
ABORIGINAL CULTURAL HERITAGE ASSESSMENT

NSW WESTERN REGIONAL ASSESSMENTS

FINAL REPORT SEPTEMBER 2002

**Brigalow Belt
South**

Stage 2

Resource and Conservation
Assessment Council

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

**NSW WESTERN REGIONAL
ASSESSMENTS**

**BRIGALOW BELT SOUTH
BIOREGION (STAGE 2)**

**NSW National Parks and Wildlife
Service**

A project undertaken for the
Resource and Conservation Assessment Council
NSW Western Regional Assessments
WRA 18

For more information and for information on access to data contact the:

A contact list of relevant Local Aboriginal Land Councils associated with the BBSB bioregion is available from the National Parks and Wildlife Service.

PO BOX 2111
Dubbo 2830

Phone: 68419200
Fax: 68419222

Resource and Conservation Division, Planning NSW

GPO Box 3927
SYDNEY NSW 2001

Phone: (02) 9762 8052
Fax: (02) 9762 8712

www.racac.nsw.gov.au

© Crown copyright September 2002
New South Wales Government

ISBN 1 74029 178 6

This project has been funded by the Resource and Conservation Division, Planning NSW and managed by the National Parks and Wildlife Service, Dubbo.

Main Author: Phil Purcell (NPWS)

ACKNOWLEDGEMENTS

My deep appreciation and respect is extended to all the Aboriginal people who have assisted with carrying out this project.

Appreciation is extended to the following people contracted to assist with the project: Mr Patrick Gaynor; Mrs Leila and John McAdam (Umwelt Australia Pty. Ltd); Ms Aleshia Oakenfull.

Thanks to the following people who reviewed the first draft of this report and provided comments: Dr Wendy Beck (University New England), Ms Sarah Martin, Mr Anthony English (NPWS) and Mr Peter Thompson.

Special thanks and appreciation to Ms Kate Waters and Mr Korey Moon who were contracted to compile the Oral history and archival investigation; and Dr Paul Hesse (Macquarie University) for the landform identification and analysis.

Thank you to my colleagues with the Western Regional Assessment Unit (NPWS) and Ms Ally Manning and Michelle Murphy for their assistance with editing.

My thanks also to Ms Evelyn Crawford (RACD) who supported the project design and assisted with many aspects of the project. Ms Joan Chatfield (RACD) assisted with oral history gathering and field work.

To all of the above I extend a sincere thanks

Phil Purcell
24/9/2002

Disclaimer

While every reasonable effort has been made to ensure that this document is correct at the time of printing, the State of New South Wales, its agents and employees, do not assume any responsibility and shall have no liability, consequential or otherwise, of any kind, arising from the use of or reliance on any of the information contained in this document.

CONTENTS

PROJECT SUMMARY

1	INTRODUCTION	10
1.1	Project description	11
1.2	Study area	13
1.3	Project aims	13
1.4	Aboriginal consultation project aims	14
1.5	Project team	15
1.6	Reporting to Aboriginal communities	15
1.7	Issues specific to Aboriginal heritage in the Brigalow Belt South Bioregion	16
1.8	Sensitivity of cultural heritage information	16
2	BACKGROUND	18
2.1	Landforms	18
2.2	Legislation and guidelines affecting conservation of Aboriginal heritage	19
2.3	Overview of the protection and management of Aboriginal cultural heritage	20
3	METHODS	22
3.1	Background	25
3.2	Aboriginal consultation project	25
3.3	Oral history and archival investigation	26
3.4	Cultural heritage field survey	26
4	PROJECT RESULTS	32
4.1	Aboriginal consultation project	32
4.2	Oral history and archival investigation project	34
4.3	Cultural field survey project	39
4.4	Landforms and sites	41
4.5	Distance from water of sites - BBSB	48
5	DISCUSSION	52
5.1	Aboriginal cultural heritage and the Brigalow Belt South bioregion	52
5.2	Landform as a management tool for Aboriginal cultural heritage	52
5.3	Aboriginal management of cultural heritage	53
5.4	BBSB Forest Agreement	54
5.5	Further work	54
6	RECOMMENDATIONS	56
6.1	Recommendations for Government Agencies	57
6.2	Recommendations for further information gathering	57
6.3	Aboriginal community recommendations	58

REFERENCES

61

FIGURES

Figure 1:	Local Aboriginal Land Councils within the BBSB Bioregion	24
Figure 2:	Distribution of Mapped Landform Type	43

TABLES

Table 1:	Recorded Aboriginal Sites Per Province	39
Table 2:	Area Of Mapped Landform Coverage Per BBSB Province	41
Table 3:	Description Of Landform Categories – Alluvial Group.....	43
Table 4:	Description Stable Deep Sand Landforms	44
Table 5:	Terrace Group Of Landform	45
Table 6:	Description Higher Contour Landforms	46
Table 7:	Distribution Of Sites Among Grouped Landforms	47
Table 8:	Number Of Sites And Distance From Water – Agl.....	48
Table 9:	Summary Of Distance Of Site From Water - Stage 1	49
Table 10:	Distance From Water Of Aboriginal Sites - Stage 2	49
Table 11:	Number Of Aboriginal Sites Among BBSB Tenure	50

APPENDICES

Appendix A:	Landform Profiles
Appendix B:	Sampling Method from Brigalow Belt South Bioregion Stage 1
Appendix C:	List of Aboriginal Organisations informed of the Assessment

PROJECT SUMMARY

This report describes a project undertaken for the Resource and Conservation Assessment Council (RACAC) as part of the regional assessments of western New South Wales. RACAC advises the State Government on broad-based land use planning and allocation issues. An essential process for the western regional assessments is to identify gaps in data information and the best ways in which to proceed with data gathering and evaluation.

The New South Wales National Parks and Wildlife Service (NPWS) undertook the Aboriginal cultural heritage assessment project for RACAC. The assessment took place in two stages, with Stage 1 focusing on the Pilliga and Goonoo State Forests and Stage 2 assessing the remainder of the Brigalow Belt South Bioregion (BBSB). The assessment structure was the same for Stage 1 and Stage 2 and comprised three parts: Aboriginal cultural heritage consultation, oral history and archival investigation, and cultural heritage field survey. The Stage 2 projects built upon and extended the Stage 1 projects.

Stage 2 project objectives

The cultural heritage assessment aimed to build upon work carried out in Stage 1 to increase understanding of the cultural links between Aboriginal people and the BBSB. This was done by:

- Continuing to consult with Aboriginal communities associated with the bioregion;
- Continuing to expand upon the oral history and archival investigation, started in Stage 1;
- Extending the cultural field survey done during Stage 1 to sample representative areas, using identified landforms as the basis for sample area selection.

Methods

Aboriginal cultural heritage consultation project

The Project team distributed detailed information about the project to Aboriginal people throughout the bioregion, and then followed up with formal and informal meetings with Aboriginal people and organisations to seek guidance on and participation in the project.

Oral history and archival investigation

Aboriginal people from a variety of communities conducted interviews with members of their own communities and facilitated interviews between contracted historians and community members. Contract researchers, including members of the Aboriginal community, carried out an examination of documentary material relevant to the bioregion.

Cultural heritage field survey

The assessment team approach involved selecting areas for sampling where there were the types of landforms expected to be associated with Aboriginal cultural heritage. The team used information from Aboriginal people, the results of the Stage 1 sampling investigation, registered sites, and landform assessment of the bioregion, to determine areas which would be most useful to investigate for the purpose of locating and recording Aboriginal sites and other features of cultural significance.

Key results and products

Aboriginal people, through oral histories, historical records and consultation articulated a strong sense of historical and contemporary attachment to the BBSB. Information gathered during the assessment produced an improved understanding of the Aboriginal cultural heritage values of the bioregion and demonstrated clear links between Aboriginal people and landform types.

At the completion of Stage 1 and Stage 2, the project teams had:

- Recorded and transcribed 110 oral history interviews;
- Retrieved and researched numerous documents highlighting Aboriginal association with forests, travelling stock reserves, rural properties and towns;
- Located and recorded 1,110 Aboriginal sites;
- Documented 60 traditionally used plant species; and
- Identified and mapped a variety of landforms, which have Aboriginal cultural heritage.

Aboriginal guidance and participation provided direction to the project team in the gathering of cultural heritage information. Ninety-two Aboriginal people from various communities in the bioregion were employed in the project, 110 Aboriginal people were interviewed on tape and 17 Local Aboriginal Land Councils were contacted about the project.

The information gathered during the project will provide new opportunities for improving cultural heritage management using mapped information about landforms and their relationship with Aboriginal heritage.

The assessment process reinforced existing relationships and established new relationships between NPWS and the Aboriginal communities in the BBSB.

1 INTRODUCTION

The Aboriginal cultural heritage assessment is a part of the Western Regional Assessments (WRA) of NSW. The WRA is a State Government investigation of biodiversity and cultural heritage carried out on a bioregional basis. The Brigalow Belt South bioregion is the first of the bioregions in western NSW to be assessed. The bioregional assessment is also linked to a Forest Agreement process from which recommendations will be made about future management of public land in the bioregion.

The Aboriginal cultural heritage assessment for the Brigalow Belt South bioregion is the first State funded project to involve Aboriginal communities on such a large scale. In many respects, the extent of Aboriginal involvement and guidance resulted in the project becoming a community based project, facilitated and guided by government agencies at a technical level.

Through Aboriginal involvement, those involved in the project learned new ways to gather cultural heritage information and to make use of that information for constructive conservation planning mechanisms, respecting Aboriginal issues of sensitivity.

The cultural heritage assessment commenced in 2000 when Stage 1 of the project focused on the Aboriginal cultural heritage values of the Goonoo and Pilliga State Forest areas within the bioregion (RACD 2000). Stage 2 carried out additional assessments both of other land tenures and other forests.

The cultural heritage assessment considered various facets of Aboriginal cultural heritage including Aboriginal sites and historical, social and spiritual association with areas within the bioregion. Information gathered during the assessments will assist in improving the conservation of heritage areas under the guidance of the Aboriginal communities associated with the Brigalow Belt South bioregion.

This project was designed and carried out differently from conventional cultural heritage assessments and a non-conventional style of report has been produced. The report structure has been designed to respect Aboriginal community wishes of sensitivity. At the request of Aboriginal people from across the bioregion a report containing specific information relating to site data and issues particular to individual LALC areas has been given to each LALC. The specific information is not included in this report.

This has occurred for several reasons. The size and diversity of issues across the study area (52 409 sq kms) requires an approach for understanding and reporting on the extent of Aboriginal cultural values with the bioregion. The project design has also been influenced by conservation and management issues for cultural heritage. These issues have been identified by Aboriginal people overtime and during the project, as well as experiences drawn from the Environmental Impact Assessment process.

Aboriginal people are principle stakeholders in the Forest Agreement process. The project results have the potential to raise awareness of other stakeholder groups about the importance of Aboriginal involvement in the Forest Agreement process.

The approach adopted in this assessment has used a scientific method influenced by Aboriginal people's perceptions, knowledge and community priorities. Other regional assessments have focused on an archaeological style of assessment (Appendix B), or on Aboriginal consultation only.

1.1 PROJECT DESCRIPTION

Three closely linked projects were developed to carry out the Aboriginal cultural heritage assessment, building upon the Stage 1 Aboriginal cultural heritage assessment. They were:

- The Aboriginal cultural heritage consultation project;
- The oral history and archival investigation; and
- The Aboriginal cultural field survey.

The Aboriginal cultural heritage assessment was also linked to the NPWS Targeted flora survey and mapping project (WRA No 16 Stage 2) and, NPWS fauna survey and analysis project (WRA 23, Stage 2). Each of these projects assisted with additional information to be made available to Aboriginal communities.

1.1.1 Aboriginal consultation

The project team contacted Aboriginal people from a wide range of communities to inform them about the cultural heritage assessment and the proposed regional assessment. Team members made initial contact with the Aboriginal people, then followed up with a series of face to face meetings to discuss the assessment and determine the nature and level of involvement they wanted.

1.1.2 Oral history and archival investigation

Prior to this project, there was a shortage of compiled documentary material highlighting the Aboriginal cultural heritage significance of the bioregion and there was no Aboriginal account of that significance documented. The Aboriginal oral history and archival investigation project was developed to address these shortcomings by gathering information about the historical and contemporary significance of the Brigalow Belt South bioregion.

Oral history

The Aboriginal oral history study gathered information from Aboriginal people, and identified numerous cultural themes from which to better understand the historical and contemporary aspects of Aboriginal culture. The majority of the interviews were conducted with people living in the central north west of the state, and some interviews were carried out with people living in other areas who had previously lived in the BBSB bioregion.

Archival investigation

The archival investigation documented the cultural links Aboriginal people have and have had with the bioregion. All sensitive archival documents gathered were used with permission from the relevant Aboriginal communities and families.

1.1.3 Aboriginal cultural field survey

The Aboriginal cultural field survey comprised three parts: Aboriginal site survey, landform mapping, and recording native plants of Aboriginal significance. The cultural field survey recorded information that highlights relationships between Aboriginal cultural heritage and landform categories within the Brigalow Belt South bioregion. The cultural field surveys also attempted to record sites in areas of the bioregion where Aboriginal site distribution was unknown.

Site survey

The project team carried out field surveys to locate and record Aboriginal sites in targeted areas throughout the bioregion. During Stage 1, the surveys focused on areas within the Pilliga and Goonoo State Forests. Stage 2 continued assessments of accessible land in each of the Local Aboriginal Land Council (LALC) areas within the Brigalow Belt South bioregion. Through the consultation process the project team learnt that each Aboriginal community would have more ownership of information gathered and of the assessment process, if surveys were carried out individually with each LALC.

Landform mapping

A landform mapping project was carried out to assist with developing a predictive model of Aboriginal site distribution throughout the bioregion. A representation of geomorphic landform units for each of the seven Brigalow Belt South bioregion provinces (Morgan and Terry 1992) were identified, described and mapped.

The scale of mapping was determined by the available topographic maps and aerial photos, both of which varied from 1:25 000 to 1:50 000.

Cultural plant recording

A cultural plant survey was part of the cultural field survey. Native plants of cultural importance to Aboriginal people were sought and recorded by the project team to highlight one part of the natural environment that demonstrates the Aboriginal cultural affiliation with the landscapes of the Brigalow Belt South bioregion.

A cultural plant field recording exercise was carried out with the Aboriginal community to develop and test methods of combining botany identification and recording skills and Aboriginal plant knowledge. The project team created information sheets about individual cultural plants for Aboriginal community usage.

Surveys on private property

Initially, a consultation plan was developed early in the project to consult with private landholders about access to private land to carry out site surveys. Private and leasehold land constitutes 85% of the bioregion. The plan to consult with landholders was modified because time constraints did not allow for adequate consultation with landholders.

Access to private land to carry out Aboriginal site surveys is a sensitive issue among many landowners. Some of the most productive parts of the landscape for recording sites include riparian areas, which are mostly contained on private land. Access to these areas to record or visit sites is important for Aboriginal people. The project was able to access some properties through existing relationships between property owners and Aboriginal people.

1.2 STUDY AREA

The Brigalow Belt South bioregion covers an area of 52 409 sq km (6.5% of New South Wales). The project team focused on the Pilliga and Goonoo State Forests during Stage 1, a total area of 4 650 sq kms. During Stage 2, the project team focused on the remaining areas of the bioregion by sampling travelling stock routes, road reserves, and many of the remaining state forests.

1.3 PROJECT AIMS

The aim of this project was to build upon information gained during the Stage 1 Aboriginal cultural heritage assessment to highlight the cultural heritage values of the Brigalow Belt South bioregion and thereby, promote improved management methods for Aboriginal cultural heritage.

The project aim accords with the RACD project specifications and is based on NPWS Vision Statement (NPWS 1999) about the conservation of Aboriginal cultural heritage:

- “That conservation in NSW be landscape based, incorporating and integrating natural values, Aboriginal cultural and broader community values, and historic heritage values, both within and beyond the protected area system.
- That Aboriginal people be the determinants of the cultural significance of Aboriginal heritage.
- That the conservation of Aboriginal cultural heritage incorporates acknowledgment of both traditional and contemporary association of Aboriginal people with the environment as well as physical evidence.”

The NPWS respect for Aboriginal culture and heritage is supported by values which:

- “Recognise the aspirations of Aboriginal people for the management of their culture and heritage;
- Work in partnership with Aboriginal communities in the design, delivery and evaluation of NPWS services; and
- Manage information relating to Aboriginal heritage in accordance with the wishes of the rightful owners of that information (NPWS 2000).”

The design of this project incorporated aims such as:

- Gathering information about where culturally sensitive areas are likely to occur, and which areas have greatest and least cultural sensitivity;
- Gathering information that would increase knowledge of Aboriginal cultural heritage values across the Brigalow Belt South bioregion and which will assist Aboriginal communities identify their desired outcomes in the final Forest Agreement;
- Gathering information that will increase opportunities and improve methods for conservation of Aboriginal culture and heritage;
- Managing information about Aboriginal heritage in accordance with the wishes of the rightful owners of that information;
- Involving Aboriginal communities with the planning and implementation of assessment projects; and

- Providing communities involved in the assessment with information gathered which relate specifically to each LALC area. This information was analysed as part of the process of formulating broad outcomes and conclusions but as requested by the LALCs was kept out of this report.

Each of the three projects designed to carry out the assessment required specific aims which complemented the overall project aim.

1.4 ABORIGINAL CONSULTATION PROJECT AIMS

The Aboriginal consultation project aimed to consult with as many as possible of the large number of Aboriginal communities associated with the Brigalow Belt South bioregion to:

- Inform Aboriginal people about the cultural heritage assessment;
- Seek guidance from Aboriginal communities about how they wish to be involved in, and participate in the project;
- Seek information from the communities associated with the bioregion about areas with high cultural heritage values; and
- Discuss conservation and management of areas of high cultural sensitivity.

1.4.1 Oral history and archival investigation

Oral history

The oral history project aimed to collect information from a wide range of Aboriginal people about historic and contemporary social and cultural associations with the bioregion. The project team aimed to collect this information in the most sensitive manner possible, respecting gender and cultural sensitivities.

Archival investigation

The archival investigation aimed to locate and compile a wide range of documents highlighting the historic and contemporary social and cultural associations between Aboriginal people and the Brigalow Belt South bioregion.

1.4.2 Cultural heritage field survey

The aim of the cultural heritage field survey was to sample key targeted areas in the bioregion for locating and recording Aboriginal sites. The project team aimed, using the results of a geomorphological assessment, to verify an anticipated link between particular landforms in the bioregion and the presence of sites. The project, in using this landform approach, aimed to demonstrate the benefit of preserving areas on the basis of their landform association, rather than preserving individual components of a site in isolation.

The cultural field survey team aimed to produce indicative rather than absolute results about the location and number of Aboriginal sites and their relationship with landforms. By defining landforms as having likely association with cultural heritage it is not intended to assert that Aboriginal affinity with landscape is limited to these areas but, areas of association were identified for purposes of management and conservation.

Information about Aboriginal plant use was also gathered to increase understanding of the Aboriginal cultural values attached to the bioregion.

1.5 PROJECT TEAM

The National Parks and Wildlife Service (Dubbo) project managed the Aboriginal Cultural heritage assessment.

A historian consultant was contracted to assist NPWS develop and carry out an oral history workshop for Aboriginal community members, assist them to conduct taped interviews and oversee the transcription of material into a report. The consultant supported Aboriginal community members in the collection of archival material for the report. Macquarie University was contracted to identify, map and describe the landforms of the Brigalow Belt South bioregion.

NPWS, with assistance from Aboriginal communities across the bioregion, carried out cultural field surveys within each of the LALCs involved in the assessment. Consultant archaeologists were contracted to assist where necessary.

Ninety-two Aboriginal people from various communities of the bioregion were employed with NPWS to carry out various tasks in the project. The relevant LALCs selected all Aboriginal participants.

Staff members from Planning NSW (RACD), Ms Evelyn Crawford and Ms Joan Chatfield provided assistance with various aspects of the project.

1.6 REPORTING TO ABORIGINAL COMMUNITIES

An outcome of the Aboriginal consultation was that each community receive it's own community report of the assessment, detailing the respective community's involvement in the project and assessment results. Participating Local Aboriginal Land Councils will be provided with a report that contains general details of the cultural heritage assessment across the bioregion. Each LALC report will vary regarding information about site locations, site type and areas surveyed. This information will be separated so that each community has control over sites pertaining to their area.

All of the oral history information appears in the generic section of the LALC reports. Each of the separate Local Aboriginal Land Council reports include:

- Bioregional overview of the project;
- Fauna list of species found in the relevant LALC areas;
- Generic plant community list relevant to each of the LALC areas;
- Location of the Aboriginal sites recorded within the relevant LALC area during the region assessment;
- Location of areas sampled during the field surveys;
- A collation of the transcribed oral history themes;
- Analysis of the historical, contemporary, social and cultural research;
- A summary of the cultural plant species including: species type, habitat, plant description, picture of the plant, known examples of bioregion distribution, a modelled map of the species predicted distribution in the bioregion, Aboriginal usage and source of information;

- Results and description of the landform mapping project; and
- Results of the identified relationship between sites and landforms, and other cultural features.

1.7 ISSUES SPECIFIC TO ABORIGINAL HERITAGE IN THE BRIGALOW BELT SOUTH BIOREGION

Most land tenure within the study area is freehold and various types of crown lease. Current Aboriginal land use activities are restricted to forestry areas and accessible public land. The areas of land available for potential management by Aboriginal communities are very limited. Active participation in land management is a central issue for Aboriginal communities throughout NSW. Aboriginal communities want active involvement in managing Aboriginal sites.

A study undertaken in the central west and north west of NSW highlighted the current limitations on Aboriginal involvement in site management. Aboriginal communities have expressed the desire to ensure that sites are recorded, managed effectively and that the history of those sites is taught to younger members of the Aboriginal community (Geering and Roberts 1993).

1.7.1 Development and Aboriginal heritage

Aboriginal communities have strong concerns about the potential impacts of development on their heritage. Government agencies and regional planning bodies are attempting to incorporate Aboriginal viewpoints into planning processes to address finding a balance between development interests and environmental issues. Prior to this assessment a limited overview of the cultural resources of the BBSB bioregion existed. Documentary material about Aboriginal history for the central northwest is scant. Historical references are also very limited in reporting upon various aspects of Aboriginal culture and tend to be Eurocentric in their observations. An Aboriginal history told by Aboriginal people is required to address some of the shortcomings that exist and to highlight how Aboriginal values, other than recognition of cultural objects, can be integrated into regional planning processes.

A number of archaeological and anthropological studies have been carried out within areas of the bioregion that provide insights into Aboriginal land use based on individual sites, or areas outside of the bioregion (Creamer 1984, Balme 1986, Beck *et al.* 1988). In addition, very few assessments that include additional assessment methods other than archaeology (e.g oral history gathering, broader consultation, and Aboriginal involvement) have occurred in the BBSB bioregion. In general these areas have been focused in resource rich environments as a result of site surveys in the Environmental Impact Assessment (EIA) process. Other areas such as the BBSB forests, which tend to occur in resource poorer landscapes have been less investigated.

1.8 SENSITIVITY OF CULTURAL HERITAGE INFORMATION

All sensitive cultural heritage information collected during the project appears in the LALC reports, but not in this report. Consultation with the Aboriginal communities provided guidance to the project manager on the appropriate method for reporting back the results of the assessment to the LALCs and the RACD, and government agencies.

1.8.1 Access to information

Information in the Stage 2 RACD assessment report provides a summary of information gathered which highlights the Aboriginal cultural affinity within the bioregion. A descriptive overview of the landforms associated with the bioregion and their potential cultural sensitivity, based on sites, is provided in this report to assist regional planning bodies in conservation planning. Interested parties wishing to access information gathered during the assessment will be required to consult with the relevant LALC. This approach provides Aboriginal people with more control of cultural heritage information. Control of cultural heritage information has been a strong desire of Aboriginal communities throughout the BBSB bioregion.

Through this project Aboriginal people have received opportunities to decide how cultural heritage information can be accessed. The NPWS Vision Statement (NPWS 2000) and RACD Data Agreement (2000) support Aboriginal people being the custodians of their cultural heritage information.

2 BACKGROUND

In NSW regional planning processes use a variety of methods to identify the complex inter-relationship between landuse capability and biodiversity. A method is needed to identify and gather suitable information about Aboriginal heritage, for the purpose of improving outcomes for the conservation of Aboriginal heritage.

Conservation principles for Aboriginal cultural heritage have shifted recently towards new methods of protecting Aboriginal sites and other cultural values by highlighting the relationship between landforms and Aboriginal culture (NPWS 2000), rather than by protecting individual sites. This approach is suitable for regional scale conservation planning. Existing protective legislation for Aboriginal cultural heritage is limited by comparison.

2.1 LANDFORMS

Cultural landscapes, landforms, places and areas are terms used among heritage practitioners and government agencies to express the Aboriginal cultural linkage to the environment. These terms, often used interchangeably, reflect the notion of conserving Aboriginal cultural heritage at the landscape scale, rather than on a site-by-site basis. These terms are poorly defined and consequently are poorly used and understood in existing regional planning processes.

This project uses the term “landform” in a geomorphologic context as defined by McDonald et al (1984). Landforms indicate the features that make up physical landscapes and are identified by set criteria for example, the type of water feature, degree of slope, morphology, size in area and soil type. Landforms can be mapped at most scales, but for planning purposes in regional planning, scales of 1:25 000 and 1:50 000 are useful because the sequence and relationship between landforms can be distinguished, and management strategies can be achieved as result.

Some examples of landforms identified and mapped during Stage 1 in the Pilliga and Goonoo State Forests include, floodplain, soil mantled slopes, terrace, rocky ground and alluvium. A sequence of 12 landform categories, covering an area of approximately 500 000 sq ha, were identified and mapped during Stage 1 in the Pilliga forest and 10 in the Goonoo. Each category of landform occurs in various areas of the forest, often in repeated relationship with other landforms highlighting the make-up of the landscape overall. Aboriginal sites were mapped among a sample of the landforms highlighting the relationship between sites and landform (RACD 2000; Appendix C). Management strategies of the Pilliga and Goonoo forest using landforms as a method of identifying sensitive and non-sensitive areas can be developed

2.1.1 Mapping landforms and Aboriginal sites

Some landform criteria influence the distribution of Aboriginal sites for example, soil type and slope (Pearson 1981, Balme 1986) and fluvial action (RACD 2000; Appendix C). Aboriginal site distribution is commonly accepted as being influenced by the location of water. However,

problems exist when mapping water features for use in regional scale planning as the only criteria for modelling Aboriginal site locations. Some examples are as follows:

- Many of the published 1:50 000 topographic maps are inconsistent with the extent of lower order drainage lines. A proportion of registered Aboriginal sites and sites recorded during Stage 1 occur among lower order drainage lines. Distinguishing these features is important from a conservation planning perspective.
- Stream ordering on topographical mapsheets, particularly in forested areas, is inaccurate and inconsistent. This provides difficulty in identifying site patterns among various ordered streams except at a general level.
- Topographic mapsheets sometimes show creeks and channels that are in fact eroded gullies created recently from poor land management practice.
- Artificial water features such as dams have modified to some extent the original watercourse or destroyed it completely.
- Water features that appear on topographical mapsheets do not indicate adjoining soil type or type of fluvial action. Both soil type and the type of water action can influence site distribution

Potentially, other aspects of Aboriginal culture can be used to show relationships with landform type. Landform is one of many variables that affect the distribution of vegetation communities. Each vegetation community has potential to contain examples of important cultural plant resources.

2.1.2 Landform mapping cultural areas

Landform mapping is suitable for use in mapping culturally sensitive areas because of the size in area that landforms are mapped. The scale size used to map landforms permits conservation management strategies to be developed for Aboriginal site and non-site features but with the scope to respect precise location information of sensitive cultural material. For this project the following scales distinguish the differences in scales used during the project:

Brigalow Belt South Bioregion Scale Division

1. Map of entire bioregion scale – 1: 2 000 000
2. Map of each bioregion province scale – 1: 500 000
3. Mapped landforms per province (western areas) – 1: 50 000
4. Mapped landforms per province (eastern areas) – 1: 25 000

2.2 LEGISLATION AND GUIDELINES AFFECTING CONSERVATION OF ABORIGINAL HERITAGE

In NSW the National Parks and Wildlife Service administers the protection of Aboriginal heritage through the *National Parks and Wildlife (NP&W) Act 1974* (NSW). Mechanisms for protecting Aboriginal heritage include the creation of Aboriginal Places, Aboriginal Areas, protected Archaeological Areas, and the legal protection of Aboriginal artefacts (objects). The legal protection of objects links this Act with other environmental legislation such as the *Environmental Planning and Assessment Act 1979* (NSW). Broadly, it is from this relationship that survey assessments are undertaken to determine Aboriginal cultural values for areas where development is proposed. The NPWS guidelines (1997) require that best practice principles be used for assessments of Aboriginal cultural heritage. This includes using Aboriginal consultation. Best practice guidelines and principles occur in other documents relating to

cultural heritage management such as the Burra Charter (1983). In addition, Local Government planning procedures enable Aboriginal involvement in assessment at a regional scale through Local Environmental Plans (LEPs).

2.3 OVERVIEW OF THE PROTECTION AND MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE

In the past, items or areas of cultural significance have tended to be protected on an individual and often isolated basis. By comparison, identifying the relationship between landform and sites enables a broad range of additional cultural values to be identified and management strategies developed to preserve those values.

The current Environmental Impact Assessment process limits opportunities for evaluating Aboriginal cultural values on a regional scale. Detailed assessments do occur, however resources are usually concentrated on the proposed area to be developed, providing only a small picture of the potential cultural resource. As a result, the individual Aboriginal sites and relics protected may fail to reflect the true extent of the sites of the region. Broader preservation strategies are needed.

The legislative protection of artefacts (objects) limits planners' capacity to take a holistic approach to cultural heritage protection. For example, an artefact may be protected in isolation from its cultural context, limiting its cultural value to Aboriginal people. The current EIA process limits the potential for assessing the depth of significance of Aboriginal sites. In comparison, regional assessments can highlight many attributes of Aboriginal cultural heritage, which contribute to defining and enhancing the significance of sites at a local and regional scale.

The development of protective mechanisms which can maximise conservation of Aboriginal cultural heritage will also be limited by the current laws, which do not provide Aboriginal communities with authority to manage cultural heritage sites. Aboriginal community management of sites has gathered momentum in recent years through joint management with the NPWS, and in some instances through opportunities created during development processes. Limited resources continue to restrict the expansion of this type of management. The importance of Aboriginal communities having a greater involvement in managing cultural heritage has been strongly voiced in recent years by the communities of the central north west of NSW (Geering and Roberts 1993:107). This vision was expressed again during the consultation process and in the recorded interviews of the oral history project of this Aboriginal cultural heritage assessment.

Aboriginal significance exists in a variety of forms, and includes traditional and contemporary perspectives. Scientific assessment of Aboriginal sites is in some instances, in opposition to the Aboriginal value placed on a site, although science can provide useful information to Aboriginal communities to help them understand the significance of a place. Ultimately, the community determines the significance of a site. Significance may be determined by considering a variety of perspectives that are of importance to the local community and which may change as information or local issues become better understood.

The method adopted to carry out this project used scientific ways of gathering information combined with Aboriginal knowledge and direction on how and what type of information should be sought. The project results show that given time and appropriate resources a multi level approach provides better opportunities to gather and use information for developing effective management strategies for cultural heritage.

Within the EIA process, existing legislation for the protection of Aboriginal sites is structured mostly towards the protection of artefacts. Assessing the extent of the cultural heritage significance of sites is restricted in the EIA process, where limited resources and time can inhibit understanding of the depth of significance of a place. The EIA process does not provide opportunities to re-evaluate significance over time. Aboriginal and non-Aboriginal communities require adequate tools to assist in determining significance.

The protection of culturally sensitive areas is greatly enhanced and improved through land managers taking a landform approach to land use and conservation. Ultimately, it is the Aboriginal community that develops the criteria for determining whether or not a landform is regarded as a cultural landform, based on the interests of the local community. These interests will vary over time and will also include contemporary perceptions. This means that significance may change as new information is gathered and understood. It follows therefore, that for Aboriginal communities to be able to influence the determination of significance, participation in land management needs to occur. Continued use of land for either cultural or socio-economic purposes can be achieved through a Forest Agreement.

2.3.1 Landforms as a management tool for Aboriginal cultural heritage

The landform pattern of a landscape allows for greater understanding of the region under question and has direct application to land use planning. Aboriginal site surveys that involve geomorphology to distinguish specific landform units can be successful in identifying patterns between landform and site distribution. Statements of significance and effective management planning are possible through combining both.

Land managers often have a variety of landforms within their property boundaries. Each landform type will have varied potential for cultural sensitivity attached to it because of the landform's resource potential or its proximity to other landform types.

The Mid-Lachlan Regional Vegetation Mapping Plan (DLWC 2000) adopted the principle of protecting landform elements that potentially may have cultural attachment, based on a generalised association between Aboriginal sites and particular landforms. The assessment for Aboriginal cultural heritage of the Brigalow Belt South bioregion has further developed the approach adopted for the MLRVMP by identifying and mapping landforms, and sampling those landforms for Aboriginal sites and other cultural links.

3 METHODS

3.1 BACKGROUND

For Stage 1 of the assessment, information was required in order to develop an understanding of the Aboriginal cultural heritage significance of the Pilliga and Goonoo State Forests. A multi-level approach was adopted which included Aboriginal consultation, an oral history and archival investigation, and a cultural heritage field survey. The project team considered that a broad approach to investigating heritage resources was required for a project of this size. Further considered, was that Aboriginal communities associated with the Pilliga and Goonoo would require adequate information to assist them to determine the significance of areas within the forests and the appropriate management of those areas.

For Stage 2 of the assessment, the project team continued with the multi-level approach focusing on the remainder of the Brigalow Belt South bioregion. One project objective was to involve the Aboriginal communities throughout the whole assessment process. The large size of the study area and the number of the communities associated with it, required an extensive consultation process be created. This process included follow-up consultation with community groups at the completion of field investigations and during compiling of this report.

To identify Aboriginal interests in the forest areas and the broader bioregion, it was important to develop an understanding of the historical and contemporary associations with the bioregion, through oral history. An archival research component assisted with this task. The scope of the bioregion's prehistory, including forests, also needed to be understood. Each of the BBSB forests is made up of a variety of landform types. The project sought to gather information on the association of site distribution among landforms in forests. Travelling stock routes were also targeted for landform mapping and site distribution to understand landform and site association among landforms that do not occur in forests.

During Stage 1, the multi-level approach adopted was successful in highlighting the importance of the Pilliga and Goonoo State Forests for Aboriginal people during periods of economic and social oppression, and in gathering information of sites and landforms. For Stage 2, the results of the projects that were developed to carry out this assessment would serve two broad purposes. Firstly, the cultural significance associated with the Brigalow Belt South bioregion would be established. Secondly, Aboriginal involvement in the management of landscapes could be developed in recognition of those cultural values.

3.2 ABORIGINAL CONSULTATION PROJECT

3.2.1 Aboriginal communities of the BBSB bioregion

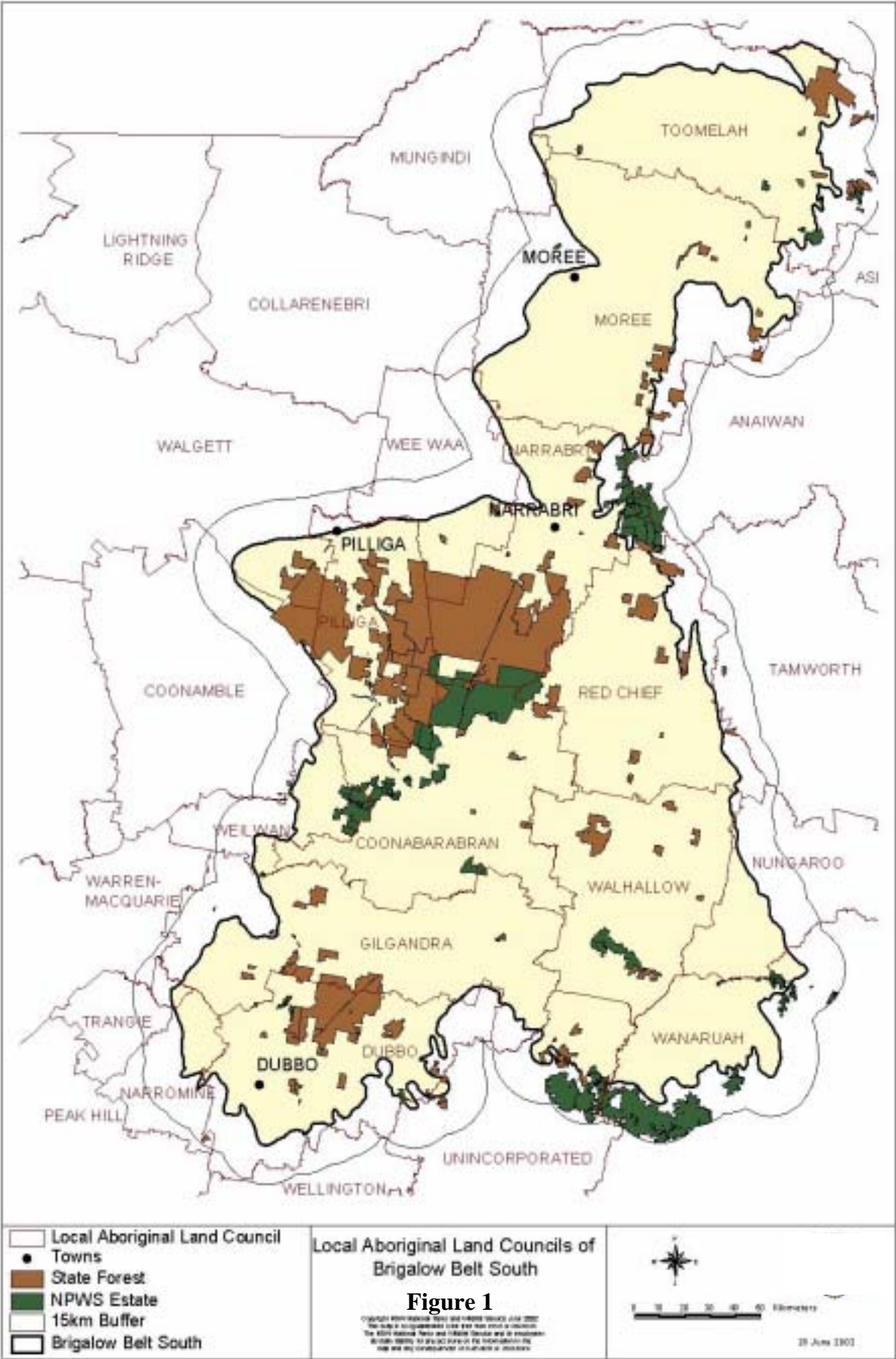
Approximately 106 690 Aboriginal people live in the Brigalow Belt South bioregion or outlying areas. This estimate is based upon a population census per Local Government area, carried out in 2001 (RACD 2002). It is probably a conservative estimate. The bioregion contains a diverse range of Aboriginal organisations and groups. Of these groups Local Aboriginal Land Councils are the principle organisation that are contacted about cultural heritage matters by developers, Local Government and State agencies. The boundaries of 17 LALCs intersect within the BBSB bioregion (Figure 1). Information about other important Aboriginal groups such as, Elders groups and Traditional owners, was sought through LALCs. A list of Aboriginal organisations contacted about the project appears in Appendix C.

Consultation entailed discussions about the WRA and cultural heritage with Aboriginal people throughout the central northwest of New South Wales. The consultation process involved 28 Aboriginal Organisations. During The project team used information from Federal and State bodies to identify Aboriginal organisations associated with the subject areas. Additional information was obtained from the Aboriginal community.

Project specifications and information sheets about the assessment process were distributed to several Traditional groups and organisations, and all of the 17 Local Aboriginal Land Councils whose boundaries occur within the Brigalow Belt South bioregion. The project team initiated discussion with each LALC gradually, first meeting with LALC executives to discuss the project and gain feedback and to set a suitable time for a project presentation to LALC members. Consultation occurred in this manner over a period of 8 months (February 2001-August 2001). During this period the team sought specific feedback from the communities. The type of feedback the project team sort included:

- Sensitivity of information gathered during the project;
- Guidance on the appropriate people to contact within the community;
- Endorsement of the project structure, cultural field survey, oral history and archival investigation, and landform mapping;
- Areas that should be surveyed as a priority; and
- Appropriate mechanisms to get the project information to the communities.

Towards the end of the project in July 2002, the project team carried out a workshop with Aboriginal communities to re-visit the mechanisms agreed upon earlier in the consultation phase with regards the separation of information in the Resource and Conservation Assessment Council (RACD) report and the individual LALC reports. Draft copies of both reports were distributed to Aboriginal representatives for feedback on the suitability of information provided in the RACD report, and to show the LALC reports and the extent of detailed information gathered during the assessment. Twenty-five Aboriginal people representing seven LALCs were in attendance. The Aboriginal representatives provided clear direction about the extent of information to be placed in the final RACD report. In subsequent meetings, other LALCs representatives have voiced preference for the specific project findings to be reported in the LALC report, and not the RACD report.



3.3 ORAL HISTORY AND ARCHIVAL INVESTIGATION

3.3.1 Rationale

During Stage 1, the project team identified that the assessment required an historical research approach, which included gathering oral histories from Aboriginal people affiliated with the bioregion. This approach differs from anthropological research, which attempts to understand the family history of individuals, including their traditional descent to specific areas, relationship with other groups and individuals, language diversity and their relationship with traditional land owning groups.

The historical approach taken allowed for the gathering of a considerable amount of information about the patterns of life in the bioregion during the twentieth century and people's concerns with the changes they have seen occur in environmental, economic and land use patterns over recent decades. An anthropological approach would have accessed a different body of information that would provide additional insights into the cultural heritage of the bioregion. However, the willingness of community members to be interviewed for this project depended largely on their understanding of the project as one that was concerned with an historical rather than an anthropological or sites-based approach. This was made explicit by a large number of interviewees. It reflected a widespread dissatisfaction with site management and previous research outcomes that were regarded as responding to academic and bureaucratic, rather than community needs.

3.3.2 Oral history

The project team contacted Aboriginal organisations, families and individuals and used information from the Aboriginal consultation project to select a group of people who could potentially take part in the oral history project. The project team took care to minimise offence and intrusion, ensuring that cultural and gender sensitivities were respected and that the person interviewed regarded their interviewer as appropriate. Where possible a member of the Aboriginal community did the interviews.

A historian contracted by NPWS (Ms Kate Walters) assisted project staff to conduct an oral history workshop for community members. Aboriginal community members conducted half the taped interviews. Aboriginal people who were willing to be interviewed were distributed widely throughout the central northwest of NSW.

Interviews were conducted in various ways, sometimes at the person's home or other times in the field, depending on the preference of the interviewee. All interviews were conducted as informally as possible and lasted approximately one hour. Some interviews were conducted with a person over a three-day period, during which places associated with the taped subject matter were visited.

During Stage 1, each interview concentrated on how Aboriginal people used the Goonoo and Pilliga State Forests and the importance of the forests to the Aboriginal community. This theme was continued broadly for the remainder of the bioregion but also allowed Aboriginal people to guide the project team on the specific topics that would assist in highlighting the cultural links between themselves and the bioregion.

3.3.3 Archival investigation

The project team sought to find and retrieve documentary material demonstrating the range of historical and contemporary associations between Aboriginal people and the Brigalow Belt South bioregion. The team sought information from articles, reports, literature, from major archival institutions and libraries in NSW and the ACT, and from local museums and historical societies. Permission from relevant Aboriginal families and organisations to allow access to sensitive material held in archives of the Department of Aboriginal Affairs was sought and granted. Aboriginal people also offered access to private photographic material and documents.

3.3.4 Project constraints

Originally, 60 taped interviews were considered sufficient to deliver project results within the project's timeframe and budget. The process of acquiring the interest of appropriate people willing to share information with the project team involved a long period of consultation. However this process provided unexpected opportunities to record individual's accounts of their cultural affinity within areas of the bioregion. As a result, 110 taped interviews were recorded. Additional time was needed to transcribe and analyse the material. There were some areas of the bioregion where coverage was less successful due to a variety of reasons generic to oral history research - shyness at being interviewed on tape, mistrust of government processes or unwillingness to divulge cultural information for research projects.

The project team could not gain access to some archival material relevant to the bioregion. For example, Aboriginal Welfare Board Minutes (1890-1960) and Aboriginal school files (1890-1940). Many key archives and other main documentation have been accessed and reviewed. A complete bibliography list appears in the LALC report.

3.4 CULTURAL HERITAGE FIELD SURVEY

The cultural field survey comprised of three closely linked components: Aboriginal site surveys, cultural plant investigation, and a geomorphological landform analysis designed to identify the variety of landforms represented in the bioregion.

The rationale for recording sites was selected because of the importance Aboriginal people attach to places where sites exist. The threat imposed upon sites from rural and urban development is an issue that is commonly voiced by communities. Aboriginal people have expressed strong feelings towards preserving sites so that teaching their children about sites and their culture can be maintained. Skill training in site identification and recording is considered important among Aboriginal communities.

The reasons to include a cultural plant survey in the project were similar to the reasons for recording sites. In western NSW, native vegetation clearing is an on-going issue for Aboriginal communities. Aboriginal people consider many of the plant species that are important to them are threatened by current land management practices. Limited access to areas to look for plants and to teach their children of a plant's usage and importance is another concern.

The inclusion of landform mapping in the cultural field survey project was to understand and show the cultural association among landforms that occur within the bioregion. The location of recorded sites, plants and places that have historical meaning or, places that are embodied in memory can be viewed among landform categories. Management strategies of Aboriginal cultural heritage can be improved upon by exploring relationships between various cultural aspects and landforms.

The choice to use landform as a variable to identify relationships with sites has been influenced by the limitations of using water as the sole method of site prediction. Limitations such as changes to the course of water flows over time. However, distance from water at which sites occur does provide useful information that can assist with the management of sites.

3.4.1 Aboriginal site surveys

The method used for the cultural field survey was developed during the Stage 1 assessment of the Pilliga and Goonoo State Forests (RACD 2000; Appendix C, pp.21-6). The Stage 1 survey results identified a pattern of Aboriginal site distribution among specific landforms. A summary of the method used follows.

A sampling approach based on a landform analysis was adopted due to the large size of the Pilliga and Goonoo forest areas (4,500 sq kms). A total of eight weeks was spent surveying sampled areas of the forests, approximately four weeks for each. The survey team used results from a landform assessment to determine the landform types that would be surveyed. The survey teams sampled a representation of each of the landforms identified in the Pilliga and Goonoo forests. Transects crossed potential sensitive and non-sensitive landforms for varying distances to determine the extent of Aboriginal occupation for each landform. Landforms that have prominent water features are accepted as potentially sensitive due to a generalised assumption that sites are strongly associated with water.

During Stage 2, the site survey adopted a non-random approach, surveying landforms that were considered potentially sensitive based on the Stage 1 results and registered sites. In some cases, landforms that are distinct to other areas of the bioregion and which have unknown cultural attributes were sampled.

After consulting with Aboriginal people and undertaking a review of registered sites for the bioregion, the team selected land tenure areas within the bioregion that were accessible to the survey team. The survey team then selected landforms in the targeted land tenure areas for sampling. The land tenure selected included:

- State forests;
- Travelling stock routes and reserves;
- Road reserves;
- Federal property (CSIRO);
- Recreation areas;
- Some private properties interested in providing access; and
- Some NPWS Nature Reserves.

3.4.2 Site information

The survey team recorded limited information of site content. The focus of the survey was to record the relationship between Aboriginal sites and landforms. The team did not attempt to analyse the contents of the sites in detail. Some data were recorded for individual sites but analysis will be done after further consultation with Aboriginal communities. Additional site analysis will benefit future planning decisions for site management. Key site information recorded included:

- Type of site;
- AMG location;
- Tenure;
- Site dimension;
- Distance from water;
- Potential impacts to the site; and
- General assessment of surface visibility.

The survey team gathered more detailed information at some sites where the opportunity presented itself or where the team considered that a site of potential importance required additional attention for future evaluation and protection.

Enquires were made to communities about any knowledge of physical features in the landscape that have cultural attachment. Similar enquires were also conducted during the oral history project and archival investigation.

As part of the consultation process, in September and October 2002, Aboriginal communities across the bioregion will be invited to discuss how information should be stored and to explore options which include maintaining the current system with modification, or to develop a new system.

3.4.3 Cultural plant surveys

In addition to recording Aboriginal sites, the project aimed to increase understanding of the cultural values of the bioregion by obtaining information about plants used traditionally by Aboriginal people. During Stage 1, some examples of the cultural association between plants and Aboriginal people were gathered.

Exact locations of cultural plant species were recorded where Australian Map Grid (AMG) references were used to record Aboriginal sites. During the Stage 1 survey, transects were designed to investigate a representative sample of landforms for Aboriginal sites. The number of individual cultural plant species observed along each transect was also recorded. Because landforms influence plant diversity, sampling of each landform provided opportunities to investigate a variety of vegetation communities.

Stage 2 involved additional methods for obtaining information of cultural plants. A pilot study was conducted with the Coonabarrabran Aboriginal community to develop effective methods for involving Aboriginal people in surveys for plants of cultural importance and learning new ways of recording the information. The pilot study was conducted over a five day period and involved six members from the community. The team was assisted by an ecologist to record feedback from the study. Discussion about methods for ensuring that the Aboriginal community has ownership of the information and ways the community can communicate information to approved interested parties, concluded the study.

During Stage 2, data sets from the NPWS vegetation and cultural heritage projects were combined to test whether cultural plant distribution can be predicted and mapped. This information will assist in understanding the likely distribution of plant species that have specific Aboriginal cultural importance.

Many of the cultural plant species recorded during the project were identified through the following methods:

- Taped interviews with Aboriginal Elders;
- Plants identified during site surveys by Aboriginal team members;
- Research of historical and contemporary documents; and
- Assistance from field botanists.

3.4.4 Modelling for Aboriginal cultural plants

A Generalised Linear and Additive Modelling exercise was carried out for many of the cultural plants identified during the assessment. The statistical model aimed to develop locality predictions for where certain plant species occur based on their relationship with various aspects of the environment. The statistical results were loaded into GIS software to produce maps of likely locations for each cultural plant species. This method was adopted from the Targeted Flora Survey and Mapping Vegetation Project (NPWS 2002).

Effectiveness of the model is consistent with generic modelling limitations. Observation bias and reliability of existing records can in some cases limit the reliability of results. Use of the predictive model with Aboriginal community interests in specific plant species is an important step towards the integration of conservation planning strategies with community interests.

3.4.5 Cultural plant survey constraints

Names for some of the plant species identified during the project have been difficult to verify, and will require further consultation with Aboriginal communities. There may be several names for the same plant species. In some cases the wide range of species types among a genus made identification difficult, when only scant information was available. This required additional time spent on cross checking names for some plant species from references and Aboriginal people advisers.

3.4.6 Landform mapping

The landform mapping involved aerial map interpretation with stereoscopes, mapping the landforms onto a topographic map as polygons and then digitising the information onto Geographic Information System software for map production and integration with other project results such as site information and cultural plant data.

The team selected landforms for mapping that represented key landscapes for each of the seven bioregional provinces (Morgan and Terrey 1992). The Aboriginal site survey endeavoured to sample a high proportion of the areas mapped for landforms to assist with identifying and highlighting relationships between landform type and sites. Landform mapping was extended in some areas of the bioregion where existing site data is known to procure additional information of site and landform relationship. In some instances, landform mapping was carried out for some areas of the bioregion where gaining access was not possible. This included, mostly, land that is freehold. Opportunities to build upon the Stage 2 results can develop if future surveys occur in these areas, for example, through the Environmental Impact Assessment process.

3.4.7 Landform Profiles

A series of landform profiles appear in this report. The profiles have been developed to show the relationship between Aboriginal cultural areas and landforms. The profiles are designed to

provide planning bodies with indications about areas of likely cultural heritage significance. It is not intended the profiles provide definitive information about sites. Aboriginal communities will hold additional information of sites and of other important cultural and heritage values. It is intended that any proposed development body will need to directly approach the Aboriginal people who hold the detailed information.

The BBSB bioregion is made up of seven geographic provinces, each province contains a variety of landscapes and each landscape contains a variety of landforms. The BBSB landform profiles are described in the following manner:

- Landscapes which dominate each Province;
- Landforms associated with each landscape; and
- Landform elements which occur within each landform.

3.4.8 Landform scale and information

Landforms have been mapped according to available topographic maps and aerial photos that range from 1:25 000 to 1:50 000. Descriptive information of each province and associated landscape is provided for context. Landform descriptions are provided to assist people identify landforms in the landscape.

3.4.9 Survey coverage

Access to land tenure varied throughout the bioregion. State Forest and Travelling Stock Routes and Reserves provided the majority of areas for sampling. In the bioregion, state forests tend to share similar landform characteristics, which are not representative of all landform types in the bioregion, especially the resource rich river valleys and floodplains. Such areas were sampled in the north of the bioregion using Travelling Stock Routes and Reserves. Travelling Stock Routes are smaller in number and size in the central and southern areas of the bioregion than the northern areas. This created a bias which favoured sampling of the broad floodplains of the Liverpool Plains, Northern Outwash and parts of the northern Pilliga Province and excluded much of the valleys of the southern areas of the bioregion. In some cases, travelling stock routes were difficult to identify because available crown land (CLID) data was not always accurate. Access to private properties in the southern parts of the bioregion provided key opportunities to sample landforms in the river valley areas. Landform coverage extended to areas with registered sites to assist with understanding relationships between site and landforms.

3.4.10 Landform mapping constraints

The manner in which information about landforms is presented on GIS maps necessitates the creation of polygons with sharp boundaries. This constraint obscures both gradual natural transitions and mapping uncertainty and should be interpreted with caution. Subjective judgements have been made in determining geomorphic units and their boundaries.

Visibility factors have inhibited some features in the landscape being mapped, because of the 1:50 000 scale used and the nature of the landscape itself. In some cases, drainage lines were difficult to distinguish on 1:50 000 aerial photographs over the forest areas due to tree canopy. Limited time was available to verify on the ground all of the areas mapped in the bioregion. Thus modification to mapped units may be required in the future.

3.4.11 Research Design

Watered localities are a major contributing element influencing the distribution of sites among landforms. Several sample methods adopted in EIA surveys have demonstrated patterns of Aboriginal site distribution along the river valley areas of central west NSW. The results of the Stage 1 assessment established that sites are strongly linked with water features associated with the higher contoured terrain of the Goonoo and Pilliga State Forests. Among the valley floor areas of the forests, sites are more frequent. From available studies of the region, forestry assessments in general (including Stage 1 assessment), and ethnographic sources, the following factors have been considered in developing an appropriate sampling strategy for the remaining forest surveys of the bioregion (App: B):

- Aboriginal sites have the potential to occur in all landforms that exist in the study area; and
- Sites are expected to be concentrated near watered localities.

Landforms have been used as a variable to assess the presence of Aboriginal heritage because:

- Particular landforms are consistently linked with Aboriginal cultural heritage;
- Landforms can be mapped at a regional scale to assist planners; and
- Potential conservation of landforms rather than individual sites is possible once the links between landform and cultural heritage are identified.

4 PROJECT RESULTS

The results of all the cultural heritage assessment projects consistently reflected high levels of Aboriginal cultural value attached to areas within the Brigalow Belt South bioregion. Following is a summary of the results for each project that was developed to investigate and understand those values. Detailed results appear in the individual Local Aboriginal Land Council reports, which are accessible through appropriate consultation. In accordance with the expressed wishes of Aboriginal people throughout the BBSB the detailed results do not appear in this report.

4.1 ABORIGINAL CONSULTATION PROJECT

The project team consulted with 28 Aboriginal organisations including Local Aboriginal Land Councils, Regional Land Councils, Traditional Aboriginal interest groups, Community Development Employment Programs and Aboriginal Health services.

In its initial phase the consultation process involved travelling to each community to discuss the project. Awareness of the project occurred mostly through the consultation phase. The Aboriginal community guided the project team in various phases of each of the cultural heritage projects and some aspects of the project were modified as a result.

Broadly, some of the issues raised by communities or where a strong interest was focused included: management of Aboriginal sites, site training and education, reporting on the sensitive information, selection of areas to be sampled for sites and plants, and direction on consultation. The issues are presented in the following sections.

4.1.1 Management of Aboriginal sites

- Desire for cultural heritage management of some sites known to the communities, notably Aboriginal cemeteries; and
- Concerns of limited access to areas to record and manage sites.

4.1.2 Site training and education

- The community considered that additional time and resources are needed to meet community demand for involvement in the survey and the recording of sites;
- Communities wish to have further opportunities for site work and site recording training;

- Communities preferred to use the project surveys as an opportunity to expose younger community members to opportunities of field work with Elders and experienced site recorders; and
- The project's assessment results to be compiled for use as an educational tool for younger community members.

4.1.3 Reporting on sensitive information

- Requests that each community receive a customised report detailing the specific cultural heritage information relevant to the particular community;
- Request that sensitive information be withheld from broader community and from the RACD report; and
- Request for a meeting with the NPWS Aboriginal Sites Registrar to discuss ways in which each community can have greater control of culturally sensitive information.

4.1.4 Selection of areas to be sampled for sites and plants

- Approval by communities of the areas selected to carry out surveys including areas where the community directed the project team to record sites known to them;
- Communities directed the project team to areas of cultural interest. In some instances the areas of interest within each LALC region were outside of the bioregion boundary; and
- The Coonabarrabran community selected the forest areas for sampling and recording cultural plants as part of pilot study for learning new methods in plant recording undertaken in their area (see section 3.4.3).

4.1.5 Direction on consultation

- Additional meetings with some communities to better understand how they could become more involved with the assessment;
- Aboriginal communities, through community consultation, selected the people to be involved in the cultural field surveys and oral history gathering.

Each Aboriginal community will receive a comprehensive presentation at the end of the project. Several communities have received presentations to date and have commented on this draft report. The comments voiced indicate concern with maintaining the ownership of cultural heritage information. This means presenting each community with the information relevant to its area, and withholding sensitive material from the RACD report. During the community review process, opportunities for communities to include their own recommendations in the report was facilitated in a workshop. Community members have discussed several recommendations openly at LALC meetings. These appear in the recommendations.

4.1.6 Aboriginal participation

Ninety-two Aboriginal people were employed by NPWS to carry out project tasks. In some instances, this has involved training opportunities, for example, in:

- Site recording and survey methods;
- Application of Geographical Information System software (GIS);
- Oral history recording techniques;
- Accessing historical documents;
- Digitising map information and preparing maps;
- Methods in Ethnobotany;
- Application of various computer software;
- Facilitation between the project team and the community; and
- Report writing and formatting.

4.2 ORAL HISTORY AND ARCHIVAL INVESTIGATION PROJECT

A total of 110 interviews were conducted and 130 hours of tape was collected and transcribed over stages 1 and 2 of this project. A three-day workshop was conducted with ten Aboriginal community representatives to discuss the oral history component and to become familiar with recording equipment, interview style and to practise doing interviews with each other. Community members conducted 50% of the Stage 2 interviews. The material collected is presented in the LALC reports and exceeds 100 A3 pages consisting of direct quotes from community members across the bioregion. These quotes were illustrated with a range of historical and contemporary photographs and were interspersed with contextual historical information.

In addition, a research bibliography has been compiled to assist community members by providing initial avenues for undertaking further documentary historical research. The bibliography provides listings of general works relating to Aboriginal history, local histories and life stories by or concerning the Aboriginal communities, local non-Aboriginal histories for background, journals of relevance, and information regarding relevant archival holdings.

Interviewees were identified through a number of avenues including personal contacts of community interviewers, community information meetings and community organisations. The community organisations were briefed regarding the project and requested to identify potential interviewees.

As a result of the wishes expressed by the communities during the community consultation process the tapes have not been deposited with any institution but have been returned to the interviewees. In an attempt to facilitate the preservation of the tapes they have been returned with a covering letter detailing interviewee's options for depositing tapes themselves with AIATSIS or the oral history collection in the Moree Regional Library.

The structure of the oral history material within the LALC reports has been designed to highlight community members' own words and minimise the intrusion of an external historical voice. This structure reflects that the intended audience of the report is the Aboriginal communities themselves.

4.2.1 Key results from the oral history and archival research project

The following key points emerged from an analysis of the oral histories:

- The oral history material demonstrates that Aboriginal communities across the bioregion express a common understanding of the cultural landscape. In the context of this study the key feature of this understanding is that the historical events and locations that structure and give meaning to the communities understanding of landscape are overlaid on traditional cultural meanings embodied in the landscape.
- That the areas of the bioregion (and beyond) are interconnected through complex patterns of movement that are centred around kinship ties and frequently facilitated through work patterns. These patterns of movement are understood to be the continuation of traditional patterns into the historical period and through to the current day.
- The interviewees' memories of their own and their antecedent's lives illustrate the constant and considerable role that Aboriginal communities have had as a source of labour and knowledge in the economic life of the bioregion. Aboriginal people have had a central, though largely unacknowledged, role in the economic development of the bioregion. The changing labour patterns of recent years have led to a marked decline in Aboriginal involvement in the paid labour force. This is a source of considerable concern to communities for a number of reasons, including loss of economic independence, loss of pride, and reduced access to country.
- Widespread concern was expressed regarding the loss of places and sites of importance and the urgent need to protect what remains. In the areas affected by cotton development, people spoke of the concern that the impact of large scale cotton farming was destroying not only specific sites and places but that the landscape as a whole was becoming unrecognisable. Such loss of known landscapes is a serious threat to Aboriginal cultural heritage, both traditional and historical, as stories and knowledge are linked to country.
- The interviewees whose cultural and environmental concerns were interwoven in their concern for country consistently expressed concern regarding the environmental deterioration occurring in the bioregion. The decline of waterways and the loss of tree cover and indigenous vegetation were the two environmental issues consistently highlighted by interviewees across the bioregion. Lagoons, rivers, and forests were repeatedly spoken of by interviewees as places of importance for their traditional, historical and current cultural uses and meanings.
- The decline of bush foods, animal and plant, as a result of the loss of indigenous vegetation, the increase in agriculture and the degradation of the waterways was a source of concern in many communities. An associated concern was the restrictions on access to land on which to hunt or gather bush foods. The core concern in relation to this issue was with the loss of opportunities for knowledge to be passed down from the older to the younger generations.
- The Aboriginal communities of the bioregion expressed throughout the consultation and interview process the linked desires to record their history and heritage in their own words and to control access and use of that information once it was recorded.

4.2.2 Themes from the oral history interviews

The interviews were unstructured in format and the topics covered emerged from what the interviewees regarded as relevant to the project and were willing and able to share in this

context. The themes into which the oral history material has been ordered within the LALC reports were drawn from the interviews themselves and are as follows:

The Role of Plants in Aboriginal Life

The stories of the plants that people used, and in limited instances continue to use, throughout the bioregion as food, medicine and child's playthings. These stories include comments on the decline of species with changing land use.

The Role of Animals in Aboriginal Life

The stories of the animals that people utilised, and continue to utilise, throughout the bioregion and of the skills involved in acquiring them. The decline in animal populations, and the increasing limitations of access to land for hunting are sources of concern.

Forests

Forests appear in the oral histories as the location of social, economic and spiritual activities in the traditional, historic and current periods. Forests are particularly valued as locations in which skills, knowledge and traditions can be handed down. Concern with the decline of forested areas was frequently voiced, as was the increased cultural value placed on those that remain.

Rivers

Rivers are spoken of as markers of community identity, the traditional place of meetings, and the chosen location of settlements traditionally, historically, and currently. They are talked of as being, historically, an extremely rich and important source of food. The decline of the river systems with changing patterns of land use and increasing irrigation is a source of widespread concern and distress.

Movement

This section demonstrates the interlinking of the different areas of the bioregion through the regular pattern of people's movements through it for reasons of family and work. The movement of community members in established patterns interlinks historical and contemporary sites across time and space.

The Places People Lived: Missions, Camps and Reserves

This section includes the stories people told of the missions, reserves and camps in which people in the bioregion lived from the 1920s to the 1970s, and in many cases continue to live in. This section provides information on locations that are not present in the documentary historical record and indicates that further research would identify many more site locations. The narratives demonstrate the value that people place on these sites as the locations of traditional and historical community life and cultural practices.

Community Life: Hunting and Fishing

This theme includes a selection of people's stories on fishing and hunting around the missions, camps and reserves on which they grew up. The bulk of the material about these activities is included in the sections on rivers and animals. A selection is included in this section to represent the importance of these activities in people's memories of community life.

Community Life: Social Gatherings

The theme includes a range of events that people remembered as social gatherings that brought together the communities in the era from the 1930s to the 1970s: corroborees, dances, singalongs, rodeos, boxing, football and church. These events are always linked in memory to the specific places in which they occurred. They are expressions of people's memories of community strength and are one aspect of people's attachment to place.

Community Life: Childhood Days

Narratives of growing up in the missions, camps and reserves in the era from the 1920s to the 1970s and people's attachment to the place of their early years. The stories tell of the activities that children did together, the stories they were told to protect and teach them and the valued example of the old people.

Control and Suppression: Managers

The restrictions and controls placed on Aboriginal people living within the managed mission and reserve system affected life on a daily basis. Cultural practices, particularly language were suppressed, behaviour was monitored and movement on and off the settlements was controlled. The narratives in this section tell of this control and of people's resistance to it.

Control and Suppression: "Welfare"

The "welfare" was spoken of by people in relation to the removal of children and adolescents from communities. Children were removed from their families and communities and became part of the stolen generations. Adolescents, mainly girls, were taken from their families and communities and placed on stations as domestic labourers for years on end. The narratives are by those who themselves suffered from these policies.

Control and Suppression: "Dog Act"

The 'Dog Act' is the term used to refer to the process by which members of the Aboriginal community could apply for certificates which 'exempted' them from the discriminatory laws governing Aboriginal people.

Control and Suppression: Police

The police are remembered as having acted as enforcers of the desires of white authority in removing and moving-on people from missions, reserves and camps. The stories people tell are of the racism and harassment they suffered at the hands of police.

Control and Suppression: School

Schooling, particularly within the schools on missions and reserves, is spoken of in terms of racism, suppression, suffering and being trained to work rather than educated. People talk of the low quality of the education provided and the lack of opportunities to continue beyond primary school as issues that are still affecting the lives of individuals and communities.

Control and Suppression: War Service

People spoke with pride of those in their families and communities who fought for Australia in the two world wars. The lack of recognition of that service, the discrimination that the men returned to, and the fact that they did not receive the benefits accorded non-Aboriginal servicemen all contribute to a continuing sense of injustice.

Control and Suppression: Racism

This section addresses the racism directed at Aboriginal people by members of the white Australian community in non-official capacities. In particular the narratives concern the segregation that occurred in shops, movie theatres and swimming pools through to the late 1960s.

Work: Places and People

The many narratives associated with work demonstrate the central involvement of Aboriginal people in the economic development of the bioregion throughout the historical period. The types of work include: station work, ringbarking, shearing and shed work, domestic labour, droving, brumby catching, railways, sleeper cutting, fencing, and tobacco and cotton farm labouring. The stories told of work and demonstrated people's pride in their and their ancestors'

knowledge and skills. Many of the narratives of work indicated the semblance of freedom that work sometimes provided in the era of intense control and suppression.

Land Management: Lock Out and Environmental Decline

This section includes people's comments on two issues that are regarded as central in increasing the restriction on their capacity to continue to practice and to pass down specific cultural knowledge and skills. These are: increasing restrictions on access to land and water due to changing patterns of ownership and usage, and environmental degradation and decline. The impact of land clearing, agriculture and irrigation on the river systems of the bioregion was a consistent source of particular concern.

Heritage: Value and Management

This section includes community members' views on the management of physical and documentary heritage including the importance of Aboriginal involvement and control of the management process. There are also expressions of concern about the destruction that has occurred historically, and continues to occur, of cultural heritage sites and items. The need to preserve the physical landscapes, particularly rivers and forests, as the necessary location for the transmission of cultural knowledge is highlighted.

Sites of Significance

The oral histories collected about specific sites of significance were very limited. This was due to three factors: the limited time to develop relationships of trust with informants, the disinclination to provide specific information to government agencies for fear of information becoming public and leading to site destruction, and the understanding of those spoken to that the landscape in its entirety is significant.

This section includes examples of some of the categories of sites that are of significance to the communities within the bioregion. These include sites of traditional mythological significance; sites of traditional ceremonial, social and resource activities; traditional burial grounds and historical cemeteries; and historical sites of community life. It includes information on a number of specific carved trees as well as people's concern over the historical removal and ongoing destruction of carved and scarred trees.

My Place: Attachment to Country

Throughout all of the oral history sections the narratives people tell are concerned with their attachment to country. The knowledge and attachment to country is expressed through memories and stories relating to, or located in, the traditional and historical sites and tracks of movement that give meaning to the landscape. This section includes a selection of explicit statements about attachment to country.

4.2.3 Mapping Oral history

On occasion, Aboriginal Elders and the oral history team mapped locations where stories were shared of plants, landforms, animal habitat, drover events and visits to the forests. The mapped locations of these events appear in the LALC reports to compliment the transcribed text and to show the relationship between Aboriginal culture and landforms so that management strategies can be developed, based on landforms.

4.2.4 Archival investigation

The initial examination of documentary collections for material relevant to the Aboriginal history of the region was conducted in Sydney and Canberra. The documentary history has been

used to provide a contextual overview of the issues and themes raised in the oral history interviews. A comprehensive research bibliography has been compiled which will provide a valuable tool for local communities to pursue further research.

4.2.5 Ownership of taped information

All interviewees from Stage 1 have had the original tapes of their interviews returned to them. Interviewees in Stage 2 will have their interviews returned at the end of the project.

4.3 CULTURAL FIELD SURVEY PROJECT

4.3.1 Summary

Results of the cultural field survey indicate that sufficient data were collected to develop predictions about Aboriginal site distribution in the Brigalow Belt South bioregion. The information obtained during the field surveys highlights the cultural association between Aboriginal people, their heritage and the bioregion. The detailed results of, the cultural field survey coverage, the frequency and type of Aboriginal sites recorded, the landforms identified among sites, and the variety of cultural plants recorded, have been included in the reports to each of the Local Aboriginal Land Councils involved in the assessment. Consultation with the community will be required to access detailed material. A summary of the principle results is provided below to contextualise the project's discussion and the recommendations that follow.

The cultural heritage field survey results provided an improved understanding of the extent of Aboriginal resource use in the bioregion. Initial investigations by the project team and Aboriginal communities, indicated that some of the sites recorded are of high cultural importance. In some instances, field surveys occurred outside the bioregion boundary but within the 15km bioregion buffer zone. The surveys gathered information of sites, landforms and plants in different resource zones. Investigations within the buffer zone were carried out because Aboriginal Elders requested the project team to record sites known to them, or in some instances, areas outside of the BBSB buffer provided opportunities to understand site distribution among certain landforms.

4.3.2 Key results of the cultural field survey project

A total of 1 110 Aboriginal sites were recorded during the cultural heritage field survey (Stage 1 & 2). This included 250 sites recorded during Stage 1 (RACD 2000) and 849 recorded during Stage 2. Prior to the assessment 893 existed on the NPWS Site Register (1997 data base list). The assessment results have increased the total number of sites for the bioregion to 1 940. The sites recorded during the BBSB assessment have not been forwarded to the NPWS Sites Register (now upgraded to a new system called AHIMS). Adequate consultation with communities about the issue of ownership of site information is required. TABLE 1 below shows the number of sites recorded in the BBSB bioregion prior to and after the assessment. Recorded sites have been grouped by BBSB Province to highlight the range of survey investigation throughout the bioregion.

TABLE 1: RECORDED ABORIGINAL SITES PER PROVINCE

BBSB Province*	Pre - WRA	Stage 1	Stage 2	Total
Liverpool Plains**	124	0	187	311

Liverpool Ranges	88	0	7	95
Northern Basalts	61	0	124	185
Pilliga	296	166	147	609
Pilliga Outwash	110	78	115	303
Talbragar Valley	175	0	29	204
Northern Outwash	39	1	55	95
Total	893	245	664	1 802
Sites outside of BBSB*		5	185	138
Combined Total			849	1 940

** Sites recorded during AGL survey (1999) and Liverpool Ranges (2000).

During Stage 1 and Stage 2, 402 site locations were targeted to carry out surveys to sample various landforms and areas of the bioregion.

4.3.3 Land tenure surveyed

The project team gained access to carry out field surveys on the following land tenures:

- 60 State Forests;
- 130 Travelling stock routes and reserves;
- 10 Road Reserves;
- 14 private properties;
- 10 crown recreation areas,
- 3 NPWS nature reserves;
- 1 NPWS national park; and
- 1 federal research station (CSIRO).

Detailed locations appear in the LALC reports.

4.3.4 Landforms and sites

Thirty landform types, representative of the bioregion's landscapes, were identified and mapped. Of the total number of sites known in the bioregion (1 940), 65% (1 266) occur within the coverage of mapped landforms. The occurrence of sites among mapped landforms has been used to identify relationships between sites and landform within the bioregion.

Information about the average distance of Aboriginal sites recorded from water has been used to assist with understanding patterns of site distribution among landforms. The distance of sites from water was recorded for all of the 1 110 sites recorded during Stage 1 and Stage 2 of the BBSB bioregion assessment, and a site survey for a gas pipeline development which recorded 98 sites (AGL 1999).

4.3.5 Cultural plants

A total of 60 plant species of Aboriginal cultural importance were recorded in the bioregion. Information on each plant has been summarised for educational use by Aboriginal communities. The variety of cultural plant species has highlighted relationships with a diverse range of vegetation communities and environmental settings. A series of modelled maps predicting the likely regional location within the bioregion of many of the plant species has been produced. All information concerning the results of the cultural plant study appears in the Local Aboriginal Land Council reports.

4.4 LANDFORMS AND SITES

4.4.1 Mapped coverage

Landform mapping covered a total of 38.1 percent of the bioregion. Additional areas outside of the bioregion boundary were mapped in some instances, linking surrounding bioregions (Figure 2). A total of thirty landform categories representative of the Brigalow Belt South bioregion were identified and mapped. Coverage of landform mapping varied among the seven BBSB provinces. The Liverpool Ranges and Liverpool Plains have considerably less areas of mapped coverage compared with the other provinces. Additional mapping for both provinces is a recommendation of this report. TABLE 2 shows the bioregion areas where landforms were identified and mapped.

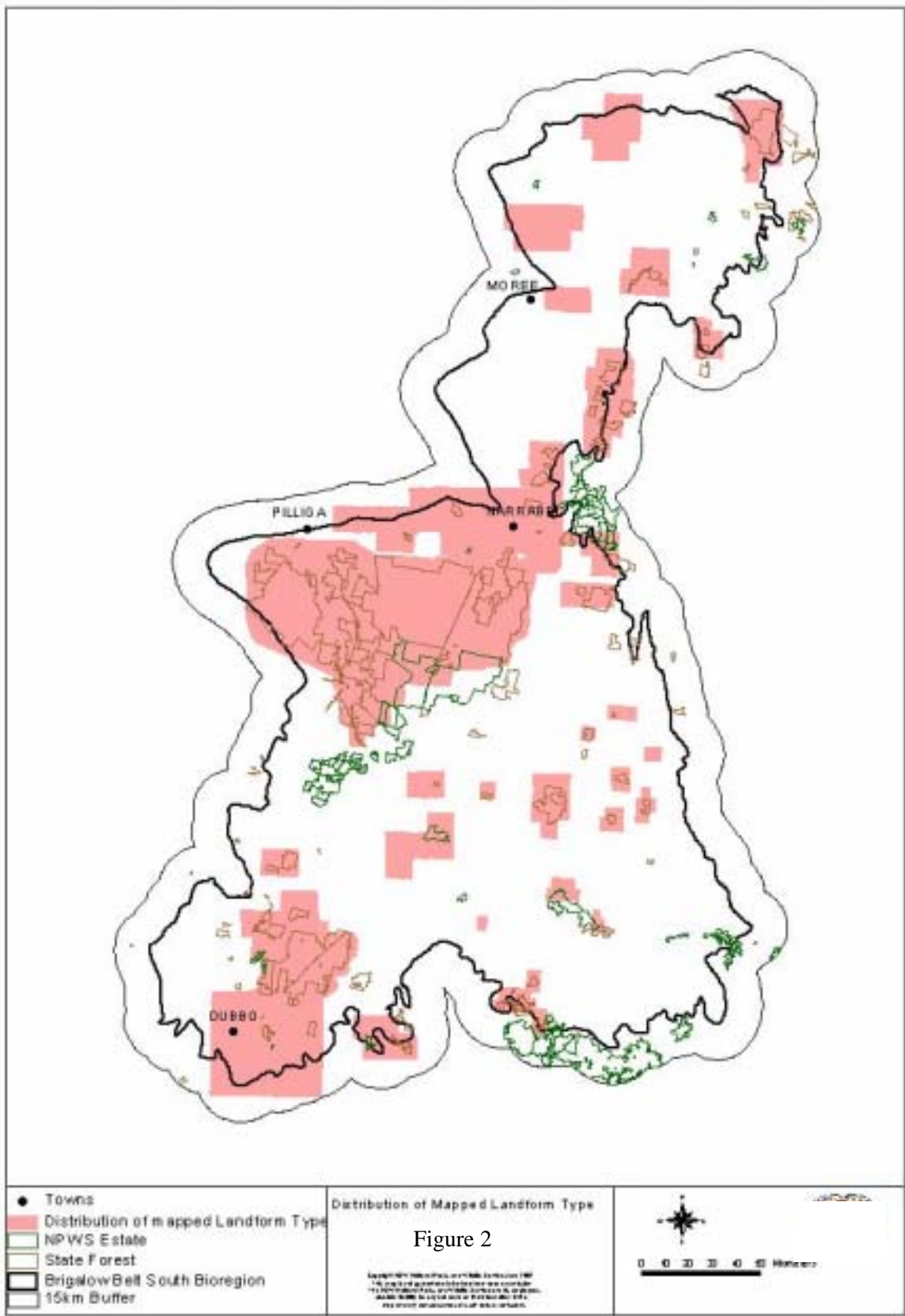
Landform mapping of the Warrumbungle National Park did not occur. The complex nature of the terrain meant there was insufficient time to identify and map landforms. Local Aboriginal communities consider the area covered by the Warrumbungle National Park as very culturally sensitive.

TABLE 2: AREA OF MAPPED LANDFORM COVERAGE PER BBSB PROVINCE

Province	Hectares	Hectares mapped	% mapped	% unmapped
Northern Basalts	611 268	170 758	27.9	72.1
Northern Outwash	701 355	141 633	20.2	79.8
Liverpool Plains	940 197	196 775	20.9	79.1
Pilliga Outwash	535 097	451 942	84.5	15.5
Liverpool Ranges	523 105	32 551	6.2	93.8
Pilliga	1 734 198	597 280	34.4	65.6
Talbragar Valley	205 346	131 015	63.8	36.2

4.4.2 Identified landforms

Each landform type has been classed in one of four landform groups: Alluvial landforms, Deep stable sand landforms, Landforms of higher contour, and Terrace group of landforms. Each landform group contains landforms which share criteria that potentially influence the distribution of sites among landform type. Criteria such as: type of water feature, soil type, and landform process. Grouping the landforms also assists with showing the topographical sequence of how landforms are linked to one another. Each landform group has been combined with information of Aboriginal site location to show likelihood of where Aboriginal sites have a higher occurrence among landforms that share similar characteristics.



4.4.3 Alluvial group of landforms

The alluvial landforms are the low-lying areas of the bioregion and are associated with a variety of water features: rivers, creeks, channels, billabong, gilgai, swamp, lake, and chain of pond. They have been grouped based on their relationship with these features and fluvial occurrences (TABLE 3). The larger landforms in this group, in area of size, are alluvium and floodplain. Nine landform types are classed among this group. The assessment results show that Aboriginal sites occur frequently among landforms associated with this group.

TABLE 3: DESCRIPTION OF LANDFORM CATEGORIES – ALLUVIAL GROUP

Alluvial fan	A cone or fan-shaped alluvial deposit, usually where a stream leaves a narrow valley and enters a broad plain. Generally steeper angled than other alluvium. Often with traces of many abandoned channels on the surface. May be coarse grained, but will vary.
Alluvial terrace	Abandoned floodplains of streams or rivers (abandoned because the stream has eroded its bed and floodwaters can no longer reach the old floodplain). Usually a natural process although gullying can have the same effect.
Alluvium	Deposited by streams or rivers. The mapped areas will usually surround a channel and include both the channel and floodplain. Where the floodplain is too small to map, the creek lines may indicate small pockets of alluvium. Soils range from sand to clay, usually deep. Creek beds may erode to bedrock in some areas. In this survey distinguished from floodplains of larger rivers by their relatively featureless and infrequently flooded surfaces (see below). Some alluvial areas have only poorly defined drainage lines or discontinuous channels (chains-of-ponds).
Channel	River channel. Only mapped where the true channel width (from top of bank to top of bank) is much greater than that shown on map (usually a tracing of the streambed or water-covered area at the time of the photography).
Floodplain	Broad areas of alluvium around the major rivers (Macquarie, Castlereagh, Namoi, Gwydir, McIntyre) and creeks of the Liverpool Plains. Differentiated from alluvium by the size of channels, permanence of water, in-channel features (bars, pools) and abundance of floodplain features such as flood channels, meander scrolls, palaeochannels etc. Generally fine-grained soils (clays to earths). Flat and with poor drainage. Susceptible to flooding.
Flood channel	Channels which only carry water during floods. Often formed by the floodwaters leaving the main channel (not palaeochannels). The flood channels are often discontinuous (shaped like an axe-grinding groove) and act as waterholes between floods.
Gilgai	Areas of deep, black cracking clay where the surface has a pattern of mounds and hollows (formed by expansion and contraction of the clays as they wet and dry). The hollows often gather water after rain and can hold it for some time. In the cleared areas of the Pilliga outwash the mounds are bare and a source of sediment in runoff. Associated with Brigalow in the northern Pilliga Outwash and Belah (<i>Allocasuarina cristata</i>) in smaller pockets in the Pilliga Forest.
Wetland & Swamp	Any natural depression which shows evidence of periodic standing water or saturation. Ranges from long periods of inundation to very infrequent, however there is usually some evidence of modification of the vegetation. This can be bare (long inundation) or dense (saturated swamps). The length of inundation can not be determined from air photos (being a single point in time). Often found on floodplains in palaeochannels, flood channels, meander scrolls, floodplain basins.
Paleochannel	An old channel (abandoned). Usually as the result of natural processes and the creation of new channels elsewhere on the floodplain. Conspicuous because they retain the characteristic meandering channel pattern. They range from being permanently dry and largely filled in, to some with widely spaced waterholes to some which are often full of water and which act as flood channels.

4.4.4 Stable deep sand group of landforms

This group consists of only two landform types: Sand monkey and Yellow sand sheet (TABLE 4). Both occur mostly within the Pilliga Outwash Province. Water is scarce among both landform types. Water features are intermittent and are active after prolonged rain periods. An example is the shallow depressions that are associated with box woodland communities. These features contain cultural plants that are dormant during dry periods, but become active during wet periods, or when water is widespread. Aboriginal sites and plants have been recorded among these features. Overall, sites are less frequent among this landform group because of the scarcity of water but also because, potentially, the landform processes can conceal sites.

TABLE 4: DESCRIPTION STABLE DEEP SAND LANDFORMS

Landform	Description
Yellow sand sheets	Deep, uniform medium to coarse yellow sand. Possibly in situ weathering product of a particular stratum within the Pilliga Sandstone Formation with or without subsequent reworking by wind into sand dunes. Gentle slopes in parts of the Goonoo forest.
Sand monkey	Local term for a sandy palaeochannel 'stringer' in the Pilliga Outwash. Unlike palaeochannels, which retain a concave shape and hold water, sand monkeys are convex at the surface. The channels are filled with deep medium sand, either yellow or red, depending on drainage. The channel outline can only be determined by excavating, but in air photographs the sand bodies are long, continuous bodies with low sinuosity and characteristic vegetation (sparse, cypress dominated).

4.4.5 Terrace group of landforms

The landforms grouped in this category consist of: Terrace with scalds, Terrace with overland flow, Terrace, and Claypan (TABLE 5). A variety of terrace landforms distinguished by different water regimes were identified during the project. Each variety of terrace adjoins the landforms associated with the alluvial group, particularly floodplains. The features that distinguish terrace landforms from alluvial landforms are soil type, and that they are beyond the limit of flood events. Terraces can be large in area. Soil type associated with terrace landforms is generally porous and prone to erosion. Porous soils offer suitable camp locations compared with floodplain soils which are generally heavy clays that remain wet for long periods after rain or flooding. Aboriginal sites concealed below the surface are more prone to exposure due to the eroding qualities of the terrace soils. Areas where terrace and floodplain overlap will have high potential for sites because of an overlap in resources.

TABLE 5: TERRACE GROUP OF LANDFORM

Landform	Description
Terrace	Abandoned floodplain. Abandonment caused by incision of river to greater depth so that floodwaters never or very rarely reach this level. Will usually still retain floodplain features of palaeochannels, flood channels etc although these may carry water less regularly than on the floodplain.
Scald	Bare areas where erosion has removed the topsoil. Often at the edge of the floodplain, on slightly higher ground. May be associated with salinity.
Claypan	In areas of the Pilliga Outwash, small, shallow, circular depressions that intermittently hold water (from local runoff). Usually without trees, but sometimes with grasses. Circular shape suggests possible shaping of shoreline by wave action. Appear to form by deflation of the topsoil, exposing the impermeable subsoil that holds the water.
Overland flow	On terraces (mostly) where surface features indicate irregular inundation by a thin sheet of water. This is usually local runoff (Pilliga outwash) generated on the terrace, not overflow from a river or creek. There is some reshaping of the terrace surface and some thin deposition, but this is usually minor. Contributes to distribution of veg on terraces, soil moisture etc.

4.4.6 Higher contour group of landforms

Higher contour landforms are the elevated areas of the bioregion and consist of: Rocky ground, Rocky ravines, Colluvial slope, and Soil mantled slopes (TABLE 6). Less common examples that occur in the bioregion are: Steep rocky ground, and Bench. Colluvial slope and soil mantled slopes adjoin, in many instances, with the alluvial group of landforms. Both landform groups have high incidences of site association, but only in areas where alluvial landforms adjoin or among the small creek lines associated with both. Soil mantled slope is the most dominant landform in size of area within the bioregion. It can vary from undulating to hilly but can have large areas of very low degree of slope. The degree of slope associated with Colluvial and Soil mantled slope contributes to slope erosion of creek bank areas of lower order stream. Many of the sites recorded among lower order streams were exposed by erosion on creek banks.

TABLE 6: DESCRIPTION HIGHER CONTOUR LANDFORMS

Landform	Description
Soil mantled slope	Low to steep slopes with a continuous cover of soil and no rock outcrop. Soils range from shallow to deep and a range of textures. Soils formed largely by in situ weathering of rock. Subject to sheet erosion and gullyng only in extreme cases, but only usually with cultivation.
Colluvial slope	Deposits of slope processes, usually sheet (rather than channel) flow, accumulating on the lower slope, below a soil mantled or rocky slope. Slopes range from steep (>15 deg) to very low (< 1 deg). Colluvium slopes towards the creek line from the slope, distinguishing it from alluvium which slopes down the valley parallel to the creek. Often a deep coarse or medium (sand to loam) soil. Highly susceptible to erosion especially where vegetation has been disturbed (such as by cultivation, forestry, road-building etc.)
Rocky ground	Bare rock surfaces or thin soils with abundant rock. Can range from cliffs to flat benches (see below for variations in Deriah SF).
Steep rocky ground	Cliffs and steep slopes of rocky outcrop. Differentiated from bench.
Rocky ravine	Valleys with very steep straight sided slopes, narrow ridge crests and narrow valleys. Soils thin or absent on slopes. Main erosion process is mass movement along joints or bedding planes in rock, therefore slopes angles tend to be at the limit of mechanical stability of the rock: usually greater than 30 deg. Creeks will have boulders, gravel and sand as a thin cover over bedrock. Channel gradients will be low to steep, with occasional rapids and waterfalls at bedrock steps.
Bench	Flat or near flat bench of rock on plateaus of Deriah Forest. Often at edge of plateau, above steep slope.
Talus	(Talus = Scree). Blocks of rock at the base of a cliff, usually very steep (at the angle of repose), >30 deg. Limited to areas of basalt/volcanic outcrop in Liverpool Ranges and the Warrumbungles.

4.4.7 Ratio of site distribution to landform

An estimate of the number of sites per square kilometre with each landform group was calculated (Appendix A). The results show that Aboriginal sites have been recorded more frequently among the High contour landform group and Alluvial landform group (TABLE 7). Both landform groups have greater area of mapped coverage. The average size of each landform that occurs among each group is considerably lower among the Alluvial group of landforms, for example, floodplain, alluvium and alluvial terrace are smaller in area than soil mantled slope which dominates the Higher contour group and all of the landforms overall.

TABLE 7: DISTRIBUTION OF SITES AMONG GROUPED LANDFORMS

Grouped landform	Number of landform types	Number of sites	Total area in size (ha)
Alluvial	9	668	867 161
Stable deep sand	2	7	28 942
Terraces	4	83	46 516
Higher contour	5	475	1 033 354

4.4.8 Variation among Aboriginal site type

The variety of site type within the bioregion highlights the diversity of Aboriginal culture within the bioregion. Collectively, the sites reflect a diverse range of Aboriginal landuse among different landforms. Some of these landforms are under threat from expanding rural and urban development. A total of 17 different site types are associated with the coverage of mapped landforms in the bioregion.

Some site types are poorly represented among the site data coverage. Examples include shelter sites with art (2), rock engraving (1), ochre quarry (1), stone arrangement (3), and stone quarry (1). The reason is partly because sites of this type are rare and because the sample of landform and field survey was unable to locate these sites. Considering that 85% of the bioregion is freehold and very few samples on freehold occurred, inadequate coverage may be the reason for few counts of some site types. Commercial landuse of landforms that are commonly associated with art sites and engraving sites (rocky ground) is less, compared with the alluvial group of landforms where greater frequency of other site types occur. Land clearing and agricultural land use, particularly irrigation, are major threats to Aboriginal sites. Potential threats do exist that can impact upon art sites and other sites associated with secluded rocky ground environments, for example, site destruction from goat infestation.

Only one stone quarry was recorded in the area of mapped landform coverage. No stone quarries were recorded during the BBSB assessment, however, it was observed that stone artefact assemblages were made up of raw material classes available from river and creek beds, and pebbles eroded from sandstone landforms, particularly in the forests.

Aboriginal communities have requested that specific details of sites be excluded from this report.

4.5 DISTANCE FROM WATER OF SITES - BBSB

4.5.1 Summary

Information from the distance from water Aboriginal sites has been extrapolated from three separate surveys carried out within the bioregion. They include the results from a site survey for a gas pipeline (AGL 1999), Stage 1 of the BBSB assessment for the Goonoo and Pilliga State Forests (NPWS 2000) and the results of the BBSB Stage 2 assessment. All three studies share similar results of distance from water for Aboriginal sites among the landforms identified and mapped.

4.5.2 Sites associated with water localities - AGL

The AGL study demonstrated that an Aboriginal site survey of 226.2 km was able to distinguish a pattern of Aboriginal site distribution, despite a narrow survey width which averaged approximately 20 metres. Interpretation of the results produced predictive statements about Aboriginal site distribution across various landform features, particularly watercourses. Of the sites recorded, 50% were within 200 metres of water (TABLE 8). Adequate sampling of many landforms encountered was restricted due to poor surface conditions at the time work was undertaken (AGL 1999:14). The pipeline survey occurred in areas of the Talbragar Valley Province, Pilliga Province and Liverpool Plains Province.

TABLE 8: NUMBER OF SITES AND DISTANCE FROM WATER – AGL

Distance from water (m)	Number of sites
Less than 50	25
100-200	19
200-300	4
300-400	13
400-500	9
500-600	4
600-700	6
800-900	5
1-2km	6
2-3km	3

4.5.3 Sites associated with water localities - Stage 1 Goonoo and Pilliga forests

The Stage 1 results are based on surveys that sampled 12 landform types, that overall, are consistent with landform types that make up many the bioregion's forests. The results of the cultural field survey highlight how understanding of the creek systems in many of the forests sampled in the bioregion has been influenced by the effects on the forests by erosion and other forms of modification. The Goonoo and Pilliga State Forests are discussed as examples of forest stream flow affecting site distribution because of the large size of each forest and the many sites recorded in each. The majority of other forests sampled (58) share similar physical similarities.

Watered localities in both the Goonoo and Pilliga are in the main, intermittent creeks, drainage lines, depressions and chain of ponds. These features strongly influence site distribution in the Goonoo and Pilliga State Forests. The results displayed in TABLE 9 illustrate that sites are located within close proximity to water. Approximately 90% of sites were recorded within 200-300 metres of water.

TABLE 9: SUMMARY OF DISTANCE OF SITE FROM WATER - STAGE 1

Distance from water (m)	Goonoo Sf sites	Pilliga Sf sites
Less than 50	20	65
Greater than 50	9	13
100-150	7	5
151-200	5	6
201-300	2	7
301-400	1	1
401-500	2	1
501-1 km	0	3
701-800	0	1
1-2km	1	4

Prior to the BBSB Stage 1 assessment, it was widely believed that the rain fed creeks behaved in a hierarchical network of stream flow. The dominant class of ordered streams that occurred in the forests was formed on the higher contoured slopes and then as larger drainage streams on the flatter alluvial plains. From this general viewpoint, the interpretation of forest usage by Aboriginal people would be considered as sporadic, reflecting a response to the intermittent flow of rain fed streams of a marginal landscape.

Results of the sites survey and geomorphological study indicate a different story. Aboriginal occupation may have occurred for prolonged periods under the right conditions, made possible by a different array of water features (chains of ponds) that existed prior to European usage of the forests. From what is understood of the chains of ponds, the relationship between vegetation and the morphological structure of the soils resulted in water being available for prolonged periods. A diversity of plant foods would have been associated with these features.

Intensification of forest usage since European arrival has modified stream flow dramatically, resulting in only a few examples of chain of ponds remaining in the forests. These features would have provided Aboriginal people opportunities to exploit the diversity of resources that occurred throughout the forests. The number of cultural plants recorded, the range of vegetation types mapped (Beckers and Binns 2000) and the wide distribution of recorded sites, notably in areas where chains of ponds may have occurred, support this interpretation.

4.5.4 Sites associated with water localities - Stage 2

Both the AGL and Stage 1 survey results were based on sampling similar landforms but some different landforms were also sampled. Stage 2 sampled 30 landform types overall. Results of the Stage 2 site survey shared close similarities with Stage 1. Results have been influenced by the number of forests surveyed (58). In most instances, the State forests in the bioregion share similar landforms and surface visibility constraints for sighting artefacts are common. A consistent result would therefore be expected. Surveys during Stage 2 also occurred on other land tenure with different landform types. Although calculated average distances to water showed similar results to the Stage 1 survey results of the forests and the AGL study, some exceptions stand out. Sites among the broad floodplain and terraces of the major rivers have a higher average distance and range of sites from water (TABLE 10).

TABLE 10: DISTANCE FROM WATER OF ABORIGINAL SITES - STAGE 2

BBSB Province	Range	Average (m)
Liverpool Plains	1- 4 000	410

Liverpool Ranges	20 - 900	173
Northern Basalts	1 - 600	76
Pilliga	1 - 1 000	145
Pilliga Outwash	0 - 2 400	119
Talbragar Valley	0 - 600	101
Northern Outwash	0- 750	102

Aboriginal site distribution is influenced by the variety of widespread water features that occur on floodplain and alluvium landforms. Examples include river frontage locations, creek tributaries, swamp, chain of ponds, gilgai and billabong. The landform groups, especially those that dominate forest areas, have less variety of water features (lower drainage lines) where sites tend to be focused.

4.5.5 Aboriginal sites among land tenure

TABLE 11 below shows the number of Aboriginal sites known to occur among NSW State forest, NSW NPWS, Travelling Stock Routes and other land tenure within the BBSB bioregion. Other land tenure includes private land (freehold), private lease and various crown land.

TABLE 11: NUMBER OF ABORIGINAL SITES AMONG BBSB TENURE

Number of sites	Land tenure
519	NSW State Forest
77	NSW NPWS national park & nature reserve
329	Travelling Stock Route & Reserve
877	Other (freehold, private lease & other crown tenure)

4.5.6 Forest landforms

Fifty-eight state forests were investigated for the variation in landforms. The most dominant type of landform is Soil mantled slope (48% of all forests). Aboriginal sites were recorded among this landform but are sparsely distributed. Alluvium landform makes up 25% of the forests and also contains the highest density of sites. Colluvial slope (18%) and rocky ground (5%) are the other landform type that occur consistently among the forests.

4.5.7 Landforms among TSRs

Travelling stock routes and reserves were used as the principle land tenure to sample landforms away from forest areas. Landforms that were identified, mapped and sampled away from forest areas mostly included the alluvial group of landforms and the major rivers that occur among them. TSRs also offered the only accessible land tenure to survey and record sites among the group of landforms that are located less among forest areas, in particular, floodplains (which make up 20% of the TSRs mapped and sampled). This was also the case with Road Reserves. The focus of many of the surveys on TSRs was in the bioregion provinces of Northern Outwash, Northern Basalts, Pilliga Outwash and Liverpool Plains. Travelling Stock Routes and Reserves have maintained their large size and access to water in some areas of these provinces. These provinces also contain many of the bioregion's major rivers and floodplains. Travelling Stock

Routes in the remaining provinces tend to be smaller in number and size but did provide access to sample other areas.

The Travelling Stock Reserves on floodplain and terrace landforms produced many recordings of Aboriginal sites. The type of site frequently recorded and landform association influenced its distance from water.

4.5.8 Cultural Plants among landforms

Variation of cultural plant species among land tenure occurred. Whilst this may be partly due to landform and environmental setting, the landuse activity also played a role. The cultural plants identified by Aboriginal people while surveying TSRs tended to be among herb and forb species associated with low ground cover and vines associated with tall shrub and tree storey layers. Within forest areas cultural plants were identified more frequently among the shrub layer. Information of cultural plants has been excluded from this report at the request of the Aboriginal communities.

5 DISCUSSION

5.1 ABORIGINAL CULTURAL HERITAGE AND THE BRIGALOW BELT SOUTH BIOREGION

The project team considered it vital that the assessment of the Brigalow Belt South bioregion included other attributes of Aboriginal culture other than just sites. Generally, the cultural association attached to Aboriginal sites receives greater attention than the recent historic and present day cultural values, although these are of equal importance to Aboriginal communities. Aboriginal people, through oral histories, historical records and consultation have articulated a strong sense of Aboriginal historical and contemporary attachment to the bioregion. People who took part in this assessment have reiterated documented concerns of Aboriginal people about limited involvement in heritage management and training opportunities (Geering and Roberts 1993).

A diverse range of cultural values pertaining to the bioregion has been acknowledged and better understood through this project. A sample of those values has included recognising some examples of previous Aboriginal landuse among landforms through to contemporary affiliations with the same landforms. The results of the cultural field surveys, as well as gathering information of plants and landforms, has shown that a distinct relationship between sites and landforms with neighboring bioregions exists, linking bioregions culturally. This linkage is also demonstrated through historical and oral history investigations of people movement across the bioregion.

The Aboriginal cultural heritage assessment has raised awareness among numerous stakeholder groups and government agencies (RACD 2000, pp. 11-14) of the Aboriginal cultural and heritage values associated with the Brigalow Belt South bioregion. This report has provided a summary of those values which have been brought together by Aboriginal involvement and guidance into the collection of their history, stories and the recording of important cultural areas.

5.2 LANDFORM AS A MANAGEMENT TOOL FOR ABORIGINAL CULTURAL HERITAGE

The use of landforms to understand Aboriginal site patterning has been a component of this project used to find new ways of improving the management of Aboriginal sites. Through appropriate Aboriginal consultation, the relationship between landform and sites can be used to develop conservation strategies for Aboriginal interests in regional planning processes. Such conservation strategies would have similarities to the interests of other land use managers and conservationists. In western NSW, Regional Vegetation Committees and Catchment Management Boards are suitable planning constructs which could incorporate a landscape approach to managing cultural heritage using landforms, Local Government environmental planning processes is another.

The Brigalow Belt South bioregional assessment concludes that some landform types will have greater cultural heritage potential than others. This is not to say that some landforms will not have any cultural value at all. The assessment has demonstrated that a common element that is associated with each landform type, is water. The relationship between Aboriginal sites recorded during the assessment highlighted a strong association with water. This is also the case for other aspects of Aboriginal culture. The oral history and archival investigation has gathered information that shows that many of the historic, social, contemporary and spiritual aspects of Aboriginal culture share a common theme with rivers, creeks and waterholes. Examples of Aboriginal culture away from water certainly exists, but from a conservation planning perspective, immediate action is needed to conserve threatened landforms with many examples of Aboriginal culture.

Landforms provide land managers with a tool by which the terrain within their managed area can be divided and ranked on Aboriginal cultural values. This designation of landforms into a suite of cultural areas is achievable with adequate information gathering and Aboriginal input and guidance in the process. An effective plan of management for Aboriginal cultural heritage is then achievable.

5.2.1 Development and Aboriginal heritage

Primary industry dominates the floodplain and river valleys of the bioregion. These areas are also prone to development by expanding townships and transportation networks. The cultural collision with and impact upon Aboriginal sites is therefore obvious. Much of the land adjoining river frontage in the bioregion is occupied by primary industry. As a result, entire landscapes have undergone some level of modification, particularly floodplains. Less developed floodplain areas that contain remnant examples of culturally resource rich landforms and which are accessible to the public are Travelling Stock Routes and Reserves. The preservation of Aboriginal cultural heritage on TSRs needs to be developed through adequate planning and consultation with Aboriginal people.

The term cultural landform has in the past been poorly represented in regional planning and not fully understood among planners who come from a different skilled background. The use of the term landform, as defined by its geomorphologic definition, is one method to which cultural heritage can be linked into the regional planning process. These existing planning processes are more accustomed to using and understanding ecological attributes of the environment.

This project has demonstrated a strong link between various aspects of Aboriginal culture and landforms. Individual landforms have examples of Aboriginal culture and heritage and are then classified as a cultural landform. Another example of cultural landform is being able to identify the relationship among landforms that have different examples of Aboriginal culture but where each example is either culturally or physically linked to one another. This requires Aboriginal involvement. The use of landform in the planning process enables a unit of analysis to be mapped and managed depending on any data layer that is placed on it, including cultural heritage.

5.3 ABORIGINAL MANAGEMENT OF CULTURAL HERITAGE

It is important that Aboriginal communities control the processes of determining significance values and given opportunities to manage culturally sensitive areas, particularly on accessible tenure such as the forests and Travelling Stock Routes and Reserves. Appropriate management of cultural heritage requires that Aboriginal people make the management decisions, and have access to technical and logistical support. Recognition of Aboriginal affiliation with various

environments is now occurring through involvement in joint cooperative management strategies in Forest Agreements. This would be an ideal opportunity to begin the shift to Aboriginal management of cultural heritage using the bioregion as a focus.

This report has discussed the importance of using a variety of types of information when assessing site significance and developing management strategies. Aboriginal people need the opportunity to express what is already known about a site or place, and to have access to technical information which may help them understand the significance of a site or place. Aboriginal management of culturally sensitive areas is dependent on recognition that Aboriginal communities have a clear interest in and link with regions in the bioregion. It is important that State Forests and the NPWS support Aboriginal communities to have greater involvement in the management of cultural heritage and to develop community-initiated ventures, which may lead to training and employment.

5.4 BBSB FOREST AGREEMENT

The Forest Agreement is a suitable process for Aboriginal communities to negotiate opportunities in land management participation of public lands. The assessment has concluded how Aboriginal culture is affiliated in various ways with State Forests, Travelling Stock Routes and Reserves, Road Reserves and NPWS estates. The Forest Agreement process is an opportunity for communities to acquire suitable training, employment and a greater role in cultural heritage management.

5.4.1 Aboriginal involvement in the Forest Agreement process

NSW Planning facilitated Aboriginal involvement, training and consultation for the Forest Agreement process. NSW Planning also undertook a series of workshops for Aboriginal people to learn skills in negotiation for the Forest Agreement process and to provide a platform from which Aboriginal interests in the Forest Agreement process could be developed.

Aboriginal interests have also been supported through the BBSB Aboriginal cultural heritage assessment undertaken by NSW National Parks and Wildlife Service. The cultural heritage assessment project has maintained a high profile through a reporting process to the Western Regional Assessment Steering Committee, which oversees all BBSB assessment projects (see RACD 2000a). Information updates of each project have, over a two-year period, been distributed among numerous stakeholders who have a vested interest in the outcomes of the Forest Agreement. Aboriginal involvement, participation and interests in cultural heritage issues in the BBSB bioregion have been widely understood and acknowledged by stakeholders through the assessment project updates.

5.5 FURTHER WORK

This project has attempted to investigate and highlight examples of the Aboriginal cultural values of the Brigalow Belt South bioregion and in so doing, provide a different outlook for managing those values in face of growing land use and development. The size of the bioregion, the complexity of landform variation and the diverse range and distribution of Aboriginal communities requires a new management approach.

The use of landforms in this project provides a framework for improving Aboriginal cultural heritage information. The framework is an initial step towards achieving better information for

decision making but will require on-going refinement as new information about Aboriginal sites, landforms and cultural perspectives is obtained.

The project has also brought together a large contingent of Aboriginal communities who have articulated their concern about development threats to their culture. The communities have a comprehensive summary of information gathered from the assessment of the bioregion. They can decide how the information can be accessed and developed, and how it can be used for their own cultural interests.

Continued consultation between communities and agencies is required to assist with facilitating technical information and ensuring that the project results are used to foster new directions in cultural heritage management, under the guidance of Aboriginal people. Community training in cultural heritage management skills is also necessary to improve opportunities for better community participation.

6 RECOMMENDATIONS

The following recommendations are based on the assessment results and Aboriginal community consultation workshops. They are divided into three sections: Recommendations for Government agencies; Recommendations for further information gathering; and Recommendations expressed by Aboriginal communities. Each recommendation identifies action required to address the conservation management issues of Aboriginal cultural heritage in the Brigalow Belt South bioregion.

- Recommendations 1-7 address management strategies required for Aboriginal cultural heritage in the BBSB.
- Recommendations 6-8 involve further information gathering to build upon the cultural heritage assessment results and assist with improving cultural heritage management.
- The final recommendations from 9-14 have been directly expressed by the Aboriginal communities involved in the BBSB assessment.

6.1 RECOMMENDATIONS FOR GOVERNMENT AGENCIES

Recommendation	Action	Description	Funding required
1	Consultation with Private Landowners	Consultation project for developing partnerships with landowners in key areas of the bioregion, for the purpose of managing Aboriginal heritage on private land	Yes
2	Management strategy of Travelling Stock Routes and Reserves in BBSB	Management strategies for cultural heritage to be developed between Rural Lands Protection Board, appropriate government agencies and Aboriginal communities for the TSRs of the bioregion	Yes
3	Cultural heritage management strategy of State Forest	The NPWS Western Regional Assessment Unit to organise with NSW State Forest and Aboriginal community representatives a workshop seminar to discuss Aboriginal cultural heritage project results	Yes
4	Involvement of Local Government (BBSB)	Develop a consultation project with Local Government for intergration of BBSB Aboriginal cultural heritage project outcomes, in particular, Local Environment Planning process	No
5	Facilitation of Aboriginal cultural heritage information with regional planning processes.	Project to be developed by relevant agencies to consult with Aboriginal communities for accessing suitable cultural heritage information that would assist with improving Aboriginal heritage management through the regional planning process, eg RVCs and CMBs	No
6	Further bioregional assessments	Western Regional Assessments to continue with a Aboriginal cultural heritage assessment component for other bioregions in western NSW.	Yes
7	Consultation with Aboriginal communities associated with other bioregions	Aboriginal communities to be consulted on how bioregion assessments can address their issues that are specific to their area	Yes

6.2 RECOMMENDATIONS FOR FURTHER INFORMATION GATHERING

Recommendation	Action	Description	Funding required
6	Cultural heritage assessment on NPWS Estates within the BBSB	Field survey	Yes
7	Cultural heritage assessment of remaining TSRs	Field survey	Yes
8	Landform mapping	Warrumbungle mountain range and remaining areas of the bioregion	Yes

6.3 ABORIGINAL COMMUNITY RECOMMENDATIONS

Recommendations	Action	Description	Funding required
9	Protection of all mission areas and old town camps recorded during the BBSB assessment	Consultation between Aboriginal communities and NPWS to develop strategies for site protection	Yes
10	Aboriginal site surveys	Assessment of remaining forest areas, national parks and Travelling Stock Routes in the BBSB under the guidance of Aboriginal communities	Yes
11	Aboriginal plant survey	Aboriginal community cultural plant survey to build upon the BBSB assessment cultural plant survey results and a Pilot study undertaken by the Coonabarrabran Aboriginal community	Yes
12	Intellectual property rights	Consultation between Aboriginal communities and State agencies to discuss processes for acquiring intellectual property rights for information about traditionally used cultural plants	Yes
13	Training in cultural heritage management	A training package to be developed under Aboriginal community guidance. Must include as a minimum; site identification and recording skills; cultural plant identification and bush rejuvenation skills; survey methods and map reading skills	Yes
14	Access of BBSB cultural heritage information	NPWS to liaise with Aboriginal LALCs to discuss strategies for assisting LALCs distribute information to Aboriginal community members	Yes
15	Language programs	Assistance with developing funding for Traditional language programs	Yes
16	Consultation with landowners about access for site recording	Develop a consultation project that informs and develops partnerships with landowners in key areas of the bioregion, for managing Aboriginal heritage on private land	Yes

References (n.b. includes references from Appendix B)

- AGL 1999. Dubbo to Tamworth Natural Gas Pipeline. Environmental Impact Statement. Volume 3. Unpublished report to Mandis and Roberts.
- Balme, J. 1896 North central rivers region archaeological project. Vol. 1 & 2. Unpublished report to NPWS.
- Beck, W., Cooper, C. and Davidson I. 1988 Warrumbungles region archaeological project. Interim report to the NPWS.
- Beck, W. 1989. The taphonomy of plants pp31-49. In *Plants in Australian Archaeology*, Tempus series. Anthropology Museum, University of Queensland, St Lucia, Queensland. Beck, W. Clarke, A. and Head, Leslie. Editors.
- Beckers, D. and Binns, D. 2000 Vegetation survey and mapping – Stage 1. Western Region. A project undertaken as part of the NSW Western Regional Assessment. NPWS.
- Bryne, D. 1983. The Five Forests. An archaeological and Anthropological Investigation Volume One. Unpublished report to the NPWS.
- Creamer, H. 1984 A gift and a dreaming: The NSW survey of Aboriginal sacred and significant sites. NPWS confidential Report.
- English, A, Veale, S. Erskine, J. Robinson, J. 1998. Goobang National Park Cultural Heritage Assessment. NPWS. Unpublished report.
- Geering, K. and Roberts, C. 1993 Current Limitations on Aboriginal Involvement in Aboriginal site management in centralwest and northwest NSW. In *Aboriginal Involvement in Parks and Protected Areas*. Australian Institute of Aboriginal and Torres Strait Islander Studies pp 207-214. Editors: Birckhead, J. De Lacy, T. Smith, L.
- Hughes. P.& Buckley 1999. Development of a model for Aboriginal cultural heritage management in the Victorian Regional Forest Agreement region. Report to Environment Australia. Environment Forest Taskforce Victoria Section.
- James, R and Conyers, B. 1995. NPWS Northeast NSW Aboriginal Archaeological Sites Project for NRAC 1994.
- Koetigg, M. 1986. Aboriginal sites in the Dubbo city area. Report in conjunction with planning study undertaken by Cameron McNamara.
- Mitchell, P.B. 1985. Some aspects of the role of bioturbation in soil formation in south eastern Australia. PhD thesis, Macquarie University.
- Pearson, M. 1981 Seen through different eyes. PhD thesis. ANU.

- Pearson, W. 1993. An investigation of the archaeological resource in the Warung management area. A report to NSW State Forest.
- RACD. 2000. Aboriginal Cultural Heritage Assessment. Brigalow Belt South bioregion. Stage 1. NSW Regional Assessments. WRA 14. Includes appendices: A, B, C& D.
- RACD. 2000a. Brigalow Belt South bioregion assessment Strategic Framework. Western Regional Assessment Steering Committee. Strategic framework report approved by Resource and Conservation Assessment Council (RACAC)
- Roberts, C. 1991. Investigation of the Aboriginal archaeological resources of the Pilliga Forests. Unpublished report to the Forestry Commission of NSW.
- Witter, D. 1995 Preliminary guidelines for the NPWS.