/May! and – be aware of shooting parties). Early morning and evening sunshine will reveal many sites by shadow effect, and which gradually become less visible throughout the day as the sun rises overhead. The same is true when a light dusting of snow or frost is on the ground. However, even in pouring rain, with adequate waterproofing of both people and drawing boards, good surveys may be achieved.

Written descriptions are fine if all the information regarding the site or feature is given, however, plans are so much better in explaining the relationships between features and shapes and sizes etc and of course photographs are worth a thousand words.

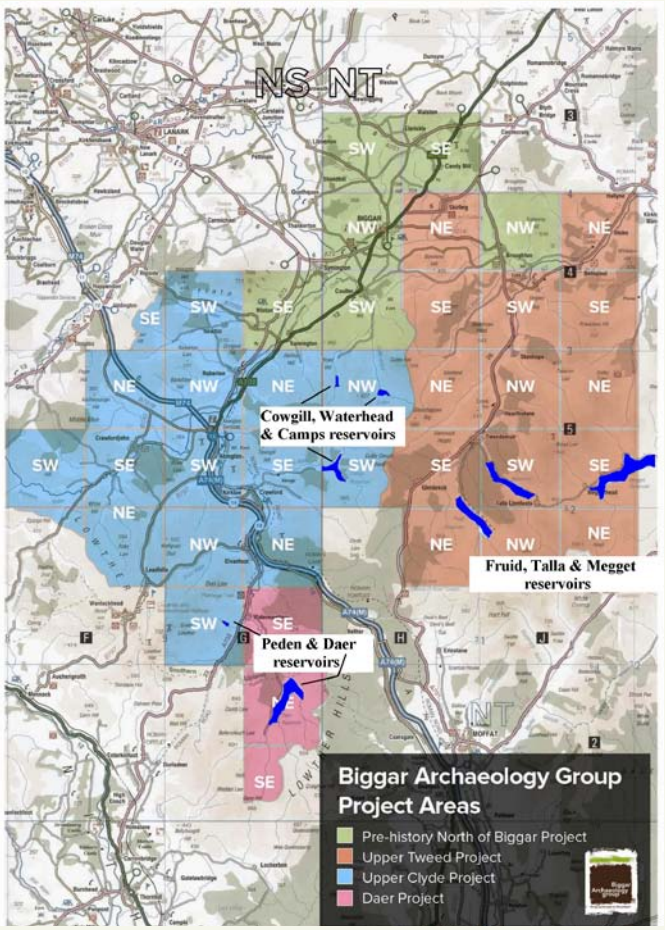

Plate 5 Area of fieldwork by BAG in southern Scotland

Plate 6 Possible barrow discovered in heather landscape near Biggar

The basic information should be:

- National Grid Reference (NGR)
- Map sheet number/s
- Height above sea level (given as metres above Ordinance Datum, mOD)
- Name of feature eg 'cairn' 'mound' 'building' 'boundary' etc
- Written description which should include the additional information on location, size, shape, full description of feature/s, context with adjacent or nearby features, description of vegetation surrounding and on the feature/s, compass alignment if necessary, and anything which may help people to understand what you have found. Too much information is better than not enough (See Ward 1992 & 2004 for BAG surveys, ibid).

Expensive equipment is not necessary to make good surveys; even surveys of large areas are easily and speedily accomplished with basic equipment. This can even be done single handed but it is preferable to have two or more people to help, working with others is always more enjoyable.

Appendix II gives the method of tape offset surveying which can be done by anyone.

Arable fields

Plates 7 - 13

Walking over arable fields is a most worthwhile and rewarding pastime to engage in, but as always, permission must be sought first. Fieldwalking allows the participant to build up a good working knowledge of local geology as well as archaeology and while it may be confusing to begin with, experience will develop as more walking is done. It is excellent exercise, need not be too strenuous, gets one fresh air and gives a perspective of the landscape not otherwise available from roads. You will also see the countryside in all its glory – and moods! So take a camera with you.

The basic equipment are finds bags and waterproof marking pens, measuring tapes and canes for recording finds, but much easier nowadays, is a hand held GPS recorder.

All one then does – is go for a walk. Walking systematically will produce better results and be more efficient in finding objects. It is best to cover all of the ground in sweeps of up to 3m wide, any wider and you may miss things. Groups should line up about 3m apart (Pl 7) and walk in unison if possible (Pl's 8 & 9), traversing the field back and forth. If a particular field is very productive (and some are) then walking both ways over the same ground will produce even more finds, since changing lighting and different viewing angles will be had.

Plate 7 Volunteers lined up for fieldwalking at Weston Farm, near Dunsyre

Plate 8 Volunteers walking Pre-History North of Biggar Project. Dolphinton

Plate 9 Volunteers walking Pre-History North of Biggar Project. Carwood

Plate 10 Range of arrow heads found in fields

Plate 11 Range of arrow heads found at Howburn Farm. Late Upper Palaeolithic

Plate 12 Barb & tang arrow head found near Biggar (see Plate 13)

Plate 13 Barb & tang arrow head found near Biggar (see Plate 12)

The best days to walk are bright overcast, even in the rain, as objects will shine against the plough soil. Walking in bright sunshine and shadow gives too much contrast and walking dusty fields seldom produces much. However, one has to do it when the opportunity presents itself.

Objects retrieved (Pl's 10 - 13) may be pre historic lithic, sometimes even pottery, Roman and Medieval material, especially pottery and often more modern items discarded as rubbish or midden over fields. The fun part is working out what you have found and of course if you don't know; seek specialist advice, usually your local museum.

All objects retained should be bagged and marked with a National Grid Reference number (NGR) for the find spot; the GPS makes this a simple matter of reading it off. For recording by measuring tapes see Appendix III. Objects will be of little value without their location being known as repeat walks in the same field and over years can build up a picture of sites or activities on the land, and it is this supplementary information that's makes the object more valuable in interpreting the past.

If multiple objects are found in close proximity, then the centre spot should be recorded, giving the diameter of the spread, say up to 20m or less if higher quantities are found. Multiple finds such as these will almost certainly indicate a site below, unless the objects have been deposited as midden or rubbish disposal, for example this happens with medieval and later material.

The scale and accuracy of recording is usually dictated by what and how much is being found. An easy but less accurate method is to block out the field in formal squares of a given size, say 10m to 20m, and record anything found in the block to its location (see App III). Always remember the more accurate the location, the better the interpretation.

When objects are found, they should be recorded as to their location, they may be lightly cleaned but pre historic pottery (unglazed) should never be washed as valuable evidence in the form of residue may be removed, an increasing school of thought now says that pre historic lithic should not be washed as similar deposits can be detected by specialist techniques, for example the resins used in hafting tools can survive.

The final part of the process is to relinquish the material to a responsible body, with a record of location etc, this will usually be a local or the national museum. A record of the work can be published in the annual journal Discovery & Excavation in Scotland (D&ES) (see below) and this will automatically find its way into the national archive of the NMRS.

Job done – except for the next 500 fields!

The main reason for trying to encourage people to engage in this type of work is that it can be demonstrated that sites and finds in arable fields have never before been in such danger of obliteration (Ward 2013 ibid) The cause of that is the ever increasingly large, heavy, mechanised equipment used in modern cultivation which now causes severe attrition on ancient material and sites in the fields. It is now easy to foresee the day when existing fields will be stripped of any antiquarian value, except for the deepest deposits if they exist.

What is needed now is for hundreds of people to walk the thousands of arable fields which become available every year. There is no likelihood of professional archaeology doing this because there are no agencies to pay them. National institutions and bodies which purport to

be interested in Scottish archaeology and cultural heritage, do little if anything in real practical terms, to raise the issue and attempt to resolve it. It is now time to take at least this aspect of archaeological endeavour back to where it began, with dedicated amateurs.

Excavation in fields

Plates 14 - 18

Where multiple finds are made these can often indicate the presence of a site below, several times in BAG projects the presence of charcoal, perhaps including hazel nut shell, clearly shows that archaeological deposits have been disturbed for the first time, and this is often seen lying on lighter coloured till on top of the plough soil, which is also an indicator that the plough has reached deeper than before. New types of finds (flint long end scrapers) lying on till were the first indicators of the important Howburn Farm Late Upper Paleolithic site discovered by BAG.

Excavation may be deemed the best way forward under these circumstances, and this is what BAG does with excellent results. However, the implications should be weighed up before going down that road and in this case advice should be sought if in doubt, however, the fact that fresh archaeological deposits are being disturbed should be notified to some authority.

Plate 14 Excavation begins on an early Neolithic settlement at Brownsbank Farm

Plate 15 Excavation on Mesolithic camps sites at Weston Farm

Plate 16 Mesolithic pit features at Weston Farm

Plate 17 Early Neolithic pottery at Carwood Farm

Plate 18 You're never too young to start, (the authors grand daughter)

Reservoirs

Plates 19 - 23

It may appear crass or even irresponsible to encourage people to go and look within reservoirs during periods of low water levels. However, since the Laws of access in Scotland were changed, more and more people are actually using reservoirs as recreational places, fishing was always practised in most reservoirs but now people have a right to do almost anything which falls within the law, and certainly access is a right enshrined in law in Scotland, see App I Scottish Natural Heritage.

As with any activity, responsibility and safety are the first and foremost considerations and this is repeated here as its importance merits. BAG have been active in a series of major reservoirs and discovered archaeological finds and sites of a profound nature see www.biggararchaeology.org.uk for most reports. This has all been done by volunteers and in the entire record of that Group there has never been an incident which involved injury to a participant. Swimming in reservoirs can be extremely dangerous and should never be condoned.

Plate 19 Burnt mound near Daer reservoir

Plate 20 View over Daer reservoir

Plate 21 Excavation a Bronze Age house site in Fruid reservoir

Plate 22 Finding a cairn group in Peden reservoir

Plate 23 Excavation a late Neolithic pottery scatter in Megget reservoir

The obvious dangers (apart from drowning!) are from sediments within the reservoirs; peat and silt. Some times these can be quite deep and obviously such places should be avoided. Steep rocky slopes with gravelly under footing should similarly be treated with great caution. However, for the most part, walking along shorelines is quite safe and it has been demonstrated by BAG (and others) that rich archaeological landscapes may exist in such locations, but, as BAG also observe, they are vulnerable to severe erosion and ultimate loss (Ward 2013 ibid).

Certainly in BAG's experience many sites are found around the upland reservoirs and within most there is a high likelihood of archaeological sites or objects to be found, and like arable fields, there is no legislation to protect it and no obligation on the part of the owners (or institutions) to consider it for any reason, this is also true for commercial forestation after the initial planning procedures to plant are agreed (to follow). Therefore here is another area which should be of great concern to those in authority who express the worth and value of archaeology, but in reality it seemingly has none!

By simply walking along the reservoir shores it is possible to find objects and these should be recorded in a similar manner to ploughed fields. Equally possible may be the discovery of monuments or groups of features such as cairns, burnt mounds, enclosures and buildings, and as BAG have demonstrated, clutches of lithic often mean pre historic sites such as Mesolithic camp or knapping locations. The effects of erosion, whether moderate to severe at most areas within reservoirs is self evident when visited. The erosion within reservoirs although certain, happens at an unquantifiable rate, due to the various circumstances of the reservoir and the archaeology. The need for intervention to salvage antiquity should be quite obvious.

BAG have excavated numerous reservoir sites from Mesolithic camps sites, Bronze Age houses (Pl 21) and burials and Post Medieval settlements, all under dire threat of being washed away!

Forests

Plates 24 - 29

Forestry now plays an important role in the economy of Scottish uplands, and depending on the vagaries of the market for timber, more or less trees are planted each year. Large areas have been planted with mixed broad leaf trees but for the most part it is conifers and particularly the Sitka Spruce variety which dominates Scottish woodlands.

Once more as a consequence of the work of BAG it can be shown that at least in the Southern Uplands, an area with a rich and varied legacy of archaeological sites and monuments, many still awaiting recording for the first time, the attrition of the archaeological resource is vast.

In their attempts to mitigate on behalf of the archaeological heritage, BAG have secured the co operation of several forestry companies and produced remarkable results over the last thirty years. The names of Corse Law, Biggar Common (West & East) and Daer will resound in Scottish archaeology for a long time, such were the discoveries made in these places.

When the first major forests in the area were planted in the 1960's and 70's there was no requirement for archaeological surveys to be made as part of any planning process. Even known archaeological sites were disregarded as of no value whatsoever, an example of that is in upper Tweeddale around the village of Tweedsmuir, Borders Region, and where at least one hundred individual Bronze Age house platforms (unenclosed platform settlements) and which are visible, were overplanted with trees.

The sites are only now becoming visible again through a clear felling programme and at least they should not be re planted because of modern procedures, which demand environmental assessments to be made of all factors which may be affected by the further development of the forest. New forest applications also have to complete a pre forestation survey to determine what cultural and other heritage may lie on the land.

Plate 24 Walking upland clear felled forestry near Fruid

Plate 25 Inspecting clear felled forestry at Daer valley

Plate 26 Discovery of a chert Barb and Tang arrowhead in Fruid forest

Plate 27 Barb and tang arrow head lying as found at Fruid

Plate 28 New forest ploughing at Daer valley

Plate 29 Excavating a Mesolithic site in clear felled forestry at Daer valley

As far as that goes it is fine, but what is not allowed for is the buried archaeology which cannot be seen, as it does not manifest itself by surface indicators such as piles of stones or buildings. Therefore throughout the entire forestry process the buried archaeology is not considered, despite the fact that it may be the most important aspect of the antiquity of the landscape, that is to say fragile and rare pre historic locations with equally fragile finds assemblages. The position seems absurd.

BAG have noticed that Sitka spruce trees are relatively benign as far as damaging archaeological sites goes, they grow with a thin mat of roots which radiate from the trunk, spreading over the ground surface and with no ground penetrating tap roots, such as most other species have. Nevertheless, it is when harvesting and re planting takes place that the damage can and does occur to sites. Since they are unknown and invisible to the forestry workers, no blame can be attributed (to anyone) for their damage when cutting new drains, roads, quarries and mounding for new tree planting. It is at this stage in the forest process that discoveries can be made through the disturbance caused, and it is at this stage that an additional inspection of the ground should be made as part of the environmental assessment.

Similarly when new forest is created on land which has been deep furrow ploughed, an inspection should be built into the planning process to check the landscape for freshly disturbed archaeological deposits and or finds, and appropriate action taken on the basis of the results.

The results of BAG projects must have more than satisfied any doubt as to the value of such work on the types of projects above mentioned. It would appear that such work is seldom done in other places, and Scotland has a huge area of commercial forestry.

Discovery and Excavation

When the discovery of sites are made, and if these are considered to be important and under threat, it is best to inform relevant authorities, in an attempt to have something done, and preferably by qualified and resourced archaeologists. The problem is that such a process may not happen at all, or the wheels may turn too slowly and agreement to do something may come too late. In the interim, the archaeology or the opportunity to deal with it is lost, for example in reservoirs and ploughed fields where rainy weather and farmers wanting their crops sown will not wait.

To engage in a rescue excavation is perhaps a thorny issue when admittedly under resourced groups like BAG do it. The view is taken here that some information gleaned is better than all information lost. However, excavation does carry a huge burden of responsibility and carrying out a dig is much easier than completing the process, by having finds and samples processed by specialists and finally writing the reports for dissemination of the results. The management of competent excavation work is enormous.

Having said that, there are plenty of instances of high profile projects by professional archaeology, several decades' old, and still awaiting publication.

BAG dares to engage in such work despite critique from some quarters, believing that their contribution is worthwhile and meaningful, and although far from perfection, the data gathered is available to anyone who may be interested in it.

Discussion

There should be no doubt in the readers mind that amateur, hobbyist or voluntary archaeologists, what ever their name, can play a very important role in active archaeology. It is often difficult to participate in professionally run projects and therefore what better way forward than to engage oneself and join in the excitement of discovery? Groups will always be more fun, safer and probably will achieve more than operating as an individual, but the main thing is to get started. There is no better way to get in touch with the past – than actually touch it, (PI's 12, 17 & 26) and be the first person to do so in thousands of years.

Confidence to do that will only come from 'self' as little encouragement will be received from the 'profession' who in this writers opinion have become generally more elitist (not professional) in their outlook, and especially towards amateurs in the field. So called hobbyist archaeologists are denigrated by some in the quest for academic standards to be maintained, and are even seen as a problem, this writer believes that more voluntary archaeologists will be part of the solution to saving our heritage in coming years, and if the 'profession' cannot see fit to embrace them, then they will be part of the problem.

Throughout the entire voluntary archaeological career of this writer and the BAG, being over thirty years, he and BAG have enjoyed the kindness and assistance of farmers, shepherds, forestry managers, water authorities and other landowners in their (BAG's) attempts to record and salvage the archaeological heritage in their area of interest. These people and authorities have no remit or obligation to allow BAG access to their properties to engage in fieldwork, but they have allowed it freely and in a great spirit of co operation.

Furthermore the writer and BAG have experienced the fantastic co operation of many professional archaeologists and organisations, and it is important to acknowledge that fact, this co operation has worked two ways, as it should, and we have all benefited as a result, but most importantly, the archaeology has been enriched.

The paper presented here offers no criticism of those who have allowed access to land and such kindness to BAG, on the contrary, BAG have nothing but appreciation and gratitude since they occasionally found themselves causing inconvenience by their presence. The forbearance and interest of the landowners has been one of the most pleasurable aspects of engaging in fieldwork on their respective properties. Similarly the help and advice of professionals and organisations has enriched the voluntary contribution, not the least by the friendships which have been made.

The fact that there is little or no procedure to deal with archaeology under threat from the various circumstances given above is what this paper is about.

Therefore criticism is offered here to those authorities; national government, local and regional councils, the various national archaeological and educational institutions, and most especially to the entity which calls itself 'professional archaeology' in whatever capacity that might be, for ignoring (in practical terms) the plight of our archaeology as presented here and in other areas of Scotland, such as in coastal erosion. They do have a moral remit, to take this issue on board and hopefully secure a solution before it is eventually too late.

On a final note, if the 'powers that be' in Scottish archaeology could consider what is stated in this report and start discussions on what may be done about the erosion of all aspects of archaeology under threat, it may provide for the employment of more archaeologists, who at least would get some respite from finding 'no archaeology' on a small building site, and finding 'lots of archaeology' in fields, forests and reservoirs. They should be aware that in economic downturns, developer funded archaeology may dry up providing less employment.

Abbreviations

BAG	Biggar Archaeology Group
D&ES	Discovery & Excavation in Scotland (published by Archaeology Scotland
HS	Historic Scotland
NMS	National Museum of Scotland
RCAHMS	Royal Commission for the Ancient and Historical Monuments of Scotland
NMRS	National Monuments Records of Scotland (part of RCAHMS)

References

Ward T 1992. Upper Clydesdale Through the Ages. Biggar Museum Trust 1992. www.biggararchaeology.org.uk (Forthcoming on web 2013)

Ward T 2004. Upper Tweed Survey 2004. www.biggararchaeology.org.uk.

Ward T 2013. The erosion of archaeology within reservoirs, ploughed fields, forestry and in other circumstances in the areas of the upper Clyde and Tweed rivers. www.biggararchaeology.org.uk

Appendix I

ARCHAEOLOGICAL FIELD SURVEY USING THE TAPED-OFFSET

METHOD AND OTHER RECORDING METHODS

The following information is extracted from teaching handouts issued by the University of Glasgow, Department of Adult and Continuing Education. This is the technique which is taught by the University as part of their Certificate of Field Archaeology Course. The surveys produced by BAG are all accomplished by this method.

The basic aims of any archaeological field survey should be to record, as accurately as possible within the constraints imposed by differing scales, those features which are thought to be of archaeological significance; to relate such features to basic scale OS maps, and to offer an interpretation of the features as evidence of human past activity. There are many different methods of survey, such as those employing (in decreasing order of expense) equipment including tellurometers, electronic distance meters (EDM), theodolites, self-reducing alidades, plane table and pacing.

The method of taped-offset outline here was the one generally employed by the former Archaeology Division of the Ordnance Survey. It combines relative cheapness of equipment with speed of survey in the field, and has considerable scope for adaption in large area field survey. The equipment used consists of:

1) Minimum of two metric tapes (30m and 50m; 100m if available)

2) Optical prism (used for setting right-angles from a base line)

3) Prismatic compass (for taking bearings and measuring angles)

4) Ranging poles (or bamboo canes) and surveying arrows

5) Record sheets and drawing boards

A plan can be produced from the survey simply from the recorded measurements, but it is always more desirable if a drawn plan can be produced in the field at the same time as the measurements are taken, the combination of recording and planning provides a greater check on the progress of the survey, the elimination of errors and, with the plan produced on site, it is possible to indicate the subtle variations in archaeological features which might not be apparent from a series of measurements.

The basic techniques of taped-offset are not particularly difficult. The comparative cheapness of the equipment, coupled with the fact that a plan can be produced by a single person (although it is certainly quicker with a team of two or three), makes this method of survey particularly suitable for both amateur and professional field archaeologists.

METHOD OF OPERATION

1) Base Lines

Taped-offset works by determining a straight line through the area or monument to be surveyed. This is marked out on the ground by ranging poles. Whenever possible, either or both ends of the base line should be directly related to physical features recorded on OS maps (normally 1:10,000 or 1:25,000 scales for rural survey).

Tape offset method of survey. Simple base line and offset

Tape offset method of survey. Baseline with supplementary offsets

Features on maps can include comers of fields, buildings, roads etc. Base lines will be lettered A-B; C-D; E-F to Y-Z. Determination of the direction of the base line will be done by magnetic bearing using a prismatic compass, and the bearings should be 180° apart. A tape is then laid out on the ground along the base line. Commencing at zero on the measuring tape (at the point of origin), measurements are taken in metres along the base line and, using the optical prism to set a right angle to the feature to be recorded, a measurement is taken to it. In the example given here, the feature would be recorded as 25M along the base line (from A) and offset 10M to the centre of the feature. When all features are recorded to right and left of the base line tape, the tape can be advanced to the next section and the process repeated until the end of the line is reached

Great care should be taken to note the number of times the base tape has been advanced, when the tape is moved along each time ensure that the additional measurement is added to the record. On a long base line, where the tape has been advanced several times, a 'missed' tape movement will cause havoc in a survey!

2) Supplementary Base Lines

It will sometimes be necessary to add one or more supplementary base lines to the original base line, in order to reach groups of features at distances of over 40M (which is about the limit for any offset right angle using the optical prism), and where it is not desirable to lay out a new base line. The designation of supplementary base lines takes the form of adding a number to the base line letters. Thus in the illustration here the supplementary base lines are designated Al-Bl and A2-B2. The same rules for magnetic bearings and point of origin as for base lines should be observed with, in this case, the point of origin being the distance along the base line tape. Note also that supplementary base lines need not be at right angles to the base line.

3) Record Sheets

The record sheets are designed to enable the distance along the base line and the offset measurements to be recorded. The basic information at the top of the record sheet should be entered first. Remember that the first letter of the base line code should be used as the zero point for the base line, and should be recorded at the top of the base line column on the record sheet with the magnetic bearing for that end. Measurements along the base line and the offsets to the features can then be recorded in the appropriate columns. To ensure consistency the recorder should always face towards the point of origin in order to determine left and right. The feature columns should be used for a brief description and supplementary measurements (e.g. dimensions of a cairn or width of a bank). Abbreviations may be used as appropriate.

Record sheets will deteriorate in wet weather. If this should happen, every effort should be made to transfer the information to another sheet and record it as a copy.

The individual features and the entire surrounding area should be described giving details of location, height, topography and vegetation and an interpretation of the features. Models for these descriptions and drawing conventions and symbols can be had by comparing other surveys such as those published by the RCAHMS in their Inventories.

4) Determination of scale

Appropriate scales should be adopted according to the detail which is required. Generally it will be found that for basic survey of both large and small archaeological features over a large area, a scale of 1:1000 will be most practical. With monuments which require a more detailed plan such as hillforts or settlements, then scales of 1:500 or 1:200 may be more appropriate. For smaller monuments where detail may be important, scales of 1:100 or 1:50 should be used. It should be remembered that the accuracy to which a plan can be drawn depends on the scale adopted. For example, at a scale of 1:1000 even a sharp pencil will cover an actual distance of 0.5M. At such a scale measurements should be rounded up or down to the nearest metre. The record sheets can however show the accurate dimensions of features such as the width of a doorway.

5) Field Plans

Drawings will usually be done on water proof drafting film, which is expensive, but has the great advantage of not distorting in wet weather. Using masking tape, the film is mounted over metric graph paper on a drawing board of a size appropriate to the area being surveyed. The graph paper provides a visual scale in conjunction with a scale ruler. Very large areas will require separate drawings which will have to be matched together for the finished plan.

Match lines or points must be included so that a proper fit between drawings can be made. It is advisable to draw the base lines onto the field plans and annotate the plans with magnetic bearings, and perhaps other local information such as topography or vegetation.

Finally a finished plan should be made in ink using mapping pens. It is important to indicate true north which can be calculated from the magnetic bearings on the field drawings using a protractor (check OS maps for the difference between magnetic north and true north). A scale bar should be included in case the finished plan is later reduced or enlarged.

Recording finds in arable fields

The easiest method is to use a GPS which may be purchased in most sports shops and which are used by hill walkers nowadays.

However, the next easiest method is to set out squares in the field and the size will be dictated by the numbers of finds being made, around 20m square is perhaps the maximum size.

Setting out squares

The principal requirement is to get accurate right angles set up and this should be done from a base line, usually running along a straight existing fence or boundary.

Measure along say 20m and use the 3 – 4 – 5 triangle method to offset a right angle line from the base, maintain that line and the base line with garden canes, simply repeat the process as often as required and the entire field can be blocked out. Number the blocks and bag all finds to each one. Special objects can be estimated for positions within the blocks. A plan of the blocks should be made and the record of finds to each field will give a good overview of its antiquity.

Appendix II

Useful organisations

Between them these organisations can supply all relevant information and advice regarding archaeology, the law and access in Scotland.

Archaeology Scotland

Formerly The Council for Scottish Archaeology. Can advise on all matters of archaeology in Scotland including contacts for amateur groups and societies and publishes Discovery and Excavation in Scotland annually.

Suite 1a
Stuart House
Eskmills
Station Road
Musselburgh
EH21 7PB www.archaeologyscotland.org.uk

Historic Scotland

Principally responsible for Guardianship Monuments and Scheduled Ancient Monuments in Scotland.

Longmore House
Salisbury Place
Edinburgh
EH1 1JF www.historic-scotland.gov.uk

Royal Commission for the Ancient and Historical Monuments of Scotland

Principally responsible for recording sites and monuments in Scotland, public office has all Scottish archaeological data and records maintained in the National Monuments Records of Scotland.

John Sinclair House
16 Bernard terrace
Edinburgh
EH8 9NX www.rcahms.gov.uk

National Museum of Scotland & Treasure Trove in Scotland

Principally responsible for Scotland's nationally important objects and site assemblages and also for Treasure Trove administration in Scotland.

Chambers Street
Edinburgh
EH1 1JF www.nms.ac.uk and www.treasuretrovescotland.co.uk

National Library of Scotland

Principally responsible for Scotland's national literature and literary records and also for maps of Scotland.

George IV Bridge
Edinburgh
EH1 1EW www.nls.uk

Scottish Records Office

Principally responsible for Scotland's nationally important records both governmental and private.

New Register House
3 West Register Street
Edinburgh
EH1 3YT www.gro.scotland.gov.uk

Scottish Natural Heritage

Government agency responsible for all matters of natural heritage and access in Scotland. In Particular see the Scottish Outdoor Access Code and local Access Officers.

Great Glen House
Leochkin Road
Inverness
IV3 8NW www.snh.gov.uk

Forestry Commission

Principally responsible for Forestry in Scotland including private forests.

Silvan House
231 Corstorphine Road
Edinburgh
EH12 7AT www.forestry.gov.uk

Council for British Archaeology

Can advise on all matters of archaeology in Britain, parent body to Archaeology Scotland, operates the National Young Archaeologists Club.

66 Bootham
York
YO30 7BZ www.archaeologyuk.org