INTRODUCTION

The aim of this chapter is to gather together the significant results, both archaeological and methodological, obtained through the RPC project surveys conducted in the period 1998-2000. The surveys conducted by the RPC project have all been aimed at a better understanding of the spatio-temporal distribution of archaeological materials within the three study regions, and have generally been targeted at marginal landscape units in order to compensate for the fact that previous research has mostly been concentrated on urban settlements and their immediate surroundings.¹

The 1998-9 fieldwork near Ninfa in the Lepine footslopes originally aimed to map Republican rural villa sites in an area adjacent to that of the earlier Norba survey (King 1995) in an effort to enhance an earlier topographic survey by Vittucci (1968), but following the discovery of a large number of Archaic sites its aims were broadened to include sites of protohistoric date. The 1998-9 fieldwork near the Fogliano lagoon aimed to establish to what extent the coastal landscape of ancient beach ridges was indeed 'marginal' with respect to contemporaneous developments (centralisation, urbanisation) in the Alban hills area, as argued by Attema (1993). Whereas the latter area and its fringes showed a clear development towards urban forms from the late Iron Age onwards, no such development had been visible elsewhere in the Pontine region. The 1999 fieldwork in the Salento Murge near the town of Ostuni was likewise aimed at studying an area thought to be geographically and economically marginal to the developments ongoing in the Salento Isthmus zone, studied intensively by researchers at AIVU since 1980. No rural surveys had yet taken place in this landscape of LBA and IA centralised settlements and scattered Hellenistic and Roman farm sites. The 2000 fieldwork east of the town of Lauropoli in the footslopes of the Pollino range was rather different from previous campaigns, in that it expressly aimed to test aspects of the distribution of known sites established by Quilici in the 1960s (De Rossi et al. 1969). Specifically, our aims were to test whether the large-scale patterning of mainly Hellenistic-Roman scatters which Quilici correlated to a hypothetical infrastructure was not due to the manner in which he conducted his survey; and to establish the nature of the small-scale variation in the archaeological record in between the sites discovered by Quilici.

¹ The Ninfa field survey was planned and conducted as part of the Pontine Region Project, precursor to the RPC project at the GIA, which aimed to map the Republican villa landscape in the immediate neighborhood of the early towns of Segni, Lanuvio, and Sezze. The preliminary report reproduced here in chapter 9 therefore contains no references to the extensive Italian literature which is available on the ‘formazione delle città’ in this area. Starting with the 1998 campaign near Fogliano, however, field surveys in marginal landscapes of the Pontine region, the Salento Isthmus, and the Sibaritide were integrated with the existing research programs at the GIA and the AIVU. The surveys in the Fogliano area served to complement the long-term excavations conducted by Prof. Kleibrink at the Archaic center of Satricum; the Ostuni survey complemented the intensive diachronic research conducted by Prof. Yntema in the Brindisino since the early 1980’s; and the Sibaritide survey was part of an ongoing program of surveys in the surroundings of the protohistoric settlement and cult place at Francavilla Marittima, excavated by Prof. Kleibrink since 1991.
1.2 BACKGROUND

Interest in the theory and method of field walking surveys, famously introduced into Italy in 1956 by Ward-Perkins, peaked in the late 1970's and 1980's, as can be seen from such edited volumes as those of the Society of Antiquaries one-day seminar on archaeological field survey in Britain and abroad (1983, Macready & Thompson 1985), the 1986 Theoretical Archaeology Group conference in London (Schofield 1991), the 1988 conference “La struttura agricola romana: il contributo della ricognizione archeologica” organised by the British School at Rome (Barker & Lloyd 1991), the 1989 conference on archaeological landscapes in Eastern England (Leicester, Parker Pearson & Schadla-Hall 1994) and the 1981 colloquium on archaeological surveying in the Mediterranean area (Athens; Keller & Rupp 1983). Monographs in this area included those by Shennan (1985) on collection and analysis experiments and Ebert (1992) on distributional archaeology. Numerous less significant conferences have been held on the subject, and a count of journal articles would certainly run to more than one thousand.

After what seems to have been a considerable lull due to delays in publication, another two important volumes of proceedings on the subject of surveying and plough-soil assemblages were recently published (Bintliff et al. 2000; Francovich & Patterson 1999); these were based, respectively, on an academic session at the 1996 EAA conference in Riga (Latvia) and on a 1995 symposium organised by the POPULUS European network. An important recent monograph was Boismier’s (1997, appearing in the British series of the BAR) PhD thesis on tillage-induced pattern formation. Further reviews and discussions conducted in the context of a conference and workshops organised by the RPC Project team in 1999 will become available shortly (RPC forthcoming). In no particular order of importance, the significant trends arising from these studies are:

- geopedological research has become a required part of regional projects, not only in order to map one of the most important factors in past land use, but also to map geomorphological bias in the survey results (erosion, accretion). The OST99 survey demonstrates that some landscapes can be seriously affected by soil movement and restructuring.

- The increased use, since the middle 1980s, of field digital equipment, DBMS, and GIS as a data management tool

- The ‘maturation’ of survey as compared to other forms of research - increased complexity of organisation, concern for (supra-) regional comparison, leading to calls for standardisation. Cherry’s (1983) work still aimed to show how important survey was; Cambi & Terrenato, in their introduction to landscape archaeology (1994:151-8), write that much work is still needed before agreement on basic procedures for survey is reached, and that the problem of visibility had only recently been recognised, but nowadays many surveyors are well aware of these issues and have begun to be concerned to be able to compare results.

- The increasing importance of ‘off-site’ archaeology and more intensive collection methods. The general tendency has been for surveys to become increasingly intensive, both in regard of the distance between walkers and of the amount and type of material recorded, collected, and described. Schiffer and Wells (1982) tabulated some typical crew spacings of the ‘80s; Cherry (1983) tabulated the number of sites produced by survey projects over the previous three decades. Although theoretically rooted in the early 1970’s, this tendency towards intensification only resulted in the advocacy of non- or off-site survey by Mediterranean archaeologists from the early 1990s onwards.

1.3 APPROACHES

The choice of the area to be surveyed was based on physiographical criteria, in some cases modified by pragmatic and political considerations. The Ninfa survey area needed to be adjacent to the Norba area surveyed earlier, and was defined essentially on geological grounds by the steep limestone slopes of the Lepine mountains on one side, and by the tuff ridges of the Alban massif on the other. The Fogliano
survey area was again defined geomorphologically, this time by the landscape of lagoons and ancient beach ridges that forms the coast of the Pontine plain and is bounded on the landward side by the clayey deposits of the Latina level. The Ostuni survey targeted two areas, one located within the Murge upland, the other just below the Murge scarp on which an LBA settlement was known to be located. The SIBA2000 survey targeted a transect through the fluvio-marine terraces which were thought to expose most of the detectable physiographic and archaeological variation occurring in the northern half of the Sibaritide region, but here the choice of area was also limited by the concession obtained from the archaeological superintendency for Calabria. In all cases, current land use at the time of the surveys to some extent directed our choice of general area – a sufficient amount of accessible tilled land had to be available -, and precluded surveying in a considerable number of agricultural fields within those areas.

The general approach used during all the surveys was that of intensive rural (or ‘off-site’) field-walking aimed at total coverage within the survey area. Methods evolved from those previously used by Attema (which in turn derived from methods developed by the Agro Pontino Survey project, Voorrips et al. 1991) and quickly became more intensive when it was found that significant small-scale variation occurred in the archaeological record in between the easily recognisable classical sites. Because it was intended that GIS be used for the management and visualization of the survey results, the collection of finds and recording of variables was organised in geographically defined units rather than archaeologically meaningful units such as sites; the former units decreased in size from agricultural fields (Ninfa survey) to hectare-sized (Fogliano survey) and eventually quarter-hectare sized (50 by 50 meters) in the Ostuni and SIBA2000 surveys.

The intensity of the surveys was also increased by the decision to collect all archaeological materials on the transects walked by each team, as it was recognised that individual team members could not be expected to classify and count all materials correctly in the field. Since the typical distance between walkers was 6 to 10 meters, approximately 20% of the ground surface of each unit was inspected and approximately 20% of surface material was collected. Primary finds processing took place at the survey base under the direction of team members qualified to classify the material on the basis of fabric and ware group; more detailed secondary classifications based on form were carried out later on (sometimes after the field campaign) by appropriate specialists.

These approaches entailed a lowered ‘productivity’ of the surveys as compared with less intensive surveys conducted earlier. The overall speed of the surveys was reduced to just over 1 hectare per person per day. Various experiments were conducted in an effort to increase the efficiency of the surveys, firstly by reducing the number of variables to be recorded for each unit (these could be derived from digitised map layers in the GIS at a later stage), secondly by reducing the number of hardcopy forms needed for the paper trail of units and finds prior to their entry into computer databases (see Appendix to this chapter), and thirdly by skipping hardcopy forms altogether and recording unit and finds data digitally using portable equipment in the field (see chapter 7).

2 RESULTS

To a remarkable extent, the RPC surveys succeeded in uncovering evidence for the existence of pre-Roman indigenous settlement, which previous research had either ignored or been unable to detect because of the low visibility of the archaeological materials involved. Hypotheses about the marginal role of these landscapes with respect to the large-scale processes of centralisation, urbanisation, and colonisation have had to be modified not only by the direct results of the surveys, but also by our increased awareness of the biases introduced by the geopedological and land-use history of the study areas.
2.1 PONTINE REGION

The Ninfa survey proved that the Lepine footslopes between Cori and Norba were thinly settled from the later Iron Age onwards, with a large increase in the number of settlements occurring in the Archaic. Because the assignment of pottery and tile to the post-Archaic period is not yet secure, the fact that almost all Republican rural villa scatters proved to include Archaic and post-Archaic material cannot be used to argue for an essential continuity of settlement in this area; rather, it is likely that the increasing likelihood of raids forced some of the inhabitants to retreat to central and defended settlements elsewhere. The Roman Republican villas were established on previously used Archaic settlement locations in the area sometime after the late 4th century BC pacification, as part of the Roman ‘colonisation’ of the Pontine region.

The Fogliano survey uncovered a protohistoric landscape in some respects very similar to that of the Lepine footslopes. A relatively small number of ?BA and IA settlements was attested, and these may have been located in promontory-like landscape units in order to take advantage of cooling breezes and clear views across the small valleys that dissect the beach ridges – whether with a view to hunting the wildlife that would have concentrated there, or to grazing their cattle, is uncertain. The number of sites increases steadily throughout the Archaic and post-Archaic periods but no nucleation occurs; it is only in the late Republican period that the area appears to have been ‘discovered’ by the Romans, and a rural village grows up at the site of present Borgo Grappa, possibly in connection with industrial villas exploiting fish farming along the coast.

Both these surveys show a remarkable cessation of occupation following the early Roman Imperial period; it is not clear whether this must be explained by a depopulation of the Pontine plain or by a concentration of the population in large villae and defended burghs such as those attested for the later Middle Ages. It is thought that the economic significance of the Pontine plain, as a supplier of grain, olive oil, and other products to the Roman market, was much reduced when the Empire acquired more suitable lands.

2.2 SALENTO ISTMUS

The Ostuni '99 survey resulted, first and foremost, in the discovery that both the areas surveyed contained a completely unexpected and large number of MBA ceramic scatters, one of which was nearly 6 ha in size. The same material was also found in abundance in the coastal plain during a later (unpublished) campaign by Burgers, and poses interesting problems of interpretation – for now, a period of shifting cultivation is proposed to explain the widespread occurrence of the undiagnostic coarse impasto. In fact, finds dating to the MBA were in absolute majority because both areas contained only a few classical (hellenistic-Roman) sites. No LBA and only a few possible IA finds were made, but for these periods the settlement system is known to have been strongly nucleated on hilltops on average about 12 kms apart. The absence of Archaic and Classical finds indicates that this nucleated pattern continued to dominate until the area was incorporated into the Greek colonial and, later, Roman Imperial sphere. For these latter periods, there is a remarkably regular (although thin) pattern of farms present in both the Murge uplands and the coastal plain, which presumably formed part of the rural hinterland of the town of Ostuni. As in the previously discussed surveys, no material dating to the high or late Empire was found, and only a few late antique sherds.

2.3 SIBARITIDE

The SIBA2000 survey, preliminary analysis of which is for the first time reported here in chapter 12, brought no large surprises to the survey teams in that the results were sufficiently similar to those of the excellent extensive regional surveys conducted in the 1960’s by Lorenzo Quilici and his team in advance of the excavations at Sybaris. Our survey was aimed at establishing whether the patterns, densities, and nature of the archaeological record reported by Quilici would be upheld in an intensive survey of a representative section of his research area; the quality of his work is evident from the fact that we
must make only minor corrections to it. Our work confirms that most of the archaeological record in the foothill zone consists of poor, and poorly datable, Hellenistic (occasionally Roman) farms; it also showed that the virtual absence of ‘rural’ protohistoric materials is real (although perhaps partly caused by very low visibility), and again points to a nucleated hilltop settlement pattern – several of which are known to lie just outside our survey area. Again, no late Imperial or Byzantine wares were found, but these periods will be the subject of a separate research programme in the future.

In both the Ostuni '99 and the SIBA2000 campaigns we found ample evidence for the occurrence of significant local bias factors. In the calcareous area around Ostuni deep soils are so rare, that where they occur they are often dug away and redeposited elsewhere on the owners’ estate, or even sold for use by other farmers; the ‘shortfall’ is made up with large chunks of broken-up limestone which are then covered up with a thin layer of soil. Such destructive work was evident in many places from the bright red color of the subsoil as it lay on the surface, with obvious consequences for the archaeological record. In the Sibaritide, agricultural improvement again caused a bias in the survey, because in many areas the plough had ripped up and disintegrated chunks of the underlying conglomerate rock. Being full of pieces of pebbles of many colors and bits of conglomerate cement, it was extremely difficult to discern any but the most obtrusive archaeological materials in the ploughsoil – possibly contributing to the dearth of reported non-classical material.

3 DISCUSSION

3.1 FINDS COLLECTION AND PROCESSING

As a point of principle, and because the survey teams consisted of a mixture of experienced and unexperienced walkers, the policy of the RPC surveys has been to collect all non-natural material observed in the transect, and not to make any decisions individually about discarding any particular class of material. Because the surveys took place in marginal rural areas, this strategy only broke down occasionally as high density scatters of Roman tile and dolium fragments were encountered; in these cases, smaller representative and diagnostic samples were taken. In addition, team leaders were responsible for setting a slow pace that allows proper scanning of the surface. It was found that even under these conditions, great quantitative as well as qualitative differences between individual collections remained. The general effect of these was throughout to de-emphasise the presence of coarse, earth-coloured and fragmented pre- and protohistoric ceramics and lithics, while emphasising the larger, brighter, and more obviously artificial (in other words, the classical) finds. This problem could not be addressed within the context of the RPC surveys but is flagged up here as one that needs much more attention if collections are to be representative of the surface record. Among the examples cited in the individual survey reports are the well-known phenomenon of the lithic specialist picking up almost all of the lithics (Ninfa 98), and highly motivated individuals being the only ones to detect barely visible protohistoric wares (Fogliano 98, SIBA2000).

Ceramic finds for all the above-mentioned surveys were processed either by, or under the direct supervision of, Peter Attema, and use a system of classification based primarily on fabrics and ware groups. Specialists were called in to classify the lithics which were collected more or less as a by-product (but no less systematically), and those ceramics which allowed closer dating and form description. Where a typology of the local ceramics had already been produced, as in the Pontine Region, this allowed finds to be assigned to categories with a fairly restricted period of use (typically a century or two), although there are still considerable uncertainties associated with some classes and periods. Examples include the highly worn protohistoric impasto body sherds of the Fogliano survey, which may be ascribed to the Bronze Age or Iron Age, the Roman coarse and depurated kitchen wares which last from the Republican into the Imperial period, and various late Republican or Imperial tile categories.
3.2 DATA PROCESSING

In addition to the question of what data to record in a survey, there is also the question of how to record and process it prior to analysis and interpretation. In general, the recording practice during the RPC survey campaigns 1998-2000 documents my attempts to progressively exclude the informal recording of information and to preclude the recording of ambiguous information – the aim being to ensure that all forms would be comparable, while at the same time reducing recording and transcription error and inputting all form data into an RDBMS as quickly as possible. While the starting point in the Ninfa 98 survey was provided by the paper forms that had been in use in earlier survey campaigns by Attema, these had to be substantially altered to make use of the fact that many topographic variables such as slope class, relief class, and soil type no longer had to be estimated in the field but could be derived afterward from appropriate GIS data layers. A second major alteration consisted in relinquishing the individual transect as a recording unit, and replacing it with an areal unit surveyed by a team of walkers.

Since it was intended for the survey data to be linked to digital maps in a GIS and to be analysed in this form, further changes became necessary in the system of identifiers being used for collection units (‘blocks’ and ‘sites’) and collections (‘bags’), and in the numeric encoding of variables that were to play a role in the process of correcting for biases. Finally, it was found that the physical movement of (bags of) finds through the various stages of cleaning, classification, and storage could only be kept relatively free of errors if the forms were designed to be passed along with the finds to the next responsible person in line.

In the end, the SIBA2000 survey teams worked with only two different paper forms: one for recording information about collection units, the other for information about collections (i.e. the contents of single bags). The former is sufficiently flexible to allow both the recording of a typical off-site unit and of a ‘site’; the latter ‘bag’ form accompanies the bag from the moment it is created in the field through the processing, and information is added to it at every stage. Finally, only one transcription step is needed when the form data are entered into a digital database. These forms and the accompanying user notes, which represent the latest (2000) stage in the ongoing development of satisfactory field administration procedures, are included here as an appendix.

It must be admitted here that, although the survey teams and directors were happy with this system, it is by no means perfect, and relies on thorough instruction and discipline of all those involved in using them. Inevitably, errors and omissions creep in as the day wears on and people get hot and tired, so it remains as important as ever to reduce as much as possible the demands made by the forms in the field, while at the same time ensuring the integrity of the data entered on them. It is evident that these tasks can, in principle, be better performed by digital forms than by paper forms, and in our last campaigns we have therefore begun to experiment with the use of handheld field computers or PDA’s (see chapter 7). These have the advantage that they can present only the relevant fields to the user, can prompt them to fill these fields out, make it easier to do so by offering option lists, and reject illegal values; they can also be ‘context aware’ by automatically providing information such as the current time, date, temperature, name of administrator, and location (through an attached GPS); finally, they have the advantage that the information in them can be downloaded rather than transcribed into the RDBMS. An area still to be explored is that of using such handhelds not only for the recording of alphanumeric unit attributes, but also for the digital mapping of the boundaries of collection units or even the individual transects walked by the surveyors, obviating the need for the time consuming practise of laying out measured collection units in the field. Shortwave radio or satellite phone communications could be used for the purposes of creating an instant backup of the data thus acquired on the expedition’s computer system.

Once the data are safely within the database, preliminary quantitative processing can produce such descriptive information as the counts and weights of classes or combinations of classes per collection unit, which can be transformed into densities and displayed in map form once the boundaries and identities of the collection units have been entered into the GIS. Since the recording and correction of biases plays such an important role in my research, I must here go into some detail regarding the
correction procedures used. The method developed for the RPC surveys corrects for three factors – area of collection unit, percent coverage, and estimated total visibility.

Since we used relatively small collection units (typically of 0.25 ha), even relatively minor errors in mapping their boundaries could potentially have a large effect on the calculation of finds densities, causing spurious highs and lows to appear in our density maps. We therefore had to take great care in noting and excluding such features as verges, paths, and gardens intruding on our units, which do not appear even on the most detailed and up-to-date topographic maps. When I compared the actual total area surveyed in the Ostuni ‘99 campaign as calculated on the basis of our detailed field maps with the apparent area as derived from field boundaries on the 1:10,000 scale topographic map, the latter turned out to overestimate by as much as 15% the average surface area of any unit. This was in a relatively well-mapped region of Italy, and indicates that in more poorly mapped areas, or where maps of coarser scale are being used, this source of error can become even more significant. In the SIBA2000 survey I found that the actual arable part of some agricultural fields (i.e., the area open to survey) may be less than half the area contained within its mapped boundaries, because the maps do not show the scrub which usually takes up all the steeper parts of the landscape. Thus, one cannot rely on sketch maps but needs to estimate, or better measure, the actual area surveyed.

Since the area open to survey was typically walked by us at an interwalker distance of between 6 and 10m, depending on the type of land use encountered, the correction must take into account the percentage area observed (percent coverage). We therefore recorded this factor whenever it deviated from our standard 10m. In order to calculate the percent covered per unit and normalise this to its equivalent of 100%, I estimated the effective width of the ‘swath’ observed on a typical transect to be 2m. This is perhaps a slight over-estimate but since the same swath width was used in all surveys no errors result from it. Thus, in a typical case, the percent coverage would be 2 / 10 is 20%, and the correction factor would be its inverse, or 5.

A similar procedure was used to correct for estimated total visibility, although here the objectivity of our methods for estimating both the size of the bias factors and their effect on finds recovery may be questioned (see chapter 5 on bias modelling for details). Three areas for future research have been identified here: firstly, the need to establish objective measurement scales for bias factors, next, the need to distinguish the effects these bias factors can have on the recovery of different classes of archaeological materials; and thirdly, the need to avoid multiplying out of proportion random variations in low density finds data – the ‘low numbers’ problem.

Using this method, the raw counts per finds category are normalised into a continuous variable (densities per hectare), assuming total coverage and optimal visibility, and displayed as GIS raster map layers for interpretation. At this point they can be compared both with other data layers in the GIS (generally holding environmental variables), and with qualitative archaeological data regarding finds and sites observed during the campaign and in earlier compilations. Although this work could (and perhaps should) be done during the field campaign itself so as to be able to help ‘steer’ the work away from trouble, our relatively low-budget campaigns did not allow us to do so, and all GIS processing and most database processing was done at the Groningen Institute of Archaeology after the campaigns ended.

3.3 INTERPRETATION: (RE-) CONSTRUCTING SETTLEMENT AND LAND USE HISTORIES

Although each of the RPC surveys has helped to answer the immediate questions posed about each region, it is to be hoped that their impact will be wider than that. Bit by bit, field surveys are contributing to a database that should allow us to begin to see similarities and differences through space and time. The scope of typical field survey data may be limited by its generally low diagnosticity and temporal resolution, and its interpretation further bedeviled by a host of post-depositional biases, but broad patterns in space and time tend to emerge quite well from surveys, and their main use is therefore in qualifying the ‘stories’ told of the long-term history of settlement and land use within regions. Thus, they lead away from the generalising ‘stories’ of centralisation, urbanisation, and colonisation processes, towards the particular
history of the region or even landscape within a region. Yet because of the low quality of the data much depends on the comparison between data sets collected in the different regions and landscapes, and therefore on the comparability of the methods by which these data have been collected. The beach ridge landscape around Fogliano, and the colluvial slopes of the Lepine margin, can only be called ‘marginal landscapes’ in the protohistoric and Archaic periods if some aspect of the survey results – whether this simply be the quantity of finds or of sites, or qualitative indicators of urbanisation - , can be shown to demonstrate this. As will be shown in chapter 13, the necessary comparisons between different data sets lacking the elementary precondition of standardization in definitions and recording methods makes this an extraordinarily difficult task. At the very least, our research question should now becomes: from the perspective of which system (in what sense) should these landscape units be called marginal?

Conversely, it is not clear that survey data have much bearing on the ethnicity of the protagonists. Can Roman colonisers in the Pontine Region be distinguished from their Latin allies and sometime enemies? Are the majority of the Hellenistic farmers in the Sibaritide likely to have been of indigenous descent or from the pan-Hellene colony? The material culture of these rural areas is just too poor, and in some ways too standardised, to distinguish the two purely on the basis of data gathered by fieldwalking survey. Questions of ethnicity, cultural affinity, etc., can only be studied through excavated evidence of cultural practise.

4 CONCLUSION

The RPC fieldwork has contributed to the aim of ‘elucidating the complex nature of archaeological reality’ as expressed in chapter 1, by showing that marginal landscape units can have their own settlement and land use dynamics, sometimes in line with general regional trends but sometimes independent as well, and that the archaeological record is indeed severely biased in favour of the classical landscape and of ‘high culture’. While aimed at understanding the nature of ‘marginal’ areas within the study regions, it has also been important in providing a sense of the landscape which cannot be obtained from studying maps and literature alone. The same is true of an appreciation of the nature and significance of the biases introduced by geopedological processes, historical and present land use and land cover, and the history of archaeological research in each study area.

Further work will be directed at the intensified exploration of highland economies as begun in the SIBA2000 campaign, with the attendant development of appropriate methods and techniques to increase surveying efficiency and quality of the data collected.
APPENDIX: SIBA2000 FIELD FORMS AND USER NOTES

UNIT FORM

A UNIT can be any geographically defined collection unit (such as an agricultural field, measured grids, a site, or a "string square"); the UNIT form is used to record information about the UNIT itself, and about the archaeological samples taken from it. Large-scale landscape characteristics (such as land use/land cover and geomorphology) are no longer recorded for each UNIT individually, but are mapped separately on copies of 1:10,000 scale topographic maps. If the UNIT is a standard nonsite area, only those characteristics particular to the UNIT (soil colour, evidence of working, etc.) must still be recorded in the NOTES box and on the reverse of the UNIT form where necessary. If the UNIT is a 'site' (however defined), the mandatory additional characteristics to be recorded are a) the location of the core and b) at least one contour line for the halo, with density in finds/m². Recording of the conditions affecting the recovery of material from the UNIT has been streamlined so that a five-point scale must now be ticked for each of six factors. There must be prior agreement on the meaning of the scale.

A SAMPLE is defined as any set of finds put together in one finds bag. An RPC standard sample consists of all non-recent objects found along 10 m interval lines (for a swath width of 2 m, this gives a standard 20% coverage). Additional, non-standard, samples may be collected for a variety of reasons; four non-standard RPC sample types are recognised:

- **Grab sample (Gs)** – an unsystematic collection of ‘typical’ artefacts aimed at obtaining a quick impression of the surface material in the UNIT, usually made when circumstances do not permit the collection of a better sample;

- **Diagnostic sample (Ds)** – a systematic collection of artefacts selected for their diagnostic value, usually made in order to obtain a closer dating in cases where the Standard sample was not sufficiently diagnostic, or where the overall finds density is very high;

- **String square sample (Sq)** – a total collection of artefacts within a 4 by 4 m area marked out with a specially prepared rope, usually made on-site in order to obtain accurate finds densities and to ensure that unobtrusive finds categories are not overlooked;

- **Total sample (Ts)** – a total collection of all artefacts in the UNIT; usually made in the case of small and low-density scatters.

Each UNIT form has space for recording three samples, so an additional UNIT form will be needed if more than three samples are taken from the same UNIT. To avoid any confusion between standard samples taken on different visits to the same UNIT, samples must always be recorded straightaway (so the bag number will tell you which sample was taken first); as an additional safeguard, you can include ‘2nd visit’ etc. in the Notes section of each sample record.

At a minimum, the ticket in each bag (written in waterproof marker) should have the UNIT, BAG, and Sample ID numbers filled out. The bag weight and contents information is included to provide additional control against loss during processing. The bag itself should also have (written on the outside in waterproof marker) the UNIT, BAG, and Sample ID numbers.

The page number box on the UNIT form is filled out at the end of the campaign in order to facilitate annotation of, and referral to, UNITs.
BAG FORM

Finds bags containing SAMPLEs, after preliminary recording on the UNIT form, are brought back to the survey base for processing at the end of each day. BAG forms are written out in the field whenever finds bags are produced, and are passed to the finds processing supervisor along with the bags themselves. The purpose of the BAG form is to record, in summary form, the contents of a single finds bag, and to provide the necessary control during all stages of processing. The form is A5-sized and contains information about a single bag, allowing the forms to be stored in the order of the UNIT/BAG ID number. The form is not intended for the recording of specialist processing involving individual objects. Each BAG is identified by its combination of UNIT and BAG numbers, eg 0136-02, which must also appear on the ticket included in the bag and, for security, written in indelible marker on the outside of the bag.

Four stages of finds processing are recorded on the BAG form, facilitating the identification and tracing of bags that go missing at any stage:

- **From Field (date)** – records the date on which the bag was brought back from the field and became available for preprocessing.
- **Washed/Dried (date)** – records the date on which the washed and dried finds were put back into their bag, and became available for processing.
- **Processed (date, person)** – records the date on which and the person by whom the finds were classified, counted and weighed. Non-artefacts and recent artefacts are thrown away at this stage; broad find categories (lithics, protohistoric to archaic ceramics, classical to post-antique ceramics) are bagged separately each with a copy of the original ticket (see below) and put into crates for storage.
- **Entered into PC (date, person)** – records the date on which and the person by whom the processing information were transferred into the project RDBMS. The data entered is subsequently checked for errors and omissions by a second person.

The description of the finds during the processing stage follows a classification system which may vary depending on the region where the survey takes place. The number of sherds larger than 1 cm² within each class is recorded, as well as the total weight per class so that average sherd size can be calculated. Both the condition of the material (weathering, patination, abrasion, rounding) and the occurrence of diagnostic features is noted on the form.

The writable plastic ticket included with each bag contains spaces for:

- (compulsory) UNIT (4 chars) and BAG (2 chars) numbers; Find category code; Estimated Weight (4 chars)
- (optionally) Date; Sample type (Sq, Ts, Gs, or Ds) and ID (2 chars); Site y/n.

Information regarding the find categories and estimated weight is included on the ticket as a precaution against the loss or omission of these same data on the UNIT form, and to allow the identification of the bag in cases where the BAG ID has been recorded incorrectly or incompletely. The GIA address is included for reference.
<table>
<thead>
<tr>
<th>Campaign</th>
<th>Team</th>
<th>Admin</th>
<th>Date</th>
<th>Time</th>
<th>Weather</th>
<th>Page</th>
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<table>
<thead>
<tr>
<th>UNIT</th>
<th>SIBA 2000</th>
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<table>
<thead>
<tr>
<th>Stony</th>
<th>1 2 3 4 5</th>
<th>1 2 3 4 5</th>
<th>Tillage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
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<table>
<thead>
<tr>
<th>Shady</th>
<th>1 2 3 4 5</th>
<th>1 2 3 4 5</th>
<th>Recent</th>
</tr>
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<tbody>
<tr>
<td>Mat</td>
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<table>
<thead>
<tr>
<th>Veget</th>
<th>1 2 3 4 5</th>
<th>1 2 3 4 5</th>
<th>Final</th>
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<tbody>
<tr>
<td>Cover</td>
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<td>Visib</td>
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</table>

Indicate size of one grid box in meters

<table>
<thead>
<tr>
<th>BAG#</th>
<th>% Cov</th>
<th>Sample type</th>
<th>Ds</th>
<th>Gs</th>
<th>Sq</th>
<th>Ts</th>
<th>Sample ID</th>
<th>Wt.</th>
</tr>
</thead>
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<table>
<thead>
<tr>
<th>Lithic</th>
<th>Stone</th>
<th>Tile</th>
<th>Impasto</th>
<th>Coarse</th>
<th>Pure</th>
<th>Fine</th>
<th>Recent / Glazed</th>
</tr>
</thead>
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Notes

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<tr>
<th>BAG#</th>
<th>% Cov</th>
<th>Sample type</th>
<th>Ds</th>
<th>Gs</th>
<th>Sq</th>
<th>Ts</th>
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<th>Wt.</th>
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Notes

Entered by | on (date) | / | Checked by | on (date) | /
<table>
<thead>
<tr>
<th>UNIT</th>
<th>BAG</th>
<th>S?</th>
<th>From Field</th>
<th>Washed / dried</th>
<th>Processed</th>
<th>By</th>
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<table>
<thead>
<tr>
<th>Box No</th>
<th>Find Category</th>
<th>Count</th>
<th>Weight (g)</th>
<th>Condition</th>
<th>Notes</th>
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(continue on reverse if needed)

**Processing Remarks**

<table>
<thead>
<tr>
<th>Date into PC</th>
<th>By</th>
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<tbody>
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<table>
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<tr>
<th>Date checked</th>
<th>By</th>
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<tbody>
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*a* Campaign code, eg SIB2000  
*b* Team ID, eg 200  
*c* Initials of team administrator  
*d* Format DD/MM  
*e* 24 hour format  
*f* Brief statement such as ‘AM cloudy, PM clear’  
*g* Page number to be added later on, when forms have been ordered by UNIT#  
*h* All geographical collection units get a 4 digit UNIT#; administratively therefore there is no difference between a site (however defined) and a block of land.  
*i* Other forms; Land Use; Soil; Relief; Levelling etc.; Erosion/Inflation; Drawings; Photos; Unusual legend entries; Visits, Local informants  
*j* Stoniness from 1 none to 5 very much  
*k* Find visibility as affected by tillage (ploughing conditions, harrowing etc), rain and dust, from 1 not affected to 5 very much affected  
*l* Amount of shade interfering with visibility from 1 none to 5 very much  
*m* Amount of recent material (post-medieval) affecting find visibility, from 1 none to 5 very much
Amount of vegetation cover obscuring the soil, from 1 none to 5 very much

Final visibility factor (estimate of all other factors combined), from 1 very low to 5 optimal

The bag itself gets numbered with the UNIT #, the BAG #, and the SAMPLE ID

In the case of a standard sample this is 2 divided by the interwalker distance (assuming a swath of 2 meters), eg 2/10 = 20%

Only if % coverage is not filled out. Ds = Diagnostic sample; Gs = Grab sample; Sq = StringSquare sample; Ts = Transect sample

If two diagnostic samples were taken, write DS 2 / 2.

In grams, estimated; this serves as a control during finds processing

Flint and/or obsidian

Add categories as required

For example: Includes material from a diffuse scatter of PARCH ceramics, see UNIT 136.

Initials required

Format DD/MM

3 digit Unit ID, from ticket in bag

2 digit Bag ID, from ticket in bag

Mark this box if BAG is from a Site.

date (DD/MM) that bag was brought in from the field; must be filled out by team administrator

date (DD/MM) that finds were dried; must be filled out by supervisor of washing team

date (DD/MM) that finds were determined; must be filled out by processing supervisor

Initials of person processing the finds

Box number may be added later if finds are sent to a specialist first

Weight should always be recorded, since it provides a better basis for comparing proportions of different materials than do the counts

Condition of the finds (eg, abraded, fresh breaks, surface treatment), numeric scale to be determined

For example, regarding condition of finds, wares, dating, etc

For example, “all finds recent & thrown away”, “finds lost during processing”