NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION MONOGRAPH 23: Tony Walton (ed.), *Archaeological Site Recording in New Zealand*

ARCHAEOLOGICAL SITE RECORDING IN NEW ZEALAND

New Zealand Archaeological Association

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New Zealand Archaeological Association Monograph 23

1999

Published with the assistance of the Department of Conservation and the New Zealand Lottery Grants Board

New Zealand Archaeological Association

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Cover: Eroding midden on coastal dunes, Ninety Mile Beach, Northland. *Photo: J. Coster, Auckland Museum Ref. 187/50/3.*

Orders to:
New Zealand Archaeological Association
Publications
Auckland Museum
Private Bag 92018
Auckland

ISSN 0111–5715
ISBN 0–9597915–6–6
ISBN 978–0–478–14164–1 electronic version (April 2007)

Designed and typeset by Ian Mackenzie

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PREFACE

The New Zealand Archaeological Association was formed in 1954–55 to promote and foster archaeological research into the prehistory of New Zealand and related areas in the Pacific. It has long since expanded its brief to encompass the physical remains from the more recent past by fostering work in historical and industrial archaeology. The Site Recording Scheme was established soon after the Association was formed and has now been operating for more than forty years.

Archaeological Site Recording in New Zealand has its origins in previous handbooks by Golson and Green (1958), Daniels (1970), and Daniels (1979). The text has been extensively revised to reflect the changes in New Zealand archaeology over the last twenty years. Chapter 2 has been shortened and its references updated, with the agreement of the original author, Aidan Challis. The chapters by Nigel Prickett and Bruce McFadgen have been revised by them. Chapter 9, describing the organisation of the New Zealand Archaeological Association Site Recording Scheme, is based on Smith (1994). Other sections have been contributed by Bruce McFadgen (Global Positioning Systems) and Kevin Jones (taking oblique aerial photographs). Sections in the chapters on classification and types of site were contributed by Clayton Fredericksen. Substantial input was provided in most sections by Owen Wilkes. Thanks to Chris Jacomb, Kevin Jones, Rick McGovern-Wilson, Mary O'Keefe, Sarah Ross, and Moira White for their comments on draft versions.

As with previous handbooks, this edition is intended to describe the Site Recording Scheme for potential contributors to assist them to get started in site recording. The Association's filekeepers provide a point of contact for novice site recorders. No handbook can entirely replace time spent in the field with an experienced site recorder but familiarity with the contents of this handbook will ease the process of developing the required expertise. It is not, however, a manual of advanced field recording techniques: plenty of manuals on surveying, photography, and other technical subjects are readily available and some of these are referred to in the relevant sections. Although such manuals are often written for archaeologists in other parts of the world, many techniques and much of the advice can be applied in New Zealand.

The handbook has an important role to play in ensuring that information is collected in a standard form—this is essential if it is to be used to best advantage. Much archaeological interpretation is based on comparison and, at present, the use that can be made of the accumulated data is often limited by the lack of comparability of the recorded information. It is important, therefore, to underline the need for consistency in the collection of basic information and for the data to be as reliable as possible. An accurate plan of the archaeological features of a site should be regarded as a key component of any adequate record of that site. At the moment, many low-grade records exist and upgrading the overall standard of records is a high priority. As development continues apace and the sites themselves disappear, research will come to rely more and more on the existing records to fill gaps in information.

Finally, the handbook is a guide to potential users of the information held by the Site Recording Scheme—the largest single source of such data in the country and one of the country's most heavily used science databases. Other forms of dissemination of information are an important part of the New Zealand Archaeological Association's activities and it publishes a quarterly (*Archaeology in New Zealand*), an annual (*New Zealand Journal of Archaeology*), and a monograph series. The Association believes that research, site protection, and site management are best served by fostering an understanding of heritage places and by making data as widely available as possible.

The Association gratefully acknowledges grants from the Department of Conservation and the New Zealand Lottery Grants Board which have helped make this new edition of the handbook possible. The Association also acknowledges the assistance in kind of the Science & Research Unit, Department of Conservation.

Tony Walton
Wellington, 17 May 1999

CHAPTER 1. HISTORY AND OBJECTIVES OF THE SITE RECORDING SCHEME

Archaeology is the study of the physical evidence of past human activity. It deals with a range of material from earthwork structures and lost or discarded tools to old rubbish dumps. It is also concerned with the environment, how it has affected human settlement and how humans have transformed it for their own purposes. The discipline of archaeology, like that of history, is concerned with investigating and writing about the past. The popular perception of archaeology is that of excavation which is, however, only one component of the subject. The study of archaeology includes the discovery, recovery, and interpretation of the surviving evidence of past human activity in its context in or above the ground. Recording the location and surface evidence of archaeological sites in the field is the subject of this handbook.

Archaeological sites are an important source of information about the past but they are also often places of heritage value to iwi or the wider community or both. Maori have an important role to play in promoting the protection of heritage sites and Maori values have a special position in heritage legislation and practice. This custodial role is recognised by archaeologists and it is New Zealand Archaeological Association policy that recorders consult with iwi when any archaeological work involving Maori heritage sites is intended. This is essential. Archaeologists usually enjoy good relations with iwi but they will only continue to do so if they undertake research with adequate consultation. Maori are also often concerned about the interpretation of heritage places by others, including archaeologists. These issues can only be worked through in the particular circumstances of the time and place but any approach must recognise the special relationship that often exists between Maori and their heritage sites.

HISTORY

The Site Recording Scheme was established in 1958 to fulfil one of the Association's original aims: 'to encourage the recording and surveying of archaeological remains by setting up and operating a National Site Recording Scheme.' The objective of the scheme is to create simple but systematic files of information about archaeological sites. It was intended that this information should

be used as a basis for archaeological research, and to promote the protection and conservation of archaeological sites.

The development of the Site Recording Scheme owes much to the efforts of J.D.H. Buchanan (1902–1961) who promoted the idea of establishing a system for recording Maori sites and was largely responsible for working out the detail of how such a scheme could operate. When the New Zealand Archaeological Association Site Recording Scheme was established in 1958, it largely followed Buchanan's recommendations (Davidson 1974). Originally restricted to prehistoric Maori sites, the scope of the scheme was broadened in 1967 to include all sites capable of being examined using standard archaeological techniques. The term 'prehistory' denotes a time when no written records were kept. The presence or absence of a written record profoundly affects knowledge of the past and this is why prehistory is conveniently distinguished from history. In New Zealand, prehistory is generally considered to have ended in 1769 or later (see Davidson 1981, 1984) and is roughly synonymous with 'pre-European.' The characteristic forms of pre-contact settlement were mostly discontinued in the early 19th century.

The content of the Site Recording Scheme is still dominated by records of Maori sites but about 15% of the records relate to sites of the historical era—mission stations, fortifications, mining and other industrial remains, homesteads and farms, etc. Since the mid 1970s, in particular, publications devoted to historical archaeology have grown steadily (Smith 1990). A useful book on the scope of historical archaeology in an antipodean context is Connah (1988).

The Site Recording Scheme grew slowly in its first decade and a half but the early 1970s saw a number of changes. There was a gradual shift in emphasis from the use of the scheme as a research tool to its unforeseen but vital role in site protection. This occurred against a background of a growing recognition of the significance of heritage places amongst New Zealanders. This change was reflected in, and was in turn encouraged by, changes in legislation. Archaeological sites were given protection by the Historic Places Amendment Act 1975 and this, along with increased funding of site recording by the New Zealand Historic Places Trust, the New Zealand Forest Service, and the Department of Lands and Survey, marked the beginning of a phase of rapid growth in recording in the years 1975–1987. This rapid growth ended in about 1987. Since then moderate levels of growth have been maintained.

A major change was forced on the Site Recording Scheme by the gradual replacement of the NZMS 1 (1:63,360) maps which had formed the original basis of the Scheme with NZMS 260 (1:50,000) maps (Daniels 1979). From the early 1980s onwards the old site numbers based on NZMS 1 map sheets were replaced by site numbers

based on NZMS 260 map sheets. Sites recorded previously on NZMS 1 map sheets were assigned new numbers, although the old numbers are still used on occasion as they are often quoted in older reports and publications. It is often worth quoting both the metric site number and the NZMS 1 site number in publications. All new recording is, however, now based on NZMS 260 maps and uses the New Zealand Map Grid as its primary means of recording the location of sites.

OBJECTIVES

For the purposes of the Site Recording Scheme an archaeological site is defined as any specific locality at which there is physical evidence for human occupation in the past that is, or may be able to be, investigated by archaeological techniques. There is no minimum age limit on sites that may be included in the Scheme, and it may therefore include sites that do not meet a statutory definition.

Many forms of standing structures are routinely and properly recorded as archaeological sites, or as a component of them. Generally, for a structure to count as an archaeological site, it will be in a ruined, abandoned or derelict state and have little prospect of economic use without extensive rebuilding. Buildings are not, as a rule, described as archaeological sites if they are in current use or useable, although such structures may nonetheless have archaeological values (Wood 1994) as their fabric provides physical evidence which can be unravelled by archaeological investigation.

Shipwrecks and hulks are also archaeological sites and their recording in the Site Recording Scheme is encouraged. The practice of underwater archaeology is, however, a specialist area and is addressed only in passing in this handbook. There is a separate organisation, the Maritime Archaeological Association of New Zealand, which has a specific focus on this field.

The Site Recording Scheme is the only national inventory of archaeological site information in New Zealand. In the 40 years that it has been operating, more than 50,000 archaeological sites have been recorded. Information about these sites is retained in the Site Recording Scheme even if the site is subsequently destroyed. Anyone may contribute information to the Site Recording Scheme, and the updating of information about previously recorded sites is encouraged.

The basic recording units are the ‘feature’ and the ‘site’. Archaeological sites in New Zealand vary considerably in size and in the complexity of their surface features. A site may be a single feature or a complex arrangement of many different features. It may represent the activities of a small group of people over a short period of time or a

larger group over an extended period. It is the job of the recorder to identify the various elements and record them in a coherent manner. Deciding what to record is discussed in more detail in Chapter 5.

Information gathered by site recorders is put to a range of practical uses. While the discovery and recording of sites is an absorbing interest, most recorders operate in the expectation that their work is serving a wider purpose or will do so in the future. The rest of this chapter describes some of the purposes served by site recording.

Research

Archaeology is not a science like physics or biology but it uses scientific methods of description and has been heavily influenced by scientific approaches to knowledge. Site recording is an integral part of the process of archaeological research. Without a good knowledge of the existence of sites, the range of surface features they exhibit, and their distribution over a given area, archaeological research is seriously handicapped. The need for site recording has to be balanced, however, by an effort to convert this data into knowledge. The data is examined and questions asked which then provides a basis for further collection of information in the field. One overseas commentator on archaeological record systems has described a spiralling process of recording, synthesising, gaining new knowledge, and recording so that 'of understanding, there is no finality; of the record, there is no completion' (Fowler 1981: 109).

The records held in the Site Recording Scheme cannot hope to meet all research needs for information. Sites should be recorded with as much accuracy and detail as possible, but it is impossible to anticipate all future research needs for information. A high standard of recording will, however, help satisfy a wide variety of research needs. Standards of accuracy and identification and description of features must therefore be set, and kept, high. The minimum aim of site recording is to provide the researcher with sufficient information to enable a judgement to be made as to whether a site or group of sites can throw light on matters which are the subject of the research.

The researcher may either be satisfied with the information on the record form or may wish to personally visit the site to collect more information. In either case, the record has fulfilled one of its functions.

Recording may be a preparation for, or even an essential adjunct to, the work of excavation. Information on the whole range of sites in an area will help researchers to choose for investigation the most suitable sites to meet their research objectives.

Only excavation can determine the exact form and function of some features. Once a certain feature has been investigated and checked by excavation, however, inferences may be made about similar features found elsewhere.

Site recording provides a wide and important field of research in itself. The character and distribution of surface field remains can often tell the archaeologist a great deal about the occupation of an area. It is unlikely, however, that any conclusions reached will be reliable without resorting to excavation of some of the sites. Research on settlement patterns depends on the inter-relationships of the information on site function and distribution provided by both field recording and excavation. Considered generally, site recording provides the distributional information of the site types whose age, form and function are defined by excavation.

At their best, site records comprise an archaeological archive for an area. They provide not only an inventory for future research but a documentation of the visible history of the area so that some knowledge of this is never lost, no matter what happens to the sites themselves. To be used effectively knowledge must be accessible and entering the data into the Site Recording Scheme is one way of doing this. The role of site recording in research is dealt with more fully in Chapter 2.

Site protection

Modern society makes great demand upon the land. The ability of earthmoving machinery to speedily re-shape the surface of the land has put archaeological sites at increasing risk. Even in rural areas there is continuing loss and damage to archaeological sites from farming practices such as the bulldozing of roads and fencelines, exotic plantations, stock trampling and cultivation (Prickett 1985). Archaeologists and others have been concerned for many years about the rate and the scale of destruction of archaeological sites. Legislation, and supportive public attitudes, can be effective in protecting archaeological sites only if there are adequate records of the existence, location and nature of sites available before developments affecting sites proceed. Inventory is important not just because it tells us ‘what is where’ but because all judgements made about individual sites rely to a greater or lesser degree on a knowledge of the wider resource. Assessment of site significance is about putting sites in an appropriate context. While recording is a prerequisite to assessment, it is important to note that the Site Recording Scheme is not primarily concerned with the question of significance. The role of recording and inventory as part of the wider management of historic places, including heritage assessment, is discussed by Pearson and Sullivan (1996).

Records can be employed in several ways where sites are threatened with destruction:

- To show what sites are recorded in any area.
- To enable an initial impression of the possible relative value of recorded sites.
- To assess the extent to which further site recording is required.

A thorough recording programme should demonstrate what sites are visible on the surface and may help to indicate those which should be preserved. If preservation is not possible, an estimate may be given of the extent of excavation required prior to destruction.

Even with increased public awareness of archaeology, vigilance is necessary to anticipate likely threats to sites. There are a number of ways in which prior knowledge of threats can be obtained:

- From indications in district plans that the objectives, policy or rules of the territorial local authority may place sites at risk.
- From public notifications of applications for resource consents.
- From announcements of new public works, e.g. roads and reservoirs.
- By keeping a lookout for new earthmoving, tree planting, or other development activity in the vicinity of known sites.

Examination of the site records will reveal if sites are known in a given area. A decision must then be made whether or not further site recording is required and what action should be taken to protect sites. The advice and local knowledge of site recorders and filekeepers may be valuable in such cases. The Site Recording Scheme cannot, however, be expected to always provide adequate information for all site protection purposes.

If no recording has been done in the threatened area, then an immediate survey is called for. Few areas in New Zealand are completely recorded. In filling the gaps intelligent anticipation of likely threats to sites, using the indicators suggested above, should play an important part in deciding the areas to be covered in a site recording programme. Research considerations aside, areas where the threats seem greatest should be recorded first.

Publicity and public education

Archaeology has a number of different audiences with varying levels of understanding of the subject. The results of site recording form a readily available body of material for publicity and public education and can be presented in a number of effective ways (see for example Brailsford 1981; Prickett 1990; McFadgen and

Williams 1991; Trotter and McCulloch 1997). People are usually interested to learn of archaeological sites in an area they know. Distribution maps and aerial photographs, as well as photographs and slides of individual sites, can be used in presenting the information to interested groups.

The most common reason for valuing an archaeological site is simply that it is old. There are many reasons why a site may be important and these range from it being a symbolic link with the past to what it can contribute to an understanding and appreciation of the past. In some cases, tangata whenua may derive a sense of belonging from a particular site which has links with a notable ancestor. For archaeologists, the primary importance of sites is as a source of information about the past and the aim is to save what should be saved and investigate and record as far as possible what cannot be.

Public support for archaeology and for site protection is needed in all places and all levels. It is particularly necessary to encourage sympathetic attitudes in landowners. Some owners may be interested in formally protecting sites with heritage covenants. If an owner is interested in this, he or she should contact the New Zealand Historic Places Trust or the Department of Conservation, who will help implement the process.

CHAPTER 2. RESEARCH DESIGN IN SITE RECORDING

Site recording is accorded high priority in New Zealand archaeology, but the related subject of the analysis of data has been relatively neglected. Computers now have a great variety of roles in archaeology and the use of Geographical Information Systems (GIS) has increased the capacity to store, retrieve, analyse, manipulate and display data (see for example Allen *et al.* 1990; Brandt *et al.* 1992; Hunt 1992; Johnston and North 1997). Major advances in interpretation are, however, still dependent upon the quality of the available evidence. It is essential that the degree of reliability of the fieldwork is known. It is appropriate, therefore, to review the procedures and objectives of research in site recording.

Practical guidance for site recorders can be found in general publications on archaeological methods, in site survey reports, and in handbooks especially written for the purpose (for example, Schiffer *et al.* 1978; Joukowsky 1980; and the present volume). From such sources it can be learned that the objectives of fieldwork are the location of as many sites of past human activity as possible, the assessment of their nature by surface examination, and the production of full records for use by archaeologists and those concerned with land management. A 'catch-all' approach is commonly adopted. The usual procedure is described as initial familiarisation with the topography, ecology, relevant records, and oral knowledge of the area as a guide to possible site location, followed by as complete a physical examination of the surface as practicable. Site survey reports frequently include a descriptive account of sites located, site plans often of high apparent accuracy, and distribution maps.

Archaeological site distributions documented by fieldwork are usually incomplete. It is well known that distributions are affected by subsequent land use, which leads to artificial patterns of destruction and survival in the evidence. The intensity of the site recording and the procedures adopted may also bias the pattern of site discovery. There are variations in the likelihood of finding different types of site and some may be missed completely because they represent an as-yet-undocumented form of site. For these and other reasons, the goal of complete site survey is unattainable.

Site recording may be interesting and enjoyable and may be of great assistance in extending local knowledge and achieving the preservation of the sites found. Data collection should, however, be planned to contribute to the wider aims of archaeology. The advance of understanding requires that accurate observation and recording stem from a conscious quest for patterns and relationships and for new explanations of them. Most site recording projects can achieve research results. To this end, site recorders should consider using a structured approach concerned with the isolation of problems and the testing of answers to them against data gathered in the field. The procedure is summarised in Fig. 1.

The selection of the problem area (step 1, Fig. 1) applies in both a physical and an academic sense. The physical area of study within which fieldwork methods are to be applied to archaeological questions is often dictated by impending land development or may be suggested by regional gaps in knowledge. Beyond this, the academic problems which the fieldwork is attempting to solve must be defined. Archaeological sites are continually being destroyed, and a record made of any one of them may be the last. There are few sites and no region which can fail to provide information relevant to archaeological theory, method, terminology, or material. Thus site recording programmes should take account of a range of archaeological questions, define them at the outset, and be designed to answer them. The potential range of these questions is discussed below.

The formulation of hypotheses (step 2), or possible answers to the questions posed, follows. Systematic collection of facts will not necessarily lead to archaeological understanding, but rigorous testing of hypotheses in a regional context usually does. Most scholars work on several competing possible explanations of a problem at once. Hypotheses may derive from experience of settlement patterns and the apparent relationship between site location, site type, and resource zones. General theories involving the distribution of pa types, the extent of agriculture, or the function of pits, may be tested in the study area (see for example the work of Irwin (1985), Phillips (1994), and O'Keeffe (1991)). Ideas current in other sciences may provide hypotheses and statistical techniques may have been developed to help test these.

The formulation of hypotheses is not difficult. Already most site recorders apparently act on the basis of them: to traverse main ridges, dunes, and flats implies the expectation that most sites will be found in these locations. Such procedural hunches are not, however, hypotheses until they are overtly stated and until the research is designed to test them. The procedure suggested (Fig. 1) then becomes productive: the hypothesis is tested by the examination of other localities in the area as well. Here lies the importance of research design (step 3), which is the planning of the project to

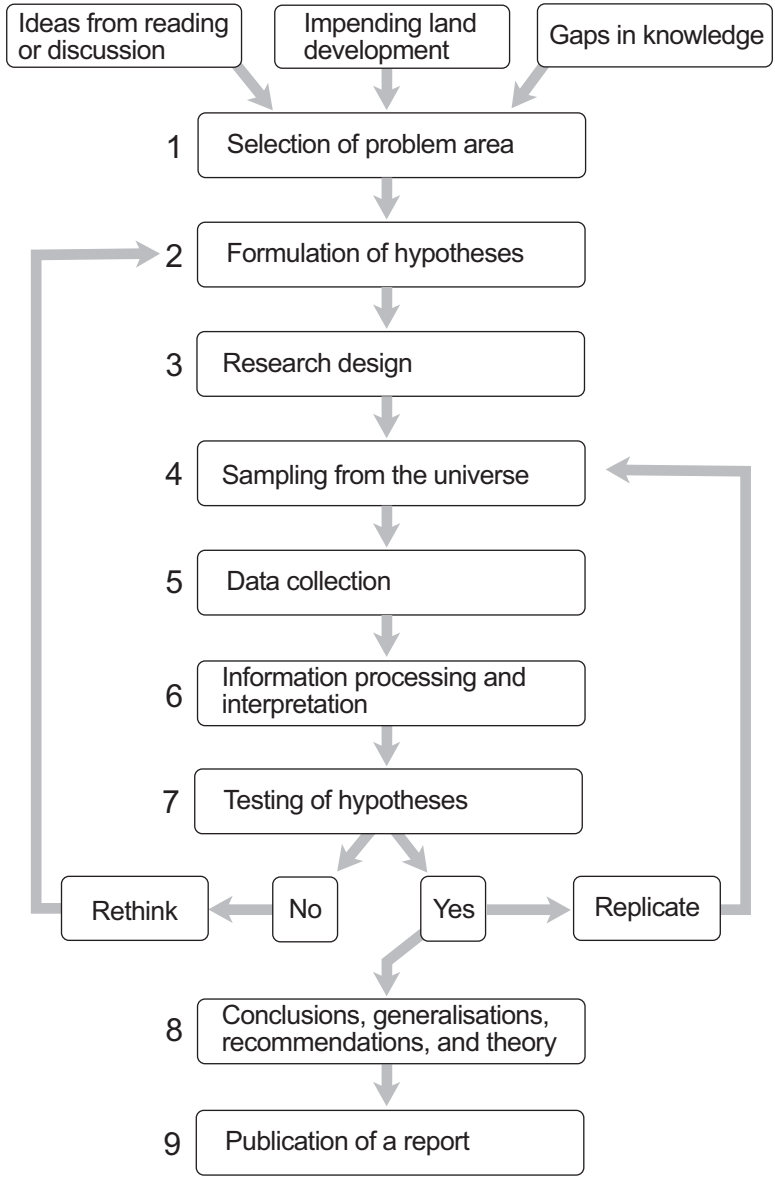


FIGURE 1. A procedure for surface archaeological fieldwork.

achieve research objectives. This is not a matter of imposing preconceptions since testing of the hypotheses should be the aim of research design.

The selection of those parts of the study area which are to be surveyed (sampling from the universe, step 4, Fig. 1) is very important. Despite the often-stated objective of complete areal coverage, comprehensive ground-walking is rarely possible or economical. All site recording may therefore be regarded as sampling. The objectives of such sampling are to achieve maximum information from minimum effort, to obtain representative and reliable data, and to answer the questions which have been posed. When these questions deal with the location and nature of the total archaeological resources of an area, data collection (step 5, Fig. 1) will be an intensive process. The methods of data collection and some useful sampling strategies are noted below.

Information processing and interpretation then follow (step 6). Of the stated hypotheses, some may be proved acceptable and others not (step 7). Those accepted may receive further confirmation as a result of additional fieldwork in the study area or elsewhere. The less useful hypotheses may be abandoned, and replaced by new hypotheses to be tested using the fieldwork data.

Thus the site recorder is led on to generalisations, conclusions and recommendations about future work (step 8), related to distribution studies and the hypotheses tested. Recommendations about site conservation priority are also best defined according to research objectives. Publication (step 9) may be difficult, because many explanations cannot be further substantiated or tested without excavation or related studies elsewhere. Nevertheless, publication should be seen as an important end result of fieldwork.

The mixing of fieldwork survey and description with analysis and interpretation should be avoided. The former must be as far as possible objective, and the latter be kept separate. Only then can further analysis and comparison be undertaken by other archaeologists. Although site recording may be carried out for differing specific reasons, its scope should not become limited. Fieldwork should be carefully designed to also include broader research objectives. It is necessary, therefore, to discuss the wider potential of surface fieldwork in solving archaeological problems. A summary of this potential is given in Fig. 2.

Site location is but one factor related to many others; for example, social factors such as settlement structure and technology, or physical factors such as surface geology and flora. No one variable can be wholly detached from the others. Such dynamic situations can be analysed using a kind of open system model (as in Fig. 2) now commonly applied in the social sciences at all levels. Relevant terms often used to describe the organisation of such systems are: (1) nodes, places of activity with

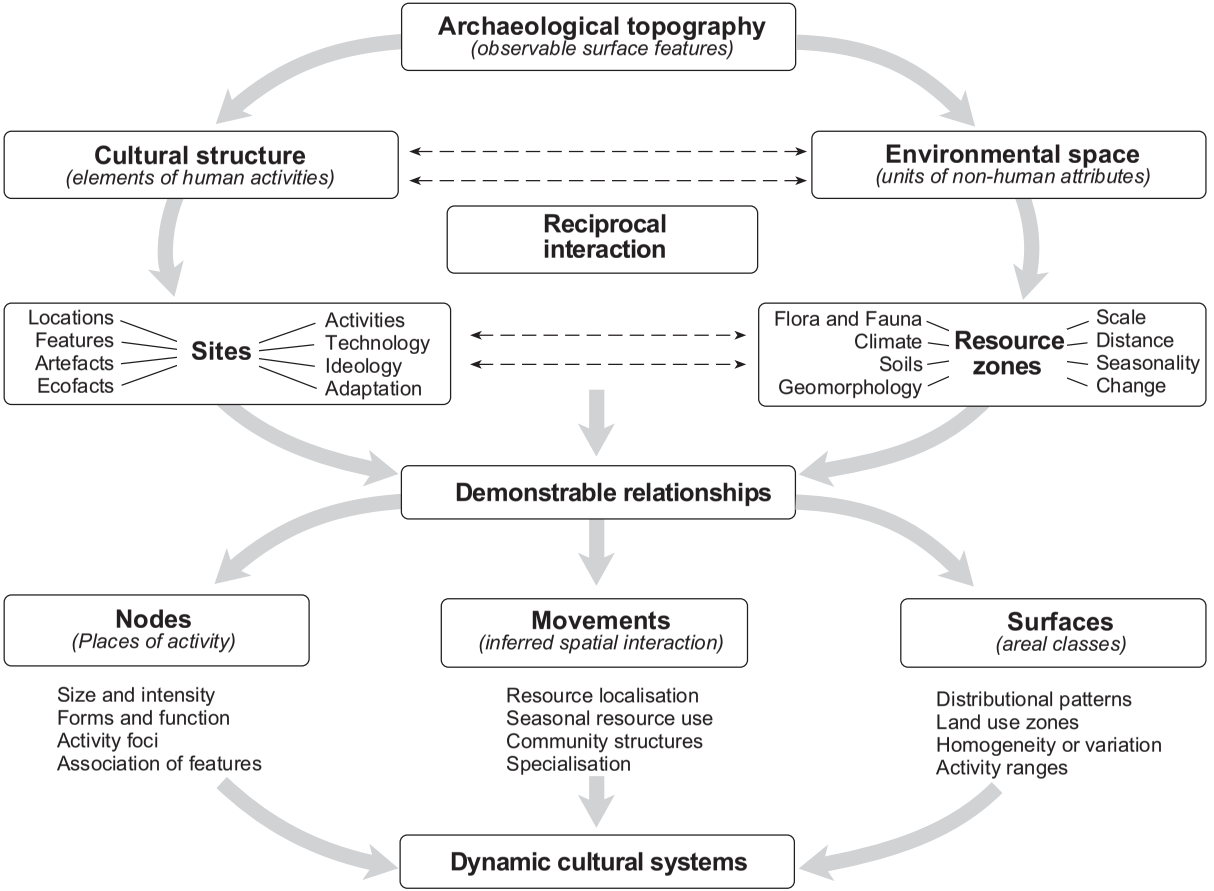


FIGURE 2. The interpretative potential of surface archaeological fieldwork.

differing sizes, features, and functions; (2) movements, interactions between these nodes resulting from factors such as seasonality and resource localisation; and (3) surfaces, or land areas with different uses, activity ranges, and distribution patterns (see Fig. 2, lower half). These are concepts which can usefully be applied to archaeology because large bodies of theory exist about them (see for example Hodder and Orton 1976).

The archaeological sites and the environmental characteristics within the study area, and the reciprocal relationships between them (see Fig. 2, upper half) are elements of the system. All these observable elements, archaeological and environmental, comprise the archaeological landscape. Thus the model (as in Fig. 2) may be used to isolate and examine change. By reference to the behavioural, ecological and regional frameworks of this approach the full potential of archaeological fieldwork may be grasped.

An objective of data collection and processing (steps 5 and 6, Fig. 1) should therefore be to define as many of the relevant elements of the model as possible. In order to assist such work a general enquiry model relating the objectives to the methods of data collection is given in Figure 3. Two stages in surface fieldwork may be defined: (1) site location, in which the whole of the study region, or chosen parts of it, is surveyed to locate sites and establish resource zones; and (2) surface sampling, in which individual sites and resource zones are examined in more detail so that their characteristics can be further defined. (See Binford 1972: 148, where the distinction is drawn between two sampling universes: the region and the site.)

The location of sites, stage 1, involves the use of various information sources (such as those noted in Fig. 3, upper half) relating to archaeological sites and the environment. Rather than being considered as a separate study, enquiry into resource zone characteristics should be an integral part of the work. Where sufficient information, for example about marine resources, is not available in the literature, this may be obtained as the site survey proceeds. As complete coverage of the study area is not likely to be achieved, given both the time and resources available and the other factors already noted, a probability sampling procedure (decided at step 3, Fig. 1) may be implemented to provide representative information. Stratified sampling, which usually involves the division of the study region into resource zones and the survey of a sample area of each, may be recommended (Haggett 1965: 195; Binford 1972: 151). Study of site distribution and density in relation to resource zones is a major theme of surface archaeology (demonstrated in Figs. 2 and 3) and has received a fresh impetus from the capacity of GIS to handle large data sets.

Stage 2, surface sampling, requires a more detailed examination of located sites to determine their nature, and resource zones to evaluate the ways in which they were

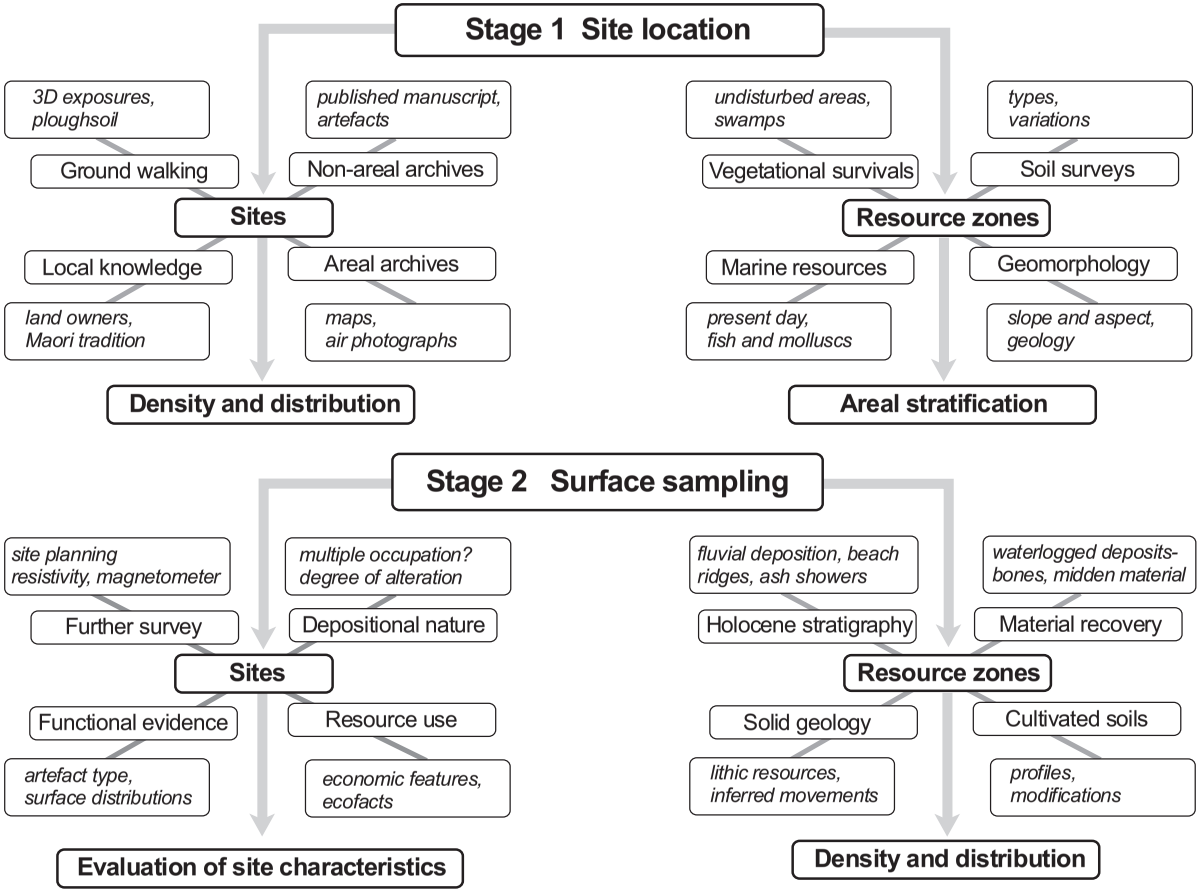


FIGURE 3. Data collection stages and sources in surface archaeological fieldwork.

exploited (see Fig. 3, lower half). It is often not necessary for samples to be removed from sites. Rather, check lists can be developed for different types of site (as in Fig. 4) to enable the data to be compiled in the field. Nevertheless, where there are problems of identification, laboratory analysis is desirable. Thorough collecting and mapping of surface evidence of exposed sites can be extremely rewarding, allowing interpretations to be made about activity loci, feature relationships, and chronology (Binford 1972: 163). Where there is insufficient time to cover the entire surface, the technique of systematic sampling (the examination of equally spaced locations on a grid covering the area) may be employed (Haggett 1965: 196). Binford's 'dog leash' technique can expedite this procedure as it simply defines a circular zone for examination at each point on the grid (Binford 1972: 152–153). On the environmental side, worthy of special note is the potential of Holocene stratigraphy in providing some chronological control for the fieldwork (see for example McFadgen 1985, 1994.)

At all stages in site recording it must be realised that absence of evidence is not evidence of absence. This is clearly the case for areas not examined when sampling procedures are adopted, but it also applies to the areas searched because, as has been noted, distributions derived from surface evidence are never complete. Absence of field evidence does not have the same status as presence, even when the apparent probability of absence is very great.

The framework within which the patterns and relationships defined by site recording may be interpreted has already been discussed (Fig. 2). It is necessary, however, to understand that many of the analytical techniques, procedures, and theoretical positions cannot be applied to archaeological data without careful consideration of their underlying assumptions. For example, the popular Thiessen polygon analysis (Haggett 1965: 247), used to define the areas or regions controlled by or utilised from the various settlements in a distribution pattern, assumes the contemporaneity of the settlements. If settlement coexistence cannot reasonably be assumed, then such an exercise has little interpretative value. Archaeology rarely achieves the tight chronological control of human geography and methods of analysis, and the validity of the resulting interpretations (undertaken at step 6, Fig. 1), should be subjected to critical examination.

New methods of numerical and spatial analysis of fieldwork data offer great prospects for advance in archaeology. Such procedures and applications are not to be shunned in New Zealand site recording. They are a means by which knowledge of the past is extended.

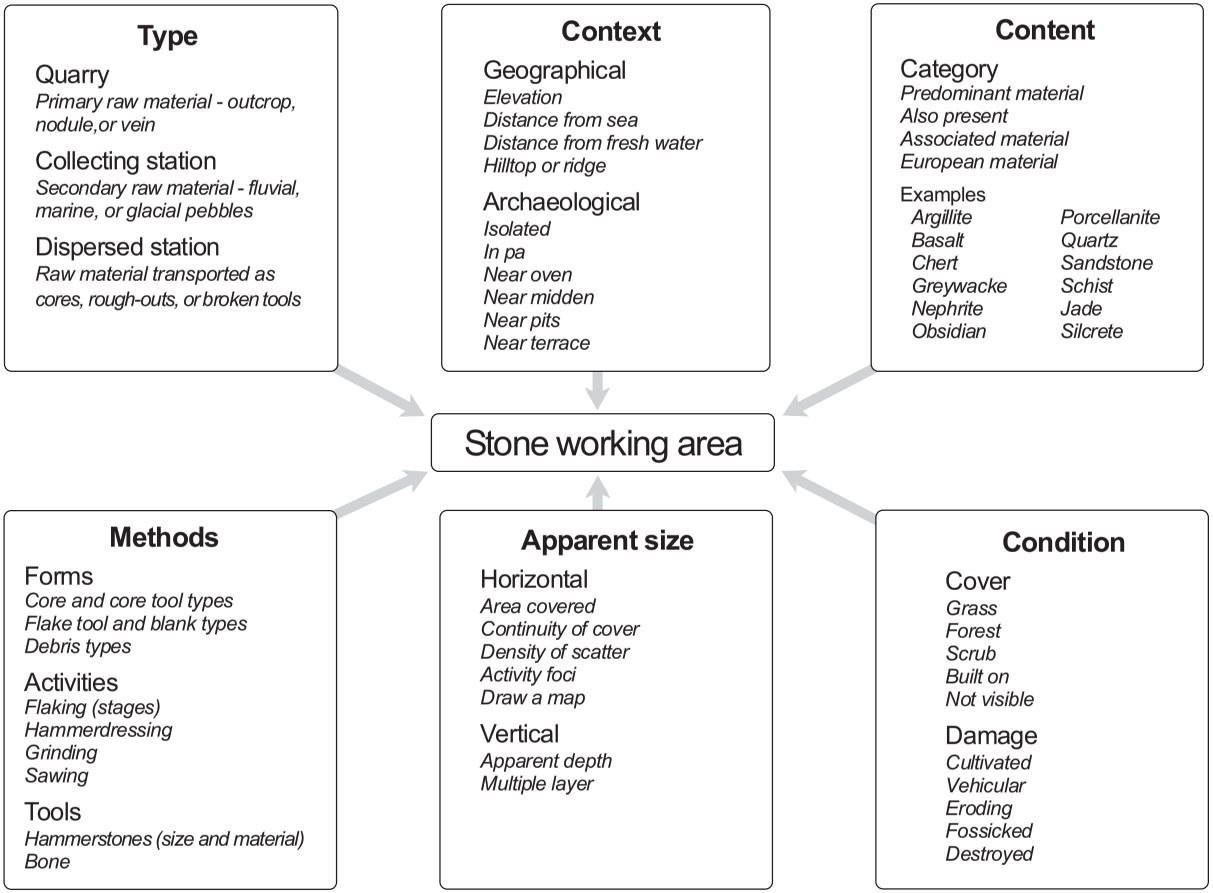


FIGURE 4. An example of a surface fieldwork checklist.

CHAPTER 3. PLANNING AND ORGANISATION OF FIELD RECORDING

This chapter provides a general discussion of planning and organising site recording. Time spent in preparation usually saves time and effort in the field. Whatever type of survey is undertaken, it is important that recorders should neither attempt too much nor, if faced with an apparently overwhelming number of sites to record, think the task beyond them.

DOCUMENTARY RESEARCH

There are few parts of the country which are now completely unknown archaeologically. Archaeologists have been very active in the last 40 years and there is a large and steadily growing literature on sites, their antiquity, form and function, and their setting in the landscape. Some recording has occurred in most parts of the country and there is much to learn from previous efforts before venturing into the field. Recorders should check what has already been recorded, the adequacy of the existing site records and any plans, and identify gaps in the areas covered. Revision of existing site records is encouraged. Contact with recorders who have previously worked in an area is often also valuable.

No preliminary check can be considered complete without consulting the existing site records. Information in the Site Recording Scheme is constantly being added to and updated. Information should, therefore, be sought anew for each project as any data acquired earlier may be out of date.

Relevant written sources on the survey area should also be consulted. Written sources include:

- Accounts of the Maori oral traditions of an area. These include works which attempt to associate places named in oral traditions with places in the landscape (e.g. Best 1925; Phillips 1989, 1995; Stafford 1994, 1996).
- Early historical accounts. These are an excellent source of information on the location and character of sites visited by the authors. Some of these works are still little known and hard to come by, and for anybody going deeply into the Maori

occupation of an area a check through the holdings of one of the larger libraries specialising in New Zealand history, particularly the Hocken Library in Dunedin or the Alexander Turnbull Library in Wellington, is usually well worthwhile.

- Local histories. These are often valuable sources of information and smaller works, such as school jubilee and centennial booklets and guidebooks, may turn out to be unexpectedly rewarding.
- Published and unpublished archaeological surveys. There are some excellent published examples such as Challis (1978).
- Theses. These can be a major source of information and often offer a broad synthesis of the available data. Examples include those on the Waitakere Ranges (Lawrence 1989), the Western Bay of Plenty (O'Keeffe 1991), the Hauraki Plains (Phillips 1994) and the South Kaipara Peninsula (Spring-Rice 1996). Archaeology is taught at the post-graduate level at both the University of Auckland and the University of Otago.

Local histories are particularly important if the survey has a focus on, or is to adequately deal with, historical archaeological sites. If a report on the fieldwork is planned or required then a review of previous work and the prehistory and history of the area will usually be included.

Some less critical local histories are not reliable guides to the prehistoric period. Some contain either garbled versions of already published tradition (often unacknowledged) or unreliable and fanciful accounts of Maori history. Such works need, therefore, to be treated with reserve, particularly if the sources of the information in them are not made clear.

Unpublished material

The recorder may find occasionally that they are able to consult valuable unpublished manuscript material such as the reminiscences of a pioneer settler, or the journals of early missionaries, travellers, and explorers. The best collection of such material in New Zealand is in the Alexander Turnbull Library, but there are also important regional holdings. This material can be difficult to work on and is often time consuming even though many sources now exist in typescript form. Identifying people who are already familiar with the material is a useful approach.

Maori Land Court Minute Books deserve special mention. These records of the Court's proceedings are a goldmine of information on Maori history and traditions, and individual sites but contain inordinately lengthy passages which have little information of relevance to archaeologists. Like all sources, they must be treated with caution. Often there were two parties whose claims were in conflict, each trying to

establish a case. The evidence of one has to be balanced against that of the other, and contradictory statements of fact must be treated with suspicion. The judgements of the Court may be helpful in determining what evidence to accept. Site location information is usually reliable, as witnesses would have been unlikely to make false statements on matters on which opposing parties would also be well informed.

The Maori Land Court maintains offices in eight centres, each maintaining the records relating to their district. To consult the records it is necessary to know the original Maori Block name and this can usually be obtained from cadastral maps. There is a computer index which lists all pre-1914 references to particular blocks. The hearings which yield most information for site recording purposes are those identified as a 'title investigation.' Facsimile bound volumes of all Minute Books are held in the Alexander Turnbull Library and the books are being entered onto computer for Internet access.

Some district filekeepers, some Department of Conservation conservancies and the head office of New Zealand Historic Places Trust hold collections of unpublished reports. The central file has a large collection of unpublished site survey reports produced since the 1970s.

Early Maps

Survey maps and plans dating from the 1840s on are held in district offices of Land Information New Zealand and in their head office archives. Some of these show Maori place-names (not always spelled correctly), old pa and kainga, and cultivation grounds. Old Roll Plans (now prefixed S.O.) and early M.L. plans are particularly valuable. Some of the M.L. plans were tabled at Maori Land Court hearings and may assist with the interpretation of the written records. Land Information New Zealand offices have an old index to Maori Blocks which lists all plans for the block and subsequent subdivisions. The older plans tend to be more useful than more recent ones. In addition, the contemporary field books, the numbers of which are often noted on the plans, may well repay perusal. The Terralink computerised database can also be used to track down early plans but this is a less sure method. Offices of National Archives in Wellington, Auckland, Christchurch, and Dunedin also contain collections of early maps. Searching the ground for traces of sites noted on such plans can be a profitable avenue of investigation.

Old Photographs

Old photographs are often invaluable for showing what places looked like in the past and make effective illustrations. It is important to record who took the photograph, when it was taken, why it was taken, and what it shows. The Alexander

Turnbull Library and many museums have built up good collections of old photographs and the Alexander Turnbull Library are entering theirs onto the Internet.

TYPES OF SURVEY

The methods and techniques used vary with the purpose of the survey and the information required. The intensity of coverage of the survey area will depend on variables such as:

- The amount and quality of information already on record
- The ground cover
- The visibility of various classes of site
- The likelihood of unrecorded sites
- The anticipated use of the data

In general, the more information that is collected, the more useful and reliable the resultant records are likely to be. No matter how intense the survey, however, it is unlikely that all evidence of past human occupation will be identified in any given area. The evidence may not be visible at the surface, or it may be hidden by vegetation or not be recognised by the recorder. Most recording involves sampling in one form or another.

Examples of types of survey are:

- **Reconnaissance survey**. This is an exploratory survey of an area and is intended to indicate the likely form, pattern and density of sites. Such a survey may form the first stage of an intensive survey.
- **Survey done in conjunction with a specific programme of excavation**. Davidson's (1970, 1972, 1978) work on Motutapu Island, the Otago university project in Palliser Bay (Leach and Leach 1979), and Irwin's (1985) work on Poutu Peninsula provide examples.
- **Limited survey**. Research orientated and in a specific area, e.g. Prickett's study of pa in Taranaki (Prickett 1980, 1982, 1983).
- **Intensive survey of an area**. e.g. D'Urville Island (Prickett and Prickett 1975) or the King Country coastline (Wilkes 1995).
- **Threat-orientated survey**. This is undertaken specifically to identify sites which may be threatened by a proposed development and may include an assessment of likely effect of the project on individual sites. Such surveys have become a large part of recent historic heritage management work, e.g. in forestry blocks and proposed subdivisions.

- **Opportunistic or ad hoc survey**. An inspection of a place to locate on the ground a site identified from another source or a visit to a site that takes advantage of being in an area.

If possible, previously recorded sites in the project area should be visited to update information on them. If the condition of the site is unchanged, this should be recorded along with the date of the visit.

Ground visibility will vary. Usually visibility is best in areas of short grazed grass, and large swaths of ground can be effectively scanned while walking across it or from vantage points with binoculars. Sites are less easily detected in tall grass and it may be necessary to walk onto a site, feeling with the feet, to understand it. Site survey in dense shrub, gorse or manuka is virtually impossible. In an exotic forest with a closed canopy (15–30 years), ground cover may be thin and visibility may be of the order of 8–9 m.

Preconceived notions about the likely location of sites can be tested by surveying a series of randomly selected areas, preferably as part of a formally developed sampling strategy. A statistically valid assessment depends on the use of an appropriate means of selecting the areas for survey. It is valuable to establish the extent of the bias introduced by standard approaches such as following ridgelines and looking where the sites are thought to be.

Aerial photograph interpretation provides an important source of information which may be used to guide fieldwork. The lack of visible features on a photograph, however, can never prove that an area is devoid of archaeological remains, only that when the photograph was taken there were no traces sufficiently prominent to show on the photograph. Many sites do not show on aerial photographs.

DEFINING THE AREA OF OPERATIONS

This is an important decision. For some sorts of survey, such as those that are threat orientated, the boundary will usually be determined by the area of likely impact of a proposed development or will coincide with the legal boundaries of land owned by a company or individual. Even in these cases, it is often advisable to extend the survey boundaries to provide additional information on the wider archaeological and environmental context. How far beyond a project boundary it is possible or necessary to survey depends in part on what is already known about the project area itself and what additional information is required to make sense of it.

If a survey is research-orientated, the boundaries will be determined by the topic and resources available and may rely in part on previous recording. In some types of

research, there are clearly advantages in using natural units such as drainage basins. Other types of research may focus on a region, a site type, or a resource and in each case the boundaries, and the mix of survey methods and techniques employed, will differ.

The boundaries may be determined by the extent of earlier surveys or may be an arbitrary unit. However the boundaries of an area are determined, they should always be documented either in the site records produced or in a separate site survey report.

EQUIPMENT

The minimum equipment required is a field book and a pencil. This would, however, limit the precision of the measurements to paced distances or estimates and so it is desirable to also have a tape measure, a compass, and a camera. Wire pegs are a useful adjunct for recording, and make the use of a tape by an individual working alone feasible. A wire peg can also be used as a probe to detect or map the extent of shallow deposits of midden. An abney level or clinometer is needed to sight angles for measuring the profiles of earthworks.

Other instruments which have been found to be useful in the field include binoculars and secateurs. Binoculars can save a lot of walking, while secateurs or machetes are useful when pushing through dense vegetation. PVC rainwear is useful not just as protection from the rain but because it provides excellent electrical insulation for climbing over or through electric fences. Electric fences often represent a formidable barrier to movement across country.

Safety should always be a prime consideration and recorders should work in pairs wherever possible. A mobile phone or VHF radio to summon help if required should also be carried. The amount of equipment which could usefully be carried is daunting and it is always necessary to find a balance between the amount and weight of equipment carried and the comfort and convenience of the recorder.

Field books

Detailed notes should be written in the field as the human memory is fallible and is prone to error in both general and specific matters of detail. A field book may be just an ordinary notebook, but specially designed products for use in the field are also available. The very best field books are waterproof but these are relatively expensive and usually have to be obtained from specialist surveying suppliers. Ball point pens don't work in the rain, waterproof paper or not. All-weather pens which will write on damp and wet

paper are now available but pencils are still the least expensive and the most versatile choice.

Field books should be retained by site recorders as the primary record of the work. This is particularly important for those who are working professionally. The field books should eventually be archived in a public institution, although there are no established arrangements in place for this at present.

Maps

A map and an aerial photograph of the survey area is an important part of the site recorder's kit. Thorough examination of maps and aerial photographs will help to give the 'lie of the land' generally, and with practice may suggest likely site locations. Some published maps have the more prominent sites marked on them.

Site recorders need to plot or keep track of their movement across the ground and mark the location of sites. NZMS 260 maps may be used but often larger scale maps or aerial photographs will be available and are more useful in the field because of their more detailed depiction of the landscape. Maps and aerial photographs can be laminated and maps photocopied onto waterproof paper if weather conditions make this necessary. It is often useful to carry a cadastral plan of the area (available to required specifications from the Digital Cadastral Database held by Land Information New Zealand) as well so that it is possible to track progress in terms of land boundaries and title boundaries.

The primary data used by the Site Recording Scheme for locational purposes is a grid reference from the New Zealand Map Grid as used, for example, on the NZMS 260 topographical maps. Grid references are often assigned in the writing-up stage, rather than in the field. *An accurate grid reference is essential.*

A grid reference consists of an *easting* and a *northing*—the reference in an easterly and northerly direction respectively from the arbitrary point of origin of the grid. A useful way to remember the correct order of eastings and northings is the mnemonic 'read RIGHT UP.' The figures of a grid reference denote a square within which a point is located by designating the co-ordinates of the south west corner of that square. A grid reference should ALWAYS specify the south west corner of the square in which the point occurs; it should NEVER be rounded to the nearest figure. A point which lies just left of, or just below, a grid line, is never rounded up, no matter how close it lies to the line. This is an important convention and should always be followed.

NZMS 260 maps show the grid lines of squares which represent 1000 m on the ground. A conventional six-figure grid reference defines a square 100 by 100 m on the ground and to determine the grid reference of a particular point to this level of

precision it is necessary to divide the 1000 m squares shown into tenths. To give an accurate reading it is advisable to use a romer and not rely on estimating tenths by eye. A *romer* is a purpose-made device for measuring the position of a point within a square. It can be made using durable paper and marked with the appropriate set of lines drawn from the scale bar on the map. A ruler provides an acceptable substitute.

Adding further figures to the eastings and northings helps define the location of a point more closely. It must be remembered that to quote the extra figures implies an increasing level of precision from a square equivalent to 100m x 100 m on the ground for a six-figure grid reference to a square equivalent to 10 x 10 m for an eight-figure grid reference, and one equivalent to 1 x 1 m for a ten-figure grid reference. These levels of precision are rarely attainable without differential GPS or other specialist equipment.

There has been an increasing demand for more precise locations to be recorded for site protection purposes, in particular. The minimum level of precision required for site records is a grid reference precise to the nearest 100 m but more exact locational data should be supplied if available. The greater the precision attempted, however, the greater the need to check and re-check the grid reference for accuracy.

Quality control is vital. Grid references, above all else, need to be checked and checked again for accuracy.

Tapes and compasses

A 30 metre tape and a compass are desirable for taking measurements. Military-style prismatic compasses constructed to withstand tough conditions have often been used in the past but they are relatively expensive. There are now a range of small, convenient, robust, and cheaper compasses available. An aluminium compass with a prism for reading bearings is nearly ideal in terms of quality, weight and robustness. The larger survey equipment supply companies have catalogues detailing a range of products from elementary surveying instruments to the latest Global Positioning System (GPS) instruments and total stations. Total stations are state of the art surveying instruments which electronically measure and record angles and distance.

Techniques and instruments useful for detailed mapping exercises are not covered in this handbook. Any survey can usually be done adequately in a number of different ways and the site recorder will usually choose a method in the light of equipment obtainable, the precision and accuracy required, and the time available. The techniques and instruments required are discussed in advanced manuals on surveying for field scientists such as Puch (1975) and Hogg (1980), although neither author deals with some of the newer instruments, such as total stations, that are now available. Total stations are

expensive, will usually be owned by institutions rather than individuals, and are generally more useful for detailed mapping of sites rather than for routine site recording. Pacing provides a rapid and relatively reliable means of measuring short distances. Beginners should calibrate their pace by walking a known distance.

Equipment checklist

The following checklist of equipment is not exhaustive nor is it suggested that all items need to be carried.

- Field book
- Pencil and ruler
- Clipboard
- Topographical map (preferably laminated)
- Cadastral overlay
- 30 m tape
- Compass
- Clinometer or abney level
- Line level, string and hand tape (for recording sections)
- Wire peg(s)
- Trowel (for cleaning down sections or taking samples)
- Secateurs and lightweight folding pruning saw
- Mobile phone, VHF radio or personal locator beacon
- Camera, including wide angle lens
- Binoculars
- Pocket magnifying lens
- Plastic bags and tags
- Torch
- First aid kit

GLOBAL POSITIONING SYSTEM (GPS)

GPS is a satellite-based method of finding a position on the earth in three dimensions. The system services many thousands of users. Receivers in common use vary from pocket calculator size to back-pack size. GPS has been hailed as a major advance in finding the positions of archaeological sites but it has to be used with due regard for its limitations and in many cases there are less technical ways of achieving the same results.

The satellites broadcast radio signals which are picked up by the receivers and used to calculate positions. GPS is quick and can be used day and night in all

weathers. GPS signals do not pass through buildings or through vegetation, which may limit the usefulness of GPS for recording site locations in cities, under bush, or near large trees.

GPS positions

The positions calculated by GPS are co-ordinates expressed either as *geodetic co-ordinates* (latitudes and longitudes), or as *grid co-ordinates* (metres north and east of some origin). The positions have errors associated with them, the size of which depends on the type of GPS receiver used. The calculated positions are not grid references, but acceptable grid references can be derived from them.

GPS errors

The size of the error in a GPS position depends on which radio signals the receiver uses to find its position, and whether or not the signal degradation is corrected. Without correcting for signal degradation, a GPS position is only accurate to about 100m horizontally, and about 150m vertically, regardless of the receiver used.

Signal degradation is corrected using a technique called *Differential GPS* (DGPS). This technique uses a *receiver* at a known location (base) to record satellite signals at the same times as the user's receiver (*rover*). Differences between the base station's known location and its GPS-derived location are applied as corrections to the positions determined by the rover.

The distance of the base station from the roving GPS affects the accuracy of the user's calculated position. In general the distance between a base station and a rover should be less than 100 km for decimetre accuracy, and 400 km for metre accuracy. Corrections can be applied in real time by establishing a radio link between the base station and rover, or by processing the readings from the base station and rover at a later date (*post-processing*).

The accuracy of the various GPS receivers is given by manufacturers in their promotional material. The quoted accuracies are standard errors, not absolute errors, and normal statistical principles apply. On average, the error of one out of every three readings will exceed one standard error, the error of one out of every twenty readings will exceed two standard errors, and the error of one out of every one hundred readings will exceed three standard errors.

A GPS position uncorrected for signal degradation has a horizontal error up to about 100 m. The true position therefore lies somewhere inside a circle of radius 100 m and this is less accurate than a grid reference from a 1:50,000 map. Single uncorrected

readings are inadequate for site location regardless of the equipment used. Positions found using differential GPS are more accurate and are to be preferred.

Examples of receivers and their errors after differential corrections are applied are as follows:

10–100 m units	Trimble Scoutmaster (using acculock)	Magellan handheld
2–5 m	Trimble Scoutmaster (real time correction)	Sokkia Spectrum (code differential)
2–5 m	Trimble GeoExplorer II	
1–50 cm	Trimble Pro XR <50cm (code differential) 1–20 cm (phase differential)	Sokkia GIR1000 Sokkia Spectrum (phase differential)
1–5 cm	Trimble 4700 Trimble 4800 Trimble 4000 Trimble 4400 Trimble 4600	Sokkia GSR1200 Sokkia GSR2100, 2200, 2300

For various reasons GPS co-ordinates can be grossly in error. Check for such errors regularly by measuring the positions of known locations on a map and comparing the GPS position with the map position.

What to record on Site Record Forms or in the site survey report:

- The GPS position as a GPS co-ordinate
- The GPS receiver used
- Manufacturer's accuracy specification
- Differential GPS corrections applied, and the distance to the base station
- The software and version number used to process the GPS data
- The 1:50,000 grid reference determined using the GPS position

PHOTOGRAPHS

Well-composed photographs are an important record of a site. Photographs can be used to illustrate:

- The layout of a site
- Selected features
- The general setting

A compact or Single Lens Reflex 35 mm camera with a zoom lens is ideal for many types of site recording. Such a camera can be light weight, easy to use, and can produce good quality pictures. The zoom lens is versatile and replaces the need to carry a Single Lens Reflex camera with a selection of lenses. It should be noted, however, that there is a trade-off between versatility and quality.

It is not intended to discuss technical details of cameras, lenses, and films. If photography is a significant part of a project, however, a compact or Single Lens Reflex camera with a zoom lens will be inadequate and a useful field kit may be a Single Lens Reflex camera with standard prime lens (f 1.4) plus a prime wide angle (24–28 mm) lens (f 2.8). The latter will allow the user to stand near a site, such as a pit, and view the whole of it, all in focus at infinity.

The following points should be noted:

- Photographs unintelligently taken tell nothing. Use must be made of light and shadow to bring out the required features. Sharp sunlight, preferably with the sun low in the sky, is needed for earthworks while diffuse, flat light is best for photographing stratigraphic sections, rock art, and so on.
- A scale of some sort must always be included—a trowel, a person, etc., depending on the subject of the photograph.

Documentation required for photographs will usually involve:

- A description of the subject. As soon as the shot is taken, this should be written against the appropriate frame number in a notebook. Film reels should be numbered as they are completed and the appropriate number written in the notebook.
- Direction. A description of the subject should always include a note indicating the direction. A description of the sort 'view towards (direction) from (vantage point)' is encouraged as it is less ambiguous than alternative forms.
- There should be references to photographs in the written description, and in plans and diagrams.
- The month and year the photograph was taken, and the negative number, should be written on its back and on the accompanying Site Record Form or Site Description Form.

Most photographs are taken for record purposes, not for publication. If a photograph is intended for publication, more attention should be paid to properly composing the shot and ensuring that it illustrates the particular point intended. It may be worthwhile to plan a return visit to a site if light conditions are unsuitable when it is first visited.

AERIAL PHOTOGRAPHS

Aerial photographs are useful for reconnaissance and for mapping. The use of such aerial photographs should be referred to on the Site Record Form and, if possible, a copy or print filed.

Aerial photographs are an important tool of archaeology:

- Information about sites and their relationships with each other and with the terrain is easily interpreted.
- The amount of readily interpreted information they contain about the nature of the terrain usually allows the site locations to be plotted with considerable accuracy. Aerial photographs can have an important role when dealing with large numbers of small sites in a restricted area.
- Stereo-pairs provide three-dimensional relief and detailed information on the character of the terrain and on site context.
- Fieldwork planned with use of aerial photographs helps save time and effort.

New Zealand has been the subject of conventional vertical aerial photography since 1936; complete coverage was attained in the 1950s. Aerial photos for all parts of New Zealand, indexed by runs and photograph positions plotted onto cadastral maps, may be examined by appointment at the Head Office of Land Information New Zealand and copies may be purchased through New Zealand Aerial Mapping (Ltd), based in Hastings. The early Royal New Zealand Air Force photographic coverage is indexed at Land Information New Zealand and is available through Air Force World, Wigram. Unfortunately, Crown aerial photograph collections have become much less accessible to the public as a result of changes to the roles of government departments in the last decade. District offices of Land Information New Zealand and Department of Conservation Conservancy Offices may have reference sets of photographs available to the public but the situation varies. Regional and district councils usually hold useful sets of contact prints, both historical and current.

New Zealand Aerial Mapping is the only supplier of prints from Crown copyright negatives. New Zealand Aerial Mapping will advise on the availability of aerial photographs, supplying details and date if contacted by letter or fax with a photocopy of part of NZMS 260 map marked to define the area of interest. They will generally not supply photocopies. If you specify that your interest is archaeological, they may make a comment as to whether features show clearly and the condition of the negative (negatives or diapositives may occasionally have flaws that ruin their archaeological value) or both. There is an archival fee for use of negatives dating from before 1970 and an hourly search rate for more detailed reference services may be charged. New Zealand

Aerial Mapping holds a reasonably comprehensive collection of contact prints at its Hastings office. Arrange ahead of time for access to this collection.

Other major commercial suppliers of aerial photographs are Air Logistics, Browns Bay, Auckland, and Air Maps, Tauranga (the latter has especially good coverage of the Bay of Plenty).

Terralink is producing orthophoto composite maps at 1:25,000 which may have uses for recording site locations.

A major limitation to this valuable tool is the scale of most vertical aerial photographs taken for routine mapping purposes in New Zealand. Contact prints of the earlier photographs often have scales around 1:15,840. These are useful for archaeological details (due to the larger scale than those produced from present flying) and to reveal the extent and nature of what may have been destroyed in the intervening years. Many areas now in bush or forest were in pasture 40–50 years ago. Winter flights and flights early and late in the day were also undertaken so shadow detailing of earthworks is often very good. Nonetheless, positive identification of many smaller features is difficult even at this scale. Later contact prints usually have a scale ranging from 1:25,000 to 1:50,000 and many identifications of archaeological features require ground checking to confirm them.

These photographs are unlikely to disclose sites invisible on the ground to the naked eye (unless the site has been ploughed flat since the photograph was taken). Use of obliques (aerial photographs taken at an angle to the ground to highlight contrasts in shadow, vegetation etc.) to show sites not apparent to observers on the ground and early aerial photograph can have value for reconnaissance and mapping purposes.

Vertical aerial photographs

Vertical aerial photographs are taken in 'runs' and generally in an east–west or west–east direction so that each photograph overlaps some 60% on the previous photograph. Successive runs are generally parallel and overlap with the previous run, thus building up a comprehensive coverage of the land surface.

The basic information essential for the interpretation of the photograph is shown in a panel on the margin of the photograph. This panel does not always indicate north. Usually successive runs differ, depending on whether they were flown west–east or east–west.

For present purposes the important details are:

- **Number of survey or run number and photograph number**. These are numbers assigned for reference purposes. For each photograph there is a survey number, a run number or letter (if a number of runs is involved), and a photograph number. Head Office of Land Information New Zealand maintains a set of index maps which shows the coverage available for an area, although many agencies such as the former New Zealand Forest Service took photographs for their own purposes and these are only retrievable through New Zealand Aerial Mapping.
- **Scale**. Altitude is indicated on the photograph, as is the focal length of the camera. These are used to determine the scale of the photograph. The formula for calculating scale is focal length of camera divided by altitude. Scale is always shown on more recent photographs.
- **Date of photography**. The older aerial photographs have a number of advantages for archaeological purposes. Comparison of photographs at one or more dates in the past with the present state will allow informed comment on changes to the state of a site.

Viewing aerial photographs

If aerial photographs are viewed singly only part of the information they contain is being used. With vertical aerial photographs runs, the ground surface common to two successive aerial photographs is photographed from different viewpoints by the camera. Use is made of this difference in perspective to produce a three-dimensional image with a stereoscope. It is possible to view small areas of stereo-pairs in three-dimensional relief without the aid of a stereoscope, but this is less effective, since the stereoscope provides magnification which allows recognition of features likely to be missed by the naked eye.

Two kinds of stereoscope are in common use: the lens stereoscope and the mirror stereoscope. When using a lens stereoscope, the image-pairs directly beneath each eye will partially lie one over the other so that the whole area of image overlap cannot be seen at once. By rolling the inner edge of the top print up between the eye pieces of the stereoscope it is possible to extend the area that can be seen without rearranging the stereo-pair. When using a mirror stereoscope the photographs are more widely separated and the whole area of overlap in a pair of photographs can be seen. Lens stereoscopes are far superior for use in the field. Relief under a stereoscope is greatly exaggerated.

In mid latitudes most photographs are taken around midday when the sun is highest. When viewing a photograph the relief looks ‘correct’ when the light is coming from the northwest, and the photograph should be viewed with north away from the observer.

The aerial photograph may only be used with caution as if it is an accurate and reliable map. This is because the aircraft flies at a given altitude so that in rough country higher ground is nearer the camera than lower-lying terrain. The scale therefore varies and higher ground is displaced in relation to lower lying areas. There are also scale differences between the centre and the margins of photographs. Such considerations are often not important for archaeological purposes but recorders should be aware of some of the limitations if they are using them to make measurements or to locate sites onto photogrammetrically correct map bases. A history of the use of aerial photography in New Zealand archaeology is provided by Jones (1997) and a general guide to air photograph interpretation for archaeologists is Wilson (1982).

Taking oblique aerial photographs

Obliques from a Cessna or similar high-wing plane are useful for taking reconnaissance and illustrative photographs and for mapping. A small strut on Cessna window frames can be unscrewed which allows the window, when opened, to flip right up on to the under surface of the wing. Flying speed should be about 80 knots. A fast (f1.4–f2.8) fixed focal length lens (28, 50 or 80 mm) with 100 ASA panchromatic or slide film will produce best results. Print films will have poor archival value. Only the most expensive zoom lenses in the 28–100 mm focal length range will produce good results. Cheap zooms with fast (400 ASA) film speeds may be adequate. The best shadow effects are in early morning, late afternoon or winter. For slide film reliable aperture priority auto exposure (f8 for 100 or 200 ASA film) is desirable.

A good route plan and well-briefed pilot are essential. Check cameras, film and the opening of the window before takeoff. Fly at 1800 to 2800 feet, use good intercom headsets and instruct the pilot on directions, turns, and so on, since the pilot can only see a fraction of what the photographer wants. The essential camera technique is to maintain the site still in the viewfinder as one goes through the turn. Circle the site until its features show to best advantage in the shadow conditions prevailing. Common faults are too little context or physical setting of the site and photography at too high an oblique angle (i.e. only 20–40 degrees above the horizontal). The latter problem arises because it is not possible to see very much under or forward of an aircraft. The remedy is not to circle the site but to fly towards it, estimating when it is about to come under the aircraft, and then instructing the pilot to do a steep bank: this will reveal the site more or less below the aircraft.

LANDOWNERS AND LOCAL CONTACTS

It is New Zealand Archaeological Association policy that archaeologists obtain the landowner's or occupier's permission when any archaeological work is intended. This is a chance for the site recorder to explain the scope of the project and what it is hoped will be achieved. Site recorders cannot expect co-operation if they enter land without permission. Normal consideration, such as leaving gates as found and not trampling crops or disturbing livestock, must be observed.

It is useful to have a cadastral map of the area. A straightforward way of proceeding is simply to contact one landowner or occupier in the area and, in the course of discussions, establish property boundaries and ask who the neighbours are and where or how they can be contacted. Contact with the press and a leaflet in rural mail boxes can be effective where personal contact has yet to be made. Owners or occupiers can also be located using farm location maps, local body rating rolls, or the telephone directory.

Sometimes it may be necessary to search land titles to identify the landowner. This is not as formidable as it sounds. The documents are kept at Land Titles Offices at Land Information New Zealand which are usually in main or provincial centres. The first step in the procedure is to identify the legal description or appellation of the relevant parcel of land on the Digital Cadastral Database in the Land Titles Office of Land Information New Zealand. This is a fully computerised map-based system which shows land block names and numbers and section numbers. Land is subdivided for ownership purposes in several different ways. The main types are:

- Sections of Survey districts. Survey districts are divided into blocks and sections e.g. Section 9, Block X, Belmont Survey District. Such subdivisions are recorded on Survey Office (S.O.) plans.
- Sections of Land Registration Districts e.g. Section 4, Porirua District. Such subdivisions are recorded on S.O. plans.
- Maori Blocks, which are subdivisions of an original block and retain a common block name, e.g. Haukaretu Block 2D4A. Such subdivisions are recorded on Maori Land (M.L.) plans and each subdivision of a block is indicated by alternating numbers and letters i.e. the first subdivision is a number e.g. 2; the subdivision of 2 is a letter e.g. 2D; the subdivision of 2D is again a number e.g. 2D4; and so on.
- Lot numbers on a plan. The plans may be prefixed by A, B, D.P. (Deposited Plan) and D.P.S. (Deposited Plan South Auckland Land District) e.g. Lot 2 D.P. 12345, Lot 1 A 237. A and B plans are rare.

The aim of finding the number of a section or lot and its parent plan is to find the certificate of title (C.T.) number for the piece of land in question. Sometimes the C.T. is

noted on the plan, in which case all that is needed to find the name of the owner is to examine the title.

The C.T. number is usually in two parts (e.g. 427/154, or D24/23). Look up the C.T. number in the computerised index at the Land Titles Office. The computer record should contain the name of the current registered owner. If difficulty is experienced, the Land Titles Office staff may assist. Alternatively, rating rolls will give the name of the ratepayer (usually the owner). This is no more than a brief outline of the procedure but it should enable the ownership of most land to be traced.

Landowners, particularly those with a long family attachment to the land, often have collections of artefacts and helpful information about how the land has been used over generations. Recorders should seek to record, measure and document any finds which are of interest. Landowners can often provide explanations of ambiguous features, although some of these explanations may need to be treated with caution. Local contacts, particularly those with an interest in history, can be invaluable. They can often provide information on the history of the area and on specific places. They will often also provide an introduction to landowners which may be important in establishing your bona fides if you are not a local. There may, however, also be feelings of resentment at an outsider meddling in the history of an area.

SURFACE COLLECTIONS

The collection of culturally significant material, either artefacts or faunal and other remains, from the surface of archaeological sites is an unresolved issue among archaeologists. As surface collecting will bias the evidence available to future researchers, the straightforward approach would require that site recorders leave all cultural material in place. More practical considerations, however, may impel the site recorder to remove materials which would be at risk from fossickers, casual site visitors or from natural events such as floods. If, however, any surface material is removed from a site, a record of the removal, including the distribution of the material on the site, should be made and should be included in the site record when filed. If the material is removed from a previously recorded site, this information can be submitted to the district filekeeper on a Site Description Form.

Bone or stone refuse material should be listed and, if it cannot be identified in the field, a small surface collection may be made for later identification. The provisions of any relevant legislation must be observed. The ownership of Maori artefacts normally lies with the Crown, not the finder or landowner, but other artefacts belong to the landowner (see Appendix 3). The removal of surface material should not be confused

with sub-surface testing and collection for which there are different legal requirements.

LONG-TERM REVISION

In some cases only minimal records have been filed for even quite important sites. There is, therefore, considerable scope for upgrading and updating existing records and it is hoped that all those engaged in site recording will look on this as an integral part of their recording programme, and aim to improve descriptions, plans and photographs for all sites they visit.

KEEPING UP WITH THE PAPERWORK

Preparing records for the filekeeper is just as important as work in the field and this often takes longer than is realised. It involves checking and drawing plans, and if postponed can pile up distressingly. In areas with a high density of sites, plan to spend about three days in the office for each day spent in the field. Recording which remains in the field book is of value only to the recorder.

SITE SURVEY REPORTS

Whether sites are found or not during a survey, a formal report is an important end result of fieldwork. The area actually walked and the nature of the ground cover should be indicated so that the results of the survey can be evaluated in light of these constraints. The level of detail should be commensurate with the size and complexity of the project. If a report is to be duplicated by photocopying, prepare the report with the limitations of this method in mind. A site survey report should contain some or all of the elements discussed below (Davis 1994).

Contents should include a title page with:

- Report title (indicating project and location)
- Author (s) (including addresses and affiliations)
- Sponsor, funding authority or controlling agency, if any
- Date of report

This should be followed on a separate page by a summary of the main elements of the report.

The Introduction should include the following material:

- Description of project area and its setting
- Nature of survey undertaken and the date of fieldwork
- Actual commitment of time in fieldwork and writing-up
- Constraints on field and documentary research

Previous archaeological work in project area may include discussion of:

- Extent of previous fieldwork
- Written sources
- Known sites

Environmental setting may cover:

- Present environment and constraints on fieldwork, including delimiting areas not covered because of difficult conditions
- Environment in the past and the effect of this on settlement at earlier times

The section on the project itself should include discussion of:

- Objectives and the purpose of the survey
- Survey methods employed, including justification for choices made
- Results of fieldwork. Include large scale plans of site location and extent, in a folded map tucked in a pocket if necessary. Discuss problems of defining nature of sites and impact of any constraints on fieldwork. If no sites are found, what is the likely explanation?

Some reports will require statements of significance and recommendations. These should be included in a form which allows them to be detached from the main body of the report if this is required by the sponsor. It is New Zealand Archaeological Association policy that the empirical results of archaeological surveys should not be withheld for commercial or other reasons and that they should be made available through the Site Recording Scheme in a timely fashion. This section may include:

- Identification of information gaps
- Predictions of kinds and number of archaeological sites
- Nature, distribution and potential significance of archaeological sites
- Potential impacts and options for managing these

Appendices may include:

- Brief biographical sketch of personnel involved including summaries of academic training and field experience
- Lists and brief descriptions of recorded sites
- Copies of Site Record Forms produced as a result of the survey (if appropriate)

Place of report preparation, copying or distribution should be indicated. Two copies of a site survey report should be provided, one for the district file and one for the central file.

CHAPTER 4. CLASSIFICATION OF THE FIELD EVIDENCE

DECIDING WHAT TO RECORD

Recording archaeological sites involves four sets of decisions. The first has to do with deciding exactly what field evidence should be recorded. The site recorder has to decide which landscape features are natural and which are the product of human activity. This is by no means always an easy distinction to make and even experienced investigators can mistake naturally occurring features for those made by people. Before any site recorder can begin to undertake field recording they must familiarise themselves with their survey area. This may involve spending a few hours driving around or walking over the terrain or both and becoming accustomed to the range of features formed by natural and animal agencies. Speaking to landowners and other people with local knowledge can also be a way of avoiding the pitfalls.

Having decided that a feature is of human origin, the recorder has to decide if the evidence falls within the scope of the Site Recording Scheme and is worth recording. At the present time any site of human activity which has potential scientific or historical/ cultural significance should be recorded as a matter of course. A recorder may wish to describe quite recent sites which he or she considers are, or may become, significant to the history of New Zealand. Some evidence is so slight, however, that it may be questioned whether it is useful or necessary to pinpoint and record it. Recording an obsidian flake as a find spot may or may not be justified depending on circumstances. This is a judgement that the recorder must make based on an understanding of the archaeology of the area and likely significance of the information.

The third decision to take in field recording is whether to make a plan or merely to describe the site in words. The latter is warranted in situations where a plan would provide little additional information. For example, making a plan of a 20 centimetre long shell scatter eroding from a cattle track might not be worth the effort, neither would mapping the find spot of a single obsidian flake. In situations such as these an accurate location and written description would suffice. Plans are essential when information on the shape, size and relative location of features is necessary for an adequate appraisal

of the archaeological evidence. For example, a plan would be required to accurately illustrate the length, height and orientation of a defensive bank, or the relative location of five closely spaced shell middens. Details of local geographical features are important both as setting and as an aid to relocating sites. Having decided which field features should be mapped, and to what to what degree of accuracy and detail, the fourth phase of the decision making process in field recording involves assessing how these features can be classified. Discussion of this comprises the remainder of this chapter.

Methods of classification

The Site Recording Scheme divides archaeological sites into two broad classes: prehistoric/Maori sites, and historical sites. The prehistoric/Maori class includes prehistoric sites and related sites of Maori origin from the historical period such as gunfighter pa. Historical sites may be loosely defined as the physical remains associated with the Pakeha settlement of New Zealand. Such sites date to no earlier than 1769 and most date to the 1840s onwards.

For historical sites a considerable amount of information is often but not always available from other sources—written, cartographic, or photographic. Information gleaned from oral history or old maps and land surveys can be invaluable in locating historically important sites (see for example Kennedy 1969; Spencer 1983). Some sites may now be invisible on the landscape but if precise locations can be deduced they should be recorded. To some degree the site recorder's task is to identify what elements of the documented past occupation of an area still survive in the landscape. For historical sites, a classification based on identifying the original function of the features or site is employed.

The classification of prehistoric/Maori sites is a pragmatic one that is based primarily on physical characteristics or form. Some commonly used morphological units are 'terrace', 'pit' and 'midden'. Many of these physical forms can be identified by historical, ethnographic or archaeological research with particular functions or sets of functions but, for the purposes of recording, use and function are secondary considerations. This is true even when the physical form is classified using a name which is derived from ethnographic sources and which implies a certain use or function. Examples are 'pa', 'umu-ti', and 'rua'. In some cases, variation within classes is recognised giving rise to mixed morphological and ethnographic labels such as 'ring ditch pa' and 'bell-shaped rua'. Nonetheless, the classification is intended to be primarily a morphological one. Doherty (1996) discusses the history and use of the site concept in New Zealand archaeology and notes that it is generally assumed that

features do form coherent clusters and that these clusters do have some behavioural validity and are appropriate units for analysis.

Phillips (1983: 125) has suggested that:

> 'At all times *the recorder must be aware of the paa as a functional and cultural unit, not just a few features scattered on the landscape*, and if necessary add interpretation in order to contribute to a better understanding of the site.' [emphasis added]

Archaeology in New Zealand would quickly become a very sterile pursuit if researchers threw out all ethnographic and historical evidence and interpreted sites only in terms of what could be seen on the landscape. The point is, however, that the *primary* unit of description and classification should be the feature, in other words, the minimum morphological unit visible to the field recorder. At this level a pa is indeed 'a few features scattered on the landscape' and that is, in one sense, how it should be recorded, with due attention to the form and distribution of the component features. Too often in the past, as Phillips has pointed out (1983: 120), pa recording has resulted in minimal or idiosyncratic data which cannot be compared between sites or regions, frequently necessitating the re-recording of sites. This problem might be obviated by the application of a method of recording in which all features of the pa are treated individually as discrete components of the whole. These would provide a standardised data set thereby facilitating comparison of the size, shape or complexity of fortifications within and between regions. This strategy can obviously be also applied to other forms of complex feature aggregations, such as terrace complexes, pit clusters, and early historic European or Chinese settlements. This will ensure greater comparability between field surveys undertaken by different investigators and provides a less ambiguous data set for researchers and heritage managers to work with.

Features and sites

A site is usually composed of a single feature or a set of similar or different features found together. Many sites will be of a single type of feature, but combinations often occur (for example, pits/terraces). Sometimes features occur in configurations which are classified at a higher level of interpretation, e.g. pa.

The problem is to determine exactly where the *limits* of a site are. If two clusters of pits are present 20 m apart on a ridge containing no other archaeological evidence should they be recorded as two sites or one? If a set of terraces is identified 15 m outside the earthwork defences of a large pa should it be considered part of the pa or recorded as a separate site? These problems in distinguishing site boundaries are not unique to New Zealand. In Australia, for example, archaeologists face similar questions:

> 'A . . . problem arises in defining the limits of a site, and in determining whether it is one or six. For example, is a row of six rock shelters within 50 metres of each other, all with red hand stencils in them, one site or six?' (Sullivan 1983: 6).

Extensive areas of occupation are one of the greatest problems faced by recorders, who sometimes may have been deterred from adequately recording them. Typical of the problem are extensive areas of stone structures or middens and ovens. Large areas of midden and burnt stones can be particularly difficult as they are usually partly covered in sand or vegetation and the presence of occupation debris in every eroded place suggests that the whole area may be one undivided site. The pattern of remains can vary over time as the landscape changes, burying or uncovering evidence.

The problem is not confined to prehistoric evidence. Early historic mining sites may, for example, cause even greater difficulty (Ritchie 1991).

Experience has shown that initially it is preferable to record extensive areas of occupation as one site rather than to try to distinguish discrete areas. Splitting such areas into different sites without detailed study often seems an artificial exercise. This would note the presence of the area in the Site Recording Scheme, and serve as a basis from which further work could proceed.

Repeated visits and more detailed subsequent examination of the area will usually be productive. Careful mapping of the evidence, if necessary using an artificial grid or, particularly in bush or dunes, aerial photographs, will reveal variations in spatial pattern and archaeological content. The evidence which had initially appeared continuous may emerge as a series of nuclei or groups of apparently related features, sometimes different in content, and often discrete but sometimes contiguous. At this stage it is desirable to subdivide the site records.

Subdivision into separate sites after detailed study of the field evidence is important. In the case of middens, variation in location, density, content and stratigraphy may possibly mark different stages of occupation which is significant. In the case of large areas of stone rows or borrow pits it is acceptable to record site type variations within the same area, such as pit groups and middens, as separate sites, especially if the field evidence suggests discrete settlement units or different periods of occupation. Individual miners' claims within historic mining areas can often be defined by documentary research and careful fieldwork. An initial site number assigned to a whole area may be re-assigned to one site within the area, and other numbers should be given to the rest.

When recording large numbers of small adjacent sites in this way the scale at which the sites are mapped may cause problems in assigning grid references. Six

figure grid references on NZMS 260 maps, giving the location to the nearest 100 m, will not be sufficient to distinguish one from another while eight figure grid references gives the location to the nearest 10 m and imply a precision in pinpointing the location that is more difficult to attain. Maps and aerial photographs at a larger scale will usually help resolve these problems. Two or more sites may be given the same six figure grid reference but each record should have sufficient locational information to clearly distinguish its location vis a vis the other sites. It is particularly important that location maps are included when fine grained site recording is being undertaken. A location map may be filed with the first site record form of the series, and then be referred to in subsequent records.

The recorder must, in deciding whether to record them as one site or more, rely on the proximity of features to one another, and in relation to the landscape. An analysis of recorded sites in a pastoral landscape on Motutapu island (Doherty 1996) suggests that the critical separation distance used by most recorders in such circumstances is of the order of 40 m.

The extent and nature of visible surface evidence is not necessarily the extent and nature of the underlying site (see for example Foster and Sewell 1995: 3–4). While site recording necessarily deals primarily with surface evidence, assessments of archaeological potential requires an appreciation of the likely extent of subsurface evidence and this may require limited intrusive investigation.

UNITS OF CLASSIFICATION

It is suggested that focusing on individual cultural landscape features is required to ensure accuracy and standardisation in field recording. These features become the units of classification in that they provide the building blocks for the subsequent definition of sites as pa or pits/midden, etc. Clearly, recorders are looking at a functionally, culturally and chronologically diverse range of features on the landscape, so this prompts the question of how they can be integrated within a single standardised system of classification. Archaeologists who have investigated ways of classifying evidence agree that a successful system of classification has to be explicit in the choice of criteria used to define a system's constituent units (cf. Brown 1982: 179). This has not always been the case in New Zealand site recording, resulting in a mix of rather fuzzy definitions of the evidence.

It is at the higher level of classification that the field recorder begins to make some assumptions about the cultural, chronological and functional affiliation of the feature. An example is the handling of the category 'pit'. A field recorder coming

across a depression in the ground would immediately recognise it as an 'excavation' and then, having importantly first discarded the possibility of a natural or very recent occurrence, would make a decision as to which feature category was most appropriate. If, for example, the excavation was one metre deep, measured two metres by three metres in area, and was roughly rectangular in plan, it would be classified as a 'pit'. This is a very diverse functional, chronological, and cultural class. Maori constructed many kinds of pits for the storage of various foodstuffs and water. Other pits were used as cooking ovens, or constructed as recessed house floors. Still other pits ('borrow pits') were excavated by Maori during the extraction of sand or gravel for addition to garden soils. Leather tanning pits and timber saw pits were constructed during the early European settlement of New Zealand. Some pits formed defensive features of historic redoubts and gunfighter pa. Deciding the cultural or functional association of the pit will depend on the context in which it was found (within the defences of a pa, near an early mill, etc.), and the recorder's knowledge of variation in the morphology of this category of feature. The important thing during field recording is to accurately map the dimensions and shape of the pit, its location with respect to topography and nearby features, and the presence of any directly associated features (such as midden eroding out of the front of a terrace). Accurate recording is essential for future definition of the possible function of the feature, as well as its relationship with other like or nearby features.

A list of some of the more common forms of feature types are listed below by feature class and category. This is by no means a comprehensive catalogue as dozens of potential forms could be envisaged for some feature types. Field recorders must familiarise themselves with the range of types which they could expect to encounter in their survey region.

FEATURE COMBINATIONS AS SITES

Site recording should focus on the feature as the primary unit of classification. Often it becomes apparent quite early in a field survey which features can be logically recorded as a single site and which features grouped together for inclusion in the Site Recording Scheme as a single site, with a single site number. The final decision as to which features can be combined to form sites should, however, be taken at the end of a field survey, after all relevant historical and archaeological information has been carefully scrutinised. It is at this point that Site Record Forms are completed, not during the course of the survey. Careful consideration is needed when including any feature within the combination of features which define a site, as this association carries an implicit notion of cultural chronological relatedness with the other features. The field recorder must also realise

that the definition of a site is potentially the weakest link in the identification and recording process, and will always be open to debate. (At least until the site is excavated, and even then debate may continue). This is an important consideration to bear in mind in these days of increasing legal and public scrutiny of archaeological interpretations of landscape evidence. An archaeologist should always be prepared to defend their definition of a site and must therefore be clear about the criteria used to identify the components of a site.

In the past New Zealand site recorders tended to identify sites by putting lines around features. This was particularly useful for pa where feature clusters were delineated with respect to ditch and bank defences; features inside the defences tended to be regarded as part of the site, those outside as separate sites (although perhaps still associated with the fort in some way). Where there were no fortifications to aid reconstruction, features were grouped according to their spatial proximity, topographic location, or, particularly in the case of historical sites, according to common sense judgement. Land planners like circles as they neatly enclose evidence, making it far easier to assess which parts of the landscape might be developed and which parts might be preserved as 'historic precincts'. The danger with circles (or squares or triangles) is that they come to fix the boundaries of a site, making it difficult to define grey areas around a site which contain features which could arguably be incorporated into or excluded from the site. In a nutshell, recognition is not made of the fact that the site may be a nebulous entity, and that features present the only firm kind of evidence site recorders deal with.

An alternative approach deals with the problem in terms of probability. Features can instead be grouped according to an assessed probability of their cultural chronological affiliation. Conceptually this can be thought of in terms of a statistical analysis. The judgement of association will be up to the individual field recorder, but logically those most closely allied in terms of cultural origin, functional interdependence and spatial/temporal location will possess the strongest links. The advantage of this approach is that the 'boundaries' of a site can easily be shifted, in much the same way as group composition can be altered in multivariate analysis by changing the cut-off point for cluster membership. In effect it makes little difference which features are grouped together as sites, as the primary data i.e. the constituent features themselves, will remain uninfluenced by any form of segregation or combination. The data remains uninfluenced, making any future re-analysis of site composition a straightforward procedure. At the risk of labouring the point, the most important aspect of field recording is the accurate locating, mapping and description of individual features; the organisation of features as site components is the next analytical stage in the recording process.

LIMITATIONS OF CINZAS CODES

The Central Index of Archaeological Sites (CINZAS) is an electronic index to the paper records of the Site Recording Scheme and provides users with minimally interpreted data. To be useful, information has to be submitted and held in standardised ways. Whether sites are recorded as a large group of interrelated features or feature by feature does affect the ease with which the data can be stored and used. Some regard must be had to the coding system used in CINZAS when deciding how many forms to submit. Recorders need to appreciate the limitations of the system if it is to be used to best advantage.

CINZAS is an index to the paper records. It is used to generate lists of sites that match particular descriptions. The information is only as reliable as that contained in the Site Recording Scheme, from which it is derived. The coded information on site type held on the database may understate the variety of features present as only the one most appropriate code can be assigned. The codes in use are listed in Appendix 1. The site description field is limited to 14 characters and may also understate the variety of features present.

It sometimes happens that two quite different and chronologically separated site types are located in the same position. An armed constabulary redoubt may have been built on the site of an old pa, for example, or a coastal artillery emplacement may be located on a shell midden. In such cases a separate record should be made for each site. This facilitates indexing of site types and subsequent data recovery from the record files.

SITES DESCRIBED ELSEWHERE

Where sites are described in published records, the publication reference should be given in the site record but lengthy quotations from the publication are not essential, but may be helpful for people who subsequently consult the record. If field observation shows additional features to those already published, description of this is required.

PARTLY DESTROYED SITES

With these it is best to describe the remains as they are, and give the site type accordingly. If there is solid evidence about what was once there then a site type reflecting this might be justified. Traditional and historical evidence is worth quoting but should be used sparingly for identifying and classifying sites.

DESTROYED SITES

The word ‘destroyed’ should be used with considerable caution and avoided for all but clear-cut cases. The first reaction to a very badly disturbed site is often to write it off as destroyed. The levelling of a site for subdivision or other development does not, however, always entail the complete destruction of retrievable archaeological information. Sections of the site may well survive and be able to supply answers to research questions.

When assessing the condition of a site it is useful to describe the state of the surface features distinct from the inferred state of the subsurface evidence. Loss of surface features does not necessarily entail the loss of subsurface traces, while the roots of trees can substantially destroy subsurface evidence while leaving the surface features apparently intact.

The purpose of the Site Recording Scheme is to assist researchers as well as to promote site protection, so records of ‘destroyed’ sites do have a place in the files. Information about such sites can be gathered from aerial photographs, published information, oral information, or unpublished manuscripts. Records of destroyed sites, if accurate, can be of use in studies of site distribution and in reconstructions of the prehistoric landscape. While the emphasis is placed on visible remains, sites that no longer exist but which nevertheless at some point were satisfactorily described and can be accurately located, do have a place. Suspected sites only approximately located and of which only meagre hearsay descriptions exist, should not be placed in the files.

As time passes, more and more sites recorded in the field will be destroyed and possibly the only record of their existence will be the Site Record Form. Their research potential will depend on how well the recorder has done the job.

CONCLUSION

There are numerous ways to classify field evidence. In recent years there has been a shift in emphasis away from site types towards detailed recording of features or site attributes. An unambiguous and standardised definition of evidence requires focusing on the feature as the primary unit of classification. The combining of features into sites can be subsequently undertaken by a process of ranking similarity between individual features, in terms of cultural, chronological, functional and spatial association.

Clearly, one major advantage of using a standardised form of classification is that the resulting information is amenable to transferral to a computerised data base. This

in turn means that data can be subjected to GIS mapping and statistical analysis in the search for correlation between features, and between features and aspects of the natural landscape. Within the next few years further developments in computer relational databases may affect the indexing of information held in the Site Recording Scheme. The possibility of digitising of site boundaries is one option. It is therefore essential that field recorders describe and classify archaeological evidence in a way which will make the transfer from paper to digital formats as simple and painless as possible.

CHAPTER 5. PREHISTORIC/MAORI SITE TYPES

This chapter contains a list of established features and site types for recording sites of Maori origin and provides further guidance on what to record. Historical sites are discussed in Chapter 6. There is a large literature which can provide additional assistance to site recorders. A useful index to articles appearing in *New Zealand Archaeological Association Newsletter* 1957–1987 is Furey and Prickett (1988). Many of the site types listed below are illustrated in Jones (1994). References to published material have been used sparingly, but most of those cited provide references to further useful sources.

An important source of information to watch for in all recording is stratigraphy (i.e. layering of occupation). Many sites will be cut through by farm roads, or be eroded by rivers, exposing a vertical slice through the site. Some sections provide a potentially valuable insight into the history of the site and an opportunity to take samples. It is essential that any significant section be recorded in detail. The section should be cleaned down, working from the top down, with a spade or trowel before recording. Make sure the landowner knows what you are doing and any consents required have been obtained (see Appendix 3). The base of the section may not go to the full depth of the features or it may be obscured by debris. Dig down to the deepest depth possible. This is a rare opportunity to see a site in depth, so it is often worth taking some time in recording. Where various layers are visible, describe each one in detail. Structural features, such as pits or postholes, which are not otherwise visible at the ground surface may be present. These should be recorded as for the relevant site type, with full details of the dimensions and contents of the site exposed.

PA

In ethnographic texts, such as Elsdon Best's (1927) classic *The Pa Maori*, the term pa is used to describe a fortified place constructed by Maori. Pa were often built on hills and ridges but with the advent of firearms the so-called 'gunfighter pa' came to be constructed. The common identifying features of pa were earthwork defences (ditches and banks and, for some gunfighter pa, bastions and underground bomb

Figure 5. Pa with raised rim pits within and without; Pirinoa, Wairarapa (K. Jones).

shelters) and frequently palisading. Pa sites are one of the most striking form of field evidence in New Zealand. Their earthworks, often massive and in some cases very well preserved, have attracted much attention (Figs 5–8).

Palisades do not usually survive in an archaeological context so the main field identifier is now earthworks. Archaeologists have over the years devised a number of ways to classify pa (Golson 1957; Golson and Green 1958; Buist 1965; Groube 1970). A recent and widely adopted classification is that devised by Fox (1976), a modified version of the schema proposed by Groube (1970). The Fox classification is, however, too imprecise for most site recording purposes and the older topographical systems have much to commend them.

Classification is a convenient way of ordering information, and of giving a shorthand reference to the features which a particular site possesses, based on recurring observable similarities between sites. There is no objection to the use of pa

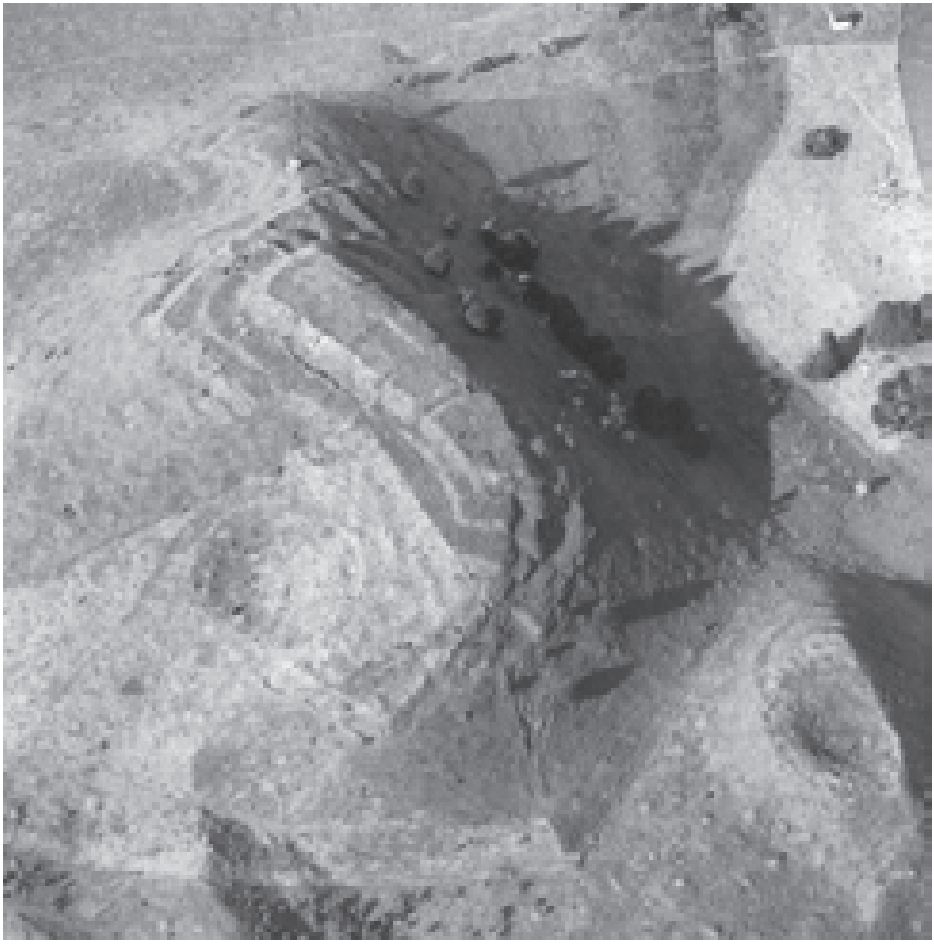


Figure 6. Pa; Puketona, Northland (K. Jones). There are eroded pits and terraces on hill bottom right and mounds on ground at foot of hill.

classifications in recording as long as it is made quite clear whose classification is being used in cases where there could be doubt. Recorders should not feel obliged to use any of them. It is, however, important to describe a site fully and in unambiguous terms, and this can be done quite satisfactorily without using any of the available classifications. Classification should not be used as an alternative to a full description. Plans or sketches will allow others to use and classify the site for their own purposes and are, therefore, an important part of the record.

Figure 7. Pa; Lake Oingo, Hawkes Bay (K. Jones). There are scarps and structures visible within pa.

Recording the defences

Artificial defences provided to supplement natural defences include ditches, banks, and scarps. The terms ditch and bank should be used instead of the Victorian terms fosse and rampart. A scarp is an artificially steepened slope. Ditches, banks, and scarps may be combined in different ways in a defence system (Fig. 9).

The disposition of artificial defences in relation to the topography of the site and to each other must be recorded. In some cases the site will be entirely surrounded by defences; in others there may be a lesser portion of the circumference which it was necessary to fortify, the balance being taken up by naturally steep slopes. Thus features such as scarps may be found either continuously aligned or irregularly arranged around the perimeter. On some sites, particularly those on headlands, spurs or ridges, it is useful to distinguish between transverse and lateral defences. Transverse defences are those running at right angles to, or across the ridge or headland on which the pa is situated, and lateral defences are those running parallel with the length of the topographical feature.

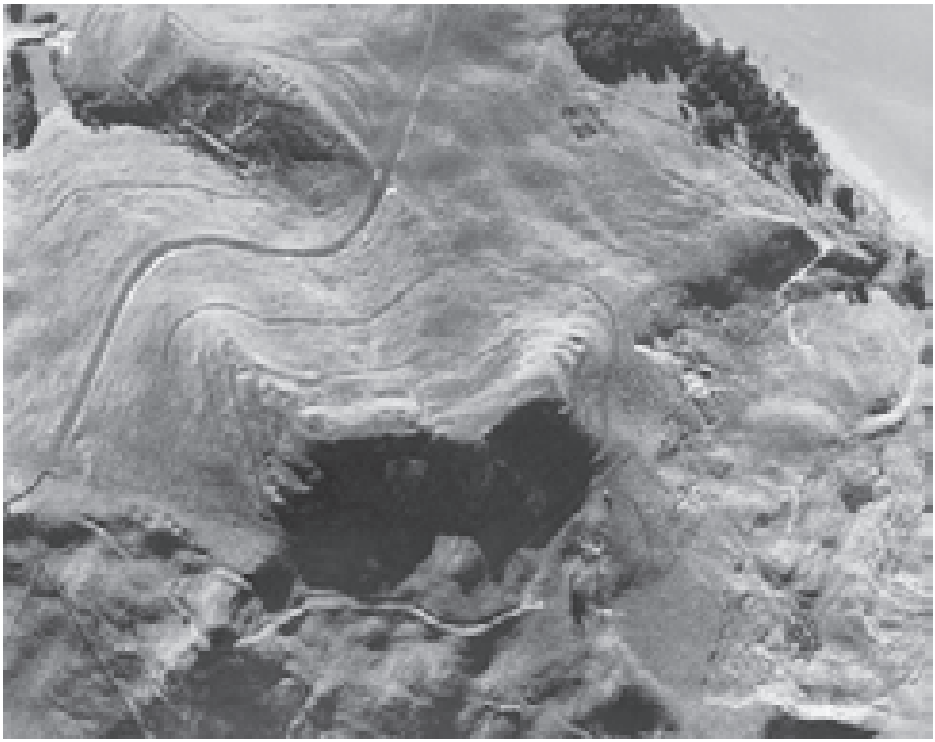


Figure 8. Pa with pits; Otamatea River, Northland (K. Jones). There are pits on ridge upper left.

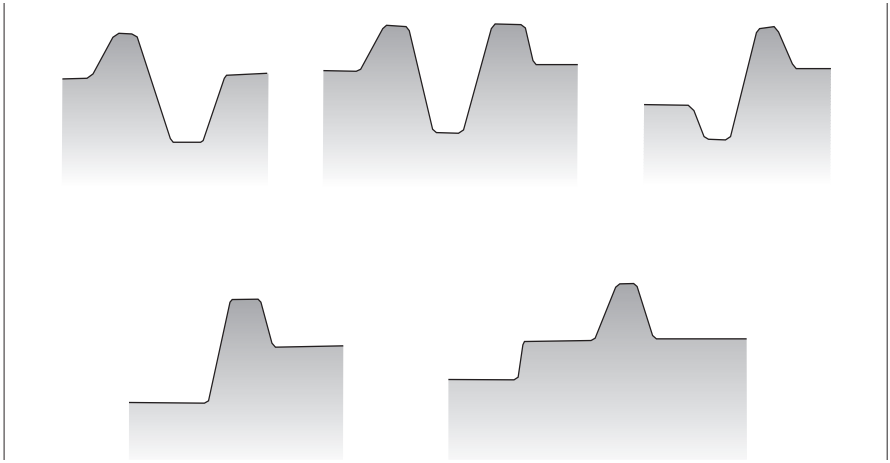


Figure 9. Defensive earthworks: some combinations of ditches, banks, and scarps.

Defensive features may be arranged either singly, or in dual, treble, or even quadruple series. If they are in series, state whether they are contiguous or spaced and note the interval between them. Often the inner defence lines of a spaced or staggered series are more massive than the outer ones.

The junction of transverse and lateral defences should be noted. These may take various forms:

- Transverse ditches and banks may be extended, in a straight line in such a way that the lateral features abut at right angles against them.
- Transverse ditches and scarps may meet the lateral features at right angles.
- Transverse ditches may turn through a right angle to become lateral ditches for a short distance.
- Combinations of these elements may be present on the same site. Other practices may be discovered.

Pa on artificial islands within lakes and swamps (Shawcross 1968; Bellwood 1978) have been described. Recognition of the sites as pa may depend upon the preservation of timbers, or be suggested by traditional evidence in association with definite signs of habitation. If traditional evidence is used to suggest the classification of a site as a pa, this should be specified. If there is doubt, however, about whether or not the site is a pa, only the visible field evidence should be described and the site classed accordingly.

The introduction of firearms resulted in changes in Maori methods of warfare and fortification. The trench, for instance, became a place to shelter, and from which to fire on attackers. The gunfighter pa differs in many ways from earlier pa and Best (1927) and Jones (1994) describe some of the changes that occurred, giving some specific examples of this type of site.

Entrance and access

The following features have been noted in the field, but may not exhaust the possibilities:

- Undug 'causeways' in ditches.
- Gaps in banks.
- Ramps forming sunken pathways through scarps.

Defensive elements may also have been used for access purposes:

- Sloping terraces.
- Ditches, especially transverse ditches, turning through a right angle at one or both ends, and giving access to the lateral terraces.

Areas of habitation

Signs of habitation on pa should be carefully described. The place of the pa in the prehistoric settlement pattern appears to be complex and indications of long term occupation of any sort is relevant to this question. Pa may be envisaged, for instance, either as settlements which were defended, or as fortifications which were lived on. Although the question can be answered only by excavation of particular sites, careful field recording of habitation evidence can be of great value.

Habitation took place within the pa proper and sometimes outside. Where the perimeter is uncertain, it may be impossible to decide whether certain areas are outside the defences or not.

On the majority of upland pa useable ground is provided by artificially levelling hill-tops and slopes. The levelling of hills or ridges created platforms or terraces. Platforms are generally so disposed that they contribute to the defence system; they are not only areas of habitation, they may also be units of defence, bounded by scarps, or by ditches, with or without banks, and forming part of a spaced system of transverse ditches.

Terraces on pa vary considerably in size and form. They may be:

- Long and continuous, sometimes with irregularities of level and width.
- Shorter and discontinuous, making a broken, irregular arrangement on the hillside.
- Short and discrete, not noticeably part of any arrangement, regular or irregular.

Signs of habitation consists of features, such as pits, hearths, ovens, and shell middens. These features are more fully discussed below. Shell midden is often found on the slopes around pa sites. Hearths are occasionally visible as rectangular stone slab settings. Their positions in relation to other features should be noted.

PITS

Pits are of two kinds:

- Rectangular to square surface pits (Fig.10).
- Subterranean pits which may be either the bell type with an entrance at the top, or the cave type with an entrance at the side.

Surface pits

Pits occur in many situations: in pa, on flat ground, on ridge tops, on natural platforms on spurs, on artificial terraces, and on hills or ridges with extensive views (Fig. 11). Pits occur singly, in clusters, end to end in line, and side by side with undug

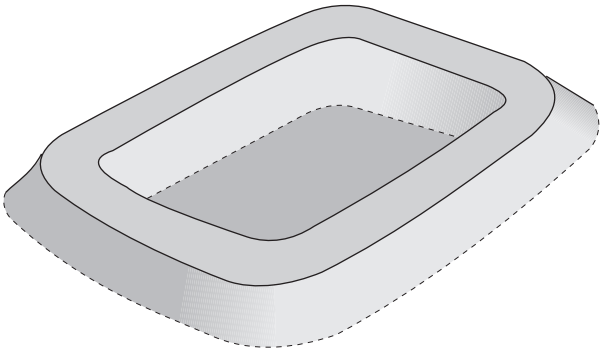


Figure 10. Surface pit with raised rim.

baulks in between. They vary considerably in size but dimensions of about 4–6 m long and about 2–4 m wide are most common.

There is a distinction between pits with a raised rim, presumably from earth dug out of the pit, and those without. Raised-rim pits often have surface drainage ditches around the rim. Where a raised-rim pit is dug on a slope, the uphill side may lack the rim.

Discussion of pits, based on excavated examples, include Fox (1974) and Lawlor (1983).

Subterranean pits

Subterranean pits (Figs 12 and 13) tend to occur in the parts of the country where the substrate is easy to dig but which holds its excavated shape. They are possibly more common than the recorded instances of their occurrence would suggest. The nature of their construction renders them liable to collapse and since they are sometimes a danger to stock, they have often been filled in by farmers.

There are two main varieties:

- Bell type. The domed chamber of the pit has a narrow circular or square entrance at the top. The type is usually found on the level areas of pa, sometimes in rows with connections from one to the other underground.
- Cave type. The domed chamber has an entrance to the side, and is thus adapted for the base of scarps of ditches, where it is commonly found with underground passageways. The entrance is sometimes elaborated into a doorway, with recesses for the fitting of a wooden door.

Figure 11. Pit sites; Whangaehu River, Wanganui (K. Jones).

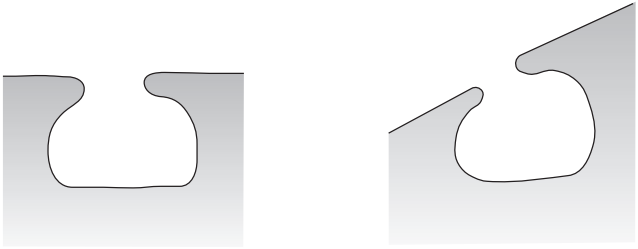


Figure 12. Subterranean pits—bell type.

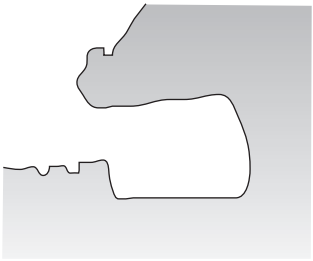


Figure 13. Subterranean pits—cave type.

Subterranean pits which have recently collapsed usually show up as an narrow open cavity, widening with depth. Subterranean pits at a later stage in the process of infilling may show as saucer-shaped depressions.

Recording pits

Describe and give details such as the entrance, the rims, and the length, breadth and depth. Where pits have been infilled to some degree, measurements of length and breadth are best taken along the change of slope on outer edge of the pit. When taking measurements across features always indicate whether they are internal, external, crest to crest, lip to lip, or otherwise. Details are best shown on a plan which indicates the orientation and pattern of pits.

Describe the position the pits occupy in relation to the surrounding topography, and what the drainage appears to be.

Uprooted trees and the activities of stock also leave pit-like depressions so some depressions recorded as pits may not be archaeological features. Positive indications in the form of regularity and presence of other definite archaeological features nearby or in the vicinity should be sought before recording single depressions as pits. Wind-thrown trees leave hummocks of soil and corresponding hollows which can persist and take on deceptive forms long after the land has been converted to pastoral use. Grant (1996) describes and illustrates the pit and mound topography resulting from windthrow in Hawkes Bay.

TERRACES

A terrace is an artificially levelled area consisting of a tread and one or more risers. The tread is the levelled area, the riser is an artificially steepened scarp upslope or downslope of the tread or both (Fig. 14). Terraces may appear singly, in small sets, or in 'flights' with large numbers of terraces.

This category covers a variety of different functions which in many cases can only be determined by excavation. Terraces have been noted with soils containing deliberately transported sand, with occupational features such as pits or middens, or with no obvious features at all. In some areas, natural terraces can also look surprisingly regular and artificial. Attention should be paid to the size of the tread (very small terraces of only two or three square metres are unlikely to have been useful for occupation or cultivation), the angle of the risers, the slope of the tread, the regularity of the surface of the tread, and any evidence of occupation or cultivation. An individual terrace, isolated

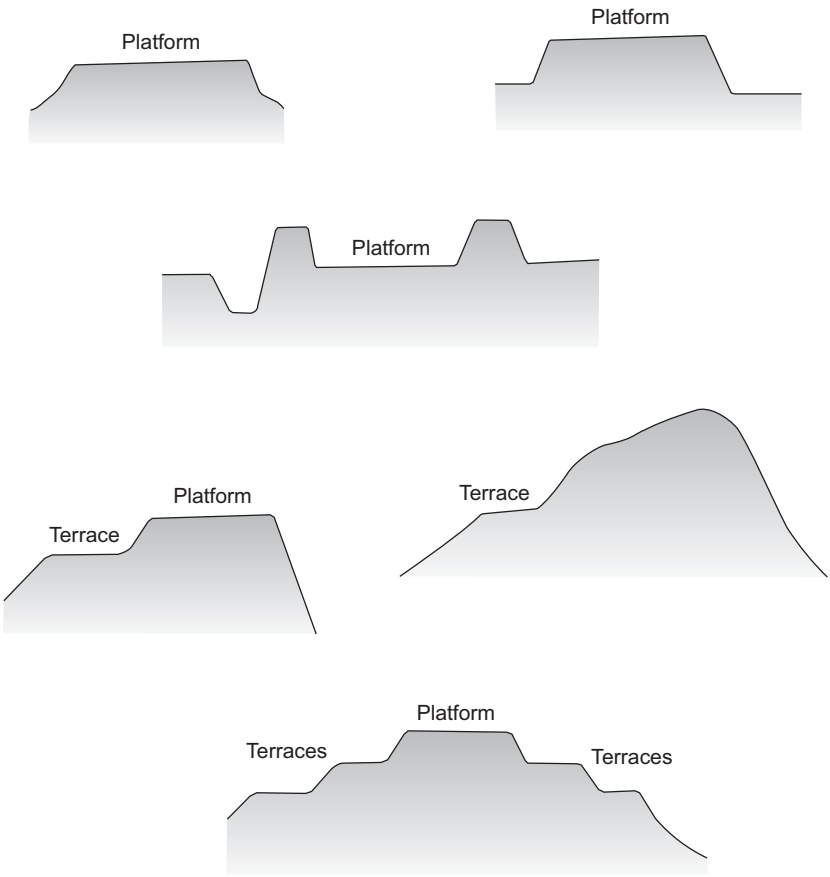


Figure 14. Platforms and terraces.

from other archaeological remains, should be treated with particular caution. Stock displace soil downslope and often accentuate terracettes on steep slopes.

Other details to be noted are the number of terraces, their disposition, size, and approximate area. General information on topographical position, direction of outlook, and distance from water should also be given.

PLATFORMS

A platform is a levelled area, usually on the top of a hill, which may be associated with terraces or other features.

Details should be given of the size of the platform, its relation to other features, and the presence of any occupational debris, such as midden or artefacts. If this material is obtrusive enough the site should be given a composite typing, such as platform/midden, or platform/working floor.

HOUSE FLOORS

On some sites, house floors may be recognised as shallow rectangular depressions with distinct level bases cut into a sloping surface or surrounded by a low bank (Newman 1988). The bank may be open at one end. They vary in size but many are comparable in size to storage pits. A rectangular hearth of stone slabs may also be present (Fig. 15). This interpretation should only be used if there is a firm basis in the evidence. Care should be taken not to confuse house floors with some forms of pits, terraces or platforms.

Figure 15. Stone hearth; Ragged Point, D'Urville Island (I.W. Keyes).

STONE STRUCTURES

Most stone structures occur in horticultural areas, and are probably connected with clearing ground for gardening (Fig. 16). Typical areas are aprons around volcanic cones or on colluvial fans or old raised beach ridges in coastal areas. Descriptions of

Figure 16. Stone rows and stone mounds; Waikikino, Wairarapa (K. Jones). There are pits on ridge lower right, ploughlines centre top, and a fenced cemetery centre right.

stone structures associated with horticulture are discussed by Sullivan (1972, 1974), Leach (1979, 1984) and Bulmer (1989, 1995).

Stone structures may be divided into the following classes:

Walls

These are solidly built, free-standing, and have more or less perpendicular parallel sides. They are rare in prehistoric contexts. In recording them, state:

- Height, width, and construction.
- Arrangement. (Are they straight, angular or curved? Do they form regular or irregular patterns?)
- Area covered by the features.
- The presence and relationship of other stone structures.
- The nature of the ground over which the walls are built. (Is it normally stony, and is it steep or flat?)
- If enclosures are formed, their number and size.
- The possible source of stones.

Heaps

These are piles of stones of various sizes. Examples with a facing on some or all sides of carefully placed larger stones, no doubt to keep the heap contained, have been noted. In recording stone heaps give:

- The number of heaps.
- The size and shape of heaps.
- Their arrangement. Aligned or apparently haphazard, closely clustered or scattered?
- The presence and relationship of other stone structures.
- The area covered, and any pattern of distribution of the heaps over the area which may be apparent.
- The nature of the ground.

Stone heaps were also produced in historical times when the land was cleared for agricultural use. These later heaps can often be distinguished by the form of the heap (amorphous, with little evidence of care in construction), the size of the stones in the heap (they usually contain mostly larger stones) and the placement of the heaps (there is little attempt to site the heaps on waste ground).

Rows

These are elongated heaps of stones. The same information should be recorded for stone rows as for walls and heaps.

Retaining walls and stone-faced scarps

Stone retaining walls are solidly built stone walls acting as retaining walls for terraces or natural slopes. In some cases they may have been built at least in part as free-standing structures, and the earth of the terrace has been filled in behind them at a later date. Where stones are used to cover the face of the scarp, but are not a retaining wall, the feature is described as a stone-faced or revetted scarp. Stone structures, particularly retaining walls and stone-faced scarps, may occur on sites such as pa.

Alignments

These are lines marked out on the ground by stones, either side-by-side, or at intervals in a row. Two closely spaced parallel alignments, perhaps indicating pathways, have also been recorded (Leach 1979: 148).

Other structures

Other stone structures which have been recorded include: fish traps in the intertidal zone, stone-lined pits, stone-surfaced paths, and stone platforms or pavements.

DITCHES (NON-DEFENSIVE)

Ditch features have different forms and functions in different settings. Measurements of depth, width, and length should be made. The course of the individual ditches and the layout of ditch systems should be described in relation to the topography and the soils of the area.

Ditches or channels of small width and depth have been recorded. They often extend downslope and across flats, particularly behind bays and beaches. Some, which define garden systems (Nicholls 1965; Peters 1975; Jones 1994: 100–101), are particularly common in Northland (Fig. 17). They should not be confused with regularly spaced downslope channels produced by some forms of ploughing (Walton 1982).

Ditches in swamps were sometimes associated with cultivation, but comparatively little is known about them (Johnson 1986; Barber 1989a, 1989b; Jones 1994: 66–70).

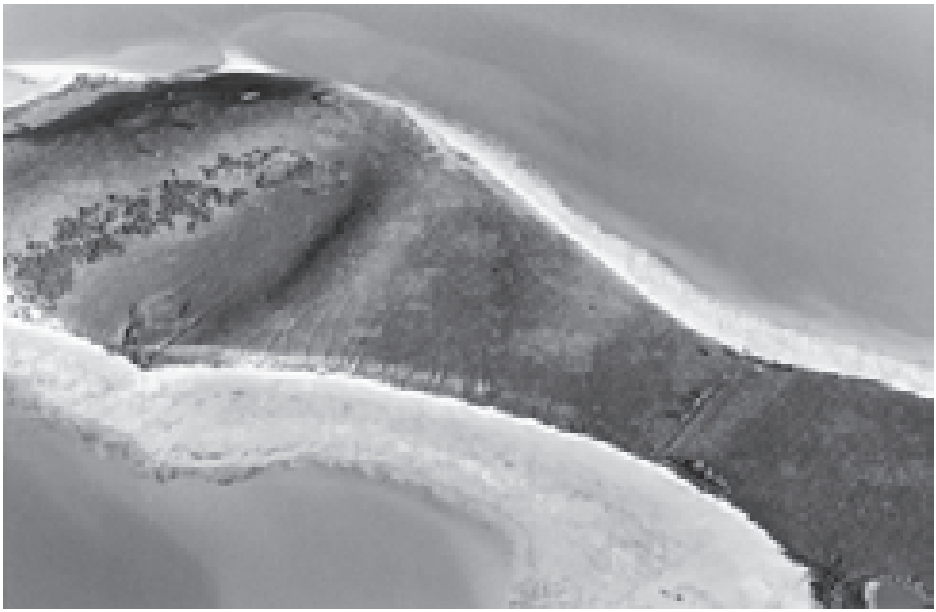


Figure 17. Field boundaries and plough lines; Kaipara Harbour, Northland (K. Jones).

Some ditches are probably associated with eel harvesting (Adkin 1948; Cassels *et al.* 1988).

Ditches associated with banks in open country are likely to be the remains of ditch and bank fences, and are a feature of the historic period (Smart 1966; Trotter 1976). Many ditch and bank fences were built by Maori to keep pigs from gardens. In these cases the site type is ditch/bank fence.

MOUNDS

Artificial mounds are found occasionally.

Burial mounds are a feature of some parts of the country such as in the vicinity of the Whanganui River where they occur in 19th century urupa (cemeteries).

Record mounds as for stone heaps.

MIDDENS

Middens are refuse from occupation (Figs 18 and 19). Contents may include shell, bone, stone (artefacts or oven stones or both) and charcoal. They are often exposed by erosion or other disturbance of the ground on known sites, and at locations where no other surface indications are present. They are sometimes found on steeper slopes, where they are easily missed, and may be the only clue that the area above was once utilised.

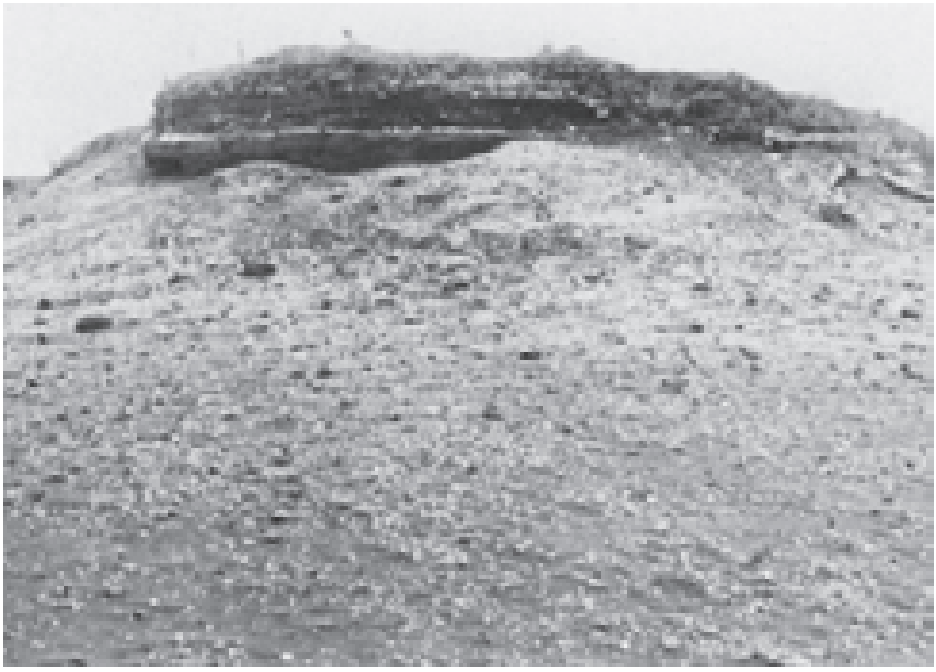


Figure 18. Eroding middens; Houhora, Northland (Anthropology Department, University of Auckland).

Figure 19. Eroding midden; note intact midden in the bank at the top, Mercury Island (Anthropology Department, University of Auckland).

The following is a guide to the important things to describe:

- Record the extent and thickness of the midden as far as possible.
- Describe the composition of the midden, for example: abundant cockle; some mussel and paua; little fish bone; rare bird bone; abundant burnt stones. Collect loose examples of unidentified species and seek expert help for identification if necessary. It is better not to identify specimens than to identify them wrongly. If in doubt, say so. Record the provenance of any artefacts.
- Record the structure of the midden, i.e. whether it is a heap or a scatter, if the shells are broken or unbroken, whether the material is concentrated or dispersed through a matrix of earth or sand, whether it forms a cap on an eroding dune, etc.
- If stratification is apparent, record in full the depth, composition, and state of each layer.
- If a midden is found in sand dunes, note whether it is associated with the foredunes or the inner dunes. If on an inner dune, note the number of the dune in the beach ridge series, and its distance from the back of the beach. Describe the relationship of the

midden to the dune sand: whether it is on the top, on the lee slope, or at the foot of the lee slope. Note any evidence (e.g. a buried soil) that indicates that the midden occurs on an old ground surface.

- Note the potential of the immediate environment in respect of fish, shellfish, fresh water, swamps, and rock outcrops or boulder banks for stoneworking. Highlight any faunal or stone material which may indicate changes in the local environment in the past or the long distance transport of materials.

OVENS

The remains of cooking activity often appear as an area or depression showing signs of blackening or burning, usually accompanied by fire broken stones if these were used in the cooking process. Ovens are often seen in section, exposed by erosion or road cutting. They should be recorded as for middens. Ovens may be stratified, but only controlled excavation will elucidate this.

It has been established that at least some ovens (umu-ti) which were used for cooking the root of the *ti* (cabbage tree*)* occur in the field as simple, circular pits (Knight 1966; Fankhauser 1987). They are to be recorded as ovens only if it is clear that they were umu-ti, otherwise they should be recorded simply as pits. In umu-ti there are usually oven stones below the topsoil in the base of the pit and a steel probe may be used to determine whether stone is present.

OCCUPATION LAYERS

Occupation is a generic term and should generally be avoided. It is legitimate to use 'occupation' or 'occupation layer' as a site type only when a more specific identification is not possible. An occupation layer will usually be exposed in a section and may comprise a suspected living surface, lenses or layers of fill from unidentified earthmoving, and sparse charcoal, shell, or stone may be present.

SOURCE SITES

This type covers places where material such as rock, sand or gravel was obtained from the ground. It includes those places where extraction operations involved substantial disturbance of the ground surface, borrow pits and quarries, and those where material could be collected without quarrying.

Borrow pits

Sand and gravel for use in kumara horticulture were obtained by excavating a pit into the ground. These pits are referred to as borrow pits or quarry pits. They vary considerably in size, and are usually roughly circular or oval, but are sometimes irregular in shape. For borrow pits, record:

- The number of pits.
- Where the pits are located in relation to the topography.
- The soil type of the area where they occur.
- Any evidence of the presence of areas of made soil in the near vicinity.
- Estimates, if possible, of the quantity of overburden removed and the quantity and nature of the sediments quarried.

Borrow pits in South Taranaki are discussed by Buist (1993).

Quarries

Stone material for tools was often quarried from suitable outcrops. For quarries, record:

- The type of rock being quarried.
- The by-products of quarrying (i.e. cores and flakes), the area they cover, and the depth they attain (if visible).
- Evidence for quarrying methods, and tools like hammer-stones.
- Evidence for stone tool manufacture on the site, i.e. rough-outs and broken artefacts.

Examples of studies of stone sources are Keyes (1975), Moore (1976, 1977) and Jones (1984).

Other source sites

Stone deposits in rivers or on beaches, where material was collected for working on the site or elsewhere, may be recognised by deposits of stone flakes and cores and waste chips (Moore 1981). They should be recorded as for quarries.

GARDEN SOILS

Soils that have been altered by cultivation are sometimes identifiable in sections but before any interpretation is offered it is important to compare the soil with an unaltered soil profile from a similar topographical setting in the same vicinity. Some features to look for are:

- Increased thickness of topsoil.

- Mixing of subsoil into topsoil and variations in the degree of mixing of the different materials in topsoil.
- Mixing of tephra layers at shallow depth into topsoil (e.g. in Rotorua/Bay of Plenty regions).
- Disturbance to boundary between topsoil and subsoil.
- Changes in the colour of the topsoil.
- Presence of charcoal. (The presence of charcoal alone is not necessarily an indication of human presence. Natural fires were common in the past and many sections contain charcoal, charred wood, and even fire-burnt stones from these events.)
- Presence of added sand or gravel. (This is referred to as a made soil and is a particular type of garden soil.)

In recording garden soils, describe:

- The topography of the areas of garden soils, e.g. flat, gently sloping, or steep.
- The direction the areas face, i.e. aspect.
- The nature of the soil which has been modified, and the nature of the modifications.
- The area of the soils, if this is possible to obtain without excavation.

Made soils

Made soils, sometimes referred to as Maori plaggen soils, are artificially modified soils containing deliberately added sand or gravel. They were formed for cultivation purposes, most usually for kumara. Made soils may be discovered in an exposed section or as a result of ploughing. They may be associated with borrow pits, from which the sand or gravel has been excavated, or the added material may have been taken from a beach. Artificial terraces with soils containing added sand have been noted.

Natural processes need to be eliminated as the cause of the introduced sediments. Sparse foreign pebbles in the soil, for example, may be gastroliths (crop-stones).

In recording made soils, describe:

- The topography of the areas of made soils, e.g. flat, gently sloping, or steep.
- The general compass direction the areas face, i.e. the aspect.
- The nature of the sands and gravels exploited, e.g. river gravels at a certain depth, extensive or limited in area, or beach gravels found at a certain distance from the sites.
- The nature of the soil which has been modified, and the nature of the modifications.
- The area of the soils, if this is possible to obtain without excavation.

Made soils are discussed by Challis (1976c), McFadgen (1980) and Walton (1983).

WORKING AREAS

These are areas where materials, usually stone, have been worked (Fig. 20). Working areas within caves and rockshelters are particularly important because otherwise perishable material such as wood chips and shavings may be preserved.

The surface evidence should be recorded in detail:

- The proportion of stone working to working in, for example, bone.
- The nature of waste flakes and the nature of worked flakes, if any.
- The number and character of unfinished and broken tools, if any.
- The variety and proportions of stone present, such as obsidian, chert or metasomatised argillite. (Get an expert to confirm identifications.)
- The character of bonework and the type of bone worked.
- The area covered by the working area.

Examples of studies on working areas are Challis (1976a, 1976b), Jones (1984) and Turner and Bonica (1994).

Figure 20. Stone-working area; Ragged Point, D'Urville Island (I.W. Keyes).

BURIAL SITES

Human skeletal remains are sometimes encountered during fieldwork. Burial customs are discussed by Davidson (1984: 172–177) and the distinctive physical form of 'the first New Zealanders' is described by Houghton (1980, 1996). It is illegal to disturb burials so, without in any way interfering with the remains, briefly record what information is available by inspection only. On no account should such sites be further investigated unless proper recording or excavation has been planned with due permission and consent. Investigations of any kind may prejudice further archaeological work in the area. The Association values the goodwill of the tangata whenua and does not sanction any examination of burial sites without the concurrence of the local Maori community.

Urupa or cemeteries, particularly those of 19th century antiquity, should be recorded. Such cemeteries may be fenced and contain a variety of styles of headstones, or monuments, as well as unmarked graves. Such urupa have many features in common with non-Maori cemetaries. Some individual plots may have a cast-iron or wooden railing fence around them. Many pa sites have been used subsequently as urupa.

CAVES AND ROCK SHELTERS

Caves and rock shelters often contain evidence of occupation (Anderson and McGovern-Wilson 1991). The character of the occupation is usually influenced by the setting and dimensions of the shelter. Recording must be of surface evidence only. There may be visible evidence of any or all of the following:

- Habitation. The evidence of habitation should be specified (e.g. midden, ovens, hearths, burnt patches, vegetable matter, coprolites, and working floors).
- Burials. The circumstances of burial should be noted without interference with the remains (e.g. remains articulated or disarticulated; presence of mainly long bones, skulls, etc.; placement of remains).
- Drawings and carvings.

Attention should also be given to the nature of the parent rock, and the origin of the cave (e.g. sea-worn, river-worn, water-eroded). Record details of the topographical position, the direction in which the entrance faces, the availability of light in respect of different parts of the cave or shelter, and different times of the day; whether the cave is sheltered or unsheltered; and the availability of water supply.

Consultation with the tangata whenua is particularly important when working in terrain which contains caves. There is a potential to generate suspicion and hostility because caves may contain, or be thought to contain, burials or artefacts or both.

ROCK ART

These are abstract designs or naturalistic motifs, normally executed in red or black pigment or with shallow incisions, and are usually found on the walls of dry caves or shelters (Trotter and McCulloch 1981; Furey 1989) (Figs 21 and 22). Sometimes the drawings are associated with other occupation.

Detailed recording is something of a specialised art, as is advice on conservation. If detailed copying is not planned, it is sufficient to record the location, surroundings, and general character of the artistic features, preferably with sketches of the drawings. Photography should be attempted if at all possible as insurance against vandalism before detailed recording can be carried out. Paintings require flat diffuse light for photography. Incised art requires oblique lighting. On no account should drawings be outlined with chalk or crayon to make them more easily photographed. Even the use of a fine water spray tends to damage the fabric but may be justified in some circumstances.

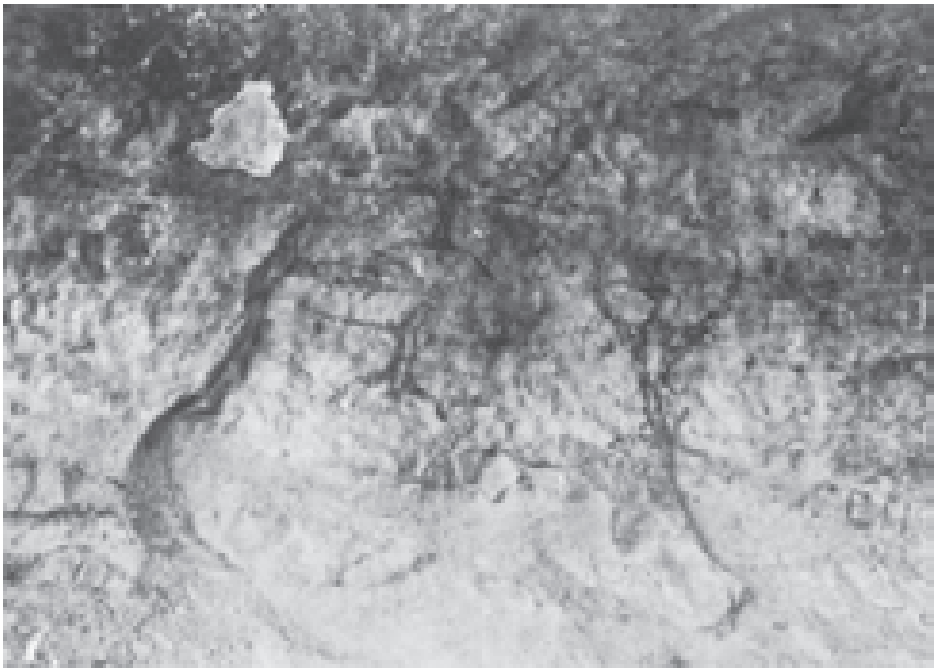


Figure 21. Rock drawing, figures drawn with charcoal on limestone (figure at right is 33 cm high); Frenchmans Gully, South Canterbury (M.M. Trotter and B. McCulloch).

TREE CARVINGS

Tree carvings or dendroglyphs are rare (see Fig. 23, next page). The Chatham Islands dendroglyphs have attracted most attention. Karaka trees appear to have been most frequently chosen. These can be recorded as for other art sites.

TRACKS

Tracks have proven difficult to identify as being of Maori origin since they have tended to be used and re-shaped at later periods. Many early Pakeha roads followed old Maori tracks. Before tracks are recorded as being of Maori origin, there should be direct evidence, or very strong circumstantial evidence, that this is so. The location of old tracks is most likely to be learnt from historical sources, local historians, memoirs, and old survey plans and they should be recorded if it is possible to pick up definite physical traces on the ground.

Figure 22. Rock carving, incised curvilinear design in limestone (18 cm wide); Te Ana Raki, North Otago (M.M. Trotter and B. McCulloch).

Figure 23. Tree carving; Inland Patea (R.A.L. Batley).

In giving a grid reference for such a feature it is best to give two grid references, one for each terminal point. This will give only the beginning and the end, and there should always be a locality plan of the route, preferably traced from a topographical map, so that it can be related to the present landscape. However, in the case of a track which followed an existing road, it is sufficient to identify the road.

FIND SPOTS

These are places where isolated artefacts have been found, and there are no other traces of occupation present. In other words, if artefacts are found with other evidence, the site is recorded according to the nature of that occupation (e.g. terraces, middens), although naturally the presence of artefacts will be an important point in the site record. If desired, artefacts can become a part of the site type, e.g. terraces/artefacts, middens/artefacts. In some areas the existence of find spots is very significant because no other signs of occupation may have been found. The particular type of artefact found may throw light on the nature of the occupation in the area. The finds themselves if made after 1 April 1976 must be notified to the Department of Internal Affairs and should be recorded with sketches and measurements to provide detail.

BOTANICAL EVIDENCE

This is worth recording as a site or as supplementary information in the description of the nearest neighbouring archaeological site. Items to watch out for are:

- **Flax**. The occurrence of flax should be recorded if there is a reasonable probability that it was planted and cultivated. Often there are fairly obvious plantations near other signs of occupation. Record the general situation, the area covered, the relation to other sites, and the size of the plants.
- **Taro**. In some areas, particularly North Auckland, taro may be found growing on or near old Maori sites (Matthews 1982, 1985). A colour photograph may facilitate later identification of the variety.
- **Karaka trees**. Karaka trees may be an indication of a possible adjacent site or be a clue to past settlement and subsistence patterns, particularly when found beyond their natural range which is confined to the north of the North Island. The trunks should be examined for dendroglyphs.
- **Cabbage trees**. Cabbage trees are often found on or adjacent to sites. Like karaka trees, they may have been deliberately planted in some places for their economic value (Simpson 1994). Care needs to be taken in ascribing the presence of trees to human planting as they are widely distributed.
- **Cleared bush**. Areas of cleared bush may be sometimes recognised as islands of secondary vegetation. Areas of rewarewa/kamahi/kanuka within northern podocarp/tawa forests are particularly indicative of old burn-offs.
- **Bark-stripped trees**. Examples have been reported of trees partially stripped of bark in antiquity to make containers. The stripped portion dies and decay may affect the heart of the tree, but the unstripped portion continues to grow and a

characteristic scar is left. Totara and karaka were commonly stripped in this way. Record details of the dimensions and area of the stripping and the amount of growth since stripping. Record evidence of tool used i.e. stone adze or metal axe.

OTHER TYPES

It is certain that field remains other than those described here will be found. If a site does not fit into any known category assign a site type which seems appropriate and send a note to the Site Recording Scheme Co-ordinator and to *Archaeology In New Zealand* about the site. Unusual sites are of interest, and a published note may bring other information to light and so help to define their character.

SITE TYPES TO AVOID

It is not helpful to use generic terms that cover a variety of different evidence when classifying sites if a more precise classification is possible. The site type 'occupation' falls into the generic category as all sites represent occupation of some sort. The temptation to use this term is considerable when faced with a situation where the recorder is unsure what the evidence represents and how to describe it. The general term then becomes a substitute for the difficult job of describing the site. Yet it is precisely these instances when it is important to know exactly what is there if this is at all possible. It is acceptable to use the term to describe a layer if no definite evidence of form or function is available.

The terms 'settlement' and 'kainga' are also unhelpful as they are general terms which suggest the presence of combination of features whose only common feature is the lack of obvious defences. A more precise classification based on the features present is preferable.

CHAPTER 6. HISTORICAL ARCHAEOLOGY

Nigel Prickett

INTRODUCTION

A very wide range of archaeological sites in New Zealand date from the historic period, that is, since the advent of written and pictorial records. Many of the sites and classes of sites are of great potential interest, offering valuable insights into domestic arrangements, material culture and technologies, society, economic activity, and particular events and historical processes. Recording historic archaeological sites requires particular research and observational skills.

Historical archaeology has its own particular purpose and developing body of knowledge, which sets out to describe and explain the past from archaeological evidence. In addition, historical archaeology can complement written historical material in the study of our recent past, offer insight into similar processes in the prehistoric period for which archaeology is the only source of information, and, like prehistoric archaeology, can contribute to the general study of history and of anthropology.

Historical archaeology has a different interest and emphasis to history which is derived only from written records. The study of historic sites and landscapes must be firmly based on field observation. Written records will give direction to fieldwork, assist in the location and interpretation of sites, and in filling out particular site histories, but it is information contained in the sites themselves that is critical to the study of historical archaeology.

New Zealand is not the only country where has been a strong development in historical archaeology in recent years. Experience gained elsewhere is relevant to the types of sites encountered here, and to field techniques and analysis which might be used. This is especially so where there has been a similar colonial and economic history in other English speaking countries, such as Australia and the United States.

In Britain 'industrial archaeology' is concerned mainly with industrial technology of the past two hundred years and seldom employs actual excavation. British 'landscape history', on the other hand, draws on the widest possible range of archaeological

evidence to emphasise continuity in people's interaction with the land, and in the development of cultural landscapes.

In New Zealand archaeology traditionally has been divided into the historic and prehistoric periods. Landscape history, however, makes no such distinction, and its emphasis on continuity may help us avoid the historic/prehistoric division of archaeologists and archaeological discussion. Archaeology has a unique potential to emphasise continuity in the human history of New Zealand.

Introductory texts include:

Hoskins, W.G. 1988 (first published 1955). *The Making of the English Landscape.* Hodder and Stoughton: London.

An illustrated edition of the classic exposition of landscape history; full of interest and ideas for New Zealand archaeologists.

Stratton, M. and B. Trinder, 1997. *Industrial England.* B.T. Batsford and English Heritage: London.

A succinct historical and technological survey; good short bibliography.

Relevant journals are:

Australasian Historical Archaeology. The journal of the Australasian Society for Historical Archaeology (Vol. 1 1983).

Essential reading for anyone serious about historical archaeology in our part of the world. The society also publishes a monograph series. You should be a member.

Historical Archaeology. The journal of the Society for Historical Archaeology (Vol. 1, 1967).

An American publication relevant to New Zealand. Held in the University of Auckland library from Volume 1, and University of Otago library from Volume 27.

Industrial Archaeology. The journal of the history of industry and technology (Vol. 1, 1964).

A British publication; contains much of interest to New Zealand in a specialised field. Held in the University of Auckland library from Volume 3, and University of Otago library from Volume 10.

TYPES OF HISTORIC ARCHAEOLOGICAL SITES

The variety of historic archaeological sites is as great as the variety of activities which characterise the early years of European settlement in New Zealand. Most fall within a few broad classes: domestic, agricultural and pastoral, industrial, commercial, transport and communication, and military. Other sites like mission stations and cemeteries do not fit easily into any of these categories.

Many Maori sites belong to the historic period, but are not covered here since they are similar in most cases to like classes of prehistoric sites.

Historic shipwrecks make up an important group of sites, but require specialised techniques and also are not covered here. The first, but sometimes flawed, source of information is:

Ingram, C.W.N. 1984 (6th edition). *New Zealand Shipwrecks 1795–1982*. Reed: Wellington.

Pre-1840 sites

An important group of sites dates to the earliest period of European settlement, for which the 1840 signing of the Treaty of Waitangi is a useful cut-off point, marking the start of British colonial government and organised European immigration. Sites include Christian missions, timber cutting sites, trading establishments, sealing camps, shore whaling stations, and a range of domestic, agricultural and industrial sites which are precursors of a much wider range of similar sites dating from after 1840.

Sites unique to this early period document the stopovers of early European explorers on our coasts. In Dusky Sound are the stumps of trees cut down to form a clearing for Cook's 1773 observatory, now presented by the Department of Conservation as a significant historic place. Maori sites associated with these visits also deserve attention—such as Cook's 'Hippa' island in Queen Charlotte Sound.

Domestic sites

Domestic or living sites have so far attracted little attention from New Zealand historical archaeologists. Why this should be so is an interesting question, especially as the study of living arrangements is of central importance in prehistoric archaeology. In the 19th century, women's work and social roles were in large part confined to the house. Study of the domestic world is therefore central to a balanced account of gender contributions to social and economic life.

Regarding the description of domestic structures, none is more important than:

Salmond, J. 1986. *Old New Zealand Houses 1800–1940*. Reed Methuen: Auckland.

A survey of building materials, techniques and styles.

Agricultural sites

Agricultural sites document the development of land, including the felling of bush, the breaking in, fencing, draining and cultivation of land, and the whole range of agricultural and pastoral practices and landscapes. Sites include saw pits, fencelines (wire, post and rail, stone or earth walls), drainage and water reticulation systems, dams, farm tracks, sheep yards, dips, boiling down plants, farm dwellings, musterers' huts, cowsheds, shearing sheds and living quarters, stables, killing sheds and other buildings.

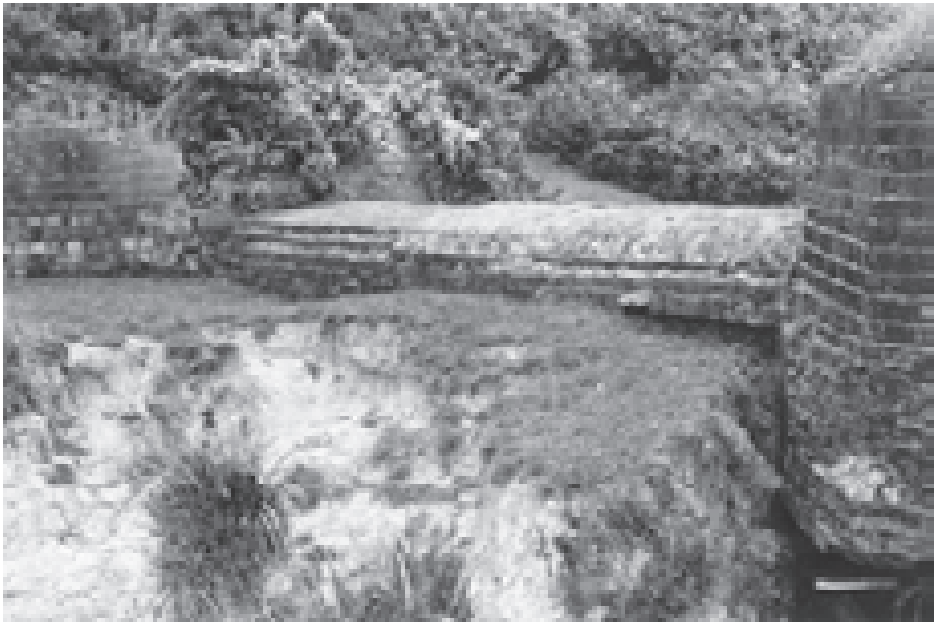


Figure 24. In the south Wairarapa a dam of bricks made on the property once provided water to a sheep station boiling down plant, for tallow production before development of the refrigerated meat trade (N. Prickett).

In early years poor transport and cheap labour led to farms and stations being of necessity self reliant. In the south Wairarapa, archaeology of the early pastoral industry includes evidence of a boiling down works for tallow production. The plant dates from prior to development of the refrigerated meat trade at the end of the 19th century, and includes a dam faced with bricks which were made on the property (Fig. 24).

On the Otago Peninsula an early rural landscape is modelled on Scottish small-holdings of the period. There are the remains of stone houses and barns ('steadings'), stone walls, mortised broadleaf fence posts and round stone towers erected like 'consumption dykes' in clearing the paddocks of stones.

Economic changes now taking place are profoundly changing the historic farming landscape which has underpinned New Zealand's economy for 150 years. Uneconomic units are amalgamated or maintained by off-farm income, farm labour is laid off, hill country properties are planted in pines, and on the plains and fattening country new ways are developed to make a living. There is a major role here for archaeology in the

Figure 25. The Mokoia, south Taranaki, factory closed after dairy industry amalgamations in 1968. Today one factory serves all Taranaki and much of the North Island as far as Hawkes Bay and Wairarapa (N. Prickett).

description of changing social, economic and technological aspects of the pastoral industry, and the cultural landscape that has emerged.

Also changing is the old infrastructure of rural townships, with primary school, public hall, post office, general store, and garage which might double as a engineering works for repairing and even making farm equipment—a successor to the earlier blacksmith's shop. In Taranaki rural primary schools have closed in recent years in response to rural depopulation and better roads. The districts have already lost their post office, store and dairy factory. Many district halls too are falling into disrepair.

Also in Taranaki, amalgamations in the dairy industry have resulted in derelict factories, just as an earlier development of technology saw creameries replaced by whole-milk plants. The settlement of factory workers' houses is demolished or removed and the concrete factory building recycled for another purpose (Fig. 25). The importance of the pastoral industry to New Zealand's economy and identity can hardly be overstated; the field is wide open for archaeology.

Figure 26. Hoffman kiln dating from ca 1900, Robert Edwards and Company, Palmerston North (N. Prickett).

Richards, G. and J. Richards 1995. . . . *And Then There Was One*. TNL: New Plymouth.

An historical survey of Taranaki dairy factories, to the present day when one factory serves the entire province.

Thornton, G. 1986. *The New Zealand Heritage of Farm Buildings*. Reed Methuen: Auckland.

A superb archaeological study illustrates the changing economy, technology and built environment of New Zealand farming.

Wheeler, C. 1989. *Historic Sheep Stations of New Zealand*. Beckett: Auckland.

An artist looks at working stations, their people, past technologies and early buildings.

Industrial sites

In *New Zealand's Industrial Heritage* Geoffrey Thornton (1986) lists historic New Zealand industries as follows: shipbuilding, flax, timber and flourmilling, brewing, goldmining, copper and antimony mining, woollen mills, industrial engineering, coalmining, the frozen meat and dairy industries, brickmaking (Fig. 26), lime burning and cement manufacture, tanning, the gas industry, rope making, papermaking, coachbuilding, boot and shoe making, electric power generation, sugar refining and

Figure 27. Propellers damaged in the Ross Sea pack ice and slipway, at the site of the 1920s Norwegian whaling base in Patterson Inlet, Stewart Island (N. Prickett).

sash and door manufacture. To these may be added quarries, kauri gum workings and camps, whaling and sealing establishments, smelters, potteries and many others.

In the 19th century poor transport and relatively small capital requirements resulted in a wide variety of local manufacturing industries. In the 20th century, with better transport, expensive machinery and economies of scale, these could no longer compete. As early as 1855 there were four breweries in Nelson alone; in 1878 there were 91 in New Zealand. This century has seen a steady reduction in numbers as firms are bought up, closed down and demolished. The surviving remains of early breweries are important evidence of early technology and social history.

Shore whaling and sealing were important early industries in the Cook Strait region and South Island for their economic roles and cultural significance. Sealers and whalers made up the first European communities in many districts. Maori learned new skills and acquired new goods, and shipped out for Sydney and the wider world. The Patterson Inlet, Stewart Island, base used in the 1920s by Norwegian Ross Sea whalers has left an unusual site of a later whaling era (Fig. 27).

Figure 28. Earnscleugh dredge tailings, near Alexandra in Central Otago (N. Prickett).

In parts of New Zealand the optimism of early European settlers resulted in exploration for minerals. Mining for copper, chromite and other ores began in the Nelson area early in the 1840s. The Dun Mountain railway line reaching from Nelson to mines in the ranges behind the town is evidence of one of the most ambitious of these ventures, and is the oldest railway in New Zealand.

Gold mining areas such as Coromandel, Golden Bay, Central Otago and the West Coast are very rich archaeological resources with major engineering works such as water races, ponds and mine tailings (Fig. 28), miners' huts and large settlements abandoned since the mining era. All may be examined by means of archaeology.

Timber milling was another significant early industry, and still is in some districts. Mills, tramways, settlements and other infrastructure relating to the industry all leave archaeological remains (Fig. 29). A class of site unique to the north of the North Island is the kauri timber dam. These were placed across a stream at a collecting point for kauri logs, and were 'tripped' to release the water in a flood to carry the logs downstream to the mill.

Figure 29. A steam boiler marks the site of McIntyre's sawmill, ca 1895-1905, Cromarty, Preservation Inlet (N. Prickett).

Moore, P. and N. Ritchie 1996. *Coromandel Gold: a Guide to the Historic Goldfields of Coromandel Peninsula*. Dunmore Press: Palmerston North.

A unique regional survey; covers history, technology and archaeological evidence.

Prickett, N. 1998. The New Zealand shore whaling industry. In S. Lawrence and M. Staniforth (eds) *The Archaeology of Whaling in Southern Australia and New Zealand*, pp. 48–54. The Australasian Society for Historical Archaeology and The Australian Institute for Maritime Archaeology, Special Publication No. 10.

An outline survey.

Ritchie, N. and R. Hooker 1997. An archaeologist's guide to mining terminology. *Australasian Historical Archaeology* 15:3–29.

Invaluable source for definitions and technologies.

Thornton, G. 1982. *New Zealand's Industrial Heritage*. Reed: Wellington.

A ground-breaking survey, well illustrated.

Watt, J.P.C. 1989. *Stewart Island's Kaipipi Shipyard and the Ross Sea Whalers*. The author: Havelock North.

Encyclopaedic account of Norwegian whaling base. Some archaeology, mostly technology and social history.

Figure 30. Now a garden shed, the Armed Constabulary lock-up at Pungarehu, Taranaki, dates from the 1880–81 Parihaka Campaign (N. Prickett).

Military sites

Military sites include European fortifications, Maori pa, camps and battle sites of the New Zealand Wars, as well as coastal defence works and other sites of later periods.

Sites of the New Zealand Wars are mostly located in the Wellington, Wanganui, Taranaki, Taupo, Bay of Plenty, Waikato, Auckland and North Auckland districts. Rare sites in other areas include surviving bastion defence of Fort Arthur, dating from 1843, to be seen near the main door of Nelson cathedral. European works include earth redoubts, and timber stockades and blockhouses often also enclosed by a defensive ditch. The outstanding Maori fortification of the period is Ruapekapeka in the Bay of Islands district dating from 1845–46.

In north Taranaki as many as 80 small fortifications were erected by the British Army and settler militia and other forces from the opening of the First Taranaki War in 1860 to the Parihaka Campaign of 1880–81. Together they document the course and results of the long struggle for land and political control. Associated with the 1880s Armed

Figure 31. Castellated, demi-bastioned barrack building behind the guns of Fort Takapuna, Auckland, late 1880s (N. Prickett).

Constabulary post at Pungarehu near Parihaka is a small lock-up now used as a garden shed (Fig. 30).

The 1870s and 1880s Russian scares and the First and Second World Wars have left gun positions, torpedo and mine bases, observation posts, engine rooms, magazines and associated camps at harbour mouths and coastal areas in many parts of New Zealand (Fig. 31). Other sites document army camps, airfields, naval establishments and anti-aircraft positions of World War II. In Taranaki slit trenches above coastal beaches look like Maori storage pits; some were actually dug on ancient pa which occupy commanding positions above the main road.

Mitchell, J. 1993. The Russian Scare harbour forts of Auckland New Zealand. *Fort* 21:83–104.

Prickett, N. 1994. Archaeological excavations at the Omata Stockade and Warea Redoubt, Taranaki. *New Zealand Archaeological Association Monograph* 20.

Smith, I. 1989. Fort Ligar: a colonial redoubt in central Auckland. *New Zealand Journal of Archaeology* 11:117–141.

Figure 32. The 1899 Clifden suspension bridge, western Southland (N. Prickett).

Transport and communication sites

Sites relating to early systems of transport and communication include jetties and wharves, tracks, roads, railway lines and tramways. Associated with them is a variety of early bridges (Fig. 32). Many sites will be related directly to farming or industrial activity.

Early bridle tracks are outstanding landscape features in many districts, such as the Marlborough Sounds where they relate to pastoral farming, and mining districts where supplies and even heavy machinery were packed in to mining locations. Later, roads were constructed by pick and shovel for horse-drawn vehicles and stock. Such early roads survive in country districts where there is little traffic to justify upgrading.

Cemeteries

Cemeteries are a fertile field for social history. Gravestones—or rare wooden markers—do not just give a person's name and date of birth and death, but often tell of how the deceased was regarded, their contribution to the community, and even their part

in a wider commercial, industrial or military enterprise. Changes in design and what is said show changing attitudes to the loss of loved ones and how they should be remembered. The New Zealand Society of Genealogists has a database which records gravestones in cemeteries throughout the country.

Particular gravestones may have a wider historical significance. In St Mary's churchyard, New Plymouth, are buried Matilda Foreman and three of her children who died of diphtheria within six weeks of each other in the besieged town of New Plymouth in the winter of the 1860. At Christ Church, Russell, a stone marks: 'George B Sherman, Second Officer of Ship Lancaster New Bedford, was suffocated while smoking ship at Bay of Islands, aged 28 years 14 days.'

Recent sites

A wide range of sites date only from recent years. Many are of little immediate interest, the activities they represent and the artefacts they contain being familiar enough to present day New Zealanders. There are, however, recent sites which tell of an activity or period which is fast receding into history. Unemployed workers camps of the 1930s and World War II defence sites are examples.

As industrial enterprises are centralised, historic factories are abandoned. Dairy factories have been mentioned above. New Zealand is now undergoing economic change at an unprecedented rate, to make redundant whole industries and transform industrial and farming practices which have been important in many cases since the 19th century.

RECORDING HISTORIC ARCHAEOLOGICAL SITES

Recording historic archaeological sites may take place either in the course of a research project concerned with a particular historical interest or site type, or as part of a wide-ranging field survey of a district or parcel of land.

In the case of particular research projects the survey will be guided by historical information. The field worker will have some knowledge—even a great deal of knowledge—regarding the location and nature of sites before going into the field. This is true of particular sites (military redoubts, mission stations, known mining activity, etc.), and also of classes of sites where, for example, a survey is undertaken in an historic mining district.

In some cases site recording of evidence for a particular activity will involve recording only one or two site types; examples are the early sealing and whaling

industries. In other industries, a variety of site types will be recorded, as in the study of mining, industrial or agricultural activity. The archaeological record of a mining district might include shafts and drives, tailings, mullock heaps, dams, water races, tramways, stamper batteries and other processing machinery, as well as the remains of living quarters, stores, community facilities, etc.

Alternatively, the site recorder goes into the field without specific historical direction to record sites as they are found, in which case many different site types will be recorded, both historic and prehistoric. This follows the method employed in recording most prehistoric sites. It does, however, require experience of a wide range of site types or important evidence can be overlooked.

Since evidence of recent changes in the New Zealand landscape is very abundant (at least in most areas of interest to historical archaeology) it is often impractical to record all of it. Evidence for changes in farming practice alone would, if completely recorded, be beyond the range of interest of all but the most specialised study. Clear objectives need to be set before going into the field.

Districts which enjoyed a flurry of early European settlement and little subsequent activity to blur or destroy the early evidence, (gold mining, gum digging, and abandoned farming districts), give opportunities for developing an inclusive approach. The selective basis of much historic archaeological site recording may be replaced by a wide-ranging field search for all evidence of early economic activity and settlement pattern.

Recording historical sites will often be essentially the same as recording prehistoric sites. There will be modification to the natural topography, or sub-surface deposits visible in natural sections or surface scatters. Recording calls for techniques of observation and mapping no different to those used in dealing with earlier Maori sites. Just what makes up the remains, however, may be very different. Building materials such as brick and stone, iron machinery and other remains, and industrially produced artefacts such as ceramics and glass, may be found in large quantities. Earthworks too are different to Maori terraces, pits and defensive works. Thus a wide knowledge of domestic and industrial technologies and artefacts is necessary for good observation and recording of historic sites.

Historical sites, especially those with standing structural remains or engineering works, lend themselves to recording by camera. Be sure to write down the content of each photograph; the deterioration of historic sites is such that in a few years good photographic records may be invaluable. Sketches or plan drawings employ essentially the same techniques as in prehistoric archaeology. An accurate plan (surveyed or taped) is best, but any sketch showing the relation of site elements is better than none.

Field workers should have a wide interest in the natural environment and cultural landscape, so that the environmental impact of human activities is understood as an important part of the historical archaeology.

STANDING STRUCTURES

Standing structures or buildings that are part of or linked to archaeological remains should be recorded as part of a site. Quite apart from their significance to the particular site, such structures may greatly assist in interpretation of other similar sites in both field recording and excavation. The recording of buildings and others standing structures requires a knowledge of building techniques, materials and styles.

It is hoped that the issue of deciding just when an historic building or structure is of interest to historic archaeology is resolved in a practical manner. Clearly, standing remains offer enormously more information than a demolished structure or scatter of post holes. It is not sensible to wait for a building to fall down—thus creating what is strictly an archaeological site—before a record is made.

Another approach is the examination of particular processes, design features or products which have a wide variety of uses. In this respect the outstanding study in New Zealand so far is Geoffrey Thornton's book on concrete construction and buildings, from humble musterers' quarters in Canterbury, said to date from 1861, to bridges, dams and aircraft hangars of the 20th century. There is also a valuable outline of New Zealand building stones by geologist Bruce Hayward.

Hayward, B. 1987. *Granite and Marble: A Guide to Building Stones in New Zealand*. Geological Society of New Zealand Guidebook No. 8.

Thornton, G. 1996. *Cast in Concrete: Concrete Construction in New Zealand 1850–1939*. Reed: Auckland.

A remarkable study of innovative engineering, the built environment, and economic change. Outstanding photographs.

FUNCTIONING SITES

Functioning industrial, domestic and public buildings offer unusual opportunities in the description of manufacturing technologies, and social and domestic arrangements. For example, country halls express community consciousness and map practical needs, social interactions and changing prosperity. Halls which are designated war memorials, or which contain memorial plaques, provide a link with families of the past and remember sacrifices which have ensured the present (Fig. 33).

Figure 33. Country halls are rare public buildings in the rural landscape, significant for their architecture and social history. Many are war memorials. Oroua Downs is in the Manawatu near Foxton (N. Prickett).

Throughout the country many small engineering, manufacturing, commercial and professional firms still operate in historic built environments and employ historic technologies. Nortons Brick and Tile Company at Pukerau, Southland, which was founded *ca* 1880, is still operated by the same family at the original site. In nearby Gore, the historic 1919 Fleming and Company factory still uses much of its old technology in the production of rolled oats. The recording of such operations is an urgent task for historical archaeology.

BOTTLES AND OTHER ARTEFACTS

The collection of artefacts from historic sites should be avoided if possible. Finds should not be kept as personal property, or archaeologists come dangerously close to bottle hunters who have inflicted enormous damage on numerous historic sites in recent years. When artefacts are found they should be accurately located on the site plan, properly labelled, and offered to a professionally curated museum or study collection.

Record all artefact finds, or if they are too numerous, list the unusual material and that which helps define site function and date. Makers' names should be recorded where given. Manufacturers' names on 19th century machinery will often tell of the importance of Great Britain in providing industrial technology to the world at the time, part of a wider theme not unrelated to European settlement of New Zealand.

Henry, G. 1999. *New Zealand Pottery*. Reed: Auckland.
Revised edition of an outstanding illustrated account of our domestic ceramics industry.

Johns, F. 1998. *'Strike a Light'*. The Author (obtainable through Taranaki Museum, New Plymouth).
Illustrated survey of wax vesta tins and matchboxes in New Zealand 1840–1993.

HISTORICAL RESEARCH

Text and pictorial research is essential for the interpretation of historic archaeological sites in three broad areas. It will focus on a specific site: when occupied, by whom, for what purpose, in what circumstances, and all the particular detail which relates to that site. It is concerned with the general description of activity, social and economic arrangements, etc., for the type of site or historic landscape under study. It is needed for the identification and understanding of artefacts, from buttons and boot heels, bottles and ceramics, to machinery, built structures and entire historic landscapes.

There are many sources of historical information available. Public and research libraries hold a wide variety of printed books, documents, newspapers and manuscript material.

Important research libraries are the Alexander Turnbull Library, General Assembly Library and National Archives, all in Wellington, the Hocken Library, Dunedin, and the libraries of Canterbury Museum and Auckland Museum. Significant local collections are held by the Hawkes Bay Museum, Taranaki Museum, New Plymouth Public Library, Nelson Provincial Museum, Whanganui Regional Museum and elsewhere. Public libraries and museums in smaller centres may hold collections of local printed and manuscript material. University libraries are also available for research purposes.

Keeping pace with changes in the whereabouts of historic resources in the new state-owned enterprise environment is not easy. Nor are today's commercially driven organisations always sympathetic to requests for access to historic data. District offices of Land Information New Zealand hold historic printed and manuscript maps, as well as surveyors' field books which may give detailed information unobtainable elsewhere.

In addition to written and printed material many libraries hold collections of photographs, paintings and sketches of immense value in identifying archaeological

remains. The record of early mining activity in the Golden Bay district which is included in the Tyree Collection of photographs held in the Nelson Provincial Museum is just one example of the invaluable information yet to be utilised by historical archaeologists. Other important photographic and pictorial collections are held in the Alexander Turnbull Library, Hocken Library, Auckland Museum, and elsewhere.

It is not possible here to mention more than a fraction of the sources and nature of primary and secondary historical documentation available to those interested in researching historical sites. In many cases accurate identification of a site will be as far as the recorder will wish to go; in others the site surveyor will be drawn into a continuing quest for historical information far beyond the resources of the local library or museum.

Archaeologists who wish to carry out historical research connected with sites would be advised to make use of:

Wood, G.A. 1992 (Second edition). *Studying New Zealand History.* University of Otago Press: Dunedin.

> An exhaustive survey of research collections, online databases, archives and manuscript finding aids, bibliographies and printed reference works, periodicals, theses, primary sources, official documents and records, local government records, overseas sources, etc.

CHAPTER 7. SURVEYING FOR SITE RECORDING

Bruce McFadgen

INTRODUCTION

This chapter describes how to draw a plan of archaeological field remains. The methods are not intended for mapping large sites, which are often better handled by different methods. Instead, they are intended for small sites likely to be encountered on a field trip. The important details to show on a plan are size, shape, and relative position of remains, and to do this the means should be available to measure distance, direction and slope.

INSTRUMENTS

To measure distance a tape measure is suitable, and careful pacing is sufficiently accurate on fairly flat sites. Measure pace-length by pacing out a known distance. State in field notes the unit of measurement.

To find the direction or bearing of a line, a prismatic compass which can be read to the nearest degree is accurate enough for most recording. If only a north point is required, then use any compass. To use a prismatic compass, look through the prism and line up the object sighted and the line scribe on the glass cover (Fig. 34b). The numbers seen through the prism (Fig. 34b) give the magnetic bearing of the line. Keep at least 3 m away from wire fences or large metal objects such as cars as these can deflect a compass needle.

To find the angle of slope to an object, use a clinometer. An example is an Abney level, a hollow tube attached to a semicircle graduated in degrees and fractions of degree (Fig. 35a). Attached to the semicircle is a bubble level and a pointer which are free to rotate, the pointer moving around the graduated semicircle. To use an Abney level, look through the eyepiece at the end of the tube and sight towards the object. Inside the tube is a mirror with a scribed line, which reflects an image of the bubble. The object sighted must be cut by the hair-line in the tube, and the bubble level rotated until the scribed line on the mirror bisects the bubble (Fig. 35b). The angle of slope (elevation or depression) is then read off the graduated semicircle.

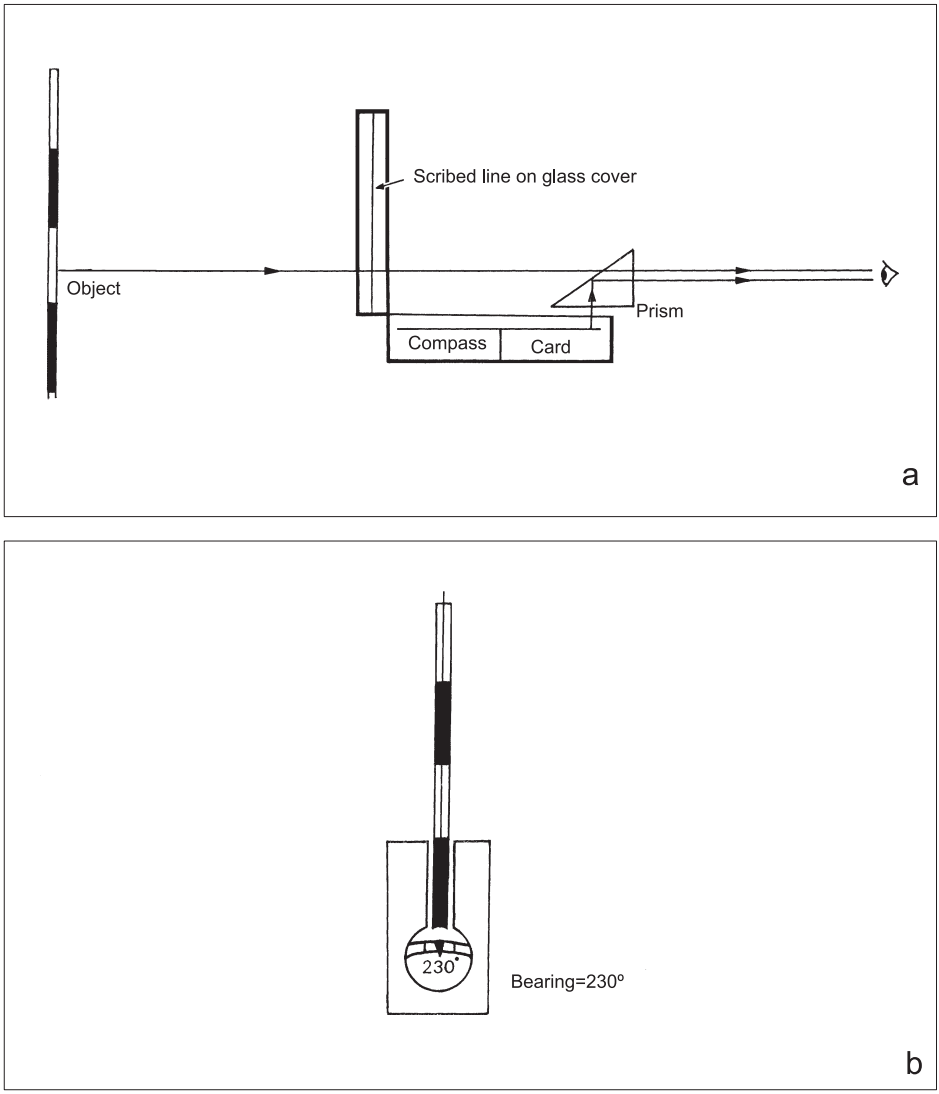


Figure 34. Use of the prismatic compass: (a) Line of sight through prism. (b) View through prism.

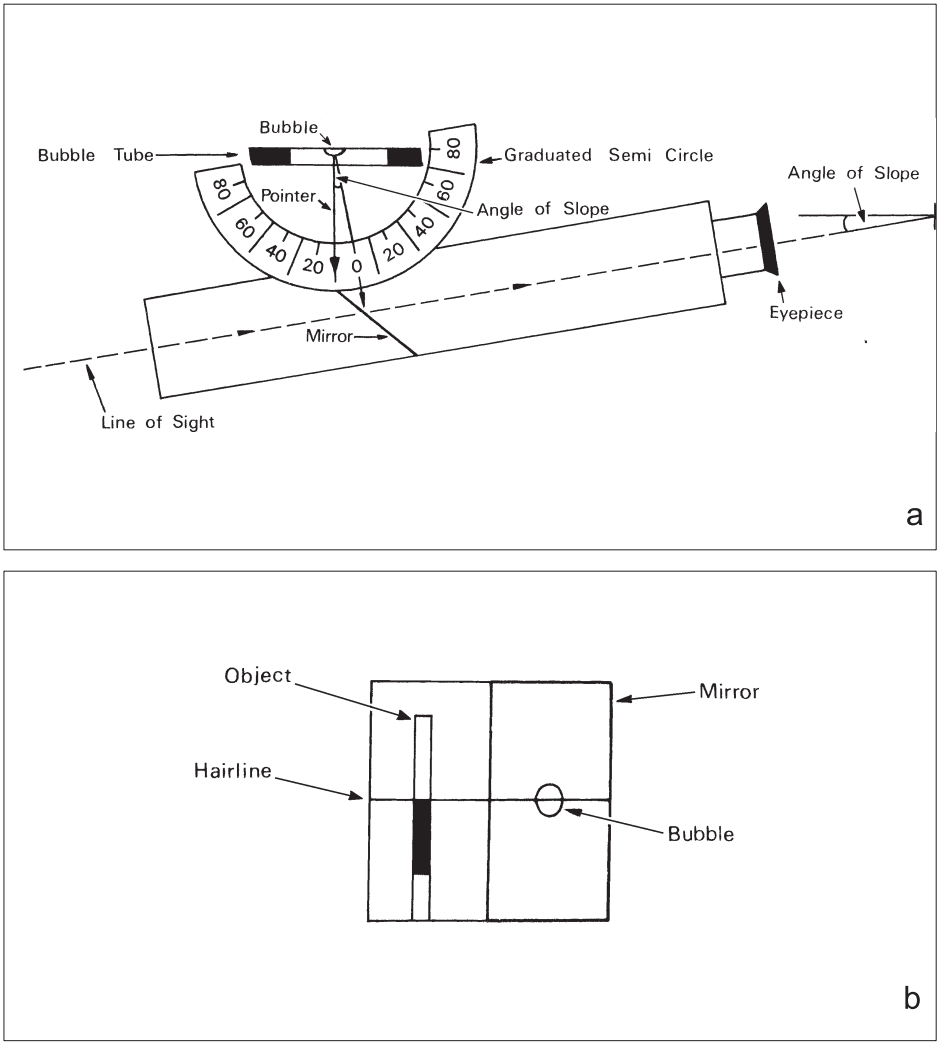


Figure 35. Use of the Abney level: (a) Line of sight through tube. (b) View through eyepiece.

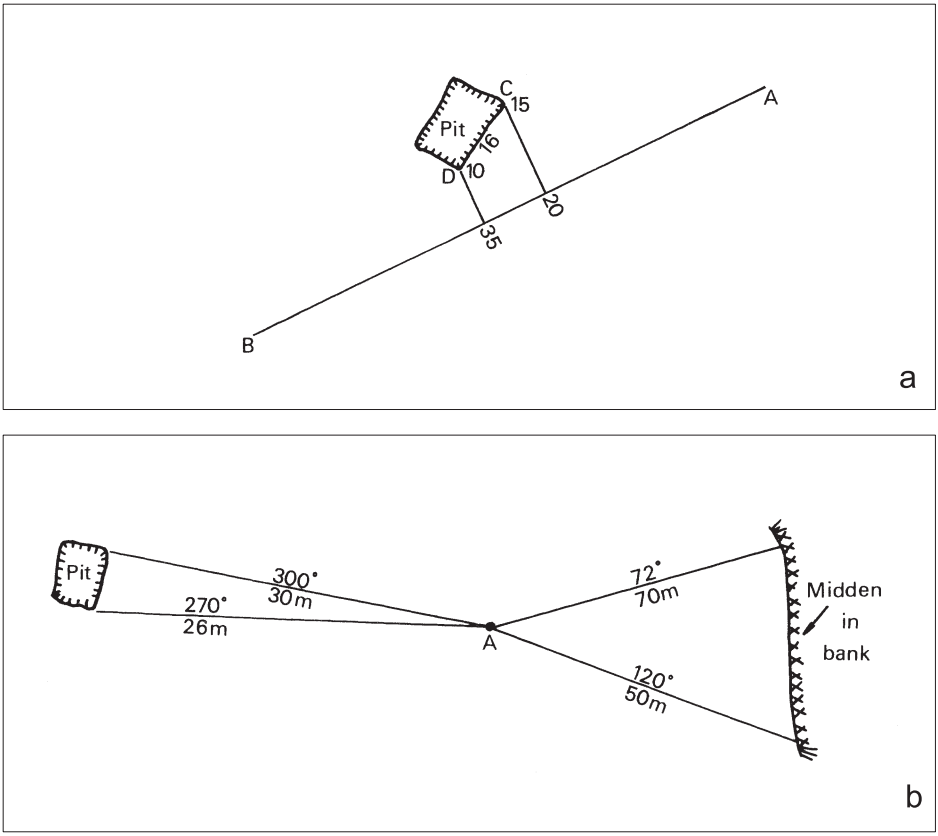
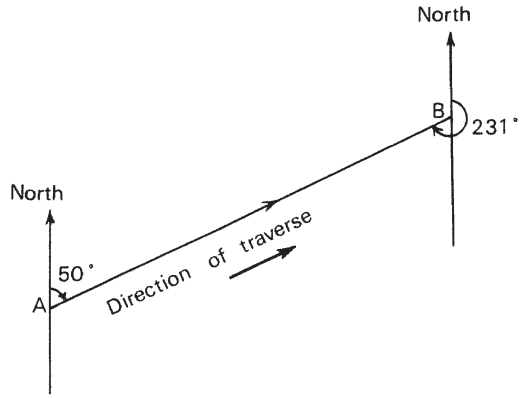


Figure 36. Methods of recording detail. (a) Offsets from a baseline. (b) Bearing and distance from a single point.

METHODS OF RECORDING DETAIL

Detail is recorded either by offsets at right-angles from a baseline (Fig. 36a), or by bearing and distance from a single point (Fig. 36b). If a site is mapped by offsets from a single baseline, then the bearing of the line is unnecessary except for determining where north is.



Forward bearing (from A) = 50°
Back bearing (from B) = 231°
The following calculation shows how to find the bearing of the line from A to B (for explanation, see text):

Back bearing = 231°
+ 180°
411°
- 360°
51°
Forward bearing = 50°
Bearing of line A–B = mean of forward and back bearings = $50\frac{1}{2}°$

Figure 37. Measurement of the bearing of a line.

COMPASS TRAVERSE

A compass traverse is a series of baselines forming a closed framework for mapping a site. Measure the length of each baseline and along each line take two bearings (Fig. 37): a forward bearing (from point A, Fig. 37) in the direction of the traverse, and a back bearing (from point B, Fig. 13) in the reverse direction. Add 180 degrees to the back bearing, if the back bearing plus 180 degrees is more than 360 degrees, subtract 360 degrees. The forwarding bearing and adjusted back bearing

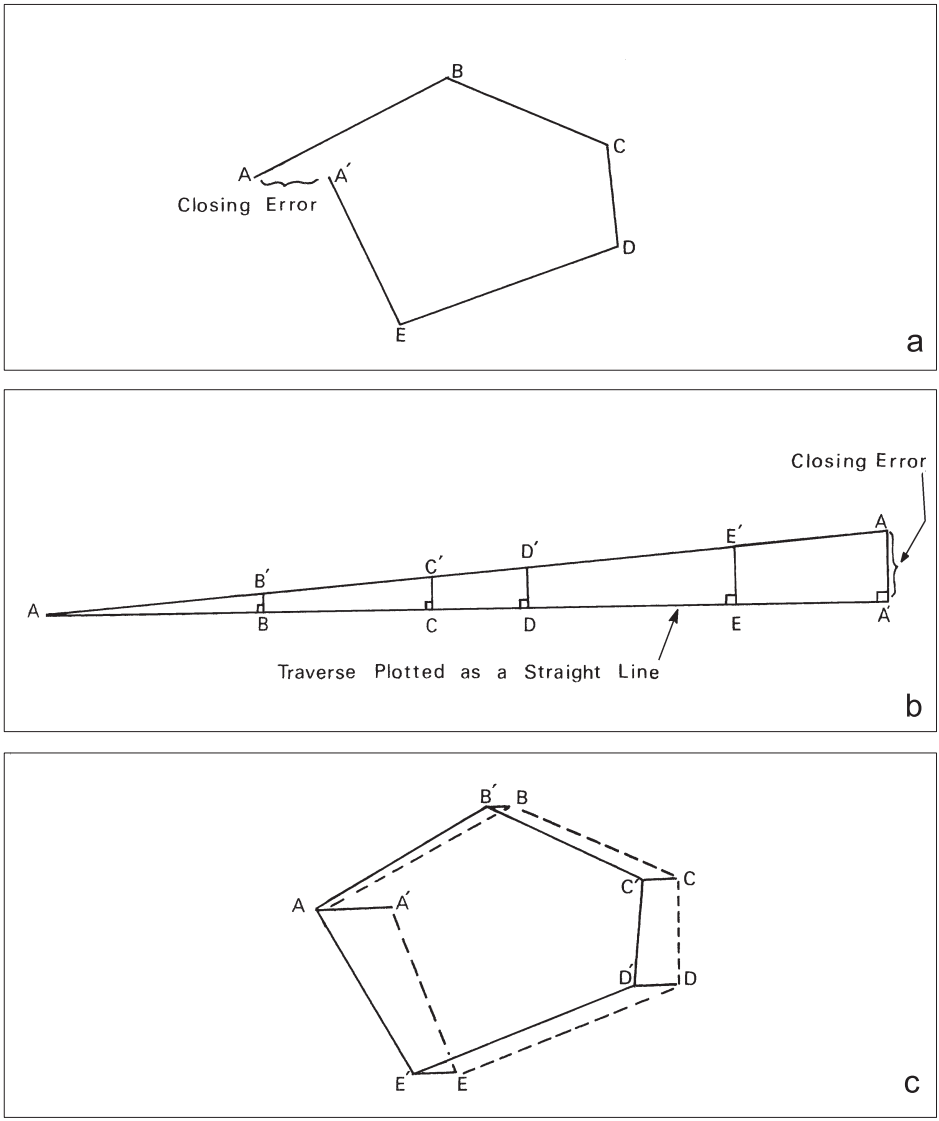


Figure 38. Adjustment of a compass traverse. (a) Traverse plotted to scale. Traverse points = A, B, C, etc. Closing error = A–A'. (b) Traverse plotted to scale as a straight line. Corrections to traverse points = A–A', B–B', etc. (c) Adjusted traverse. Corrected traverse points = A, B', C', etc.

should agree within 2 degrees. If they do not agree the observations should be repeated. The bearing of each base line is the mean of the forward bearing and adjusted back bearing.

The traverse is plotted to scale using a protractor, rule, and pencil. A plotted traverse will normally end at a different point from which it began. If the difference (closing error) is greater than 2% of the traverse length, check calculations and plotted traverse for errors. If no errors are found repeat the traverse.

If the closing error is less than 2% adjust the traverse as shown by Fig. 38:

1. Plot the traverse to scale as a straight line and mark each traverse point.
2. Draw the closing error at right angles to the end of the line, and draw in the third side of the triangle.
3. At each traverse point draw a perpendicular to meet the third side of the triangle. The length of the perpendicular at each point is the correction to be made at that traverse point.
4. Apply the correction to each point of the plotted traverse parallel to the original closing error. The adjusted traverse is between the new points: A, B′, C′, D′, E′, A.

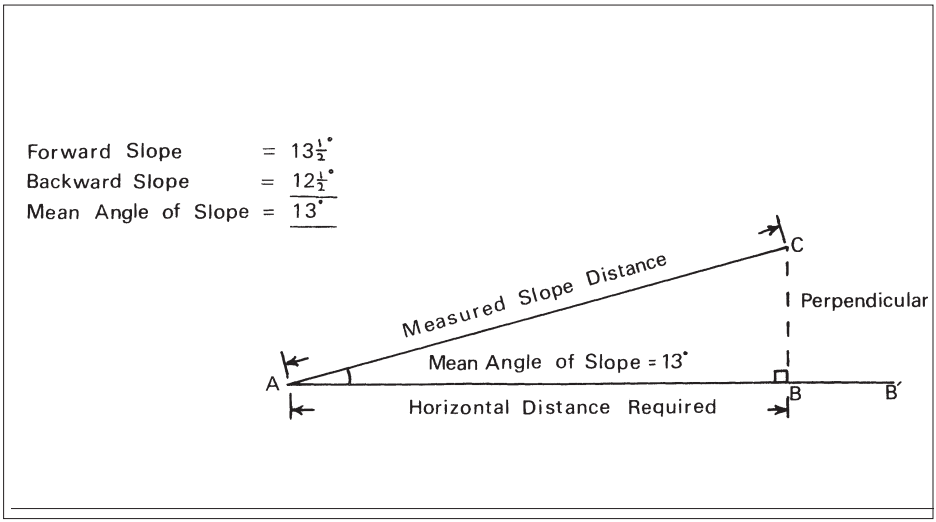


Figure 39. Method to find horizontal distance from slope distance and slope angle. 1. Draw a line A–B'. 2. Draw to scale a line A–C at an angla to A–B' equal to mean angle of slope, and with a length equal to the measured slope distance. 3. Draw line C–B at right-angles to A–B'. 4. Horizontal distance = A–B.

ACCURACY

Edges of archaeological features are often indistinct and measurements to the nearest metre are usually sufficiently precise. Keep *offset* distances short (about 30 m maximum) to reduce errors due to the estimated right angle not being truly perpendicular to the baseline. Keep *bearing and distance* distances less than 100 m: half a degree error in 100 m will result in a lateral error of about 1 m.

Measured distances are assumed to be horizontal. The horizontal distance between two points is less than the slope distance which is that usually measured, but except for steep slopes, slope error can be ignored. Slope errors are significant when the difference between horizontal distance and slope distance is more than a metre. In a 60 m line this occurs when the slope is greater than 10 degrees, in a 30 m line when the slope is greater than 15 degrees, or in a 15 m line when the slope is greater than 20 degrees. To correct for slope, measure slope with an Abney level or other clinometer and find the horizontal distance as shown in Fig. 39. For traverse lines, measure the slope from each end, and use the mean of the readings to find the horizontal distance.

FIELD NOTES

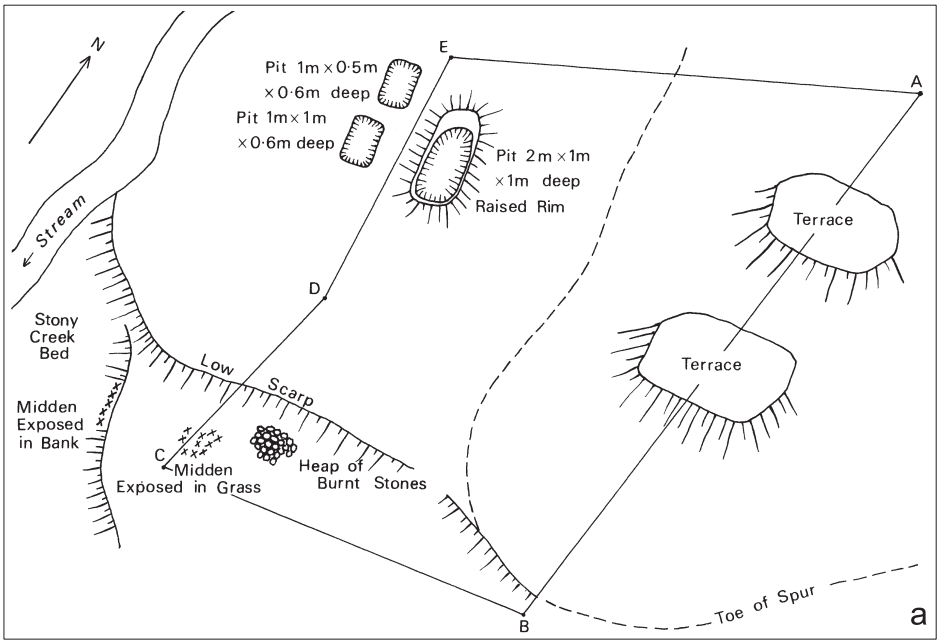
A small school notebook is suitable for field notes. A pencil is necessary and a rubber, straight edge and semicircle protractor are useful.

Sketch the area to be mapped. Show the compass traverse or baseline, and either show on the sketch all measurements made or, if points are clearly labelled, tabulate the measurements. Describe remains in note form and record the site grid reference and the map used.

Figure 40 is an example of a small site survey.

PLOTTING

On a site record form draw in pencil the baseline or compass traverse at a suitable scale, and plot the surveyed remains. Draw the remains in ink and erase the traverse or baseline. Show a north point, a scale, site grid reference and site name.



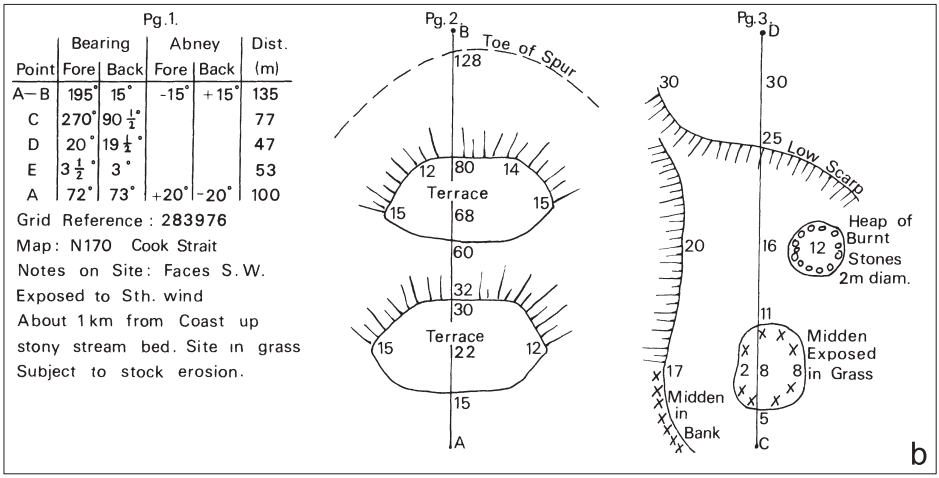
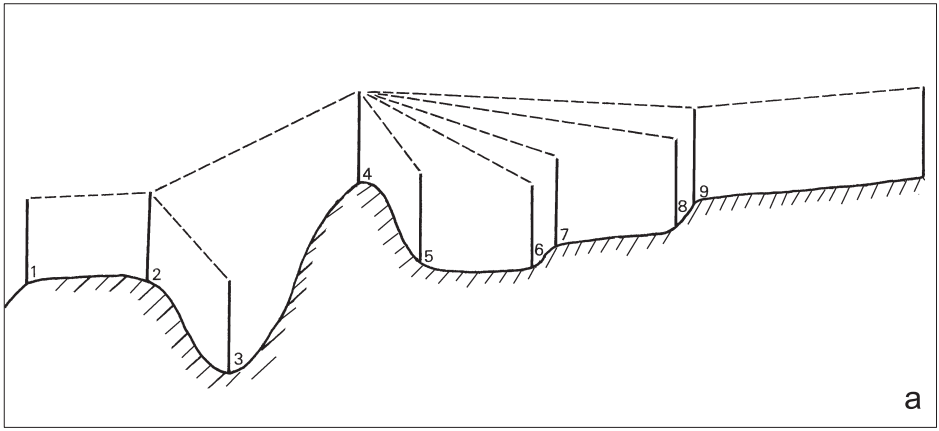


Figure 40. Example of small site survey. (a) Sketch map of site showing archaeological and topographical features to be recorded, and compass traverse. (b) Sample field notes.

PROFILES

A profile is normally surveyed from traverse points along one or more straight lines which should be marked on the plan and should show each significant change in ground slope. Use two poles marked at eye-height, an Abney level or other clinometer, and a tape. Hold the clinometer against one pole and sight to the same height on the other pole. Read the angle of slope and measure the slope distance. Several changes in ground slope can be measured from each traverse point (Fig. 41a), but keep slope distances less than 30 m.



At Point		To Point		Abney Reading	Distance (metres)	Bearing
1	Top Scarp	2	Edge Ditch	+2°	30	210°
2	Edge Ditch	1	Top Scarp	-2°		30°
		3	Bottom Ditch	-50°	8	250°
		4	Top Bank	+10°	16	"
4	Top Bank	2	Edge Ditch	-10°		"
		5	Foot Bank	-52°	6	"
		6	Foot 1st Terrace	-12°	15	"

b

Figure 41. Surveying cross-sections. (a) Cross-section showing observed lines. (b) Example of field notes.

Where slope distances are greater than 30 m, where there is a change in direction, or where points are not intervisible, establish a new traverse point. Between traverse points, read the clinometer forwards and backwards.

Where the traverse changes direction, measure bearings of traverse lines with a compass. Level back to the starting point. When a profile is plotted, the level at the start and finish should be the same. If it is not, adjust the plot in the same way described for the compass traverse (Fig. 42).

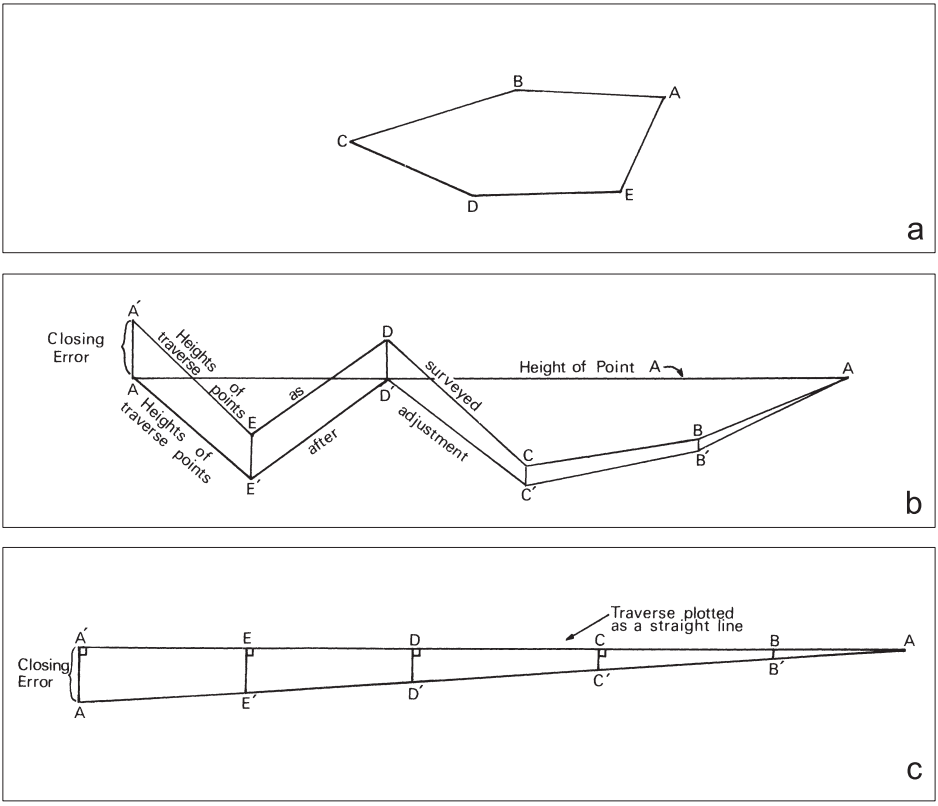


Figure 42. Adjustment of cross-section traverses. (a) Plan view of traverse points (shown A, B, C, etc.) (b) Vertical view of traverse point heights, plotted to scale. (A, B, C, etc. = surveyed positions; A, B', C', etc. = adjusted positions.) (c) Height corrections to traverse points (= A'–A, E–E', D–D', etc.).

PLOTTING PROFILES

When plotting a cross-section ignore the heights of the poles because all measurements will have been taken to and from a constant height. Lay off slopes with a protractor, draw observed lines at a suitable scale and join up the resulting points. Show a horizontal and vertical scale on the drawing.

CHAPTER 8. COMPLETING THE FORMS

GENERAL

1. One site record should be produced for each site recorded. In general terms, a site comprises archaeological remains separated by unoccupied space from other such remains.
2. Use a printed site record form or an approved template. Attach extra site description sheets as necessary.
3. If possible, type the records. Any handwriting must be firm and clear.
4. Include a site location map either on the Site Record Form or on a Site Description Form.
5. Fill in as many of the sections of the Site Record Form as possible. (Type dashes if no information is available.)
6. Attach large format maps folded to A4 size.
7. Completed forms should be sent, in duplicate, to the appropriate district filekeeper. (See list and map attached in Appendix 2.)

   In the notes that follow, refer to the specimen forms.

SPECIFIC

1. Map details: number, name and edition. Use the latest available NZMS 260 map.
2. NZAA site number: use a number provisionally allocated to recorder by the district filekeeper or leave clear to be filled in later by the district filekeeper. All sites receive a serial number based on the number of the map, e.g. A44/1, 2, 3, etc. The sites are numbered consecutively, in the order in which they are given to the filekeeper.
   In the course of recording it may be useful to allocate field numbers as sites are recorded. These numbers will be provisional, since the permanent numbers will be allotted by the district filekeeper. A convenient form of field number is the recorder's initials and a consecutive number. Avoid any system which produces field numbers which might be confused with NZAA site numbers.
3. Date visited: the date on which the fieldwork took place.

4. Site type: one of the types described earlier, or a combination of such types: e.g. 'midden', or 'midden/pits', not 'occupation', or 'exposed section'.
   The site may merit a combination of site types. An obvious example is the ditch and bank, which would be recorded as 'ditch/bank', but there are many other possibilities, such as 'midden/pits', 'midden/terraces', etc. If possible, try to keep the types in alphabetical order, but this need not be done in the case of established combinations like 'ditch and bank', or when one feature of the site is more prominent than the other (e.g. if there is a large group of pits with a small scatter of midden, 'pits/midden' is permissible).
   Don't describe a site as, for example, 'Pits, associated with midden' in the Site Type panel. It is your job to decide whether, or not, in this case, the midden is part of the same site as the pits (see page Chapter 4). If it is, record it as 'midden/pits'; if not, a separate site record is needed, with cross references if you like.
   Don't put miscellaneous information, such as 'Ovens, 10 small', or types of pa, in this panel. This type of information belongs in the site description.
5. Site name: Maori—for Maori sites give a genuine name if known. Indicate the source of the name in the 'description of site' section. If the recorder is not sure about vowel length then the name should be spelt without attempting to differentiate between long and short vowels. If the recorder is sure about long vowels, then these are to be indicated with a macron, either typed in or added after with a ball-point.
6. Site name: other—either historical name of the site, locality, paddock, or street, or a name assigned by the recorder for archaeological purposes.
7. Grid reference: a 6-figure grid reference for the map quoted in (a) above. Avoid the practice of dividing the 100 m square into quarters by adding a '0' or '5' as the fourth figures. An 8-figure grid reference should be given only if the use of a larger scale map permits this level of precision.
   An accurate grid reference is essential. In the case of a very extensive site it is a good idea to give the grid references at each end, e.g. '310102 to 320104' in the description of site section. However, only a single central grid reference should be placed in the space provided at the top of the form.
8. Aids to relocation of site: clear precise description with reference to relatively permanent features of the adjacent landscape. A sketch location map or equivalent should be attached. (Such a map may apply to several adjacent sites and may be filed with one site record and referred to in the others.)
   This entry should enable someone unfamiliar with the area to find the site without too much trouble. It *must* be completed, because a grid reference is usually not sufficient to locate a site, particularly small ones or those in confusing surroundings. Avoid phrases such as 'left of', 'in front of' or 'further along'.

If many sites are being recorded in a small area it is essential to draw a locality plan at a suitable large scale and plot the site numbers on it. This saves much written description, as you can simply refer to the plan, and this will avoid confusion among later investigators. If nothing better is available, a useful location map can be created by enlarging the 1:50,000 map by 200% or similar on a photocopier. The plan should be filed with the first site recorded on it, and subsequent site records should have, under 'Aids to relocation'—'See locality plan filed with (site number)'.

If a temporary field number system is employed, it should be one which will not cause confusion with the NZAA site numbers once they are allocated. A simple field number could consist of the site recorder's initial plus a number.

9. State of site and possible future damage: the state of site at the time of the fieldwork, and the likelihood of future damage by any agency.

   Record whether the site is in grass, bush, etc., the general state of preservation, and whether it appears to have been disturbed by any of the following:

   - Erosion by sea, stream, wind, slips.
   - Trampling by stock. Specify sheep, cattle, or other and where i.e. in gateways or alongside fencelines, etc.
   - Ploughing or disking.
   - Major engineering works, e.g. roading, drainage (name of authority responsible).
   - Subdivision for housing or industry.
   - Reversion to scrub or other vegetation.
   - Fossicking.

   It is usually worthwhile to make some polite inquiries to see whether or not the property owner intends to subdivide the land or carry out any works on it. It may also be possible to offer advice on maintaining any sites in good condition.

   It is easy to be vague about site condition and many stock descriptions or phrases such as 'good' or 'poor' are essentially useless. Try to be specific. Identify the impacts which have occurred and try to quantify the extent of the likely damage if possible. Indicate where patches of erosion occur and their dimensions. Describe vegetation cover down to details of tree species etc. If possible, map details of condition on the site plan, or on a second copy of it. Aerial photographs may give clues as to the changing condition of a site since about the 1930s or 1940s.

10. Description of site: give full details as instructed on the site record form. This section may include references to published and unpublished material. An accurate plan is an essential part of any detailed description. If lack of time prevents an accurate survey a sketch plan is more informative and valuable than a long written description. It is important, however, to state the level of accuracy achieved e.g. the closing error in any traverse.

11. Owner, occupier: include postal address, street address and, if available, the legal description of the land and a Certificate of Title reference.
    Permission should always be obtained before going on to private land, and this is a good opportunity to find out name, address, etc., as well as seeing if the owner has found any artefacts or knows anything of the site or its history and checking hazards to personal safety.
    Give a sufficiently clear address to enable the owner to be relocated. In the countryside the name of the road and the district is usually sufficient. A grid reference to the owner's house can be useful.
    If the land is not occupied by the owner, it is helpful to know if the occupier is a tenant (e.g. leasee) or a manager.
12. Nature of information: the nature of the fieldwork, photographs taken, and aerial photograph coverage. (Note that clarity refers to archaeological features and not to topographic location.)
13. Reported by: fill in name and address; leave the filekeeper section blank.

SITE DESCRIPTION FORMS

Any suitably headed A4 sheet may be used as a Site Description Form. Always head the sheet 'Site Description Form' and list site number, site type and grid reference.

These may be used for any purpose desired, and should be headed-up appropriately. Examples are:

- Site description.
- Traditional information.
- Historical information.
- References to publications.

Other uses of suitably headed A4 sheets may be for small plans, or for amplification of any other sections of the Site Record Form.

PHOTOGRAPHS

Full details of photographs should be provided on a Site Description Form. Give the month and year the photograph was taken and say exactly what the photograph is of, and in what direction it is taken. Photographs are kept in the file with the other material, and ideally two prints are required, as one set must go to the central file. Good quality photocopies or laser prints are acceptable as alternatives to a print. If the photographs are held elsewhere, e.g. by the site recorder or an institution, information on where they are held and a reference number should be provided.

PLANS AND DIAGRAMS

Various types of data are best recorded as plans or diagrams or as a supplement to written descriptions. Examples are:

- Location maps.
- Site plans.
- Sketch site plans.
- Profiles.
- Stratigraphic sections.

Site plans are often the best way of conveying detailed information and, as already indicated, an accurate plan of the archaeological features of a site should be regarded as an essential component of any detailed record of that site. In the absence of a detailed plan, however, a sketch plan is still valuable. Sketch plans should be roughly accurate and should illustrate particular points. Some details of the setting of the site, particularly the topography, should be included on all plans to provide context. All plans should include essential information such as site number, site type, grid reference, date of fieldwork, and person responsible for fieldwork and drawing the plan.

The following points should be noted:

- Symbols used should be clearly explained and those already in common use (e.g. Prickett 1980, 1982, 1983) should be used in preference to idiosyncratic forms.
- The scale should always be shown graphically, preferably with the original scale cited as a ratio and shown as, for example, 'mapped at 1:500.' If possible, use a scale of 1:50 or multiple thereof and employ a vertical exaggeration of 1:1.25. This will help standardise the form in which information is collected and improve comparability.
- The method of compilation (tape and compass, plane table and autoreduction alidade, and so on) should be shown and also an indication of probable accuracy of the plan. If the plan is based on a closed traverse then the closure error should be stated.
- True north rather than magnetic north should be shown.
- There should be adequate references to the plan or diagram in the written description.

SENSITIVE SITES

There may be sites in existence which the recorder, for various reasons such as local Maori feeling, does not wish to make widely known. This is a very useful safeguard, but sites will only be placed in this category if there are valid reasons for doing so (see Chapter 9).

SAMPLE SITE RECORD FORM

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD FORM

NZMS260 map number
NZMS260 map name
NZMS260 map edition

NZAA METRIC SITE NUMBER
DATE VISITED
SITE TYPE
SITE NAME: MAORI
OTHER

Grid Reference **Easting** |-|-|-| **Northing** |-|-|-|

1. Aids to relocation of site ***(attach a sketch map)***

2. State of site and possible future damage

3. Description of site ***(Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here)***

4. Owner
Address

Tenant/Manager
Address

5. Nature of information ***(hearsay, brief or extended visit, etc.)***

Photographs ***(reference numbers and where they are held)***

Aerial photographs ***(reference numbers and clarity of site)***

6. Reported by
Address

Filekeeper
Date

7. Department of Conservation *(for office use)*

|_|_|_| Type of site
|_|_|_| Land classification

|_|_|_| Condition/threat
|_|_|_| Local body

CHAPTER 9. ORGANISATION OF THE SITE RECORDING SCHEME

This chapter is based on the written agreement between the New Zealand Archaeological Association, the Department of Conservation and the New Zealand Historic Places Trust. It describes the organisation and operation of the New Zealand Archaeological Site Recording Scheme and the roles and responsibilities of each organisation (Smith 1994). This is an edited version with some additional text by way of clarification.

THE DISTRICT FILES AND THE CENTRAL FILE

The Site Recording Scheme comprises a number of district files of site records, along with a duplicate set of all records which are deposited in a central file. For this purpose the whole of New Zealand is divided into mutually exclusive filing districts based on NZMS 260 map boundaries. There are currently nineteen filing districts on the New Zealand mainland and one for the outlying islands (see Appendix 2).

Each district file comprises all the site records for that district and the filing cabinets in which they are stored, along with a set of index maps on which are marked the location and number of each recorded site, and a set of index lists which note the site number, grid reference and site type of the sites marked on each map sheet. Each archaeological site is recorded on a standardised Site Record Form. These forms, and any additional information appended to them, are filed according to the NZMS 260 (or NZMS 1) map sheet on which they are situated. Sites on each map sheet are numbered in order of receipt. Each district file is in the custody of a district filekeeper.

The central file is made up of duplicates of all records in each of the district files. It is managed and maintained by a member of the Association appointed by Council as central filekeeper.

The Association has entered into arrangements with both the New Zealand Historic Places Trust and the Department of Conservation concerning the operation of the Site Recording Scheme (see below), particularly in relation to the central file. Under these arrangements both the Historic Places Trust and the Department of

Conservation endorse the Site Recording Scheme as the national system for recording archaeological site information. The Historic Places Trust also developed a computerised database of archaeological site information extracted from the central file. This Central Index of New Zealand Archaeological Sites (CINZAS) is now managed by the Science and Research Unit of the Department of Conservation.

ADMINISTRATION OF THE SITE RECORDING SCHEME

The records produced and incorporated into the Site Recording Scheme are the property of the New Zealand Archaeological Association. The Central Index of New Zealand Archaeological Sites (CINZAS) is the property of the Department of Conservation.

All aspects of the Site Recording Scheme are under the ultimate direction of the New Zealand Archaeological Association Council, which administers the scheme in the light of its objectives outlined above and with due regard to its use as the national system for recording archaeological site information. The routine operation of the scheme is overseen by one member of the Council who is appointed as site recording co-ordinator. Matters which the Association Council administer include:

1. The scope and format of information to be requested for standard site records.
2. The physical arrangement of site records within files.
3. The fixing of filing district boundaries.
4. The location of files.
5. The appointment of filekeepers.
6. The procedures for communication between district filekeepers and the central filekeeper.
7. The procedures for access to the files.
8. The setting of fees for access to the files.
9. Such other matters as the Association Council may from time to time determine.

There are arrangements with other organisations integral to the operation of the Site Recording Scheme. The Association Council has an obligation to respect these in its administration of the scheme. Where administrative matters concern other institutions involved in routine operation and obligations in relation to the Site Recording Scheme the Council's decisions will be made after appropriate consultation.

The site recording co-ordinator

The member of the Association Council with special responsibility for administration of the Site Recording Scheme is the site recording co-ordinator. It is the

responsibility of the site recording co-ordinator to direct and manage the Site Recording Scheme and to be responsible for its day to day administration under the supervision of the Council. To this end, it is the responsibility of the site recording co-ordinator to:

1. Oversee standard procedures for the routine operation of the scheme.
2. Report to the Association Council on the progress of the scheme and advise on matters requiring action.
3. Liaise with district filekeepers and represent their interests to the Association Council.
4. Liaise with the central filekeeper to ensure that the central file is maintained and used in a manner consistent with the objectives of the scheme and the interests of the Association.
5. Liaise with the Department of Conservation on matters to do with the Site Recording Scheme and convey to the Science and Research Unit decisions made by the Council with respect to the Site Recording Scheme, and bring to the Council issues and concerns passed on by the Department of Conservation.
6. Liaise with the Historic Places Trust on matters to do with the Site Recording Scheme and convey to the Trust decisions made by the Council with respect to the Site Recording Scheme, and bring to the Council issues and concerns passed on by the Trust.
7. Make decisions and appointments as delegated by Council.
8. Keep a record of decisions made and actions taken in relation to the Site Recording Scheme.
9. Keep a record of all correspondence with filekeepers and other institutions involved with the Site Recording Scheme.

District filekeepers

District filekeepers are financial members of the Association and are appointed by the Council. It is the responsibility of each district filekeeper to manage and maintain their file in the manner set out in this document and as revised or instructed in greater detail by the site recording co-ordinator.

Filekeepers may use any suitable person as an assistant for the purpose of keeping the file.

It is the specific responsibility of the district filekeepers to:

1. Keep the file up to date and in good order.
2. Process, check and assign site numbers to new records submitted for their filing district.
3. Decide on the rejection of unsatisfactory material.

4. Forward duplicates of new records to the central filekeeper.
5. Control access to their district file records.
6. Assist with legitimate requests for information from the file.
7. Maintain and manage the file in accordance with the principles and procedures set out by the Association Council.

Central filekeeper

The central filekeeper is appointed by the Association Council. The central filekeeper has special responsibility for the management and maintenance of the central file. It is the responsibility of the central filekeeper to:

1. Keep the central file up to date and in good order.
2. Control access to the central file records.
3. Liaise with district filekeepers on matters of mutual interest.
4. Liaise with the site recording co-ordinator on matters of principle and procedure.
5. Maintain and manage the central file in accordance with the principles and procedures set out by the Association Council.

Under the present arrangement between the Association and the Department of Conservation, the role of central filekeeper is carried out by a member of the Association who is an archaeologist employed by the Science and Research Unit of the Department.

COMPLETING AND SUBMITTING SITE RECORDS

Sites are recorded on Site Record Forms, with additional information, maps etc. placed on Site Description Forms. Site Record Forms or a word-processing template may be obtained from the central filekeeper or district filekeepers. One site record form should be completed for each archaeological site recorded. A full explanation of the information required in each section of the form is set out in Chapter 9 of this monograph.

Checking of site records

On the receipt of a new site record the district filekeeper examines it for internal consistency, credibility and acceptability, then checks the grid reference on the appropriate map and compares the location with that described in section 1 of the site record form. Minor corrections that are obviously necessary may be made by the district filekeeper (any changes made should be initialled), but other amendments or major problems are referred back to the site recorder.

Acceptable records with apparently correct grid references may be included in the Site Record File. Grid reference and site type are checked against the index list and index map of sites recorded. In cases of apparent duplication new records are checked against existing ones. If both apply to the same already numbered site, that number is placed on the new forms, the top copy of which may be placed in the district file with the old ones.

Allocation of site numbers

When a new site record is acceptable and does not refer to a site that has already been recorded, it is assigned the next consecutive site number for the relevant map sheet. Each copy of the new record is marked with the assigned site number, signed and dated by the district filekeeper. The index list and index map are updated accordingly.

If the sequence of site numbers becomes interrupted for any reason, such as a record being cancelled, such unused or pre-used numbers should be re-assigned as soon as possible.

Site numbers should be allocated by district filekeepers only after receiving and checking of site records since issuing blocks of site numbers to site recorders can lead to site record duplication, gaps in site number sequences, and the presence of inappropriate records in the files. If numbers are to be provisionally allocated, the site recorder should first provide the district filekeeper with a list of site types and grid references for the proposed records.

Addition of records to files

Once a new site record has been marked with the assigned site number the top copy is placed in the district file, and the second copy is forwarded to the central filekeeper for inclusion within the central file.

Acknowledgement of receipt of acceptable records is sent to the site recorder, together with a list of site numbers assigned to those records.

SENSITIVE FILES

The Site Recording Scheme is founded on the belief that the interests of archaeological research, site protection and site management are best served by open access to information about archaeological sites. Nonetheless, it is acknowledged that there may be some situations in which restricted access to this information may be warranted.

Filekeepers may create sensitive files (termed secret sites in Daniels 1970, 1979) if this is requested by the site recorder and there is a valid reason to do so. When considering this classification the filekeeper shall have regard to:

- The nature of the site and whether this renders it vulnerable to interference.
- The location of the site, the management of the land where it is located, and the prevalence of fossicking in the region.
- Local Maori concerns about the protection of the site.

The category should, however, be used sparingly.

Sensitive files must be stored in such a way that they are not seen by persons making routine use of the file. They may be consulted by the original site recorder, the current district filekeeper, the central filekeeper and site recording co-ordinator. Access to sensitive files by all others is at the discretion of the district filekeeper, who may consult the recorder if appropriate. The central filekeeper also keeps a copy of sensitive files, stored in such a way that they are not seen by people making routine use of the central file. Access to these files is at the discretion of the central filekeeper.

The Association recognises its obligation to protect these records from illegitimate use, and may make alternative arrangements for the custody of sensitive files as the circumstances warrant. Sensitive files may be reclassified as ordinary files by the joint decision of the site recording co-ordinator and the central filekeeper, who may consult the district filekeeper and recorder if appropriate.

RELATIONSHIPS WITH OTHER ORGANISATIONS

Institutions housing district files

Many of the district files are housed in public institutions such as museums or government department offices. In most of these cases the institution housing the file is also the place of work of the district filekeeper. This situation is of benefit to the Association in that it provides a safe, secure and accessible location for each file. It is also of benefit to the institution concerned in that it provides the filekeeper with ready access to information in the files which is often of use in their day to day employment.

The Association acknowledges the valuable role that these institutions play in the Site Recording Scheme, and will consult with them about all relevant matters concerning the files in their care. All decisions concerning the files are, however, made by the Council.

New Zealand Historic Places Trust

The New Zealand Historic Places Trust has been closely associated with the Site Recording Scheme since its inception, and has contributed both financially and in other ways to the management and growth of the scheme. This relationship developed further when the Trust was given statutory responsibilities for the protection of archaeological sites under the Historic Places Amendment Act (1975). To assist the Trust in meeting these responsibilities the Association made available to it information in the central file of the Site Recording Scheme and the Historic Places Trust endorsed the Site Recording Scheme as the national system for recording archaeological site information.

The Trust undertook to manage and maintain the central file on behalf of the Association, and to assist with filekeeping expenses. The Association continued to own and administer the Site Recording Scheme and provide the network of voluntary district filekeepers, and in addition permitted the Trust to extract information from the central file to develop its own computerised database—now known as CINZAS, see below. The latter did not duplicate all information in the Site Recording Scheme but rather provided an index to the more complete data held in the site files. It did not include records of sensitive sites. The Trust also undertook to develop and maintain its information systems in a manner consistent with the Site Recording Scheme.

Modification to this relationship came about with government reorganisation in 1987 which shifted the Historic Places Trust archaeologists to the newly formed Department of Conservation. While the Trust continues to have statutory responsibilities for the protection of archaeological sites it no longer maintains the central file or CINZAS, and information and advice on recorded archaeological sites is provided by the Science and Research Unit of the Department of Conservation.

The Association acknowledges the valuable role played by the Historic Places Trust in the Site Recording Scheme and that it has significant interests in the Site Recording Scheme. The Association also:

- Acknowledges its obligation to permit New Zealand Historic Places Trust access to information in the Site Recording Scheme for the purposes of fulfilling its statutory responsibilities for the protection of archaeological sites.
- Will consult with the Historic Places Trust on matters relevant to the Site Recording Scheme.

Department of Conservation

In 1987 the Association agreed to transfer to the Department of Conservation the same arrangements that had been in operation with the New Zealand Historic Places

Trust, and that these would be implemented by the Science and Research Unit of the Department who would in turn service the Trust's needs for information from the Site Recording Scheme.

Through the Science and Research Unit the Department of Conservation:

1. Manages and maintains the central file on behalf of the New Zealand Archaeological Association.
2. Assists with district filekeeping operations.
3. May use information in the central file to fulfil its statutory responsibilities.
4. May store duplicates of central file records on some other media.
5. May extract information from the central file to maintain its Central Index of New Zealand Archaeological Sites (CINZAS).
6. Will consult with the Association on relevant matters concerning the operation, development and application of CINZAS and procedures for the release of information from this database.
7. May at any time make suggestions or comments on any aspect of the Site Recording Scheme to the Association Council.

The Association acknowledges the valuable role played by the Department of Conservation in the Site Recording Scheme and that it has significant interests in the Site Recording Scheme. The Association also:

1. Acknowledges its obligation to permit Department of Conservation access to information in the Site Recording Scheme to fulfil its statutory responsibilities.
2. Acknowledges that CINZAS is owned and administered by the Department of Conservation.
3. Will consult with the Department on relevant matters concerning the Site Recording Scheme.
4. May at any time make suggestions or comments on any aspect of CINZAS to the Department.

ACCESS TO INFORMATION IN THE SITE RECORDING SCHEME

Principles

The basic principle is open access to information about archaeological sites.

The Site Recording Scheme files are a unique and valuable resource. To ensure the security, integrity and quality of the original records, physical access to the Site Recording Scheme files must be carefully controlled.

Some of the information in the files was provided on the understanding that it would not be made available to people making routine use of the files, and the Association has a responsibility to ensure that inappropriate use does not take place. Such records, however, make up a very small percentage of the holdings.

The Site Recording Scheme is the national system for recording archaeological site information, and new information is continually added to it. The release of information from the scheme to other databases must be carefully managed to guard against the proliferation of outdated databases of archaeological site information.

The Association has entered into agreements with the Historic Places Trust and the Department of Conservation allowing them access to information in the Site Recording Scheme to fulfil their statutory obligations.

Access to the Site Recording Scheme files

Access to district files is controlled by the district filekeepers, who will normally supervise any inspection of the files. They shall give access to the files at any reasonable time to the site recording co-ordinator, and any person given authority by the Association Council to consult the file for the purposes of quality control. They may grant access to the files at their own discretion and convenience to:

- Financial members of the Association.
- Students of archaeology and related subjects.
- Officers of government departments, local and statutory bodies.
- Any other person or body having a legitimate interest.

It is Association policy that all replies to requests for information are accompanied by a standard sheet detailing the limitations of the information and carrying a disclaimer stating that while reasonable care has been taken in compiling the information, the Department of Conservation and New Zealand Archaeological Association make no warranty or representation, express or implied, with regard to the accuracy, completeness, or utility of the data. Officers of the Association may pass on information held in the Site Recording Scheme but may not give specific advice in resource management cases.

Access to the central file is controlled by the central filekeeper who will normally supervise any inspection of the file. The central filekeeper shall give access to the files at any reasonable time to the site recording co-ordinator, and any person given authority by the Council to consult the file for the purposes of quality control. The central filekeeper may grant access to others on the same discretionary basis as that outlined above.

Where access to files is denied, the applicant must be informed that they may appeal to the Council, and the filekeeper concerned must report the refusal to the site recording co-ordinator. The Council may reverse the filekeeper's decision to refuse access.

Requests for information from files

District filekeepers will usually deal promptly with requests for information from the Site Recording Scheme where these are:

- Requests for information by the Historic Places Trust or Department of Conservation to meet their statutory obligations.
- Small requests from financial members of the Association.
- Small requests for the purposes of archaeological research, site protection and site management.
- Superficial enquiries.

Large requests, particularly where these involve the filekeeper in a lengthy file search may incur a Search Fee. These fees are set by the Association's Council and revised periodically.

The Site Recording Scheme files are the property of the Association and may be copied only with prior approval. Filekeepers may at their discretion allow copying of Site Record Forms for the purposes of archaeological research, site protection and site management. Requests for copies of large numbers of records may be referred to the Site Recording Co-ordinator for approval. Costs incurred in making copies may be passed on.

The Site Recording Scheme and electronic databases

Summaries or indexes of information about archaeological sites are a valuable aid to archaeological research, site protection and site management, particularly when they are in an electronic form. The Site Recording Scheme is, however, an ongoing programme with new records added continually, as well as additional information being appended to existing records. Unless updated frequently, listings of sites recorded in the scheme become incomplete within a very short time. For this reason databases of information extracted from the Site Recording Scheme may be made only with the prior approval of the Association. Where this approval is given arrangements will normally be set in place to ensure frequent updating of the database, and to restrict the provision of copies of all or part of the database to third parties.

The Association has an agreement with the Department of Conservation allowing indexing of a specified subset of information from Site Record Forms for inclusion within their Central Index of New Zealand Archaeological Sites. Information about sensitive sites is not incorporated in CINZAS.

The information held in the Site Recording Scheme files has been recorded by archaeologists for the purposes of archaeological research and site protection. Proper interpretation of this information is possible only by people with thorough training and experience in archaeology. It is the policy of the Association that whenever information from the files is used it should be interpreted by people with appropriate archaeological expertise.

CENTRAL INDEX OF NEW ZEALAND ARCHAEOLOGICAL SITES (CINZAS)

The Central Index of New Zealand Archaeological Sites (CINZAS) was conceived in the mid 1970s and has been operating more or less in its present form since 1982. It is, as its name suggests, primarily an index to the paper records. The database, which uses ORACLE software, can generate lists of sites according to standard database interrogative procedures. Printed reports are available to anyone on request and have been widely used for site protection and research purposes for well over a decade and a half. Electronic copies of the data are also provided to territorial authorities, iwi, researchers and others for use with their computer systems. Distributions can be plotted by linking the database to a plotter or a GIS package which enhances the analysis of data and the ability to tailor data for the user.

CINZAS fields are NZMS 260 map sheet and site number, metric eastings and northings, NZMS 1 map sheet and site number, NZMS 1 eastings and northings, site description, site type code, land ownership code, state of site and possible damage code, local body code, and year of last recorded visit.

CINZAS is used to generate lists of sites that match particular descriptions. The information is only as reliable as that contained in the NZAA Site Recording Scheme, from which it is derived. The coded information on site type held on the database may understate the variety of features present as only the one most appropriate code can be assigned. These limitations need to be considered when requesting information from CINZAS.

APPENDIX 1. CENTRAL INDEX OF NEW ZEALAND ARCHAEOLOGICAL SITES: SITE TYPE CODES AND CATEGORIES

PREHISTORIC/MAORI SITES

General categories

- AD pa
- AG historical period settlement or marae
- AJ occupation / habitation (non-specific)
- BA unclassified site
- BK traditional site

Art categories

- AB cave / shelter with rock art
- AK rock drawing
- BZ petroglyph / rock carving
- CA dendroglyph

Artefact categories

- AE artefact(s) / findspot (wooden items)
- AF artefact(s) / findspot
- AQ findspot in rock shelter
- CX burial(s) with artefacts
- DB findspot (item(s) in swamp)

Burial categories

- AT burial(s) / urupa
- CW human remains
- CX burial(s) with artefacts
- CY burial or human remains in cave/ shelter
- EM burial mound

Cave categories

- AB cave / shelter with rock art
- AQ findspot in rock shelter
- AW habitation cave or shelter without art
- CY burial or human remains in cave/ shelter

Defensive categories

- AD pa
- BJ gun pits / gun trenches
- CK bank
- CL ditch
- DC gunfighter pa

Industrial categories

- AN quarry
- AR canoe building site
- AX flaking area
- AZ stone source
- BR grindstone area
- GM midden and flaking area

Midden categories

- AA midden(s)
- AV oven(s) / midden(s)
- AY midden(s), oven(s), and terrace(s)
- CC pa with midden(s)
- CE midden(s) with historical evidence
- CG midden(s), oven(s) and pit(s)
- CH midden(s) and pit(s)

CI midden or oven(s) or both with moa bone
EI pa with pits and midden
EJ midden(s), pit(s) and terrace(s)
EK terrace(s) and midden(s)
GM midden and flaking area

Oven categories

AC oven(s) / hangi stones
AI umu ti
AV oven(s) / midden(s)
AY midden(s), oven(s), and terrace(s)
CB pa with fireplace(s) / oven(s)
CG midden(s), oven(s) and pit(s)
CI midden or oven(s) or both with moa bone
CS pit(s) and oven(s)

Pa categories

AD pa
CB pa with fireplace(s) / oven(s)
CC pa with midden(s)
CD pa with pits
DC gunfighter pa
EI pa with pits and midden

Pit categories

AM pit(s)
AO pit(s) / terrace(s) (or house site(s))
BI cave-type rua pit
CD pa with pits
CF pit(s), raised rim
CG midden(s), oven(s) and pit(s)
CH midden(s) and pit(s)
CO pit(s), rectangular
CP pit(s), circular (rua)
CS pit(s) and oven(s)
EI pa with pits and midden
EJ midden(s), pit(s) and terrace(s)

Terrace categories

AO pit(s) / terrace(s) (or house site(s))
AP terrace(s)
AY midden(s), oven(s), and terrace(s)
BQ platform or platform / terraces
CU terrace(s) with karaka
CV terrace(s), stone faced
EJ midden(s), pit(s) and terrace(s)
EK terrace(s) and midden(s)
GO house floor(s)

Vegetation/cultivation categories

AH botanical evidence
BF karaka tree(s)
BG stone walls, rows or alignments
BH made soil / garden soil
BL field boundaries (drains, etc.)
BM tree with bark removed
BN taro
BT stone heaps
CN stone structure(s)
CR traditional food collecting area
CU terrace(s) with karaka
CZ borrow pit(s)
EN historical period cultivations

Miscellaneous prehistoric categories

AS causeway
BO eel weir or channel(s)
BP fish trap
BQ platform or platform / terrace(s)
CJ stone lined fireplace(s)
CM mound
CN stone structure(s)
CR traditional food collecting area
DA track (prehistoric)
EL storehouse site
GW raised shell area

HISTORICAL SITES

General categories

- BD building foundation
- ER settlement / town / buildings
- FC findspot / artefact(s) (historical item)
- GH prehistoric and historic period site

Agricultural categories (see also fences and walls)

- DT pump / well / spring
- DU farm building
- DX stock yard / enclosure
- ES dwelling / house / homestead / hut
- ET potato clamp
- EV sheep dip
- EX orchard and/or vegetable garden
- FA forge / smelter / foundry
- FD woolshed
- FE irrigation works
- GQ ploughing / cultivation

Defensive categories

- BJ gun pits / gun trenches
- DD redoubt
- DZ military camp
- EA blockhouse
- EB stockade
- EC battle site
- ED gun emplacement
- FH defence system (other)

Domestic categories

- CE midden(s) with historical evidence
- DU farm building
- DV fireplace / hearth
- ER settlement / town
- ES dwelling / house / homestead / hut
- FA forge / smelter
- FI chimney
- FJ cob cottage
- FK stone cottage
- FL cave or rock shelter (historical)
- FM camp site
- GP rubbish dump
- GR terrace (historical)

Fences and walls

- BU stone wall(s) / revetment
- BV sod wall(s)
- BW ditch and bank fence
- DX stock yard / enclosure
- DY fence / fenceline
- EW historic tree(s)
- FN cairn / monument

Forestry categories

- BB railway / tramway
- DG track / road / road tunnel
- DL timber mill
- DS kauri timber dam
- EO saw pit
- EP logging skid

Industrial categories

- AL gold mine
- BC lime kiln
- BE mine (not gold or coal)
- CT goldfield features / tailings
- DJ boat / ship yard
- DK tallow plant
- DL timber mill
- DM goldmining machinery or plant
- DN pottery
- DO brickworks
- DP flourmill
- DQ brewery / distillery
- DR dairy factory / creamery
- EF whaling station
- EG sealers' camp
- EQ flax mill

FA forge / smelter / foundry
FB gold dredge
FF gum digging
FG quarry
FI chimney
GI shaft / drive / adit / portal / stope
GJ coal mine
GK tannery
GL bakery
GN prospecting trenches or pits
GR terrace (historical)
GS industrial site

Transport categories

BB railway / tramway
DE shipwreck
DF wharf / jetty / landing
DG track / road / road tunnel
DH bridge / ferry / ford
DI lighthouse
FO signal station / lookout
GA footpath
GB railway tunnel

Water control

DS kauri timber dam
DT pump / well / spring
DW drainage system
EU water race / water pipeline / aqueduct
FE irrigation works
GC dam / reservoir
GD stone or stone-lined dam
GE concrete or brick dam
GF water diversion tunnel

Religious categories

EE mission station
EY cemetery / burial ground
FN cairn / monument
GG church

Administrative and commercial categories

EH trading post / station
FP general store / shop
FQ courthouse / gaol
FR school
FS hospital
FT library
FU town hall
FV fire station
FW police station
FX post office / bank
FY hotel / tavern / accommodation house
FZ stable / hitching post
GT commercial building
GU administration building
GV storehouse / warehouse

Miscellaneous categories

BY miscellaneous historical site
EW historic tree(s)
FN cairn / monument
GR terrace (historical)

APPENDIX 2. FILING AREAS AND FILEKEEPERS

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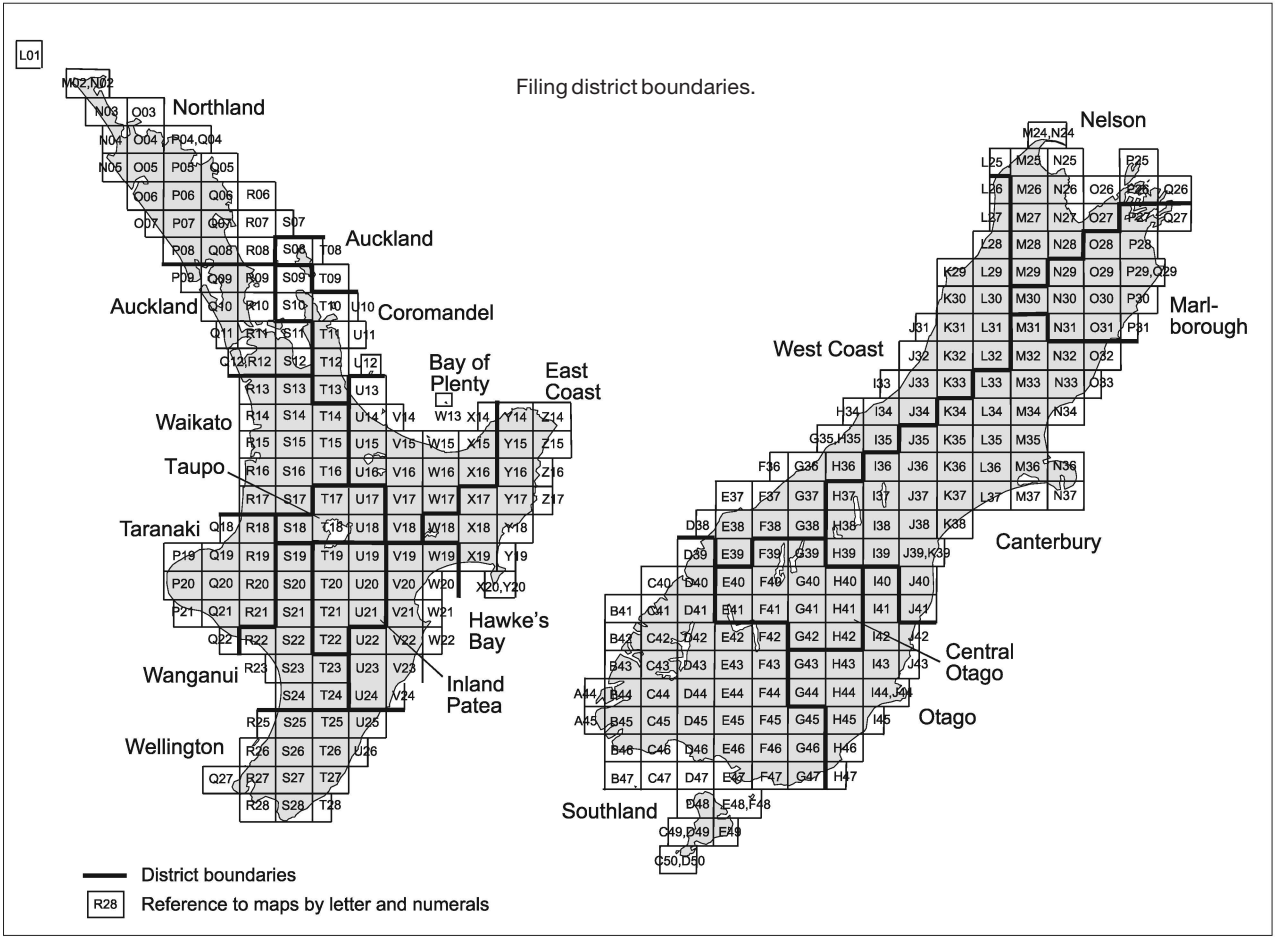
See next page for Filing District boundaries >>


Filing district boundaries.
L01
Northland
Auckland
Auckland
Coromandel
Bay of Plenty
East Coast
Waikato
Taupo
Taranaki
Hawke's Bay
Wanganui
Inland Patea
Wellington
Nelson
Marl-borough
West Coast
Canterbury
Central Otago
Otago
Southland
District boundaries
R28
Reference to maps by letter and numerals

APPENDIX 3. CURRENT LEGISLATION

Two pieces of legislation are particularly important for the way they affect the practice of site recording in New Zealand. At the time of writing both are under review and may be replaced. This appendix briefly refers to the main provisions as they affect the practice of site recording.

Antiquities Act 1975

Any artefact found anywhere in New Zealand after 1976 is deemed to be prima facie the property of the Crown.

An artefact is any chattel, carving, object, or thing which relates to the history, art, culture, traditions, or economy of the Maori or other pre-European inhabitants and which was manufactured, modified or used by any such inhabitant in New Zealand prior to 1902.

Historic Places Act 1993

It is not lawful for any person to modify an archaeological site for any purpose without an authority from the New Zealand Historic Places Trust.

An archaeological site is defined as any place in New Zealand associated with human activity that occurred before 1900 and that is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.

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