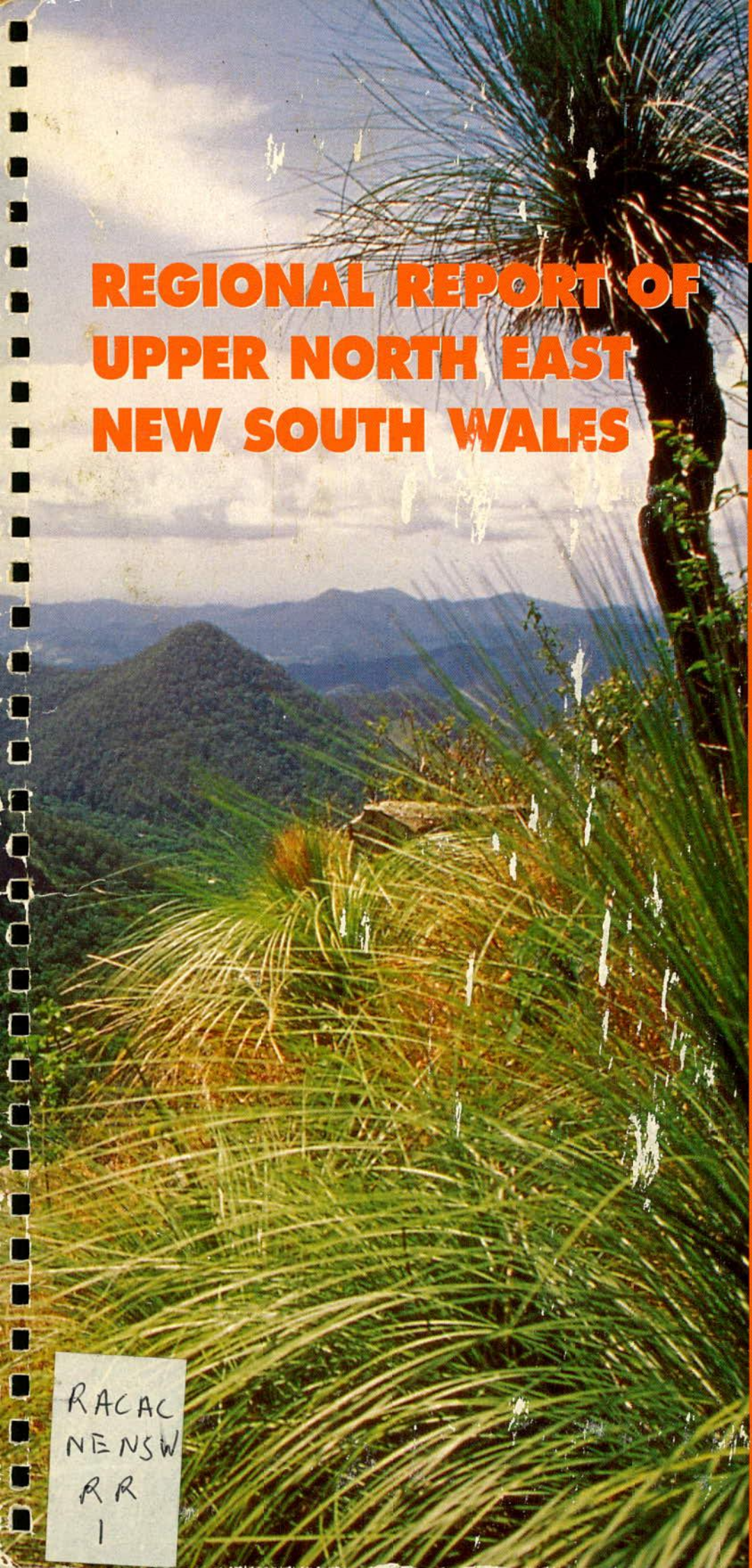
REGIONAL REPORT OF UPPER NORTH EAST NEW SOUTH WALES



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Setting the scene

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Resource and Conservation
Assessment Council

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REGIONAL REPORT OF UPPER NORTH EAST NEW SOUTH WALES

VOLUME 1
SETTING THE SCENE

A Report initiated by the Natural Resources Audit Council

Resource and Conservation Assessment Council

Sydney

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Resource and Conservation Assessment Council

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PREFACE

The Natural Resources Audit Council (NRAC) was established by the former NSW Government in 1993. Its brief was to conduct a series of regional 'audits' of public lands across the State, beginning with the Upper North East Region.

In 1995 the incoming Government fulfilled an election promise to dissolve NRAC while at the same time committing itself to publishing the findings to date of the first audit. It did this recognising not only the amount of work which had already gone into the task but also the value which that work may have to government and the community.

The Regional Report on the Upper North East has been a massive undertaking – of research, of coordination and of production. Its forty six chapters have been researched, written and reviewed with the involvement not only of the principal State Government agencies but also Commonwealth and local government, academic institutions, community groups, and individuals.

Although not an audit in any formal sense, the Report is an attempt to draw together sufficient information to give a detailed picture of the Region's public lands. It consists of six volumes:

Volume 1: Setting the scene
Volume 2: Physical attributes
Volume 3: Water attributes
Volume 4: Biodiversity attributes
Volume 5: Socio-economic attributes
Volume 6: Heritage, Aboriginal and social values

No similarly comprehensive report on public lands has previously been undertaken, and it was originally intended that this be an 'experimental first' in a series to be completed across New South Wales.

So as a first attempt to collate the attributes and values of the Upper North East Region, the Report cannot claim to be perfectly complete.

The unevenness between chapters reflects the unevenness in data quality and availability: some chapters raise as many questions as they answer. Yet this exercise in itself can be useful in identifying areas for further inquiry.

The Report is not intended to provide an assessment of the value of public lands or to make recommendations for management. It is meant to inform the community and decision-makers about the regional context. It will not provide a basis for decisions on allocation or management of individual parcels of land and will not replace the need for more detailed investigations and assessments when such decisions are being made.

The Regional Report documents a great deal of new and existing knowledge in an accessible format. It assists all the community – students, community groups, business and all levels of government – to understand the particular diversity of the Upper North East Region. It provides both a research tool and detailed background information to decision-making in New South Wales.

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1.1 NATURAL RESOURCES AUDIT COUNCIL

The New South Wales Natural Resources Audit Council (NRAC), an independent body reporting to the Government, was established in 1993. Its main objective was:

> 'to facilitate a systematic and comprehensive audit of all the values of public lands and natural resources of New South Wales on a regional basis'.

NRAC was established as a means of improving the quality of information available on the State's public lands and natural resources. As the population of New South Wales grows, increasing demands are being placed on the State's public lands and natural resources. The material gathered by NRAC will be used as a basis for informed decision-making about the allocation, management and use of public lands and natural resources in the State.

NRAC was chaired by Mr Alex Dix, Deputy Chancellor of the University of Western Sydney and Chair of the NSW Science and Technology Council. Other members were the chief executive officers of major land, environmental and resource-use agencies in the NSW Government and four non-government members who have a wide range of knowledge and experience on land and resource matters.

1.2 THE REGIONAL AUDIT OF UPPER NORTH EAST NEW SOUTH WALES

In November 1993, the Premier gave NRAC its first reference: to conduct a regional audit of public lands and their natural resources in the upper north east of New South Wales. This report is the result of NRAC's Regional Audit.

THE FORMATION OF RACAC

The Carr Government came to office in March 1995 on a platform of commitment to provide a broad-based mechanism for natural resource decision making in New South Wales. Additionally, the Government identified significant priority areas that need to be addressed swiftly but in a different functional manner than NRAC could provide. To this end, NRAC was restructured, refocused and renamed. As an entity NRAC ceased on 30 June 1995.

A new council known as the Resource and Conservation Assessment Council (RACAC) has been formed and will have as its initial emphasis the resolution of forestry issues. The new council is committed to completing the Regional Audit of the Upper North East and all of the NRAC-funded projects.

THE NRAC REGIONAL AUDIT – AN AUSTRALIAN FIRST

The Upper North East Regional Audit is the most comprehensive collation of information about a region ever undertaken in Australia. It is the first time that an area has been thoroughly investigated for *all* its attributes and values, including not only biodiversity (flora and fauna), minerals, air quality, tourism, demographics, wilderness and water but also Aboriginal values, education and social attitudes. In the past, studies of this kind have avoided such areas as being too indeterminate and therefore unquantifiable.

Unlike any similar studies in the past, the region of study was determined by natural rather than bureaucratic boundaries. The Audit Region (comprising the Tweed, Richmond, Clarence and Brunswick Rivers catchments, as well as a narrow coastal catchment area) is defined on catchment boundaries, rather than on artificial ones such as local government or electoral divisions.

Such an approach is in line with the Total Catchment Management philosophy which views catchments as natural units on which to base planning and management decisions.

The Audit Report draws on an incalculable amount of work by literally thousands of people. From the rain gaugers who began measuring rainfall at Casino in 1858, to the scientists at Manly Hydraulics Laboratory who provide complex hydrology charts today, a vast range of data has been investigated for the purposes of the Audit.

The Audit is not only wide-ranging in its sources of data, but also broad in its perspective. For the most part, the Audit Report has been researched and written by representatives of the nine State Government agencies charged with caring for the natural resources of New South Wales.

However, particular groups and individuals outside the public sector have been used wherever necessary, and a number of chapters have been prepared by consultants with invaluable expertise and knowledge in their area.

For example, three chapters on the Aboriginal history, values and sites of significance on public lands in the Audit Region were prepared for NRAC by the Gungil Jindibah Centre at Southern Cross University, in consultation with the local Aboriginal community. It is a unique contribution to the report.

This Audit enables the people of New South Wales to know the full extent of public lands in the Upper North East Region. Detailed information on public lands included in this Audit is available from the Office of Land Information Policy and Coordination (OLIPaC) ph: (02) 228 6060.

1.2.1 The Audit Region

The Upper North East Region (see map 1a, Location of Audit Region) is bounded by the coast from north of Coffs Harbour to Tweed Heads, westward along the Queensland border and south to near Glen Innes in the west and Ebor in the south. The western boundary follows the top of the ridge along the Great Dividing Range and includes in the Region only those catchments with streams flowing in an easterly direction. On the southern border, the boundary follows the top of the escarpment which runs through Eastern Dorrigo and excludes any areas with streams draining to the south.

The Region covers the catchments of the Tweed, Clarence, Richmond and Brunswick Rivers, as well as a narrow coastal catchment area.

1.2.2 Aims of the audit

The main aim of the first NRAC Regional Audit has been to provide a descriptive, objective account of public lands and their natural resources in the Upper North East Region. With this in mind, the principal users of the Audit Report are expected to be:

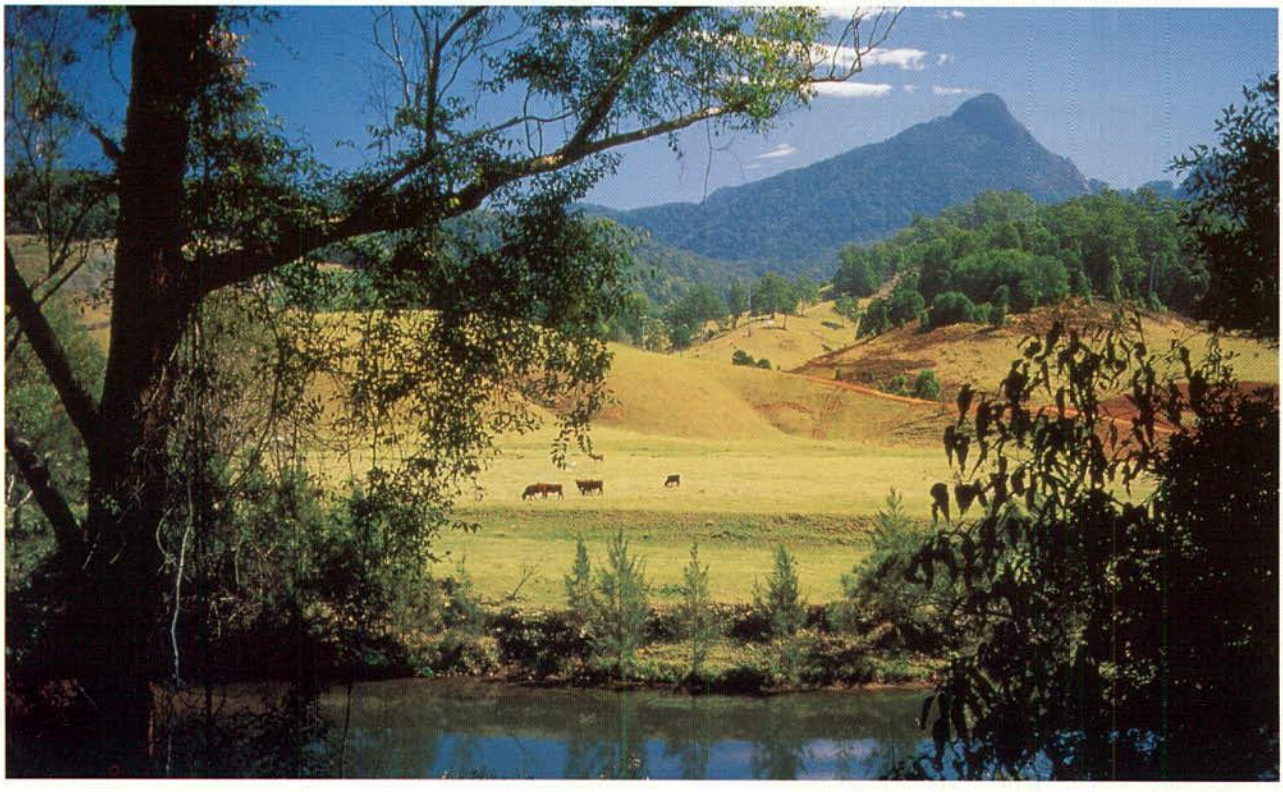
- New South Wales Government agencies
- Commonwealth and State officials
- industry and community groups
- Aboriginal groups
- local councils
- community leaders
- members of the public

The Audit is not intended to provide an assessment of the values of these lands or to make recommendations for management. It is meant to inform decision-makers, both government and non-government, about the regional context. It is not meant to provide a basis for decisions on allocation or management of individual parcels of land and will not replace the need for more detailed investigations and assessments when such decisions are being made.

In most cases, the report collates and summarises data sets, rather than presenting the data itself. Readers will be able to use the reference lists and select bibliographies provided to guide their search for further, more detailed information.

To complement the information from the Regional Audit, NRAC funded a range of projects and consultancies. A list of these is provided in appendix 1.1. Some, such as the *Natural Resources Data Directory* and the *NSW Wildlife Atlas Project*, are of a general nature, dealing with Statewide information, guidelines or method development. Others, such as the *Freshwater Wetland Survey of the North Coast*, are specific to the Audit Region.

Where possible, the findings of the NRAC projects and consultancies have been incorporated into the relevant chapter(s) in the Regional Audit Report. In addition, summaries of NRAC projects are provided at the end of each volume. The findings of all NRAC projects are



Tourism NSW

Tweed River.

NRAC PROJECT THE NSW NATURAL RESOURCES DATA DIRECTORY (G3)

The New South Wales Natural Resources Data Directory is a computerised directory of information about the lands, forests, water, minerals, energy and other natural resources of New South Wales. It has been compiled by the Office of Land Information Policy and Coordination in the Department of Land and Water Conservation.

The Directory is designed to allow government, business and community users to quickly find out about natural resources: what data exist and their geographic extent, where the information is held, what it contains and how to get it. Knowing what data exists is the first step in accessing the enormous amount and variety of natural resources data already collected by governments. The Directory does not contain the datasets themselves, but directs users to the most appropriate contact to obtain them.

The Directory is low cost, available on CD ROM and diskette and can be used on most personal computers. Users can select a region on a map of the State about which they would like information. They can also ask for a listing of specific data by subject that covers the selected area. Alternatively, they can search by keywords and the extent of the dataset coverage will be shown on the screen. A contact name and number is provided for each dataset.

publicly available from relevant Government agencies and selected projects are reported in monograph form.

1.3 WHICH LANDS ARE INCLUDED?

NRAC's charter has been to gather information on public lands and their natural resources. It specifically excludes consideration of freehold (private) land. The definition of public lands for the purposes of the Regional Audit was:

- Crown timber land, including land within a State forest, flora reserve or timber reserve within the meaning of the *Forestry Act 1916*;
- land in the National Parks and Wildlife Service estate, comprising land dedicated or reserved under the *National Parks and Wildlife Act 1974*;
- Crown land within the meaning of the *Crown Lands Act 1989*, including vacant Crown land, Crown land dedicated or reserved for a public purpose and the following types of leasehold Crown land: term leases, yearly leases and special leases. However, the Audit does not cover incomplete purchase or perpetual leasehold Crown land;
- the coastal waters of the State;
- waters and submerged lands (of which the bed is public land). In general, the beds of all estuaries, lakes and lagoons are Crown property; and
- land owned by NSW Government agencies.

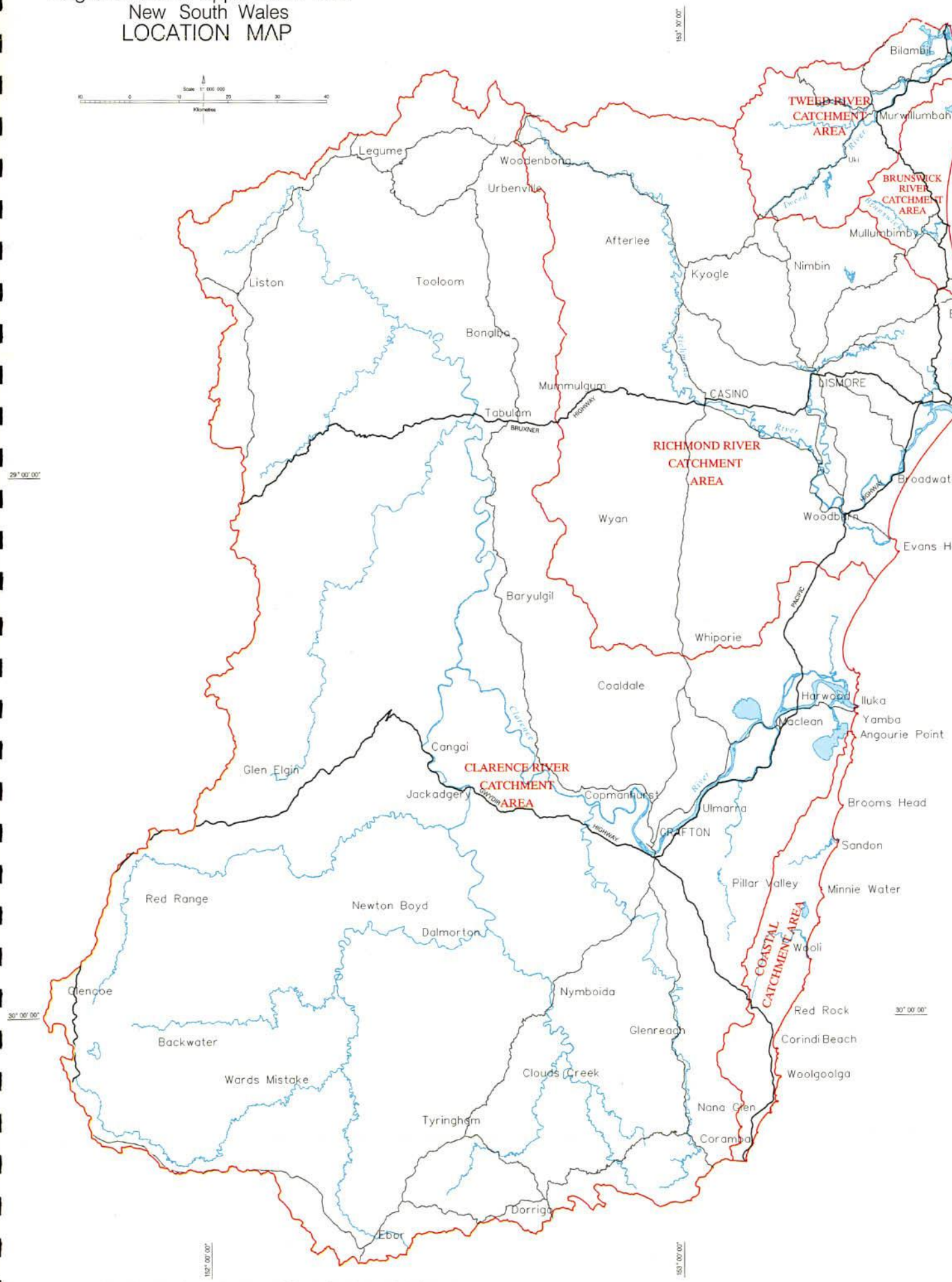
For the purposes of the Audit, the public lands of the Region were taken to be those areas designated as public lands (as defined above) on 1 January 1995. These lands are described further in Chapter 2 Public lands and natural resources.

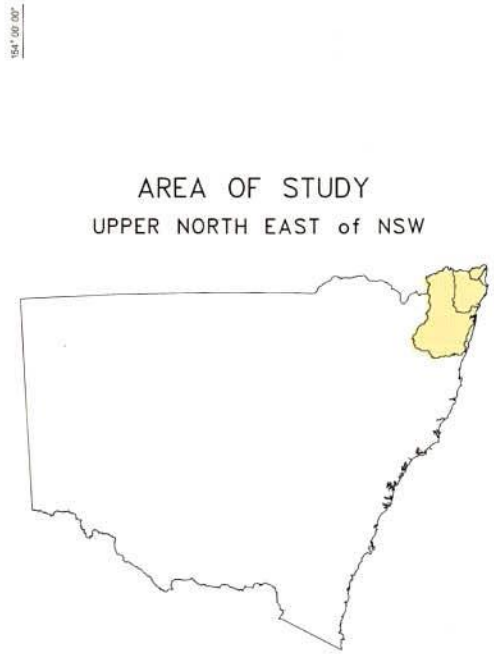
Tourism NSW

Tourism NSW

top: Angourie Beach, near Yamba.
bottom: Knox Park Murwillumbah.

Regional Audit of Upper North East New South Wales
LOCATION MAP





Catchment Area..... TWEED RIVER

Highway.....

Main Road.....

River.....

RACAC

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Published by the Resource and Conservation Assessment Council
Base map produced by the Land Information Centre,
Department of Conservation and Land Management January 1995
Data produced by the Land Information Centre Februrary 1995

This map is not guaranteed to be free from error or omission. Therefore, the State of New South Wales and its employees disclaim liability for any act done or omission made on the information in the map and any consequences of such acts or omissions.

1.4 HOW THE REPORT WAS PREPARED

The NRAC Secretariat has been responsible for overseeing the preparation of the Regional Audit Report for the Upper North East Region of New South Wales.

For the most part, the drafting of chapters for the Audit Report was the responsibility of the State Government agencies represented on the NRAC Audit Team (see figure 1a). Certain chapters were written by people seconded to the Secretariat from other agencies.

New South Wales Government agencies not represented on the Audit Team, but holding information relevant to the Regional Audit, were contacted for advice, assistance and review of draft chapters throughout the project.

The variety of content and approach in the report's 46 chapters reflects the wide range of personal styles and organisational cultures of the Government agencies and individuals involved. That such a diversity of views has been integrated into the report is a credit to the cooperative efforts of all contributors.

Although information provided by NSW Government agencies forms the basis of the report, many other individuals and organisations have made a valuable contribution to the Audit process. These include:

- local government authorities
- Commonwealth Government agencies
- academic institutions
- community interest groups
- private companies
- individual members of the public

Community consultation has been a key element of the Audit process. During the Audit period, members of the Council and the NRAC Secretariat met with local councils, community groups and interested individuals. A Regional Liaison Officer, based in Grafton, was appointed in mid-1994 to identify and collate local information about the public lands of the Region and to help in the consultation process.

1.5 CONTEXT OF THE AUDIT

The reference period for NRAC's Regional Audit of the Upper North East was 1994-1995. The report provides a 'snapshot' description of the public lands and their natural resources in the Upper North East region during that period.

In many cases, however, up-to-date information is not available and reference has been made to data obtained before 1994. In such cases, the period of data collection is identified in the text, or references to the source data are provided.

Many factors may affect the results of an audit such as this, from climatic conditions, such as drought, flood and bushfire, to the extent of information gaps in our current knowledge, the varying quality of different information sources and the degree to which all possible information sources have been used. Users of the report should bear in mind the context in which the audit information has been gathered and the limitations (in many cases unknown) of the data sets used. Extrapolation of the data beyond this framework is not advised.

1.5.1 Climate

Large sections of the State, including parts of the Audit Region, were drought-declared from mid-1992, during the data collection period of the Audit. Such persistent dry conditions affected the natural resources of the Region over the Audit period. An obvious example is the water quality of the rivers in the Region. Water quality is highly dependent on climate and flow, because of the effects of such factors as run-off from the catchment during storms, evaporation of water during hot, dry periods and settling out of suspended material under low flow conditions. The NRAC project *Status Report on Water Quality in the Tweed, Brunswick, Richmond and Clarence Rivers* (which forms the basis of chapter 5 Water quality in Volume 3 Water attributes) clearly demonstrates this.

The widespread bushfires in northern New South Wales during January and October-November 1994 also had a significant impact on the public lands and natural resources of the Upper North East over the Audit period. As a result of the fires, extensive areas of State forest, national park and other public lands in the Region were severely damaged. The results of the NRAC projects *Collection and Integration of Vegetation Data in North East NSW* and *Mapping and Survey of Vegetation on Vacant and Other Crown Lands* reflect the conditions of the period.

1.5.2 Gaps

Any information gathering exercise which has a scope as broad as this Regional Audit will inevitably omit some information, either because information sources have been missed, or because the data has not been collected yet. For some subjects, such as marine water quality, micro-organisms and mosses, there is virtually no data. For others, such as the timber resources of the Region, there is much more information.

Where possible, information gaps have been identified in each chapter. NRAC funded a number of projects to fill some of the gaps identified at the beginning of the Upper North East Regional Audit.

1.5.3 Quality of information sources – data quality statements

Information used in this report has come from a wide range of sources including local government 'State of the Environment' reports, Commonwealth Government documents, community group input, university post-graduate theses

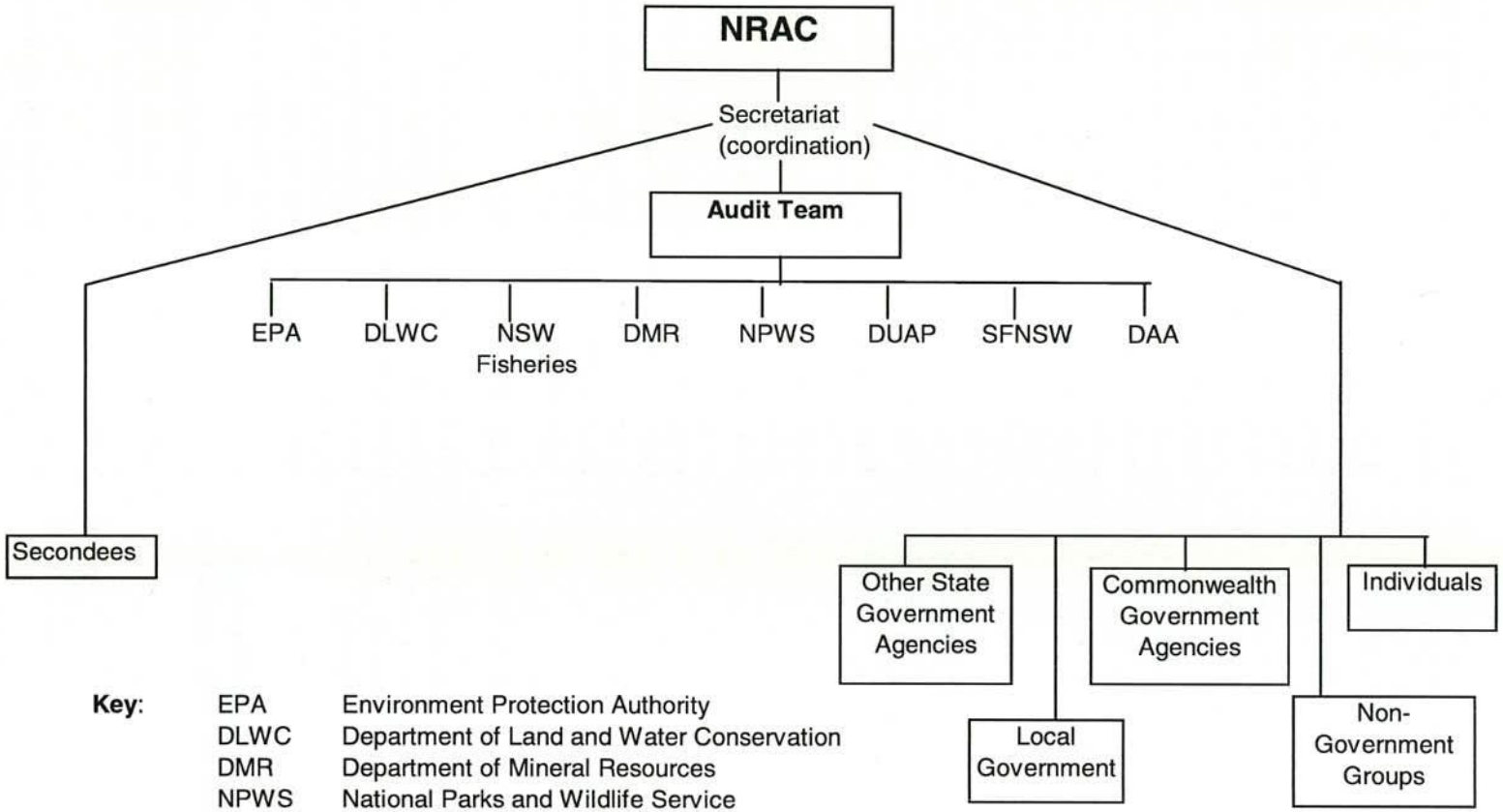

Figure 1a NRAC structure – NRAC, Secretariat, Audit team, secondees, other State Government agencies, Commonwealth agencies, Local Government, non Government groups, individuals

NRAC PROJECT DATA QUALITY GUIDELINES FOR NATURAL RESOURCES DATASETS (G13)

These guidelines allow datasets, especially those produced by government agencies, to be assessed by other users to see how suitable the dataset might be for their particular purpose. This is especially important when users are seeking to aggregate or integrate information for analysis or policy work.

The guidelines recommend that one or more of three levels of quality statement should be prepared and available for each dataset. These statements will help future users to identify whether the data will meet their needs and should help to avoid expensive recollection of data, as well as maximising the investment in existing data.

The guidelines were produced by the Office of Land Information Policy and Coordination in the Department of Land and Water Conservation, with input from agencies involved in creating or managing information about natural resources. They are being further developed for possible national application.

and Environmental Impact Statements (particularly relating to forestry operations in the Region). The quality of these information sources is highly variable and, in the case of much of the historical data, is unknown. The development of accurate and detailed maps of the public lands in the State is also still in its evolutionary stage. Users of this report should bear these factors in mind.

As a general principle, NRAC aimed to provide an indication of the quality of information that it summarised. However, this is almost impossible for much of the historical data which have been included in the NRAC Regional Audit Report.

As a first step towards documenting the quality of information released by NRAC, a 'data quality statement' has been prepared for NRAC projects and for some of the data sets drawn on in the Audit Report. The aim of these data quality statements is to enable potential users to determine the 'fitness for use' of specific data sets.

1.6 FINDING YOUR WAY AROUND

The content of the Audit Report has been arranged by theme into six volumes:

Volume 1

Setting the scene, including a background to the Upper North East Audit, discussion and delineation of public lands and the history of the Region.

HOW EACH VOLUME IS STRUCTURED

Summary: an overview of the contents of the volume and an explanation of how the volume fits within the context of the whole Audit Report.

Chapters: each of which contains (where applicable):

References: a list of references cited in the text of each chapter

Glossary: providing brief definitions of terms not in common usage

Acronyms: a list of acronyms used in each chapter;

Major contributors: identifying authors and peer reviewers.

Appendices: which provide more detailed information than is in the main body of the chapter.

Select bibliography: for each chapter appears at the end of the relevant volume.

Data Quality Statements: where applicable: statements which will help potential data users to judge:

- What is the quality of the data?
- Would it be worthwhile obtaining these data for my needs?
- How far could I extrapolate the data to meet my needs?

Executive Summaries of NRAC projects related to this volume

Index

Volume 2

Physical attributes, including climate, air quality, geology, geomorphology and landscape.

Volume 3

Water attributes, including information on rivers and catchments, the coastal and marine zone, groundwater, hydrology and water quality.

Volume 4

Biodiversity attributes, with discussion of biodiversity, genetic diversity, species diversity (flora, fauna, micro-organisms and fungi), and several chapters on ecosystem diversity, covering forests, heaths and grasslands, freshwater, coastal and marine systems and artificial systems.

Volume 5

Socio-economic attributes, including information on demographics, employment and infrastructure, as well as the economic significance of the timber, mineral, water, agricultural, fish, tourism and recreational resources of the Region.

Volume 6

Heritage, Aboriginal and social values, including World Heritage and Wilderness areas and social considerations such as community attitudes, Aboriginal values, tourism, education and scientific activity in the Region.

Volumes 2 to 4 provide factual information on the characteristics and properties of a range of public lands and their natural resources in the Audit Region. Chapter 4 Fauna species in volume 4, Biodiversity attributes, for example, describes the vast range of faunal types present in the Region, from invertebrates, fish and frogs, to reptiles, birds and mammals. Their variability, distribution, biological significance and status are discussed and, where possible, information gaps are identified.

Volumes 5 and 6 on the other hand, discuss the public lands and natural resources of the Region from a more human-centred viewpoint. They look not only at the economic characteristics of the Audit Region, including demographics, employment and the dollar value of the Region's resources, but also the less quantifiable, but nonetheless real, 'worth' of public lands, as measured by:

- the importance of these lands to the physical, cultural and emotional wellbeing of both local communities and visitors to the area; and
- the 'natural significance' of these lands, in terms of the maintenance of biodiversity and the protection of wilderness and World Heritage listed areas.

Each of the volumes in the Audit Report follows a standard format, as shown in the box below.

It is anticipated that many users of the Audit Report will be interested only in a specific volume (for example, volume 2, Physical attributes) rather than in the whole document. For this reason, individual volumes will be available as well as complete sets.

1.7 GOVERNMENT AGENCY NAMES

In the Audit Report, each government agency is referred to by its name as at April 1995. There were a number of agency name changes after the change of government in March 1995. Previous names of the principal agencies involved in the Audit are provided below. Those listed in italics have undergone a name change.

ACRONYMS

ANCA – Australian Nature Conservation Agency

NRAC – Natural Resources Audit Council

NRS/NRSCP – National Reserves System / National Reserves System Cooperative Program

RACAC – Resource and Conservation Assessment Council

MAJOR CONTRIBUTORS

Author

Helen Daly

GOVERNMENT AGENCY NAMES

Old Agency Name	New Agency Name
Environment Protection Authority	Environment Protection Authority
Department of Conservation and Land Management	*Department of Land and Water Conservation*
Department of Water Resources	*Department of Land and Water Conservation*
NSW Fisheries	NSW Fisheries
Department of Mineral Resources	Department of Mineral Resources
National Parks and Wildlife Service	National Parks and Wildlife Service
Department of Planning	*Department of Urban Affairs and Planning*
State Forests of New South Wales	State Forests of New South Wales
Office of Aboriginal Affairs	*Department of Aboriginal Affairs*

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2.1 INTRODUCTION

The Natural Resources Audit Council's Regional Audit of the Upper North East is a compilation of information about all of the values of the public lands of the Region and their natural resources. The term 'public lands' has a specific definition for the purposes of the Audit, as defined by the Natural Resources Audit Council (NRAC).

This chapter explains this definition. It then presents information on the various types of public lands and natural resources in the Upper North East which fall within NRAC's definition and are covered in this Report.

The chapter goes on to discuss indigenous land tenure, the planning controls over the public lands in the Audit Region and the administrative boundaries applicable to the Region.

A map showing the public lands of the Upper North East Region of New South Wales is contained in the front of this volume.

2.2 DEFINITION OF PUBLIC LANDS AND NATURAL RESOURCES

The information collated in the Regional Audit is aimed at assisting decision-makers within and outside the NSW State Government to make better informed decisions about the lands under the NSW Government's control. Accordingly, NRAC's definition of public lands is based on those lands over which the NSW State Government has sole or primary control in normal circumstances.

On this basis, NRAC has determined that, for this Regional Audit, the term 'public lands' comprises the following land tenures:

- national parks, nature reserves, Aboriginal areas and historic sites: under the management of the National Parks and Wildlife Service (see section 2.4);
- State forests (including leases within State forests), timber reserves, flora reserves, forest preserves and other Crown timber lands: under the management of State Forests of NSW (see section 2.5);
- certain Crown leasehold lands, Crown reserved and dedicated lands, unallocated Crown lands and undefined public lands: under the management of the Department of Conservation and Land Management (see section 2.6);
- New South Wales Government-owned land (see section 7);
- waters and submerged lands the beds of which are public land - in general, estuaries, rivers, lakes and lagoons (see section 2.8);
- the coastal waters of the State - that is, Crown land below mean high water mark to 3 nautical miles (see section 2.9); and
- marine protected areas (see section 2.10).

Again on the basis of examining those attributes over which the NSW Government has primary control, the Regional Audit also covers the natural resources which occur on or in the above-listed public lands. For example, this Report covers the flora, mineral and soil resources of the public lands of the Region.

In addition, the Crown has legal rights over some natural resources when they occur on non-public land, such as freehold land. The Regional Audit does not focus on these resources but, in some cases, this Report does give information about them as they occur on non-public lands. Such natural resources are: water; some timber resources; some native fauna; certain mineral resources; and fish (see section 2.11).

The following lands are not included in the definition of public lands adopted by NRAC, either because the State does not hold equity in them or because the NSW Government does not, except in special circumstances, have primary control over their allocation, use and management:

- freehold (private) land;
- Crown leasehold land in perpetuity (also known as perpetual leases) – these are leases of Crown land which are not time limited – there are 600 perpetual leases within the Audit Region;
- Crown leasehold land which is incomplete purchase – where the leaseholder has converted his or her lease to freehold and is paying off the purchase price – there are 415 incomplete Crown land purchase areas in the Audit Region;

Detailed information on public lands included in this Audit can be obtained from:

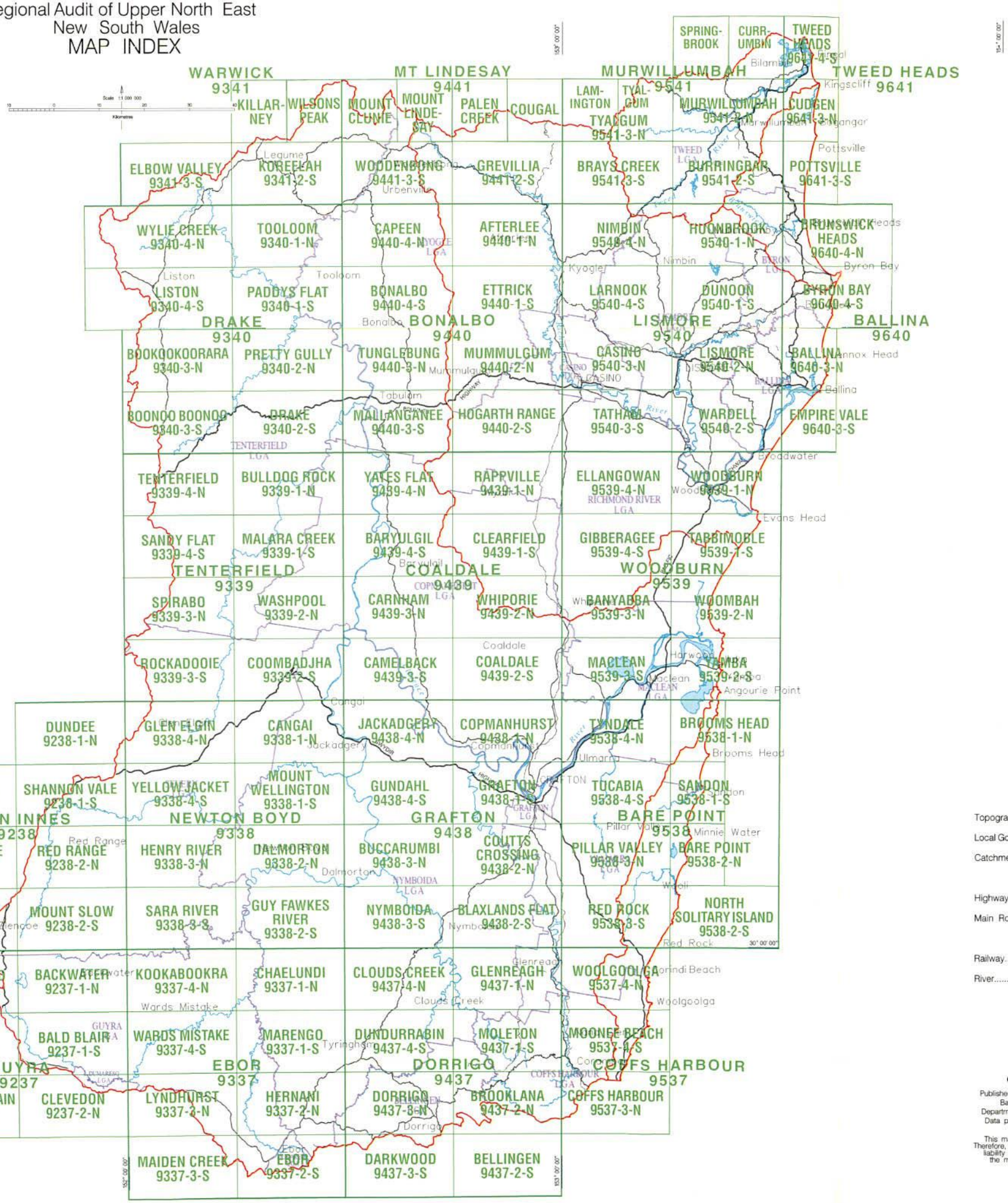
Office of Land Information Policy and Coordination (OLIPaC)
Level 3, Land Titles Office Building, Queens Square
SYDNEY. 2000.
Phone: (02) 228 6060

The information includes available details of certain Crown lands, including reserved and term leasehold land, national parks, nature reserves, State forest land and other lands owned by NSW Government agencies in the Audit Region. It is available on disk or hard copy.

If you need detailed maps of the Region , they are available from:

Map Sales, 23-33 Bridge Street, Sydney.
Phone: (02) 228 6111
See figure 2a for a Map Index of the Audit Region

Regional Audit of Upper North East New South Wales
MAP INDEX



Topographic Map Sheet ..... YAMBA 9539-2-S

Local Government Area ..... BALLINA

Catchment Area .....

Highway .....

Main Road .....

Railway .....

River .....

RACAC

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Data produced by the Land Information Centre Februrary 1995

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- land owned by the Commonwealth Government; and
- land owned by local government (councils).

NRAC has decided that the base date for the Regional Audit is 1 January 1995. That is, lands which were public lands on 1 January 1995 are included in the Audit and are therefore covered in this Report. Any lands which have become public lands since that date are not covered in the Report. Further, some of the lands which were public as at 1 January 1995 may no longer be so. However, as at the time of the printing of this Report, no additions to, or disposals of, the public lands of the Region have been made which would significantly alter the area of lands.

2.3 OVERVIEW OF THE PUBLIC LANDS IN THE REGION

Approximately 43.6% of the total lands in the Upper North East Region are public lands (under NRAC's definition). See figure 2b.

Of the public lands in the Upper North East Region, figure 2c shows the breakdown by tenure type.

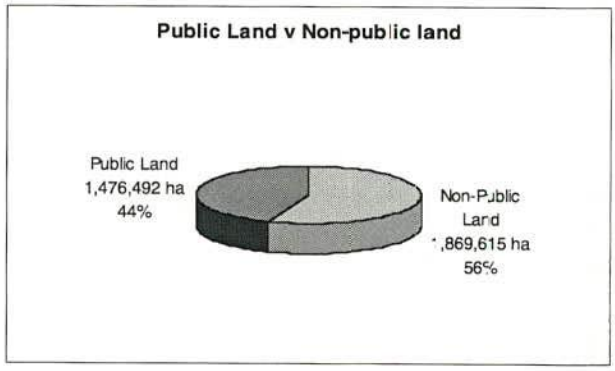


Figure 2b Public land versus non-public land

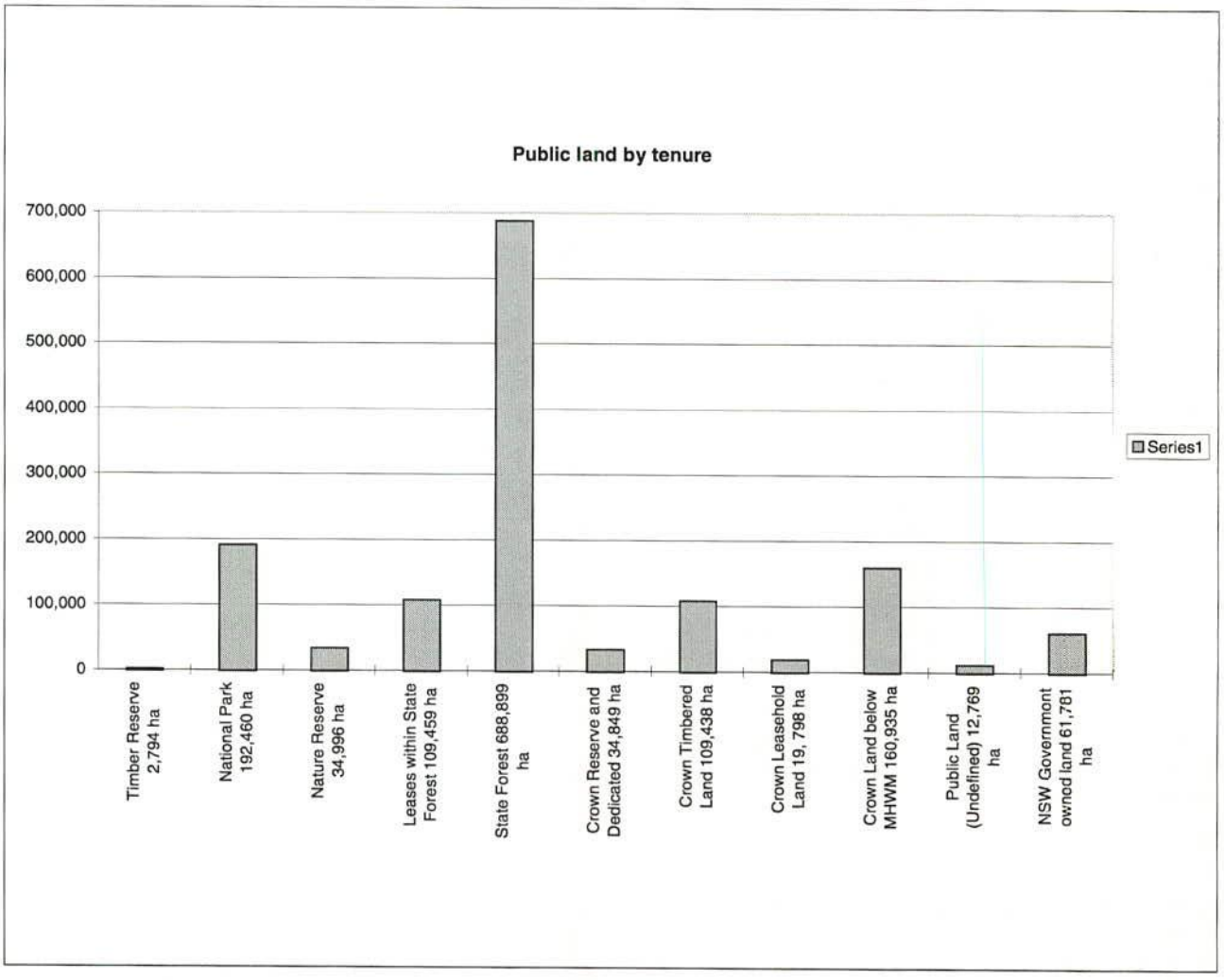


Figure 2c Public land by tenure

2.4 NATIONAL PARKS AND OTHER LANDS IN THE NATIONAL PARKS AND WILDLIFE SERVICE ESTATE

The National Parks and Wildlife Service (NPWS) is the premier nature conservation agency in New South Wales with responsibility for an extensive park and reserve system and broader conservation responsibilities throughout the whole State.

The conservation responsibilities of the NPWS are set out in the *National Parks and Wildlife Act 1974* and subsequent amendments, together with the provisions of the *Wilderness Act 1987*. They can be summarised in the following objectives:

- to investigate and acquire land for inclusion in a system of national parks and nature reserves to conserve a complete range of the natural environments of the State;
- to protect and manage Aboriginal sites, objects and places of special significance to Aboriginal people throughout the State;
- to manage historic places within the NPWS park and reserve system and acquire historic places of significance for management as historic sites;
- to manage these areas and culturally significant features for the enjoyment of present generations and to conserve them for future generations;
- to ensure the conservation of protected native animals and plants throughout the State;
- to identify, protect and manage wilderness throughout the State;
- to promote community awareness, understanding and appreciation of the conservation of nature and of our cultural heritage, by way of
  - facilities and services provided on parks and reserves, and
  - information and community education programs.

Under the *National Parks and Wildlife Act*, four categories of land – national parks, nature reserves, Aboriginal areas and historic sites – are vested in the Director-General and managed by the NPWS. It also manages a number of State recreation areas.

Under the *Wilderness Act*, the NPWS is responsible for the investigation, protection and management of wilderness in the State.

There are six other types of area in which the NPWS has some responsibilities. These are Aboriginal places, protected archaeological areas, wildlife refuges, wildlife management areas, and lands covered by conservation agreements and wilderness protection agreements.

Any land acquired by the NPWS for purposes under the *National Parks and Wildlife Act* must be managed in accordance with a Plan of Management.

Disposal of NPWS lands can occur (and has occurred), but such instances are rare. Lands dedicated as a national park or nature reserve remain as such unless there is a specific Act of Parliament introduced to enable such a disposal.

Within the Audit Region there are 14 national parks (192 460 ha), 45 nature reserves (34 996 ha), one Aboriginal area (0.3 ha) and one historic site (8 ha). There are also seven declared wilderness areas (94 780 ha) within national parks. These lands cover a total of 227 464 hectares. There are no State recreation areas in the Audit Region.

2.4.1. National parks

A national park is an area set aside for the conservation of nature as well as Aboriginal and historic heritage, and for recreation activities compatible with those conservation objectives.

The 14 national parks in the Upper North East Region are shown on the public lands map and are also shown on map 2a (NPWS estate). They are:

National park	Area ha
Bald Rock	5431.3
Boonoo Boonoo	2692.0
Border Ranges	31508.1
Broadwater	3737.1
Bundjalung	17737.7
Cathedral Rock (part)	3758.6
Gibraltar Range	17273.3
Guy Fawkes River	35629.6
Mount Warning	2380.4
New England (part)	601.2
Nightcap	4945.0
Nymboida	18998.0
Washpool	27715.0
Yuraygir	20032.2

NPWS Land	Area ha
National Parks	192,460
Nature Reserves	34,000
Historic Sites	8
Aboriginal Areas	0.2943

2.4.2 Nature reserves

A nature reserve is an area set aside primarily for nature conservation purposes.

While national parks are relatively large areas which offer a mix of conservation, education and recreation facilities, nature reserves are generally smaller and more restricted in terms of the level of development for tourist and recreational facilities. This is because such reserves are focussed primarily on scientific and educational use.

The 43 nature reserves in the Upper North East Region are shown on the public lands map and on map 2a (NPWS estate). They range in size from two hectares to 12 244 hectares.

2.4.3 Historic Sites

A historic site is an area set aside for cultural heritage conservation purposes.

These are usually the sites of buildings, objects, monuments or landscapes of national importance. There is one historic site in the Audit Region – the Tweed Heads Historic Site which includes the Minjungbal Aboriginal Cultural Centre. This is shown on map 2a (NPWS estate).

2.4.4 Aboriginal areas

Aboriginal areas are places dedicated for the protection of Aboriginal sites.

There is one Aboriginal area in the Audit Region – the Lennox Head Aboriginal Area, shown on map 2a (NPWS estate). It contains a bora ring and was used by the Bundjalung tribe. There are other bora rings preserved in the Region at Tucki Tucki in Yuraygir National Park and at Tweed Heads Historic Site, but this is the only one which is dedicated as an Aboriginal Area.

2.4.5 Wilderness areas

Wilderness is a large area of land which is in a relatively natural state. Wilderness areas are lands (including subterranean lands) which are declared to be a wilderness under the *Wilderness Act 1987* or the *National Parks and Wildlife Act 1974*. Wilderness areas follow a sequence of nomination, assessment, identification and declaration.

Wilderness is both a social concept and a legal entity and is discussed further in volume 6, chapter 3 Wilderness values.

Declared Wilderness areas in the Audit Region are Cooraldooral, Haystack and Dandahra (in Gibraltar Range National Park), Guy Fawkes (in Guy Fawkes National Park), Lost World (in Border Ranges National Park and Limpinwood Nature Reserve), Mann (in Nymboida National Park) and Washpool (in Washpool National Park). These Wilderness areas are shown in the NPWS estate map. It should be noted, however, that not all wilderness areas are public land, as private land holders can enter a conservation agreement for land which may be proclaimed as wilderness areas under the *Wilderness Act*.

2.4.6. Lands zoned 8 (b)

In 1979, various lands in the Audit Region were identified as proposed additions to the Broadwater, Bundjalung and Yuraygir National Parks. These lands, which are mostly privately owned, were zoned '8(b) Open Space – Protected Zone (Proposed Future National Park extension area)' following extensive public consultation.

These areas were selected on the basis of their inherent natural or cultural heritage values and the need for boundary rationalisation. As far as possible, compulsory acquisition of these lands has been avoided and owners continue to occupy the land. The NPWS has undertaken to negotiate acquisition on demand from the landholder.

The size of the individual parcels involved varies from less than one hectare to more than 1000 hectares. There are a few parcels of land less than six hectares that are mostly Crown land.

Because the privately-owned properties remain freehold (private) land, they do not fall within NRAC's definition and are therefore not covered in this report.

2.5 STATE FORESTS AND OTHER LANDS IN THE STATE FORESTS OF NSW ESTATE

For more than 100 years, the forests of New South Wales have been managed by State Forests of NSW (SFNSW); originally by a Division of the NSW Department of Mines, then from 1916 the NSW Forestry Commission and from August 1993 known by the new registered trading name of State Forests of NSW.

The SFNSW currently administers more than 3.4 million hectares of the New South Wales forest estate. This is greater than one third of all forest vegetation on Crown land in New South Wales. In the Audit Region, SFNSW manages approximately 700 000 hectares of State forests, including 20 300 hectares of flora reserves and 109 459.74 hectares of leasehold land dedicated as State forest.

Some of the activities on these lands, for which SFNSW has responsibility, are the management and harvesting of native forests and plantations, research, fire protection and the marketing of forest products.

SFNSW has the rights to timber on Crown timber land through the *Forestry Act 1916*, Section 11. This Act also gives SFNSW the power to acquire, maintain, dedicate and dispose of land. Acquisition may be for SFNSW or other purposes through Sections 15 & 16A, dedication by Section 18.

Crown timber land is defined in the *Forestry Act* to mean:

'(a)land within a State forest or flora reserve;

(b)Crown lands, whether or not held under a lease or licence from the Crown and whether or not included in a timber reserve; and

(c) land affected by profit à prendre reserved under subsection (1) of Section 25F,

but does not include

(d) any Crown lands the subject of a tenure from the Crown specified or described in the First Schedule if the land the subject of that tenure has an area of 2 hectares or less; or

(e) any Crown lands the subject of a tenure from the Crown not specified in that Schedule.'

While the Crown timber rights remain as a State resource, NRAC determined that the land base for the timber when growing on incomplete purchase tenure or perpetual leasehold, other than leasehold dedicated as State forest, not be included in the Audit.

In effect, only very small volumes of timber are located on leases other than these latter two tenures.

2.5.1 State forests

State forest is public land dedicated under the *Forestry Act* to be managed by maintaining and improving natural and artificial forests. Similarly, revocation may only be effected under the authority of the *Forestry Act*.

There are 115 State forests in the Audit Region, including four which are only partly within the Region. The total area of State forests (according to gazettal notices but only estimated in the case of four partially excluded State forests) is 688 899.

Along with timber reserves and certain other public lands, State forests are Crown-timber lands as defined under the *Forestry Act*, lands from which State Forests NSW may take any timber or products and sell, dispose or process them.

2.5.2 Timber reserves

Timber reserve is public land temporarily reserved for forestry purposes but not dedicated under the *Forestry Act*.

Timber reserves are Crown-timber lands, managed by SFNSW, not generally considered to have long-term timber production values.

There are seven timber reserves in the Audit Region, totalling 2794 hectares.

2.5.3 Flora reserves and forest preserves

Flora reserves are public land set apart within a State forest, under the *Forestry Act*, for the preservation of native flora. Revocation requires an Act of Parliament.

There are 55 flora reserves within State forests in the Audit Region, totalling 13 318 hectares.

Flora reserves may also be dedicated on certain other public lands with the consent of the Minister for Land and Water Conservation. There are no such dedications in the Audit Region.

Forest preserve is public land within State forest, determined by State Forests NSW to be under consideration for allocation as a flora reserve. Logging and other activities that would jeopardise this status are prohibited.

The area of forest preserve within the Region totals about 2800 hectares. Flora reserves and forest preserves, although primarily preserving the habitat of native flora, are also used to protect fauna-rich habitats or other natural or human features.

2.5.4 Leases within State forests

Where timber values are high, in many cases State forest has been dedicated over Crown leasehold land. Most are perpetual lease (see volume 5, chapter 3, section 3.1).

2.5.5 Other Crown timber lands

Other Crown-timber lands, in this context, are lands other than State forests and timber reserves, over which SFNSW has responsibilities for the sale of timber. These include:

(a) Crown lands without tenure (unallocated).

(b) Crown lands greater than two hectares with tenures as listed in the First Schedule of the *Forestry Act*. These include – Conditional Leases, Conditional Purchase Leases, Special Conditional Purchase Leases, Settlement Leases, Crown Leases, Residential Leases, Special Leases, Snow Leases, Annual Leases, Occupation Licenses, Preferential Occupation Leases, Permissive Occupancies, Western Lands Leases, Special Western Lands Leases, Prickly Pear Leases, and any other tenure under the *Real Property Act 1900*.

(c) Lands affected by *profit à prendre* reserved under subsection (1) of Section 25F of the *Forestry Act*. This comes into effect when certain leases (Conditional Leases applied for since 1 January 1910, Settlement Leases, Crown Leases, Special Leases and Prickly Pear Leases) are granted conversion to Conditional Purchase. In such cases the right is conferred on State Forests NSW (or the holder of a timber licence if one has been issued) to take timber or products from the land. This right lasts for ten years from the time of application, or until release is authorised by SFNSW.

Crown timber lands in this category have not been included in the definition of public lands for the purpose of this Audit. The number of such purchase applications in the Audit Region is 28 and the volume of timber involved is very small.

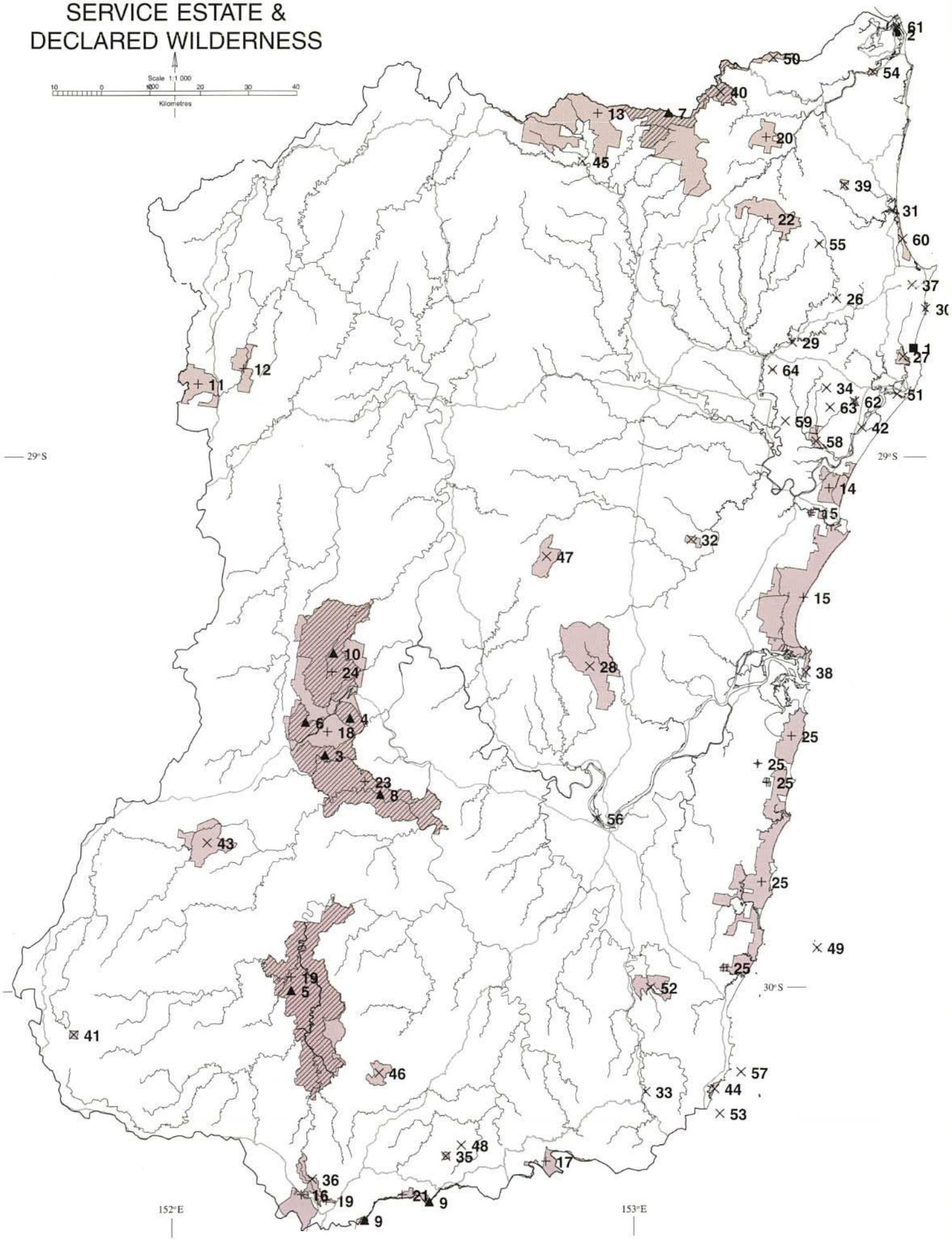
2.6 THE CROWN LAND ESTATE

Approximately 5% of the public lands in the Upper North East Region are Crown lands. Crown lands can generally be divided into:

- Crown leasehold land;
- Crown reserved and dedicated land; and
- unallocated Crown land.

Regional Audit of Upper North East New South Wales

SERVICE ESTATE & DECLARED WILDERNESS



KEY

- NRAC Service Estate
- Declared Wilderness
- Aboriginal Area
- Historical Area
- Wilderness Area
- National Park
- Nature Reserve

LABEL	NAME
	ABORIGINAL AREAS
1	LENNOX HEAD ABORIGINAL AREA
	HISTORICAL AREAS
2	TWEED HEADS HS
	DECLARED WILDERNESS AREAS
3	COORALDOORAL
4	DANDAHRA
5	GUY FAWKES RIVER
6	HAYSTACK
7	LOST WORLD
8	MANN
9	NEW ENGLAND
10	WASHPOOL
	NATIONAL PARKS
11	BALD ROCK NP
12	BOONOO BOONOO NP
13	BORDER RANGES NP
14	BROADWATER NP
15	BUNDJALUNG NP
16	CATHEDRAL ROCK NP
17	DORRIGO NP
18	GIBRALTAR RANGE NP
19	GUY FAWKES RIVER NP
20	MOUNT WARNING NP
21	NEW ENGLAND NP
22	NIGHTCAP NP
23	NYMBOIDA NP
24	WASHPOOL NP
25	YURAYGIR NP
	NATURE RESERVES
26	ANDREW JOHNSON BIG SCRUB NR
27	BALLINA NR
28	BANYABBA NR
29	BOATHARBOUR NR
30	BROKEN HEAD NR
31	BRUNSWICK HEADS NR
32	BUNGAWALBIN NR
33	CORAMBA NR
34	DAVIS SCRUB NR
35	DEER VALE NR
36	GUY FAWKES RIVER NR
37	HAYTERS HILL NR
38	ILUKA NR
39	INNER POCKET NR
40	LIMPINWOOD NR
41	LITTLE LLANGOTHLIN NR
42	LITTLE PIMLICO ISLAND NR
43	MANN RIVER NR
44	MOONEE BEACH NR
45	MOORE PARK NR
46	MOUNT HYLAND NR
47	MOUNT NEVILLE NR
48	MULDIVA NR
49	NORTH SOLITARY IS. NR
50	NUMINBAH NR
51	RICHMOND RIVER NR
52	SHERWOOD NR
53	SNOWS GULLY NR
54	SPLIT SOLITARY ISLAND NR
55	STOTTS ISLAND NR
56	SUSAN ISLAND NR
57	SW SOLITARY IS. NR
58	TUCKEAN NR
59	TUCKI TUCKI NR
60	TYAGARAH NR
61	UKERABAGH NR
62	URALBA NR
63	VICTORIA PARK NR
64	WILSONS PARK NR

RACAC

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New South Wales, April 1995.

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TABLE 2A DIFFERENT TYPES OF CROWN LAND IN AUDIT AREA

Type of Crown land	Holdings	Number (Study Region)
Tenured Crown land	Perpetual leases	600
	Leases for a term of years	200
	Licences under *Crown Lands Act 1989*	150
	Permissive occupancies	850
	Enclosure permits	3600
Crown land Reserved for special purpose	Reserved land	3095
	including Reserves over perpetual lease	110
	Reserves over term leases	5
	Future public requirement reserves not over a tenure	419
	Reserves over a term lease, enclosure permit, licence, permissive occupancy	144
	Reserves not over any tenure	2841
	Dedicated land	unknown
Crown Roads		
Unallocated Crown land		
River beds and waterways		
Lands below mean high water mark		
Beaches		
Coastal waters to the three nautical mile limit		

2.6.1 Tenured Crown land

The allocation of Crown land since European settlement has supported the economic and social development of the State. Much of the Crown land that has been allocated in the past has been in the form of freehold grants. A significant proportion of Crown land, however, has been allocated under various forms of tenure, as shown in table 2a.

Crown leasehold lands in the Upper North East Region are shown on the public lands map as a dark pink colour.

The phrase 'Crown leasehold land' encompasses two types of tenured Crown land: leases and licences. It should be noted that, in referring to a Crown lease or a licence, this study is not referring to any equity that a lease holder or licence holder might have in a lease or licence, but the equity that the Crown retains in the land subject to that lease or licence.

2.6.1.1 Crown land – term leases

Crown land can be made available by lease for a set number of years. In the past, this type of lease was generally known as a special lease because the use of the land was specified in the lease. Term leases are registered on the Torrens system at the Land Titles Office.

Leases for a set term of years are granted for a range of purposes, including agricultural, business and commercial, but not usually for residential. Term leases granted for terms up to a maximum of 40 years usually have market rental arrangements. These leases can be subject to an application for purchase on expiry or during the term of the lease and where approval is given, purchase price at full market value is applied.

Leases for a term of years are now favoured as a means of providing land for community, sporting or charitable purposes, rather then by reserving or dedicating the land. Examples include Woolgoolga Community Centre and Wommin Bay Hostel for the Aged near Fingal. In these cases a reduction in market rent is given through a concessional rebate.

Term leases are a means of allocating Crown land and the granting of such leases usually involves public competition. Under new legislative arrangements, the term of existing leases cannot be extended. In certain cases a new lease can be made.

2.6.1.2 Licences

Licences are issued to people wanting to occupy or use unallocated Crown land.

These licences are typically designed for short to medium-term occupations and do not generally permit exclusive use or occupation of the land. In many cases, a licence does not specify a term and may be terminated at the discretion of the Crown. A licence is a less secure form of tenure than other forms of tenure, such as a Crown lease. Licences do not generally allow the building of any permanent or significant infrastructure. Generally, any infrastructure must be able to be removed at the termination of the licence.

Licences over Crown land have been known by various names, including permissive occupancies, yearly leases and enclosure permits. Today, most tenures are known as licences.

Perhaps the most significant and widespread use of

Nick Rigby

Aerial view of Cape Byron Headland.

The strategy is being piloted on the North Coast in acknowledgment of the diverse range of reserves in the region and the importance of these areas in the overall Statewide Crown reserve system.

2.6.2.1 Crown roads

When Crown land in New South Wales was first surveyed and subdivided, land holdings were provided access in the form of a Crown road. Many of these Crown roads still exist today although a significant number of Crown roads have never been developed and could not provide practical access for modern modes of transport.

Crown roads hold a right of public access and are subject to applications at any time for closure and addition to adjoining freehold land. Applications to construct or form a road may also be made, at which point they are usually dedicated as a public road and vested in the local council as the roads authority. Apart from their significance in terms of providing public access, such roads are a source of revenue to the State in the form of rent from enclosure permits. Where Crown roads have been enclosed and are subject to payment of an enclosure permit they can be used for grazing purposes only by the landholder except where a licence for temporary cultivation has been sought and obtained.

DID YOU KNOW?

On the NSW North Coast, approximately 65 per cent of the coastline is protected in Crown reserves, including Cape Byron Headland which is Australia's most easterly point. In the Audit Region, there are 3095 reserves including 2841 that are managed by the community, mostly by local councils. There are 860 reserve trusts, 100 of which are community-based.

2.6.3 Unoccupied or unallocated Crown land and undefined public land

There are significant areas of Crown land that are not held under any form of tenure (apart from short-term licence tenures) and have otherwise been unallocated for a specific purpose. These lands, by definition, have no legal description and have not been surveyed. These areas cannot be described for the purposes of this Report but are represented graphically on the public lands map (included in the category Unallocated Crown lands and Undefined public land) in a light pink colour.

Before any of this land is allocated for a specific purpose under part 3 of the *Crown Lands Act 1989*, including disposal by way of sale, lease, licence, dedication or reservation, it must be subject to land assessment. This includes the compilation of an inventory of the land's natural attributes and capabilities. Through this process the most suitable use of the land and an identification of a preferred use is made. The draft land assessment is placed on public exhibition prior to adoption.

Since 1983 allocations of Crown land have included consideration of Aboriginal land claims under the NSW *Aboriginal Land Rights Act* (see section 2.12). In addition, native title is also being considered following the Mabo High Court decision and the commencement of the Commonwealth *Native Title Act* on 1 January 1994 (see section 2.12).

TABLE 2B SOME OF THE CROWN RESERVES ON THE NORTH COAST

Alstonville Showground
Alumy Creek Recreation Reserve
Angel's Beach Coastline Reserve
Angourie Coastal Reserve
Ballina Racecourse
Bangalow Showground
Baryulgil Recreation Reserve
Bawden's Bridge Travelling Stock Route
Boganbar Coastline Reserve
Bonalbo Showground
Booyung Recreation and Flora Reserve
Boyds Bay and Border caravan parks
Brays Park Hall, Murwillumbah
Broadwater Koala Reserve
Broken Head caravan park
Brooms Head caravan park
Brooms Head Recreation Reserve
Brooms Head Coastline Reserve
Brunswick Heads Coastline Reserve
Burringbar Recreation Reserve
Calypso caravan park, Yamba
Cape Byron Headland Reserve
Casino Recreation Reserve
Casino Racecourse
Casino Showground
Channon hall
Copmanhurst hall
Copmanhurst Recreation Reserve
Coraki Common
Coramba Sports Ground
Cudgen-Round Mountain Recreation and Conservation Reserve
Dirawong Reserve (Goanna Headland)
Drake Recreation Reserve (the 'Quakka')
Evans Head Recreation Reserve (Silver Sands caravan park)
Fingal caravan park
Fingal Coastline Reserve
Glenreagh Recreation Reserve
Grafton Showground
Grafton Racecourse
Gundarimba Flood Refuge Service
Iluka Koala Reserve
Jack Evans Boatharbour
Jackadgery Camping and Recreation Reserve
Kingscliff Coastline Reserve
Kingscliff caravan park
Kingsford Smith park, Ballina
Knox Park, Murwillumbah
Kyogle Showground
Lawrence Literary Institute
Lawrence Riverside Reserve
Lismore Showground
Lower Southgate Flood Refuge Reserve
Lower and Upper Bucca Recreation Reserves
Maclean Showground
Maclean Rainforest Reserve
Minnie Waters caravan park
Moonee Beach caravan park
Moonee Beach Coastline Reserve
Mullumbimby Showground
Mummulgum Hall
Murwillumbah Showground
Nimbin Rocks
Pretty Gully Flora Reserve
Red Rock Recreation Reserve
See park, Grafton
Shelley Beach Coastline Reserve
Spinks Park, Lismore
Tabulam Racecourse
Tabulam Hall
Terrace caravan park, Brunswick Heads
Tuntable Creek Hall
Tyalgum Flora Reserve
Uki Hall and Recreation Reserve
Wardell Recreation Reserve
Whiporie Recreation Reserve
Whiporie Hall
Woodenbong Hall
Woolgoolga Beach Coastline Reserve
Woolgoolga Beach caravan park
Yamba Flora Reserve

2.7 NEW SOUTH WALES GOVERNMENT OWNED LAND

NRAC's definition of public land includes land owned by all NSW Government agencies at 1 January 1995. This includes freehold land owned by these agencies.

A summary of all the lands in this category in the Upper North East was derived from the Government Property Register in the Department of Land and Water Conservation. The Government Property Register is a register of land owned by State Government Authorities. This register contains details of all types of government land including schools, hospitals, police stations and national parks and is updated as property is transferred to and from government. These lands are shown on the public lands map in a purple colour.

A questionnaire of the leading State Government property owners and the departments represented on NRAC was conducted in late December 1994. They were asked the following questions:

The principles of Crown land management as set out in Section 11 of the *Crown Land Act* are:

'(a) that environmental protection principles be observed in relation to the management and administration of Crown land;

(b) that the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible;

(c) that public use and enjoyment of appropriate Crown land be encouraged;

(d) that, where appropriate, multiple use of Crown land be encouraged;

(e) that, where appropriate, Crown land be used and managed in such a way that both the land and its resources are sustained in perpetuity; and

(f) that Crown land be occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State consistent with the above principles.'

- Approximately how much land does your agency own on the Upper North-East coast? What are the predominant forms of tenure this land is held in? Please estimate the number of hectares and, if possible, give a proportional breakdown into tenure type.
- Do any special or unique tenure arrangements exist?
- What are your agency's responsibilities regarding the acquisition, management and disposal of land? ie what procedures or duties are set out in statutes or charters your organisation operates under? Please give a brief summary.

The results of this questionnaire can be found in appendix 2.1.

APPROPRIATIONS OF CROWN LAND

Appropriations of Crown land by local government and State authorities for a public purpose is another way of alienating areas of the Crown estate.

Crown land can be appropriated by these authorities provided the land is to be used for a public purpose and compensation under the Just Terms Acquisition legislation is paid.

Unlike alienations which are initiated by the Crown land administration, appropriations do not require prior land assessment as they do not represent an alienation of Crown land under the *Crown Lands Act*.

2.8 WATERWAYS AND SUBMERGED LANDS

NRAC's definition of public lands includes waters and submerged lands the beds of which are public land. This covers most estuaries, rivers, lakes and lagoons. The main waterways are shown on the public lands map and a more detailed map is in volume 3, chapter 1, Rivers and catchments.

2.9 COASTAL WATERS

The coastal waters of the State, as defined by NRAC, comprise the Crown lands from below the mean high water mark to the State's boundary which is three nautical miles to sea. This is shown on the public lands map as a blue colour.

It should be noted that all of the Solitary Islands, Cook Island and North West Rocks are included in the Audit, even though they are technically outside the three nautical mile limit.

2.10 MARINE PROTECTED AREAS

Marine protected areas in NSW are formally protected by legislation. Some of these are essentially terrestrial reserves managed by the National Parks and Wildlife Service, but include aquatic areas within or adjacent to their boundaries. Activities such as commercial and recreational fishing are not regulated under the *National Parks and Wildlife Act* in these aquatic areas.

The remaining marine protected areas are wholly aquatic protected areas and are managed by NSW Fisheries under the *Fisheries Management Act 1994*. The declaration of these reserves is carried out by NSW Fisheries as part of its role in conserving and improving the State's fisheries resources. The department's objectives for these reserves is to manage existing uses of an area to ensure that the ecological diversity and value of the area is protected.

Particular goals which support this objective and apply to existing reserves are:

- to conserve the diversity of marine life;
- to provide for and regulate commercial and recreational activities;
- to encourage a sense of community ownership and stewardship;
- to encourage further research into and education about the resources of a proposed reserve and in particular to identify and record the diversity and abundance of marine life.

In the Region two aquatic protected areas managed by

NSW Fisheries exist. These are the Solitary Islands Marine Reserve and the Julian Rocks Aquatic Reserve.

Another aquatic reserve is proposed for approximately 300 hectares around Cook Island, which is 600 metres from Fingal Head near Tweed Heads. The proposed reserve contains a diversity of habitats, with numerous fish and invertebrate species present. Protected species, such as the giant Queensland groper and estuary cod, were once common. There has been limited assessment of the flora and fauna on this site. A draft management plan (Copeland 1994) is being reviewed publicly.

It is also proposed to create a Lennox Head Intertidal Protection Area. This reef is a unique geological formation immediately adjacent to Lennox Head. Due to a variety of habitats, species diversity is high and a number of rare species can be found. The area is used for a range of activities, some of which are having a detrimental effect on flora and fauna.

2.10.1 Solitary Islands Marine Reserve

This reserve consists of 85 000 hectares (in State waters) and 15 000 hectares (in Commonwealth waters). It was gazetted in May 1991 and is listed on the Interim register of the National Estate.

This reserve is the largest marine and estuarine protected area in New South Wales and the first in Australia to incorporate both marine and estuarine waters within its boundaries. Due to a mix of tropical and temperate ocean currents, the area supports flora and fauna from both these regions as well as endemic subtropical species. The reserve is an important recreational and commercial area for locals and visitors and provides opportunities for commercial and recreational fishing, diving and ecotourism.

The key management strategy used to manage the reserve is a multiple-use zoning scheme. The zoning scheme and boundaries are detailed in the Fisheries and Oyster Farms (Solitary Islands Marine Reserve) Regulation 1991. Zones have been derived from a consideration of the natural and conservation values of the area and the capability or suitability of the area to withstand pressure from commercial and recreation users both currently and in the future.

A management plan (Copeland et al. 1994) discusses the resources of these reserves and identifies management strategies for the area's protection and ongoing management.

A diverse array of marine fauna exists within the reserve but much of the information available is limited. For instance, most of the information on fish species is based on a small number of samples around three islands. The research activities occurring on this reserve are discussed in volume 6, chapter 11 Science in the Audit Region.

2.10.2 Julian Rocks Aquatic Reserve

This is a small reserve of 80 hectares protecting an area surrounding Julian Rocks near Byron Bay. It was gazetted in March 1982 and is listed on the Interim Register of the National Estate. It has a variety of habitats, including rocky reefs, sandy gutters, and steep rocky ledges. Around 474 specimens of fish have been recorded in the reserve and research is beginning in relation to corals and other invertebrates. Over 75 species of nudibranchs (molluscs) have been recorded in the reserve. Diving is a popular activity in the area, with over 20 000 divers visiting the area annually (Phillips 1992). A management plan (Copeland and Phillips 1994) has recently been released for the reserve.

2.11 NATURAL RESOURCES ON NON-PUBLIC LANDS

As previously explained, NRAC's Regional Audit covers the natural resources which occur on or in the public lands of the Upper North East. In addition, the Crown has legal rights over some natural resources wherever occurring:

- water
- some timber resources
- some native fauna
- certain mineral resources
- fish

This Report in some cases does give information about these resources as they occur on non-public lands. For example the Geology map in volume 2, chapter 3 Geology does not distinguish between those minerals found under public lands and those under non-public lands; and volume 4 Biodiversity attributes presents information about native fauna which generally occurs on the public lands of the Region despite the fact that some animals may also use non-public lands.

2.11.1 Water

The State, through the Department of Land and Water Conservation, has the right to the use, flow and control of water in all rivers, lakes and aquifers (groundwater) under the *Water Administration Act 1986*. The State is also responsible for allocating and licensing rights to use water resources under the *Water Act 1912*, as well as monitoring the quantity and quality of those resources. The State aims to ensure that there is an adequate quantity and acceptable quality of water to meet all water needs, while at the same time ensuring the sustainability of the water resource.

2.11.2 Some timber resources

SFNSW has *profit-a-prendre* rights over some freehold land, where those rights were retained at the time of purchase from the Crown. In some cases timber was reserved to the Crown in the original Crown grant in the same way as minerals.

2.11.3 Some native fauna

All native mammals (other than dingoes), birds, reptiles and amphibians are the property of the Crown, unless they

were lawfully bred in captivity, or captured or imported with the consent of the Director-General of NPWS. This applies not only to animals on public land but also those animals on private land including freehold.

2.11.4 Certain mineral resources

Minerals are a Crown resource which may occur on both private and public lands.

The *Mining Act 1992* provides a system for the granting of titles for exploration and mining. Subject to compliance with the appropriate approvals process, these titles can be granted over any public land with the exception of land within a national park, nature reserve, historic site, State game reserve or Aboriginal area under the *National Parks and Wildlife Act 1974*.

In general, minerals on private lands are publicly owned and are included in this Audit within the broad definition of 'public lands'. Sometimes, however, the private land holder may own the minerals, such as when the original grant of land did not reserve minerals to the Crown, or when the substances were not proclaimed as minerals under the *Crown Lands Act* at the time of the Grant.

2.11.5 Fish

Fish are a Crown resource. Fisheries resource management in New South Wales is carried out under the provisions of the *Fisheries Management Act 1994*. This Act is based on the concept of share management of commercial fisheries (see volume 5, chapter 7 Fisheries resources).

Fish harvesting and, more generally, the 'public's right to fish' is a common law for marine and tidal waters and for inland waters over Crown land. Fisheries harvesting includes commercial fishing, recreational angling, spearfishing and collecting for other purposes, such as for bait or aquarium use. Aquaculture production in the Audit Region includes trout and other fish farming, prawn farming, freshwater yabby farming and oyster farming. Of these, only oyster farming is carried out on Crown leases.

2.12 PUBLIC LAND AND INDIGENOUS LAND TENURE

Prior to the arrival of European settlement in Australia, tenure of the land was held by the indigenous population. In recognition of this, the State enacted the *Aboriginal Land Rights Act* in 1983, while on 1 January 1994, as a result of the so-called 'Mabo' decision in the High Court, the Federal Government enacted Native Title legislation (with the complementary *NSW Native Title Act* commencing on 28 November 1994).

Aboriginal Land Rights and Native title can only be claimed over public land which is typically unallocated Crown land. Recognition of indigenous land tenure, therefore, is an important consideration when governments (or others) intend to use public lands, such as unallocated Crown lands, for some purpose.

2.12.1 What is an Aboriginal land claim?

Under the *Aboriginal Land Rights Act*, Local Aboriginal Land Councils or the NSW Aboriginal Land Council may lodge claims over Crown land if:

- the land is not lawfully used or occupied; or
- is not likely to be needed in the future for an essential public purpose; or
- is not needed or likely to be needed in the future for residential purposes.

The claimant Aboriginal Land Council *does not* have to establish any traditional linkage with the land or indicate its purpose in claiming the land or the intentions for the land should the claim be granted. The grant is normally in freehold and may be bought and sold. Land already granted is not subject to this Audit.

Claims can also be lodged over travelling stock reserves (TSRs) and in this case the claimant land council does have to prove a traditional link with the land. Where TSR land is granted it is required to continue to be made available for travelling stock purposes. Very little land has been granted under this specific provision.

2.12.2 What is native title?

"Native title is the name Australian law gives to the traditional ownership of land and water that belongs to Aboriginal people and Torres Strait Islanders according to their traditions, laws and customs.' (National Native Title Tribunal, n.d. *What Is Native Title?*)

In June 1992, the High Court of Australia recognised that the Aboriginal people and Torres Strait Islanders owned all of Australia when English settlers first arrived in 1788, rejecting the previous 'notion that Australia was *terra nullius* (land belonging to no one) at the time of European settlement.' (National Native Title Tribunal, 1994, *A Guide*, p.5)

DID YOU KNOW?

Since the introduction of Aboriginal Land Claims in 1983, over 33 000 hectares of Crown land has been granted with a current value in excess of $100 million. In the Audit area, 1900 hectares of land has been granted to land councils with a total current value in excess of $14 million.

WHAT DOES INDIGENOUS LAND TENURE MEAN FOR THIS AUDIT?

Indigenous land tenure implies an alternative form of tenure to European forms of tenure. For the purposes of this report, 'public land' is studied because it infers ownership by the State and not by any individual or non-government organisations. Within the context and laws of the indigenous inhabitants, public land includes land that may be subject to future Aboriginal land claims or might already be subject to native title (whether or not a claimant application has been made in the Native Title Tribunal). This report does not relate to the equity that might now or in the future be held in those claims.

Readers of this report should understand that all references to 'public land' may include such land and that the report is not intended nor should it be used to affect some future or existing land claim or right to native title.

The High Court determined that native title would exist where it had not been lost or extinguished by government acts that indicated a clear and plain intention to displace native title. Examples include:

- grant of freehold title;
- grant of leasehold title conferring exclusive possession; and
- construction of public works. (National Native Title Tribunal, 1994, *A Guide*, p.9)

'Native title might still exist on unallocated Crown land and other places where Aboriginal people and Torres Strait Islanders have maintained a strong and continuing connection with the land or water based on their traditions, laws and customs. It might also exist in some form on reserves, national parks, in rivers or the sea.' (National Native Title Tribunal, n.d. *What Is Native Title?*)

Native title confers on the Aboriginal people and Torres Strait Islanders a legal right of title. Accordingly, governments seeking to acquire or use such lands must do so only:

- if the native title holders agree;
- on the same basis as acquisition from freehold title holders (i.e. compensation would be payable); or
- when the government makes an unopposed 'non-claimant' application with the Native Title Tribunal.

Unlike freehold land, native title ownership is dependent upon the maintenance of a connection with the land in accordance with traditions, laws and customs. Native title is lost if the native title holders abandon the land for its traditional purposes. In the same spirit, native title lands cannot be bought or sold.

This report does not refer to any lands where Native title is already recognised. (For further discussion of Aboriginal associations with public land in the Audit Region see chapter 3 Indigenous history and volume 6, chapter 5 Aboriginal values and 6 Sites and places of Aboriginal significance.)

2.13 PLANNING CONTROLS ON PUBLIC LAND

The status of Crown land does not override local or State planning policies or local zonings. In other words, Crown land, whether under lease or licence, or reserve or dedication, is subject to planning considerations. In regard to the allocation of Crown land it is necessary for the proposed use to comply with relevant planning instruments. In most cases the same is true of those public lands constituting national parks, nature reserves, proclaimed wilderness areas, State forests and forest reserves, although there might be special considerations applying to these areas.

Under the provisions of the *Environmental Planning and Assessment (EP&A) Act 1979*, planning is divided into three tiers: State, regional and local. At each level there are environmental planning instruments which influence the planning controls applying within a local government area (LGA). At the State level there are State environmental planning policies or SEPPs. At the regional level are regional environmental plans (REPs), and local environmental plans (LEPs) are for the local government area level. Local councils also prepare development control plans to express their policies about particular local areas or issues.

Under these environmental planning instruments some development will require development consent prior to that activity being carried out. The authority granting this consent is generally the local council. Occasionally the Minister for Planning will be the consent authority for developments which are likely to be of State or regional significance. Environmental planning instruments cover both private and public lands. Where the provisions of the instruments do not require council consent and the approval of a public authority is needed, the approval is required to be consistent with the provisions of the *EP&A Act* (see section 2.6.5). This section describes the planning controls which are in use in the Audit Region and how these relate to public lands.

2.13.1 State environmental planning policies

State environmental planning policies (SEPPs) address matters of Statewide significance or they deal with issues where Statewide application of policy is necessary. State policies can regulate development as well as providing a framework for detailed planning at other levels. The State policies which apply to the Audit Region are listed in table 2c. These policies apply to both public and private land. Each parcel of land and proposed development

would need to be investigated to determine which State policy is relevant. Three important SEPPs that apply in the Audit Region are SEPP No. 14 – Coastal Wetlands, SEPP No. 26 – Littoral Rainforest and SEPP No. 44 – Koala Habitat Protection. The value of littoral rainforest and coastal wetlands are discussed in volume 4, chapters 7 and 8 respectively.

SEPP 14 was introduced in December 1985 in response to the significant reductions in coastal wetlands that had occurred. The natural values of 60% of the State's coastal wetlands have been destroyed or greatly reduced in the past 200 years. This happened because their value to the community went unnoticed (Department of Environment and Planning n.d.).

The policy ensures that the likely effect of development proposals on wetlands are properly considered, while allowing landowners to continue to manage wetlands on their land. SEPP 14 specifically applies to developments of the following type within mapped wetlands: clearing; levee construction; draining; and filling. The policy does not apply to land dedicated or reserved under the *National Parks and Wildlife Act 1974*, as an Aboriginal area, historic site, national park or nature reserve.

SEPP 26 was introduced in 1988 to preserve the remaining coastal littoral rainforest. The policy encourages people proposing developments to avoid disturbing littoral rainforest and to look for alternatives. The policy aims to provide a mechanism for the consideration of developments that are likely to damage or destroy littoral rainforest areas with a view to the preservation of those areas in their natural state. The policy requires anyone wanting to place developments in or near a littoral rainforest to:

- study the characteristics and values of the areas
- assess the likely effects of their proposal
- seek approval from the local council (this requires the concurrence of the Minister for Planning for granting consent)

This policy does not apply to land dedicated or reserved under the *National Parks and Wildlife Act 1974* as an Aboriginal area, historic site, national park or nature reserve. In addition, it does not apply to land dedicated or set apart as a flora reserve under section 25A of the *Forestry Act 1916*.

SEPP 44 was introduced to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas. Habitat loss or modification, amongst other things, has resulted in koalas being listed on schedule 12 of the *National Parks and Wildlife Act 1974*, as endangered fauna in part 2, vulnerable and rare. When core koala habitat is found on land subject to a development application, the policy requires that a management plan be prepared. The plan of management encourages active habitat management. The policy also encourages the identification of core koala habitat in local environmental planning instruments. The SEPP applies to all LGAs in the Audit Region. However, it does not apply to land dedicated or reserved under the *National Parks and Wildlife Act 1974* or to land dedicated under the *Forestry Act 1916*, as a State forest or flora reserve.

TABLE 2C STATE ENVIRONMENTAL PLANNING POLICIES THAT APPLY TO PUBLIC LAND IN THE AUDIT REGION

SEPP	title
1	Development standards
4	Development without consent
5	Housing for aged or disable people
6	Number of storeys in a building
8	Surplus public land
9	Group homes
11	Traffic generating developments
12	Public housing (dwelling houses)
14*	Coastal wetlands
16	Tertiary institutions
20	Minimum standards for residential flat development
21	Caravan parks
22	Shops and commercial premises
25	Residential allotment sizes and dual occupancy subdivision
26	Littoral rainforest
27	Prison sites
30	Cattle feedlots
32	Urban consolidation (redevelopment of urban land)
33	Hazardous and offensive development
34	Major employment-generating industrial development
37	Continued mines and extractive industries
44	Koala habitat protection

* The coverage of SEPP 14 over public lands is on the map Public Lands Covered by SEPP No. 14 – Coastal Wetlands

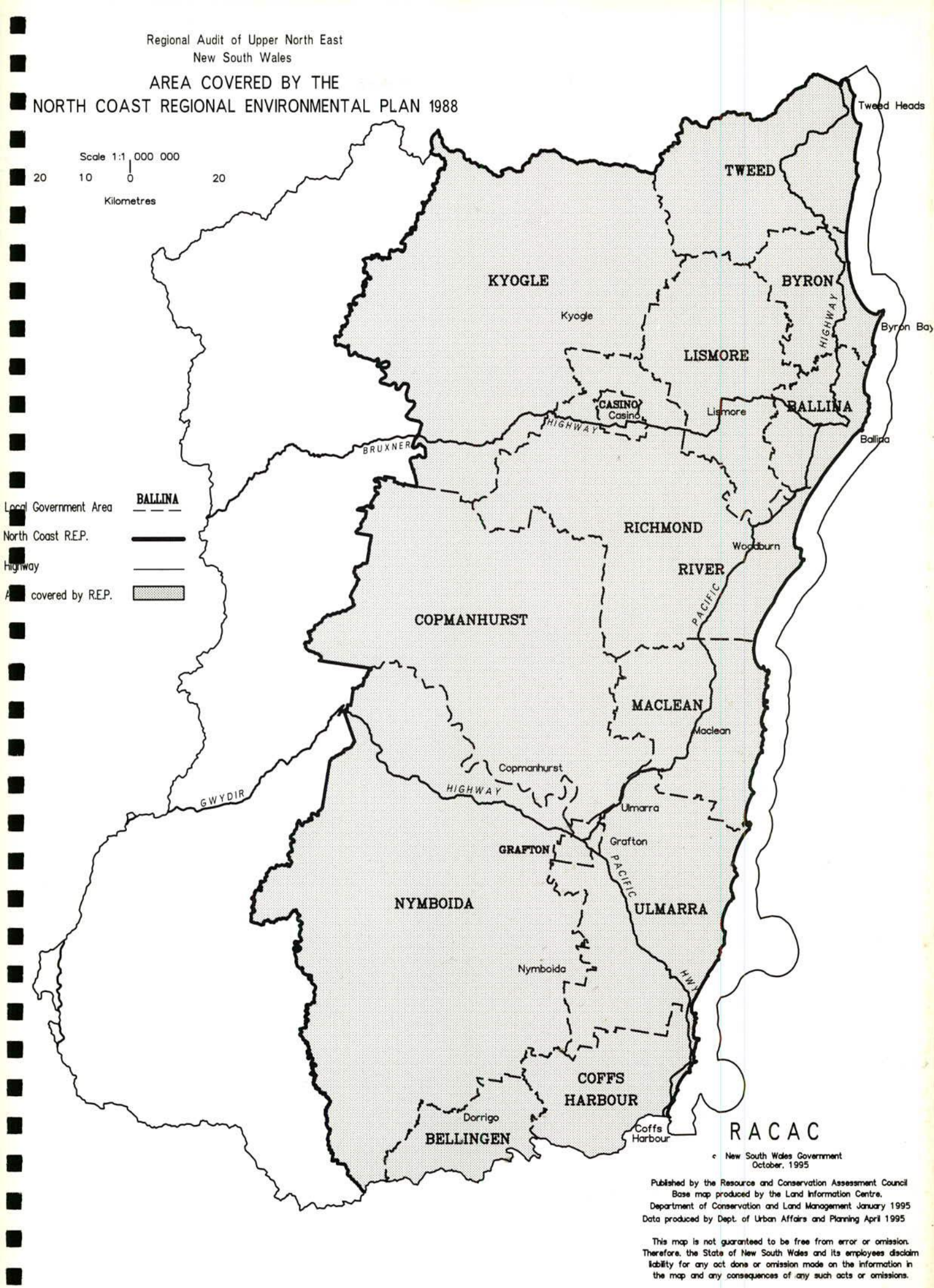
Map 2b Public Lands covered by SEPP No. 14 – Coastal Wetlands shows the coverage of SEPP 14 wetlands over public land in the Audit Region. Due to the small scale of some areas covered by this SEPPs in the Audit Region, it should be noted that the map is only indicative. Reference should be made to maps held by local councils and the Department of Planning for the accurate location of the boundaries of these areas.

2.13.2 Regional environmental plans

At present there is only one regional environmental plan (REP) that covers land within the Audit Region. The coastal area from Hastings local government area in the south to the Tweed local government area in the north is affected by the provisions of the North Coast Regional Environmental Plan 1988 (Department of Planning, 1995) and the area is shown on map 2c Area of the Audit Region covered by the North Coast Regional Environmental Plan 1988.

Regional Audit of Upper North East
New South Wales

AREA COVERED BY THE NORTH COAST REGIONAL ENVIRONMENTAL PLAN 1988



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This plan provides a broad policy approach to the major planning issues in the Region such as the protection of the natural environment and the coordination of activities related to growth of urban areas, including those carried out by government agencies. The primary aim of REPs is to be used by councils as a framework within which LEPs are prepared. The REP also contains a number of specific development consent requirements, relating, for example, to

- heritage items of State and regional significance
- wetlands or fishery habitats
- coastal hazard areas
- tall buildings (over 14 metres).

2.13.3 Local environmental plans

Land use in the Audit Region is primarily controlled by local environmental plans (LEPs) which are prepared and implemented by councils. LEPs must be consistent with SEPPs, REPs and section 117 directions (see section 2.13.4). LEPs must contain a statement of aims, objectives and strategies for the area covered, as well as identifying basic land by the use of zones. Development standards can also be included. While LEPs are a prime source of land use control, they may also deal with protection of heritage items, environmental protection, including tree preservation and area improvement programs.

Local government areas (LGAs) within the Audit Region are shown on map 2e. A list of these LGAs plus the relevant local environmental plans are at table 2d. LEPs can be amended from time to time (an amendment may only involve rezoning of one block of land) and these amendments are recorded by the relevant council.

A deemed environmental planning instrument is a plan prepared under the previous planning legislation, part XIIA of the *Local Government Act 1919*, that has not been superseded by an LEP. When a new plan is prepared it will be an LEP under the *EP&A Act*. Of particular note is the Tenterfield area where there are currently no land use controls in the rural areas except in the form of SEPPs that require council consent for some development. The Tenterfield Council has prepared a draft plan but it has not been finalised.

2.13.4 Section 117 directions

In addition to these planning instruments, under section 117 of the *EP&A Act*, councils are required to consider the Minister's directions in preparing LEPs. Until REPs and SEPPs adequately cover wider issues, directions provide the policy context for LEP preparation. All planning directions made by the Minister under section 117 apply to the tableland area (including those LGAs in the Audit Region not covered by the North Coast REP). However, only two section 117 directions apply to the area covered by the North Coast REP.

The North Coast Regional Environmental Plan (REP) 1995, replaces and modifies section 117 directions made by the Minister, which related to the North Coast. Section 117 directions still current for the North Coast are:

- S26 NSW Coast: Government Policy (part only);
- S27 Manufactured Home Estates.

2.13.5 Planning controls on public land

In preparing LEPs, councils may adopt, wholly or partially, the Environmental Planning and Assessment Model Provisions. Clause 25 of these provisions specifies that *Forestry* activities in State forests and other Crown-timber lands, including timber reserves, flora reserves and leased or licensed Crown land greater than two hectares, does not require development consent. This is reflected in specific zones used in LEPs to cover State forests and other Crown timber lands (see appendix 2.2). Where development consent is not required, the environmental assessment provisions of Part V of the Act apply.

In the case of Aboriginal areas, historic sites, national parks and nature reserves, the provisions of SEPP 4 – Development without Consent, state that development on these lands does not require consent. Instead, the provisions of Part V of the Act apply.

Part V applies to activities that do not require development consent under any relevant environmental planning

TABLE 2D LOCAL GOVERNMENT AREAS AND LEPS

Local government area	LEP Date gazetted
North Coast	
Tweed	January 1988
Byron	April 1988
Lismore	May 1992
Kyogle -Deemed instrument only	***
Ballina	February 1987
Casino	May 1992
Richmond River	December 1992
Copmanhurst	March 1990
Maclean	July 1992
Grafton	September 1988
Nymboida	June 1986
Ulmarra	February 1992
Coffs Harbour	April 1988
Bellingen	February 1990
New England	
Tenterfield	No planning controls
Glen Innes	July 1991
Severn	December 1991
Guyra	May 1988
Dumaresq	May 1985

* Local environmental plan has been prepared and exhibited for public comment

instruments. Part V requires that environmental factors be considered by a determining authority, usually the relevant Minister or government agency, when making a decision about an activity. Where an activity is likely to have a significant impact on the environment, the Act requires an environmental impact statement (EIS) to be prepared. An EIS is one way of obtaining and presenting the environmental factors which have been considered by the proponent in deciding on a proposal. Some factors to be included in an EIS are:

- a full description of the proposed activity;
- a description of the existing environment;
- analysis of likely environmental impacts;
- justification of the proposed activity in terms of environmental, economic and social considerations;
- measures taken to mitigate any impacts;
- any feasible alternatives;
- consequences of not carrying out the proposed activity. *(Environmental Planning and Assessment Regulation 1980)*

For any public lands within the Audit Region, the relevant LEP will provide the initial development status. This includes the zoning that indicates the uses that are: permitted without development consent; permitted only with development consent; and prohibited. Zones are usually constructed to prohibit some types of development and permit all others with or without consent or to permit only some development and prohibit all others. Uses not listed in the table for each zone are generally prohibited uses.

Appendix 2.2 gives examples of different zones used for public lands in LEPs within the Audit Region. The table includes examples of the objectives for the different zones and the uses that may be permitted in the zones. This information is only indicative of the zoning used in the Audit Region. Relevant LEPs should be consulted for determining the accurate zoning of public land.

Councils may introduce more detailed controls for land use and development by way of development control plans (DCP) or adopted policy. The local council is responsible for the implementation and practice of these controls. Information on planning controls that affect pieces of land are available at the local council and also at the Department of Planning.

2.13.6 Regional and local environmental studies

When regional and local environmental plans are prepared for the first time, or major changes are proposed for existing plans, an environmental study will usually be prepared as the first stage in the development of a plan. In addition, the NSW Government Coastal Policy (1990) requires an environmental study for any rezoning within one kilometre of the coast.

These studies involve the survey of the environment of the area to determine the needs of the community, the capacity of the environment and likely effects of change. Studies can, among other things, describe the physical environment, population growth and characteristics, the regional economy, land use and settlement, transport and infrastructure, and opportunities and constraints upon development.

Over 15 major planning studies have been prepared for areas within the Audit Region. These are referred to in the select bibliography at the end of this volume.

2.14 ADMINISTRATIVE BOUNDARIES

The Audit Region has a number of major administrative boundaries, including State and federal electorates and local government boundaries. These are shown in maps 2d and 2e.

2.15 MARKET VALUES OF PUBLIC LANDS

Values for land can be identified, not only by imputing the value of economic resources (such as timber, tourism and fisheries) and other attributes (such as conservation and heritage values) that the land can support, but also through the value of public land as a commodity which can be sold (alienated) or retained in public ownership.

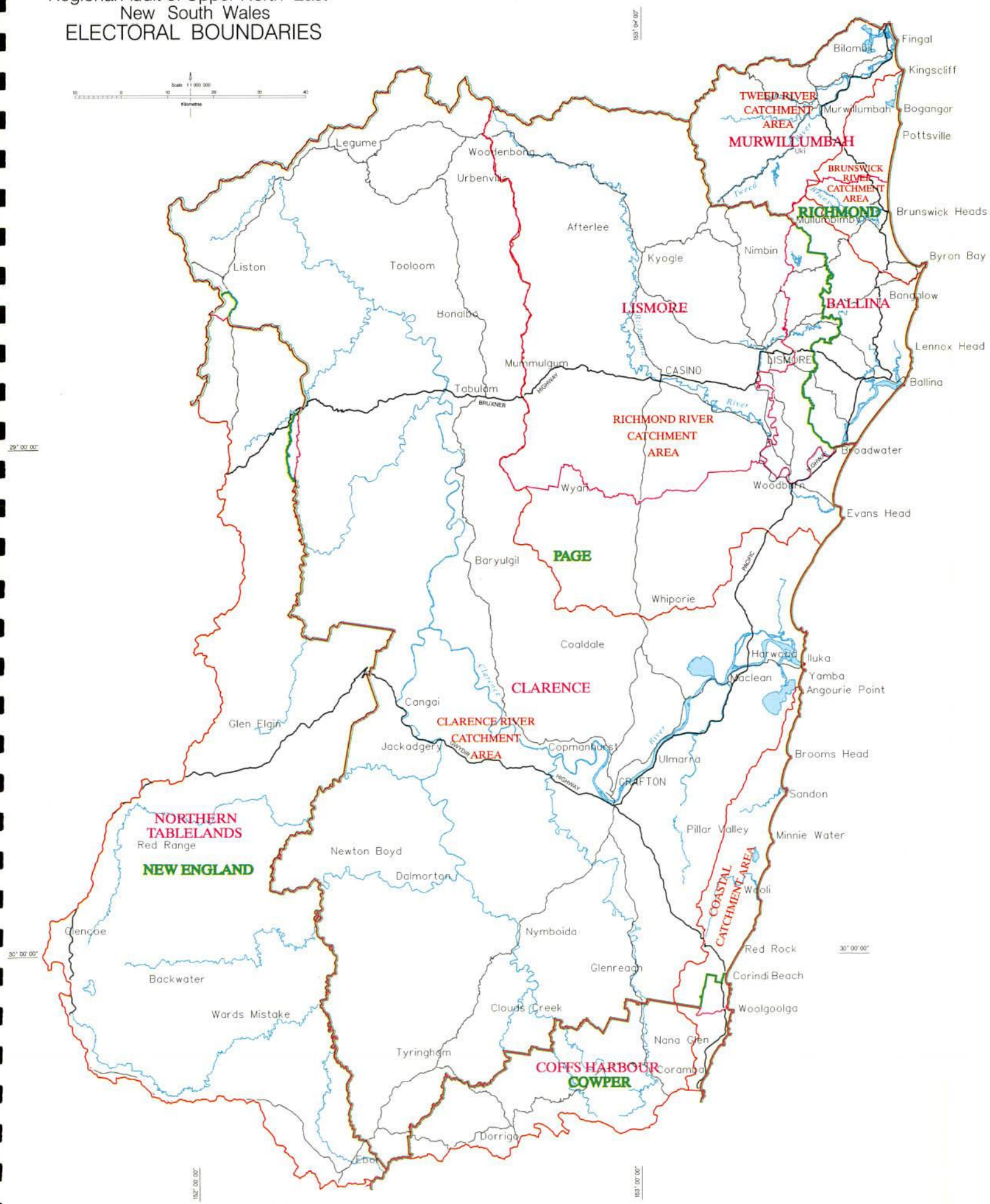
This section examines the process of identifying market values and opportunity costs for public lands and the range of issues that inform that process.

2.15.1 Valuing land

The value people place on land and its various uses can be intangible, subjective and often emotional. Most people, however, relate to the monetary value of the land. This may be a market value, opportunity cost, reinstatement value or betterment value. These are all generally expressed in terms of a monetary or dollar value. This value, especially market value (which is based on the amount people are actually willing to pay) is perhaps the most tangible indicator of worth, although subjective, sentimental and other emotive considerations will mean that this value will vary from person to person. Consequently, a useful instrument in land resource decision making is ascribing a value based on valuation evidence of the land use options under consideration.

In this section, consideration is given to prices people are prepared to pay for land as a tangible indicator of preferred residential lifestyles. Consideration is also given to the use of *in globo* values as a means of determining opportunity cost for competing uses. This can be compared to other natural resource values having regard to betterment and the multiplier effect.

Regional Audit of Upper North East New South Wales
ELECTORAL BOUNDARIES



Commonwealth Electorate..... PAGE

State Electorate..... BALLINA

Catchment Area..... TWEED RIVER

Highway.....

Main Road.....

River.....

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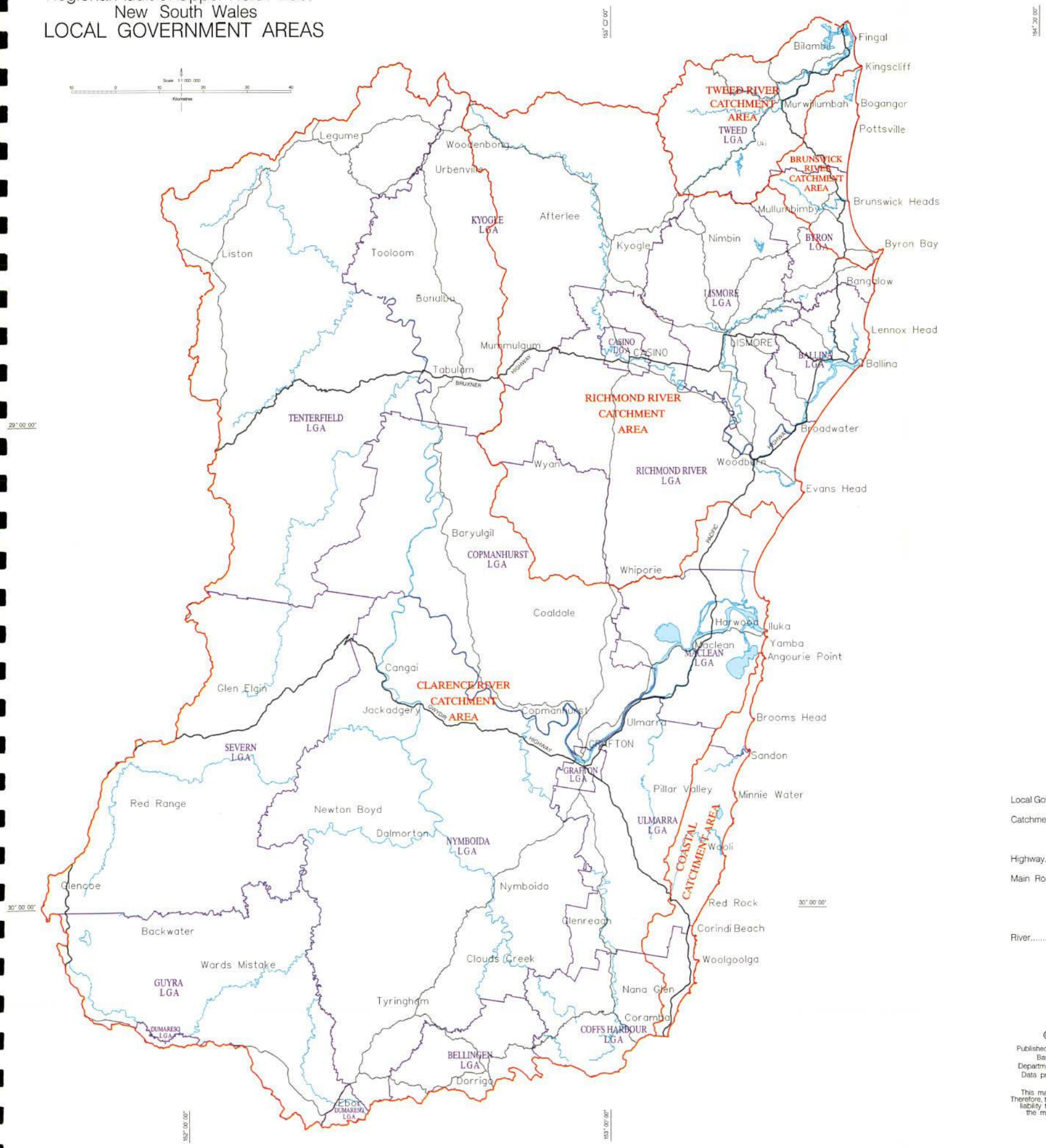
Regional Audit of Upper North East New South Wales
LOCAL GOVERNMENT AREAS



Local Government Area..... BALLINA

Catchment Area..... TWEED RIVER

Highway.....

Main Road.....

River.....

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2.15.2 Land values for residential purposes

The Valuer-General's Office (1994) determines 'benchmark' values for parcels of residential land in different parts of the State. While these values do not indicate actual market value, they nonetheless are important indicators of the relative values between locations. This is particularly shown when comparing coastal towns with nearby inland locations (see table 2e).

The willingness-to-pay by purchasers of residential land is generally a tangible indicator of their preferences for residential lifestyle.

Land values for residential purposes are relatively high in the north east corner of New South Wales compared with other areas outside the major population centres. Within the Region land values are highest nearer the coast.

The Region is generally regarded as having a high lifestyle value and this coincides with the presence of higher residential land values towards the coast. In fact, limited research suggests that quality of life is a primary reason for migration to the Region, mainly from Sydney.

TABLE 2E LAND VALUES IN THE REGION

	$1993/$1994 Benchmark Value
Coastal Town	
Ballina (Lot size:18x37m)	$75 000/$80 000
Tweed Heads (Lot size:17x35m)	$65 000/$65 000
Coffs Harbour (Lot size: 18x38m)	$50 000/$52 000
Inland Town	
Lismore (Lot size: 23x31m)	$47 500/$52 500
Murwillumbah (Lot size: 20x35m)	$55 000/$55 000
Grafton (Lot size: 20x30m)	$33 000/$38 000

2.15.3 Determining land development value

The value of undeveloped residential zoned land is based on an estimate of its *in globo* value, that is, the value a developer would pay for the land before developing and subdividing it.

A developer's decision to develop a site depends upon consideration of all the profit and risk factors involved.

The *in globo* value, which is influenced not only by location, but also by the differing complexities of individual sites, is an important factor in this decision.

The *in globo* value is fairly complex. Put simply, it is the amount a developer would pay for land prior to development. There is a relationship between the cost of purchasing and developing a site and the income from the sale of all the lots in a developed site. The difference between these is the profit margin that a developer would expect to make on a development. Obviously a developer will be attracted to a development where the profit margin is greatest. It is this margin, therefore, that is most important determinant in a decision to develop, not

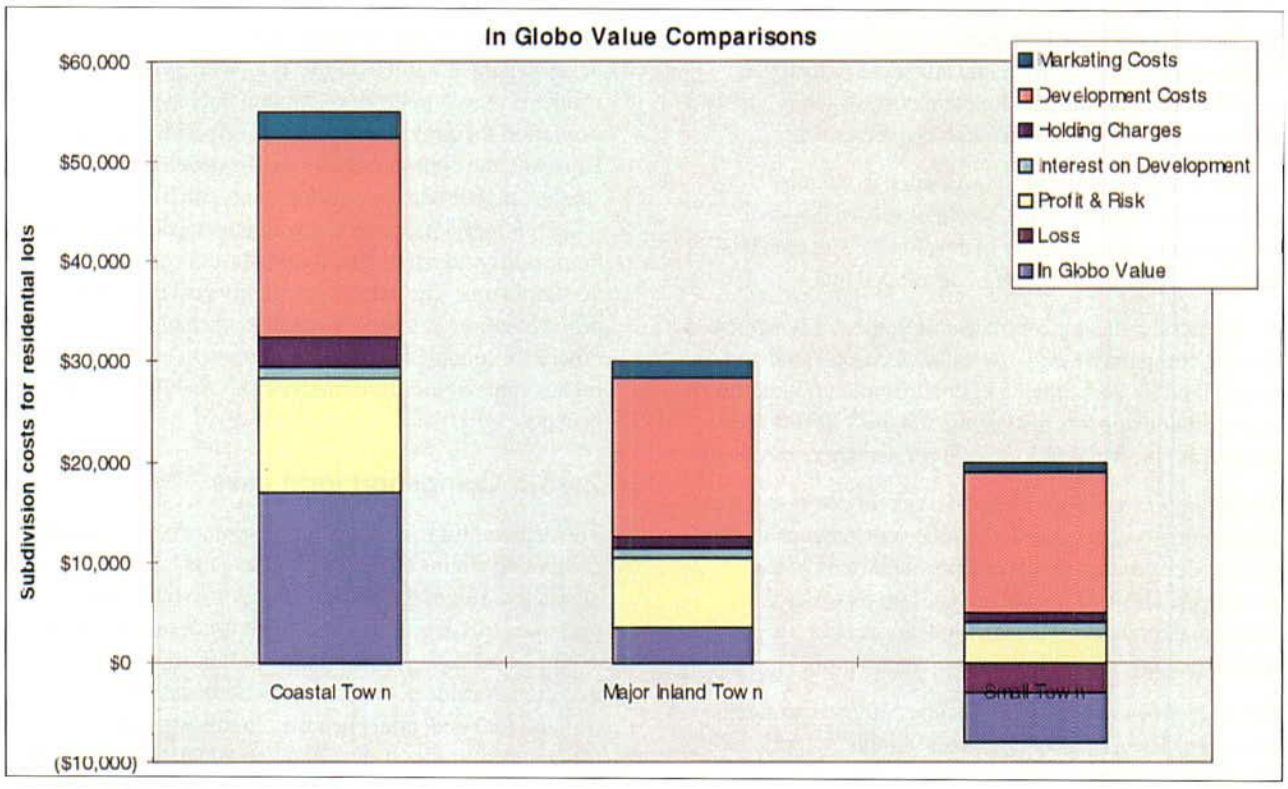

Figure 2d *In globo* value comparisons

whether the final lot value alone is high or the undeveloped value alone is low. This can be seen graphically in figure 2d – *in globo* value comparisons.

As can be seen, the actual cost of development does not vary as greatly as the *in globo* value. Of course, the development cost does vary, depending on the distance, terrain and infrastructure needs of the site but, because many of the development costs are fixed costs, the marginal variation in development costs is not generally as great as the *in globo* value. Indeed, it is often the *in globo* value itself which will reflect these variations – the *in globo* value falls as the costs of development of a particular site rise and vice versa. Accordingly, it is possible to say that, all other things being equal, development costs are relatively similar across a range of sites.

As can be seen in figure 2d, lot prices in the Region for a developed site are higher towards the coast than in the major inland towns. Yet the profit/risk ratio is higher in the major inland towns. This can be attributed to the return being higher where risk is greater. Lower land values represents lower demand and therefore a developer in such areas is taking a bigger risk in undertaking a development. The developer must decide whether to take a lower risk and develop on the coast (and therefore get a lower, but more sure return) or to develop in an inland town, where the risk is higher but the rewards are greater. Another way of looking at the problem is that a developer may choose to reduce the rate of return to enhance the prospects for sale.

It is the *in globo* value, therefore, which reflects this dilemma. In figure 2d, the relative difference between developed sale price is about $55,000 on the coast as compared to $30,000 inland (ie 11:6, near enough to twice the value). Yet the difference in *in globo* values is about $17,000 to $4,000 (ie 17:4, near enough to four times the value). The reason the final lot value does not vary so greatly is because the development cost, which is largely a fixed cost, does not vary so much between sites.

It should also be noted in figure 2d that in the third example the *in globo* value is (effectively) a negative value because it costs more to develop the site than it is possible to get from the sale of developed lots.

As a general indicator for the Audit Region, it is estimated that the comparative *in globo* value of coastal land and inland land (ie, more than 5 kilometres inland) yielding 10 detached housing lots per hectare will be $300 000 per hectare as compared to $100 000 per hectare respectively.

The *in globo* value forms a good basis for determining an opportunity cost because it eliminates extraneous factors such as development costs and profit margins of the developer. The *in globo* value therefore provides the actual market value of the land independent of improvements, infrastructure and other factors.

The *in globo* value also allows some comparison across land uses. The methodology can be similarly applied to alternative land uses (such as commercial or industrial use, medium or high density developments etc) and this provides a figure, unhampered by these other extraneous development factors, which can be compared across land uses so that the opportunity cost can be seen.

From a public land management perspective, the *in globo* value can equally be used to attribute a value for retaining the land within public ownership, thereby giving an opportunity cost of using the land for public purposes. The State, in keeping the land for some purpose, is foregoing the *in globo* value if it were sold into private ownership.

2.15.4 Pressures for development

The combination of high lot prices based on lifestyle values, coupled with high associated *in globo* values, places great pressure for residential development both from potential residents who value the lifestyle and land developers who anticipate profits. Decisions to limit development reduce the supply of lots in a way which may not satisfy demand. This may lead to higher prices, creating even more pressure to develop.

The NSW Department of Land and Water Conservation (DLWC) is responsible for the release of Crown land sites onto the property market. DLWC is subject to many of the pressures of demand, but must temper the potential for revenue to the State with wider environmental and social considerations. This process involves an assessment of the land's capability and market and other values.

The release of Crown land for development must be carefully considered. If too few lots are released, land values increase and demand is not met, while if too many lots are released, land values may suffer or undesirable environmental or social implications may result.

This is a particular issue in the Upper North East Region of New South Wales. Some existing residents see major development as a threat to lifestyle, while potential residents may support development but have a lifestyle aspiration for larger sized lots or rural residential lots. However, the optimum return for the developer is with smaller, higher density developments, such as so-called 'Green Street' lots, cluster developments, dual occupancy, home units, industrial developments and commercial developments. The value/opportunity cost of land in prime locations retained in public ownership and otherwise suitable for urban development could reflect the higher value of these alternatives of possibly $500 000 per hectare.

2.15.5 Competing land uses

The demand for residential property may be tempered by competing claims on the land. Where the land has alternative values higher than its value for residential purposes, this acts as a disincentive for development. For example, prime agricultural land or industrial land may have a high value per hectare which exceeds the value of the land for residential purposes. In this way the market for land determines its use, subject only to the limitations people consciously choose to place on the market, such as zoning or legislative restrictions designed to protect other

ALIENATION OF CROWN LAND

In the early years after European settlement, all land in the study area was Crown land. In the nineteenth century, Crown land was granted or sold (as either freehold or perpetual lease) in order to promote economic growth. Today the pattern of 'alienation', as this process is called, has slowed and land release is no longer a major economic instrument. Instead, land development responds to community demand for land.

Since European settlement commenced in the study area, a total of 1 869 615 hectares have been alienated.

land uses and landscapes valued or needed by the community. Such restrictions, however, impact upon the value of the land. Prime waterfront land zoned for residential purposes may have a higher value than if it was zoned for some other purpose or restricted from sale by legislation. The difference in value between these gives a value to the restriction or limitations placed on the land.

In many instances, land sought for retention as open space is equally suitable for residential development, so it is understandable that the quality environment for open space is often also a quality living environment. Yet open space often prevails over residential use. Examples are sites preserved for their visual aspect which otherwise provide a living environment with views.

It is appropriate that an economic value of the land for urban development (ie, the *in globo* value) be considered as the opportunity cost for many areas of open space. In other words, when a decision is made to preserve land in public ownership to protect it from development, *in globo* values can be used to estimate the value of the development opportunity foregone.

LAND USE PLANNING ON THE NORTH COAST

The *North Coast Regional Environmental Plan* (REP) 1988 (Department of Planning 1995a) states specific planning objectives which guide councils in the preparation of their own local environmental plans. The REP also raises additional considerations (social, economic and environmental) about important regional issues to help councils decide on development applications.

The REP influences development through the consideration of objectives and the implementation of its provisions. For example, one objective is to conserve, as far as possible, the environmental features which attract increasing numbers of residents and tourists to the Region. The plan also addresses the visual impact of development on the coast and around natural areas. This can have an economic value reflected in the higher price of land enhanced by the proximity to the environmental feature retained.

The *North Coast Urban Planning Strategy* (Department of Planning 1995b) addresses the future demand in the North Coast Region for suitable land for urban development. The strategy not only identifies land which is economical to development in regard to infrastructure provision, but also land which should not be developed, amongst other things, because of the environmentally sensitive nature of the area. The strategy also discusses the retention of the character of small rural centres in the Region. This involves limiting the type and amount of development occurring around these centres.

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GLOSSARY

Betterment value – the value attributed to land by rezoning to a higher value use (in planning terms) or by association with desirable features which improve its value (and hence its betterment in economic terms).

Core koala habitat – an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of population.

Dedicated land – land which has been set aside by law for a special purpose.

Freehold – a form of tenure where land is privately owned – sometimes legally called ownership in 'fee simple'.

In Globo – the value that a hypothetical developer would pay for land suitable for development prior to undertaking the development.

Lease – a form of tenure where Crown land is rented to a person for a specified period and which usually carries rights of exclusive possession.

Licence – a form of tenure where Crown land (typically unallocated land) is made available to a person usually for a short term and which usually does not carry rights of exclusive possession or the ability to build of permanent structures. It can be terminated at will and is a less secure form of tenure than a lease

Littoral rainforest – a distinctive type of rainforest which is well suited to the harsh conditions of exposure to salt-laden and drying winds on the coast.

Market value – the forces of supply and demand, which together determine the price at which the commodity is sold.

Opportunity cost – cost defined as the value of the alternatives or other opportunities which have to be foregone to achieve a particular thing. In the case of land, using the land for one purpose means you cannot use it for some other purpose. This is the opportunity cost.

Reinstatement value – the value placed on land by the value of land that could be realistically used to replace it. For example land for Churches, public halls etc are often valued by the market value of nearby land (say, residential land) which just as easily could have been used for the Church, hall etc.

Reserved land – land which has been set aside administratively for a special purpose

Tenure – a period of time over which occupation of land is legally permitted; or the legal definition of the type of land holding (ie, freehold land tenure)

Unallocated land – that part of Crown land which has not been used

ACRONYMS

DCP – development control plan

DLWC – Department of Land and Water Conservation

EIS – environmental impact statement

EP&A Act – Environmental Planning & Assessment Act, 1979

LEP – local environment plan

LGA – local government plan

NPWS – National Parks and Wildlife Service

REP – Regional environmental plan

RLPB – Rural Lands Protection Board

SEPP – State environmental planning policy

SFNSW – State Forests NSW

TSR – travelling stock reserve

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3.1 Group dialects

3.1 INTRODUCTION

The former Natural Resources Audit Council (NRAC) has undertaken a systematic and comprehensive audit of all the values of the State's public land and natural resources on a regional basis. The purpose of this chapter is to provide the most precise information obtainable on Indigenous Australian history. NRAC commissioned the Gungil Jindibah Centre of Southern Cross University, which is recognised for its expertise in the area of Aboriginal research and in the Audit Region itself, to prepare this chapter. It was originally intended that it form part of a chapter providing a general history of the North East Region. However, as the project evolved it became clear that a separate chapter dealing with Indigenous history pre- and post-invasion (1788) was a preferable approach, allowing a more comprehensive account and also allowing the Aboriginal people a chance to give their account of the history of this Region. The time allotted to research and compile this chapter has been extremely limited considering the extensive consultation which was necesary to ensure an accurate picture of this Region was reported. The Gungil Jindibah Centre (GJC) effectively had four months to research and record 60,000 years of history. While the history presented here cannot be complete, it does draw not only written sources but on a significant oral tradition, as revealed through wide consultation with the Aboriginal communities in the Audit Region. Gungil Jindibah Centre staff members, nevertheless, have made a diligent effort to record as precise an account as possible of Aboriginal history in the Upper North East Region of New South Wales.

3.1.1 Scope of Indigenous history

Indigenous Australians have a history that extends back some 60,000 years and beyond (McRae et al., 1991). For Aboriginal people their history began in the 'Creation Time', a time when ancestral beings – some human and some animal – travelled the country creating the form of the landscape and its inhabitants (Flood, 1983). Aboriginal history is derived from only two sources of knowledge: archaeological evidence and Aboriginal oral traditions passed down as legends about the 'Creation Time'. Indigenous Australian history has been unfolding for over 60,000 years in Australia. If a time line representing human occupation in Australia was reduced to one hour, Aboriginal society would occupy over fifty nine minutes, European society less than half a minute. Even so their past has been neglected, even to the point of being conveniently left out of Australian educational history books...most Australian history books devote barely a chapter to the oldest surviving society in the world (Flood, 1983).

Today much of the history of Australia is being rewritten by Aboriginal people with an emphasis on telling their truth and setting the historical records straight. Needless to say, it is a very different history from that which has prevailed for the last two hundred years. It tells quite another story and draws on diverse sources ranging from historical records to oral traditions. Underpinning this new history is a set of values and concepts quite different from non-aboriginal beliefs, values and concepts, the most fundamental being the Indigenous Australians' spiritual beliefs, values and concepts of the land.

This chapter has been prepared by the Gungil Jindibah Centre in close consultation with the Aboriginal communities of the Upper North East Region. It presents the Aboriginal perspective on the history of the Region and the value and significance which Aboriginal people ascribe to their lands. It makes considerable use of the oral history tradition and, as far as possible, has been written using the words of the communities themselves to describe their beliefs and attitudes. What is presented here, then, is their views.

3.1.2 Indigenous history and their concept of land

The concept and significance of Aboriginal history and the ongoing relationships between Aboriginal people and their land and sea country is difficult for most non-Indigenous people to grasp. This is due to the historically established ignorance and blatant denial of the fact that Aboriginal people of the Region have strong spiritual and historical associations and attachments with their land and sea country.

From the moment of invasion by Europeans, Indigenous people have struggled emotionally, physically, politically and legally against such ignorance and denial. To this day, Aboriginal people have never relinquished their ownership to their land and sea country nor have they lost interest in helping all Australians understand why, and in what ways, land and sea have continued to be of significance to Indigenous societies (Smyth, 1994).

For the purpose of this report the term 'country' means place of origin as determined by ancestry – literally, culturally and spiritually. 'Country' encompasses the physical and spiritual ownership of all Indigenous values including places, resources, oral traditions and cultural obligations associated with a particular geographical area. It includes both land and sea (including all water bodies) which are regarded as inseparable from each other. The territorial lands of Aboriginal people from the Upper North East are central to their identities, their heritage and their economic futures (Smyth, 1994).

What follows is the history of Aboriginal associations with their land and sea country in the Upper North East Region. Integral to that history are the values which Aboriginal people hold for their country. These values are detailed in volume 6, chapter 5 Aboriginal Values, but they are also examined here in the context of the Indigenous history of the Region. Volume 6, Chapter 5 Aboriginal Values includes an overview of the spiritual, cultural, historical and economic attachment Aboriginal people have to their

country, as well as individual statements of Aboriginal associations as expressed by Elders of local communities within the Audit Region. This historical chapter encompasses a review of Australian history as viewed by Aboriginal people. It includes their associations with, and values placed on, land and sea country both pre- and post-invasion history as well as values as they have evolved over time. The term invasion is used in preference to 'settlement', because, for Aboriginal people, Cook's landing and subsequent European colonisation and settlement is considered, in contemporary terms, as the first step in the invasion of their country.

3.2 HISTORICAL SOURCES

An extensive literature and bibliographic search was conducted, in conjunction with Aboriginal consultation, in an attempt to ascertain all relevant information pertaining to Aboriginal history, associations with, and use of, public lands within the Region. The main resources used were those found to be easily obtainable from organisations such as:

- Australian Institute of Aboriginal & Torres Strait Islander Studies, Canberra
- Historical societies within the Region: R.R.H.S., W.R.H.S, A.D.H.S., M.D.H.S
- North Coast Institute for Aboriginal Community Education, Lismore
- Local libraries: Lismore, Tweed, Grafton
- University network catalogue: Southern Cross University
- The Australian Heritage Commission
- NSW National Parks and Wildlife Service (NPWS)

3.2.1 Limitations of source material and research

The information contained in these sources was in no way exhausted. Research on Indigenous history and Aboriginal associations with land in the Upper North East Region has been limited by the availability of reliable written sources. In addition, some relevant information was unobtainable due to lack of time. Therefore, this chapter must not be seen as an entire account of Aboriginal history and associations with lands in the Audit Region.

3.3 PRE-INVASION HISTORY

3.3.1 Aboriginal antiquity

Aboriginal pre-invasion history began at a time that is not easily defined. Recent estimates have pushed the time as far back as 60,000 years (McRae et al. 1991). More easily defined is the time at which pre-invasion history ended – 1788 (1821 in the Audit Region).

For Aboriginal people pre-invasion history began with the 'Dreaming', or 'Creation Time' (preferred term). Each individual area has its own name for this time but there is no English term that qualifies this time. This is a time when ancestral beings – some human and some animal – travelled the country creating the form of the landscape and its inhabitants. It therefore has divine significance in Aboriginal cultural society (Flood, 1983).

Australia's Indigenous people, the first human inhabitants of this continent, belong to a people whose great antiquity is integral to an understanding of their history. Australia has seen hundreds, probably thousands, of generations of Indigenous people endure and survived the harshest of changing climatic conditions. Although the population grew slowly, by 1788 it had reached an estimated 750,000 people, with northern New South Wales being one of the most densely populated areas (McRae et al. 1991). The established economy based on hunting, fishing and gathering for all sustenance needs, and the society characterised by strong kinship networks and inter-dependence, had enabled them to create the necessary balance between population numbers and available resources (Flood, 1983).

In the Upper North East Region, archaeological evidence suggests coastal occupation is no more than 6000 years old. This applies only to the narrow strip of land between the present High Water Mark (HWM) and the former beach line (about 6000 yrs before present). Occupation sites older than 6000 years may well exist above the level of the old beach line and be very close to the present coastline. There are various references to Aboriginal occupation on a coastline now submerged (Flood, 1983; Gostin & Chong, 1994; Bowdler, 1977). Around 18,000 years ago sea levels were at least 150 metres below present levels and more land was available for occupation and use (Young, 1993).

3.3.2 The physical environment and Aboriginal settlement

Non-Indigenous knowledge of Aboriginal origins and occupation is primarily based on specific pieces of evidence gathered from examining archaeological sites discovered in a variety of environmental habitats within the Region (See volume 6, chapter 6 Sites of significance). Because these sites were occupied at various times in the past, they provide us with additional evidence of social and technological changes that have occurred over thousands of generations. Many of these changes were a result of climatic changes that occurred throughout the history of the planet and, specifically, in Australia. For example, after the last glacial period the glaciers receded, forests became more extensive and sea levels rose. The natural resource base of the Upper North East became richer, people moved inland from the coastal plains and made more intensive use of the forests and their resources (Young, 1993).

The Audit Region includes various environmental zones

from sub-tropical coastal plains to high plateau country on the tablelands. The Northern Tablelands span an area that ranges from just north of Armidale to the Queensland border. They are separated from the coastal plains by a steep escarpment, with sharply dissected foothills. The coastal rivers comprise the Clarence, Richmond and Tweed Rivers, all of which are noted for their volume compared with their length and extent of drainage area (McBryde, 1974).

3.3.3 Aboriginal traditional land use

For survival in such variable physical environments Indigenous Australians relied upon a technology based on the use of naturally available resources. The types of implements used varied according to differences in the physical environment. For example, coastal communities utilised fishing nets, hooks and lines, fish traps and spears, whereas inland communities utilised tools more appropriate to their hunting needs (such as hunting and digging sticks).

Resources of the land, including those associated with riverine conditions and those of sea and estuaries were utilised by coastal clans within the Region. Several hunting techniques were employed to ensure an adequate and rich livelihood. The Big Scrub (Gabul Gabul) occupied some 75,000 hectares of land between Lismore, Terania Creek, Mullumbimby, Byron Bay, Broken Head and the Blackwall Range at altitudes from sea level to about 300 metres and was of great significance to local tribes as it provided a wealth of rainforest resources, including many natural medicines (Blackmore, 1989). Hunting and gathering occurred at different times of the year, in different places depending on the seasonal availability of the natural resources.

3.3.4 Indigenous religious culture and society

The lifestyles of the Indigenous people of pre-invasion times were unique, not only because of their economy and technology, but also because their social and cultural structures, including the practice of religious rituals were very strong. These ritual and ceremonial practices accord closely with those practised today (Young, 1993). The 1995 national survey of Aboriginal and Islander people, released by the Bureau of Statistics, indicates that for this Region 81% of the Indigenous people still participate in cultural activities (Australian Bureau of Statistics, 1995).

According to Aboriginal religious beliefs, all life as it is known today is part of one vast evolving network of relationships that are closely linked to a living cultural landscape. These relationships can be traced to the great spirit ancestors of the Dreaming. Many of the events of the Dreaming are related through stories of those early times and bring the power of this era to bear on life today (Isaacs, 1980).

Through traditional stories, Aboriginal Elders explain the formation of the land, its animals and plants. They relate the epic travels of the great spirit ancestors and recount how these spirits taught the people how to relate to the earth and to one another (Isaacs, 1980). The Dreaming, through spiritual ancestors, provided the people with their customary laws and set the pattern for traditional Aboriginal culture – a culture which has survived for at least 60,000 years and possibly longer (Isaacs, 1980). For Aboriginal people, the Dreaming formed the foundation of their spiritual and religious beliefs, bestowed upon them the laws of the land and explains their existence, their heritage and their cultural life (Bourke et al., 1980).

3.3.5 Aboriginal values and the concept of land

The concept of value as it pertains to Aboriginal land can only be determined by local Aboriginal Elders. These values include spiritual, cultural and economic aspects, as the land provides for all of these. It has been said that 'land in the ancient religious tradition is the source of life; the spirit of each person is in it, comes from it, and in time, returns to it. The land renews the spirit. The spirit is safest in its own country. Land shapes itself, the unique identity of each individual. It is the persons place, his or her country. Each one shares responsibility for it with family and with clan. It gives the person status as each one learns the law, the rituals for the land, the tasks he or she must do or see that others do. The land is sustenance for spirit, self and flesh.' (Barlow, 1993)

From a non-Indigenous point of view, the concept of land value to Aboriginal people is difficult to fathom. Land, in pre-invasion times, could not be bought or sold. Its value lay in its ancestral and spiritual connection for people that inhabited a particular area, its religious and ceremonial significance and in the resources which it could supply. As such, the land provided Australia's Indigenous people with everything they required for a fundamental and sustainable existence, as well as providing them with a vehicle or medium for spiritual power, one which is often revered by modern society (Charlesworth et al., 1990).

The land is the spirit and basis of Aboriginal culture. It always has, and will continue to be, held in the highest regard by its Indigenous people. The land not only provides daily economic sustenance, but is also the source of their origins, spirituality and customary laws. Aboriginal people remain intimately related to their traditional countries. Indigenous Australians perceive the land and the people who live on it to be completely interdependent, both spiritually and economically, and believe that this interdependency underlies the very foundation of their society (Isaacs, 1980).

The law of the land, and the land itself, is still central to Aboriginal people of Upper North East. The land gives the Aboriginal people their purpose for existence. Moreover, it is central to the identity and self-concept of Aboriginal Nations and individual clans and their religious beliefs.

Aboriginal people retain strong spiritual and social attachment to their lands and there are many places of spiritual and religious significance throughout their clan estates. (See volume 6, chapter 6 Sites of significance).

Ownership systems, access to and responsibility for traditional Aboriginal clan estates vary from place to place, although there are some common elements which indicate the importance of particular areas to particular people. Clan membership and hence an association with particular clan country is given at birth. In most Aboriginal societies clan membership is patrilineal. Sons and daughters retain their clan membership for life, even though they may move away and live on other clan estates, or into community settlements or towns. This inherited association with a particular country and its sacred and significant sites, dreaming tracks, stories, totems and other features, provided Aboriginal people with their individual and group identities. The unforeseeable destruction of this relationship to particular country, as occurred throughout most of the Region during the post-invasion period, denied Aboriginal people a place in their kinship system, access to resources and the basis of their spiritual beliefs (Smyth, 1994).

3.3.6 Spiritual and cultural attachment to land

Each clan has its own special places that provide them with the spiritual links necessary to maintain a connection to their spiritual ancestors. These sites are sacred and have deep religious significance to their spiritual and cultural identity. A few examples are Wollumbin (Mt. Warning) in Minjungbal territory, Nimbin Rocks in Wiyabal territory and Tooloom Falls in Gidabal territory. The spiritual and cultural significance of such sites is expanded upon in volume 6, chapter 6 Sites of significance. Spiritual and/or religious beliefs provide the very foundations of daily life within, and between, clan estates (Smyth, 1994).

Understanding the importance of country to Aboriginal people involves the recognition of the centrality of particular areas of land and sea country to their identity, culture and social structure within clan estates. It also requires the recognition of the significance of all sacred sites, the contemporary importance of hunting, fishing and gathering, and their desire to secure an independent economic base which will enable them to maintain traditional and contemporary associations with land and sea. This must also include a recognition of the effects of dispossession and the importance of Aboriginal peoples' efforts at rebuilding and maintaining links with traditional country (Smyth, 1994).

In Indigenous Australian society, rights to land were holistically linked to complex spiritual affiliations with the land. The land has a central role in the Indigenous Australian world view. Aboriginal culture interconnects all aspects of a person's spiritual and cultural life, place in the kinship network, spiritual beliefs, role in ceremonies and rituals and daily activities, with his or her 'country'. Something of the essence of such a relationship has been captured by various writers in the past.

Berndt (1982) described the link between the land and creation beliefs, which makes the land a living, sacred entity. Stanner (1979) described Aboriginal religion as being 'vibrant with life'. Yunupingu (1976) wrote ... 'My land is mine only because I came in spirit from that land, and so did my ancestors of the same land ... My land is my foundation. I stand, live and perform as long as I have something firm and hard to stand on ... We will be the lowest people in the world, because you have broken down my backbone, took away my arts, history and foundation. You have left me with nothing. Without land, I am nothing'.

For Aboriginal people, including those living in urbanised areas in the Region, the significance of land and sea is intimately bound to the spirituality surrounding the origins of landscapes and seascapes and the animals, plants and people which occupy them. Such Creation beliefs from the Dreaming are found throughout the Audit Region (as elsewhere in Australia), with slight variations occuring from region to region. All Creation beliefs generally describe the journeys undertaken by ancestral beings over what began as a featureless domain. All natural and cultural resources came into being as a result of events and creation that took place during the Dreaming. Their existence in present day landscapes is seen by Indigenous people as confirmation of their spiritual beliefs (Smyth, 1994).

Creation stories explain the origin of the natural world and form the basis of Aboriginal customary laws. They also form the basis of relations between people, and between people and the environment. Just as belief systems provide non-Indigenous people with their life's values, Creation beliefs provide Aboriginal people with their life's values.

Aboriginal people value their land and have fought hard to retain it since the Europeans first arrived. Now the fight is to regain what is more valuable to them than life itself. Many massacre sites within the Region stand testimony to this (See section 3.6 and volume 6, chapter 6, Sites of significance).

3.3.7 Economic value

Although the land was not viewed in a monetary sense it did provide the Indigenous people of the Region with a strong economic base. Trade was a major part of community life and the land provided the people with all kinds of material in which to deal. The land also provided the materials for building, hunting and transport. The sea provided resources which were of economic importance for purposes of trade and individual sustenance. The economic value of clan estates is discussed further in volume 6, chapter 5 Aboriginal values.

3.4 INDIVIDUAL NATIONS

There are four individual Aboriginal Nations in the Audit Region – the Bundjalung (Bandjalang), the Gumbainggeri (Gumbayngir), the Anaiwan and the Ji:gara (Yaygir). Each nation has its own territory and language. The Bundjalung and the Gumbainggeri people have the largest territories and the Ji:gara and the Anaiwan people the smallest (Heron, 1993).

In this chapter the use of the word 'Nation' implies one or more of the following characteristics:

- most or all nation members live, or used to live, in a single, clearly bounded region;
- they speak a common language or dialect which is unique to them;
- they share certain customs or cultural traits which are unique to their nation estate.

3.4.1 Origin and history of Aboriginal nations

The origin of the four Aboriginal Nations in the Audit Region can be traced back to the 'Creation Time'. There are various references to the story of the three brothers (Heron, 1993; McBryde,1974; & Gonda, 1983). Each version told varies according to the region or territory in which it is told. For example, the Ji:gara believe the three brothers landed in their canoe at Yamba. 'After landing in their canoe at Yamba the three brothers and their families split up, one going north, one inland and the other remaining in the Yamba district. The brother who went north with his family took up and occupied the Bundjalung territory. The brother who went inland with his family took up and occupied the western region of the Bundjalung territory and the brother whom remained in the Yamba district with his family took up and occupied the Ji:gara territory' (Heron, 1993). Further north, the Bundjalung believe the brothers landed at Evans Head and dispersed from there to take up the three respective territories. Although the point of landing and dispersal may vary from place to place the content and belief in origins is the same for all Bundjalung and Ji:gara people.

The Gumbainggeri nation believe that ' ... the first man came from Wareelah Cahgarra, the east, or the land where the sun rises, and was called Uli-tarra ... Uli-tarra proceeded from the shore to the mountains, and there found a woman,... he made her his wife and called her Cowoonganbah ... She conceived and bore him a son ... and then a second child, which was a daughter ... The girl married and had children, from whom the present aborigines say they are descended.' (McDougall, 1900).

The Anaiwan nation have similar beliefs for the creation time and the peopling of their territory. However, these have not been recorded as yet.

Because of food abundance and ideal climatic conditions, the Aboriginal population density in the Region was, and still is, much higher than in most other districts throughout New South Wales. Hence, clan group size would determine an assumed but clearly acknowledged geographical boundary (Keats,1988).

The Audit Region contains various, but similar, natural geographical units (i.e. the Clarence, Richmond and Tweed River Catchment areas). Because of this, Aboriginal culture within each geographical unit was also similar and fairly uniform. Within the Region there is a great diversity of landforms, a great diversity of vegetation and a corresponding diversity of animal and marine life; but this diversity is common to the whole region. Whether a clan was based on the coast or in the foothills or mountains, members could easily travel between these places, as they were usually within a week's journey for all but the very old and frail (Steele, 1984).

Quite often the people from neighbouring nations would come together for seasonal feasts. At such gatherings goods could be exchanged, cultural entertainment was provided, marriages were arranged and feuds were settled by the administration of customary laws. Thus the culture of the region was intimately unified (Steele,1984).

3.4.2 Boundaries of nations

The boundaries agreed on over thousands of years ago appear to have been based on natural geographic phenomena such as mountains, rivers and creeks. Where boundaries occurred in unavoidable open terrain they were signified by boundary marks on rocks and trees. Unfortunately, many marked trees no longer exist and rock markings have been destroyed or removed (Keats, 1988).

Attempts at delineating territorial boundaries have occurred since the time of invasion. However, the location of exact boundaries remains unclear because the data reviewed does not sustain an absoluteness for defining boundaries. The really detailed work on determining the precise location of Aboriginal boundaries began in the 1920s when Tindale and Strethlow undertook extensive fieldwork (Davis & Prescott, 1992). Most of the work has been undertaken by non-Indigenous anthropologists, using information from sources such as historians, archaeologists and, to a less extent, Aboriginal people. Most recently, Aboriginal Nation estates in the Audit Region have been mapped. These show Aboriginal place names indicating ownership, spiritual and cultural associations, including dreaming tracks, ceremonial sites, the location of camp and burial sites, water sources, vegetation and topography. The work carried out by Ron Heron, an Aboriginal archaeologist, is seen to be the most reliable for this region and is used for this chapter (Heron, 1993). Nation boundaries are contained in figure 3a.

The Bundjalung territory extends from Black Rocks in the south to a point approximately 25 kilometres north of Southport in southeast Queensland. The Bundjalung boundary borders the western side of Ji:gara territory, continuing in a south west direction to a point approximately 25 kilometres west of Lawrence. The western boundary takes in Copmanhurst and extends west to Mt Wellington and Bald Nob. The boundary then extends northwards towards Deepwater, passing the western side of Tenterfield before turning north east and extending to the coastline in Queensland, just north of Southport (Heron, 1993).

Ji:gara territory extends from the small town of Corindi Beach in the south to Black Rocks in the north and inland as far as Ulmara (Heron, 1993).

The Anaiwan territory extends from Uralla, south of Armidale, to (and including) Glen Innes, bordering on the east of the Bundjalung and Gumbaingerri territorial boundaries.

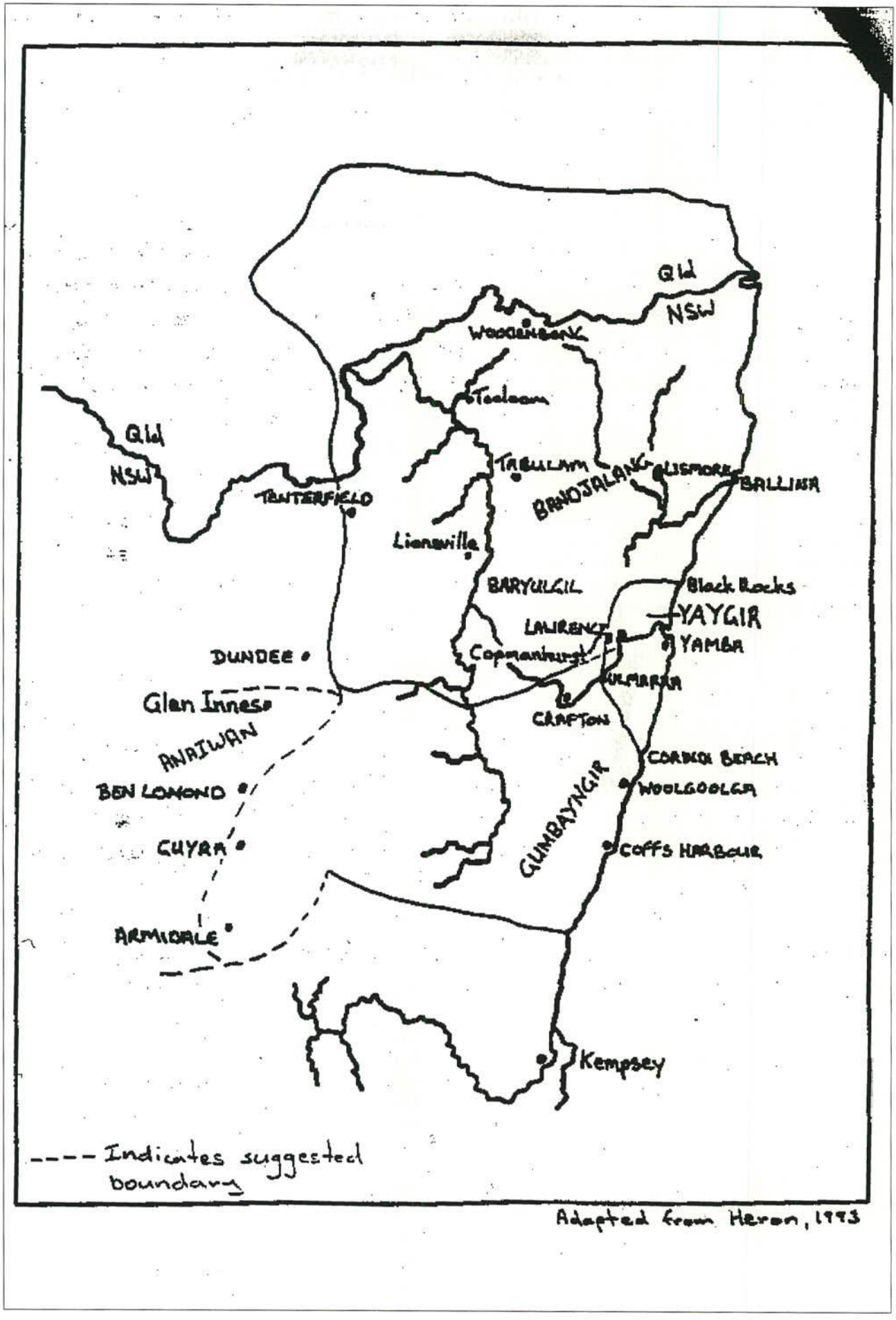

Figure 3a Aboriginal Nation Estate Boundaries – North eastern New South Wales (Source: Heron, 1993).

The Gumbainggeri territory extends from Corindi Beach in the north to an area just south of Nambucca Heads. The territory borders Ji:gara and Bundjalung territory in the north, extends to a point just south of Aberfoyle, taking in the headwaters of the Nymboida and Orara Rivers, before turning south-east to Round Mountain and on to the coast, south of Nambucca Heads (Heron, 1993).

The work conducted by Heron (1993) was primarily concerned with the Ji:gara territory and consisted of intensive consultation with the Ji:gara people in defining their territorial boundary. These boundaries closely match those recorded by Crowley (1978). It is acknowledged that further consultation with members of the Bundjalung people is required to accurately define their boundary. Gumbainggeri people have suggested that the Gumbainggeri tribal boundary extends to the Clarence in the northeast and out to and includes Guyra and Armidale in the west (See dashed lines on figure 3a) (Pers. Comm., 1995).

Where personal communications have not been identified in this chapter it is at the request of the person or local community who has provided the information. Gungil Jindibah respect their right to privacy.

3.4.3 Nation relationships

Indigenous Australian communities are exogamous, that is, there are always some people within the family unit who represent one or more other families. For example, males from one tribal nation may have more than one wife, each from different groups or nations, and therefore would have strong associations with his wives' tribal territory as well as his own (Pers. Comm., 1995). Due to this, no one family is permanently isolated or out of touch with other families living in different communities. Enough contact exists to allow the maintenance of knowledge of adjoining communities and communication is easily restored whenever one community meets with another. Contact occurs most often when some temporary increase in food or water supply enables them to spend a season together (Tindale, 1974). Aboriginal kinship and family structures are still cohesive forces which bind Aboriginal people together in all parts of the Upper North East Region (Bourke & Edwards, 1994).

Prentis (1972) describes how faraway clans were allowed to share in some particularly abundant fruit of the earth. For example, every three years the bunya pines, Araucaria bidwillii, in the Blackbutt Range north west of Brisbane provide an especially rich crop of 'nuts'. Large groups of people would come from all directions to share in the feast, including Bundjalung clanspeople from as far distant as Lismore.

Similarly, coastal clans south of Woolgoolga would permit their neighbouring inland clans to visit to have a fish diet for a short time. The people of the lower Richmond moved to the beach for salmon and mullet every September. It was customary for the different groups to camp separately, except during the oyster season when they assembled together along North Creek near Ballina to indulge in a huge shell fish feast (Prentis, 1972).

It was at these large gatherings that intra-group difficulties would be settled. In Indigenous Australia there are no formal courts of law with specially designated persons vested with authority and power to deal with disputes, to judge and to punish. Instead most problems were dealt with informally within the group by a council of Elders. Inter-nation difficulties were dealt with when the opportunity arose, such as when nation groups came together for ceremonies or feasts (Bourke et al., 1980).

3.4.4 Dialect groups

The Upper North East Region is occupied by four different Aboriginal Nations, each with its own territory and languages. Multilingualism was widespread in the pre-invasion period, as there was no common Aboriginal language which was understood across the Region. Some 600 dialects belonging to over 270 different languages were spoken throughout Australia at the time the Europeans arrived (House of Representatives Standing Committee on Aboriginals, 1992).

Crowley (1978) & Sharpe (1985) have suggested that originally there were between one and two dozen separate dialects within the Bundjalung language group. Two Gumbainggeri women Elders (Pers. Comm., 1995) have indicated that for the Gumbainggeri language group there were three, possibly four, dialects. Godwin (1990) has also suggested that originally there were at least four dialect groups among the Gumbainggeri. There is still contention over the original number and correct naming of individual dialect groups within the Bundjalung and Gumbainggeri Nations and this requires further consultation and discussion both within and between the respective communities.

At present, the Bundjalung Nation has eight dialects, three of which are spoken on the Clarence River. The Gumbainggeri speak two dialects. The Anaiwan and the Ji:gara languages have no dialect variation, which is probably a reflection of their small size (Heron, 1993). Within the Bundjalung Nation, the eight different dialect groups are the Bundjalung, Aragwal, Widjabal, Galibal, Gidabal, Minjungbal, Jugambal and Ngandowal. The two recorded dialect groups of the Gumbainggeri Nation are the Gumbainggeri and the Ba:nbai. As mentioned above Ji:gara is the only dialect spoken by the Ji:gara Nation and Anaiwan the only dialect spoken by the Anaiwan Nation (Nayutah & Finlay, 1988a).

The literature reviewed provides many group names, but there are problems in mapping them. Mitchell (1978) describes how several group names are assigned to one

general region and suggests that the reasons for this could be (1) that there were several distinct groups in the region, (2) that different informants provided different names (or different definitions of identification) for the same group, or (3) that the group names deal with different levels of group aggregation. Group dialects recorded by various authors are contained in appendix 3.1.

3.4.5 Dialect Boundaries

The exact boundaries of each tribal dialect area today remain unclear, and much more time would be required to locate them accurately. Original boundaries were agreed upon over thousands of years ago between adjoining clans, and appear to have been based on natural geographic phenomena. Since the invasion, many boundary markers (i.e. marked trees and rock markings) have been destroyed or removed, especially during the early years of land clearance in the period of the Free Selection Era (Keats, 1988).

In addition, as with all the Indigenous cultures of the Region, the onslaught of the invasion and subsequent segregation policies continued to obscure dialect boundaries. A map which defines dialect group boundaries can only be determined and defined by the individual groups and Elders after extensive consultation. As mentioned above there was insufficient time to do this.

It must be noted that it is seen to be inappropriate to expect any one person, community or group of scholars to impose a rigidity that may not have existed between dialect boundaries. This is because there is a possibility that there was a common range over which members of varying language groups foraged (Godwin, 1990).

3.5 TRADITIONAL LIFE AND LAND USE

The Aboriginal world view is essentially holistic. Humans and all aspects of human endeavour, nature and all natural phenomena, including animals and plants in all their diversity, are seen as equal in a timeless spiritual or cosmic order whose origins, meaning and integrity are never challenged. In contrast, the dominant European world view necessarily separates the spiritual, natural and human domains whose characteristics and attributes are always open to challenge. For example, the early settlers considered natural areas as 'wilderness' to be fought, overcome and exploited. The application of this philosophy over the last 200 years or more has resulted in widespread devastation of the natural environments in Australia and not least in the Audit Region. The very successful existence, adaptation and survival of Indigenous Australians in this vast continent was firmly founded on an intimate, detailed understanding of nature and natural and climatic phenomena. This coupled with spiritual beliefs enabled the Indigenous people to live and develop their communities within this continent. Such knowledge, if desired, is easily integrated into socio-economic structures which facilitates successful adaptation into a variety of environments (Gostin & Chong, 1994).

Indigenous Australian spiritual beliefs assert that the people and the land that supports them are inextricably bound together. This is often expressed in the saying 'The land is my mother and I am her protector'. The land is the source of sustenance, spirituality and social coherence. Land is the very foundation of Indigenous Australian society. For Indigenous Australians, land ownership has a more holistic meaning than is common in non-Indigenous society. Land was not a possession valued only in a monetary sense, to be bought or sold for profit. Nor was it a commodity with resources to be exploited for profit rather than for survival. To Indigenous people land ownership essentially implies responsibility – for themselves, their ancestors and for their descendants. This responsibility is characterised both in resource use and in the spiritual significance of the land (Young, 1993).

The Indigenous people of Australia have been utilising the resources – on their land and in their seas – for at least 60,000 years (Smyth, 1993). Survival in their physical environment meant relying upon a technology based on the use of stone, bone, wood and natural fibres. The tools which they manufactured enabled them to harvest both land and sea resources (Young, 1993). The North East Region provided its Indigenous people with an environment which was more favourable than many others in Australia and its islands. Each local group harvested various and differing food sources in different parts of their territory when seasonally available (Prentis, 1972).

Resources were used on a sustainable basis, in ways which recognised constraints imposed by the physical environment and which acknowledged the needs of future generations. For Indigenous Australians, their whole existence depended entirely on the land and the richness of the resources which it provided (Young, 1993).

In Indigenous Australian society the land not only provided daily economic sustenance, but was also the source of their origins and spirituality. The people are intimately related to their traditional countries, the land which is associated with their ancestors. Their systems of inheriting responsibility for caring for land affect its use because certain individuals and groups must be involved in decision making pertaining to this. Land caring roles are inherited through parents and maternal and paternal grandparents. When performing the ceremonies which celebrate their attachment to the land they act as either 'owners' or 'guardians' ('guardians' if it is 'mothers' country and 'owners' if it is 'fathers' country). Both 'owners' and 'guardians' had to be consulted over the use of their land, no matter what the purpose of use (Young, 1993).

3.5.1 Lifestyle

In Aboriginal societies the family structures and the sets of rights and obligations underlying them are extended to

the whole society. This is made possible by the application within the society of what is termed the Classificatory System of Kinship. A basic principle of this system is the equality of same sex siblings. This principle implies that people who are of the same sex and belong to the same sibling line are viewed as essentially the same. Therefore, two brothers are considered to be equivalent. When one brother has a child, that child applies the term father to both his father and his father's brother. The same applies to two sisters, both being mothers to any child either one bears. As a direct consequence, because a father's brother is also identified as father, the latter's children will be brothers and sisters rather than cousins (Bourke & Edwards, 1994).

The smallest family unit comprised father, mother and children. However, the extended family was also very important. The Classificatory System of Kinship ensured that children were well cared for. At night children listened to the camp stories, clapped along at corroborees and, on some occasions, participated by playing parts especially designed to include the children. The stories were a form of education by which they were taught about their culture and the appropriate use of the land. Through these stories they also learned how and what to hunt and were given the basis of their customary laws (Nayutah & Finlay, 1988a).

Mitchell (1978) gives a detailed description of the lifestyle of the Richmond River region Indigenous societies, whilst Sullivan (1964) synthesises much of the ethnographic data on the manufacture and use of the material culture of the Richmond and Tweed Indigenous societies. The women of the Northern Rivers region, as well as elsewhere, were experts in plant identification and use. They knew where and how to obtain them and could judge the time of the year by changes in the plants (for instance, when certain plants were flowering they knew the crabs would be fat).

The women would usually cook and/or educate the children in their tribal ways (i.e. who they were responsible to, their position in the tribe and how they must respect the land). In general, the women and children spent most of their time together (Nayutah & Finlay, 1988b).

The men were expert in hunting and tracking larger animals. They were also responsible for crafting weapons, hunting tools and canoes. When young boys were reaching initiation age, the men taught them how they were to change their roles within the tribe. They refined their hunting skills, taught them about the law of the tribe and the laws which pertained to their tribal territory. The men were the rule makers within the tribe. They arranged and negotiated marriages and initiated tribal fights (Nayutah & Finlay, 1988b).

Men comprised a council of Elders which dealt out punishment to the law breakers. The Elders handed on tribal secrets and were the most powerful people within the tribe. Some of the Elders became 'clever men' and the clever men held the greatest power within their social group (Nayutah & Finlay, 1988b).

The old people of the tribe usually had separate camps, one for females and one for males, which were strategically placed so as to allow them some peace and quiet from the daily routines of the camp. They were cared for by their kinfolk as the tribal rules dictated. Certain laws and food taboos ensured they received a staple diet even if they could no longer hunt or gather food for themselves. The older men partook in the decision-making process and the older women would often tell stories, by which they could pass on knowledge to the younger women. During the day the older men and women could spend their days together as they seldom left the camp unless it was necessary (Nayutah & Finlay, 1988b).

3.5.2. Seasonal movements

Based on archaeological deposits and documented observations, the picture of Indigenous Australian life established so far suggests that, for the coastal plain area, Indigenous groups moved seasonally between the coast and the foothill country. Favourable environmental conditions supported a high population along the coastal strip, clearly much higher than on the tablelands and western slopes. Indigenous groups of the tableland area, such as the Jugambal (Jukembal) of the Tenterfield district, required larger territories than their coastal neighbours because environmental conditions were much harsher. Large ceremonial gatherings usually occurred at times of plenty. Many people from a number of areas would congregate for several weeks and the surrounding land had to support them (Poiner, 1980).

Many writers such as Hodgkinson (1845), Ainsworth (1922), Dawson (1935), Pierce (1971), McBryde (1974), Belshaw (1978, Sullivan (1964) and Coleman (1982) have either observed, or studied and interpreted, the seasonal movements of the various tribes within the Audit Region. From these observations, and ethnohistoric evidence, a model of seasonal movement has been suggested – most recently by Coleman (1982).

The model suggested by Coleman (1982) is one in which large numbers of people living in small territories along the coast gained their subsistence entirely from the maritime zone, the coastal plain and the estuaries. Coleman's model is supported by three interesting features: a marked degree of cultural homogeneity due to the high level of inter-group activity running north-south, historical accounts from the early contact period, which suggest high population numbers, and the sedentary lifestyle of Indigenous Australians on the North Coast.

Coleman (1982), however, does acknowledge inland movement by Indigenous coastal groups of the Clarence district travelling to the Armidale district for a corroboree. The earliest accounts of seasonal movements describe consistently high, sedentary, local populations, which seasonally migrated to places where natural enhancement of food stocks enabled larger gatherings to occur. The people at these gatherings enjoyed a change of diet, the company of distant clan groups and a rich ceremonial lifestyle.

3.5.3 Resource use

The land and sea country of the Audit Region belongs to the Indigenous Australians of the Bundjalung, Gumbainggeri, Anaiwan and Ji:gara Nations. It is spiritually and economically important to these people, as it defines their existence and provides them with a means to survive both physically and spiritually. For evidence of the spiritual link to the land and sea areas within the Region see volume 6, chapter 6 Sites of significance.

The sharing of resources and reciprocity were important forms of Aboriginal behaviour which are today still significant in local communities. This type of behaviour reflects the realities of survival in a sometimes harsh and unpredictable environment. Resources were shared without question whenever necessary. In drought times people often had to range widely to find sustenance and on occasion were forced to hunt in a neighbours' territory. This did not incite conflict as everyone in the region recognised the general need to find food and water. It was acknowledged that the sharing of resources would eventually come full circle (Young, 1993).

Prentis (1972) describes evidence of deliberate conservation of natural resources by local Indigenous groups, such as the careful protection of bunya pines by Bundjalung clansmen. In addition to this, there is an old story that Hospital Hill, Murwillumbah, was 'taboo' for hunters because the game there was needed when floods in the area covered all other low lying land in the vicinity. It is also well known that boys at various stages of initiation were forbidden particular foods, whilst pregnant women and widows, and younger people generally, were variably restricted as to what they could eat (See particularly, Palmer, 1884; Bray, 1900; Small, 1898).

Aboriginal people of the North East Region had little need to control their environment because of its richness in diversity. Nevertheless, they put considerable spiritual and physical effort into conserving and fostering it (Prentis, 1972). Trade played a vital part in the lives of local Indigenous people in the Audit Region. For example, trade in bunya nuts is well recorded (Nayutah & Finlay, 1988a). In addition, trade in stone and stone implements between the mid-Clarence clans and the clans of the tablelands, and the upper-Clarence clans occurred (Prentis, 1972). People from the ranges travelled to the coast during seasons of abundant seafoods and took with them possum skins, soft belts of possum fur string, ochre and various gemstones. In return, the people of the coast would offer fish, shellfish, nautilus shells and dilly bags (Nayutah & Finlay, 1988b).

The coastal area of the Audit Region was and still is central to the culture of many Indigenous communities. As previously mentioned, the coastal area has the highest population density within the Region and the sea coast provides a rich source of fisheries resources. Intensity of use is indicative of the great value that Indigenous Australians attach to this part of the country (Coleman, 1982). This intensity includes the physical and spiritual use of the resources by way of food, recreation, religious rites, emotional needs and identity.

Coastal land, estuarine and marine resources were, and still are, of major economic, spiritual and cultural importance. Many sites of significance occur in all types of coastal environments (i.e. beaches, headlands, estuaries and the sea) many of which have been identified and are recorded in volume 6, chapter 6 Sites of significance. Many groups of Indigenous people in the Region, including inland groups who also have links with the sea through dreaming tracks, consider areas within the sea as integral parts of their traditional country (Resource Assessment Commission, 1993).

The Indigenous Australians of the coastal and riverine habitats within the Audit Region possessed a more varied array of equipment than their inland neighbours. This enabled them to exploit, with a high degree of success, their marine and aquatic environments. According to Prentis (1972), the Bundjalung and Gumbainggeri appear not to have had fish hooks but instead used nets and spears when hunting marine and aquatic resources. According to Sullivan (1964), the Richmond and Tweed Indigenous communities also constructed quite elaborate canoes. Local sources have provided little information on local Indigenous watercraft. However, it is clear from the nature of the country that they were an important piece of equipment, carefully constructed and highly valued. The canoes were used for fishing and for traversing the river systems of the Region. The Indigenous people of the area clearly showed themselves to be well-adapted to life in a region of many river systems and high rainfall (Sullivan, 1964).

Aboriginal people of the North East Region enjoyed a unique and rich cultural life. By the early 1800s the lifestyle enjoyed by the Aboriginal people of the area faced imminent destruction. The year was 1820. A new era, one that Aboriginal people believe amounted to cultural genocide, was about to begin.

Tim Low

Bunya nuts, used in pre-invasion trade.

3.6 POST-INVASION HISTORY

When the Europeans entered the Upper North East Region, they entered a region of dense Indigenous occupation. The richness of the coastal riverine and valley food sources was the major determinant of the Aboriginal of population density. Unfortunately, this same richness was the main attraction to Europeans who soon came to remove valuable wood stocks and forcibly take up land for grazing and settlement.

The Europeans dramatically changed the existing spiritual, social and economic structures of Indigenous communities of the Region by forcing them from their lands. The swiftness of these changes was a key factor in the present spiritual and economic conditions of the Indigenous communities in the Region today. Soil and water were polluted, natural forests and wetlands were removed or drained, natural food stocks were depleted and non-renewable resources extracted, all of which added to the desecration of the cultural landscape of the Indigenous people.

3.6.1 Early contact

When Governor Phillip arrived with the First Fleet he was under strict instructions '... to conciliate their affections, enjoining all our subjects to live in amity and kindness with them ... the natives should not be offended or molested on any account' (Lippmann 1981). Early administrators stressed that killing an Aboriginal person was murder, but few of the culprits were ever charged with the countless murders that occurred. The further the Europeans encroached on the lands of the Aboriginal people of the Region the greater the conflict between the two peoples. The Europeans failed to understand the nature and significance of Aboriginal people's attachment to their lands. The taking of the land meant the destruction of the Indigenous societies' economic and spiritual security (Haigh & Goldstein, 1980).

The first recorded contact between the Indigenous Australians of the Region and the European invaders occurred in 1799 when Matthew Flinders was met with wary avoidance by the Ji:gara people at the mouth of the Clarence River (Prentis, 1972). Flinders, upon climbing to the highest point of the southern headland to take latitudinal readings, found three huts which he describes as being 'of a circular form, of about eight feet in diameter ... much superior to any that he had seen before' (McSwan, 1978).

In the early 1820s a number of escapees from the Moreton Bay Penal Colony in south eastern Queensland lived with Aboriginal people in the Clarence region. By 1838 the first boatload of sawyers had reached the Clarence: 'The schooner had returned to Sydney with cedar, leaving the sawyers to cut a load for the next trip. After a week the men became alarmed at the numbers of their dusky neighbours, and one night they fired amongst them, killing several and dispersing the others' (Medcalf, 1989). So started a fierce and drawn-out struggle 'which caused many deaths on both sides', according to local historian, Norman Hewitt (1879-1959) (Medcalf, 1989).

3.6.2 Effects of European occupation of land

In the late 1830s the Aboriginal population in the Region was estimated to be somewhere between 3000-4000 people. During this period, their lands were systematically and selectively taken by the invaders for agriculture and settlement. These actions initiated the decline in availability of traditional foods and fresh water sources became increasingly scarce. The traditional owners considered that all animals on 'their' territory were theirs for the taking and as a consequence began to spear sheep and cattle.

3.6.3 Violence and warfare

Aboriginal people were frequently shot in retaliation by angry stockmen and settlers protecting their stock and land. The invasion of early settlers in the Clarence and Richmond valleys increased rapidly as cedar getters, pastoralists and finally gold miners arrived. In clearing the land, settlers destroyed the traditional economic base for Aboriginal people (Keats, 1990). Faced with the invasion of their territory, the violation of their sacred places and the annihilation of their hunting grounds and food sources, the Aboriginal people took cattle and vegetables from the settlers, which also led to brutal reprisals. Hewitt puts the toll of Slaughterman's Gully as 'scores' (Medcalf, 1989). Olive describes the Evans Head massacre where over 100 'darkies' were shot (Medcalf, 1989).

Hewitt and Bawden record mass poisoning in 1848 where 24 Aborigines were given flour laced with arsenic in payment for work. Hewitt also gives an account of a man named Scarr whose rampage finished in the murder of more than 100 Aborigines and two troopers who tried to capture him. (Medcalf, 1989). Arakwal (Ballina area) oral tradition and historic records recalls a mass poisoning at South Ballina in which whites gave the local clan flour laced with poison. Over 150 adults and children died after eating it. The list goes on to give evidence of further massacres (Medcalf,1989).

Clashes between Europeans and Aboriginal people worsened with the arrival of the squatters in 1839. Hundreds of the Region's Aboriginal people were killed by Europeans. Many Aboriginal people fought back, but spears, boomerangs and nulla-nullas were next to useless against guns and poison.

In 1839 the brutal and infamous Border Police were formed and were used to push Aboriginal people off their land. From 1840 onwards there were various massacres (See particularly, Medcalf, 1989) at Corindi, the Orara River, Boyd River, Casino and Ballina, just to name a few. Introduced diseases from the early 1820s also took their toll on the Aboriginal population, the first recorded being

escaped convicts from the Moreton Bay Penal Colony who 'held out' with the north coast Aboriginal people. Following on from this came the cedar cutters (1830s) and pastoralists and gold miners (1840s-1860s) who carried with them diseases included small pox, chicken pox, flu, lung and chest infections such as tuberculosis and also venereal diseases. Alcohol and tobacco were also introduced around this time. Labour was given to some of the Aboriginal men and women on stations but their pay was generally small – food rations which included 'grog' (rum) tobacco, flour, tea and occasionally sugar. By 1880 the Aboriginal population had been reduced to a mere 1200 (Schnierer & Robinson, 1995).

Allan Cunningham traversed the New England area first in 1827. The Surveyor-General Thomas Mitchell explored the area further in 1831-32. However, both official and unofficial explorations were carried out by many others from the 1820s to the 1840s – including squatters and stockmen, surveyors and bushmen. The tableland Aborigines often associated with and assisted explorers, but their way of life was quickly devastated by the settlement that followed. The tableland terrain enabled the Aborigines to launch a 'guerrilla' like defence of their territory but, as on the coast, they were no match for guns and disease, and various massacres occurred, the most infamous being the Myall Creek massacre which occurred near Bingara (Haigh & Goldstein, 1980).

3.6.4 European incursion into the Audit Region

After the explorers, came the first squatters, then miners, then selectors and eventually the agriculturists. From 1832, the pastoralists penetrated the Region and established large stock holdings which were beyond the European law until new land regulations provided them with security of tenure in 1847. Later, in the 1860s the Robertson Selection Acts were successful in securing lands around Tenterfield and Glen Innes (Gilbert, 1980).

European 'settlement' quickly took up all available land on the tablelands, and by the end of the century, Aborigines were forced onto missions to the east and west. The unforeseen destruction of their society was hideously rapid (Haigh & Goldstein, 1980).

Those Aborigines who survived the genocide and forced removal were soon depicted as being dirty, lazy, drunken and diseased. Of course, what was seen was a group of people who had been subjected to four decades of white colonisation, oppression and subjugation. These were the survivors of a brutal frontier experience in which their fellows had been dispossessed, shot, poisoned, raped, diseased and ridiculed on the assumption that they were the lowest form of humanity and an impediment to progress (Bickford, 1988).

Those that had survived were left without land or dignity. Their condition was the result of political and economic factors as well as racial fear and misunderstandings. Any people, subjected to the same brutal treatment they had received, would have emerged just as broken, displaced and impoverished (Bickford, 1988). What had occurred is seen in the eyes of the Indigenous people as nothing less than cultural genocide. This may seem to non-aboriginal people as emotive but to Indigenous people this is the reality they had to face in a country where written history has been limited to the progress and settlement of another dominant culture.

3.7 HISTORY OF PUBLIC LANDS

The public lands of the Region (as determined by the NRAC) include:

- State timber land – within the meaning of the Forestry Act 1916
- National Parks and Wildlife Service estate land – land dedicated or reserved under the *NSW National Parks and Wildlife Act 1974*
- Crown land – within the meaning of the *Crown Lands Act 1989*
- The coastal waters of the State – to a distance of three nautical miles from the low water mark
- Waters and submerged lands of which the bed is public land
- Land owned by New South Wales Government agencies

3.7.1 Aboriginal land and the concept of public land

Before European 'settlement' all land in the Region was 'public land'. That is to say, as in non-Indigenous society where public land is community land, Aboriginal tribal lands were also in a sense community land. Even sacred and significant areas which were utilised by select groups within the community belonged to the community as a whole (Pers. Comm Heron, 1995.). These lands were shared by various family groups and provided the Aborigines not only with the means of physical survival but also the focus of social groupings and a source of rich religious and emotional ties.

3.7.2 The impact of the doctrine of terra nullius

From the moment the Europeans set foot on Australian soil the land was looked upon as terra nullius, that is, land owned by no-one. Under the doctrine of terra nullius these lands could be 'discovered' by a European nation which, by the simple act of effective possession, became the sovereign (Wilke, 1985). As the Europeans moved across the Australian continent, their policies and actions toward Aboriginal people evolved through several distinct phases. These phases can be identified as:

- first contact and conciliation
- displacement, conflict and extermination

- protection and segregation
- assimilation
- integration and
- self-determination.

3.7.2.1 From first contact to race warfare

The history of the first phase, first contact and conciliation, has been recorded by various writers (Bawden, 1979, Wilke, 1985; Reynolds, 1989; Medcalf, 1989 & McRae et al., 1991). In the early 1800s European misconception about Aboriginal culture was already deeply embedded. Aboriginal perceptions of the newcomers initially involved a fundamental misunderstanding about the true intentions of the invaders, for territorial conquest was not something they had faced before. The Aboriginal misconception and subsequent early tolerance became impossible to maintain in the face of the brutal behaviour of many of the invaders. By the late 1830s race warfare characterised the relationship between the invaders and the Indigenous people of the Region. Displacement, conflict and extermination was characteristic of this era. (McRae et. al., 1991).

By the 1840s organised Aboriginal resistance to the invasion of their lands, and the theft and enslavement of their women, was at a peak. Stockmen were speared, squatters huts were attacked, homesteads were attacked. There are records of 'prolonged campaigns of destroying or stealing livestock and crops' (Medcalf,1989). This should have left the Europeans in no doubt about Aboriginal attachment to land and kinfolk, since they paid with their lives to protect both.

The Border Police were formed in 1839. Governor Gipps created this force as a peace-keeping force, 'punishing the atrocities of black and white. Each Commissioner was practically a law unto himself and his authority was enforced by his Border Police' (Medcalf, 1989). The policies and the practices of the time amounted to physical and cultural genocide. 'With the rise of the Native Police Force and the subduing of the region's Aborigines, the Border Police were phased out in the 1850s' (Medcalf, 1989).

The repression of physical resistance by Aborigines was accomplished in New South Wales during the 1850s with the establishment of reserves. By this time an estimated 1200 Aboriginals had survived what had in fact been a holocaust of terrifying proportions. Aboriginal people of the North East were deeply concerned about further loss of their kinfolk, the survival of their cultures and holding on to their lands, and began an attempt to re-establish their economic independence. For example, a group of Aborigines on the North Coast occupied Cabbage Tree Island during the late 1870s and farmed it for many years before it was officially notified as a reserve in 1893 (Wilke, 1985).

For the European invaders, the 1830s were years of great territorial expansion. Even though the first squatters did not reach the lush valley of the Richmond until 1840, the tablelands had seen the graziers already well-established and beginning to take up land in the Clarence River Valley. In less than ten years, all of the Aboriginal lands on the upper Richmond River was occupied by squatters. Their stations extended from the mountains in the north and west, and included part of the eucalypt country lying between the Clarence, Richmond and Tweed Rivers. The only area not yet occupied by squatters was the dense, impenetrable Big Scrub (Gabul Gabul) area straddling the coast. The 1840s saw the appointment of a Commissioner for Crown Lands, who also took on the role of the local protector of the Aborigines. By the mid 1840s most of the prime river bank land along the Clarence, Orara and Richmond Rivers had been occupied or settled by Europeans (Prentis, 1972).

In 1842 cedar getters had already arrived in the Richmond Rivers from the Clarence to cut down the cedar trees which grew in abundance on the rich basalt soil (Daley, 1973). The cedar-getters moved from place to place selectively removing the cedar trees. They were very much a transient group. While their licences to extract the cedar did not give them entitlement, they occupied the land of the Region and in doing so engaged in the massacres of local clans.

3.7.2.2 Protection, segregation and assimilation

During the 1850s and 1860s the Aborigines faced depopulation, social and cultural disorganisation and spiritual disorientation as a result of infectious diseases, massacres and government policies. In the 1860s the welfare of Aborigines in New South Wales was the responsibility of the NSW Aborigines Protection Association and it set about establishing reserves for Aboriginal people.

In 1878 the first reserves and missions were created in New South Wales and three years later, a Protector of Aborigines was appointed to undertake a survey on the condition of Aborigines throughout the colony (Prentis, 1972). Harsh regimes were imposed on reserves in an attempt to concentrate the population and suppress traditional lifestyle and culture (Read, 1980). Aboriginal people were hunted and herded onto these reserves. Different clans who traditionally did not mix were put together. Some were removed up to thirty miles away from their traditional country. In these 'concentration camps', which is how they are described in the oral history of the Region, Aboriginal men and women had to follow strict rules as determined by the mission and reserve managers. Once you were caught and put there you needed permission to leave, to visit relatives (if that permission was granted at all) and hunt outside the grounds. No one was allowed to have spears to hunt, the women had to be servants in the masters' homes (generally the managers) and the list continues. Aborigines would be punished for trying to practise their spiritual beliefs, and for continuing to speak their own language.

In 1862 Robertson's 'free selection' Acts, more correctly known as the *Crown Land Alienation Act* and *Crown Lands*

Occupation Act, were passed and the consequent rapid settlement forced Aboriginal people off their traditional lands (Schnierer & Robinson, 1995). These Acts effectively paved the way for the clearing of land and allowed non-aboriginal people to take – by force if necessary – Aboriginal land. This forced more Aboriginal people off their land with no compensation and allowed settlers to deliberately desecrate sacred sites of both men and women. The consequences of occupation and land clearing made it impossible for Aboriginal people to visit their sacred places for worship or to hunt their food or to have access to fresh water holes. Aboriginal people were charged and locked up by troopers for tresspassing once these Acts were imposed on their traditional lands. This of course had devastating effects on all Aboriginal people of this area.

In 1883 the NSW Aborigines Protection Board (APB) was established, to 'ameliorate the conditions of the blacks and to exercise a general guardianship over them' (Rintoul, 1993). The APB established 25 reserves in its first year and by 1891 was running 78 reserves covering almost 9000 hectares. In 1889, in a law case, Cooper v Stuart, it was stated that, from a legal view point, New South Wales had been 'peacefully annexed to the British dominions'.

In 1906 the NSW Lands Department announced that it was reversing its previous policy of creating and maintaining reserves, in order to free as much land as possible for settlement. Each year between 1903 and 1911 the Aborigines Protection Board issued statements opposing revocation, saying in 1910, 'the land already available to this unfortunate race is so limited that every attempt on the part of Europeans to acquire these reserves for settlement purposes should be strongly opposed' (APB Report 1910).

In 1909 the NSW Aborigines Protection Bill became law. It allowed for the forced removal of Aboriginal children from their families. In 1915 and 1918, amendments to this Act gave the NSW Aborigines Protection Board greater powers to remove children for training as domestic servants (Rintoul, 1993). The devastation this caused to the children, parents and to the community has never been fully documented. The effects of these policies are still being suffered today as many Aboriginal people are still trying to find their families and their lost life. Culturally these 'stolen generations' are still trying to establish a connection to their past. Between 1916 and 1969 an estimated 10,000 children had been removed from their families throughout New South Wales, under a policy of protection and assimilation (Goodall, 1990). In 1933 at a conference of State and federal officials, assimilation for some Aborigines was adopted as official policy. Part Aborigines were to be assimilated into the white community, regardless of their wishes (Rintoul, 1993).

In 1940 the NSW Aborigines Protection Board became the Aborigines Welfare Board under a new *Aborigines Act* aimed at assimilation (Rintoul, 1993). The Act was virtually a White Australia Policy which was to remove children from the age of six to try to assimilate them into the white community.

3.7.2.3 Integration

In 1951 a conference of the Australian Council of Native Welfare (Rintoul, 1993) was held in Canberra. Government policy laid down that all Aborigines 'shall attain the same manner of living as other Australians'. Yet, most Aboriginal people were still disenfranchised, and still subject to curfews and controls. In 1961 the Federal Government blocked full voting rights for Aborigines. Then in 1967 a referendum proposing to end constitutional discrimination against Aborigines was held. Overwhelmingly approved by 90.77% of Australians, it proposed to count Aborigines in the census and to allow the Federal Government to make laws for them. In 1969 the *NSW Aborigines Act* was passed, the main feature of which was the abolition of the Aboriginal Welfare Board and the establishment of an Aborigines Advisory Council. In 1973 the Act was amended, and the Lands Trust came into being in 1974. In 1972 the struggle for land rights was highlighted by the setting up of an 'Aboriginal Tent Embassy' outside Parliament House (Rintoul, 1993).

3.7.2.4 Towards self-determination

In 1983 two Acts were passed, the *NSW Aboriginal Land Rights Act* and the *Crown Lands (Validation of Revocations) Act*. The passage of the later Act pre-empted action taken by the NSW Aboriginal Legal Service seeking a declaration that the revocation of Aboriginal Reserves between 1909 and 1969 was in fact unlawful and void. An estimated 15 000 hectares of reserved land was lost as a result (Wilke, 1985).

In 1992, 222 years after Cook 'discovered' Australia for England, the High Court ruled in Mabo and others v Queensland that the doctrine of terra nullius was invalid (Rintoul, 1993). In 1993 the Federal Government passed the *Native Title Act* which was followed in 1994 by the *Native Title (NSW) Act*.

These events proved once and for all time that the Australian continent, its islands and waters were never uninhabited and that there were nations of Indigenous peole with their own laws and spiritual beliefs living here, and that they still had rights to the land as their own. Unfortunately Indigenous people, including those of the Audit Region, must still prove their connections to this land in a British judicial system which does not understand Aboriginal traditions and spiritual beliefs and connections to 'country'. The struggle continues for Aboriginal people to reclaim their traditional and inherent tribal lands. Aboriginal people have never stopped fighting for the rights to ownership of land that is traditionally theirs, determined by their inherent birthright. Self-determination, the right to religious and spiritual freedom and the right to make their own life choices is the right of all human beings, rights which should not be, but still are being, legally ignored.

3.8 CONCLUSION

Australia has a unique history, an Aboriginal history and a hidden history. The history of Aboriginal culture is older than 60,000 years and is described as the oldest living culture in the world. The Upper North East Region covered in this chapter has its own unique characteristics. This includes the landscape from ocean beaches and coastal flats to the mountains and rivers and the unique flora and fauna which shaped the religious, spiritual and cultural lifestyles of its Indigenous people. It is a proud, vital and distinguished culture that endured extreme climatic changes such as the rising of the seas. It is a culture which survived the atrocities of an invasion that ripped at the very foundations of their lives and spiritual beliefs and took without remorse the land that was owned by thousands of generations of Indigenous people, with no thought to the tribes and their ownership of traditional lands.

Throughout Aboriginal history, land has been the most vital and central component in their lives. It is their spiritual and cultural foundation. Aboriginal history should not be seen as an addendum to non-aboriginal history. It is rich history, one of transition, hardship, blood, sweat and grief which was legitimised by past and present Acts. The past cannot be changed but it should be acknowledged in a truthful, direct and correct way. The land within this Audit Region was Aboriginal land first and should be documented and recognised as such.

The Aboriginal people of the Audit Region still live in locations that were picked for them by the past Aboriginal Welfare Board (for example Tabulum and Muli Muli) and have to endure the problems of access to services and transport. Others live within the rural towns and cities of this Region and must endure racism and lack of understanding of their culture and their turbulent past. They are still fighting for recognition as the owners of the sacred sites and places in an era which allows government departments to selectively destroy cultural sites.

The Aboriginal communities will continue to fight for their rights as the Indigenous people and traditional owners of the land and its resources within the North East Region. As suggested in volume 6, chapter 6 Sites of significance all the land within and outside the Audit Region is of importance and is significant to Aboriginal people and they request to have a meaningful and active role in the management of the natural resources and to be able to have the right to negotiate in the management of their sites and places.

The Aboriginal communities would also like all Australians to join them in understanding their history and rich cultural knowledge. All Australians should know and understand the real history of this country and not to see Aboriginal history as separate from mainstream Australian history.

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GLOSSARY

Country – place of origin, physically, culturally and spiritually and includes both land and sea areas.

Creation Time – the time when Ancestral beings shaped and travelled the earth and created all life and law pertaining to each individual 'country'.

Exogamous – someone who represents one or more tribe within a family unit.

Exogamy – custom compelling a man to marry outside his country.

Inter-group – relationships between groups/communities from different nations.

Intra-group – relationships between groups/communities within region.

Inter-nation – relations between nations.

Patrilineal – based on (kinship) fathers or male line of descendants.

ACRONYMS

ADHS – Armidale District Historical Society

ANPWS – Australian National Parks and Wildlife Service

GJC – Gungil Jindibah Centre

MDHS – Maclean District Historical Society

NPWS – National Parks and Wildlife Service

RRHS – Richmond River Historical Society

RAC – Resource Assessment Commission

UNESCO – United Nations Educational, Scientific and Cultural Organisation

WRHS – West of the Range Historical Society

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4.1 INTRODUCTION

This chapter briefly describes almost two hundred years of European settlement in the Audit Region and how this has influenced the present pattern of land use, particularly as it relates to public lands. It explores the role public lands play in the preservation of heritage items and relics of past settlement and natural resource use. These places of historic heritage probably would not have survived outside public ownership. This chapter is not a definitive history of land use and public lands in the Audit Region. Instead it provides a context for the whole report, detailing events in the history of the Region. It is supplemented by a select bibliography where more specific inquiries may be pursued. Other references to the history of the Region are contained within other volumes of the Regional Report.

The activities and developments which have occurred in the Audit Region since European settlement form the basis of this chapter. For example, agriculture initially played a major role in the Region's development and the majority of present day national parks and State forests are areas which were not cleared during this time. Today, it is the tourism industry that greatly influences the development and use of public lands and natural resources. The rivers and major tributaries of the coast once provided the major transportation routes and development focused on these rivers. Today, coastal areas experience the greatest growth and road transport is the main mode of travel. Appendix 4.1 contains a timeline which briefly outlines the main events in the post-settlement history of the Audit Region.

4.2 EXPLORATION

Captain James Cook sailed past the coast of the Audit Region in 1770. He named the most prominent coastal features of the Region, including Cape Byron, Mount Warning and Point Danger. The Aborigines, however, had named many areas and landscape features long before European arrival. For example, Mount Warning was called Wollumbin, meaning 'cloud catcher'. Matthew Flinders anchored in the Clarence Estuary in 1799 (Department of Planning 1989) but did not name it. Flinders, a hydrographer, was more concerned with detailing the coastline.

John Oxley, the Surveyor-General, in his exploration of the rivers just south of the Audit Region in 1818, noted the high density of Aboriginal people living in the area, especially along the coast. The Aboriginal people made use of the many resources of the marine, estuarine and terrestrial environments (Department of Planning 1990).

The Tweed River was discovered and named by John Oxley in 1823. Captain Rous found the entrance to the Richmond River in 1828. Rous also sighted the Clarence River, which was officially named in 1839 (Daley 1968). In the same year, Captain Perry investigated the Clarence River (Department of Planning 1989). Convicts fleeing the penal station at Moreton Bay had also travelled through the region. The fertile land and the timber resources of the area were often noted by these early explorers. However, there was no immediate movement to settle the coastal area of the Audit Region (Department of Planning 1990).

In 1827, Allan Cunningham, on his return trip from the Darling Downs, travelled through the north west corner of the Audit Region. Another surveyor, Finch, found a route from the tablelands down to the Clarence River in 1837, while William Ogilvie travelled north east of Tenterfield to the upper reaches of the Clarence River and then down to Yulgilbar in 1839 (Ashley et al. 1994; Atchison 1977). In the late 1830s, an ex-convict, Richard Craig, was the first European to travel into the Dorrigo area (Sinclair Knight 1992). Craig blazed the first route from Armidale to South Grafton, which was known as Woolport. The route still retains the name Craig's Line.

4.3 THE SQUATTERS

Squatters illegally pioneered the settlement of the Region around 1840. Official settlement in the Region was not encouraged because of its remoteness - the area was considered to be beyond the limits of settlement (Ashley et al. 1994). No social, political or administrative services were provided and land could not be purchased (Department of Planning 1989). However, the growth in the export of wool and drought conditions further south encouraged colonists to search for new pastoral land.

Squatters had the advantage of being able to graze and log as much land as they pleased. Improvements were often kept to a minimum because of the cost and the fear that these could be lost if the squatters were forced off the land. One major environmental impact which the squatters caused was increasing the frequency of bushfires. This led to the establishment of younger trees where previously there had tended to be open stands of mature trees (Curby 1993).

From colonisation up until 1861, all land in the Audit Region was Crown land. The squatters' occupation was formalised by squatting leases introduced in 1839 (Ashley et al. 1994). This was in spite of the area of land used and number of stock grazed. By 1847, the Audit Region was covered by two squatter districts, Clarence River and New England, each with a Commissioner of Crown Lands. A commissioner's main role was to provide some level of policing with regard to bushrangers, Aborigines and other squatters (Blackmore & Associates 1993).

It was the discovery of good pastoral land which influenced the early exploration of the New England area and many squatters moved there from the Hunter Valley. In 1839, there were 46 stations in the New England area and, by 1852, this had grown to 178, with some one million sheep. In search of further land, some squatters headed north to the Darling Downs, while others headed

down into the river valleys. The rivers provided access by sea to Sydney markets. Initially, sheep were grazed on the coastal plains but the humid weather and high rainfall resulted in a high incidence of foot rot, catarrh and liver-fluke (Blackmore & Associates 1993). So, sheep were replaced by cattle.

Travelling stock reserves (TSRs) were used to move stock between the plateau and the coast. A TSR, which ran from Glen Elgin to Cangai, is now contained within the Gibraltar Range National Park (Ashley et al. 1994). Cleared areas, campsites and huts are relics often associated with the TSRs. The TSR system was quite extensive and very important prior to the development of rail and roads. TSRs are discussed further in chapter 2 Public lands and natural resources and volume 5 chapter 7 Agricultural resources.

Squatters mainly occupied suitable parts of the upper valleys of the Clarence and Richmond Rivers. Settlement occurred on the flat, fertile land, fronting rivers. The Tweed had fewer squatters because there was not the same extent of flat, open pastoral lands. By 1845, most of the available grassy country on the large rivers was taken up. The steep and inaccessible land was often left as Crown land. Some of this land is now part of national parks and State forests. An example is the Dorrigo Plateau where isolation discouraged pastoral settlement until the 1860s (Sinclair Knight 1992).

On the coast where cattle had replaced sheep, tallow became an important export in the 1840s and 1850s when meat prices were low. There was abundant firewood and the ports gave easy access to markets in Sydney (Blackmore & Associates 1993). Tallow processing plants were established at stations located near what is now Kyogle, Casino and Lismore.

When the squatters and cedar getters reached the coastal area between the Clarence River and the now Queensland border, several thousand Aborigines were living there (Medcalf 1993). The contact between squatters and Aborigines had devastating effects. Squatters' stock was in competition with native animals which Aborigines hunted. Aborigines resorted to hunting the grazing stock and, in retaliation, Aborigines were killed by squatters. The first recorded Aboriginal attack on squatters took place just south of Grafton in 1841. At times, there were systematic drives to eliminate Aborigines with periods of violent confrontation. In 1841, a massacre of between 200 and 300 Aborigines by squatters, stockmen and Border Police on the Orara River, west of Grafton, was reported (Medcalf 1993). What followed were years of retaliation killings by both sides, including the mass poisoning of Aborigines. However, by the 1860s, the Aboriginal resistance in the area had been crushed (Department of Planning 1989). See chapter 3 Indigenous history and volume 6, chapter 5 Aboriginal values and chapter 6, Sites and places of Aboriginal significance.

Today, sites from this early squatting period survive on public lands including those for houses, overnight huts, farm buildings, stock yards, sheep dips and fences and some dams. The heritage of grazing in many State forests in the Region continues today. In 1994, approximately three quarters of the Grafton district State forests were subject to grazing (Margules Groome Poyry, 1994).

EDWARD OGLIVIE

One well known squatter on the Upper Clarence River was Edward Ogilvie who had been in the area since the 1840s and ran Yulgilbar Station which was north of Grafton. Sheep from the station were washed in a pool of the local creek; hence, the name, Washpool, was given to the area and later the State forest and then to the national park (Ashley et al. 1994).

Ogilvie had a good relationship with the Aborigines and he noted that the hostilities between the squatters and Aborigines had driven the Aborigines into the mountains. A leader of a tribe had protested to him, saying the Europeans had the open country and rivers and the Aborigines should be left in peace in the mountains (Adam 1987).

4.4 CEDAR GETTERS, RIVER PORTS AND SHIPBUILDERS: 1830 ONWARDS

At the same time as squatters were exploring the eastern edge of the tablelands, cedar getters began to arrive on the coast of the Audit Region. Cedar around Sydney and the central coast had been logged out and there was a big demand for the wood. The soft cedar wood was prized for cabinet work and was a major export (Adam 1987). Cedar's resemblance to the fashionable mahogany resulted in its extensive use for building, fittings and furniture in the colony (Department of Planning 1990). Ex-convict Richard Craig, who had lived with Aborigines in the Audit Region, was working in a timber mill near Parramatta in 1836. He described to cedar dealers vast stands of red cedar *(Toona australis)* in the area of the 'Big River' (the Clarence). This initiated the rush by cedar getters into the Region (Daley 1968). Extensive cedar-getting did not occur in the Dorrigo district until the second half of the nineteenth century.

Cedar getters reached the Clarence River in 1838, the Richmond River in 1842 and the Tweed River in 1844. Compared with the conflict which occurred between squatters and Aborigines, there was limited contact with cedar getters. Aborigines were used by the cedar getters on the Tweed, Clarence and Richmond Rivers as cedar spotters and then as labourers to get the timber (Margules Groome Poyry 1994). Many of the first settlements in the coastal areas were ports, where timber was intercepted after being floated down river. These ports included

CONVICTS, CEDAR GETTER AND THE EXPLORATION OF THE NORTHERN RIVERS

The European exploration of the northern rivers, the Tweed, Brunswick, Richmond and Clarence, was carried out for the most part by people whose names were not recorded in the history books. The first Europeans to travel extensively from the Tweed to the Clarence were convicts who had escaped from Moreton Bay. Several were known to have lived with Aborigines before they eventually returned to European settlements.

One man, whose name is known and who is credited with the discovery of the Clarence River, was Richard Craig. Details of his early life are sketchy but it is known that he came to Australia at the age of nine as a free settler. His father set up a butcher shop in Parramatta but, when Richard was 16, he and his father were convicted of stealing five cattle. His father was sentenced to seven years hard labour on Norfolk Island, from which he never returned. Richard was sentenced to hang but the sentence was commuted to seven years hard labour in chains at Moreton Bay.

After three years, Richard escaped and fled to the south. Over a period of seven years, he lived with the Aborigines and explored the country from the Tweed to the Clarence and up to Nymboida and the Tablelands. At last, he headed south to Port Macquarie when he received a pardon for returning several head of stock that had escaped. He reported that he found a 'Big River' with stands of Red Cedar and good grazing lands. He then returned to the river with the Small brothers in the *Susan*. This was the first recorded exploration of what became the Clarence River yet Thomas Small reported that camps of cedar getters were already present along the river.

In fact, the cedar getters were always one step ahead of official exploration. Attempts to control them were ineffective and, as one river was cut out, these rough and ready pioneers were already exploring new ground. However, like the convicts before them, they left no written records, no dates and no names.

Richard Craig went on to play an important part in the development of Grafton. He brought the first sheep over the mountains from the Tablelands, following a route he presumably learned from his Aboriginal friends. He died at 45 but his descendants still live in the Grafton area (Law 1987).

Tumbulgum and Terranora on the Tweed River, Ballina on the Richmond River and Grafton on the Clarence River. The Big Scrub became a major source of cedar in the Richmond Valley and, after 1861, large scale clearing of this area for agriculture began. The seaport of Ballina developed to service the loggers in this area and it continued to grow as the first port of call for settlers. In 1860 it was the second largest settlement, after Casino, on the Richmond River.

For a period around the 1850s, shipbuilding was an important industry. The ships were needed to transport the timber to markets in Sydney and to provide the settlers with supplies. Small wharves were built along the rivers close to settlements. 'Problems developed on the rivers with the spread of the water hyacinth which hindered navigation' (Ashley et al. 1994, p. 99). A Water Hyacinth Board was established in the Richmond River area in 1914 to address this problem.

Cedar getting continued into the 1870s on the lower catchments, gradually giving way to agriculture as the land was cleared. The cedar getters moved into the scarp-land forests further inland.

4.5 THE SETTLERS ARRIVE: 1860S-1880S

In the 1860s the 'Free Selection' Acts were enacted. These acts opened up Crown land which could be bought at a fixed price. Initially, 320 acres were offered for sale and a further 320 after 1875 (Department of Planning 1990). The ownership of land provided the impetus for undertaking 'improvements' and, indeed, legislation encouraged this work. Improvements mainly involved clearing the land (which was the cheapest form of improvement) but also included fencing, cultivation and building substantial homesteads.

The change from squatters' runs to smaller farms led to greater contact between settlers and Aborigines. Aborigines could no longer move freely across the country as they had done before. They became reliant on European food to survive and access to ceremonial and sacred sites was often not possible (Department of Planning 1989). Some of these sites were also damaged by clearing and settlement. New diseases also took their toll on Aboriginal people. Despite these events, Aborigines were used as casual labour, servants and stockmen at the stations around which they lived and in cane stripping and fishing (Department of Planning 1990). These developments led to the Aborigines becoming economically dependent on the settlers.

In 1882 the Aborigines Protection Board of New South Wales was established and Aboriginal reserves were set up in the Region.Though Aborigines were not physically forced on to these reserves, economic circumstances and the attitude of the European community compelled them there. 'Although Aborigines lived on the reserves by coercion rather than choice and although the reserves were a symbol of oppression they, nevertheless, were enclaves of surviving Aboriginal culture' (Department of Planning, 1989, p. 22). By 1891, there were nine reserves in the Clarence Valley totalling 180 acres (approximately 73 ha) (Department of Planning 1990). Under the New

Government Printing Office Collection, State Library of New South Wales

Log depot, Minyon Falls, Whian Whian State Forest, 1936.

South Wales *Aboriginal Land Rights Act 1983*, most of these reserves have been vested in the relevant Local Aboriginal Land Councils.

4.6 THE SEARCH FOR A STAPLE CROP

Intensive agriculture around the forests of the north coast was made possible by the fertile alluviums of the Tweed, Richmond and Clarence river valleys, and the exceptionally rich red brown soils of decomposed basalt (Kraznozems) in the rainforests of the Big Scrub (Blackmore & Associates 1993). It was because of the economic value of this latter area that it was sold off to private interests, resulting in large scale clearing of the land. The Big Scrub originally covered over 70 000 hectares. Much was cleared between 1880 and 1910 for dairying and sugar growing (Williams 1988) (see volume 4 chapter 1 Biodiversity for more information on the Big Scrub).

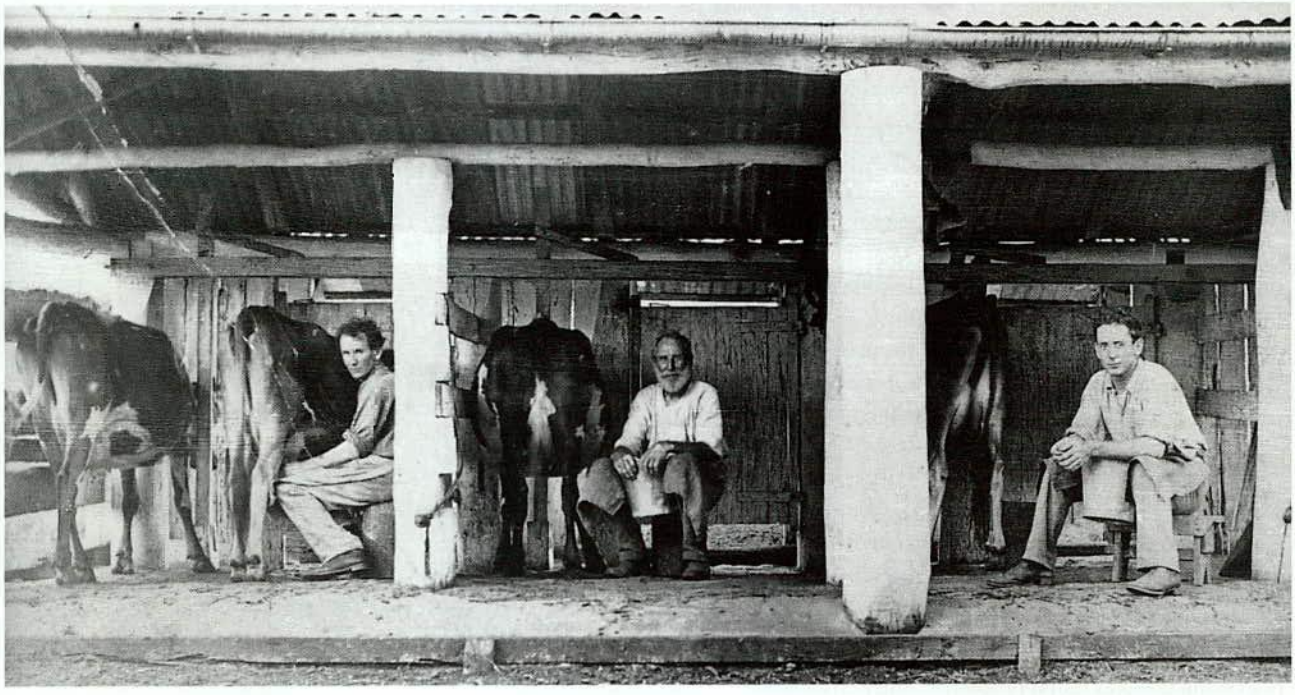
Agriculture in the Audit Region was not widespread until the latter half of the nineteenth century. The first crop tried was maize in the Grafton district. However, with low prices and transportation problems, other crops were tested including arrowroot (Blackmore & Associates 1993). Cotton was grown for a short period when there was an export market to America because of the civil war.

Government Printing Office Collection, State Library of New South Wales

Cultivating in the Tweed, Mt Warning in the distance, 1939

Bicentennial Copying Project, State Library of New South Wales

Mann's Dairy Farm, Upper Orara, 1912. Extensive land clearing took place as farms were established across the region.



Bicentennial Copying Project, State Library of New South Wales

Cowper, Malcolm (father) and Lyall Sutton Milking bails, *Lea Holm,* Tuckurimba via Lismore, 1910.

Sugar cane was eventually tried and became a long term viable crop in the Audit Region and further to the north. Sugar mills were built in the area from the 1860s though many had disappeared by the end of the century (Ashley et al. 1994). In the 1880s, the price of sugar slumped, leaving the larger company, CSR, one of the few to survive. 'However, with sensitive climatic requirements of sugar cane and the deliberate location policy decisions of the CSR company, many areas of the northern rivers were no longer regarded as viable for economic sugar cane production' (Kass 1989, p. 16). Today sugar production remains an important industry in the Audit Region.

Teatrees have been grown intermittently in the Richmond River area since the 1920s. Evidence of teatree harvesting, including the extensive working of naturally occurring teatrees, has been reported in State forests, including stills in the Gibberagee State Forest (Blackmore & Associates 1993). Bananas, macadamias, avocados and other horticultural fruits and vegetables are also grown successfully in the Region.

4.7 AN URBAN SOCIETY: 1870s ONWARDS

The growth in agriculture and dairying industries produced a demand for services and goods, which in turn supported the continued growth of towns after the cedar getters had left the region.

With the finding of gold around Grafton at Washpool and Dalmorton, Grafton prospered. Its population increased from 300 in 1851 to about 1400 in 1859. In the Richmond Valley, the population increased from just over one thousand in 1860 to about four thousand in 1871 and to 8500 in 1881. Casino, which had developed as a squatting township, was the largest centre in this valley (Daley 1968). The towns of Lismore and Casino were surveyed in 1855 (Ashley et al. 1994). By the 1880s, Lismore had 30 sugar mills, 12 steam sawmills and daily cargo boats travelled between Lismore and Ballina (Ashley et al. 1994). The Tweed was not occupied until the 1860s (Department of Planning 1990).

The number of dairy cows on the north coast increased 250% between 1897 and 1907, and the North Coast's contribution to total New South Wales butter production grew from less than a quarter to more than a half during the same period' (Blackmore & Associates 1993, p. 13). The growth of the dairying industry added impetus to the development of towns. Many small butter factories were built and villages grew up to service the factories. Ulmarra and Kyogle are examples of such towns. By the 1920s, dairying had filled the upper reaches of the coastal valleys and logging was relegated to the steeper slopes. In 1906, the first Crown land was subdivided at Dorrigo. This led to the introduction and growth of the dairying industry in that district (Sinclair Knight 1992), though it later declined. The growth in agriculture on the Dorrigo Plateau also led to clearing of rainforest.

Murwillumbah was the main service centre for the surrounding rural land. Tweed Heads, which was previously the old port, grew into a major resort town. A sugar mill was established at Tumbulgum and butter factories at Uki and Tyalgum. These industries have since closed down and the towns are much smaller than they once were.

Byron Bay was identified as a major port in the 1880s. A pier was opened in 1888 and, with the opening of the railway to Murwillumbah in 1894, the town prospered. Butter and bananas were shipped from Byron Bay to the markets in Sydney (Kass 1989).

Casino originally developed as a town servicing squatters. Lismore was at the head of the navigable section of the river and attracted industries associated with sea travel (Ashley et al. 1994). Lismore eventually displaced Casino as the major centre in the Richmond Valley. Lismore and Alstonville were the main centres for the farmers of the Big Scrub, while Coraki had been the major port servicing this area.

At the mouth of the Clarence River, the fishing trade boosted settlement at Yamba and Iluka. Oyster fisheries began from the 1880s and a cooperative fishery was established in 1945, leading to improvements in processing and anchorage for boats (Ashley 1994). Two stores opened in Grafton by 1840 and a courthouse was built in 1846. Several other government buildings were erected in the late 1800s and Grafton became the main urban centre of the north coast (Department of Planning 1990).

Further settlement and clearing took place on the Dorrigo Plateau with the soldier settlement program after World War I (Adam 1987). The program aimed to allot blocks of lands to soldiers returning from war, especially those who had previously not owned land.

4.7.1 Forestry

The Audit Region has always been important for its timber production. Initially, red cedar provided the basis for timber harvesting. As cedar grew scarce, hoop pine *Araucaria cunninghammii*, became the major rainforest timber for harvesting. Attention was also focused on the eucalypt forests in the Audit Region. The demand for hardwoods, particularly grey ironbark, tallowwood, grey gum, blackbutt, spotted gum, red mahogany, white mahogany, stringybark, forest red gum, grey box, brush box, turpentine, blue gum and flooded gum, increased as more railways, bridges and wharves were built (Blackmore & Associates 1993; Darley 1968). By 1875, there were four timber mills in operation in the Richmond Valley.

Up until the 1930s, harvesting was mostly undertaken by small mills. Logging was done around the mill, becoming more selective the greater the distance from the mill (Manidis Roberts 1992). Small isolated settlements were established around the mills. The mills employed between ten and twenty people and their families lived in the settlements (Blackmore & Associates 1993). From the 1930s on, silviculture treatment was used to improve the quality and quantity of timber being harvested. Up until the late nineteenth century, horses and bullocks were used

Kyogle Historical Society

Four men felling a rainforest tree, nineteenth century.

to transport logs. Sawmill tramways were introduced using animals, at first, then steam locomotives from the 1920s on. In the 1930s, the large scale construction of forest roads for motorised vehicles began, which meant the end of bullock drays and tramways (Blackmore & Associates 1993).

TIMBER FACTS

The longest log cut in the Richmond Range area was a yellowwood that was 130 lineal feet long (about 43 metres). The biggest hoop pine in New South Wales was cut in Yabbra State Forest. It was 8.2 metres in circumference and 27.4 metres to the first limb.

The biggest red cedar cut by Bill Haydon, nicknamed the 'cedar king', was nearly 35 metres to the first branch, 17 metres in circumference and yielded 60 cubic metres of timber. Others were also called the 'cedar king' but Bill was legendary for finding and harvesting timber from some of the remotest locations.

EARLY USES OF FOREST PRODUCTS

The escaped convicts and cedar getters who first settled in the Audit Region were totally dependent on the land to supply their needs. Gilbert (1971) in his study of early botanical investigations in New South Wales included a list of some of the many uses to which native plants were put.

These early settlers were a 'wild, intemperate lot' (Law 1987) and every plant was seen as a potential for home brewing. The sap of apple gums (Angophora spp.) was drunk as a cider and the Bitter Vine (Piptocalyx moorei) was brewed into a kind of beer. By 1892, Bitter Vine was being collected around the Guy Fawkes River and sold overseas for brewing purposes.

Many plants were used as home remedies since commercial drugs were unavailable. Presumably, many of these remedies were based on information from local Aborigines. Corkwood, for instance, was reported in 1889 as used by Aboriginals as a narcotic and to drug fish. It became the basis of an industry that lasted into the 1960s, in which, atropine, a powerful heart stimulant, was extracted from this native rainforest tree.

By 1830, eucalyptus oil was used for rheumatism and bronchitis. Bloodwood bark was boiled into a lotion for curing pimples and spotted gum sap was used as a remedy for haemorrhoids. Turpentine sap was used to treat cuts and sores while boiled bracken fern was used to combat worms and as a treatment for tick paralysis.

Local plants even supplied products to give a veneer of civilisation to their lives. The bark of the grass tree *(Xanthoorohea)* was ground up, mixed with oil and used to polish dirt floors.

Structures built by the Forestry Commission in the State forests of the Audit Region tended to be temporary structures but became more permanent from World War II on. For example, in Whian Whian State Forest, the Mebbin Headquarters were constructed in 1942, Whian Whian Headquarters in 1948 and the Peate's Mountain Fire Tower in 1948 (Blackmore & Associates 1993).

Following World War I, sawmill quotas were introduced, ensuring that royalty payments were made. The quotas were often set beyond sustainable levels. In the 1970s, the increasing public pressure over the use of State forests saw a change in practices towards more sustainable practices and the transfer of large areas, containing mainly rainforests, from State forests to national parks.

Plantation growing of eucalypts started in the 1930s. However, the extent of these plantations was not very wide. There was another major phase of eucalypt plantation development in the mid 1960s. There have been larger conifer plantations in the Audit Region

including 'southern pines' and indigenous hoop pine. Today, hardwood sawmilling dominate the regional timber industry. For further information on the past and present timber resources of the Audit Region, see volume 5 chapter 4 Timber resources.

4.7.2 Mining

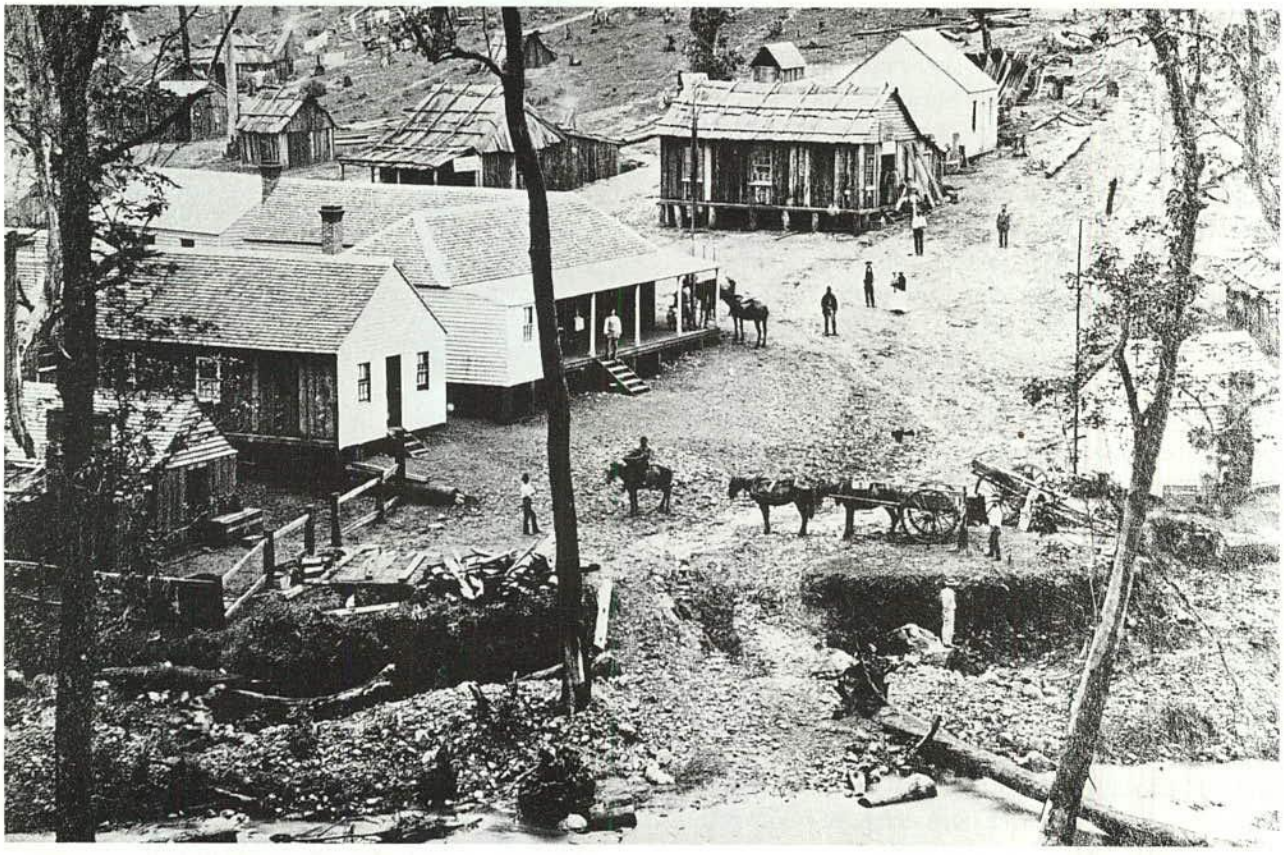
Mining has been a major industry in the Audit Region, though its value has diminished. Gold and tin were mined in the upper reaches of the Clarence River from the 1850s. Gold was found around the Mann and Boyd Rivers, Clouds Creek, Dalmorton and Tooloom areas. Alluvial and reef mining was carried out in what is now Ewingar State Forest. However, the impact of these finds was small in comparison to the mining of gold elsewhere in the country. Nevertheless, 'as late as 1987 gold deposits in Dalmorton, Clouds Creek and Sheas Knob State Forests were subject to renewed exploration' (Blackmore & Associates 1993, p. 6). At Cangai, copper mining and smelting took place from 1901 and coal was found at Nymboida (Ashley et al. 1994) and a mine operated there until the early 1970s. One use of harvested timber was in the mines.

Other coal mining took place in the Bonalbo area and at New Italy (south west of Woodburn) and near Evans Head. Limited lead and zinc mining occurred in the Lionsville area west of Baryulgil, while asbestos mining took place until the early 1970s at Baryulgil. Small scale mining for mercury, arsenic, magnetite, marble, antimony and molybdenum has also taken place at scattered localities throughout the western and southern part of the Audit Region, including areas now within Wild Cattle Creek State Forest.

With the development of roads, railways and major urban settlements, metallic minerals mining has been replaced by extractive industries producing the wide array of sand, clay, gravel, crushed rock, amour blocks, and decorative and building stones required today.

Mineral sand mining has also occurred in the coastal zone of the Audit Region. Minerals mined were rutile, zircon, ilmenite and monazite. Originally, the main method of mining was beach scraping. Subsequently, large dredgers and/or processing plants were used. 'Where these plants mined wetlands or coastal heath the natural environment was virtually lost. Dune heights were generally lowered and the biological diversity reduced' (Resource Assessment Commission 1993, p. 101). It was noted that rutile mining was so extensive along the Tweed coastline that only pockets of littoral rainforest remained of what must originally have been an almost continual strip behind the dunes (Floyd 1990).

National parks and State forests often contain relics of past mining ventures. Small temporary settlements were often established around these sites. Relics associated with the mining industry and found on public lands include shaft and alluvial mining sites, ore processing sites, abandoned machinery and disused roads. Relics of past processing plants can be found in Boonoo Boonoo,



Richmond River Historical Society

The mining village of Solferino.

Bald Rock, Gibraltar Range and Washpool National Parks. Warra State Forest contains sites of old alluvial workings (Pearson 1992). There are several old mine sites and shafts in Chaelundi and Wild Cattle Creek State Forests (Sinclair Knight 1992). Guy Fawkes National Park contains remains of gold and copper mining activities. Coastal parts of Bundjalung National Park were extensively sand mined (Ashley et al. 1994). Volume 5 chapter 5 Mineral resources includes a map which identifies the locations of past mining activities in the Audit Region.

4.7.3 Fishing

The 1880 Fishing Inquiry and the annual reports of New South Wales Fisheries provide details of the history of commercial fishing in New South Wales. Some of this information has been summarised by West and Gordon (1994).

In northern New South Wales, commercial fishing began in the mid-19th century when settlers arrived in the Region in large numbers. Forestry and fishing were the mainstay of the early communities, which developed around the major rivers. The lack of transport or suitable cold storage meant that the estuarine fisheries in this area were not heavily exploited until the turn of the century, when the introduction of steamships and ice-making facilities allowed fish to be transported south to the Sydney markets. Early this century there was a steady increase in commercial exploitation of fish in all the rivers along the New South Wales north coast. This trend continued until the 1950s. Since then, the number of commercial operators and the catches for most species have remained relatively constant.

'On the Clarence, early oyster leases were mainly situated at Yamba, Iluka, Wombak and Micalo Island. In 1887 the Clarence River was shipping 121 bags of oysters to Sydney and, by 1892, the total had risen to 1716 bags' (Kass 1989, p. 27). The fishing industry suffered from various difficulties, including siltation of oyster beds and parasite infestation in the 1920s. The Brunswick Heads fishing industry was created from the nearly total destruction of the fishing fleet at Byron Bay from a storm in 1954. In 1945, fisherman's co-operatives began to appear in main fishing ports of the Region. 'Over the years, these co-operatives undertook building programs to provide the necessary infrastructure for their shareholders' (Kass 1989, p. 27). (See volume 5 chapter 2 Infrastructure and 8 Fisheries resources).

4.7.4 Defence

Some of the national parks and State forests in the Audit Region contain defence relics. Bunkers built in World War II can be found in the Border Rangers and Bundjalung National Parks. There is an aerial bombing range at Bundjalung National Park which also has the crash site of an F1-11 fighter bomber. In Cathedral Rocks National Park, there are concrete tank traps, defences from World War II (Ashley, Gojak & Liston, 1994).

WORLD WARS: THE NORTH COAST CONNECTION

The north coast was far removed from the major battlefield of World Wars I and II, yet even here the effects were felt. Like most places in the British Empire, local men volunteered to join and serve, leaving the women to keep the towns going. As in the rest of Australia, the towns of the Audit Region each have their memorial to local men who lost their lives.

During World War I, rainforest timbers were harvested for canes and crutches for the many soldiers who lost limbs. One tree which was particularly good for that use became known as the cane-tree.

World War II came closer to the North Coast. A number of ships on convoy between Sydney and Brisbane were torpedoed by the Japanese and several sunk with the loss of lives. The Royal Australian Airforce used the air strip at Evans Heads and the area that is now Bunjalung National Park as a bombing range.

Rainforest timbers found a number of uses during this period. Coachwood from Dorrigo was used for building Mosquito fighter-bombers. Corkwood trees were harvested for atropine and other species were used as sources of quinine for malaria and drugs to treat seasickness.

The 'Brisbane Line', that was to run from Brisbane to Melbourne, ran through the Audit Region. Tank traps were built east of Tenterfield and a tent city of over 2000 troops was established there. The tank traps still exist. Further south, mines were laid on the Armidale road near Horton's Creek. If the Japanese came that way, the intention was to blow up the road to impede their progress.

Other effects of the wars were economic. The closure of the Cangai copper mine was linked to the beginning of World War I and the subsequent crash in world copper prices. The asbestos mine at Baryulgil was first worked during World War I, closed thereafter and not worked again until World War II. Returned servicemen were given oyster leases after World War I which contributed to the economic growth of the Region.

4.8 COMMUNICATION ROUTES AND GOVERNMENT INFRASTRUCTURE

The development of communication routes were important in reducing the isolation of the upper north east from other parts of the State. For example, the Audit Region was settled before surveyed roads could be provided. Communications routes were forged by settlers by land

and sea. Later, when the provision of government infrastructure was available to the Region, surveyed roads, rail, lighthouses and breakwaters and other infrastructure were provided, making communication and travel much easier.

4.8.1 Roads

The location of roads tend to follow the tracks made by the cattle and sheep mobs that originally moved into the Audit Region and also the tracks used for log haulage. In some cases, these routes were initially tracks used by the Aborigines. One early track was a bridle track established in 1845 along the Mann River through what is now Nymboida National Park. Three routes were originally blazed from the New England tableland to the Clarence Valley between 1838 and 1840. One followed Richard Craig's line from Armidale via Falconer to Guy Fawkes, then from Nymbodia to the Clarence River. When the Dorrigo area was opened up, an alternative route from the tableland to the coast developed through Cloud Creek. Squatters moved into the Dorrigo district after the route was established (Sinclair Knight 1992).

The second route, the Old Grafton to Glen Innes Road, followed what was the Newton-Boyd line to Grafton via Newton Boyd. This road was declared a highway in 1867 and there were five towns and an estimated 20 000 people residing beside the road in the late 1800s. Four towns, Newton Boyd, Springbrook, Dalmorton and Buccarumbi, no longer exist. It remained the main route till the early 1960s when the Gwydir Highway was opened (Mathew, 1994). Parts of the road system through Dalmorton State Forest are located on the Old Glen Innes Road. 'Other parts of this road can be identified as a track on either side of the present-day road or as a clearing between trees' (Margules Groome Poyry 1994, p. 114).

The third early route was the Tenterfield-Grafton Road, via Tabulam, following down the Clarence (Oppenheimer 1977) and which was replaced at a later date. In 1843, a dray route was also established to the north from the Richmond Valley across the McPherson Range to the Logan Valley and Moreton Bay to the north (Blackmore & Associates 1993).

Land transport between the river valleys was difficult because of the many tributaries. 'Ferries and punts were common, with the first bridge across the Lower Clarence not completed until 1906. It was an opening bridge to allow the river traffic to pass' (Ashley et al. 1994, p. 106).

'Where remnants of 19th century tracks and roads exist in State forests, they are significant evidence of the early struggle against a topography which isolated much of the Region into the twentieth century. Such remnants reportedly include parts of the Old Tweed Road, the Nightcap Track (Whian Whian State Forest), the old Glen Innes-Grafton Road, Cungebung Ford, Razorback Road, and a road from Cambridge Plateau to Simpkins Creek' (Blackmore & Associates 1993, p. 11). Remnants are also present in national parks. For example, Guy Fawkes River National Park contains several stockman's huts and sets of yards used for travelling stock from the coast to the Tableland. The Old Grafton Road passes through the Mann River Nature Reserve (Ashley et al. 1994).

Travelling stock reserves often became redundant following the use of motor vehicles to transport stock. However, the reserves often contain important stands of remnant vegetation and are important as grazing areas during droughts. 'In Gibraltar Range National Park, a travelling stock route ran from Glen Elgin to Cangai. In Bald Rock National Park, a TSR was declared in 1908, later forming the route of the Mount Lindsay Highway, now known as the Wood Road' (Ashley et al. 1994, p. 126).

4.8.2 Rail

The New England railway line to Tenterfield was completed in 1886 and served to consolidate the large towns just outside the Audit Region, such as Armidale, Guyra, Glen Innes and Tenterfield. The line is today idle north of Armidale, due to the use of alternative forms of transport.

The North Coast Railway was built in stages. In 1905, the section to North Grafton was completed. It was not till 1932 that the line between Kyogle and Grafton was completed. At this stage, it was possible to travel from Sydney to South Brisbane (Kass 1989). The building of railways and bridges and wharves increased the demand for hardwoods and the construction workers provided a boost for local economies (Kass 1989). A 130 kilometre branch line between Casino and Murwillumbah was built in the 1880s.

A Glen Innes-Grafton rail link was proposed in 1872. This east-west link was officially shelved by the Government in 1875. Similarly, a rail link from Glen Innes to the Clarence Valley, which was surveyed in the 1870s and again mooted in the 1940s, did not eventuate. The Dorrigo Plateau is steep and rugged, making travel difficult. It was for this reason the Parliamentary Committee on Public Works in 1910 approved the construction of a railway from Glenreagh to Dorrigo. The line was completed in 1914 and its use boosted the economy of the area. However, within thirty years its viability was undermined by the Depression and increasing use of road transportation. The line was closed in 1972 (Sinclair Knight 1992).

Tramways were also built on the Dorrigo Plateau to bring logs from the forests to the sawmills. The tramways were extended as new stands of timber were felled. Relics of the tramways can be found in Wild Cattle Creek State Forest (Sinclair Knight, 1992). The remains of logging tramways also exist in national parks, including the Border Ranges National Park, formerly Roseberry State Forest (Ashley et al. 1994).

4.8.3 Waterways

Around the mid 1800s, the opportunity to ship timber to markets in Sydney greatly increased. This required ports in the Region to be safe and navigable. Rivers were dredged and training walls built. Sea travel remained a major mode of transportation of people, timber and cargo until after World War II (Ashley et al. 1994).

In 1892, construction began on the training wall at the mouth of the Tweed River. The construction of a dock at Terranora ensured the viability of the port for many years (Kass, 1989). Work began in 1889 on a breakwater at the entrance to the Richmond River. It was completed in 1911. Due to the dangerous entrance to this river, approximately 50 vessels have been wrecked there (Ashley et al. 1994). A breakwater was constructed at Clarence Heads in 1885. At the same time, a reef was cleared from the navigation channel. This procedure was repeated in 1950. The remains of a tramway and a quarry used in the construction of the breakwater at the mouth of the Clarence are now within Bundjalung National Park and Iluka Nature Reserve (Ashley et al. 1994).

Lighthouses were constructed on prominent headlands like Cape Byron, Fingal Head and Lennox Head. Despite all this work, many ships have been wrecked on the coast of the Audit Region, especially around the mouths of rivers. These lighthouses represent an important part in the history of the Region. For example, the Cape Byron Lighthouse group of buildings, which includes residential buildings, is listed as National Estate and the site is an important recreational and educational resource (see volume 6 chapters 1 Heritage Values, 9 Tourism and recreation activities and 10 Education on public lands).

4.8.4 Quarantine boundary fences

To prevent the spread of cattle tick from Queensland and the spread of rabbits from New South Wales, double wire fences were erected in the 1920s between the Richmond Range and the Queensland border. Remains can still be found in State forests in the area (Blackmore & Associates 1993) and forms the northern boundary of much of the Border Ranges National Park. Cattle tick gates were also a system of control on public lands in this period and there are also various cattle tick inspection points on major routes still in the area.

See volume 5 chapter 2 Infrastructure, for more information on the infrastructure of the Audit Region.

THE EXAMINER

One of the largest ships built in the 19th century in the Audit Region was the 265-ton three-masted steam bark, the *Examiner,* launched in 1870. She could carry 120 000 feet of timber and was soon the most popular passenger and cargo ship on the Richmond River. The ship often travelled to Adelaide, Melbourne, Sydney and Maryborough in Queensland.

On the 1 May 1872, returning from her nineteenth trip, the *Examiner* was blown onto the northern beach at the mouth of the Clarence River. She was left high and dry. Every available man from Coraki and four teams of bullocks worked to free the ship. On 24 September, nearly five months after she was grounded, the *Examiner* was once again afloat on the Clarence River. On the ship's next trip to Sydney, its owner, William Yabsley, offered a free trip to those men who assisted in the ship's rescue (Darley 1968).

Richmond River Historical Society

The Richmond River at Lismore.

4.9 THE LEISURED SOCIETY: TOURISM

The first records of tourism in the Audit Region occurred in 1895 when Ebor Falls was reserved for public recreation and, in 1906, Bald Rock National Park was declared a Crown reserve for public recreation (Ashley et al. 1994). Before this, tourists had visited Ballina by coastal steamer. Tweed Heads became more accessible after 1902 when the rail link to Brisbane was completed. This rail link was dismantled in the 1960s. By 1910, other seaside towns were attracting visitors. Yamba and Iluka at the mouth of the Clarence River became popular holiday destinations for the farming communities in the area. Later, they attracted tourists and recreational fishers from further afield (Ashley et al. 1994).

Tourism in the Region benefited greatly from the increase in car ownership and the building of roads. Services for car travellers appeared during the 1950s and 1960s when car ownership rates continued to rise.

In the mid-sixties, many inland industries suffered a downturn in economic activity, especially in the dairying industry, and the trend in the regionalisation of services began. These events had a deleterious effect on many rural towns. Uneconomic farms and businesses were taken up by people from the city, looking for an alternative lifestyle. Nimbin, Mullumbimby and Byron Bay became the centres for this movement.

In contrast, the towns on the tablelands, along the New England Highway, have not been significant tourist destinations. However, in the 1970s, with increasing affluence, improvement in rural roads and the availability of off-road recreational vehicles, increasing numbers of tourists began to visit national parks and State forests (Blackmore & Associates 1993) although areas had been set aside for recreational pursuits in State forests before the 1970s (for example, Bruxner Park, Minyon Falls).

Today, public lands, especially national parks and State forests, attract tourists to the Audit Region. These public lands offer a wide variety of experiences, from the coast to areas remote and isolated from human activity. The importance of these areas to tourism is discussed in volume 5, chapter 10 Tourism and recreation resources.

4.10 PUBLIC LAND: 1880-1994

The majority of public land in the Audit Region is either State forests or national parks. The history behind the dedication of these areas varies and the area covered by these tenures can change over time for different reasons. Initially, the majority of Crown land was land which was not wanted for agriculture and was, therefore, not alienated. Some State forests in the Audit Region have been revoked because of the poor quality of forest present or rededicated as national park or nature reserve because of the conservation value of the area.

Bicentennial Copying Project, State Library of New South Wales

Camping out in luxury! Evans Head 1938

4.10.1 National parks

The declaration in 1879 of the Royal National Park, south of Sydney, provided the impetus for further declarations to be made elsewhere in the State. This included parts of what is now the Dorrigo National Park. The Dorrigo area was originally protected as a forest reserve in 1902 and, from 1917, as a place for the protection of native fauna. It was proposed to protect the area as a national park but, instead, it was established as a bird and animal sanctuary in 1928 (Ashley et al. 1994). Prior to World War II, there were plans for a park in the Nightcap Range, but the war put a temporary stop to this proposal.

It was not until 1967 that the National Parks and Wildlife Service (NPWS) was established. Prior to this, dedicated parks and reserves were administered and managed by local trustees. These trusts were responsible to the Parks and Reserves Branch of the Department of Lands and little funding was available to the trustees. The parks and reserves could easily be revoked (Friederich, 1991).

The history of the dedication of national parks and nature reserves in the Audit Region is varied. For example, Mount Warning National Park is one of the oldest parks in the State and was dedicated in 1920. The Mount Warning area is steep, difficult to access, unsuitable for agriculture and development, and difficult to log (Friederich, 1991). It is, however, also highly visible and an impressive scenic feature of the area. Gibraltar Range National Park was dedicated in 1963. The Border Ranges National Park was not reserved until 1979, after many years of public lobbying. The majority of national parks have been dedicated from Crown land, including State forests, timber reserves and vacant Crown land. Other reserves were added in the 1960s and 1970s because of their scientific importance as rainforests remnants, such as Stotts Island, Brunswick Heads, Victoria Park and Broken Head Nature Reserves, or because they were not viable to log, like Limpinwood Nature Reserve (Friederich 1991).

In 1973, the Coastal Lands Protection Scheme was introduced in New South Wales to identify important coastal lands which should be protected by zoning and those which, because of their special values, should be acquired. The acquisition component of the Coastal Lands Protection Scheme was introduced as a means of the Government buying back important sections of the coastline, often to augment existing public lands, including national parks or placed in the care and control of local councils as public reserves. For example, the scheme has purchased land adjoining Yuraygir National Park.

The first confrontations between conservationists and loggers in the Region culminated in the battle over Terania Creek in the Nightcap Ranges. An inquiry into the matter under Mr Simon Isaacs Q.C. began in 1979. Other conflicts in the Region involving the Border Ranges, Nightcap and Washpool, provided the catalyst for the State Government to review its policies on conservation, management and forestry. In 1982 the Government released the Rainforest Policy which involved:

- the conservation of rainforest areas in new national parks and nature reserves;
- the maintenance of employment levels consistent with those existing and predicted from the current management proposals of the Forestry Commission of NSW (now State Forests of New South Wales);
- the identification of alternative timber sources, the availability of which will be assured by Government.

The policy included in the Audit Region the Border Ranges, Nightcap, Washpool, Dorrigo and New England National Parks (Department of Planning and Environment 1983). The following year the *Forestry Revocation and National Parks Preservation Act 1983* greatly increased the size of some national parks in the Region, including Dorrigo National Park, and reserved the Nightcap and Washpool National Parks and the Mt Hyland Nature Reserve (Adam 1987; Friederich 1991). The additional areas of national park came from existing State forests. In 1985, Washpool National Park was declared a wilderness area under the provisions of the *National Parks and Wildlife Act 1974*.

The Big Scrub had been one of the largest stands of low-land sub-tropical rainforest in the world (Adam 1987). It was, however, also a source of rainforest timbers and land for agriculture and, because of its value, was sold as free-hold land. Of the 75 000 hectares of Big Scrub which existed prior to European settlement, today less than 400 hectares remains in about ten fragments (Friederich 1991). Several of these are now nature reserves managed by the NPWS.

4.10.2 State forests

In the first half of the nineteenth century, cedar getters had logged with little control and there was no management of the forests. Greater control was exercised in the latter half of the nineteenth century and, in 1871, some of the first forest reserves were established in the Clarence River district. However, the reserves were often revoked once the timber had been removed (Curby 1993). In the Dorrigo district, the impetus for creating the Dorrigo Forest Reserve was the amount of wastage which occurred when cedar was logged. Because of the distance that the logs had to be taken, inferior logs were left to rot and some logs were lost during transit (Sinclair Knight 1992).

By the end of the century, 'forests were principally the property of the Crown and were worked partly under licence and partly under royalty systems' (Daley 1968, p. 132). However, at this time, there was more concern over opening up agricultural land and water resource management than for the management of forests (Blackmore & Associates 1993). After World War I, the need to conserve timber versus the demands for Closer Settlement, including soldier settlement schemes, created conflict (Curby 1993). Assessments of areas were required to justify preserving them for forestry activities.

With increasing technological change and the rising demand for timber, further areas of rainforest were logged. World War II further increased demand and the

long-term sustainability of the forests was barely considered. The State forests on the coastal plains were heavily logged (Adam 1987). Some plantation planting, mainly of conifers, commenced in the 1940s and 1950s, for example near Woolgoolga and Wooli.

Forestry around Lismore developed after World War I and diminished by the 1960s (Ashley et al. 1994). In the Dorrigo district, forestry activities have had an important impact. The funds from some cedar logging in the district were used to purchase more park land (Ashley et al. 1994). Forestry activities in what are now national parks and nature reserves have resulted in remains from the industry being preserved. Sites which can be found include sawmill sites, derelict villages, disused machinery and equipment, notched stumps, tramways, log ramps, snigging tracks and disused roads. Moogem and Curramore State Forests contain the sites of old sawmills and huts (Pearson 1992) and there are two mill sites in Wild Cattle Creek State Forest (Sinclair Knight 1992).

In the Dorrigo Management Area, Clouds Creek State Forest was the first forest dedicated in 1914. With the introduction of the *Forestry Act* in 1916, large areas of vacant Crown land, leasehold Crown land and timber reserve were dedicated as State forest. Further dedications were made in the early 1930s. Between 1973 and 1982 areas around Marengo and Chaelundi were dedicated. Since 1916 the area of land dedicated as State forest has increased. In the Glen Innes Management Area in 1902 there were 2830 hectares of State forest. By 1922 this had increased to 35 700 hectares. The Forestry Commission became a significant employer on the North Coast (Blackmore & Associates 1993), though numbers have decreased due to mechanisation and mill consolidation since the 1950s.

On the eastern edge of the New England Tableland and the Upper Clarence River region, the rugged terrain had deterred the logging of rainforest in this area. Many of these timbered areas are now included in State forests and national parks.

4.11 CONCLUSION

The pattern of public lands that exists in the Audit Region today reflects a colourful history of natural resource use. It also reflects the changing attitude towards the conservation of natural areas and the implementation of the principles of sustainability in the use of resources.

Cedar getting and pastoral activities provided the initial impetus for the settlement of the Audit Region. Agriculture developed into a major industry in the Region resulting in many areas being cleared. The national parks and State forests in the Audit Region today include land which, for a variety of reasons, were not cleared, or were cleared and regenerated. Today the public lands and their natural resources in the Audit Region play an important role in, amongst other things, the:

- protection of ecological communities;
- provision of recreational areas;
- protection of natural and cultural heritage;
- supply of natural resources like minerals, timber and fish.

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APPENDICES

1.1 LIST OF PROJECTS AND CONSULTANCIES AS AT JULY 1995

Specific Projects – Upper North East New South Wales

S1 (A) – Geochemical Atlas – being finalised

(Department of Mineral Resources)

S1 (B) – Construction Materials Inventory – finalised

(Department of Mineral Resources)

S1 (C) – Geological Mapping – finalised

(Department of Mineral Resources)

S2 – Status Report On Water Quality In The Tweed, Brunswick, Richmond and Clarence Rivers – in progress

(NSW Environment Protection Authority)

S3 – Integrated Fauna Information for Public Lands in North East NSW – finalised

(NSW National Parks and Wildlife Service)

S4 – Collection and Integration of Vegetation Data in North East NSW – finalised
(NSW National Parks and Wildlife Service)

S5 – Rare, Threatened and Significant Plant Database for Public Lands in North East NSW – finalised

(NSW National Parks and Wildlife Service)

S7 – Recreational Use of Fisheries in Northern NSW – in progress

(NSW Fisheries)

S10 – Complete Forest Type Mapping in the Upper North East – in progress

(State Forests of NSW)

S11 – Aboriginal Archaeological Sites – finalised

(NSW National Parks and Wildlife Service)

S12 – Fish Communities in Northern NSW Estuaries – finalised

(NSW Fisheries)

S15 – Groundwater Resource Study – finalised

(Department of Land and Water Conservation)

S17 – Riparian Survey – North Coast – finalised

(Department of Land and Water Conservation)

S18 – Macroinvertebrates and Aquatic Plants of North Coast Rivers – finalised

(Department of Land and Water Conservation)

S19 – Freshwater Wetland Survey – North Coast – finalised

(Department of Land and Water Conservation)

S20 – Spring /Summer Coastal Fauna Survey – finalised

(NSW National Parks and Wildlife Service)

S21 – Mapping of Vegetation on Vacant and Other Crown Lands – finalised

(NSW National Parks and Wildlife Service)

Consultancies – Upper North East of New South Wales

C1 – Sites and Places of Aboriginal Significance – to be finalised

(Stage 1 – Gungil Jindibah Centre, Southern Cross University)

C2 – An Economic Valuation of Commercial Products and Resources – finalised

(Professor Rod Jensen and a team from University of Queensland)

C3 – A Study of Tourism and Recreation Values – finalised

(The Centre for Tourism at Southern Cross University)

C4 – A Structural Analysis of the Regional Economy – to be finalised

(Dr Roy Powell and a team from the University of New England)

C5 – Benefit Transfer Analysis – Non-Use Values – finalised

(Associate Professor Jeff Bennett – Australian Defence Force Academy)

C6 – Community Attitudes Study – finalised

(Dr Rob Hall and team, Environmetrics)

C8 – Aboriginal Culture and Attributes – in progress

(Stage 2 – Gungil Jindibah Centre, Southern Cross University)

General Projects – Statewide

G2 – Analytical Models for Prospectivity – finalised

(Department of Mineral Resources)

G3 – Natural Resources Data Directory – finalised

(Department of Land and Water Conservation)

G4 – Acid Sulphate Soils Risk Mapping – finalised

(Department of Land and Water Conservation)

G5 – Landscape Modelling Assessments – in progress

(Department of Land and Water Conservation)

G7 – Pilot Study To Identify Old Growth Forests – in progress

(NSW National Parks and Wildlife Service/State Forests of NSW)

G8 – Study Of Fish Resources In N.S.W. Rivers – in progress

(NSW Fisheries)

G12 – Enhance Atlas Of N.S.W. Wildlife – in progress

(NSW National Parks and Wildlife Service)

G13 – Data Quality Guidelines Project – finalised

(Department of Land and Water Conservation)

Consultancies – Administrative

C9 – Communications Strategy Project – under review – administrative

(Quay Connection)

C10 – CD ROM Feasibility Study – finalised – administrative

(Mr Don Miller – AUSDEC)

2.1 MAJOR LAND OWNING AGENCIES IN THE AUDIT REGION

2.1 MAJOR LAND OWNING AGENCIES IN THE AUDIT REGION

Name of Agency	How much land (approximately) owned in the upper North East, and breakdown by tenure type	Special or unique tenure arrangements Responsibilities regarding the acquisition, management and disposal of land
Department of Planning	38.6665 ha	* The Department acquires land in freehold only. * Under the auspices of the Coastal Land Protection Scheme, the Department acquires various lands along the NSW coastline and transfers the land to 'end-use' agencies such as NPWS, CaLM and local councils. The Department has acquired and transferred approximately 7840 ha of such lands in the Audit Region to date.
Department of Agriculture	* The Department of Agriculture owns: 224 cattle tick sites 6 agriculture research stations totalling 1595.02ha, held in various tenure types, being Alstonville Tropical Fruit Research Station, Duck Creek Research Station Grafton Agricultural Research & Advisory Station, Pearces Creek Research Station, Shannon Vale Field Station and Wollongbar Agricultural Institute Some freehold and some Crown land vested in the Dept. of School Education.	Some research properties are vested in the Department of Education.
Department of School Education	The Department owns some 502.08 ha, comprising 320.84 ha (63.9%) freehold. 180.59 ha (36%) leasehold and 0.66 ha (0.1%) private leasehold. The Department owns 16.4 ha purchased in conjunction with TAFE for a joint project.	No Under the Education Reform Bill 1990, Section 125 (1-7), the Minister has the power to purchase, lease, or exchange land. The purchase of land is achieved by either negotiated acquisition, or compulsory acquisition under the Land Acquisition (Just Terms Compensation) Act 1991. The Department must comply with the statutory requirements of State and local government agencies concerning all land dealings. For disposals of land, the Department follows the Property Asset Management guidelines of the Property Services Group.

2.1 MAJOR LAND OWNING AGENCIES IN THE AUDIT REGION

Department of Health	Approximately 70.4 ha, of which 60% is freehold and 40% is Crown land either reserved or dedicated for hospital/health purposes	No The acquisition and disposal of land used for the delivery of public health services is determined by the following Acts: *Health Administration Act 1982*, with land vested in the Health Administration Corporation; *Public Hospitals Act 1929* (as amended), with land vested in any of the 23 District Health Services Area *Health Services Act 1986*, land vested in any of the 10 Area Health Services. Under the provisions of these Acts and Departmental policies, land can only be acquired, resumed, sold or leased with the approval of the Minister for Health (or his delegate). The management of land vested in the Health Administration Corporation is usually carried out by the particular Area or District Health Services or the NSW Ambulance Service
Northern Rivers Electricity	* Owns 312.765 ha – all freehold.	* No special tenure arrangements. * Acquisition/management/disposal – The *Electricity (Amendment) Act 1993* says that they may acquire, develop and dispose of land as necessary. * Land must be acquired under the *Land Acquisition (Just Terms Compensation) Act 1991.*
Public Works	* NSW Public Works own: Core Business Properties - 1.4 ha freehold; Minister for Public Works (not related to core business) - 9.9 ha freehold; Minister for Public Works (transient ownership) - 422 ha freehold.	* Special tenure arrangements relate to the transient ownership land – these lands have been acquired on behalf of local councils in connection with water supply and sewerage works, and are in the process of being vested in those councils. Public Works only has transient ownership. * Acquisition – The Minister can acquire land for authorised public works under the *Public Works Act 1912*. These acquisitions are subject to the payment of compensation to the owner under the *Land Acquisition (Just Terms Compensation) Act 1991.* * Management – is only responsible for the management of core business properties and the Ministers Property Portfolio (non core). The transient lands are managed by local councils. * Disposal – land becomes vested in the relevant local council under the *Local Government Act 1993.*

2.1 MAJOR LAND OWNING AGENCIES IN THE AUDIT REGION

Roads and Traffic Authority	* Own 305 ha of freehold land in Grafton Zone, but in Tamworth Zone they have 2 half hectare lots, and all the land within the highway and main road corridors are vested in the applicable local council.	* No special or unique tenure arrangements exist. * RTA acquires land under the *Roads Act 1993*, in accordance with the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991* and the *Local Government Act 1993*. * Manages land in accordance with the *Roads Act 1993*. * Surplus land is disposed of by auction on the open market under the guidelines of the NSW Govt. Property Services Group.
TAFE Commission	* Minister for Education, Training and Youth Affairs owns 99.3576 ha in the Region, which is managed by the TAFE Commission.	* No special tenure arrangements exist. * Acquisition and disposal – land is both acquired and disposed of in accordance with section 27(1) and section 275(b) of the Technical and Further Education Commission Act 1990. * Management – TAFE manages land in accordance with the Property Asset Management Guidelines issued by the Property Services Group.
Department of Water Resources	* Owns approx. 1700 ha in the Region, which is all freehold.	* Special tenure arrangements include foreshore grazing leases, recreation area leases, dam sites and residential lots. * DWR acquires land under the Water Administration Act, in accordance with the *Just Terms Compensation Act*. * Land disposal is carried out under the guidelines set out in the NSW Government Total Asset Management Manual, subject to normal conveyancing practices.
The Environment Protection Authority, Department of Mineral Resources, NSW Fisheries and the Office of Aboriginal Affairs advised that they do not own land in the Region.		

2.2 EXAMPLES OF ZONES THAT COVER PUBLIC LANDS IN THE AUDIT REGION

2.2 EXAMPLES OF ZONES THAT COVER PUBLIC LANDS IN THE AUDIT REGION

Zones	Objectives	Without development consent	Only with development consent
1(a) General Rural	– to allow the use of land within the zone for agricultural purposes and for a range of other appropriate purposes whilst avoiding conflict between other uses and intensive agriculture; – to promote efficient, sustainable, agricultural utilisation of agricultural land; – to protect, enhance and conserve trees and other vegetation in environmentally sensitive areas where the conservation of the vegetation is significant to scenic amenity or natural wildlife or is likely to control land degradation.	agriculture; bushfire hazard reduction; forestry; home occupations; dwelling-houses; dual occupancies. Other uses not prohibited or not requiring development consent.	
1(f) Rural (Forests) or Forestry	– to permit forestry activities carried out by or on behalf of the Forestry Commission (now State Forests); – to identify land dedicated under the *Forestry Act* as State forest; – to make provision for all state forests within which forestry activities do not require the consent of council; – to ensure that siltation of streams does not occur in areas.	agriculture; agriculture other than intensive animal husbandry or horticulture; any purpose authorised under the *Forestry Act 1916* or any purpose ancillary or incidental to such purposes; bushfire hazard reduction.	utility installations; extractive industry; mines; recreation establishments; tourist facilities; any purpose that will not adversely affect the usefulness of the land for the purposes of forestry.
6(a) Open Space, Public Recreation	– to ensure that there is adequate provision of open space to meet the needs of the community for public recreation; – to recognise publicly owned land used or capable of being used for recreational purposes;	bushfire hazard reduction; picnic facilities; roads; works for the purposes of landscaping, gardening or environmental protection; drainage agriculture; amenity buildings; caravan & camping grounds; racecourses; tourist facilities; utility installations.	

2.2 EXAMPLES OF ZONES THAT COVER PUBLIC LANDS IN THE AUDIT REGION

7(a) Environmental Protection (Wetlands) or (Natural Vegetation & Wetlands)	– to identify & protect the wetland environment; – to retain significant areas of natural vegetation, such as rainforest remnants; – to prohibit development that is likely to have a detrimental effect on the habitat or landscape; – to enable development for purposes which would not have a significant detrimental effect on the habitat; – to prohibit the clearing of land except for the careful control of noxious plants by means not likely to be significantly detrimental to the native ecosystem.	nil; home occupations.	agriculture; bushfire hazard reduction; camping grounds; commercial fishing; utility installations; houses; building of levees, drains or clear felling; oyster farming; passive recreation; environmental facilities
7(a) Coastal Habitat & 7(f) Environmental Protection (Coastal Lands) or 7(f1) (Coastal Lands Protection)	– to identify and preserve estuaries and other significant coastal habitat areas; – to identify and protect environmentally sensitive & scenic coastal land & ensure that systems are not permanently altered; – to enable the development of land, identified for protection under the Coastal Lands Protection Scheme, only for purposes where it can be shown that the activity will not adversely affect or be adversely affected by, the coastal processes.	home occupations; agriculture; bushfire hazard reduction; nil.	building of levees, drains or clear felling; houses; oyster farming; environmental facilities; camping grounds; caravan parks; extractive industries; forestry; golf courses; surf clubs.
8(a) National Parks and Nature Reserve	– to set aside certain lands for any purpose under the *National Parks & Wildlife Act* and purposes incidental thereto; – to identify, preserve and manage national parks, nature reserves, state recreation areas and Aboriginal areas for conservation and recreation purposes and permit development of lands as deemed appropriate by the Director of National Parks and Wildlife.	development carried out by or on behalf of the National Parks & Wildlife Service under the Act, or any purpose ordinarily incidental or subsidiary to that development.	nil

2.2 EXAMPLES OF ZONES THAT COVER PUBLIC LANDS IN THE AUDIT REGION

8(b) National Park (Proposed)	– to conserve the natural characteristics of land which is proposed to be acquired for reservation or dedication under the *National Parks and Wildlife Act* as a national park or nature reserve; – to retain the productive use of such land provided its conservation value is not impaired;	agriculture; other than intensive animal husbandry; the clearing of trees and native vegetation; bushfire hazard reduction; development carried out by or on behalf of the National Parks and Wildlife Service.	building or works for the purposes of agriculture; miscellaneous forestry; roads; utility installations.
9 (a) Proposed Road, Roads (Proposed Arterial Road Reservation)	– to set aside land for various proposed roads; – identify and preserve land intended to be acquired for new arterial roads or the widening of existing roads.	bushfire hazard reduction; agriculture; arterial roads; arterial road widening.	arterial roads; drainage; recreation areas; utility installations.

3.1 GROUP DIALECTS RECORDED BY VARIOUS AUTHORS FOR THE NORTHEAST REGION

Sharpe (1978) in her book 'An Introduction to the Bundjalung Language and its Dialects' lists 20 dialect groups for the Bundjalung Nation. These are as follows:

1-3. Gold Coast dialects - one of these is probably the dialect Gidabal people call Narahgbal or Narahgwal

4. Nerang Creek - upper Nerang Creek

5. Yugambeh, also called Minyangbal, Manaljahli and Wangerriburra – Logan and Albert Rivers Queensland

6. Nganduwal, Nganda – along the Tweed River

7. Minyangbal, Minyang – Brunswick River and Byron Bay

8. Nyangbal – Ballina

9. Banjalang (proper) – Coraki and Bungawalbin Creek

10. Wiyabal – Lismore, and perhaps to Alstonville, Dunoon and Nimbin

11. Galibal – Richmond River around Kyogle

12. Geynyan – around Warwick

13. Gidabal – around Woodenbong

14. Dinggabal – on the Clarence River between Tabulam and Woodenbong

15. Wahlubal – Tabulam – Drake

16. Casino – around Casino

17. Birihn – around Rappville area

18. Baryulgil – around Baryulgil on the middle Clarence

19. Wujehbal – upper Rocky River, etc.

20. Copmamhurst – this is perhaps a separate Bundjalung language, not just a dialect.

Keats (1988) in his book 'Wollumbin' lists 7 dialects for the Bundjalung Nation. These are as follows:

1. Nganduwal – The Tweed River Basin

2. Galibal – The main upper Richmond River Basin i.e. Kyogle and Casino districts

3. Birihn or Birihnbal – Rappville area – Myrtle Creek, Camp Creek, Sandy Creek, Upper Bungawalbin Swamp area

4. Bandjalang – Lower Bungawalbin swamp and creek – Coraki districts – south to Clarence River

5. Wiyabal – Nimbin – Lismore districts, inclusive of the Wilson River and tributaries

6. Nyangbal – Evans Head, Ballina – Broken Head coastline area

7. Minyangbal – Brunswick River – Byron Bay regions

Oates, W.J. & Oates, L.F. (1970) in their book 'A Revised Linguistic Survey of Australia' list one dialect for the Ji:gara, one dialect for Anaiwan, two dialects for the Gumbainggeri and nine dialects for the Bundjalung. These are as follows:

Anaiwan

1. Anaiwan, New England Tableland from Glen Innes to Uralla, NSW

Yegiric Group (north coast of NSW)

1. Yegir, lower Clarence River, NSW

Kumbainggaric Group (north coast of NSW)

1. Kumbainggar, headwaters of Nymboida River and across range towards Urunga, Coffs Harbour and Bellingen; at Grafton and Glenreagh, NSW

2. Banbai, area around Guyra, Ben Lomond, Wollomombi and Kookabookra, NSW

Bandjalangic Group (Far north coast of NSW)

1. Giabal, between Allora and about Dalby; east to Gatton; west to Millmerran, Qld

2. Kambuwal, Inglewood, Miimerran area NSW & Qld

3. Kitabal, between Woodenbong and Warwick

4. Kalibal, the Macpherson Range from Unamgar NSW to Christmas Creek, Qld., east to Upper Neranf, south to Mt. Carmel, Tyalgum and Kyogle, NSW

5. Minjanbal, from the Clarence River to Logan River, (Livingstone). From Southport to Cape Byron, inland to Murwillumbah and Nerang Creek, NSW. NSW and Qld., (Geytenbeek)

6. Widjabal, upper Richmond River from Kyogle south to Casino, east to Coraki, NSW

7. Arakawal, from Lismore and northern bank of Richmond River to Cape Byron

8. Bandjelang, from Clarence to Richmond Rivers, at Ballina and Tabulam, NSW

9. Yugambal, Albert and Logan River basins from Jimboomba to Macpherson Range, Qld., (Sharpe)

Nayutah & Finlay (1988) in their book 'Our Land Our Spirit' have listed variant spellings of tribes and languages that occur on the north coast. Those listed that fall within the NRAC Upper North East Region are as follows:

Language	Various spellings
Bundjalung	Badjalang, Badjelang, Bandjalang, Bandjalong, Budjulong, Buggul, Bundel, Bundela, Bunjellung, Paikalyug, Watchee, Widge, Woomargou
Aragwal	Arakwal, Coo-al, Jawjumjeri, Kogong, Lismore tribe, Naiang, Njung, Nyung, Yawkum-yore

Galibal	Kalibal, Moorung-moobar, Murwillumbah tribe
Gidabal	Gidabul, Gidjoobal, Kidabal, Kidjabal, Kitabod, Kita-bool, Kitapul, Kittabool, Kuttibul, Noowidal
Jugambal	Jukambil, Jukumbal, Ngarabal, Ucumble, Ukumbil, Yacambal, Yoocomble, Yoocumbill, Yookumbil, Yookumble, Yookumbul, Yukambal, Yukumba, Yukumbil, Yukumbul, Yurimbil
Ju:ngai	
Minjungbal	Coodjingburra, Cudgingberry, Gando, Gandowal, Gendo, Minjang, Minjangbal, Minyowa, Minyung, Ngandowal, Ngandowul, Nganduwal
Widjabal	Ettrick tribe, Noowidal, Nowgyjul, Waibra, Watji
Gumbainggeri	Bellingen tribe, Bellinger tribe, Coombagoree, Coombangree, Coombargaree, Coombyngara, Coombyngura, Guinbainggiri, Gumbanggari, Koombangghery, Kumbaingeri, Kumbainggeri, Kumbainggiri, Kumbaingir, Kumbangerai, Nimboy, Orara, Woolgoolga
Ba:nbai	Ahnbi, Bahnbi, Dandi
Ji: gara	Jeigir, Jiegera, Jungai, Yagir, Yegera, Yegir, Yiegera, Youngai

4.1 TIMELINE OF EVENTS ON PUBLIC LANDS OF THE UPPER NORTH EAST REGION

1-2 Billion years ago. Some of the rocks that make up present day central and western Australia have already formed, as well as the Broken Hill region in western New South Wales (1.6 Billion years ago). These rocks were parts of continents that no longer exist. The former oceans disappeared.

~ 600 Million years ago (Ma). The rocks of the Audit Region still do not exist. A Neoproterozoic supercontinent started to break up and it is hypothesised that it was North America which drifted away, with old Pacific Ocean forming in its wake. Shallow seas north of Adelaide and around Broken Hill witnessed 'explosion' of life (an age of rapid expansion in population of soft bodied animals).

~540 Million years ago (Ma). The rocks of the Audit Region still do not exist, but oceanic crust is nearby to the west, remnants now occurring along the Peel Fault (a feature extending from near Warialda to Nundle). The eastern coast of Gondwanaland lies just east of present day Broken Hill. The ocean it bordered no longer exists. This geological era is known as the Cambrian Period (the age of the evolution of shelly faunas amd trilobites).

~510 000 000. Splitting of the ocean floor east of Gondwanaland forms new oceanic crust. Some of this crust possibly eventually becomes incorporated into part of the Audit Region as serpentinites in the Baryulgil area.

~420 000 000 early Palaeozoic Era – Silurian Age (Age of Invertebrates). Worldwide, the first simple land plants evolve. In the Audit Region there are no rocks of confirmed Silurian age, but some may exist in the Clarence River headwaters.

~400 000 000 mid Palaeozoic Era – Devonian Age (Age of Fishes). The ancient seabed is deformed as the new ocean floor gradually disappear beneath the margin of Gondwanaland. The volcanic rocks and sediments associated with them are partly preserved just west of the Audit Region in the Tamworth Belt and Central New England. All these rocks eventually join to form the eastern margin of this part of Gondwanaland. Some of these rocks can still be seen in the Washpool gorges. The oldest confirmed fossils in the Region are corals from limestones near Jackadgery that lived in the Early Devonian.

~350 000 000. Late Palaeozoic Era True trees, with roots, stems, and leaves, evolve. Locally, ocean sediments are deposited on the oceanic crust. Marine rocks with abundant fossil shells from this period occur near Drake. Gondwanaland drifts south into polar regions so that glacial conditions prevail. Ocean sediments are scraped off the ocean crust as it is gradually consumed beneath Gondwanaland. These sediments are folded, faulted and attached to the east of Gondwanaland. The deep parts of these sediments are heated up and melted to form granites that are also folded and faulted.

~250 000 000 mid Mesozoic Era – The Triassic Age. Major extinctions occur of invertebrate groups, followed by the appearance of the first dinosaurs. Ginkgo trees appear in the fossil record in the Clarence-Moreton basin sediments from this period. Metal rich granites intruded at about this time along the tablelands at the western edge of the Audit Region. In the later Triassic and the Jurassic, large rivers drain this part of Gondwanaland and deposit sediments in the Clarence-Moreton basin in the northeast of the Audit Region. On the river deltas, large peat bogs form, which eventually become extensive coal deposits, such as the Nymboida Coal Measures.

~80 000 000 late Mesozoic Era. There are no rocks in the Audit Region which record local history but the Tasman Sea formed by rifting of parts of Gondwanaland and at the same time initiating the development of the Great Escarpment, which in the Audit Region marks the eastern edge of the tablelands.

~65 000 000 The end of the Mesozoic Era. The dinosaurs die out along with several other major groups. Possibly as many as two thirds of the world's species died out in what may have been a catastrophe caused probably by a meteorite hitting the earth.

~50 000 000 Cainozoic Era. Australia separates from Antarctica and moves north, and the southern coast is formed. Vegetation is primarily rainforest. Australian mammals diversify to fill the niches left by the dinosaurs. Both placental and marsupial forms are present.

~35 000 000. Volcanic eruptions commence in the west. For the next ten million years, volcanic eruptions continue in the west, south and north of the Audit Region.

~23 000 000 Early Miocene Age. Eruptions of extensive areas of basalt occur and shield volcanoes at Ebor and Mount Warning are formed. Over the next 3 million years, lava flowed out onto the landscape in the Tweed region. This formed a shield-shaped dome that wore away to become the Mcpherson Range, the Tweed, the Nightcap or Main Range and the Springbrook Plateau.

~15 000 000 Late Miocene Age. The Australian plate collides with the Asian plate, raising up the islands of Timor and New Guinea. Because of the change in latitude, Australia becomes drier and the rainforest shrinks to the coastal strip.

~2 000 000 Pleistocene Age begins. The sea level drops with the ice ages, leaving land bridges across Indonesia and between New Guinea and Australia. Rodents known as 'old endemics' first cross to Australia. The first Pleistocene temperature fluctuations are small and short, while later ice ages become increasingly cold and long.

~1 000 000 - 150 000 years ago. Pleistocene Age. The sea levels rise during interglacial periods and fall during at least four glacial periods. Australia is cut off during interglacials and connected to New Guinea during glacial periods. The Great Barrier Reef has formed. Eventually some larval corals drift south during the interglacial periods to grow on the north coast, including the Solitary Islands and Arrawarra Headland.

~150 000 Pleistocene Age. The sea level drops again during the second last ice age.

~120 000. During the last interglacial warming period the sea reaches its highest level, about 3-5 meters higher than the present sea level. The Richmond River catchment was a large embayment as far inland as Kyogle. Tropical corals grew at Evans Head. Marine and estuarine sediments and fossils were deposited at this time throughout the Richmond catchment. Aborigines may have begun colonisation of Australia (from geological bore core evidence showing new-style burning patterns) (Burnum Burnum 1991).

~20-40 000. Oral tradition reports that three brothers, their mother and their families come from far to the north in three canoes and land near Byron Bay or Lennox Head. The story is told as true by their descendants who formed the Bundjalung nation, from the southern reaches of the Clarence River to the Albert River in Queensland and west to the Great Dividing Range. Seven different dialects existed in the Tweed, Richmond and Brunswick regions by the time white men arrived. The legend suggests that New Guinea was connected by land to Australia at the time, which puts the date at greater than 10 000 years ago, when the last ice age ended and the seas rose to cover the land bridge.

~17 000 years ago. The start of the last postglacial sea level rise. The level rose on average at about one meter per century.

~10 000. Marked drying of the climate, leading to the invasion of Eucalypt species to the area. The sea floods the land bridge between Australia and New Guinea.

~6 500. The sea level reaches its present level or possibly slightly higher.

~6 000 years ago. An Aboriginal camp site is in use in the Numinbah Valley of the Upper Tweed River (Burnum Burnum 1991).

600 BC Shell middens on the Tweed River are being used (Burnum Burnum 1991).

1770 Captain James Cook sails up the north coast in the Endeavour. He sights and renames the mountain Aborigines called Wollumbin as Mount Warning. He also names Cape Byron and Byron Bay after John Byron, navigator and grandfather of Lord Byron. Cook and Sir Joseph Banks describe Aborigines walking along a beach which was possibly Seven Mile Beach at Lennox Head.

1791 Mary Bryant, two children under three years, her husband and seven other convicts escape from Sydney in a small six-oared cutter. They row up the north coast and on to Timor (3 250 miles) (Hughes 1987).

1794 Col. W. Patterson of the Sydney colony sends samples of Red Cedar tree to Joseph Banks for description (Gilbert 1971).

1797 The Cumberland, a Sydney built smack and the 'largest and best boat in the colony' seized by an Irish convict crew on a routine trip delivering stores from Sydney to the Hawkesbury River. They escape up the north coast and are never seen again (Hughes 1987).

1799 Flinders comes ashore at Yamba, names the area Shoal Bay. He spends time with the local Bundjalung tribe and comments on their well-built, solid houses and seafaring craft (Law 1987; Howland & Lee 1985).

1820 Regulations put in place to control timber getting: permission to cut is required (Gilbert 1971).

1823 John Oxley explores the Mount Warning region. He also finds a shipwreck on Cook Island off the Tweed, but thinks the Tweed is the Clarence River (Law 1987).

1820-23 Timber ranks third after wool and whaling as an export income earner in the fledgling colony (Gilbert 1971).

1824 Penal colony at Moreton Bay established. Over the years until its closure many escapees headed south to the north coast. Many Aborigines in this period contract new deadly diseases which decimate their populations.

1825 Convicts are the first whites to cross the Clarence River, which they call the Big River (Law 1987; Mcphail 1964).

1827 Allan Cunningham sees the Upper Clarence Valley (Apex 1950). Rous sails into the Tweed River and names it the Clarence, charts Byron Bay, explores the Richmond River and sees the Clarence Bar (Law 1987; McPhail 1964).

1828 Logan and Cunningham climb a mountain they think is Mount Lindesay (now Mt Barney) and name the MacPherson range. The commandant of Moreton Bay stations some soldiers at Point Danger, Tweed River to intercept escaped prisoners. Troops are withdrawn by the end of the year due to hostility by Aborigines.

1829 The first Tweed River cedar rafted to Moreton Bay. Convict Richard Craig escapes from Moreton Bay, explores Clarence Valley and lives with the Aboriginal peoples (Walker 1966).

1832 The convict Sheik reaches Port Macquarie from Moreton Bay and reports on the lands in between (Apex 1950).

1833 Convict John Graham returns to Moreton Bay after living with Aborigines since his escape in 1827.

1836 The Colonial Act passed (Weiss 1991). Richard

Craig, while living with Aborigines, witnesses a big flood on the Clarence River (Law 1987).

1837 T. Small establishes the first Cedar Camp on the Clarence River, on Woodford Island (later renamed Brush Grove) (Law 1987).

1838 Craig turns himself in at Port Macquarie, receives a pardon and then returns to the Clarence River with party of cedar getters on the *Prince George* (Law 1987). A route is blazed from Dorrigo Plateau to coast by Surveyor Heneage Finch. Ship building industry begins on Clarence with construction of wooden coastal vessels by A.M. Phillips. First cargo of red cedar taken to Sydney from the Clarence by John and Thomas Small in the *Susan* (Law 1987). Squatters from the tableland explore the Mann Valley looking for a route to the Clarence River. Captain Perry in the Eliza explores the Clarence River (Law 1987).

1839 Clarence River given its modern name by Governor Gipps (the Aboriginal name was Breimba) (Law 1987). In Sydney, licenses for cutting timber are first introduced. The Deputy Surveyor General and Captain Perry make an official investigation of the Clarence River and find camps of many cedar getters plus a vessel of 150 tons being built at South Grafton (known then as Woolport) (Law 1987). Two of the men on Captain Perry's ship, the Eliza, get lost and are rescued by local Aborigines (Law 1987).

1840 Dr Dobie and party unsuccessfully try to find a way from the Tablelands to the Clarence. Craig blazes trail from Grafton through Ebor to Armidale and returns with a mob of sheep owned by Grose. Later Richard Craig guides a party from the Tablelands to the 'Settlement' (later Grafton) which includes the young Thomas Bawden (Law 1987). The squatter, Edward Ogilvie, settles near Washpool area (Donald 1987). R. Dixon surveys and maps the Tweed, Brunswick and Lower Richmond Rivers. The first squatter, W. Wilson, settles on the Richmond River. Convict John Story Baker gives himself up at Moreton Bay after living with Aborigines

1841 Massacres of Aborigines at Ramornie and Tabulam. Squatters create 'Cassino' Station on the Richmond River.

1842 An early settler, Arthur Price, drowns in the Clarence River (Law 1987). W. Phillips builds a wharf at South Grafton (Law 1987). C. Hodgkinson surveys and explores the coast. Clarence Pastoral District established under the Crown Land Act of 1839 (Jeans 1940). The Cedar-getters begin the clearing of the 'Big Scrub'. S. King establishes Cedar Camp at Codrington, north of Coraki. The Kyogle run is selected (McPhail 1964). The Moreton Bay penal colony is closed, ending the convict era on the north coast (McPhail 1964). Free Settlement is declared by Proclamation. Dray traffic between Tenterfield and Grafton begins along the old Tenterfield Road (Law 1987).

1843 J. Burnett pioneers the Burnett Track from the Logan River in Queensland via Mount Lindesay to the Richmond River (Donald 1987).

1844 Cedar getters move into the Tweed Valley, settling at Terranora (Gilbert 1971). First recorded burial in the first general cemetery in Grafton (corner Turf and Fry Streets, now Pioneer Park). Earth from the site later excavated for embankment fill for the railway line (Bate & Mackey 1981).

1845 First known shipwreck in the Region: *Northumberland* wrecked on the Richmond River Bar. (All shipwrecks are located on Crown land and are recorded in Register of NSW Wrecks North of Coffs Harbour (DoP 1994)). Massacre of the Boyd River Aborigines by Commissioner Fry (Jeans 1940). Two cedar getters on the Tweed murdered by Aborigines.

1846 Ship *Coolangatta* is wrecked near the Tweed. The Cartographer W. Baker maps the Tweed-Richmond area. Massacres of two Aboriginal groups at North Arm and Richmond Heads after two cattlemen are killed at Pelican Creek, north of Coraki (Jeans 1940). The first Court House opens in Grafton (Bate &Mackey 1981).

1847 Two shipwrecks recorded. A 240 tonne vessel is launched on the Clarence River. The first vessels are built on the Richmond at Woodburn. Jeremiah Sullivan Jnr. is killed by Aborigines, which sparks the Kangaroo Creek massacre (Edwards 1993). Grafton laid out by W. Greaves (Apex 1950).

1848 Convict transportation to NSW abolished by British Government. Four shipwrecks recorded on the north coast. Floods reported on the Clarence (all flood records from Pidcock 1968; Irby 1972).

1849 Plan of Grafton approved. Four shipwrecks. First cedar camp on the Brunswick River. The *Swift* sinks off Tweed with loss of all but two men. Post office opens at Casino.

1850 Gold prospecting begins in the Washpool area (Wilkinson 1980). Sugarcane industry established in lower Clarence (Kass 1989). Floods recorded on the north coast. The SS *Phoenix* stranded on Angourie Point, hauled overland to Yamba and refloated. Six other recorded wrecks that year. First white settlement at Chinderah (then called Cudgen) on the Tweed.

1851 Six shipwrecks recorded. Gold discovered in Clarence Valley. Proclamation issued in NSW that all gold found on private or Crown land is the property of the Crown and a licence to dig is required. First sale of town blocks takes place in Grafton (Bate & Mackey 1981). Tenterfield gazetted as town. Grafton Steamship Co. formed (Law 1987).

1852 Two shipwrecks. First Government assisted school opens in Grafton (Bate & Mackey 1981). Glen Innes town site proclaimed.

1853 Ship building begins on the Tweed River. Casino becomes a town.

1904 One shipwreck recorded. Wollumbin State Forest gazetted. Railway to Casino and Grafton completed.

1905 Bridge built at Coraki over the Richmond River.

1906 Baths erected on riverbank opposite Alice Street, Grafton using stone and rubble from the San Francisco earthquake which travelled, as ballast in sailing ships which took timber as return cargo (Bate & Mackey 1981). Land opened up for balloting in the Eastern Dorrigo region (Hampton 1987).

1907 *The Fido* sinks off Tweed Heads. Business section of Murwillumbah township all but destroyed by fire.

1908 Two shipwrecks. Aboriginal school at Nymboida opened (Edwards 1993). After local youths rescue a distressed swimmer at Yamba, the locals form a Surf Life Saving Club, the oldest in the State (Howland & Lee 1985). A Royal Commission is set up to look into forestry (Grant 1989).

1909 One shipwreck recorded. The Grafton Clock Tower is erected to mark 50 years of settlement (Anon 1910). First Forestry Act passed (Grant 1989).

1910 Aboriginal reserve created at Nymboida (Edwards 1993). Ballina advertises as a sea-side resort. Ulgundahi Island provisional school and Aboriginal Settlement established (Edwards 1993).

1912 One shipwreck recorded.

1913 Tabbimoble, Gibberagee, Doubleduke, Devil's Pulpit, Camira, Braemar, Koreelah, Bagawa, Candole, Divines, Glenugie, Kangaroo River, Lower Bucca State Forests dedicated. (Gazettal and dedication dates for State Forests here and below were provided by SF NSW). Crown Land Act passed.

1914 Copper mining ends at Cangai due to the war and subsequent price crash. Bungabbee, Bungawalbyn, Cherry Tree, Donaldson, Mt. Pikapene, Whian Whian, Boonoo, Cloud's Creek, Fortis Creek State Forests dedicated. First El Nino recorded, with associated drought on the north coast.

1915 El Nino continues. Nymboida water supply and power station installed (Apex 1950). Lamington National Park gazetted. First meeting in Grafton of the New State Movement. Disastrous bush fires in the Richmond Range State Forests.

1916 Forestry Act passed and the NSW Forestry Commission forms (Grant 1989). Aboriginal school at Nymboida closes (Edwards 1993).

1917 One shipwreck recorded. Floods. Border Ranges State Forest gazetted along with Carwong, Mebbin, Mooball, Mt. Belmore, Mt. Lindesay, Nullum, Richmond Ranges, Toonumbar, Unumgar, Yabbra, Bookookoorara, Wollumbin, Edinburgh Castle, Girard, Woodenbong, Bielsdown, Boambee, Conglomerate, Orara, Tucker's Nob, Wild Cattle Creek, Wedding Bells, Brother, Butterleaf, Cangai, Gibraltar Range, London Bridge, Marengo, Mt Mitchell, Oakwood, Paddy's Land and Warra State Forests.

1918 Oyster industry is established by returned servicemen. Asbestos deposit (chrysottle) discovered at Baryulgil and apparently first developed during WWI (Hand 1984). Spirabo, Boundary Creek, Marara, Pine Brush, Glen Nevis, Hyland State Forests dedicated. El Nino forms and drought is recorded.

1919 El Nino continues, drought too. Sugarloaf and Ramornie State Forests dedicated.

1920 Rail line between Dorrigo and Guyra begins but never is finished. Aborigines from Bundjalung tribe move to Baryulgil Square area (Hand 1984). Banyabba, Maryland, Southgate, Nymboida State Forests dedicated.

1921 *The Wollongbar* sinks off Byron Bay. Floods in the Northern Rivers. Curramore, Mt. Marsh State Forests dedicated.

1922 Myrtle State Forest dedicated.

1923 Pacific telephone cable extended from Southport to Sydney. Oysters in the Northern Rivers grown on trays for the first time instead of dredge beds.

1924 Glenreagh-Dorrigo railway line opens. Direct railway from Grafton to Sydney completed (Apex 1950). Electric light and power installed in Grafton (Apex 1950). Nymboida Power Station built (Bate & Mackey 1981).

1926 Fullers and Royal Camp State Forests dedicated.

1927 Floods. Shea's Nob, Billilimbra, Dalmorton State Forests dedicated.

1928 Construction of double-deck (road and rail) steel bascule bridge over Clarence River at Grafton commenced (Bate & Mackey 1981). Depression hits and 'Five Ways' at South Grafton and Market Square in Grafton become camps for the unemployed. Floods recorded.

1929 Floods. Charles Kingsford-Smith, in the Southern Cross, flying from California via Fiji, first sees land at Ballina then turns north to land in Brisbane.

1930 Grafton-Murwillumbah railway line completed. Newfoundland, Ellis, Mororo State Forests dedicated. Road from Grafton to Sydney completed. A railroad line is started from Casino to Bonalbo to be used to deliver coal, but the project is abandoned when they reach the Richmond Range. Charles Kingsford-Smith crash lands near Bonalbo on Dome Mountain.

1932 Rail line from Sydney to Brisbane completed with opening of Grafton road-rail bridge over Clarence River (Apex 1950). Boorook State Forest dedicated. Droughts recorded associated with an E1 Nino. Wildlife conservation becomes part of forest policy in an Act that declared National Forests with multiple aims including conservation of wildlife (Grant 1989).

1933 Ewingar State Forest dedicated.

1934 Brooklana State Forest dedicated. Rutile mining begins in the Yamba area (Howland & Lee 1985).

1935 First Jacaranda Festival held in Grafton (Apex 1950).

1936 Nightcap Ranges National Forest declared. Shark Creek Bridge completed – the first concrete bow-string arch bridge in Australia (Kass 1992).

1937/38 Floods. Steel rails used as ballast in SS *Induna* car ferry sold to Japan for scrap metal.

1939 El Nino forms and brings drought. The train engine used to build the Yamba harbour works sold to Japan for scrap metal (Howland & Lee 1985).

1940 Development of Baryulgil asbestos mine recommences (Hand 1984). El Nino and drought continue. Largest flying fox in the Southern Hemisphere built in the Nightcap range to haul logs to a Tweed Valley sawmill. RAAF use Bundjalung as a bombing practice range. Coachwood logs cut from forests in the Killungoodie area (now Dorrigo NP) for building Mosquitoes (WWII fighter-bombers). Corkwood trees harvested in north coast forests for their drugs, including atropine, and these are used in military hospitals throughout the war. Other species are harvested for quinine to treat malaria and for seasickness drugs (Jones 1986).

1941 Daily river commuting service ceases between Grafton and Yamba.

1942 Forde describes to Cabinet the 'Brisbane Line', to run from Brisbane to Melbourne, through the North East Region of NSW, where Allied troops would try to hold the Japanese if Australia is invaded (Fitzgerald 1984; Burns 1989). The Line is built through the Audit Region, with tank traps near Tenterfield and mines laid on the Armidale Road near Horton's Creek (Cloud's Creek State Forest). First banana growing leases given in Bungabbee State Forest. Production of asbestos fibre at Baryulgil commences (Hand 1984).

1943 Thirteen Wolf Cub Scouts drown returning from outing to Susan Island near Grafton (Bate & Mackey 1981). First Australian-made Mosquito fighter bomber flown. It was manufactured using Australian Coachwood plywood instead of Canadian birch which was used in England for construction of the same type of plane. Production ended after WWII with 103 delivered out of 370 ordered. Several ships are sunk by the Japanese near the Solitary Islands (Yeates 1984).

1944 Floods. The Tassie sinks off Byron Bay, possibly sunk by mine or submarine (Yeates 1984). Every soldier who landed at Normandy is given a dose of seasickness medicine beforehand, made from north coast rainforest trees (Jones 1986). Grafton Sailing Club formed (Bate & Mackey 1981).

1945 Floods. Formation of Clarence River Fisherman's Co-op.

1946 Lismore proclaimed a city. Prawn trawling industry begins at Yamba (Howland & Lee 1985).

1947 E1 Nino – drought.

1948 Floods and bad bushfires.

1949 Flying boat service begins: Grafton to Sydney (Apex 1950). Official opening of Clarence Harbour works (Apex 1950).

1950 Port of Byron Bay used for whaling. In early 1950s tailings from Baryulgil asbestos mine first used as a surfacing material for roads, school grounds, etc. at Baryulgil (Hand 1984).

1951 El Nino forms with subsequent drought on the north coast which lasts until 1953.

1954/55 Devastating floods in the Northern Rivers. Local legend has it that a cow was found swimming several miles out to sea. End of coastal shipping as rail and roads take over.

1955 New lighthouse opens at Yamba (Howland & Lee 1985).

1956 Floods. *La Balsa*, the raft, lands at Ballina after making the longest unassisted journey ever recorded, across the Pacific Ocean. El Nino brings another drought. Grafton and South Grafton amalgamated (Bate & Mackey 1981).

1958 Fishing festivals initiated in Yamba (Howland & Lee 1985).

1959 Floods. Television transmitters are erected on Mt. Nardi and named after local identity (Anon 1994).

1960 Sim Committee surveys north coast and reports on the conflicts between sand mining and conservation. Corkwood industry ends. Forestry Commission phases out banana growing leases in State Forests. Gwydir Highway opens, opening up Gibraltar Ranges area. Baryulgil Square gazetted 'reserved from sale for the use of Aborigines'.

1962 Floods.

1963 Floods. Gibraltar Ranges and the Limpinwood Nature Reserve gazetted.

1964 Glenreagh-Dorrigo railway line last used.

1965 Floods. Bill Haydon, the Kempsey Cedar King, disappears in the Washpool region (Jones 1986).

1966 Mt Warning National Park gazetted. Yamba Fishing Club forms (Howland & Lee 1985). El Nino recorded.

1967 Floods. National Parks and Wildlife Act passed. Dorrigo and Gibraltar Ranges National Parks gazetted.

1968 Bad bushfire year. Floods also recorded.

1969 Work begins on flood levee protection systems for Grafton and South Grafton.

1970 Federal Department of Transport build microwave radar station on Round Mountain (now Cathedral Rock National Park).

1971 First parts of Angourie National Park gazetted.

1972 Glenreagh Dorrigo railway line closed down. Guy Fawkes National Park gazetted. Grafton flood levee completed. El Nino brings drought again.

1973 Coastal Land Protection Scheme initiated. Aquarius festival held at Nimbin. Chaelundi State Forest dedicated.

1974 Floods. Broadwater National Park gazetted.

1975 Angourie and Red Rock National Parks officially declared. NSW Canoe championships held at Goolang Creek near the Nymboida River (Bate & Mackey 1981).

1978 Cathedral Rock National Park gazetted.

1979 Border Ranges National Park gazetted (Grant 1989). Protesters blockade logging operations at Terania Creek (Grant 1989). Premier Wran calls moratorium on rainforest logging while an inquiry is held. Land and Environment Court formed. Asbestos mine at Baryulgil closes (Hand 1984).

1980 Bundjalung and Nymboida National Parks gazetted.

1981 Eden Creek State Forest dedicated. First occupation of Malabugilmah residential area at Baryulgil as alternative to the Square for the Aboriginal community. Australian and International Canoe Championships held at Nymboida (Bate & Mackey 1981).

1982 Drought. Boonoo Boonoo National Park gazetted. Protesters act against logging in the Mt. Nardi area of the Nightcap Ranges. Rainforest logging virtually ceases in NSW. Mt Nardi conflict is the first test of Land and Environment Court for resolving environmental conflicts.

1983 Drought. Nightcap National Park gazetted (Grant 1989).

1984 Washpool National Park gazetted.

1985 Goonengarry State Forest dedicated.

1986 Washpool, Mt. Warning, Border Ranges and Nightcap national parks gain World Heritage Listing.

1988 Viewing platform constructed at the top of Mt Warning. North Coast Regional Environmental Plan gazetted.

1990 The Mann Wilderness added to Nymboida National Park. Protesters blockade Chaelundi State Forest.

1991 El Nino forms – start of drought.

1993 El Nino reforms. Drought. Bushfires. Dick Smith lands his balloon near Tabulam after making the first cross-Australia balloon flight.

1994 Drought continues. More bushfires.

1995 Much of area is no longer drought declared.

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DATA QUALITY STATEMENTS

THE NATURAL RESOURCES DATA DIRECTORY

Lineage

The Natural Resources Data Directory (NRDD) is a digital catalogue of some 3600 data sets of natural resource data. The Directory was compiled by the Office of Land Information Policy and Coordination from information supplied by NSW State, local, ACT Government and Commonwealth agencies over the period March 1994 to June 1995. The directory is accessed through viewer software (PC based) to enable selection to be made on the data by both graphical and textual queries on data content and location. The viewer software has been specifically developed by Space Time Research Pty Ltd in 1995.

The directory information is described by ten different fields of information (termed metadata) such as the name of the data set, what agency was responsible for the data, who were the contacts for the data set, etc. This data set description provides enough information to enable users to determine whether the data is of interest and where it can be obtained. Each data set was associated with a specific area of NSW or ACT and the areas were either supplied with the data set or digitised on-screen. The areas were captured as polygons to locate the data set.

This metadata information was obtained by interviews with representatives from State Government agencies. A similar but separate program was undertaken to obtain information from local government. Once the information was entered it was distributed to the representatives for verification.

The remaining metadata was provided by importing metadata from other existing directories. This included the National Directory of Australian Resources (NDAR) maintained by the National Resources Information Centre, the State of the Environment Directory (SoEDI) for NSW and for the ACT as developed by the Commonwealth Department of the Environment Sport and Territories, and the High Level Metadata maintained by the Earth Resources Information Network (ERIN). The information from these sources was reviewed and transformed to the current fields. In some cases this required additional information which was directly collected by OLIPaC from Commonwealth and ACT Government custodians, and verified directly between those custodians and OLIPaC.

The NRDD includes a directory of standard aerial photography belonging to the Land Information Centre based on photography for 1:100 000 scale map sheets from the early 1950s to the present. Project aerial photography is also listed with the standard photography and this is also referenced to be included within 1:100 000 scale map sheets. The available photography has been determined from data captured directly from the card indexes and is subject to error as the individual card index entries have not been verified. The indexes were complete for all aerial photography up to the end of 1993. Standard photography entries have been updated by inspection of map indexes held by the centre.

Positional Accuracy

The location of the data set is only an indicator of the likely position of the data and should not be expected to be accurate to more than ±20 kilometres. Care needs to be exercised in interpreting the displayed extents as many data sets have been referenced to large but relatively well known regions even though they apply in only a small part of that region. This aspect is noted in the Coverage field for the data set.

The location of individual elements making the map of NSW (roads, railways, rivers and localities) has been obtained from the Division of Wildlife and Ecology CSIRO, who sourced this data from the Land Information Centre NSW. The accuracy of the location of these elements is not expected to be better than ±5 kilometres. +

Attribute Accuracy

The field entries cataloguing the data sets were verified by the contacts recorded against each data set.

This information was checked during June and July 1995. However, many of the fields are subject to change over time.

Logical Consistency Report

Logical consistency checking was done on the data set description information. Checks were made to ensure the data set names and abstracts, spatial description, general area and vector polygons describing the areal extents of each data set were consistent. In addition, agency names and contact details were independently checked. All contacts were individually contacted to verify their position as the data set contact.

Completeness

The data set descriptions provided from Government agencies were those that were important to the business of those agencies and consequently subject to continued maintenance.

Information has not been provided on some data sets which had restricted access due to privacy considerations. Data sets currently in production were also not recorded because of difficulties in transferring the data.

Very little information has been collected from community organisations, business or university custodians.

LIST OF PUBLIC LAND OWNED BY STATE GOVERNMENT AUTHORITIES

Lineage

A hardcopy listing of Government properties for the upper North East region of New South Wales was extracted from the Government Property Register for the Natural Resources Audit Council (NRAC). This Government Properties Register is being developed as a database of all State Government properties in New South Wales.

To implement the Register, 'owner authorities' were asked to provide details of their land ownership. The owner authorities contacted were as listed in the Annual Reports Acts (and Public Finance and Audit Act) which require them to provide the information.

The authorities provided details on properties in a variety of formats; on hard copy, in forms and in digital formats. This data was then entered into the Government Property Register database.

NRAC distributed a printout to each authority of their property ownership recorded in the Government Property Register. The authorities have returned changes/ confirmations and these were entered into the Register before the study was finalised.

The Government Property Register is also progressively being checked against the Automated Land Titles System (ALTS) of the Land Titles Office to confirm ownership and lot/plan details. Some properties submitted by the authorities have not been located in the ALTS system as yet.

As a further check, all properties owned by government authorities were extracted from the ALTS data base and compared to properties in the Government Property Register to determine any properties not known to the Register.

The Department of Land and Water Conservation is in the process of distributing both these differences to the authorities for clarification but corrections for these were not available to be included in the NRAC listing. As a result of this work, there could be some limited duplication of properties.

Positional Accuracy

Positional accuracy is not relevant to this NRAC listing of Government properties. However, the Government Property Register will in the future be linked to the Digital Cadastral Data Base of the Land Information Centre.

Attribute Accuracy

There are still a number of properties that were not reconciled between the Government Property Register and the Automated Land Titles System of the Land Titles Office. This work is still continuing but was not completed for the release of the NRAC listing.

Some attributes like local government areas (LGAs) were entered through a pick list to ensure correct spelling.

Automated checks were made to ensure that suburbs were correctly spelt.

The field of land use has been provided by the 'owner authority' and no check has been made as to its accuracy.

Logical Consistency Report

The Department of Housing has properties where a number of houses can exist on the one lot/plan and in the same suburb. As the street address does not appear in the listing these will look to be duplicate records.

Properties that have missing lot/plan identifiers can be recognised by a dummy plan number of '99999'. The missing identifiers can be either because the information was not supplied by the authorities or because some properties do not have lot/plan identifiers.

The new State Government changed a number of authorities following the recent State election. Not all changes to responsibility for land were entered into the Government Property Register at the time of preparation of the NRAC report. Accordingly some land may be listed against the authority which was responsible for the land prior to the election.

Completeness

The NRAC listing was extracted by local government areas (LGA) rather than by the drainage areas that define the Upper North East Region of New South Wales. At the time, it was not possible to do the extraction spatially using the Digital Cadastral Data Base. While NRAC requested authorities to delete properties outside the Region during checking, in practice this may have been difficult for authorities to do and some properties listed may be outside the Region.

As data was extracted by LGA, any properties given without an LGA will not have been included in the NRAC study.

Crown Land was excluded from the study but no checks were made to ensure that authorities did not include Crown Lands in their lists of land owned.

Properties of the State Rail Authority that do not have documentary title were not available to be included in the NRAC listing. The State Rail Authority has a project to capture these property details but it will be some time before completion.

The listing covers land owned as at 30 June 1995. The data will not be maintained beyond that date. Land sold or acquired by authorities which is not registered by 30 June 1995, will not be included in the listing.

MAP FOR THE REGIONAL AUDIT OF UPPER NORTH EAST NEW SOUTH WALES

Lineage

The Land Information Centre developed a map of the Upper North East Region of New South Wales at a scale of 1:500,000 for the Natural Resources Audit Council (NRAC) to be used in their audit of that Region. The map shows national parks, nature reserves, State forests, timber reserves, flora reserves, leases within State forests, Crown leasehold land, Crown land reserves, NSW Government owned land, unallocated Crown and Undefined Public lands, Crown Land below Mean H.W.M., Local Government Areas, catchment areas, 3 nautical mile limit, highways, main roads, other roads, railways, and rivers. Where an area is one of several of the above categories it is only shown as the highest in the above sequence on the printed map. For example, where Crown leasehold land and Crown land reserve occupy the same parcel it would only be shown as Crown leasehold land. The map has also been supplied to NRAC as full digital overlays for each category without this precedence rule.

The Digital Cadastral Data Base (DCDB) was used as the base for this map. The DCDB, in the North East Region, was produced by digitising predominantly 1:4,000 scale (for larger urban areas) and 1:25,000 scale cadastral maps.

The national parks and the nature reserves were identified from the DCDB. This data (DCDB) has been compared with National Park Records.

The State forests were identified from the DCDB and have been compared with State Forests' records. State Forests supplied a textural list of lots for timber reserves. These were matched with parcel identifiers in the DCDB to obtain the timber reserve areas. The flora reserves were also defined by State Forests. These were line work on topographic data and not identified by cadastral parcels.

Leases within State forests and Crown timbered land were supplied as textural lists of lots (and these were also supplied on disk).

Crown leasehold lands were based on lot identifiers from the Crown Land Services' Tenures data base. Crown land reserves were based on lot identifiers from the Crown Lands Services' Reserves database. In addition, a separate study was undertaken by the LIC in 1992-94 to collect all Crown reserves (approved at the district level) and dedications (placed before Parliament) from parish maps. These are being reviewed by Crown Land Services.

Unallocated Crown & undefined lands have been derived from the DCDB and parish maps.

The Crown land below Mean H.W.M. extended from the shore to the three mile state limit excepted where it was expanded to include marine parks. The three mile limit was shown smoothed.

NSW Government owned land were obtained from the DCDB from lot identifiers supplied by the Office of Land Information Policy and Advisory Committee (OLIPaC). These were matched with the DCDB and discrepancies have been referred to OLIPaC for checking.

Local government areas were a component of the DCDB.

Catchment areas follow the ridgelines and were obtained from Soil Conservation

Service. These were digitised from markups on 1:100,000 topographic maps.

Highways were added from a tourist map base, railways and roads from the DCDB, main rivers from the Digital Topographic Data Base and Crown land drainage from the DCDB.

Positional Accuracy

The information in the main was obtained from the DCDB which was digitised from 1:4,000 and 1:25,000 maps and consequently suitable for the 1:500,000 scale map.

Spot checks were done on the accuracy of data entry to the DCDB, dependent on the experience of the operator.

Attribute Accuracy

Government authorities were asked to check that the areas under their management appeared correct.

Logical Consistency Report

The DCDB was contained in the GIS product GENAMAP and this provided routine GIS logical consistency checking.

The flora reserves were checked to ensure that they lay within State forests.

All areas were clipped back to the region boundaries defined by the catchment areas.

Completeness

Crown land reserves were sourced from the Crown Lands Information Database.

Some unallocated Crown & undefined public land has been licensed to be used for purposes such as grazing, and this has not been identified.

INDEX VOLUME 1

SCOPE NOTE TO INDEXES

The Regional Report includes a detailed index to each individual volume as well as a combined index to all volumes.

Each subject entry in the indexes have been referenced to the section heading number in which the subject appears. In the combined index the section heading number is preceded by the volume number in bold.

For example: algal blooms, **3** 5.3.3; **4** 5.2.4

The bolded numbers denote volumes 3 and 4 and the light numbers denote section headings 5.3.3 and 5.2.4.

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