Appendix D

MCH Correspondence with Tocomwall

McCARDLE CULTURAL HERITAGE

21 May 2015

Thomas Watt
Planning Officer
Resource Assessments
Department of Planning & Environment
(by email: thomas.watt@planning.nsw.gov.au)

MCH Reference: Response to OEH and DoPE

Dear Thomas,

RE: Dolwendee Quarry Aboriginal Heritage Impact Assessment (AHIA), Issues raised by Tocomwall

MCH has completed an Aboriginal Heritage Impact Assessment for the proposed Dolwendee Quarry on behalf of UHH. A number of issues have been raised by one of the registered Aboriginal stakeholders (Tocomwall) to MCH, UHH and OEH. MCH and UHH have attempted to resolve the issues but to no avail. Tocomwall wrote to OEH expressing its concerns and OEH forwarded the letter to us for our information. This letter addresses the issues raised Tocomwall.

Tocomwall, a Registered Aboriginal Party, (the organisation that acts on behalf of the Plains Clans of the Wonnarua People (PCWP) and a Registered Native Title Claimant for the Hunter Valley Region) has raised three key issues regarding the above named project as follows;

1. Serious failures by MCH during the life-cycle of the project to date to engage in a respectful and meaningful manner in relation to the OEH *Aboriginal cultural heritage consultation requirements for proponents 2010* (Consultation);
2. Inadequate reporting on the potential and actual archaeology of the study area through an inadequate consideration of geomorphology and landscape (Archaeology); and
3. Failure to provide additional information as requested by Tocomwall on the draft AHIP – a fact exasperated by the problems of points 1 and 2 above (Additional Information).

We provide the following information to address these issues for your record.

1) MCH and the proponent undertook consultation as per the relevant guidelines, i.e. the

Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010; the "Consultation Guidelines"). Evidence of all correspondence is provided in Chapter 2 and Annex A of the Draft Dolwendee Quarry Aboriginal Heritage Impact Assessment which is provided as Attachment 1. Tocomwall's issues with the consultation appear to be with the actual process outlined in the Consultation Guidelines. Accusations of exploitation of the process by MCH against Tocomwall are untrue and unfounded.

Issues of paid participation are separate from consultation and not relevant to the consultation process. As to the concerns raised about workplace insurances, with respect this is a nonsense. Invitees coming onto a property are covered by the Public Liability Insurance of the owner/occupier. If Tocomwall's current insurance cover is not regarded as satisfactory to it then again with respect it may have to seek other insurance. Tocomwall cannot expect to hold to ransom applications because they were not selected as a paid participant, which appears to be the real issue here.

2) Chapter 3 of Attachment 1 addresses the overall environmental background with additional anticipated site specific information (relating to the specific study area). The report also provides detailed archaeological background and predictive modeling/site patterning (Chapter 5). This is then clarified in Chapter 6 (Results) whereby the disturbances and effects of those disturbances are presented along with the soil horizon descriptions, archaeological results and the likelihood of there being in situ deposits. The results are derived from the combined information of background environmental and archaeological contexts, on site and known site patterning of the local area along with the actual sites identified.

   In order to undertake subsurface investigations, there has to be scientific justification. The DECCW (now OEH) *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010; the "Code of Practice")) clearly states in Section 3.1 that:

   "Archaeological test excavation will be necessary when (regardless of whether or not there are objects present on the ground surface) it can be demonstrated through Requirements 1, 2, 3, 4, and 5 that sub-surface Aboriginal objects with potential conservation value have a high probability of being present in an area, and the area cannot be substantially avoided by the proposed activity."

   The Code of Practice is provided in Attachment 2. There is no such justification in this case. As discussed in Attachment 1 (Chapters, 3, 5, 6), the landscape is disturbed, erosion is significant, distance from reliable water and associated resources indicates the location was unsuitable for occupation/camping and this is supported not only by the results of the assessment but also by site patterning throughout both the local and regional area. Locations, such as the study area, were unsuitable for camping being too distant from reliable water (well over 100 metres) and associated resources; and were typically used as travel routes and/or hunting and/or gathering activities. The survey was undertaken by two

qualified archaeologists and three experienced site officers (representatives from the Registered Aboriginal Stakeholder Groups) who all agreed the location was not suitable for past occupation/camping and therefore no evidence of occupation/camping, was expected. This combined with the impacts from both human and natural activities supported the fact that there is no justification for subsurface investigations due to the impacts from past land uses, erosion, archaeological site patterning and distance from reliable water and associated resources.

The suggestion by Tocomwall of undertaking subsurface investigations through bore hole sampling is inappropriate under the current legislative requirements and the Code of Practice. In Australia, scientific subsurface investigations are undertaken to test a specific location that has demonstrated potential for in situ cultural deposits based on the environmental and archaeological background research, land use impacts, predictive modeling, site patterning and the survey results. Undertaking test excavation for obtaining geomorphological information is not standard practice and is typically only undertaken during an archaeological test excavation process if necessary (though rarely necessary in the Hunter Valley where duplex soils are present, as in the study area).

We have followed the prescribed procedure carefully and in continuous consultation with OEH because of past negative experiences with Tocomwall and their continuous threats and efforts of intimidation.

There is absolutely no justification for the investigations they request based on the intensive study carried out by us.

3) The additional information Tocomwall is requesting is commercial in confidence material and will not be released at this time. The claim by Tocomwall that an archaeological assessment cannot be completed without a geomorphological assessment and/or borehole logs is incorrect as the majority of assessments are undertaken successfully without such information. The geomorphology of the study area is simple and easily identified on site.

   Again based on the careful and considered investigations to date the information sought is not warranted or justified for this site. If Tocomwall had participated as invited to so, it would have been obvious to them.

   It is noted also that the reference to an AHIP is spurious. The proposed Dolwendee Quarry is following a State Significant Development (SSD) approval pathway and as such, an AHIP is not required.

We trust this letter and attached report addresses the issues raised. Please contact us if you require any further information.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

CC: Colin Phillips, Department of Planning and Environment
Nicole Davis, Office of Environment and Heritage

Attachment 1

Aboriginal Heritage Impact Assessment

Attachment 2

Aboriginal Heritage Impact Assessment

NSW GOVERNMENT | Environment, Climate Change & Water

Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales

Part 6 *National Parks and Wildlife Act 1974*

Cover:
View of Mutawintji National Park from a rock art site (Patrick Laughton/DECCW)

Published by:
Department of Environment, Climate Change and Water NSW
59–61 Goulburn Street
PO Box A290
Sydney South 1232

Report pollution and environmental incidents
Environment Line: 131 555 (NSW only) or info@environment.nsw.gov.au
See also www.environment.nsw.gov.au

Phone: (02) 9995 5000 (switchboard)
Phone: 131 555 (environment information and publications requests)
Phone: 1300 361 967 (national parks, climate change and energy efficiency information and publications requests)
Fax: (02) 9995 5999
TTY: (02) 9211 4723
Email: info@environment.nsw.gov.au
Website: www.environment.nsw.gov.au

ISBN 978 1 74232 936 9
DECCW 2010/783
24 September 2010

Printed on recycled paper

Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales

Part 6 *National Parks and Wildlife Act 1974*

Contents

1 Introduction

The Director General of the Department of Environment, Climate Change and Water NSW (DECCW) is responsible for protecting and conserving Aboriginal objects and declared Aboriginal places in NSW.

Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. Harm is defined to mean destroying, defacing, damaging or moving an object from the land. There are a number of defences and exemptions to the offence of harming an Aboriginal object or place.

One of the defences is that the harm was carried out under an Aboriginal Heritage Impact Permit (AHIP). Information about AHIPs can be found at: www.environment.nsw.gov.au/licences/achregulation.htm.

This Code of Practice has been adopted by clause 3A of the National Parks and Wildlife Regulation 2009 (NPW Regulation).

1.1 Purpose of this Code of Practice

The purpose of this Code of Practice is to:

1 establish the requirements for undertaking test excavation as a part of archaeological investigation without an AHIP

   If you comply with these requirements and you harm an Aboriginal object when undertaking test excavations, your actions will be excluded from the definition of harm and as such you will not be committing an offence of harm to an Aboriginal object.

2 establish the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made.

   Under the NPW Act, the Director General can require that certain information accompany an application for an AHIP. This Code explains what that information is in relation to archaeological investigations.

DECCW recommends that the requirements of this Code also be followed where a proponent may be uncertain about whether or not their proposed activity may have the potential to harm Aboriginal objects or declared Aboriginal places and the proponent is required to:

- undertake further investigation to understand and establish the potential harm their proposal may have on Aboriginal cultural heritage, and
- the further investigation involves archaeological assessment.

For guidance on whether or not further investigation is required, refer to the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* available on the DECCW website.

1.2 Objective of archaeological investigation

The objective of any archaeological investigation (where necessary) is to learn about past human societies through the study of material remains and historical, oral and environmental sources. Archaeological investigations locate, identify and study Aboriginal objects, archaeological deposits and potential archaeological deposits, and historical, oral and environmental sources to provide an assessment of the archaeological significance of the objects and the subject area.

In order to fulfil this objective the following steps are taken:

1 Clearly describe the aims of the project. The rationale for the archaeological assessment must be clearly defined through these aims.

2 Present a feasible and appropriate methodology for the archaeological survey and other investigations to ensure that work can be clearly linked to these aims.

3 Present the findings and interpretation of the results within a wider context of archaeological knowledge and Aboriginal history.

4 Ensure that the findings and interpretation of the results support the assessment of the archaeological significance of the subject area.

Where archaeological test excavation cannot be undertaken in accordance with this Code, or where the Aboriginal cultural heritage assessment concludes that the proposed activity will result in harm to Aboriginal objects or declared Aboriginal places and an application for an AHIP will be made, the application must be supported by an Aboriginal Cultural Heritage Assessment Report (clause 80D of the NPW Regulation). If an Archaeological Report is required under this Code then that report should be an appendix to an Aboriginal Cultural Heritage Assessment Report.

1.3 Preconditions to undertaking an archaeological investigation

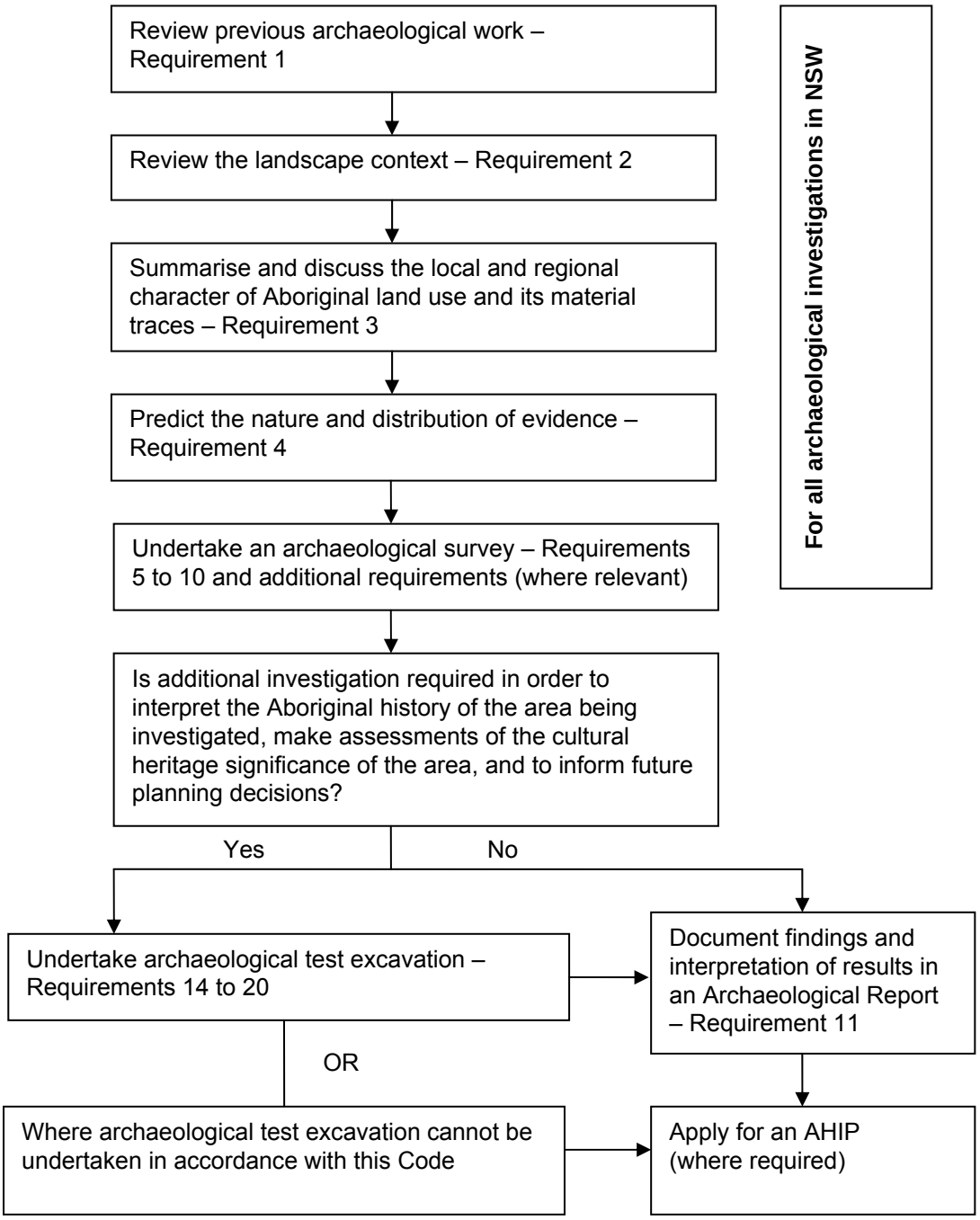
Before undertaking an archaeological investigation you must establish that:

- further investigation is required; for guidance on whether or not further investigation is required you should refer to the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* available on the DECCW website
- your proposed activity requires assessment under Part 4 or Part 5 of the *Environmental Planning and Assessment Act 1979.*

1.4 Application of this Code

This Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act. Where an Aboriginal cultural heritage assessment requires an archaeological investigation to be undertaken, this must be done in accordance with the requirements of this Code. These requirements are summarised in Figure 1 below.

Figure 1: Requirements of the Code



Other requirements

In addition to the requirements of this Code, you may also need to comply with the requirements of other legislation.

1.5 Standard and additional requirements

This Code contains the **standard requirements** (Section 2) that must be met when carrying out an archaeological investigation in NSW. Depending on the investigation required to adequately characterise the proposed development area or the archaeological site type being investigated, **additional requirements** may also apply (Section 3).

Advisory notes

This Code also contains **advisory notes** about some of the steps that may be taken to comply with the standard requirements. The advisory notes are intended as a guide only and may not be appropriate for every situation. Alternative measures may be taken as long as the standard requirements are complied with.

1.6 Minimum qualifications for persons to comply with this Code

When undertaking archaeological investigations in NSW in compliance with this Code, proponents must use the services of people who are skilled and experienced in archaeology and, in particular, the archaeology of Aboriginal people. These skills and experience may be available in-house or sourced from specialist service providers. For the purposes of the Code, an appropriately skilled and experienced person has:

1 a minimum of a bachelor's degree with honours in archaeology or relevant experience in the field of Aboriginal cultural heritage management, and

2 the equivalent of two years full-time experience in Aboriginal archaeological investigation, including involvement in a project of similar scope, and

3 a demonstrated ability to conduct a project of the scope required through inclusion as an attributed author on a report of similar scope.

1.7 Offences under the NPW Act

The NPW Act establishes a number of offences. The following offences and penalties apply to harm to Aboriginal objects.

Offence	Maximum penalty – Individual	Maximum penalty – Corporation
A person must not knowingly harm or desecrate an Aboriginal object	2,500 penalty units ($275,000) or imprisonment for 1 year or both	10,000 penalty units ($1,100,000)
	5,000 penalty units ($550,000) or imprisonment for 2 years or both (in circumstances of aggravation)	

Offence	Maximum penalty – Individual	Maximum penalty – Corporation
A person must not harm an Aboriginal object (strict liability offence)	500 penalty units ($55,000)	2,000 penalty units ($220,000)
	1,000 penalty units ($110,000) (in circumstances of aggravation)	

If a person carries out an archaeological investigation and they do not follow the requirements of this Code, and they harm an Aboriginal object, they would be committing one of the two offences set out above.

If you plan to carry out an archaeological investigation in a declared Aboriginal place you will need to apply for an AHIP.

1.8 Currency of these requirements

This Code is effective from 1 October 2010.

1.9 Amendment of these requirements

This Code may be amended from time to time. An amendment to this Code will require an amendment to the NPW Regulation to refer to the updated version of this Code.

1.10 Definitions

Key terms and phrases used in this Code are defined in Appendix A. If a word is not defined it must be given the meaning it has under the NPW Act or Regulations. If a word remains undefined it has its ordinary meaning.

1.11 Further information

Further information about the Code can be obtained from DECCW Environment Protection and Regulation Group (EPRG) Regional Offices. These locations are provided in Appendix C.

2 General requirements applying to all archaeological investigations

This section of the Code (Section 2) contains a set of requirements that must be followed if an act is to be excluded from the definition of harm.

Depending on the investigation required to adequately characterise the proposed development area or the Aboriginal objects being investigated, additional requirements as set out in Section 3 may also apply.

2.1 Reviewing existing knowledge

The first step is to compile, analyse and synthesise previous archaeological information and relevant contextual information. This process should indicate the nature and range of material traces of Aboriginal land use to be expected within the specific landscape contexts in the subject area. This knowledge provides a framework for interpreting the material traces within the subject area, and for understanding the cumulative impacts to Aboriginal heritage in the subject area.

Requirement 1 – Review previous archaeological work

Purpose: To synthesise available information from previous archaeological and ethnohistorical studies to provide a context and baseline for what is known about Aboriginal cultural heritage in the subject area. This contributes to the assessment of the archaeological significance of the proposed development area.

Requirement 1a – Previous archaeological work

The review of previous archaeological work must:

- be appropriate to the scale of the proposed activity, its anticipated impacts and the size of the subject area
- include an Aboriginal Heritage Information Management System (AHIMS) search (see Requirement 1b)
- synthesise the known archaeology and ethnohistory of the region using relevant published and unpublished sources (such information is available from AHIMS), published material, local knowledge and other sources
- evaluate the results of any previous reports for the subject area in light of current knowledge
- describe the range and nature of Aboriginal sites and features present within and near the subject area, including presentation of the results in tabulated form (at the very least this must summarise the number of sites by type or features present)
- describe existing predictive models that are relevant to the project and subject area, such as models of past Aboriginal land-use strategies and cultural systems together with models of relevant taphonomic processes that highlight the main issues and regional character of the archaeology; depending on the scale of the project and information available this may be simple or complex

- be used to present a map in the Archaeological Report, preferably prepared using a geographic information system (GIS), showing the location of previously recorded sites and, where available, areas of previous surveys. Where there are restrictions placed on data by Aboriginal people, these must be respected and appropriately documented in the Archaeological Report.

This review must be documented in the Archaeological Report as set out in Requirement 11.

Advisory note

The synthesis of information may take the form of an annotated bibliography of relevant sources or statement of relevant sources.

Always clearly describe which are primary and secondary sources.

Requirement 1b – AHIMS searches

AHIMS searches must:

- be contemporaneous with the project
- include an area larger than, and wholly containing, the subject area
- include an area large enough to allow adequate landscape interpretation, and – if available – sites in large enough numbers to allow adequate understanding of the distribution of the sites within the landscape
- include a search for any previous reports relevant to the subject area
- be assessed to determine the robustness of the search, giving consideration to issues that may affect the search results, such as the number, size, intensity and results of previous surveys in the area.

The date of the AHIMS search and AHIMS client service number must be referenced in the Archaeological Report (Requirement 11).

Advisory notes

Refer to the AHIMS webpage for further information.

Some AHIMS searches may already have been conducted at Step 2a of the generic due diligence process described in DECCW's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. Those searches can be used for the purpose of the archaeological investigation.

Other registers that should be searched are:

- NSW State Heritage Inventory
- The Australian Heritage database.

Requirement 2 – Review the landscape context

Purpose: The purpose of reviewing the landscape context is to assist in the determination or prediction of:

- the potential of the landscape, over time, to have accumulated and preserved objects
- the ways Aboriginal people have used the landscape in the past, with reference to the presence of resource areas, surfaces for art, other focal points for activities and settlement, and
- the likely distribution of the material traces of Aboriginal land use based on the above.

The landscape description must:

- describe the landscape history at a scale that allows the subject area to be characterised into meaningful components (or units) for the archaeological investigation
- describe the landforms present within the subject area using standard or generally accepted classifications
- identify the primary modes of geomorphic activity in the subject area: aggraded, aggraded or eroded (stable), or eroded, and determine if objects are likely to be concealed below the ground surface or revealed by erosional processes
- identify the forms of erosion within the archaeologically surveyed area, and where appropriate, subject area as a whole
- describe the soils present and, where available, outline their formation history
- describe the land-use history of the subject area
- describe, and if relevant, map the natural resources and natural features that will have influenced the use of the landscape in the past.

The landscape description must be explicitly referenced in the predictive model (see Requirement 4), with regard to the potential for material traces of past Aboriginal land use to accumulate, be preserved and be observed.

The landscape context must be documented in the Archaeological Report as set out in Requirement 11.

Advisory notes

Rationale

Consideration of the landscape is essential to the definition and interpretation of Aboriginal land use across a landscape. The landscape will provide clues as to those areas of land that may have been more intensively used by Aboriginal people in the past, and also provide the context within which the material remains of past Aboriginal occupation may be preserved and detectable. Landscape description is undertaken during both the background phase and fieldwork phase of any archaeological investigation.

Land-use history

Land-use history refers to the past land use (e.g. agricultural) of the subject area. The nature and frequency of different land-use activities must be quantified to assess their effect on the survival of the material traces of past Aboriginal land use (e.g. a single ploughing event may have much less impact on any buried archaeological evidence than decades of annual ploughing; land clearing will have had some impact on sub-surface deposits, but may remove culturally modified trees entirely).

Landscape description and recording

For an archaeological survey, the landscape divisions need to be manageable and meaningful units, as derived from, for example, Speight (2009: 15–72). It is these units that will provide the basis for:

- describing and assessing survey coverage
- assessing the detectability of material traces of Aboriginal occupation
- assessing archaeological potential
- considering site variability and patterning.

In areas where other types of published geomorphic or land classification systems are available or commonly used (such as the *Soil Landscapes* series), these may be more appropriate, and may be used in conjunction with The National Committee on Soil and Terrain 'Yellow Book' (2009).

Soils

Soils and landscape information will be recorded for each survey unit (see Requirement 5). This information is expected to derive either from field observations, or ideally from a combination of field observation and available soil mapping.

Speight (2009: 52–54) provides advice and examples for the primary modes of geomorphic activity.

Charman and Murphy (2007: 14–40) and McDonald *et al.* (2009: 133–146) discuss the processes and forms of erosion.

Murphy (2007: 2–13) provides advice on soils and their formation history.

In some cases the advice of a soil scientist or geomorphologist may need to be considered where this will aid in interpreting the site, or landscape and site association.

Paleoenvironmental history

Where available, a statement of the paleoenvironmental history of the subject area should be included.

Additional resources

- List of soil landscapes: www.environment.nsw.gov.au/soils/termsdef.htm
- Glossary : www.environment.nsw.gov.au/soils/glossary.htm
- CSIRO Australian Soil Resource Information System: www.asris.csiro.au/index_ie.html

Requirement 3 – Summarise and discuss the local and regional character of Aboriginal land use and its material traces

Purpose: To present a summary and discussion of the information collected in Requirements 1 and 2.

As set out in Requirement 11, the Archaeological Report must contain a section that synthesises the evidence from Requirements 1 and 2 in a discussion that highlights the main issues and regional character of Aboriginal land use and the material traces that it has produced.

Advisory note

Depending on the scale of the project and the amount and detail of information available, the discussion presented to satisfy this requirement may be simple or complex.

Requirement 4 – Predict the nature and distribution of evidence

Purpose: To present a model, or series of testable statements, about the nature and distribution of evidence of Aboriginal land use in the subject area based on the information collected from Requirements 1, 2 and 3.

Advisory note

For the purposes of satisfying this requirement, predictive models may take the form of simple observations relating past experience and available knowledge, or detailed models and considerations of large landscape areas (see Guilfoyle 2006 and references therein).

Requirement 4a – Predictive model

The predictive model must:

- integrate the distribution of known sites, summarised or modelled using the landscape descriptions derived in Requirement 2 (i.e. landscape units interpreted in terms of their archaeological potential)
- characterise the patterning of material traces from known social and behavioural characteristics evidenced in the ethnohistorical review
- consider the distribution of natural resources, and the probable land-use strategies employed by Aboriginal people in the specific landscape context
- consider the spatial and temporal relationships of sites
- identify what sorts of material traces are predicted to be present, and in what densities
- make inferences about past Aboriginal occupation of the landscape based on the evidence collected and presented.

Advisory note

Natural resources include features such as stone artefact raw materials, ecological communities, and the availability of water including relict water features and micro features that only function after flood episodes or wet periods. Sometimes these features may be evidenced by the vegetation present.

Requirement 4b – Predictive model results

The predictive model results must present statements of archaeological potential about areas – defined as the probability of objects being present (material traces of past land use and archaeological sites) – that can be verified using archaeological methodologies.

The areas of potential must be amended accordingly subsequent to further information – such as information gathered as part of fieldwork

The predictive model must be included in the Archaeological Report as set out in Requirement 11.

Advisory notes

In archaeology, predictive modelling refers to a process that considers variables that may influence the location, distribution and density of sites, features or artefacts across the landscape. As well as a review of the results of previous archaeological work and any available ethnographic information (to make judgements about past Aboriginal settlement of the landscape), the variables often included in a predictive model are environmental and topographic variables such as soils, distance from landscape features, slope, landform elements, and cultural resources (Orton 2000: 77).

Regardless of its size, every project that assesses the archaeological significance of an area of land will require predictive modelling of some sort.

The predictive model provides a basis for sampling strategies to be developed for the archaeological survey and, if required, archaeological test excavation.

More often than not, archaeological predictive models are statements about where in the landscape archaeological remains are likely to occur, rather than models in the sense that they can be mathematically tested. For the purposes of this requirement, both predictive statements and mathematically testable models are considered satisfactory.

It is important that the predictive model is credible, and that the predictions are transparent. The decisions and reasoning behind predictions must be presented logically, and the prediction itself should immediately preface the reasoning (e.g. ‘The area is of low potential because …’ or ‘Scarred trees will not be present because …’) or follow the reasoning (e.g. ‘… therefore the area is determined to be of high archaeological potential’ or ‘… for these reasons, stone artefacts are very likely to occur’).

Sometimes certain variables will not be relevant to the model; in these cases this needs to be stated, and the reason why explained.

2.2 Archaeological survey and data collection

The purpose of the archaeological survey is to identify and make up-to-date records of known and identified objects (traces of past Aboriginal land use and Aboriginal archaeological sites) within the subject area. The approach and method chosen for the archaeological survey must use the information obtained from Requirements 1 to 4 to ensure that the type of archaeological survey which is planned can logically be expected to yield the information necessary to meet the archaeological objectives stated, as set out in Section 1.2 of this Code.

The archaeological survey will contribute to the understanding of site characteristics, local and regional Aboriginal history and conservation requirements for the proposed activity.

Requirement 5 – Archaeological survey

Purpose: The purpose of the archaeological survey (sometimes called a field survey) is to record all (or a representative sample of all) the material traces and evidence of Aboriginal land use that are:

- visible at or on the ground surface, or
- exposed in sections or visible as features (e.g. rock shelters, rock art, scar trees)

and to identify those areas where it can be inferred that, although not visible, material traces or evidence of Aboriginal land use have a likelihood of being present under the ground surface (potential archaeological deposits).

Advisory notes

Vehicle traverses

DECCW encourages the use of reconnaissance observations of the subject area prior to implementing a survey strategy. Vehicle traverses are considered to be reconnaissance activities only. They may be used to inform and design a pedestrian survey strategy. If they are to be used in the assessment, vehicle traverses must be recorded and reported separately from pedestrian survey activities, as they will not allow for suitable survey effectiveness calculations.

Definitions

Refer to Appendix A for definitions of *survey units, vehicle traverses,* and *potential archaeological deposits* for the purposes of this Code.

Requirement 5a – Survey sampling strategy

The archaeological survey must not begin until a sampling strategy has been developed. Sampling must:

- include all landforms that will potentially be impacted. Where there is more than one instance of similar or the same landforms that have the potential to be impacted each individual landform must be sampled.

- place a proportional emphasis on those landforms deemed to have archaeological potential, clearly describing and justifying the reasons for their selection (see Requirement 4).

The sampling strategy must:

- describe how sampling relates to the footprint that is proposed to be impacted by the development
- clearly state when a full coverage survey will be undertaken and justify when it is not.

The sampling strategy must be documented in the Archaeological Report as set out in Requirement 11.

Requirement 5b – Survey requirements

The archaeological survey must:

- survey an area, on foot, for the purposes of discovering Aboriginal objects
- be conducted in accordance with the sampling strategy above
- be carried out using accurately defined and named survey units (see Requirement 5c below)
- include representative photographs of survey units and landforms where informative
- record landform and general soil information (see Requirement 2) for each survey unit
- record the land surface and vegetation conditions encountered during the survey, accounting as appropriate for things like vegetation, rock outcrops, coarse fragments, etc.) and how these impact on the visibility of objects
- record any Aboriginal objects (including those already registered on AHIMS or otherwise known) observed during the survey – see Requirements 6 and 7 and Section 3
- record survey coverage – see Requirement 9
- be used to calculate survey effectiveness – see Requirement 10, and
- be accurately mapped and presented visually at an appropriate scale as part of the Archaeological Report.

The survey must be documented and summarised in the Archaeological Report as set out in Requirement 11.

Advisory note

Land surface and vegetation conditions encountered during the survey can be recorded using definitions such as those in McDonald *et al.* (2009).

Requirement 5c – Survey units

The archaeological survey, using survey units, must:

- record the beginning and end points of transects or boundaries of survey units as otherwise defined

- map and record the beginning, length, and end points of transects using a hand-held GPS receiver, either by recording coordinates at start and end points or using the track function on the GPS to record the area traversed (or both) – see Requirement 8, and
- record the spacing between survey personnel.

The beginning and end of transects, or survey unit boundaries, must be defined by:

- landform boundary
- subject area boundary
- harm area boundary
- significant change in survey conditions, or
- other arbitrary termination.

Requirement 6 – Site definition

Purpose: To clearly describe acceptable criteria for defining sites and their boundaries.

One (or more) of the following criteria must be used when recording material traces of evidence of Aboriginal land use:

1 the spatial extent of the visible objects, or direct evidence of their location

2 obvious physical boundaries where present, e.g. mound sites and middens (if visibility is good), a ceremonial ground

3 identification by the Aboriginal community on the basis of cultural information.

Advisory notes

An AHIMS Site Recording Form must be completed for all isolated objects or sites.

Definitions of the types of archaeological features that can be recorded on AHIMS are available on the AHIMS webpage.

Note: DECCW does not have a formal definition of an open artefact scatter, such as '2 artefacts within 50 m'. Appropriate boundary criteria and recording should be determined as described in Requirements 6 and 7.

Requirement 7 – Site recording

Purpose: To create a record of the material traces or evidence of Aboriginal land use which is used in the archaeological assessment to interpret the Aboriginal history of the subject area. The first priority in recording any Aboriginal object must always be to avoid or minimise, as far practicable, the risk of harm to the object itself.

Requirement 7a – Information to be recorded

- Site recording must provide the information required to complete the current AHIMS Site Recording Form.

- When applicable use the appropriate AHIMS Feature Recording Form (Artefact, Modified Tree, Groove, Art, Shell).
- Identify the site boundaries and indicate how they have been determined (Requirement 6).
- Provide an accurate site plan, using professional judgement to determine the appropriate scale and precision, showing the site boundaries and all internal features and external or internal reference points.

Requirement 7b – Scales for photography

All photographs must include an appropriate graded metric scale – mm or cm graded scales (such as an International Federation of Rock Art Organisations [IFRAO] standard scale) for macro artefact or feature photography, and tens of cm or m graded scales (such as a range pole, surveying staff or tape measure) for wider angle or context photography.

Requirement 8 – Location information and geographic reporting

Purpose: To accurately and consistently record and report on the location of Aboriginal objects in NSW.

Requirement 8a – Geospatial information

Geospatial information must be recorded using GPS receivers. It must include, but is not limited to, the location of:

- objects and sites
- survey units (both location and area of survey units)
- landscape units (Requirement 2)
- test excavation units (Section 3.1)
- other relevant features.

In situations where a GPS receiver cannot function, accurate recording of the location of Aboriginal objects must be undertaken and the method used documented.

Requirement 8b – Datum and grid coordinates

Datum and grid coordinates must be:

- reported as grid coordinates using the Map Grid of Australia 1994 (MGA94) cartesian coordinate system. MGA94 grid coordinates include:
  - zone (NSW is covered by the zones 54, 55 and 56)
  - easting – six digits to the nearest metre
  - northing – seven digits to the nearest metre
- checked and confirmed using a 1:25,000-scale topographic map (or the next best available scale where 1:25,000 is not available).

Advisory notes

Additional information is also available on the DECCW website.

The MGA94 is derived from a Universal Transverse Mercator projection (UTM) of the Geocentric Datum of Australia (GDA94) geographic coordinate system.

Coordinates recorded using a cartesian, geographic or local coordinate system other than MGA94 must be transformed into MGA94 coordinates for reporting to DECCW.

Transformations can be performed using GIS software, or dedicated software or spreadsheets produced by Geoscience Australia.

In NSW, topographic map sheets produced after 1999 use the GDA94/MGA94 grid, while those produced before 1999 use the AGD66/84/AMG grid. The map datum and coordinate system must be identified, and if necessary appropriate transformations applied to the derived coordinates (to produce MGA94 coordinates) before submission to DECCW.

Requirement 9 – Record survey coverage data

Purpose: To document the conditions present during the survey in order to assess the effectiveness of the survey. Recording survey coverage data allows an assessment of the obtrusiveness of Aboriginal objects to be made (i.e. whether objects are readily visible, or buried, or otherwise obscured). This is necessary because the obtrusiveness of Aboriginal objects will influence the survey results. The specific conditions affecting the detection of Aboriginal objects can be described in terms of *what reveals* and *what conceals* the objects (see Burke and Smith 2004: 74–80, NPWS 1999).

When recording survey coverage data:

- visibility and exposure must be independently described for each survey unit
- visibility must be determined and recorded to the nearest 10%
- exposure must be described in terms of the natural erosion processes responsible for its creation and any other contributing or primary processes (e.g. stocking, machinery cutting, vehicle tracks)
- exposure must be estimated to the nearest 10% as the mean percentage of the surface area of the survey where exposure was sufficient to reveal Aboriginal objects on the surface of the ground.

When recording survey coverage data in areas where obtrusive, above-surface archaeological features are the dominant form of archaeology, the survey must:

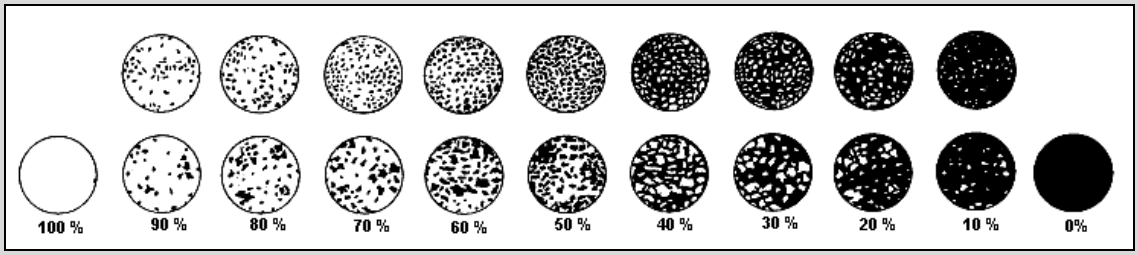
- describe the obtrusiveness of the features present (e.g. ‘rock shelters generally large and clearly visible’ or ‘small and obscured by vegetation’)
- quantify the coverage appropriately by describing any sampling procedures (e.g. ‘all or only some of the visible shelters were inspected’ or ‘inspection was confined to only some terrain units or contours’, etc.).

Advisory notes

Some types of Aboriginal sites are obtrusive and readily identified during a survey (e.g. rock art in shelters, culturally modified trees) but many other types of materials and sites (especially open sites containing stone artefacts) can be difficult to locate and can often go unrecorded due to adverse detection conditions such as thick grass cover or a lack of eroded exposures. Thus in any survey there is a bias against observing this unobtrusive form of evidence, although in most landscapes, open sites with stone artefacts (and in coastal contexts, buried shell middens) are the most common type of archaeological evidence.

Refer to Appendix A for an explanation of how exposure and visibility differ, and the meaning of ‘exposure’ and ‘visibility’ for the purposes of this Code.

The following visual comparison chart may be used to help estimate visibility and exposure conditions.



(**Visual comparison chart** modified from Terry and Chilingar, 1955, Summary of ‘Concerning some additional aids in studying sedimentary formations’, by Shvetsov M. S., *Journal of Sedimentary Research* 25: 229–234.)

An example of a survey in an area where obtrusive, above-surface evidence is the dominant form of archaeology is an environment dominated by rock shelters and rock platforms, where art and occupation shelters and petroglyphs on rock platforms would be the most common traces of past Aboriginal land use. The intent of this part of Requirement 9 is that professional experience and discretion are used to record survey coverage in these instances.

Requirement 10 – Analyse survey coverage

Purpose: To ensure that the survey data provides sufficient evidence for an evaluation of the distribution of objects across the landscape, taking into account archaeological potential. This information is essential to the assessment process and archaeological management recommendations (including any requirement for test excavations) that are derived from the assessment process.

The survey results must:

- be presented in the format of the example tables below or include clear justification where this format is not used, and
- include a descriptive summary of the effectiveness of the survey for each landform unit and then for the whole of the subject area.

Advisory notes

The aim of the survey coverage analysis is not to provide an exact percentage of ground or survey area, but a justifiable estimate.

Refer to Appendix A for an explanation of how to fill in the tables, and the meaning of each category.

Survey coverage (example table)

Survey unit	Landform	Survey unit area (sq m)	Visibility %	Exposure %	Effective coverage area (sq m) (= survey unit area x visibility % x exposure %)	Effective coverage % (= effective coverage area/ survey unit area x 100)
Example 1	Ridge	10,000	20%	50%	1,000	10%
Example 2	Rolling hills	7,000	10%	10%	70	1%
Example 3	Ridge	5,000	80%	50%	2,000	40%

Landform summary – sampled areas (example table)

Landform	Landform area (sq m)	Area effectively surveyed (sq m) (= effective coverage area)	% of landform effectively surveyed (= area effectively surveyed / landform area x 100)	Number of sites	Number of artefacts or features
Ridge	15,000	1,000	6.7%	2	150 artefacts
Rolling hills	7,000	7	0.1%	0	0

2.3 Reporting and assessment of results

The Archaeological Report should take the form of an appendix to the Aboriginal Cultural Heritage Assessment Report. The Archaeological Report needs to be a stand-alone technical report which provides evidence about the material traces of Aboriginal land use that is integrated with the other findings from the assessment of Aboriginal heritage to support the conclusions and management recommendations in the Aboriginal Cultural Heritage Assessment Report.

Requirement 11 – Archaeological Report content and format

General formatting

- All pages must be numbered.
- All sections and sub-sections must be sequentially numbered.
- All tables, charts, plates, figures and appendices must be sequentially numbered.
- Headers or footers with a short project name should be included.

Cover and title page

The cover and title page must include:

- the title, including project name
- the date (month and year)
- local government area
- geographic identifier such as the nearest town or name of the region if this is not included in the title
- consultant ’s name
- author(s) of the report
- proponent’s name.

Report contents

- **Table of contents** – Include a table of contents, including a list of tables, charts, plates, figures and appendices.
- **Summary** – Unless the report is very short, include a summary or abstract at the front of the report. This should be an overview of the main findings, interpretation of the results, and recommendations.
- **Introduction** – Include:
  - details of the proponent
  - explanation of the purpose of the archaeological investigation
  - project brief
  - subject area, and how this is defined
  - objectives of the assessment
  - overall project framework (development application, zoning study, etc.)
- **Investigator and contributors** – Include details of the qualifications and experience of the person carrying out the investigation and a list of contributors and their affiliations, specifically: reviewers, advisors, participants in survey activities

- **Description of development proposal** – Describe the proposed development, highlighting activities that have the potential to harm Aboriginal objects
- **Previous archaeological work** – Provide the information set out in Requirement 1
- **Landscape context** – Provide the information set out in Requirement 2
- **Regional character** – Provide the information set out in Requirement 3
- **Predictions** – Provide the information set out in Requirement 4
- **Sampling strategy** – Provide the information set out in Requirement 5 and Section 3.1 (where relevant)
- **Field methods** – Describe how the archaeological survey, and if relevant, the archaeological test excavation, was conducted and how information was recorded, including the dates and people involved, as set out in Requirements 5, 6, 7, 8, 9 and Section 3.1 (where relevant)
- **Results** – Describe what was found during the survey (and if relevant, archaeological test excavation). Include an interpretation of the results, a table of survey coverage data as set out in Requirement 10, and a table of findings as follows:

Site number	Feature(s)	Survey unit	Landform

- **Analysis and discussion** – The results must be interpreted using an archaeological framework that constructs an Aboriginal settlement history of the subject area.
  - The settlement history must be placed in a local and regional archaeological context.
  - Use graphs, charts and tables to effectively summarise data to support the interpretations where informative.
- **Scientific values and significance assessment** – Identify the archaeological values and assess their significance. The assessment must be supportable and the assessment criteria must reflect best practice assessment processes as set out in the Burra Charter.
- **Impact assessment** – Evaluate and discuss the potential archaeological impacts of the proposal. For known sites and areas of archaeological potential, the information must also be summarised in a table as follows:

Site number	Type of harm	Degree of harm	Consequence of harm
	Direct / Indirect / None	Total / Partial / None	Total loss of value Partial loss of value No loss of value

- **Management and mitigation measures** – Evaluate the various options for management of the archaeological impacts, and justify those that are recommended.

- **Recommendations** – These must be clear recommendations for the conservation of archaeological values and mitigation of impacts to the values. If further archaeological work such as salvage excavation is recommended, justification must be provided for this in the 'Management and mitigation' section of the report.
- **References** – Use Harvard style (author, date) referencing.
- **Maps and figures** – These must be used as necessary to support the report, as set out in the preceding requirements.
- **Appendices** – AHIMS and other heritage register information must be included as appendices to the report.

Advisory notes

The *Style Manual: For authors, editors and printers* (2002) (ISBN 0 7016 3648 3) should be referred to for best practice with abbreviations, notations etc.

Where there are restrictions placed on data or information by Aboriginal people, these must be respected and appropriately documented in the Archaeological Report.

2.4 Record keeping

Requirement 12 – Records

Records generated through implementing the requirements of this Code must be:

- kept in a legible form for at least five years
- provided in a legible form to any authorised officer of DECCW on request.

2.5 Non-compliance

Requirement 13 – Notifying DECCW and reporting

Requirement 13a – Notification of breaches

Any person undertaking works in accordance with the requirements of this Code must notify DECCW of any non-compliance with the Code's requirements that is causing harm to Aboriginal objects or declared Aboriginal places as soon as practicable after the person becomes aware of the incident. Notifications must be made by telephoning the Environment Line on 131 555.

Requirement 13b – Provision of information

Where an authorised officer of DECCW suspects, on reasonable grounds, non-compliance with the requirements of this Code and the non-compliance is causing or is likely to cause harm to Aboriginal objects, the authorised officer may request a written report of the event.

The person undertaking works in accordance with the requirements of this Code must make all reasonable inquiries in relation to the event and supply the report to DECCW within such time as may be specified in the request. DECCW may make a written request for further details in relation to the matter(s) if it is not satisfied with the report provided. The person undertaking works in accordance with the requirements of this Code must provide such further details to DECCW within the time specified in the request.

3 Additional requirements

Depending on the investigation required to adequately characterise the proposed development area or the Aboriginal objects being investigated, the following additional requirements may also apply:

3.1 Archaeological test excavation

3.2 Stone artefact recording

3.3 Rock art

3.4 Culturally modified trees

3.5 Middens

3.6 Burials or human remains

3.7 Artefact disposition and storage

3.1 Archaeological test excavation

Archaeological test excavation will be necessary when (regardless of whether or not there are objects present on the ground surface) it can be demonstrated through Requirements 1, 2, 3, 4, and 5 that sub-surface Aboriginal objects with potential conservation value have a high probability of being present in an area, and the area cannot be substantially avoided by the proposed activity.

The test excavations permitted by this Code are limited in their scope as described below. The first priority in test excavations, and recording Aboriginal objects during test excavations, must always be to avoid or minimise, as far practicable, the risk of harm to the objects under investigation. This means due care must be taken when excavating and collecting objects, and that unnecessary excavations do not comply with this Code.

Purpose: To collect information about the nature and extent of sub-surface Aboriginal objects, based on a sample derived from sub-surface investigations. Test excavations contribute to the understanding of site characteristics and local and regional prehistory and they can be used to inform conservation goals and harm mitigation measures for the proposed activity.

Requirement 14 – Test excavation which is not excluded from the definition of harm

Acts carried out in the course of sub-surface investigation will not be excluded from harm where they are carried out in the following areas:

1 in or within 50 m of an area where burial sites are known or are likely to exist

2 in or within 50 m of a declared Aboriginal place

3 in or within 50 m of a rock shelter, shell midden or earth mound

4 in areas known or suspected to be Aboriginal missions or previous Aboriginal reserves or institutes

5 in areas known or suspected to be conflict or contact sites.

In these circumstances it will be necessary to apply for an AHIP.

Requirement 15 – Pre-conditions to carrying out test excavation

Before archaeological test excavations can start the following conditions must be satisfied:

Requirement 15a – Consultation

Consultation must be undertaken as set out in the NPW Regulation and completed to the stage described in subclause 80C(6) of the Regulation.

Requirement 15b – Test excavation sampling strategy

A sampling strategy must be developed. This strategy must do the following:

- provide a framework for sampling all potential archaeological deposits (PAD) that are at risk of harm (within the subject area)
- describe the differentiation of the PAD to be test-excavated from the surrounding archaeological landscape (i.e. explain why the PAD is anticipated to be of higher significance than the continuous distribution of archaeological material in which it exists), and
  - test those areas of PAD that have no archaeological exposure or visibility, or
  - test the boundaries of known sites (where appropriate)
- confirm areas of low potential (where relevant).
- comply with the methods described in this Code
- describe how the sampling area relates to the area that is proposed to be impacted by the proposed activity.

The sampling strategy must be documented in the Archaeological Report as set out in Requirement 11.

Requirement 15c – Notification

At least 14 days before undertaking any test excavations the relevant DECCW EPRG regional office (refer to Appendix C) must be notified, in writing, of the following:

- the location of the proposed test excavation and the subject area
- the name and contact details of the legal entity with overall responsibility for the project
- the name and contact details of the person who will be carrying out the test excavations where this is different to the legal entity with overall responsibility for the project
- the proposed date of commencement, and estimated date of completion, of the test excavations
- the location of the temporary storage location for any Aboriginal objects uncovered during the test excavations.

A copy of the sampling strategy for test excavation must also be provided.

Requirement 16 – Test excavation that can be carried out in accordance with this Code

Acts occurring in the course of the following test excavations are excluded from the definition of harm if they are carried out in accordance with the requirements of this Code.

Requirement 16a – Test excavations

Acts occurring in the course of test excavations will be excluded from the definition of harm but only if done in order to understand the site characteristics, local and regional prehistory and conservation requirements for the subject area and in accordance with the conditions set out below. This will only be the case where the purpose of the test excavations is to build on the information already obtained through the archaeological investigation carried out in accordance with the requirements of this Code.

1 Test excavation units must be placed on a systematic grid appropriate to the scale of the area – either PAD or site – being investigated e.g. 10 m intervals, 20 m intervals, or other justifiable and regular spacing.

2 Any test excavation point must be separated by at least 5 m.

3 Test excavations units must be excavated using hand tools only.

4 Test excavations must be excavated in 50 cm x 50 cm units.

5 Test excavations units may be combined and excavated as necessary to understand the site characteristics, however:

   i) the maximum continuous surface area of a combination of test excavation units at any single excavation point conducted in accordance with point 1 (above) must be no greater than 3 m^2

   ii) the maximum surface area of all test excavation units must be no greater than 0.5% of the area – either PAD or site – being investigated .

6 Where the 50 cm x 50 cm excavation unit is greater than 0.5% of the area then point 5 (ii) (above) does not apply.

7 The first excavation unit must be excavated and documented in 5 cm spits at each area – either PAD or site – being investigated. Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) may then be implemented.

8 All material excavated from the test excavation units must be sieved using a 5 mm aperture wire-mesh sieve.

9 Test excavation units must be excavated to at least the base of the identified Aboriginal object-bearing units, and must continue to confirm the soils below are culturally sterile.

11 Photographic and scale-drawn records of the stratigraphy/soil profile, features and informative Aboriginal objects must be made for each single excavation point.

12 Test excavations units must be backfilled as soon as practicable.

13 Following test excavation, an Aboriginal Site Impact Recording form must be completed and submitted to the AHIMS Registrar as soon as practicable, for each AHIMS site that has been the subject of test excavation in accordance with the

requirements of this Code. The DECCW Aboriginal Site Impact Recording Form is available on the DECCW website.

The test excavation should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area. Nothing in this requirement authorises salvage excavation.

Advisory notes

The information collected during test excavation will be used to:

- interpret the Aboriginal history of the area being investigated
- assess the cultural heritage significance of the area, and
- inform future planning decisions.

Test excavations should not be carried out in areas identified by Aboriginal people as places of significant social or cultural value and documented as part of the consultation process that must be carried out in accordance with clause 80C of the NPW Regulation.

Combining test excavation units

Test excavation units may be combined in a number of ways depending on the circumstances being investigated and providing Requirement 16a (5) can be met. It will be up to the person carrying out the test excavation to make this decision. Examples include:

- 0.5 m x 0.5 m test excavation unit
- 1 m x 1 m test excavation squares
- 2 m x 1 m test excavation trenches
- 3 m x 1 m test excavation trenches
- 6 m x 0.5 m test excavation trenches
- other irregular shaped excavations as fit for purpose (e.g. a 2 m x 1 m trench with a 0.5 m x 0.5 m square on each end etc.).

Sieving

The use of nested sieves is desirable. However, there is no restriction on the sieve aperture sizes that may be used above a 5 mm sieve in the nest. Where appropriate (e.g. for clayey soils) wet sieving should be used.

Requirement 16b – Objects recovered during test excavations

Any Aboriginal objects that are moved during test excavation must be reburied as soon as practicable in a secure temporary storage location in accordance with Requirement 26 pending any agreement reached as to the long-term management of the salvaged Aboriginal objects.

The person carrying out the test excavation is responsible for ensuring that procedures are put in place so that Aboriginal objects that are reburied are not harmed.

The location of the secure temporary storage location must be submitted to AHIMS with a site update record card for the site(s) in question.

Requirement 17 – When to stop test excavations

Any test excavation carried out under this Requirement must cease when:

1 suspected human remains are encountered (see Section 3.6), or

2 enough information has been recovered to adequately characterise the objects present with regard to their nature and significance.

Advisory note

To avoid doubt, 'enough information' means that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance, and may include things like:

- locally or regionally high object density
- presence of rare or representative objects
- presence of archaeological features or locally or regionally significant deposits, stratified or not.

3.2 Artefact recording

Stone artefacts are the most common type of Aboriginal object. Usually stone artefacts are the only remains left at the locations where Aboriginal people lived in the past. In the majority of cases the only time a stone artefact site will be recorded prior to harm is during archaeological investigation. This being the case it is important to collect as much information from the sites as possible.

The first priority in artefact recording must always be to avoid harm to the artefact site itself.

Requirement 18 – Artefact recording

Purpose: To document as much information as possible from the stone artefacts and stone artefact sites, without harming them. To make basic inferences about the type of activities that Aboriginal people carried out in different parts of the landscape, as well as identifying significant changes in the technologies used to produce stone artefacts throughout time. Wherever practicable it is preferable that artefacts be recorded in the field and remain on site.

The following requirements apply for both recording or sampling a stone artefact assemblage present on the ground surface.

Requirement 18a – Visible artefacts on the ground surface

1 Before picking up any artefact, the position of each artefact to be observed or recorded must be marked with a stake, flag, nail or similar.

2 Once their positions are marked, each artefact may then be picked up or moved and recorded (attributes, measurements, photography or drawing).

3 The artefact must then be replaced to its original position prior to repeating the process for the next and subsequent artefacts.

4 The requirements above do not authorise removal of artefacts from the site.

Requirement 18b – Artefacts in section

Under no circumstances are artefacts to be removed from a section.

Requirement 18c – Partly buried artefacts

Outside test excavations, if an artefact will not readily yield when pulled with fingers then it should remain buried and must not be extricated for recording or observation.

Advisory note

Stone artefact identification

There is a tendency to take the identification of stone artefacts, in particular flaked stone artefacts, for granted. However, 'we should not underestimate the level of skill required to accurately identify stone artefacts' (Hiscock and Clarkson 2000: 100).

The text book produced by Holdaway and Stern (2004) details the identification of and approaches to analysis of flaked stone artefacts. Hiscock (1989) provides a framework for and advice on the reasons and expectations for recording stone artefacts in the field.

Requirement 19 – Attribute recording

- The attributes that must be recorded for artefacts are contained within the DECCW AHIMS Feature Recording Form and Feature Recording Table – Artefact.
- If sampling a surface artefact assemblage, be clear about the sampling method used, and provide appropriate justification and records (e.g. 'sampled because highest density area', 'sampled using 1 m x 1 m square', 'sample area clearly drawn and labelled on a site plan').

Requirement 20 – Photography and drawing

- Up to six diagnostic or representative artefacts may be collected at a time for group photography or drawing without an AHIP (subject to the restrictions below).
- The artefacts must remain on site and must be returned to their original positions, as described in Requirement 18a above.
- Where informative, photographs showing the relationship of the surface conditions and artefacts (e.g. an area of particular artefact density) must be photographed.
- Photographs illustrating the context of the artefacts in relation to the wider landscape must be taken.
- All photographs must include an appropriate graded metric scale – mm or cm graded scales (such as an IFRAO standard scale) for macro artefact photography, and tens of cm or m graded scales (such as a range pole, surveying staff or tape measure) for wider angle or context photography.

3.3 Rock art

Rock art is images on rock surfaces. Images made by Aboriginal people on rock surfaces in the past are an Aboriginal object under the NPW Act. The images are usually found on suitable surfaces such as rock platforms, vertical rock surfaces or in rock shelters and caves. The images are usually classed with reference to their means of production:

- pictograms (produced by the adding of pigment to the rock surface – painting, drawing, stencilling, printing)
- petroglyphs (produced by breaking through or extracting the rock surface – pecking, pounding, abrading, scratching).

The first priority in rock art recording must always be to avoid harm to the art itself (including the panels or surfaces on which the art is located).

Requirement 21 – AHIMS records

The attributes and features that must be recorded for rock art are contained within the DECCW AHIMS Feature Recording Form and Feature Recording Table – Art.

Requirement 22 – Recording rock art

- People undertaking rock art recording must:
  - not physically touch or interfere with any pictogram or petroglyph
  - minimise disturbance to a shelter floor in the immediate vicinity of the rock art to reduce dust mobilisation
  - minimise movement on or over surfaces with petroglyphs
  - avoid, with the exception of necessity (scales, tape measures or drawing frames for recording), putting equipment on the art or the surface containing the art.
- Photograph:
  - context – landscape, shelter/feature/platform and setting at long-range and medium scales
  - internal context – to show location of panels and art
  - panels and individual motifs – use the IFRAO scale (see www.cesmap.it/ifrao/scale.html); the scale must not be attached to the art panel surface with any adhesive media.
- Cross-reference all photographs, drawings and records using consistent identifiers (e.g. indicate panels or photographs on drawings).
- Include a photographic record of good quality (at least 8 megapixel) electronic images to be submitted with the site record.
- Consider the format the photographic data is recorded and provided in. Recognising that practitioners will use a range of digital cameras with differing capabilities in day-to-day activities, the preference for submission is (in order) RAW, TIFF, JPG. For archival recording RAW is essential.

Advisory notes

Repeated covering and uncovering of petroglyphs with soil and vegetation will adversely affect preservation conditions. Therefore removal of vegetation and soil covering petroglyphs must not be conducted without a plan for ongoing site management (Lambert 2007: 39, 42–43). This may require an AHIP.

Any rock art recording which involves the following activities requires an AHIP because it will harm the Aboriginal object:

- touching the art surface
- tracing or other contact with the art surface
- removal of pigments or other samples.

AHIMS forms must record as much information as possible. However, if harm is imminent and cannot be avoided, detailed recording by a specialist should be conducted.

3.4 Culturally modified trees

Aboriginal people used trees in many ways and in many environments. Bark was removed from trees for the purpose of making artefacts, vessels, shelters and medicines. In some regions of NSW, trees were carved with patterns and motifs for ceremonial purposes, or to mark burials. Bark was removed as both sheets, for shaped artefacts (e.g. canoes), and fibre for the manufacture of twine. Culturally modified trees can be a common type of archaeological site in areas where older trees survive.

The importance of scarred trees lies in their diversity and in the large amount of information they can tell us – individually, and as a class – about how and what Aboriginal people were doing at different times in the past. For example, scarred trees are the most important line of evidence with which to investigate the Aboriginal uses of wood and bark in the past, and they also record how different technologies such as steel axes were adopted and employed, and can give an insight into food-gathering activities (DEC and Andrew Long 2005).

Requirement 23 – Recording culturally modified trees

- Culturally modified trees must not be harmed during recording. Any harm to a culturally modified tree requires an AHIP.
- The attributes and features that must be recorded for culturally modified trees are contained within the DECCW AHIMS Feature Recording Form and Feature Recording Table – Modified Tree.
- DECCW requires that identification and terminology for archaeological consideration and recording of carved and scarred trees be consistent with that specified in *Aboriginal scarred trees in New South Wales, a field manual* (DEC and Andrew Long 2005), available at www.environment.nsw.gov.au/conservation/AboriginalScarredTrees.htm.
- Where groups of culturally modified trees are present this must be noted, and must be mapped at an appropriate level of detail.

- Photographs with a clearly visible, appropriately sized (mm or cm for close-ups, tens of cm or m for distance and context) graded metric scale must be taken, showing:
  - the complete scar
  - close-up details of the scar where this is present and informative (e.g. tool marks)
  - the tree in its environmental context.
- A sketch of the tree must be made. The sketch should show relevant features such as the location and shape of the scar(s), the location of features such as tool marks, overall condition, damage, other identifying marks, nature of the dry-face and epicormic stems (if present).
- The identification of tree scars as being Aboriginal in origin is often subject to uncertainty (DEC and Andrew Long 2005: 36–49). Any uncertainty associated with a decision to record a scarred tree as an Aboriginal object should be detailed on the Feature Recording Form. The advice of an arborist (where it may resolve an issue of potential cultural origin) should be sought prior to a 'possible' scarred tree being recorded and registered on AHIMS.

Advisory note

Unlike many other kinds of Aboriginal objects, scarred trees live, grow, and die and are a relatively short-term component of the archaeological record. The objectives in recording scarred trees are to:

- establish the cause and approximate the time of scarring (e.g. Aboriginal, pre-contact, post-contact, recent, etc.)
- document the features of the scar for recording purposes and as a means of comparison with other trees and other areas, and
- document the conservation status of the tree and the scar for long-term management, monitoring and management decision-making.

The likelihood of previously unrecorded carved trees being located in NSW is low but should not be discounted. 300 sites with carved trees were known in the early years of the 20th century but by mid-century only about a third of these could be located, and by the end of the century only 78 were known to remain in their original locations (Geering *et al*. 1991: 42).

3.5 Middens

Given the poor conditions for the preservation of organic remains at most Aboriginal sites in NSW, shell midden sites, both coastal and inland, provide the greatest insight we have into the past Aboriginal food economy. While the same best practices relevant to the general recording of open sites and closed sites apply equally to middens, best practice for shell middens has much to do with the treatment of faunal remains.

Requirement 24 – Recording shell middens

When recording shell middens the following steps must be followed:

- The attributes and features that must be recorded for middens are contained within the DECCW AHIMS Feature Recording Form and Feature Recording Table – Shell.
- Do not harm the midden in any way.
- Record the full range of shells (to species level if possible) and other materials visible on the surface of exposed middens.
- Provide an estimate of the rank and order of abundance (e.g. pre-dominant, common, rare) of species present.
- Draw and photograph any obvious changes in midden stratigraphy where middens are visible in section.
- Draw and photograph any features (e. g. pits or hearths) present.
- Estimate the density of shell (or bone) present, expressed as a ratio of shell (or bone) to sand (or other sedimentary context) on the basis either of ground surface exposure or exposed sections (e.g. eroding banks).

Advisory notes

Sullivan (1989: 51) provides a checklist of basic information about middens to record in the survey context.

Always be aware that in many cases in NSW, shell middens are also associated with Aboriginal ancestral remains.

Best practice in midden recording includes making the observations necessary to have reasonable confidence in distinguishing natural shell accumulation from an Aboriginal midden. Attenbrow (1992) and Bailey (1994) discuss the main criteria that archaeologists use to distinguish between middens and shell beds. However, there is no foolproof system of distinguishing natural shell deposits from shell midden deposits. Particular problems arise in estuarine contexts and in landscapes modified by European activities. Where there is uncertainty, best practice involves calling for an expert opinion from a person with expertise in coastal geomorphology or the archaeology of shell middens.

Best practice in midden recording includes making a determination on whether a midden has been redeposited or seriously disturbed. Expertise may be required in coastal geomorphology or shell midden archaeology.

The detectability of shell middens is limited by surface-obscuring vegetation as in the case of open sites. Middens may also be buried under metres of sand resulting from normal dune build-up and destabilisation.

Many middens are partially exposed in eroding coastal dunes or coastal and inland creek and river banks and the rest of the midden is covered by sand and vegetation.

3.6 Burials or human remains

Aboriginal ancestral remains may be found in a variety of landscapes throughout NSW, although most frequently they are found in middens, sand dunes, lunettes, bordering dunes and other sandy or soft sedimentary soils.

Aboriginal ancestral remains have a very special importance to Aboriginal people. This must always be acknowledged and respected.

Requirement 25 – Aboriginal ancestral remains

In all cases, the special importance of Aboriginal ancestral remains must be acknowledged and respected and the wishes of the Aboriginal community must be respected when making decisions regarding ancestral remains.

To avoid doubt, the precautionary principle must be applied to all physical remains suspected to be Aboriginal ancestral remains.

If any human remains are disturbed in, on or under the land, you must:

1 not further disturb or move these remains

2 immediately cease all work at the particular location

3 notify NSW Police

4 notify DECCW's Environment Line on 131 555 as soon as practicable and provide available details of the remains and their location

5 not recommence any work at the particular location unless authorised in writing by DECCW.

An Aboriginal community representative must be present where it is reasonably suspected burials or human remains may be encountered. If human remains are unexpectedly encountered and they are thought to be Aboriginal, the Aboriginal community must be notified immediately.

Recording of Aboriginal ancestral remains must be undertaken by, or be conducted under the direct supervision of, a specialist physical anthropologist or other suitably qualified person.

Archaeological reporting of Aboriginal ancestral remains must be undertaken by, or reviewed by, a specialist physical anthropologist or other suitably qualified person, with the intent of using respectful and appropriate language and treating the ancestral remains as the remains of Aboriginal people rather than as scientific specimens.

3.7 Stone artefact disposition and storage

Archaeological investigation frequently involves the collection of stone artefact assemblages.

Requirement 26 – Stone artefact disposition and storage

Purpose: To describe the procedures for the disposition of stone artefacts dealt with under AHIPs or this Code.

For Aboriginal objects that are to be submitted to the Australian Museum, contact the Museum for any specific requirements they may have.

For Aboriginal objects that are to be held by an Aboriginal community or other party named in a Care Agreement, refer to that agreement.

For Aboriginal objects kept or returned to the location they originated from:

- A full catalogue, including photographic and drawn records for diagnostic stone artefacts, must be made.
- The catalogue must be in printed form, but may also include an electronic database in the form of a table containing all records.
- All stone artefacts must be either individually bagged or bagged in appropriate and identifiable units (e.g. excavation or collection units) that can be referenced back to the catalogue.
- The stone artefacts must be stored in good quality, double-bagged plastic zip-lock bags.
- The bags must be externally labelled using permanent marker, and an 'independent' label on robust material (e.g. tyvek) written with permanent marker must be placed inside each bag.
- The collection must be placed in a suitable impervious and permanent container, which must be labelled as above, or engraved.

- A full record of the final location of the collection must be made, including:
  - grid coordinates derived as set out in Requirement 8
  - a site plan or mud map referring to permanent features
  - depth of burial, if buried
  - full photographic record of the disposition.
- The record must be submitted to AHIMS with a site update record card for the site(s) in question.

Advisory notes

Many Aboriginal communities wish to have care of Aboriginal objects which have been excavated, disturbed or moved by development activities, erosion or other processes.

The NPW Act allows the transfer of Aboriginal objects to an Aboriginal person or Aboriginal organisation for safekeeping. The person or organisation must enter into a care agreement with DECCW.

A care agreement is a document that sets out the obligations of DECCW and the Aboriginal person or Aboriginal organisation for the long-term safekeeping of the transferred Aboriginal objects. The Aboriginal person or organisation does not become the owner of the Aboriginal objects.

More information can be found at: www.environment.nsw.gov.au/licences/CareAgreements.htm or by contacting your local DECCW EPRG regional office (see Appendix C).

Appendix A – Definitions of terms used in this Code

Aboriginal object has the same meaning as 'Aboriginal object' in the *National Parks and Wildlife Act 1974* (NPW Act): 'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'.

Archaeological survey is a method of data collection for Aboriginal heritage assessment. It involves a survey team walking over the land in a systematic way, recording information about how and where the survey is conducted, recording information about the landscape and recording any archaeological sites or materials that are visible on the land surface. The activities undertaken by a survey team do not involve invasive or destructive procedures, and are limited to note taking, photography and making other records of the landscape and archaeological sites (e.g. sketching maps or archaeological features).

Artefact: For the purposes of this Code, 'artefact' has the same meaning as object, (excluding the extension of the term to 'deposits') as defined in the NPW Act.

Conflict site means a site where confrontation occurred between Aboriginal and non-Aboriginal people or between different Aboriginal groups.

Contact site means a site relating to the period of first contact between Aboriginal and non-Aboriginal people.

Culturally modified tree means a tree that has been scarred, carved or modified by an Aboriginal person by:

(a) the deliberate removal, by traditional methods, of bark or wood from the tree, or

(b) the deliberate modification, by traditional methods, of the wood of the tree.

Declared Aboriginal place is a statutory concept, meaning any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.

Exposed in section and **section** refers to the vertical exposure of a soil that reveals the stratigraphy or the profile of the soil and any objects it may contain. Sections may:

- be revealed during archaeological excavations (formed by the walls of the excavation)
- occur naturally in creek and river banks, land slips, wind-eroded dune faces or other such naturally formed vertical profiles, or
- be formed artificially, for example in road and railway cuttings.

Exposure is different to visibility because it estimates the area with a likelihood of revealing buried artefacts or deposits rather than just being an observation of the amount of bare ground. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground. Put another way, exposure refers to 'what reveals' (see also Burke and Smith 2004: 78–80, NPWS 1999).

Exposure type refers to the results of erosional processes: sheet wash, gullying, blow-outs, salt scalds, tracks or animal pads. As well as erosional processes, ground exposure may be caused by earth-moving machinery (e.g. bulldozers and graders, vehicle traffic etc.).

Full coverage survey means a survey conducted on foot in which all surfaces within the subject area are systematically observed and recorded.

Hand tools include spades, trowels, shovels, pans and brushes.

Landforms are the units (or similar) of land description explained and defined as 'landform elements' in The National Committee on Soil and Terrain (eds) *Australian Soil and Land Survey Field Handbook.* Landforms have a characteristic dimension of about 40 m. There are 70 landform elements defined in the *Australian Soil and Land Survey Field Handbook* (Speight 1990: 16; 17–44). Landforms are the primary subdivisions for the survey stratification.

Material traces of past Aboriginal land use has the same meaning as 'Aboriginal object' in the NPW Act. See 'Aboriginal object'.

Objects has the same meaning as 'Aboriginal object' in the NPW Act. See 'Aboriginal object'.

Potential archaeological deposit (PAD) is an area where sub-surface stone artefacts and/or other cultural materials are likely to occur (DEC 2005: 67).

Rock shelters are vertical or overhanging rock formations, including any flat or not steeply inclined ground surface below the overhang or at the base of the vertical face, which contain, or may be reasonably expected to contain, material traces of past Aboriginal land use (objects).

Section: See 'Exposed in section'.

Sites is sometimes used as another name for Aboriginal objects and material traces of past Aboriginal land use. The term is commonly used in archaeological assessments and discourse.

Survey units are strictly defined by DECCW to include only units of land that have been surveyed on foot. A survey unit may include more than one landform unit, correspond to a landform unit or be smaller than a landform unit depending on how the sampling strategy is structured. The survey unit is the minimum analytical or descriptive unit for the survey, and may be the same as the landform. A single survey unit should not cross the boundaries of different landforms, but there may be more than one survey unit within a landform. Sometimes survey units are also referred to as 'sampling units'.

Subject area refers to the area that is the subject of archaeological investigation. Ordinarily this would include the area that is being considered for development approval, inclusive of the proposed development footprint and all associated land parcels. To avoid doubt, the subject area should be determined and presented on a project-by-project basis.

Types of sites or **types of features** refers to the particular characteristics of material traces of past Aboriginal land use. For example, a rock shelter site is a type of site distinct from a scared tree. In addition, a rock shelter site (and indeed many sites) may contain multiple archaeological or cultural features: rock art, stone artefacts, archaeological deposits.

Vehicle traverses are activities involving the archaeological observation of a subject area from a vehicle.

Visibility is the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials. It is important to note that visibility, on its own, is not a reliable indicator of the detectability of buried archaeological material. Things like vegetation, plant or leaf litter, loose sand, stony ground or introduced materials will affect the visibility. Put another way, visibility refers to 'what conceals' (see also Burke and Smith 2004: 78–80, NPWS 1999).

Definitions used in survey results tables

Survey coverage definitions

Survey unit	See definition above.
Landform	The landform within the survey unit; see definition above.
Survey unit area	The area surveyed, calculated as the length of the survey unit multiplied by the width of the survey unit.
Visibility %	See definition above.
Exposure %	See definition above.
Effective coverage area	The survey unit area multiplied by the visibility % and exposure % – either square metres or hectares.
Effective coverage %	The effective coverage area divided by the survey unit area and multiplied by 100.

Landform summary – sampled areas definitions

Landform	The landform within the survey unit; see definition above.
Landform area	The total area of the landform within the subject area.
Area surveyed	The area of the landform that has been surveyed. Calculated by summing by landform the results in the survey coverage table.
Area effectively surveyed	The area of the landform effectively surveyed. Calculated by grouping by landform the results in the survey coverage table.
% of landform effectively surveyed	The area effectively surveyed divided by the landform area multiplied by 100.
Number of sites	A count of the number of previously recorded and newly recorded sites, grouped by landform.
Number of artefacts or features	Where the data is available, a count of features and artefacts grouped by landform.

Appendix B – References

Attenbrow, V., 1992, 'Shell bed or shell midden,' *Australian Archaeology* 34: 3–21.

Bailey, G., Chappell J. and Cribb R.,1994, 'The origin of *Anadara* shell mounds at Weipa, North Queensland, Australia,' *Archaeology in Oceania* 19: 69–80.

Burke, H. and Smith C., 2004, *The Archaeologist's Field Handbook,* Allen and Un win, Crows Nest.

Charman, E. V. and Murphy B. W. (eds), 2007, *Soils: Their Properties and Management*, Oxford University Press, South Melbourne.

DEC and Andrew Long, 2005, *Aboriginal scarred trees in New South Wales, a field manual*, Department of Environment and Conservation NSW, Sydney.

DEC, 2005, *Comprehensive Coastal Assessment: Aboriginal Cultural Heritage Data Audit,* A report prepared for the Coastal, Rural and Regional Strategy Division of DIPNR as part of the NSW Comprehensive Coastal Assessment by the Department of Environment and Conservation, Hurstville.

Department of Communications, Information Technology and the Arts, Snooks & Co., (ed), 2002, *Style manual, For authors, editors and printers*, 6th edition, John Wiley & Sons, Milton.

Flood, J., Johnson, I. and Sullivan, S. (eds), 1989, *Sites and Bytes: Recording Aboriginal places in Australia*, Australian Heritage Commission Special Australian Heritage Publication Series Number 8, Australian Government Publishing Service, Canberra.

Geering, K., Ravenscroft, M. and Roberts, C., 1991, 'The preservation and management of Aboriginal carved trees,' *Historic Environment* 8: 42–46.

Guilfoyle, D., 2006, *Aboriginal cultural heritage regional studies: an illustrative approach,* Department of Environment and Conservation NSW, Sydney.

Hiscock, P., 1989, 'Artefact recording in the field', In Flood, J., Johnson, I. and Sullivan, S. (eds), 1989, *Sites and Bytes: Recording Aboriginal places in Australia*, Australian Heritage Commission Special Australian Heritage Publication Series Number 8, Australian Government Publishing Service, Canberra, pp. 20–38.

Hiscock and Clarkson, 2000, 'Analysing Australian stone artefacts: An agenda for the twenty first century', *Australian Archaeology* 50: 98–108.

Holdaway, S. and Stern N., 2004, *A Record in Stone: the study of Australia's flaked stone artefacts,* Museum Victoria, Melbourne and Aboriginal Studies Press, Canberra.

Lambert, D., 2007, *Introduction to Rock Art Conservation: A guide to the preservation of Aboriginal rock art,* Department of Environment and Climate Change, Sydney.

McDonald, R. C., Isbell, R. F. and Speight, J. G., 2009, 'Land surface', in The National Committee on Soil and Terrain (eds). *Australian Soil and Land Survey Field Handbook,* CSIRO Publishing, Collingwood, pp. 127–146.

Murphy, B. W., 2007, 'The Nature of Soil', in Charman, E.V. and Murphy, B. W. (eds). *Soils: Their Properties and Management*, Oxford University Press, South Melbourne, pp. 1–13.

NPWS, 1999, *Aboriginal Cultural Heritage Standards and Guidelines Kit*, NSW National Parks and Wildlife Service, Hurstville.

Orton, C., 2000, *Sampling in Archaeology*, Cambridge University Press, Cambridge.

Speight, J. G., 2009, 'Landform', in The National Committee on Soil and Terrain (eds). *Australian Soil and Land Survey Field Handbook,* CSIRO Publishing, Collingwood, pp. 15–72.

Sullivan, M., 1989, 'Recording shell midden sites,' Flood, J., Johnson, I. and Sullivan, S. (eds), 1989, *Sites and Bytes: Recording Aboriginal places in Australia*, Australian Heritage Commission Special Australian Heritage Publication Series Number 8, Australian Government Publishing Service, Canberra.

Terry and Chilingar, 1955, Summary of 'Concerning some additional aids in studying sedimentary formations', by Shvetsov, M. S., *Journal of Sedimentary Research* 25: 229–234.

The National Committee on Soil and Terrain (eds), 2009, *Australian Soil and Land Survey Field Handbook,* CSIRO Publishing, Collingwood.

Appendix C – DECCW Environment Protection and Regulation Group regional offices

Parramatta

Department of Environment, Climate Change & Water NSW
Planning & Aboriginal Heritage Section
PO Box 668
PARRAMATTA NSW 2124

Phone: (02) 9995 5000
Fax: (02) 9995 6900

North East

Coffs Harbour

Department of Environment, Climate Change & Water NSW
Planning & Aboriginal Heritage Section
Locked Bag 914
COFFS HARBOUR NSW 2450

Phone: (02) 6659 8294
Fax: (02) 6651 6187

North West

Dubbo

Department of Environment, Climate Change & Water NSW
Environment & Conservation Programs
PO Box 2111
DUBBO NSW 2830

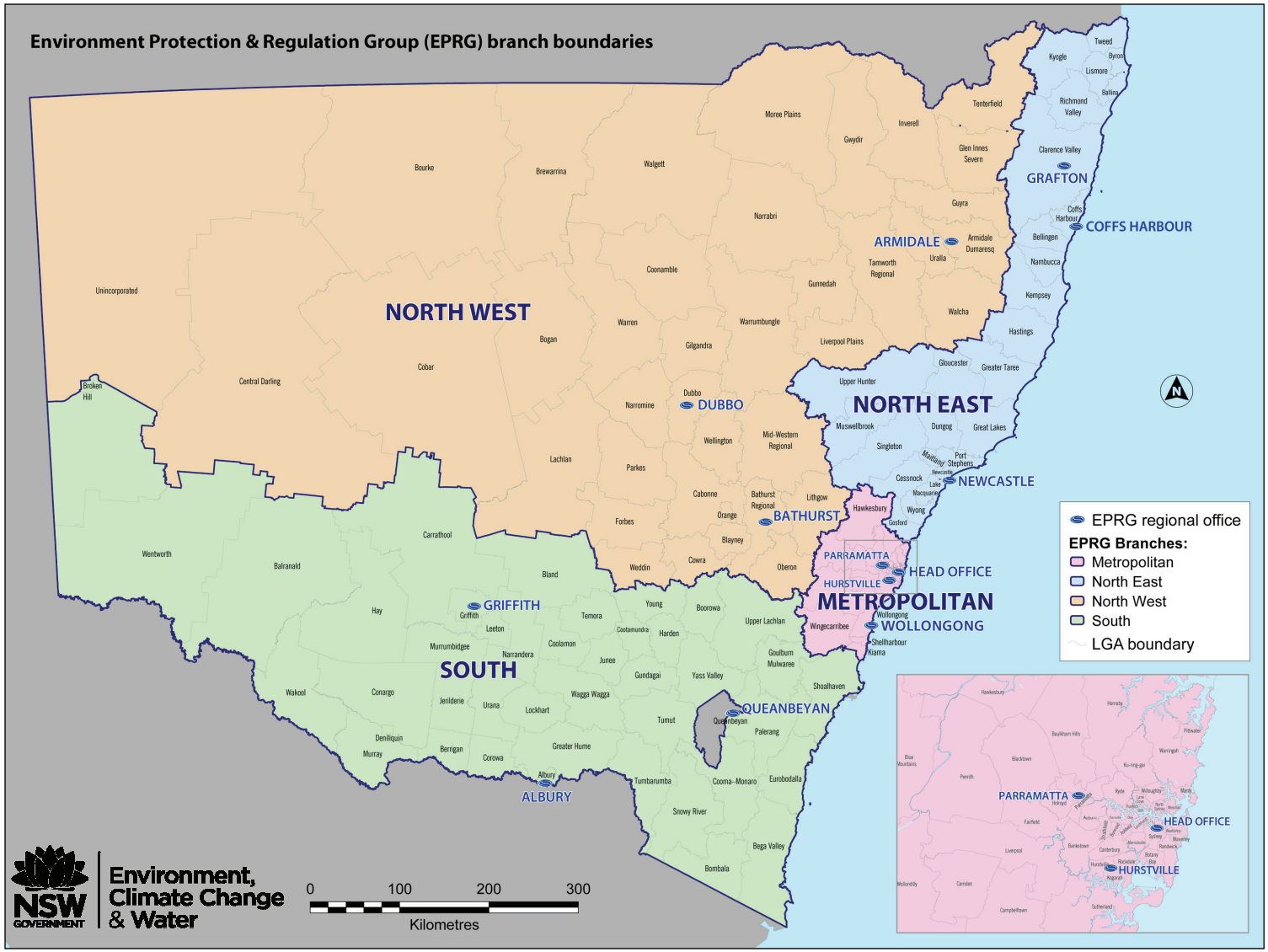
Phone: (02) 6883 5330
Fax: (02) 6884 9382

South

Queanbeyan

Department of Environment, Climate Change & Water NSW
Landscape & Aboriginal Heritage Protection Section
PO Box 733
QUEANBEYAN NSW 2620

Phone: (02) 6229 7188
Fax: (02) 6229 7001


Environment Protection & Regulation Group (EPRG) branch boundaries
NORTH WEST
NORTH EAST
SOUTH
METROPOLITAN
GRAFTON
COFFS HARBOUR
ARMIDALE
DUBBO
NEWCASTLE
BATHURST
HEAD OFFICE
PARRAMATTA
HURSTVILLE
WOLLONGONG
GRIFFITH
QUEANBEYAN
ALBURY
EPRG regional office
EPRG Branches:
Metropolitan
North East
North West
South
LGA boundary
Environment, Climate Change & Water
NSW GOVERNMENT
0 100 200 300
Kilometres

www.environment.nsw.gov.au