



Glenrock Lagoon Cultural Landscape

Conservation Management and Cultural Tourism Plan

NSW National Parks and Wildlife Service

Volume 1 - Main Report Chapters 1-6 Assessment of Significance

Griffin nrm

In conjunction with
National Heritage Consultants

January 2003

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Executive Summary

The Glenrock Lagoon cultural landscape is of State, Regional and Local significance because of its rich combination of attributes of historical, archaeological, social and natural significance. Today Glenrock is the site of strong attachments in both the indigenous and non-indigenous communities. Awabakal people maintain links with this area and other local Aboriginal people value it as evidence of the Aboriginal history of this region. Community groups participate in caring for Glenrock through bush re-generation and other activities. The Scouting Association has had a base in Glenrock since 1932 and has developed an historical attachment with the place. Glenrock is treasured and respected as an important recreational, scientific, cultural and environmental resource for the community's future.

The cultural landscape encompasses significant biodiversity and geodiversity. It contains the entire formation of the lower Newcastle coal measures, laid down in the Permian period. Their exposure by marine erosion along the beaches of the SRA shows a detailed geological history. The Permian sediments which separate the coal seams include fossil-bearing shales and, in the Dudley headland rock platform, fossilised tree trunks can be seen. This geological diversity is overlain by a rich mosaic of plant and animal habitats. The fauna of the region has been irrevocably altered by settlement but the vegetation communities reflect not only this most recent history but also the pre-contact environment.

Aboriginal people have been present in this landscape for over 10,000 years and probably since the earliest phases of the colonisation of the continent, over 40,000 years ago. They exploited the marine and geological resources of the region and used the beach as an important route of communication to the north and south. They shared their knowledge of this place with a succession of European travelers, explorers, the people of the early settlement of Newcastle, the missionary Threlkeld and others.

Geology once again shaped the 19th and 20th century history of Glenrock and the landscape is dominated by the relics, works, tunnels and shafts of coal mining. This coal mining phase brought Glenrock into the global context of empire, capitalism and the processes of

industrialisation and migration. The exhaustion of the coal seams and the growth of Newcastle as an urban centre saw the industrial landscape replaced by a landscape of recreation and urban services.

The mission of this CMCTP is to provide NPWS and the community with a creative, sustainable and achievable management approach to the Glenrock cultural landscape. This management approach is based on the integrated assessment of values, community involvement and consultation, creative interpretation and the identification of active management priorities.

Key strategies developed to achieve this mission are:

- The identification of an active management zone as a focus for interpretation, cultural tourism opportunities and for conservation actions.
- An Interpretation Plan which provides for the enhanced understanding of Glenrock's integrated values; for access and involvement for the Indigenous and non-Indigenous communities; and for the promotion of cultural tourism.
- A structure for community management partnerships to suit the different groups of stakeholders.
- A focus on long term conservation objectives based on the integrated assessment of natural, historic, Aboriginal and community heritage values.

1.0 Introduction

1.1 Background

This Conservation Management and Cultural Tourism Plan (CMCTP) for the Glenrock Lagoon Cultural Landscape was commissioned by the NSW NPWS. The NPWS engaged a consultant team from Griffin nrm, in association with National Heritage Consultants, to prepare the plan. This team was fortunate to have access to a broad array of research carried out over the past few decades. This included expert reports in the fields of Aboriginal archaeology, vegetation studies, history and historical archaeology, all of which will be acknowledged in full below.

Heritage and heritage management are dynamic fields where aims and interests change to reflect changing interests in the broader community. In view of this, the present CMCTP aims to address a number of issues which are of present concern, but have not been dealt with in past research. The issues can be summarised as:

- *A holistic approach to landscape*: today cultural heritage research has moved away from lists of different types of ‘sites’ and is endeavouring to develop more holistic approaches to landscapes as webs of cultural and environmental interactions;
- *Understanding heritage as culturally constructed or ‘socially grounded’* (Byrne et al 2001: 140): after several decades of ‘professionalising’ heritage, today heritage researchers are seeking ways to understand and acknowledge that heritage is constructed in the hearts and minds of people;
- *Landscapes of memory*: understanding that heritage is something built in people’s minds means that sometimes there will be little or no physical reminders of what places mean to different individuals or groups. This is particularly important when we think about the heritage of different groups in society, some of which may not have been able, or inclined, to build or memorialise in their important places.

The brief prepared by NPWS for this study acknowledged the above issues by requiring community based research, as well as a collaborative, multidisciplinary approach to Glenrock as a cultural landscape. Also new in this report is a consideration of how Glenrock's stories might best be told to visitors and how Glenrock might fit into new developments in cultural tourism in the broader Hunter region.

1.2 Report Objectives and Outcomes

Key project objectives are to:

- Assist NPWS to meet corporate objectives and statutory requirements;
- Establish the significance of the Glenrock Lagoon cultural landscape;
- Ensure balanced and compatible management of cultural and natural values of the Glenrock SRA;
- Develop forward looking management policies within the context of legislative requirements, the NPWS management framework and stakeholder issues; and
- Identify cultural tourism opportunities and to examine any issues surrounding such opportunities.

The outcomes of the CMCTP will be:

- The long term conservation management of the Glenrock SRA;
- The development of a cultural tourism and interpretation program for the SRA;
- To inform the Plan of Management for the SRA;
- To ensure best practice management of cultural heritage values; and
- To assist in the identification of long term sustainable uses for the place.

1.3 Location

The Glenrock Lagoon cultural landscape is a part of the Glenrock SRA, near Newcastle, NSW (Figure 1.1). The SRA occupies coastal land to the south of Newcastle city, between the suburbs of Merewether and Dudley. The Awabakal Nature Reserve is separated from Glenrock SRA only by the small village of Dudley. The location of the

Glenrock SRA is shown on Figure 1.1, and the area of the Glenrock Lagoon cultural landscape is shown on Figure 1.2.

1.4 Scope of the CMCTP

The consultant team has endeavoured to provide a holistic analysis of the Glenrock Lagoon cultural landscape, and of the SRA as a place and a management entity. It should be noted however that NPWS requested that conservation analysis and development of interpretive potential be concentrated on the “Glenrock Lagoon cultural landscape”, a zone in the northern half of the SRA within which many of the culturally significant sites and the extant Yuelarbah Track are situated (Figure 1.2).

1.5 Authorship

This report has been overseen and written, except for the Sections detailed below, by Tracy Ireland, Project Manager for the Glenrock CMCTP, on behalf of Griffin nrm.

- Section 3 was written by Aedeen Cremin.
- Section 4 includes contributions by Neil Urwin and Johan Kamminga (National Heritage Consultants).
- Section 5 includes contributions from Richard Baker.
- Section 7 includes contributions by Roger Parris, Neil Urwin and Johan Kamminga.
- Section 9 was written by Roger Parris and Tracy Ireland.

1.6 Sources

As mentioned above, a range of seminal research on Glenrock was available to the present study team:

- Stephen A.J. Bell, 1998, *Glenrock SRA and Awabakal NR Vegetation Survey*, Report to NPWS.
- NPWS, 1996, *Glenrock SRA Plan Of Management*, NPWS

- Hughes Trueman and Ludlow, 1990, *Glenrock SRA Assessment of Historic Places*, Report to NPWS.
- Manidis Roberts, *Glenrock SRA Visitor Use and Attitude Survey*, Report to NPWS.
- Godden and Associates Pty Ltd in association with Rosemary Broomham, 1989, *Historic Resource Survey*, Unpublished report for the NSW NPWS. This was an excellent, comprehensive survey of extant historic material in the SRA and the present study has little to add to it in terms of the location and interpretation of remains. Unfortunately the maps made for identified items could no longer be located.
- Newcastle Flora and Fauna Protection Society, 1983, *Glenrock Natural History*.
- John Grothen, 1978 (1st ed.), *The History In and Around Glenrock*, By the Author.

These studies formed a substantial baseline of information on Glenrock and we have not set out to “re-assess” these findings. Rather this study concentrates on issues not well covered by the above, notably, natural heritage values, Aboriginal archaeology, contemporary indigenous and other community significance and cultural tourism issues. In addition, in the historical overview in this report, considerable emphasis has been placed upon primary sources, especially those of the early colonial period.

1.7 Limitations

A number of important archives hold information pertinent to the history of Glenrock. These include the letters of Ludwig Leichhardt, the Merewether Papers, the Perce Haslam archive etc. Only limited time was available to investigate these archives.

Fieldwork was designed here to accurately map sites already identified and to re-assess their condition and interpretive potential. A comprehensive survey of Aboriginal sites was not required in the brief for this CMCTP. Existing data was relied upon.

The Bailey’s Orchard Historic Site, which is the subject of a separate Conservation Management Plan was excluded from the brief for this study.

1.8 Abbreviations

ANHC	Australian Natural Heritage Charter
CMCTP	Conservation Management and Cultural Tourism Plan
NFFPS	Newcastle Flora and Fauna Protection Society
NLA	National Library of Australia, Canberra
NR	Nature Reserve
NRL	Newcastle Regional Library
NRL LS&A	Newcastle Regional Library, Local Studies Archive
NRM	Newcastle Regional Museum
NSW NPWS	NSW National Parks and Wildlife Service
RNE	Register of the National Estate
SHI	State Heritage Inventory
SLNSW	State Library of New South Wales
SRA	State Recreation Area

1.9 Acknowledgements

The consultant team would like to acknowledge the contributions made to this study by all individuals who participated in the focus group meeting or participated in other meetings. All these individuals are named in Appendix 1.

Tiffany Knott and Cath Snelgrove managed and guided this study for the NSW NPWS and we thank them for their support and ideas.

John Shoebridge, Ed Tonks and David Wells all generously shared their research on the industrial history of the area.

Len Dyall also generously shared his knowledge of Aboriginal sites in the area and Ron Gordon of the Awabakal Land Council provided many contacts.

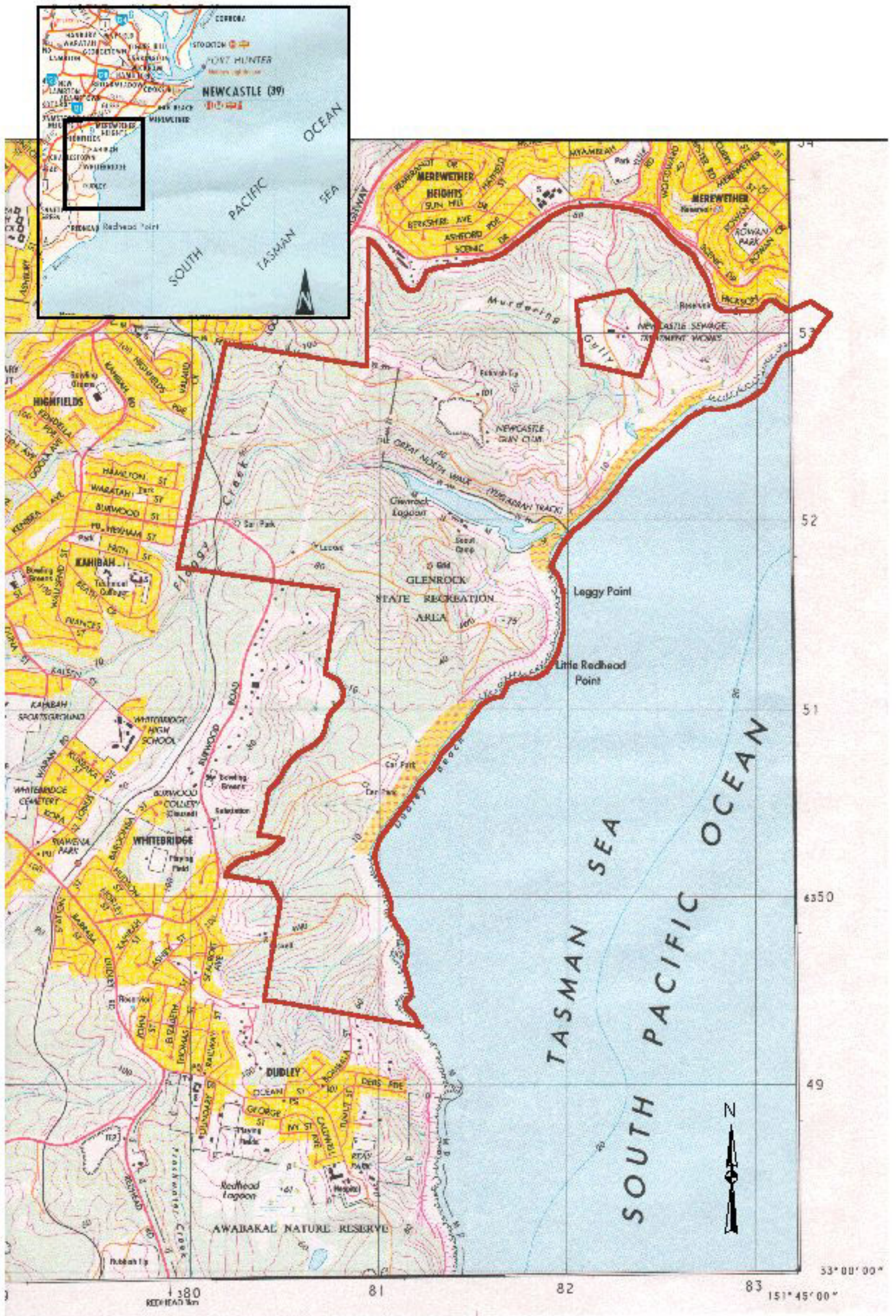


Figure 1-1: Glenrock State Recreation Area





-  SRA Boundary
-  Study Area

Figure 1-2: Study Area - Glenrock Lagoon Cultural Landscape

2.0 Glenrock: Place, Landscape, Context

The coastal areas south of Newcastle are not well known today outside the immediate district, but they encompass some very important cultural and natural landscapes combining a rich array of historical, biological and geomorphological features. The Glenrock SRA is among the best of them.

Physically the Glenrock SRA consists of the beachfront and parts of a dissected sandstone plateau, overlain by conglomerates interspersed with coal seams and fossil-bearing strata. The coal seams are part of the Late Permian Newcastle Coal Measures (Branagan and Packham 2000: 170).

The SRA, bounded by the residential Merewether suburbs to the north and by Dudley village to the south, can be divided approximately into three sections (Figure 2.1). In the north is the creek system of Murdering Gully, now partly occupied by the Burwood Beach Wastewater Treatment Works. This site is not a part of the SRA but is owned by the Hunter Water Corporation. Behind Smelter's Beach on the east are remains of the Burwood copper smelter (1850s-1860s) and of the coastal railway (1850s-1890s) which carried ore and coal to the quays at Newcastle. In the hinterland are the former sites of the Merewether gravel quarry and a gun club. Occupying a site on the northern perimeter of the SRA, on Scenic Drive, Merewether, is the site of Bailey's Orchard, with its associated structures, orchard and garden remains.

In the central section is Glenrock Lagoon running west-east into the Pacific Ocean. It is fed by Flaggy Creek and its affluents. On the south bank of the lagoon are the remains of the former Burwood Colliery (1880s-1890s), now much overgrown with lantana (Figure 2.11). Part of the Colliery's coal loader and railway site has been reused for the Glenrock War Memorial Scout Training Camp. This land is also not part of the SRA but held on separate title.

Just south of the lagoon is Little Red Head, named for the larger and more dramatic headland, Red Head, a short distance to the south of Glenrock. Aboriginal sites are found throughout this area and there exists an important historical archive relating to the Awabakal people who lived in and around the area of Glenrock. Awabakal people maintain links with this area today, while other Aboriginal people, in the broader Newcastle/Lake Macquarie community, have developed strong interests and attachments to the Aboriginal histories and Aboriginal places in this region and stress their importance for cultural identity.

To both the north and south of the lagoon is a complex subterranean landscape. This is made up by a dense network of shafts, tunnels and galleries created by the series of coal mines developed here through the 19th and 20th centuries. There were also a number of rail tunnels for the coastal railways which serviced the mines and the smelter. All of these are inaccessible today.

The southern section of the SRA, from the lagoon to Dudley, is bushland under which is an extensive system of coalmines, some of which were created by the Burwood colliery, most by its successor South Burwood/Lambton (1890s-1960s). Here the coast forms the beautiful stretch of Dudley Beach and thence, the rocky approaches to the next headland, Red Head, 2.5 kilometres south of the SRA boundary (Figure 2.7). Located between Dudley and Red Head is Glenrock's sister reserve, the Awabakal Nature Reserve. Awabakal NR, although so close to Glenrock, exhibits quite a distinct array of vegetation and habitats. It is much less accessible than Glenrock and is open only to walkers. The Awabakal Field Study Centre is located next to the Dudley School.

The Glenrock SRA possesses a diverse mosaic of habitats, all contained within this hemispherical area roughly 4 km long in the north-south direction and 2.5 km, east-west, at its widest point (Figure 2.8, 9). With these dimensions, few of the natural systems of the SRA escape maritime influence. The most common of these are salt and wind shear effects. These effects overlay the range of geological forms which characterise the combination of Permian coal measures and coastal geomorphology (Figure 2.10). The

result is a large number of vegetation communities in a small area – with correspondingly high floristic diversity. Synoptic statements on the fauna of the SRA are less easily made. No comprehensive surveys have been undertaken and existing lists indicate either this lack of survey intensity or a depauperate wildlife array. The presence of a number of “focal” species suggests that the former may be the case for birds and reptiles, but the lack of larger mammals and predators suggests low mammalian diversity.

This multitude of habitat areas is matched by the multitude of past uses and a number of present uses. In environmental terms the legacy of past uses has been to change the biology of the area, in some cases irrevocably, and to provide sites and avenues for continuing disturbance and ecological change. The legacy of this history of human occupation and exploitation is a richly layered cultural landscape. There is much community interest in and attachment to Glenrock. Local residents were involved in lobbying for its declaration as an SRA and many contribute much time and energy to bush regeneration groups, including a Friends of Glenrock group. There is also a great deal of interest in the history of Glenrock and its surrounding region, and both the Aboriginal and European histories have been avidly researched and documented by a broad range of amateur and professional researchers from the region.



Figure 2-1: Features of the SRA



Figure 2-2: Beachfronts of Glenrock SRA. North towards Merewether escarpment.



Figure 2-3: Beachfronts of Glenrock SRA. South towards Dudley escarpment.



Figure 2-4: Glenrock Lagoon, looking inland from the mouth.

Figure 2-5: Northern section of the SRA, Murdering Gully, which is dominated by the Treatment Plant.



Figure 2-6: Centre section of the SRA, dominated by the lagoon landscape.

Aboriginal sites are found throughout this area, reflecting use of lagoon and marine resources.

Figure 2-7: Southern section of the SRA, bounded on the north by Little Redhead Point.



Figure 2-8: A mosaic of habitats – wind-shorn heath and littoral rainforest.



Figure 2-9: A mosaic of habitats – gully flora and Eucalypt forest.

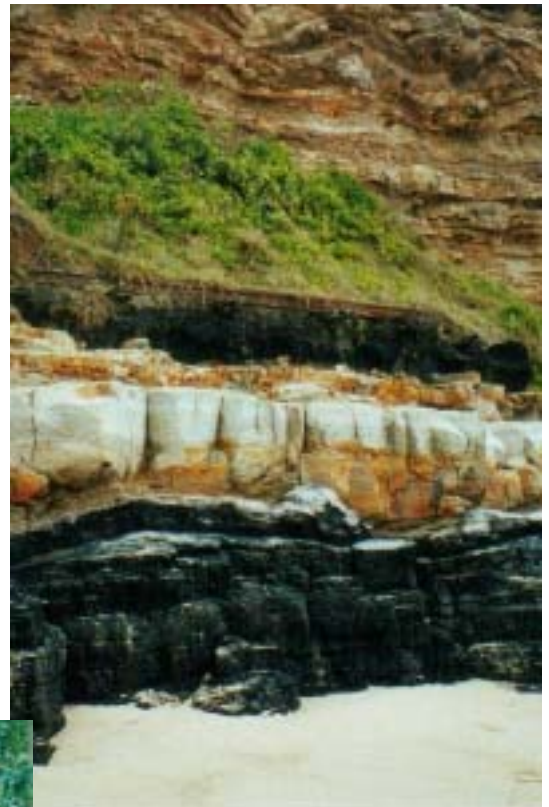


Figure 2-10: Geological diversity – exposed Permian coal measures.



Figure 2-11: Past uses and occupations – Burwood colliery ruins.

3.0 Historical Overview

3.1 Overview: Glenrock, A Cultural Landscape

Glenrock today is a much-loved landscape. The sweeping beach and surf, the quiet lagoon with its flocks of waterbirds, the dense bush of the ridges and gullies all combine to give an impression of unspoiled wilderness, of that Arcadian paradise that so beguiled the first British settlers at Port Jackson:

nothing can be conceived more picturesque than the appearance of the country... The land on all sides is high and covered with an exuberation of trees; towards the water craggy rocks and vast declivity are everywhere to be seen (Lieutenant Southwell's journal of 1788, cited in Bernard Smith's European Vision and the South Pacific, 1989, 180).

First impressions can be misleading. Glenrock had once been perceived as Arcadian, as many writers have testified, but what we see today is a complex cultural landscape. A landscape occupied and managed by Aboriginal people for thousands of years, a landscape which was intensively mined for over a century, and a landscape which during the twentieth century was used for recreation, agriculture and treasured for its natural beauty.

Glenrock is a resilient landscape. It retains physical traces of many aspects of its environmental and human stories. The sea cliffs and rock platforms set out its geological history with an almost didactic precision. Its vegetation tells stories of fire, deforestation, regeneration and invasion by galloping exotics such as lantana and bitou bush. A stroll westwards from the beach towards Glenrock Lagoon is a chronological journey through recent history: past Awabakal middens and campsite, past the fragmentary remnants of the 1860s railway line and the 1880s 'Undermanager's house', to the substantial 1890s remains of the Burwood colliery, almost concealed in the lantana.

But many of the stories of Glenrock exist only in the memories and traditions of the communities who have been involved with this place. These communities are diverse: they may be bushwalkers and surfers; Awabakal and other Aboriginal people; men and women involved in the Scouting movement; miners and their families; the families of local orchardists and many others. We have sought out some of their stories for this report.

The narratives of Glenrock can be read – or told - in various ways. There is a remarkable visual record, which can only be touched upon here. There are stories of children who lived, worked and played here, which it would be interesting to explore through oral histories. There are the stories of the Awabakal and other women. There are stories of the sea and of the orchard as well as those of the mine, and the railroad. There is the broader story of Newcastle and the important part that the people of Glenrock played in the creation of that city. There are stories with a global dimension: the development of the science of geology, principally through the work of Leichhardt, the rise of venture capitalism seen through the career of James Mitchell, the story of Australians' involvement in two world wars and their participation in international community movements such as scouting and conservation.

3.2 A Land of Plenty: the pre-colonial Aboriginal cultural landscape

The archaeological evidence of Aboriginal occupation, presented in detail in Section 4 below, suggests that the area could have been visited or lived in since the Pleistocene period. Because of fluctuating sea levels however, the earliest archaeological sites would now be buried under estuarine sediments or submerged beneath the sea. The remains now visible on today's coastline are likely to be relatively recent, deposited over the last 3000 years. At least six coastal archaeological sites have been recorded. The bushland has hardly been researched but three Aboriginal archaeological sites have been located along Flaggy Creek.

In the colonial period, the Reverend Lancelot Threlkheld, who will be discussed more below, identified the area of Glenrock as within the territory of the Awabakal people (Maynard n.d.:13). Glenrock Lagoon and its archaeological record, are particularly important because of the rich and detailed historical material relating to the Awbakal people and their life in this area. Perhaps most remarkably, Threlkeld recorded some of the names of significant places and things around Glenrock:

Awabakal Name	English Translation
<i>Pillapay-Kullaitaran</i>	<i>Glenrock Lagoon.</i>
<i>Kurraka</i>	<i>Entrance to Glenrock Lagoon.</i>
<i>Koiy'o'g</i>	<i>Where the grass and the sand meet at Glenrock Lagoon</i>
<i>Puntei</i>	<i>The sand spit forming the entrance of Glenrock Lagoon</i>
<i>Buttaba</i>	<i>Name of a hill on the margin of Glenrock Lagoon</i>
<i>Kona-konaba</i>	<i>Murdering Gully.</i>
<i>Nikkin</i>	<i>Coal (as in the coal seam along the ocean cliff in Glenrock SRA).</i>

This mosaic of landscape, archaeological, linguistic, ethnographic and historical information combines to provide a strong sense of Glenrock as an Aboriginal cultural landscape showing both deep continuities and dynamic change and cultural interactions.

Colonial observers declared that the Awabakal were very tall people and in excellent health due to the abundance of good food sources in the area (Maynard n.d.:19). The rich ecology of Glenrock and of its coastline provided many resources, not just food but also an abundance of easily-quarried stone suitable for tool manufacture, particularly 'Nobby's tuff'. Colonial accounts, which we will look at in detail below, discuss fishing, shellfish gathering, diving for lobsters, hunting in the forests and gathering edible roots and fruits (Maynard n.d.:19). The call of '*muckeroo barley marugey*' (let's go fishing) must have been heard often around the camp sites, wrote Perce Haslam, a noted local journalist who conducted a life time of research on the Awabakal people and their culture (quoted in Maynard n.d.: 20). He also mentions that the beaching of a whale, a sight last

witnessed at Glenrock in 1974 (Grothen 1988: 64), was an occasion for feasting and the Awabakal people would invite their neighbouring groups from up and down the coast to join in (Figures 3.1, 2).

Early colonial observers commented on the natural abundance of the Glenrock area. The *Skottowe Manuscript*, which is discussed further below, recorded the Awabakal name for various species observed in 1813 (Figure 3.3). The plates of fish, for instance, give the following names:

1 John Dory	Bidgi Bidgi Wang	[<i>Zeus faber</i>]
2 Mullet	Warringing	[fam. <i>Mugilidae</i>]
3 Flat head	Wallangara	[<i>Platycephalus fuscus</i>]
4 Rock Cod	Magong	[river black fish, <i>Gadopsis marmorata</i>]
5 Gurnett	Kirgill	[blenny, sp. not identified]
6 Travaille or Cavallia	Burrangine	[silver trevally, <i>Pseudocaraux dentex</i>]
7 Snapper	Kurrangang	[<i>Chrysophys auratus</i>]
8 Groper	Kurralgall	[<i>Achoerodus viridis</i>]
9 Parrot Fish	Bollowoolloo	[Maori wrasse, <i>Ophtalmolepsis lineolatus</i>]
10 Unicorn Fish or Leatherjacket	Yuagunyang	[<i>Meuschenia trachylepis</i>]
11 Barracouta	Koollambarung	[long tom, ? <i>Strongyluria leiria</i>]
12 Leopard Shark	Waabigung	[wobegon shark, <i>Orectolobus ornatus</i>]

The plate of snakes gives the following names:

1 Brown	Tirombi	[<i>Pseuodnaja textilis</i>]
2 Black	Mooloo	[red-bellied, <i>Pseudechris porphyriacus</i>]
3 Diamond	Baralban	[diamond python, <i>Morelia spilota</i>]
4 Water	Kurridaa	[yellowbellied sea snake, <i>Pelanus platurus</i>]
5 Grass	Whyogan	[unidentified, may be a lizard]

Daily life was recorded by several artists, most notably by Joseph Lycett around 1817. The *Skottowe Manuscript* gives a list of 'Native Arms &cc' (Bonyhady 1988: 71), which gives the Awabakal names:

- Mooting fish spear
- Camoy spear
- Hyllimna shield
- Wamra throwing stick
- Waddy battle club
- Cadjawang battle club
- Hyba hatchet
- Wamering 'thrown to disperse a Croud'
- Tunde basket
- Cooronong 'calabash in which they carry water'
- Herringung fishing line
- Walliyan fishing hook
- Genyang net
- Murribe 'for warding off the Blows of the Battle Club'

3.3 The Valley of Palms: Colonial Natural History at Glenrock

The first definite account of the British visiting Glenrock is in 1804, when three convicts escaped from the penal settlement at Newcastle and made their way down the coast as far as Broken Bay (Goold 1981: 12). For convicts it was a place of possible freedom, but for the free men, the military, clergymen and visitors, it was a place of recreation and, if they were scientifically inclined, of observation. The lush vegetation attracted attention:

The path or cart-road they followed [through Glenrock] passed through a hilly country covered with forests. The gum trees were the most prevalent and many were of great size, growing close together without any underwood. The gum tree, of which there are many kinds, is peculiar to

New Holland. It has an inner bark of about an inch thick, enclosed by an outer one which is quite thin. The latter is shed every year, which gives their trunks and branches a peculiar appearance of many colours, from pure white, through all the shades of yellow, olive, and red, to a deep brown. These colours, showing through the green foliage, produce a very striking effect on a stranger and the contrast is heightened by the occasional sight of a black and withered trunk, from which the bark has been stripped by the natives to make canoes, or by settlers to roof their houses (Hale and Agate, 13.12.1839, in Gunson 1974, 156).

You'll have heard of the Valley of the Palms¹. It happens that there are very few palms² there, which makes it so much the richer in other kinds of plants. It's a narrow rocky gully with steep sides which widens out towards the sea. The slopes are covered with the most luxuriant vegetation; trees and bushes are bound together by climbers; and the trunks of the trees are covered with parasitic plants. Floods, that have swept down with irresistible power during the heavy winter rains, have uprooted big trees and have produced the wildest confusion of closely entangled life and death (Leichhardt, 12.10.1842, in Arousseau 1968, 532).

I found a great many plants more in Newcastle; and the Valley of Palms, a narrow wild ravine, has given me perhaps more than 70 new ones (Ludwig Leichhardt, 11.10.1842, in Arousseau 1968, 1108).

The fauna were equally abundant and remarkable. In 1813 Lt Thomas Skottowe, commanding the penal settlement at Newcastle, commissioned the convict artist Richard Browne to illustrate his *Select Specimens from Nature of the Birds, Animals &c &c of New South Wales* (Figure 3.4, 5). The work was never published and is now referred to as the *Skottowe Manuscript* (Bonyhady 1988). It shows many species and, as noted above, occasionally gives Awabakal names.

In 1827 the 21-year old Lt William Sacheverell Coke of the 39th regiment, a Sandhurst-trained officer, was appointed as second-in-command at the convict station. He kept a diary which gives a vivid insight into his life over seven months. Within walking distance of Newcastle, Lt William Coke saw - and often killed - a whole array of birds

¹ So named by the Newcastle clergyman and geologist, Rev. C.P.N. Wilton. It is probably the upper reaches of Glenrock Lagoon and the Gully of Flaggy Creek, which could be reached through the estate of A.W. Scott, with whom Leichhardt was staying at the time

and land animals: quail, King parrots, Lowrie parrots, ground parrots, ‘such thousands of Blue Mountain Parrots [rainbow lorikeets] that they were actually a nuisance, they made so much Noise’, black cockatoo, Pidgeon, ‘two of which weighed 2lbs’, black swan, ducks, widgeon’, ‘immense emus; ‘hundreds of pelicans’; ‘old man’ kangaroo and ‘wollobys’; a Cat bird’, a pigeon, a ‘Saturn [satin] bird’ and a ‘Regent bird’ (the bowerbird, *Sericulus Chrysocephalus*, first named by Skottowe); diamond and black snakes (Hunter 1997, 31-53).

3.4 The Land Beneath the Land

The geology of this area also attracted a great deal of interest: the coal seams, which were evident all along the sea cliff, and the fossil wood found within the SRA were described and discussed throughout the nineteenth century (Branagan 1972, 37-76). Branagan (1972:11), Grothen (1988) and Turner (1997:4) all discuss the famous first discovery of coal by Europeans in Australia, stating that it was likely to have been at the mouth of Glenrock Lagoon on the 30th of March 1791.³ This discovery was made by the escaped convicts William and Mary Bryant, their two children and nine fellow escapees, during an epic journey from Port Jackson to Timor. The exact location of their discovery will probably never be known.

The observations made by Alexander Berry (1822), C.P.N. Wilton (1828-1833), J.D. Dana (1840), Ludwig Leichhardt (1842), Paul de Strzelecki (1845), W.B. Clarke (1848) and T.W. Edgeworth David (1907), all advanced the understanding of the geology of Australia (Branagan 1972). Leichhardt spent several days in the SRA area, observing the coal seams and fossil plants ‘I studied the geological section exposed in cliffs close to the lagoon’ (31.10 1842 in Arousseau 1968: 570) (Figure 3.6, 7). On his return to Sydney in 1843, he wrote up his work in German in two papers, one on the coal deposits of

² These are likely to be *Livistonia australis*, also known then as ‘cabbage tree palms’ on account of their edible growing points.

³ This does not seem to fit with the calculations made by Bligh in 1791 (after 36 hours sail), or Tench in 1793 (2 degrees north of Port Jackson) or with the evidence from James Martin, one of the escapees, ‘after sailing two days’. See Currey, 1963, 21-22 and Ingleton 1988, 12-15.

Newcastle, the other on Australian geology, both published posthumously (Gellert 1988: 5; Leichhardt 1843). He stated that:

I am convinced that the geology of Australia must in general commence at Newcastle; and that the geologist must gradually proceed hence towards the North, South and West; because a series of beds are exposed at this locality, which neither Westward nor perhaps along the whole coast lines of Australia may appear again so completely exposed (cited in Branagan 1972: 61).

This echoes Berry's earlier statement that 'There in one day more information may be obtained than in other places in many years' (1822: 234). While the coal seams were of obvious economic interest to everybody, scientists were equally interested in the petrified plants and other fossils. In an 1829 letter on 'The Burning Mountain of Australia' [Mt Wingen], Rev Wilton alludes in passing to the abundance of fossils:

The zoophytes on the coast of Newcastle as well as the shells are many and various. During my merely short stay there I collected specimens of the latter to the number of 159 species. Several of these are beautiful and rare (Sydney Gazette, 14 March 1829).

3.5 A Shared Land

After the Newcastle penal settlement was set up in 1804 the Awabakal mingled freely with the Europeans (Brayshaw 1986: 52-57, Maynard n.d.). They contributed to the *Skottowe Manuscript* both their words and, more than likely, the specimens depicted. In 1819 Governor Lachlan Macquarie, visiting the penal settlement, very much enjoyed the corroboree organized by the commandant, Captain James Wallis: Burrigon 'king of the tribe' with 40 men, women and children 'entertained with a Carauberie in high stile for half an hour in the grounds in rear of Govt house' (*Macquarie Journal*, cited in Turner 1997: 92-93). Macquarie thanked them with gifts of rum and maize, which appear to

have been consumed there and then by both the black and the white guests (Figure 3.8, 9, 10).

The Awabakal supplied food to the settlement and often took free men on hunting and fishing expeditions. John Bingle, the shipwright and merchant, made such a trip in 1821:

Our parson, the Rev. G.A. Middleton⁴ (who was an especial favorite with the blacks) started with myself with the whole tribe of upwards of one hundred (100) on a walking trip to Lake Macquarie; our necessary supplies, blankets, &c, they carried on their heads. On arrival I was enchanted with its beautiful scenery and can never forget it. The whole surrounding country and lake were serene and still, solitude reigned, no tree disturbed, and no trace of the white man's civilization, but all in its natural wild state. We enjoyed all the wild sports of the Australian bush life in its primitive state as the Aborigines of that day (before they were contaminated with our vices) were accustomed to enjoy them. Shooting, fishing, kangarooing and hunting – our game was ample for us all. They supplied us also, by diving, with the finest mud oysters, for which the waters of the lake are noted, these we scalloped on our bush fires, and we spent five or six days of as much enjoyment as I ever had in any part of the world (Bingle 1873, 13-14).

In 1825, the missionary Rev. Lancelot Threlkeld noted the good relations between the Aboriginal people and the tiny town of Newcastle, which now housed about 800 free settlers and about 250 convicts, many having been moved to Port Macquarie in 1821:

There is a confidence manifested in the Europeans by the natives which it is to be wished may never be violated. ... It is pleasing to observe the interest that many take here in the aborigines although that interest is not manifested in the most beneficial way to them, for instance supplying them with spirits &c &c (Public Journal 15.1.1825, Gunson, 85).

In 1827 Lt William Sacheverell Coke, then second-in-command at the convict station, vividly decribed his adventures around Newcastle. His main recreations of fishing, shooting and stuffing specimens, brought him into contact with several Aboriginal men

⁴ George Augustus Middleton was chaplain at Newcastle 1821-1827. He resigned to work his land near Paterson rather than move to the penal settlement at Port Macquarie (Hunter 1997, 61)

whose company he obviously enjoyed. Desmond, 'chief of our tribe' and Magill brought him oysters, lobster, shark, mullet, tailor, and 'plenty of snapper'. The following extracts show something of the relationship between Coke and the Awabakal he was in contact with:

3 Feb. Sent Desmond out fishing, he brought me back 12 large snapper, each weighing 15 lbs.

7 Feb. Amused myself throwing Spears with the Natives – Sent Desmond to shoot Kangaroo on the opposite peninsula. The Gins (Native Wives) very joyful and singing, most of the men being out on an expedition.

11 Feb. Desmond came – his wife brought me some Mullet.

13 March. Rev. Middleton went to an Oyster Feast with the blacks. I was to have accompanied him and we were to stay in the Bush two nights. Desmond brought mullet.

10 May. Numbers of Blacks in New Castle coming for clothes all naked. Magill brought me three black Duck. Grand Corroberry.

28 May. Saw some Sperm Whales in the offing. Magill shot me three widgeon.

7 June. Went out Kangaroo Hunting, took my Servt and 2 Black Boys with me. The Dogs killed several in the thick Brush but we only brought one home - Before the Blacks put their hand in the holes of trees (to catch the Opossum) they thrust a stick and if hair is attached they seize the animal with their hands without fear of Snakes.

12 June. Went out Kangaroo Hunting .. took my Servt and 2 Black Boys – I brought two Wolloby's home – we generally lose two or three which the dogs kill, the brush being so terribly thick

13 June. Stuffed a Saturn [satin] bird that Magill and Campbell brought me.

16 June. Went out Kangerooing on the North Peninsula, had two chases but my Dog too distant – after lunch went to the Wolloby Ground⁵ I shot some Duck – McIver and Brown (black Boys) accompanied me as usual.

25 June. Went out Shooting towards Red Head with Berkely and a black. Killed 2 black Wolloby. Hard work to carry them to New Castle. Berkely knocked up completely – Black wanted to lay down and cook the Wolloby and stick by them till all eat⁶.

6 July. Went out Shooting took Joney a black with me. On our return Parmegony had arrived, but he brought only two black Ducks, his Shot being by far too small to kill the Large Kangaroos. It appears the Green or Diamond snake is harmless the blacks say he

⁵ This was a flat sandy area inland from the town, which later passed to the AA Company (Hunter 1997, 73). It is shown in the Lycett painting 'Inner view of Newcastle', c. 1818 (Turner 1997, pl.6).

⁶ This may be a direct quote, like the passage on snakes, of 6 July.

*very quiet fellow but the black snake is deadly they say Snake bite you, not waddie
[strike] him or both die together – If snake live, both live.*

7 July. Sent Parmegony to Ash Island – he returned with two immense Hawks only, fine sport for him as they are a delicious morsel.

10 July. Went out a Shooting in the Morning. [Officer] Macdonald and Joney (black) accompanied me.

14 July. I went out shooting accompanied by Parmegony, only killed one Wild Duck, a large black Walloby escaped us badly wounded, we made a Circuit of about 12 miles.

6 Sept. Went with Desmond to the Shore. He dived in a tremendous surf from the Rocks and brought a Lobster. Another black named Robert brought two up.

20 Sept. Sailed for Sydney. Savage life undoubtedly preferable to civilized.

3.6 An Awabakal Man

Individual Awabakal men were often mentioned by the colonists. Information about Awabakal women in colonial times is far more sparse and Maynard suggests that Awabakal men would not have talked about women, even if they had been asked (Maynard n.d.:6). The Awabakal man who stands out in the historical record is Wepohng, better known as Biraban or Magill. He was clearly a superb linguist and a great teacher and is probably largely responsible, through translation, for much of the information Threlkeld collected. He moved freely between Lake Macquarie and Newcastle and was well acquainted with the various routes through the SRA. Born c. 1800 he had spent time in Sydney, where he learnt to speak English fluently. In 1821 he was sent with Captain Francis Allman to set up the new penal settlement at Port Macquarie, where he also acted as bush constable. On his return to Newcastle he married Tipahmahah, by whom he had a son Yerowwa/Francis, born in 1823 (Gunson 1974: 317).

Biraban accompanied Threlkeld to Lake Macquarie in 1825 and helped build the mission, both literally and figuratively. Together they translated St Luke's Gospel into the Awabakal language (1829). This work was recognized by Governor Darling's gift of a king plate, inscribed 'Barhaban or Macgil, Chief of the Tribe at Bartabah, on Lake Macquarie: a reward for his assistance in reducing his Native tongue to a written language' (Turner and Blyton 1995: 39-40).

This report is not the place in which to discuss the concept of ‘conversion’ but we might note that Biraban fits historically into an important group of people who act as intermediaries between evangelizers and evangelized. Threlkeld thought that the government should make positive efforts to find:

young Blacks from the interior, in the hostile parts, protecting and supporting them at this place [his mission], communicating to them religious and civil instruction; and whenever they express a wish to return, permit them, that they may communicate their new ideas to their own people, and thus they would become mediums of intercourse for the Protectors and others with the tribes in the interior, in the same manner as M’gill and other blacks are to me in these districts (1838 Report, in Gunson 1974, 145).

3.7 Awabakal Life around Colonial Newcastle

The colonists took a great interest in their neighbours, the Awabakal men and women who were going on with their lives all around the settlement. The cover of the *Skottowe Manuscript* shows an Aboriginal camp in front of a mountain, perhaps the Sugar Loaf. This certainly had to be near Newcastle, where the artist, Richard Browne, was still a prisoner, which suggests he was allowed to go out on painting expeditions, perhaps accompanying Skottowe (Figure 3.12). The officers in charge of the penal settlement seem to have had a certain amount of leisure, much of which was employed in walking or riding around the district. Lt Coke had time to attend corroborees and to observe scenes of Awabakal life. He sketched some implements and headwear. The following extracts are his principal observations. Although he doesn’t say so, he must have had some sort of interpreter or Biraban-like guide to explain to him what was happening:

11 Feb. Natives were driving the thunder and lightning away by their yells – they had a stone fight after burying a dead man – painted themselves white for mourning.

21 July. In the Evening when natives throwing Spears I made one of them light a fire by friction, this was easily performed in two Minutes.

23 July. In the Evening the sky was very black and the Natives began screeching, youling and threatening to drive the Storm away. They never stir in the dark for fear of Devil, but lay with their faces to the ground.

Coke was particularly interested in ‘battles’ about which he was later to say ‘the natives seem to look on these fights in much the same light as English youths regard a football match, and to derive pretty much the same amount of enjoyment from them’ (Hunter 1997, 94):

21 March In the evening when walking out with [Superintendent] Macay fell in with a camp of natives, they were Corroberry. The men performed war gestures while the women sung and beat time on the ground with their hands. About an hour before there had been a bloody fight, we saw several with blood flowing from their heads – Whilst we were talking with them, a spear was thrown by some person, which had liked to have killed a Man, the alarm was given through the Camp, all were in Arms in a moment. I believe it was one of themselves who was in passion took this treacherous means of killing if possible his Enemy.

7 May. Met a black who just came from the Field of Battle, informed me Desmond was run through the thigh with a spear and wounded on the leg with a Bomebring but he killed one of the Enemies, spear passed through his Arm in to his Heart.

8 May. Saw Desmond laying wound, the Bomebring wound pained him terribly. Spear wound not painful. He said I am wounded at last. I often told him he would be.

21 Aug. In the Morning a strong Band of blacks in battle Arrray arrvd from Port Stephen. Each man was naked (except a belt made of Opossums skins round the Loins) and painted, they were armed with Spear, Shield waddie and Bomabring. Tomorrow they are to fight the Main River Blacks, they all paid me a visit and I gave them Tobacco, they are confident of Success and looked very well with their Hair tied up and ornamented with flowers and feathers.

25 Aug. In the Evening walked to see the blacks fight. The Main River natives had refused the combat. Therefore the New Castle blacks and Port Stephen were drawn out opposite one another, and alternately a man of each stepped to the front to challenge any one. There being very little animosity amongst, not more than twelve Single Combats took place – I was near being struck by a bomerbring but a black boy saved me.

28 Aug. At Noon went to the Flat alongside the Bay to see the Port Stephen and Reid’s Mistake Blacks fight. Only one man was speared as it was chiefly a Waddie and Bomerbring Battle, several heads were broke.

3.8 Passages and Encounters 1820s

Europeans, probably following Aboriginal pathways and routes, used Glenrock as a passage between Newcastle and Reid's Mistake/Lake Macquarie, a dozen kilometres to the south. Access was originally by the beach, across the lagoon and around Red Head, but in 1825 Rev. Lancelot Threlkeld cut a track overland, west of the lagoon.

Threlkeld, newly arrived from the Society Islands, had been invited to set up a mission on behalf of the London Missionary Society. The government had set aside 10,000 acres of land between Red Head Lagoon and the entrance to Lake Macquarie, where 'the natives were numerous, and where the fishing tribes could obtain a plentiful supply of fish from Lake Macquarie' (Jan. 1825, in Gunson 1974, 85).

Threlkeld first walked to the Lake by the coast route:

.. we proposed to walk as far as we could to have some view though but distant of Reid's Mistake ..we went about 9 miles [from Newcastle] to a place some distance beyond a Mountain called Red Head. The walk was very fatiguing as we had to travel over a very rocky part of the sea shore one part, and a deep sand the other part on the level, and steep hills to encounter before we got to the place proposed to visit. At length we were gratified with a very extensive view of Macquarie Lake (Public Journal 12.3.1825, in Gunson 1974, 86).

Access to the proposed mission site, through the area of Glenrock, was difficult:

Went part of the way to the place where we expect to reside until we came to a creek. Here it was necessary to make a bridge and our servant man with the assistance of three natives cut down trees and we accomplished one in two days so that we could go over on horseback (Public Journal 20.5.1825, in Gunson 1974, 88).

Went out this day to Reid's Mistake to a place called Bad debah; we were 4 hours ½ going out and 3½ returning. We found it very difficult in going there but not so much so on our return; apprehend that it is possible and but barely so to get a cart out that way (Public Journal 26.5.1825, in Gunson 1974, 89).

When Threlkeld finally fixed on the spot he wanted, which he now called 'Biddobar', he and his Aboriginal assistants cut a track overland from Newcastle along the plateau ridge.

Went out to mark the road to be able to find the place again; this is done by chipping the barks of trees as we proceed. Find that by going on the mountains all the way a cart can be got out by a team of Bullocks. Two days were occupied in marking the way through the forest. Our workman accompanied with the natives Mac'Gill, Dismal and another one went to fall [sic] the trees to make room for the erection of our house and prepare for planting some Indian corn there. The natives appear anxious for our settling out there (Public Journal 7.6 and 9.6.1825, in Gunson 1974, 90).

These early tracks and roads established routes which are reflected in the current road system. The line of Burwood Road, for instance, along the ridgeline heading south from Glenrock Lagoon, could reflect the path originally established by Threlkeld from Newcastle to his mission site.

There is track from Newcastle leading south westerly to Lake Macquarie, which it reaches at the residence of Reverend Mr. Threlkeld, situated in the centre of a tract of 10,000 acres, reserved for the aboriginal natives (Directory 1832, 146).

We, accompanied by our old guides McGill and Boatman, proceeded [from Lake Macquarie] to Newcastle. Our way lay chiefly along the road cleared by L.E. Threlkeld to the old missionary station, thro' an open forest of hills covered with Red Gum We rewarded our sable companions who had been joined by another of their tribe on the way, named Macquarie, with bread, sugar, tea and tobacco: in coming along we saw several other parties of Backs whom our companions [had] collected (Journal of James Backhouse 2.5.1836, in Gunson 1974, 129)

3.9 Martial Law and its Consequences 1824-1838

Threlkeld became a witness to the terrible events of the late 1820s and 1830s, during which time the Aboriginal population of New South Wales was literally decimated, i.e. reduced to a tenth of its number . He was one of the very few people who was prepared to speak up about it, as a result of which he was ridiculed and ignored (Reynolds 1998,

47-70). Throughout the Colony settlers saw Aboriginal claims to the ownership of land as an insuperable obstacle to their own ambitions. The attitudes expressed in the 1820s were so extreme that many Australians today have difficulty in believing them. But they are a matter of record and worth noting, because they represent the mind-set of the mid-1820s, just at the time when Newcastle and the Hunter Valley were being opened up.

Trouble started in the Bathurst-Mudgee area. In 1820 there had been only 114 British and 33,733 sheep in the region, but by 1824 there were 1267 British and 113,973 sheep, with 37,085 hectares cleared (Elder 1988: 53). The Wiradjuri started to spear cattle and stockmen, which gave rise to a remarkable debate, under pen names, in the weekly *Sydney Gazette* (Reynolds 1996a, 52-56). The anti-Aboriginal position was put by 'Fidelis', on 29 July 1824: 'Do not the acts of inhumanity already committed [i.e. the spearings] call aloud for the extirpation of such lawless marauders?'. Although 'Philanthropus' responded on 5 August that 'If we do not approve of their conduct in molesting our people or property, how can we approve of our own conduct, in having first invaded their land, and, in a great measure, deprived them of their pleasure and subsistence?', 'Honestus' felt a show of force was needed: 'Every true friend to the aborigines must desire that they should be made to learn *by terror* those lessons which they have refused to acquire under a milder discipline' (quoted in Elder 1988: 57, my emphasis).

Pressured by William Cox and his fellow-pastoralists, Governor Thomas Brisbane, declared Martial Law on 14 August 1824, without consulting the British government. This meant that the NSW military and the newly-formed Mounted Police were now effectively licensed to kill. Threlkeld described this:

One of the largest holders of Sheep in the Colony [William Cox], maintained at a public meeting at Bathurst that the best thing that could be done, would be to shoot all the Blacks and manure the ground with their carcasses, which was all the good they were fit for! It was recommended likewise that the Women and Children should especially be shot as the most certain method of getting rid of the race. Shortly after this declaration, martial law was proclaimed, and sad was the havoc made upon the tribes at Bathurst. A

large number were driven into a swamp, and mounted police rode round and round and shot them off indiscriminately until they were all destroyed! ... Men Women and Children! (Reminiscences 1825-1826, in Gunson 1974, 49).

Martial law ended on 11 December 1824 when the Wiradjuri surrendered. At the same time Brisbane was dismissed by an outraged British government, and called home in disgrace (Coe 1989, 64). He was replaced by Governor Darling, who decided to turn his back on the situation. When approached by the Hunter Valley settlers Darling wrote:

'Vigorous measures among yourselves would more effectively establish your ascendancy than the utmost power of the military...I strongly recommend you to take measures for your own defence, and you may be satisfied that in any exertion you make, you shall receive every necessary support (quoted in Reynolds 1996b, 35-36)

This was effectively giving 'licence to kill' to the settlers, rather than to the police. The outcome of this attitude was that the settlers engaged in a series of massacres, which only Threlkeld had to courage to condemn:

The indiscriminate slaughter which has blotted the Colony with the foul stain of innocent blood, has been committed in open defiance of the laws of Nations, or of the more high authority the Law of God. .. The past years of this Colony have been fearfully tinged with the shedding of innocent blood; and it is to be feared that much blood will yet be spilled, ere peace is established in the interior (Report of 1838, in Gunson 1974, 145-146)

This did not abate until 1838, when the 12 stockmen who had killed 28 men, women and children at Myall Creek, near Liverpool Plains, were prosecuted. At first all were acquitted, but a new trial found seven of the men guilty and they were hanged. From then on the settlers were more cautious. But by then it was too late.

3.10 The Impact of Settlement: Changing Relations

The Awabakal along the coast were spared from massacre because their land was not suitable for pastoralism, but other factors intervened. The 1828 census shows that there

were about 760 Aboriginal people in the Newcastle/Lake Macquarie areas but by 1837 the *entire* Aboriginal population between Sydney and Port Macquarie was recorded as only 1220 people, perhaps only one third of the original population.

The hinterland of Lake Macquarie was lawless, a hiding place for bushrangers and cattle duffers and also the home of unscrupulous settlers (Clouten 1964: 51-67). Threlkeld records many instances of brutality, particularly to women and girls:

The un-matrimonial state of the thousands of males prisoners scattered throughout the country amidst females, though of another colour, leads them by force, fraud or bribery to withdraw the Aboriginal women from their own proper mates and disease and death are the usual consequences of such proceedings. The Official return from one district gives only two women to twenty-eight men, two boys and no girls! The continued ill-treatment and frequent slaughter of the Black women can only be deplored, perhaps without remedy (1837 Report, in Gunson 1974, 137).

Threlkeld's congregation had declined from 64 at the first mission at Battabar, on the east coast, to 15 at his second mission of Punte, on the western shore of Lake Macquarie. Many had died from alcoholism and European diseases, or been 'destroyed by force of arms' (1837 Report, in Gunson 1974, 137), while others had simply moved away:

The blacks have nearly forsaken this Lake, having found at Newcastle employment suitable to their habits; some being engaged in fishing, some as water carriers, messengers, servants and some on board the numerous vessels, according as their services are required. Thus they seldom appear at our place, the employments already stated being more congenial to their taste than any of an agricultural nature (1840 Report, in Gunson 1974, 166).

By the late 1830s white attitudes towards Aboriginal people had changed from the free and easy companionship that Lt Coke and his friends had experienced a decade earlier. The greed for land meant that Aboriginal people were no longer a part of the community, unless they could be put to work. Many did work, as Threlkeld noted, but for both them and others, grog became a part of life. The ethnographers Horatio Hale and James Agate,

who were part of a U.S. study voyage around the Pacific, noted this in 1839 when they walked from Newcastle to visit Threlkeld:

Our travelers set out in company with a troop of natives, headed by the two whom they had hired. ... Jemmy refused to start until he had received a couple of shillings, which he forthwith converted into a loaf of bread and a bottle of grog. When about a mile for the town he asked permission to take a drink; and a cup of bark was produced from a thicket where it had been hidden, whereupon the contents of the bottle as well as the loaf were shared out among the troop. The two guides took no more than an equal portion; for, according to the custom of the natives, all share alike. The cup was made of a piece of bark of the ti-tree, which resembles that of the birch, about a foot square. The ends were folded in and tied together to form a cavity of trough-like shape. Such cups are called by them taudé (13.12.1839, in Gunson 1974, 156).

Threlkeld was very worried by the loss of morale among Aboriginal people and made some proposals to the Colonial Secretary, who ignored them, as usual:

All Newcastle, the birthplace of many of the aborigines, is being sold from under their feet and only the sea-beach, one hundred feet from high-water mark, is the place on which they may rest their heads beneath the burning sun or pitiless storm. A few huts for the accommodation of about one hundred persons would be amply sufficient. ... Boats should be provided for the tribes who fish but only in the first instance, to furnish them with the means of providing for their own, by vending the produce of their industry; and in soliciting this on their behalf I am only acting agreeably to frequent requests from the aborigines, but which I have hitherto refused, hoping to induce them to reside at the Lake, and establish a fishery there. Two boats with complete gear would be sufficient for them, together with one large net (1840 Report, in Gunson 1974, 167).

In the 1820s Aboriginal people had been thought of as agreeable and trustworthy. Coke seems to have lent guns freely to his Awabakal friends and guides and he enjoyed their company although no doubt within the paternalistic framework of his intellectual milieu. The same was true of Threlkeld, who found Aboriginal people to be hardworking and intelligent:

The several Aborigines now usefully employed in various occupations, although so scattered throughout the Colony, as hardly to be observed, are found equally trustworthy

as Europeans, and shew that their intellectual capacities are equal to our own, when in an uncultivated state (1838 Report, in Gunson 1974, 149).

Many have learned to become good horsemen with us, and then gone on to other persons. .. Two lads have been exceedingly serviceable for several weeks past, in tracing out and pursuing, with the horse police, a gang of bushrangers (1840 Report, in Gunson 1974, 166-167).

3.11 1840s: New People, New Attitudes

By the 1840s Australia was changing. The Industrial Revolution was in full swing, and skilled workers were desperately needed. Emigration was replacing transportation, with unpredicted costs to the economy, as Leichhardt observed:

It was a society organized with an almost total disregard for scientific and moral principle. Nothing mattered but the production of wool for export and the breeding of sheep and cattle for sale to immigrants. And they with their convict stockmen and their herds of beasts spread out like a flood over mountain and plain as far as 300 miles inland – To infuse morality into public life certain wealthy land owners united in proposing that the transportation of convicts and their assignment to the colonists be suspended and that the immigration of free families with honourable antecedents be encouraged instead. That the proposers of this measure had no idea of what the colony stood to lose whilst the change to the new system was in progress, is shown by their own behaviour. For they went on living with the extravagance they had been able to afford when they had unpaid convict labourers... (12 Nov.1842, trans. Arousseau 1968, 590).

Leichhardt's views were based upon his stay with the Scott brothers, Robert and Helenus on their 10,000-acre horse-stud at Glendon, in the Hunter Valley. They saw themselves as 'gentry' and were typical 'exclusivists', as opposed to the 'emancipists' or former convicts (Ritchie 1975: 59-67). It is relevant here to note that Robert Scott had, quite improperly, defended the Myall Creek murderers for which he was forced by Gov. Gipps to resign his magistracy.

A third brother, Alexander Walker Scott, probably had the same attitudes but was more interested in making money from industry than from the land. He even offered to set up

Leichhardt, who stayed with him in 1842, in a vineyard: 'Mr Scott will clear 10 acres in Burwood, near the parsons' glebe. He will build a cottage, establish a vineyard, make all the necessary expenses' (11.11.1842, in Arousseau 1968, 583)⁷. Leichhardt used his stay to examine the geology and flora of Glenrock, as we have already seen. Although he had at that time little interest in Aboriginal people he recorded a couple of encounters.

The language he uses is significant, as revealing attitudes partly his own and partly derived from the Scotts: when he first met 'a naked savage' he immediately declared that 'nothing but compulsion and strong discipline could save and civilise these savages' (26.10.1842, in Arousseau 1968, 546-548). This statement can hardly have been made from his own observations, as he had only been in Australia for five months.

Leichhardt's brief description of an encounter with Gorman and Biraban/McGill is slanted to give the impression that Aboriginal men were dependent on handouts, even though he had observed women gathering crabs and *conjivoi* seaweed while men caught lobster (Leichhardt 26.10.1842, in Arousseau 1968, 547):

The two blacks who had pitched their camp opposite the hut⁸ were John McGill, king of the Lake Macquarie clan and Gorman, king of another clan. They had neither their women nor any other blacks with them. McGill came into the hut and asked for some embers and a kettle [for making 'doughboys' of flour and honey supplied by Calvert]. The two noble savages went over to the small fire they had lit under a Eucalyptus tree, stretched themselves out lazily beside it until their meal was ready, ate without stopping until they had swallowed then last scraps and then slept until later the next morning, regardless of the somewhat showery night, but putting more wood on their little fire whenever they felt the cold (31.10.1842, in Arousseau 1968, 570).

Leichhardt was on the whole both a compassionate man and a dispassionate observer. He later changed his mind and invited the Awabakal man Harry Brown, from Newcastle, to be a guide on the expedition to Port Essington in 1844 (Turner and Blyton 1995, 43).

⁷ The alternative was to accept Mrs James Mitchell's invitation to tutor her children in Sydney. Leichhardt wasn't sure this was a serious invitation and ignored it (*ibidem*).

⁸ At Red Head, home of the teenager James Snowden Calvert (1825-1884) who later accompanied Leichhardt on his expedition to Port Essington (1844-1846).

Nonetheless, if he could be so judgmental about a first meeting it is hardly surprising that the thousands of new emigrants adopted the majority white view that Aboriginal people were either dangerous or simply incompetent. This attitude became so widespread as hardly to merit discussion after the 1850s, when the stream of emigration was swollen by the flood of the goldrushes.

One of the new breed was A.W. Scott's brother-in-law, Dr James Mitchell who in 1835 purchased most of Glenrock, as far as the lagoon: 950 acres 'bounded on the north by the AA Co.'s 200 acres on the south by the ocean and saltwater lake [Glenrock Lagoon] and on the east by A.W. Scott's land' (*NSW Gov. Gazette*, 29/7/1835, quoted in Dixon 1935, 5, and Grothen 1988, 21). This area was known generally as Burwood and remained so until 1885, when its northern portion was incorporated as a municipality and renamed Merewether (Dixon 1935, 30-31).

James Mitchell (1792-1869) was at this time becoming known as a businessman and entrepreneur (Figure 3.13). He had served as a junior medical officer in the anti-Napoleon wars in the Iberian Peninsula and this gave him access to some of the colony's most influential people, who were also Peninsular War veterans, such as Surveyor-General Sir Thomas Mitchell (no relation) and several others who had taken up land on the Hunter. Another man who assisted his career was Bishop Broughton, a personal protégé of the Duke of Wellington. James Mitchell married the Scott brothers' only sister, Augusta Maria, in 1833.

Mitchell, with some scientific background was quick to understand the possibilities of the new technology of steam and, like his British counterparts, lost no time in investing in steam-based industries. Newcastle was an ideal place with its vast reserves of coal and easy water access: the first steamship had reached Australia in 1831 (Richards 1996, 1). A.W. Scott and Mitchell between them bought most of Stockton, north-east of Newcastle, where Scott established a salt works (1840-1848) and foundry (1842-45?) and, on Mitchell's land, a tweed mill (1842-1851). In 1848 Mitchell bought out Scott for £8320 (Turner 1980, 23-33). In so doing he added 456 acres to Burwood, which he further

enlarged in 1849 by purchasing 413 acres from the Crown, at 5 shillings an acre (Smith 1966, 16-17).

3.12 Taking Coals to Newcastle

Mitchell was a developer. He bought land and subdivided it for resale. Unlike the Scotts and other people in his circle, he had no interest in living in the country and built his grand house in Sydney at Cumberland Place, The Rocks. He rarely, if ever, visited Newcastle where all his business was carried on by agents. But he clearly had a vision of Newcastle as an industrial town and consistently invested in it, finding skilled men to manage his businesses. Among these were Alexander Donaldson, who ran the tweed factory, James and Alexander Brown, both of whom were weavers, later to become coal miners, and John Llewellyn Morgan, who supervised the construction of the 1850s copper smelter (Figure 3.16).

In 1846 Donaldson left the tweed factory and with his brother William started work on Smelter's Beach. Their first project was a tram/railway⁹ tunnel about a quarter of a mile long, supposedly for a saltworks, and reported on at the time by the *Maitland Mercury*. The railway was carried from the tunnel over two strong wooden bridges to the site, 'a wild romantic spot on the sea coast' (*MM* 16.12.1846 and cited in Turner 1980, 36). However Mitchell could not use any of the coal encountered during the digging of the tunnel, because the Australian Agricultural Company (AA) had in 1828 been granted an exclusive monopoly on all coal production and trade.

Mitchell complained to the Governor, to no avail, but was able to make his case in May 1847, when he gave evidence to the Coal Inquiry (a select committee on the AA monopoly). In answer to questions he claimed that he was intending to establish a copper smelter, and had come upon a coal seam:

⁹ In the early nineteenth century tramway and railway meant much the same thing. They were principally used in mining. A railway is defined as 'a prepared track which so guides the vehicles running on it that they cannot deviate'. The wagons were drawn by horses until the advent of the steam locomotive in the

Q.28 I had a tunnel opened instead of a road going over a hill, for forming a tram road for conveying the ore, and fortunately enough a seam of coal enabled me to make a tunnel easier than I could otherwise have done; there are now from two thousand to three thousand tons of coal dug out which I have not used and am prohibited from using [by the AA monopoly]; my object was to smelt copper sent to me from Adelaide and New Zealand.

Q.88 I have several factories which I would supply [with copper].

Q.90 My intention was that, if any smelting works had been established on my ground to lay down coal at their own furnaces at a price not exceeding 5 shillings a ton.

Q.94 I may state en passant that miners at Adelaide thought they could send copper over to me at Newcastle, at 10 shillings or 15 shillings per ton, taking into consideration that could take coal back to Adelaide

(NSW Legislative Council 1847, 2, 4).

As a result of the Coal Inquiry the AA Company voluntarily relinquished its monopoly and gave Mitchell permission to run a tramway through its land to the wharves, for any purpose *other* than carrying coal. Not satisfied with this he pursued the matter at government level and in 1849 he was given permission to erect wharf and coal chutes on Crown land at Newcastle waterfront. In 1850 a special act of Parliament, *Mitchell's Tram Road Act*, allowed him to carry coal through AA land to his wharf (Smith 1966, 25).

He was now able to execute the smelter project and started construction around 1851. J. Ll. Morgan newly-arrived from Britain supervised the work, which was completed by 1852:

A two-storied brick building, 130 feet by 32 feet, with a shingled roof, housed two offices, an assay furnace, a large storeroom and two dwellings and beneath it was a fresh water tank with the necessary pumping equipment. Nearby stood the large shed, 50 feet by 28 feet, which sheltered one calcining furnace, two melting furnaces, a refining furnace and a roasting furnace which was never completed. There was also room for two additional furnaces for which the castings were ready. Blacksmiths' and carpenters' shops were also provided as well as a manager's house, a labourer's hut and four three-roomed

1820s. A tramway was 'a small or temporary railway' (*Blackwell Encyclopedia of Industrial Archaeology* 1992).

workmen's cottages of brick and shingle construction. Stables for six horses and a harness room completed the establishment, the whole of which was surrounded by a 10-foot high paling fence. A tunnel into a nearby coal seam provided fuel and a system of roads and tramways was planned to link the site with the port through which would pass both ores and refined coppers (report by Morgan in Martin papers, paraphrased in Turner 1980, 37).

In 1853 Mitchell established the Newcastle Coal & Copper Co. to work both mines and smelter (Figure 3.14). Around this time he also built coke ovens to utilize small coal, and presumably to fire the smelter (Figure 3.15). They were on the northern approaches to the tram/rail tunnel and are said to have been behind the present Merewether baths, where a modern coal hopper has been installed as a municipal monument (Branagan and Packham 2000, 176). The Coal & Copper Co. took over Mitchell's personal right to run a tram/railway to the wharves. When the company folded in 1864, he bought the rights back. However, the government resumed the wharf in 1865, much to Mitchell's annoyance (Smith 1966, 33-34).

3.13 Seams and Tunnels: Coal Mines in the 1850s

The coal on Mitchell's land was extracted from the Victoria Tunnel seam, which lay close to the surface and could be mined quite cheaply (Turner 1982, 53-54). This is the uppermost of the five seams in this area, the others being in descending order, Nobby's, Dudley, Yard and Borehole, as shown in the BHP section attached. Seams were given different names at different places and times: the Victoria Tunnel was also known as the Burwood and the Gully; the Dudley seam was also the Dirty and the Diamond; while the Borehole was also the [AA] Company's, the Wallsend and the Minmi (Branagan 1972, 74).

Mitchell was able to lease out several mines (tunnels) in Burwood, at the foot of the ridge. The lessees were his former workers A. and W. Donaldson, J. and A. Brown (now miners in East Maitland), another Alexander Brown and John Nott (Turner 1982, 56, 62).

A description of the 1850s gives an idea of the mines:

The workings commence at the foot of a hill, where we entered a tunnel cut through solid coal, about five and half feet high, and double that width, passing through the hill, and opening out into a small valley. From this main tunnel there are two branch tunnels half its width running into the hill, each of two hundred yards in length, the working 'bands' being of the same dimensions with a stratum of pipe-clay eighteen inches thick. It is proposed to run these branch tunnels right through to the cliffs on the coast, many hundred yards distant, where the coal-seams are seen.

(Mossman and Banister 1853, 284)

The mines were extremely profitable, with steadily increasing production and combined sales from 7000 tons in 1850 to 39,000 tons in 1854. By 1855 Mitchell's Coal and copper Co. decided to buy back the original leases and did so at huge expense, £79,000: £24,500 for J. and A. Brown's lease, £23,500 for the Donaldson's £17,000 for Alexander Brown's and £14,000 for Notts'. The expense was probably worth it: the company sales increased steadily, to a maximum of 112,000 tons in 1861, thereafter declining to 10,000 tons in 1864 (Turner 1982, 54, 62, 64).

In 1863 Mitchell expanded south into Murdering Gully, hiring Jonathan Dixon and his son John to bore for coal there (Dixon 1935, 74), and they apparently reported on the digging of five trial shafts, encountering coal at the depths of three, seven and eleven feet (Grothen n.d.), but this does not seem to have been followed up. Mitchell's energy seems to have gone into the Coal & Copper Co's Burwood Colliery at Glenrock lagoon, described in the *Sydney Morning Herald* of 1866 (and cited in Grothen n.d.):

The mine is connected to the port of shipment by a railway which was constructed at considerable expense. From the entrance of the mine it bears eastwards for a quarter of a mile and then crosses the Lagoon. Glenrock lagoon is a fine sheet of water formed by a stream that comes down from the hills. .. The seam is worked by a tunnel running on an incline...

The shallowness of the mine indicates that it is the less valuable Victoria Tunnel Seam that is being worked.

Mitchell was quite right to concentrate on coal. It has been a major and generally steady resource for Australia, supplying both domestic and export needs. ‘In 1985 Australia became the largest coal exporting country in the world, though by no means the largest producer’ (Vamplewe 1988: 87).

Year	NSW Production	Year	NSW Production
1860	375,000 tonnes	1930	7207
1870	882	1940	9703
1880	1490	1950	13003
1890	3110	1960	18021
1900	5596	1970	35900
1910	8304	1980	50720
1920	10887		

3.14 Death and Resurrection: From Burwood to Merewether

In 1865 Mitchell struck up a disastrous alliance with William Ernest Wolfskehl, from Darmstadt in the German state of Hesse, who claimed to be an expert in glass and porcelain manufacture. They built both a glassworks and a pottery, neither of which was successful. They also decided to re-activate the copper smelter, establishing in 1866 the Burwood and Newcastle Smelting Company. The engineer Maurice Thomas was given a 10-year contract to completely renovate and managed the Burwood smelter (Smith 1966: 37-38). The copper was to come from the Currawong Copper Mining Company at Goulburn, of which both Mitchell and Wolfskehl were directors, and Wolfskehl the majority shareholder. The Goulburn ore being inadequate, Thomas ordered copper from South Australia but Mitchell’s death in 1869 and the problems this caused brought the smelter operation to a halt (Smith 1966, 36-38).

A month before his death Mitchell had made a new will, leaving all of his estate to Wolfskehl, a man of whom David Scott Mitchell said 'There is only one place where I would make an appointment to meet him, viz, at the foot of the gallows, he being to mount the same immediately'.¹⁰ The ensuing 'Great Will Case' rejected the 1869 will and Mitchell's estate of £10,279 and 45,000 acres of land around Newcastle went to his widow and three children (Smith 1966, 39-42).

The Burwood estate passed to Mitchell's older daughter Augusta Maria (1834-1922). In 1860 she had married Edward Christopher Merewether (1820-1893), a distinguished administrator, ADC/secretary to three Governors and later a Commissioner of Crown Lands (Figure 3.22). On his marriage he was offered the position of General Superintendent of the AA Company on condition he resided in Newcastle, which he and his wife did, building 'the Ridge' in Burwood. Under British Law women could not own property (until the passing of the *Married Women's Property Act* of 1870), so that Merewether, although technically his wife's trustee, effectively owned Burwood after 1869. He administered it with his customary efficiency, as can be seen from his papers, now in the Newcastle Public Library. In 1875, Edward resigned his position with the AA Company as this was in conflict with his ownership of the Burwood coal leases. The Merewethers were later to move to Sydney, leaving their oldest son in charge of the estate (*Merewether Estate Archives Inventory*, 9-10).

3.15 Under the Lagoon

Leaving the AA Company enabled Merewether to undertake some development on his own account. He followed up on Mitchell's work in the lagoon area, where the Burwood Colliery (1866-1872) had sold 10,000 tons in 1865 and 21,000 tons in 1866 (Kingswell 1890, 29; Turner, 1982, 54). This coal came from the Victoria Tunnel Seam, but

¹⁰ D. S. Mitchell (1836-1907). Only son of Augusta and James Mitchell. Scholar and bibliophile, founding member of the Royal Australian Historical Society His huge collection of Australiana, which was the basis for the Mitchell Library in Sydney, was bought out of the profits from the Rothbury estates he inherited from his father. (Robertson 1988, 1-24)

Merewether was more interested in the more valuable Borehole Seam coal and sought it out near Little Redhead Point, apparently intending to open a 'Redhead Colliery'.

He also reconditioned the old Watkin Street [coastal] rail line, which had served the smelter, and extended it along the beach southward from the mouth of the second tunnel in the cliff, where the original line turned inland towards the old smelting works. The extension, after passing through sandhills, crossed to the mouth of Glenrock lagoon by a bridge and turned inland along its southern edge to the Redhead colliery which later became known as Burwood A [No.1] Pit (Webber n.d, 83)

Merewether commissioned a special locomotive to clear the coastal railway Mitchell had built in the 1850s, as this was getting consistently covered over by sand drifts. The locomotive, called the Burwood, was built in 1878 at Rodger's foundry in Newcastle:

for the purpose of removing the immense deposits of sand that have drifted from the seashore on to that gentleman's estate. The engine will be employed for the present in running to Redhead, but will doubtless be made use of and do good service, should Mr Merewether decide on opening up his coal seams at Redhead which are known to equal any in the district (cited in Webber n.d., 83; Dixon 1935, 72).

Merewether's work at Little Red Head was the basis for the later Burwood Colliery, which operated between 1884 and 1894. The remains of this colliery are now a massive ruin west of the Glenrock Scout Camp, built in the 1930s on the site of the former coal loader (Grothen 1988). The remains have been catalogued by Godden (1989) and are discussed further in Section 4.

The genesis of the Burwood Colliery was described in 1890 by Kingswell:

The land had before been worked by the Newcastle Coal & Copper Company, the operations being confined, however to the Burwood [Victoria tunnel] coal seam which outcrops along the ravines and sea slopes of the ridges and hills adjacent to Flaggy Creek. This creek empties into the Glenrock lagoon; and near that spot Mr E.C. Merewether proved the existence of the Borehole seam by a diamond drill some years ago.

To locate the Borehole seam (well below the Victoria Tunnel seam) the company had drilled at Little Red Head in 1884. Having worked out the geology they had in 1885 sunk two shafts: No.1, 275 ft deep, was for extraction ‘fitted with the latest improvements’; No. 2 was a nearby ventilating shaft, 300ft deep with a ‘furnace supplying 90,000 cubic ft of air a minute; No. 3, a second extraction shaft was planned to be ‘85 chains [about 1.8 kilometres] south of the present colliery’ and 500 feet deep (Figures 3.23 –26).

Production was good; 25,295 tons in 1885, 72,566 in 1886; 111,782 in 1887 and 106,853 in 1889 ‘despite the general strike among the miners in the district’. The coal was carried in 225 hopper wagons over two and a quarter miles of private rail line, connecting with the Newcastle Coal line at Merewether. In 1890 400 men and boys were employed, which made this a really important new industry (Kingswell 1890, 29-31).

In 1891 a Mines Department report said that the third shaft had been sunk and that there were 349 people at work (cited in Grothen, n.d.). Burwood No. 3 shaft, or B Pit was southwest of the SRA, at Whitebridge (Tonks 1988, 28-34). It was on the same level as the rail line to Adamstown and there was no longer any point in using the old coastal line, which accordingly closed in 1893. Burwood 1 and 2 shafts (the ones close to the Lagoon) were now used only for ventilation and the coal loader there also became redundant.

From the 1890s on, therefore, Glenrock Lagoon had no industrial activity, at least not on the surface – there was a great deal of activity underground as the collieries developed under the new management of the Scottish-Australian Mining Company and its successors. The lagoon was now available for recreational purposes such as walking, swimming, fishing or boating (Figures 3.30 – 32).

3.16 The Gallant Little Engine

The northern part of the SRA, however, remained industrial, and there was huge activity along the Burwood ridge. The Newcastle Coal Mining Company had been the major operator in the 1890s, but Broomham lists no less than 15 mines at work in the early twentieth century, beneath the area now called the Newcastle Mine Subsidence District and east through to the Ocean (Godden 1989, 74-86). Godden has catalogued several remains of these mines within the SRA, around Murdering Gully.

The twentieth-century colliery of most heritage significance is probably Howley and Foreshaw's Glenrock Colliery, opened in 1905. This operated on the slopes of the Burwood ridge and was able to reuse the coastal railway:

The southern section of the line which crossed over the viaduct at the lagoon and thence westwards to the Burwood B Pit was taken up and the materials used to form an extension running along the northern shore of the lagoon to terminate in a loop siding serving the new tunnel (Webber n.d., 86).

The 'Coffee Pot' locomotive was purchased in 1910 and ran until 1925. It proved extraordinarily difficult for this engine to negotiate the coastal railway, even though it was modified to fit. For safety reasons it went through the tunnels by itself, with no driver. It was driven to the entrance of the first beach tunnel, then:

Without a guiding hand the engine wandered through the two tunnels slowly and on emerging at the far end, was taken over by a second driver who had been patiently waiting there. About 1925 another tunnel, still called Glenrock Colliery, came into use, being situated on the hillside above the railway, about half a mile to the north of the earlier workings, and the railway on the seashore connecting the former mines was abandoned, and has since been practically washed away by the inroads of the ocean (Webber, n.d. 86).

The Glenrock Colliery closed in 1944 and the Ocean Tunnels were sealed with concrete in 1945 (Shoebridge 2002. III).

Mitchell's coastal railway had lasted over 125 years. Its shattered remains encapsulate an entire history of industrial and political development in Australia, from the hand-cutting of the tunnels and the removal of coal in defiance of government orders, through to the high-risk gambles of the 1860s and the more regulated approaches of the 1910s. The idiosyncracies of the 'Coffee Pot' reinforces a certain larrikin 'she'll be right' spirit which make this a very Australian story and a very Australian relic.

3. 17 Dwelling in Glenrock

Once the Awabakal had been pushed aside, very few people ever called the area of the Glenrock SRA home. There was a small settlement near the smelter. This was depicted in 1854, in a view taken from the south and shows four worker's houses west of the smelter, with the overseer's house a little distance away, to the south (*Illustrated London News* 11 February 1854 and excellent reproduction in Grothen 1988, 44). The smelter operated for only two years and had in fact closed by the time this picture was printed.

While we do not know who exactly lived in any of the worker's houses, the company report for October 1853 in the Mitchell Papers lists: '1 general overseer [J. Llewellyn Morgan], 1 bricklayer, 1 smith and 1 striker, 1 carpenter, 3 men and 2 boys miners, 2 carters, 1 stableman and 2 men and 2 boys general labourers'. Working on the rail/tramway were '2 bushmen getting sleepers, 1 rough carpenter morticing ditto, 2 spikes, 1 overseer of railway, 10 excavators on railway, 2 excavators at coke ovens'. There were also 9 horses, stabled in the building to the west of Morgan's house (Bairstow 1987: 10, 20, 44, 55).

The workers' houses are today marked by fragments of bluestone foundations and by scatters of Victorian-period domestic crockery. They were described as having three rooms each (Morgan 1852, cited in Turner 1980: 37). This might not include the kitchen space, in which case each house could have accommodated up to six workers. It is doubtful they would have their families with them, partly because there wasn't enough

accommodation, partly because copper smelting was a notoriously noxious industry and the families could have been housed within walking distance in the marginally more salubrious environment of Newcastle itself.

There is some evidence that the cottages were reused after the 1850s: in 1899 a 'worker's cottage or tenement' was leased to Augustus Gross, an engineer who wished to re-smelt the slag (Bairstow 1987: 13). Grothen reproduces the birth certificate of a girl born to Daniel and Margaret Haddow, of the Smelting Works, Merewether (1988: 45). They already had six children aged, 13, 11, 9, 6, 4 and 2 and had lost two more. Margaret was 37, Daniel 42, and both had been born in Lanarkshire, Scotland¹¹. He worked as a miner. It is hard to imagine bringing up seven children in the tiny space of the cottage, though it must be said that there was ample space outside for self-sufficiency, such as the vegetable garden, chicken run and nanny-goat or milk-cow which many people had in those days.

There are today no remains of Morgan's house, which was totally excavated by archaeologist Damaris Bairstow in 1987. She found evidence that it had been extended after 1865, which means it was reoccupied when the smelter reopened in 1866-1869, or even later during its third brief period of operation in 1871 (Bairstow 1987,12, 54). Morgan was newly-married and we do not know if he brought his wife to live on the smelter site. The contents of his later house over the hill in Burwood suggests a refined lifestyle not very compatible with life at the smelter: Mr and Mrs Morgan on leaving Australia in 1863 were selling 'superior and substantial household furniture, brilliant toned cottage pianoforte by Broadwood & Son, massive pier-glass, valuable library of books, cut-glass, china, electroplated service etc.' (*Newcastle Chronicle* 24/10/1863).

It is possible that Mrs Morgan lived away from her husband, who could, after all, easily visit her: the walk from the smelter to Merewether takes no more than 20 minutes, and the trip would have been much quicker by horse. Morgan had of course to be on site much of the time.

¹¹ Grothen (1988, 47) shows a photograph of a couple in their 60s, who are likely to be Daniel's parents, as their clothing dates the image to the 1890s.

The same observations apply to the Burwood Colliery at Glenrock Lagoon. There were mining villages nearby, at Kahibah, Charlestown and Adamstown to the west and at Souht Burwood/Dudley to the south, which provided services, schools and social life. Only essential personnel needed to live near the Colliery. Grothen shows an image taken around 1900 with only four houses beside the No.1 Pit which had been closed since 1891 (1988, 50, 59). He identifies them as having been occupied by the winding-engine driver, the engineer, the caretaker and the under-manager. The 'Under-Manager's House' is the only one of these to remain and it has been incorporated into the Scout Camp.

3.18 Life Beyond Glenrock

Glenrock therefore never had many people in residence, but a large population of men and boys travelled to it daily and worked below its surface, for 100 years in its northern part and for 50 years south of the lagoon. These people were bound together by century-old traditions brought with them from mining villages all over Britain; there was a solidarity in the work, a shared knowledge that every day could be the last, the claustrophobic conditions of working underground in poor light, the certainty that you had to rely on your mates as they did on you. It is often said that Australian 'mateship' began in the bush in the 1890s, or at war in the twentieth century, but the elements are right here in the mining tradition.

Colliery towns worldwide are distinctive, because the same conditions of solidarity, fear and skill are present in all of them. Most miners are the children of miners and have been taught early on the skills they will need later when they go down the pit. At a domestic level, cleanliness is a major problem. Few Australian collieries had bathhouses before the 1940s and 'the men came home black' (*History of Dudley*, 45). Mining village women therefore spent a great deal more time washing clothes and household effects than women in other places. All women's work was very similar within the colliery towns. In addition to the never-ending washing, the women, girls and younger boys (the older ones

being at work) assured the maintenance of the household, normally growing fruit and vegetables for winter preserves.

There were some suppliers, a baker, a butcher, a milk provider (usually a woman), a Chinese market gardener and of course the 'Rabbito' and the 'Ico' who brought ice for the ice box. In Dudley some enterprising women would walk to Newcastle along the beach, through Glenrock, to the Arnotts factory to buy broken biscuits, at 2 shillings to fill a pillowcase. The fortnightly payday meant a rush to Newcastle, a special Pay Saturday train being run from Dudley, leaving at 9am and returning at 3pm (*History of Dudley*, 47, 65)

In the 1870s the older boys worked at the pit for 10 to 12 hours. They did no digging but worked in ancillary, often dangerous jobs. At ages 12 -13, they worked at 'coupling' the coal tubs, at 'switchkeeping' the rail points, 'trapping', i.e. opening ventilation doors, and 'greasing' rollers; at ages 14-15 they were the 'horse drivers' and from 16 to 19 were 'wheelers -- driving a horse and bringing the full tubs of coal to the flat and bringing back the empty ones'. In the view of Thomas Croudace, manager of the Scottish-Australian Company, the younger boys 'are easier worked than if they were playing and earn from 2 to 3 shillings a day'; the only strenuous work was wheeling, for which the wage was 5 shillings a day, a very sizeable sum in those days (Hubbuck 1984, 26).

The families were happy with the money and of course the boys were learning on the job. All in all they were certainly better off than under the apprenticeship system – if one doesn't take into account the ever-present danger of loss of limb or life: a 16-year old boy was among the 15 people who died in the Dudley Pit explosion of 1898 (*History of Dudley*, 25). We should also remember that while, hypothetically, a 16-year old might be able to earn 25 shillings a week, i.e. £62 a year, Mr Croudace was earning £500 a year in 1871 (Lambton P.S., 7)

Education was a priority for mining villages, partly because underground miners had to be able to read plans and to understand at least the rudiments of mechanical and electrical

work, but also because education was perceived as the only way for boys to get away from the pit, usually by becoming a mechanic, engineer, or clerical worker within the company. Mining towns typically had a Mechanics Institute or School of Arts, which offered a library and classes.

The public school system was enormously important and mining families kept up the pressure to open schools and keep them open, even before the passing of the NSW *Public Instruction Act* of 1880. Charlestown asked for a school in 1877 and opened one in 1879 with 97 children, several walking from Kahibah, above Glenrock. The new town of South Burwood (renamed Dudley in 1891) got its school in 1892 when there were 57 children. By 1900, there were 175. This school was famous for having a school Parliament with elections, a Prime Minister, Leader of the Opposition etc., a tradition which was revived in the 1990s (Dudley P.S., 28).

The students took part in the life of the town and participated in public events. They grew vegetables and helped to staff the soup kitchen during strikes, or lock-outs. During World War I both boys and girls sewed clothing for orphans of war and for the Red Cross. During World War II they knitted scarves (Charlestown PS, 20). Schools offered evening classes for boys working at the pit, but these were not always well attended

Mines closed at the weekends and for ten days over Christmas, so miners had some (unpaid) free time. Cricket and football were widely enjoyed. The School of Arts hall was the normal venue for entertainment in the form of films, dances, concerts, vaudeville etc. Brass bands were an essential part of the coalminers' life. There were more informal entertainments as well. At Dudley fishing was popular and a surf club was formed in 1900, moving to Redhead in 1908 (*History of Dudley*, 87). Glenrock was a popular spot for picnics, swimming and rowing parties. British traditions were kept up, with maypole dancing at Mayday and bonfires on Guy Fawkes Night.

The variety of immigrants meant that Australian mining villages had many more churches than their British counterparts, which tended to house only one or two

denominations. For instance the populous town of Lambton, west of Adamstown, had buildings for Primitive Methodists from 1864, Welsh Independents (1864), Welsh Baptists (1868), Episcopalian/Church of England from 1868, Presbyterian (1869), English/Particular Baptists (1871), Roman Catholic (1871) Wesleyan Methodists (1872), United Free Methodists (1873), English and Welsh Congregationalists (Hubbuck 1984, 26-28). The range of 'non-conformist' denominations reflects both the miners' individualism and their deep concern for religion and morality.

The Depression hit colliery towns less hard than other places because there was an ongoing demand for coal. Other factors, however, came into play. The Borehole Seam was no longer profitable and both Lambton No.2 and Burwood Extended/Redhead collieries closed for a time in the late 1920s (Tonks 1995, 34). The Great Lockout of 1929-1930 also affected many of the Newcastle mines, though not Dudley.

When the Lockout ceased Dudley went into abeyance, with only 102 days worked in 1930 and even less from 1931 to 1933. It finally closed in 1939, to reopen only in the 1950s (*History of Dudley*, 35-37). Some of the miners and their families had by then moved along with the management to other mines. Lambton No. 2 and Burwood No.3 were saved from a similar fate in 1932, when they were taken over by BHP which ran them for the next 50 years. Lambton No. 2 was the first Australian colliery to be fully mechanized. Burwood No. 3 closed in 1983 and Lambton No. 2 in 1992 (Tonks 1983, 1995).

3.19 Orchards in Glenrock

Orcharding is not often thought of as an activity of Newcastle, yet it had been predicted as early as 1829. Referring to Glenrock the *Sydney Gazette* of 29 October 1829 had this to say:

Several beautiful glens are passed .. the embouchures [mouths] of which expanding towards the sea afford delightful sites for rustic cottages and tropical fruit gardens, the soil, the eastern exposure and the mildness of the temperature from their sheltered situation and contiguity to the sea rendering them peculiarly adapted for such purposes,

water being generally accessible at no great distance in their rocky beds, screened from the summer suns and the thirsty winds by the glossy overhanging foliage that embowers them (quoted in Goold 1981: 41)

It took one hundred years for the prediction to be realized and it was never a major activity. But Bailey's Orchards, in the western part of Glenrock, became a useful resource for Merewether and Newcastle. They were started by Charles and Arthur Bailey, sons of Walter Bailey snr, the first settler at Dudley (Dudley PS: 21). The brothers moved both themselves and the business to Merewether in 1915, on land they had acquired during the first sales of the estate in 1912 (Godden 1989: 81). Bailey's Orchard has left some physical traces: the flying fox base at Leichhardt's Lookout, used to convey fruit to the packing plant on Scenic Drive at Merewether, and the packing shed itself (Godden and Associates 1989: Inventory Nos. GA 19-23).

A smaller venture was Mr Cobb's banana plantation on the southern slope of Little Red Head, south of the lagoon. It was created in the mid-1950s and only a clearing invaded by bitou bush, and some fence posts now survive (Godden 1989, inventory No. GL/027).

3. 20 The Pollution of Northern Glenrock

The Hunter District Board of Water Supply and Sewerage had been established in 1892 to control water supply and effluent disposal throughout the Hunter Valley. By the 1920s the increasing growth of Newcastle required drastic action. Consequently the area just below Merewether and behind Smelter's Beach was acquired in 1927 to create a sewage works. It was built from 1933, opening in 1936. Some of the equipment installed in that time still exists and has technical and heritage value (Godden and Associates 1989: 85, 109; Tonks pers. comm. 2002).

These works had a very bad effect on the environment and there were numerous complaints about pollution from the 1940s on. These problems were not overcome until

the late 1980s when a new Ocean Outfall was built. In the course of these latter works the Morgan house at the Smelter site was removed through archaeological excavation (Bairstow 1987).

3.21 Scouting in Glenrock

The scouting movement developed out of the British war in South Africa – the so-called Boer War of 1899-1902. Robert Baden-Powell (1857-1941) had from 1876 served in India, Afghanistan, Botswana and the Sudan, during which time he had developed an interest in bushcraft and written a textbook on the subject, *Aids to Scouting*. As it was being published, in 1899, he was achieving enormous acclaim as the ‘hero of Mafeking’, where his forces held off a seven-month-long siege. His work took on a life of its own and back in England he was soon running training camps and overseeing a burgeoning scouting movement. *Scouting for Boys*, published in 1908, sealed his reputation and the future of the movement. By 1910 there were scout groups in Argentina, Australia, Canada, Mexico, South Africa, Sweden and the USA. This movement therefore had its genesis in imperialism, but it has constantly changed and evolved, with a Girl Guides movement developing as early as 1912. By 1920 the first international Jamboree was held in London and world Jamborees have been held every four years since.

While the scouting movement is particularly strong in English-speaking countries it is genuinely international, with branches in 110 countries, and is well regarded as a force for international understanding and multiculturalism. Glenrock has played an important part in the development of scouting in Australia and its declaration as a reserve is no doubt partly because generations of young people have been introduced to its history and environment through scouting activities since 1932. Grothen (1988, 59-63) gives an account of the camp and publishes a photograph of Baden-Powell visiting Newcastle at the time of the opening. The presence of this eminent person, who was then 75 years old, underscores the importance of the place. There can be no doubt that the Glenrock Scout Camp has fulfilled an important role in the growth of environmental consciousness.

In the 1940s it played an equally important role in coastal defences, the camp having been taken over by the Volunteer Defence Corps which was responsible for coast watching against enemy ships and aeroplanes (Grothen 1988: 63; Stanley 2001). Operations were coordinated from Fort Scratchley (Carey et al. 1986: 15).

3. 22 Aboriginal People around Newcastle in the late 19th and 20th Centuries.

In 1845 the *Maitland Mercury* reported that Harry Brown 'last of the Newcastle tribe' had died at Newcastle. Brown was a well-known man, having not only accompanied Leichhardt to Port Essington but also guided the Hely search party in 1852 (Turner and Blyton 1995, 43). The passing of other Awabakal people went unremarked and in general it took public controversy to remind the now numerous Australian population that Aboriginal people still existed.

The case of 'Queen Margaret' and her husband 'Old Ned' excited widespread attention and sympathy in the 1870s, when they were threatened with eviction from the land they had been granted at Pelican Flat, near Swansea. At the time the family comprised Ned's mother and at least four children. The matter was sorted out by the Mayor of Newcastle and a local Member of Parliament, but arose again eight years later, by which time Ned had died. Once more Margaret was confirmed in possession of her land (Turner and Blyton 1995: 46-48). Members of the Hawken/ Brauer families, who are descendents of Queen Margaret, still live in the area today and they generously contributed to this study of Glenrock.

In 1887 the state Board for the Protection of Aborigines was established at Swansea, but in circumstances so oppressive that the remaining Awabakal moved away as soon as they could, settling in and around Newcastle, where some employment was to be had. The Constitution which created the Commonwealth of Australia in 1901 was markedly racist and Aboriginal people were not counted in the census, nor were they citizens until the passing of the 1967 Referendum (Cremin 2001: 17).

We are therefore very poorly informed about Aboriginal people between 1901 and 1967, but it is clear that there was a substantial, though partly-concealed, Awabakal presence in Newcastle and its surrounds. Newcastle had also become home to Aboriginal people from other parts of the state under the 1940s Aboriginal Resettlement Scheme. By then attitudes were changing and Aboriginal people were apparently made more welcome in Newcastle than in other parts of NSW (Maynard n.d.:46-48).

However, children were always at threat of removal by the Aboriginal Welfare Board. Many were sent to Woodland Boys' Home at Wallsend and by the 1970s 'a large number of Aboriginal children in these Lake Macquarie and Newcastle schools had been adopted to white foster parents' (Turner and Blyton 1995: 64-65).

In the 1970s Aboriginal people were finally able to achieve some measure of civil rights. At Lake Macquarie William E. Smith established the Awabakal Aboriginal Co-operative Association and participated in the formation of the Newcastle Advancement Association. William and his brother Robert formed two companies which trained and employed 'thousands of Aboriginal people throughout NSW' in the 1970s and 1980s. The Awabakal Land Council was formed in Newcastle in 1984 and the Koombahtoo and Bahtahbah Land Councils were set up at Lake Macquarie in 1988 (Turner and Blyton 1995: 67-72). By 1995 Lake Macquarie had 'the sixth largest concentration of Aboriginal people in the State' (Turner and Blyton 1995: 52). Maynard cites research in the 1980s that suggests Aboriginal people had access to above average wages and training in Newcastle (Maynard n.d.: 48). Speaking to Indigenous community members for this report revealed that much "chain migration" from Western Sydney and from towns like Brewarrinna has occurred over recent decades and that Aboriginal people living around Newcastle/Lake Macquarie therefore possess complex family and social networks which stretch across the state.

3.23 John Grothen, Historian of Glenrock: Romancing the Stones

The growing awareness of environmental issues in the 1970s was matched by a growing interest in Australian history. In 1974 these twin concerns were marked and investigated in impressive detail in what is usually known as the ‘Hope Report’; the Commonwealth Governments’s Commission of Inquiry into the National Estate. This Inquiry led to the creation of the Australian Heritage Commission and eventually to the development of heritage legislation in all parts of Australia. Much local history initiated during this period is characterised not only by a fascination with local historic places, but also with a determined resolve to recover and save the local legends that were in danger of being forgotten. In the 1970s, memories of the older generation still stretched back into the nineteenth century, but, at the same time, Australian history had not been so highly valued in previous decades and these memories were in danger of being lost for ever. At Glenrock we are especially fortunate that John Grothen, a local resident and active member of the Scouting community, took on the task of recording and remembering Glenrock’s almost forgotten history.

Stone ruins in the bush are the stuff of romance and they inspired Grothen to search out the story of the relics which made Glenrock such an adventure to explore. His history (*The History in and about Glenrock Lagoon* (1978, 1979, 1982, 1988)) is an evocation of the entwinement of people and place. In successive editions of this work Grothen chronicled a history for Glenrock which today is remarkably well known throughout the community (see Section 5). Drawing strongly on research into local newspaper archives, as well as collecting local yarns and tall tales, Grothen produced a story of origins, a “birth myth” for the Glenrock area. Grothen’s history does not record the sources from which it is drawn, so with today’s professional requirements for verifying historic evidence, some of Grothen’s work has left us guessing. For example, we were unable to confirm or deny the presence of convict miners at Glenrock. The evidence for convict period mining seems to emanate from a manager of the Glenrock No2 Colliery, Jim

Anderson, who remembers breaking into old tunnels in the 1940s¹². Anderson described the workings in great detail and is certain they date to the convict period. Another puzzle is the story of Leichhardt and the “Sacred Cave of the Awabakal”, which supposedly had paintings in it (Grothen 1988:10). The reported existence of this site is well known today throughout the district, but our searches of Leichhardt’s letters have not revealed any mention of it, although Leichhardt certainly met the Awabakal men Gorman and Biraban/McGill. No trace of this mysterious cavern has ever been found and it seems unlikely that it ever existed, at least around Glenrock lagoon. Like many local historians, Grothen had a keen interest in the indigenous culture of the Awabakal people and in recovering the traces of Aboriginal culture within the historic landscape he loved so much.

3.24 Creating the Glenrock SRA

The declaration of Glenrock as a State Recreation Area in 1986 was the result of a lengthy process of community activism and urban planning. The natural values of Glenrock had been appreciated by the local community since before the Second World War (NFFPS 1983:5). In the 1970s and 80s, environmental and heritage concerns came to a head in Australia, partly because of the election of the Whitlam government in 1970. The Whitlam administration introduced a broad ranging package of inquiries, funding programs and legislation designed to meet the expectations of a growing part of society, concerned about environmental and heritage protection. At the same time the role of urban and regional planning in NSW was expanding and serious consideration was given to the long term, future needs of urban communities in terms of open space and recreational areas.

Such moves were however a source of conflict within Australian society: between those who saw the right to develop as paramount and essential to “progress”, and those who perceived the broader community values of publicly owned lands, accessible to all. The

¹² This interview is recorded in detail in Comerford 1997, 108-110. A similar story was told in the 1880s about Fort Scratchley, Goold 1985: 9.

beautiful beaches of the NSW coast were a prime site of conflict between development interests and conservation/public access concerns. Coastal lands commanded high real estate values, they also contained valuable natural resources. There was also a strong sense in Australia that beaches should be free, open and accessible to all. The National Trust (first formed in 1947), the National Parks Association, the Dudley Progress Association, the Northern Parks and Playgrounds Movement, the Association for Environmental Education and the Newcastle Flora and Fauna Protection Society all lobbied for the protection and preservation of Glenrock (NFFPS 1983, 5). The NFFPS and the Leggy Point Board Riders were concerned about plans for residential development and also by the general neglect of the area which was degrading land through 'trail bike damage, rubbish dumping, fires, transmission easements, quarries and highway proposals' (NFFPS 1983, 2-3).

Their proposition for a State Recreation Area was met with sympathy and the SRA was proclaimed in 1986. Several reports have since been written on heritage and environmental issues, but, as we hope this report makes clear, its history is a rich and complex one and much remains to be revealed to the visitors and frequent users of Glenrock.



Figure 3-1: Fishing scene, perhaps around Red Head, watercolour by Joseph Lycett (1774-1827), 17.7x28cm, National Library of Australia R5686. This is one of 20 drawings assembled in an album sometime in the nineteenth century. The scenes are unlabelled, but it is clear that most show Awabakal life in and around Newcastle, where Lycett served three years.



Figure 3-2: Aborigines cutting up beached whales, watercolour by Joseph Lycett (1774-1827), 17.7x27.9cm, National Library of Australia R5680. This scene could depict Glenrock beach.

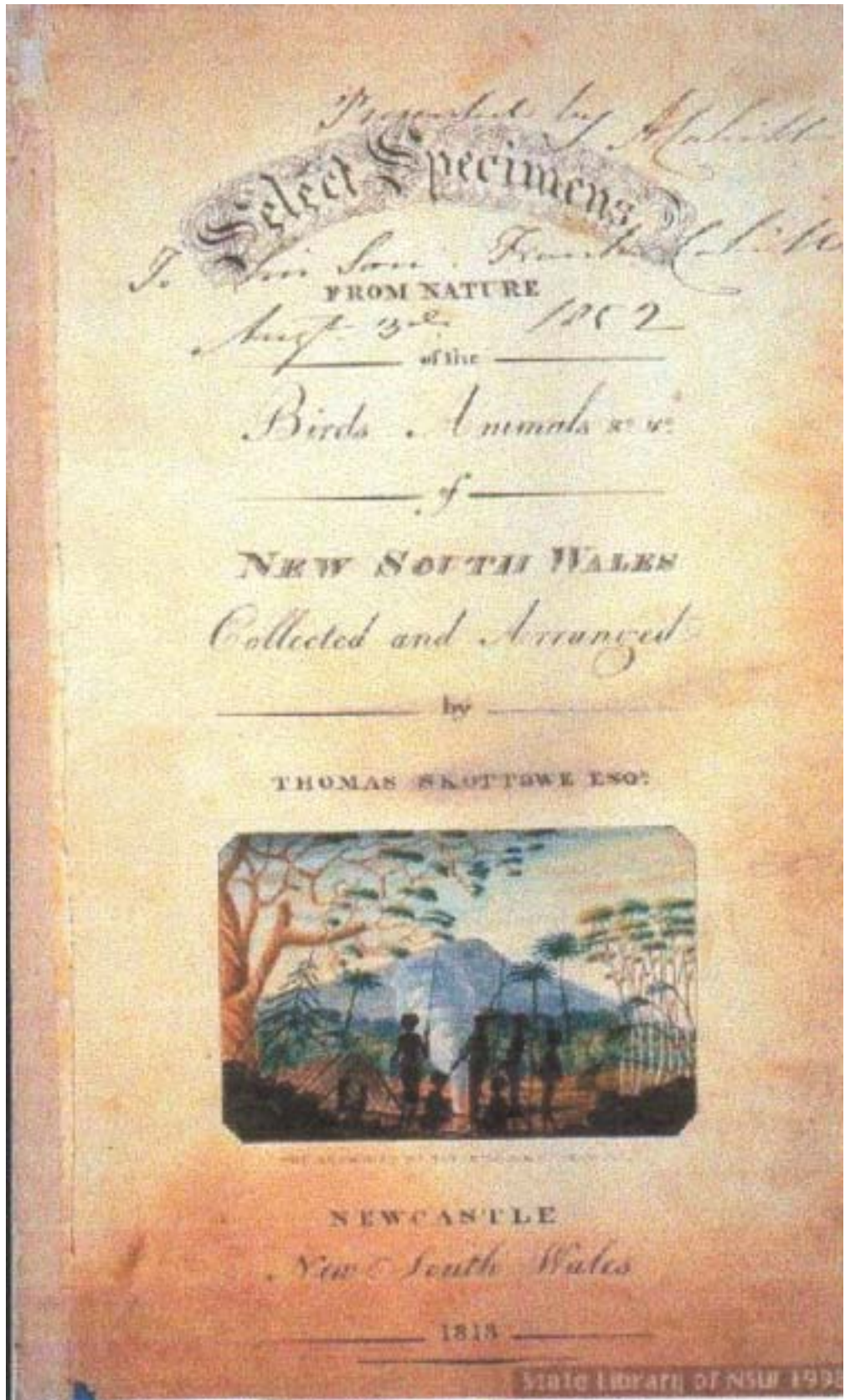


Figure 3-3: Cover of the *Skottowe Manuscript* (Newcastle 1813), ink and watercolour, 30x18.5 cm, State Library of NSW, PXA 555.



Figure 3-4: King Parrots, watercolour by Richard Browne (1776-1824), from the *Skottowe Manuscript* (Newcastle 1813), 15.2x21.9 cm, State Library of NSW, PXA 555.f.16.

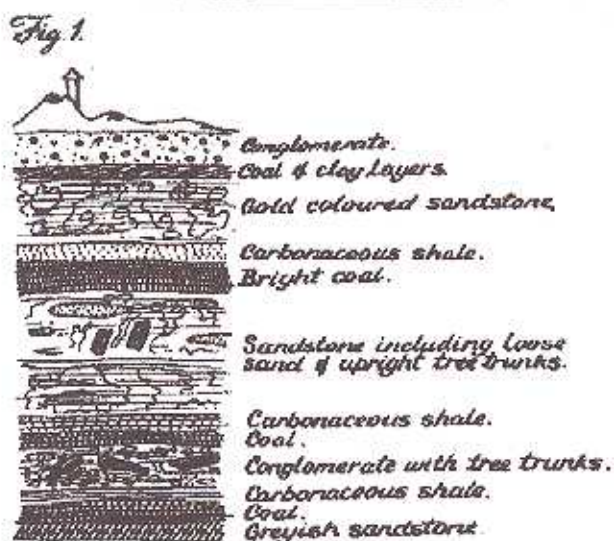


Figure 3-5: Black Swan, probably on Lake Macquarie, watercolour by Richard Browne (1776-1824), from the *Skottowe Manuscript* (Newcastle 1813), 14.9x22.7 cm, State Library of NSW, PXA 555.f.10.

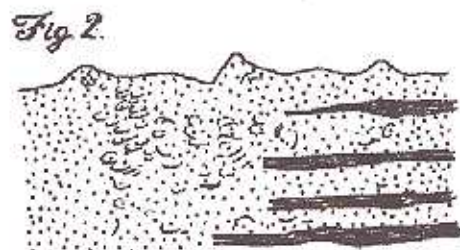
Figure 3-6: Ludwig Leichhardt in 1846, by Charles Rodius (1802-1860), lithograph, 14x8.5 cm, National Library of Australia, Rex Nan Kivell Collection NK1928. Although Leichhardt was often assumed to have the title of Doctor, he never claimed it and had in fact not graduated from either of the universities he attended (Göttingen 1833, and Berlin 1834-1837).



Figure 3-7: Leichhardt's diagrams of the geology around Glenrock (1842), published in German in 1849. Redrawn by J. Nielsen and translated by David Branagan. Reproduced from Branagan's *Geology and Coal Mining in the Hunter Valley 1791-1861*, 1972.



View of the Strata beneath the Beacon, South Head - Newcastle, (Signal Hill).



An idealised cross-section showing the relationship I believe to exist between the coal beds at Newcastle, the conglomerates near Tuggerah and the Hawkesbury sandstone.



The Entrance to Lake Macquarie



Figure 3-8: Corroboree at Newcastle, oil painting on wood by Joseph Lycett (1774-1827), 17.7x28cm, State Library of NSW, DG 228.



Figure 3-9: Burgun c. 1819, watercolour by Richard Browne (1776-1824), 28.3x22 cm, National Library of Australia, Petherick Collection PIC R8947. This may be the same man as the Newcastle 'king' who staged a corroboree for Governor Macquarie's visit.



Figure 3-10: Biraban/Magill c. 1819, watercolour by Richard Browne (1776-1824), 26.8x22 cm, National Library of Australia, Petherick Collection PIC R8953. Although Browne could have known Biraban in Newcastle, this image was apparently painted after Browne obtained his freedom and had moved to Sydney.



Figure 3-11: Armed contest, watercolour by Joseph Lycett (1774-1827), 17.6x27.8cm, National Library of Australia R5678.

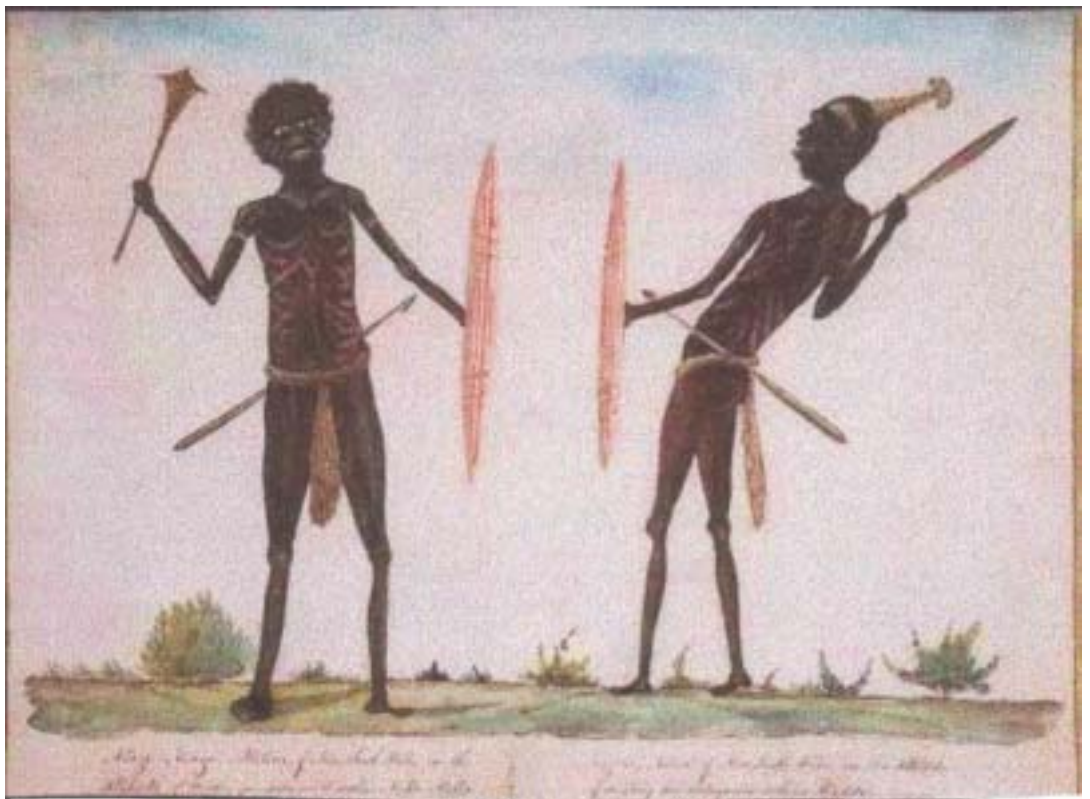


Figure 3-12: Ninge Ninge and Nigral, c. 1811, watercolour by Richard Browne (1776-1824), 29.5x41.2 cm, National Library of Australia PIC R11221.

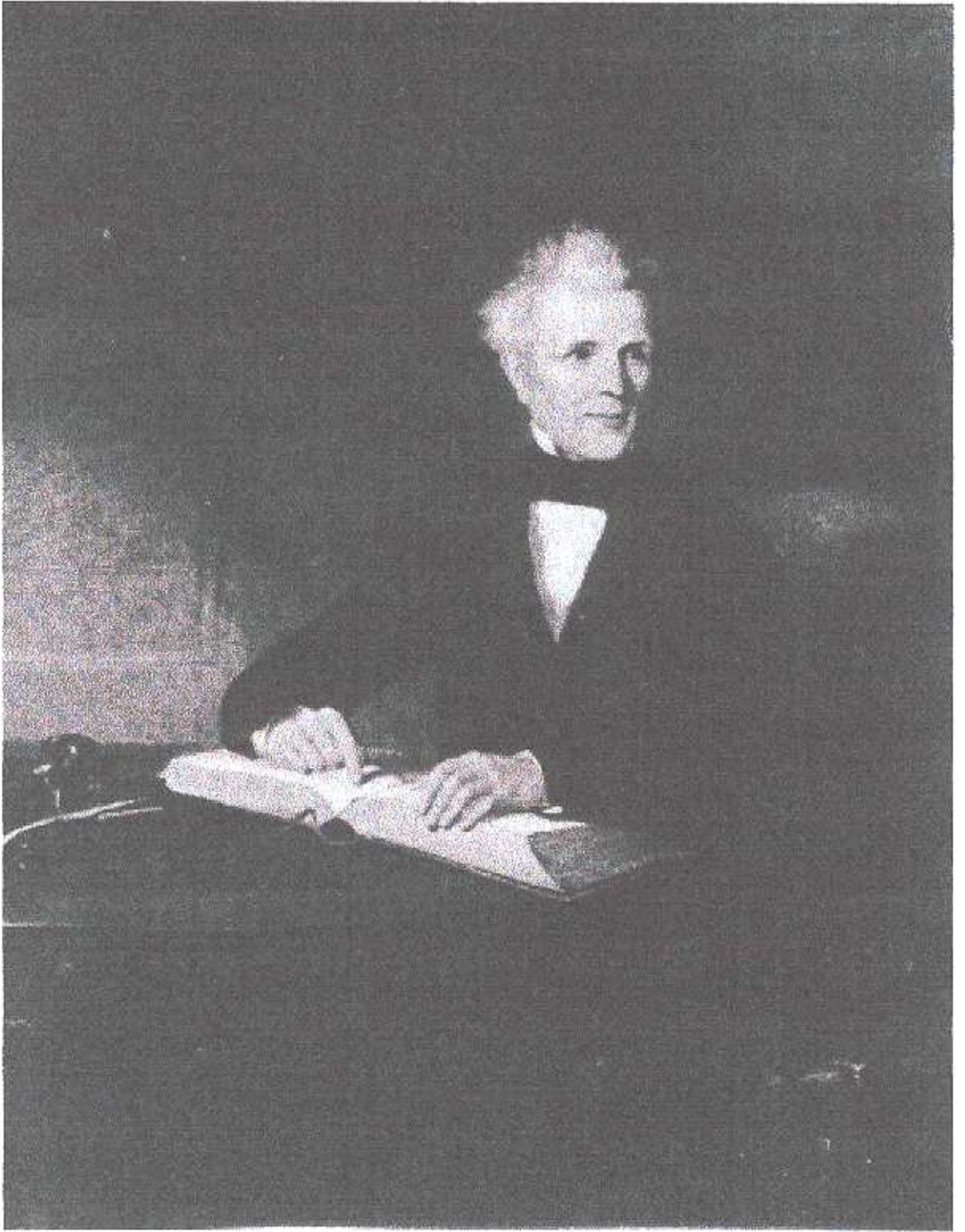


Figure 3-13: Dr James Mitchell in 1854, oil painting by Marshall Claxton, oil 140x112cm. State Library of NSW.

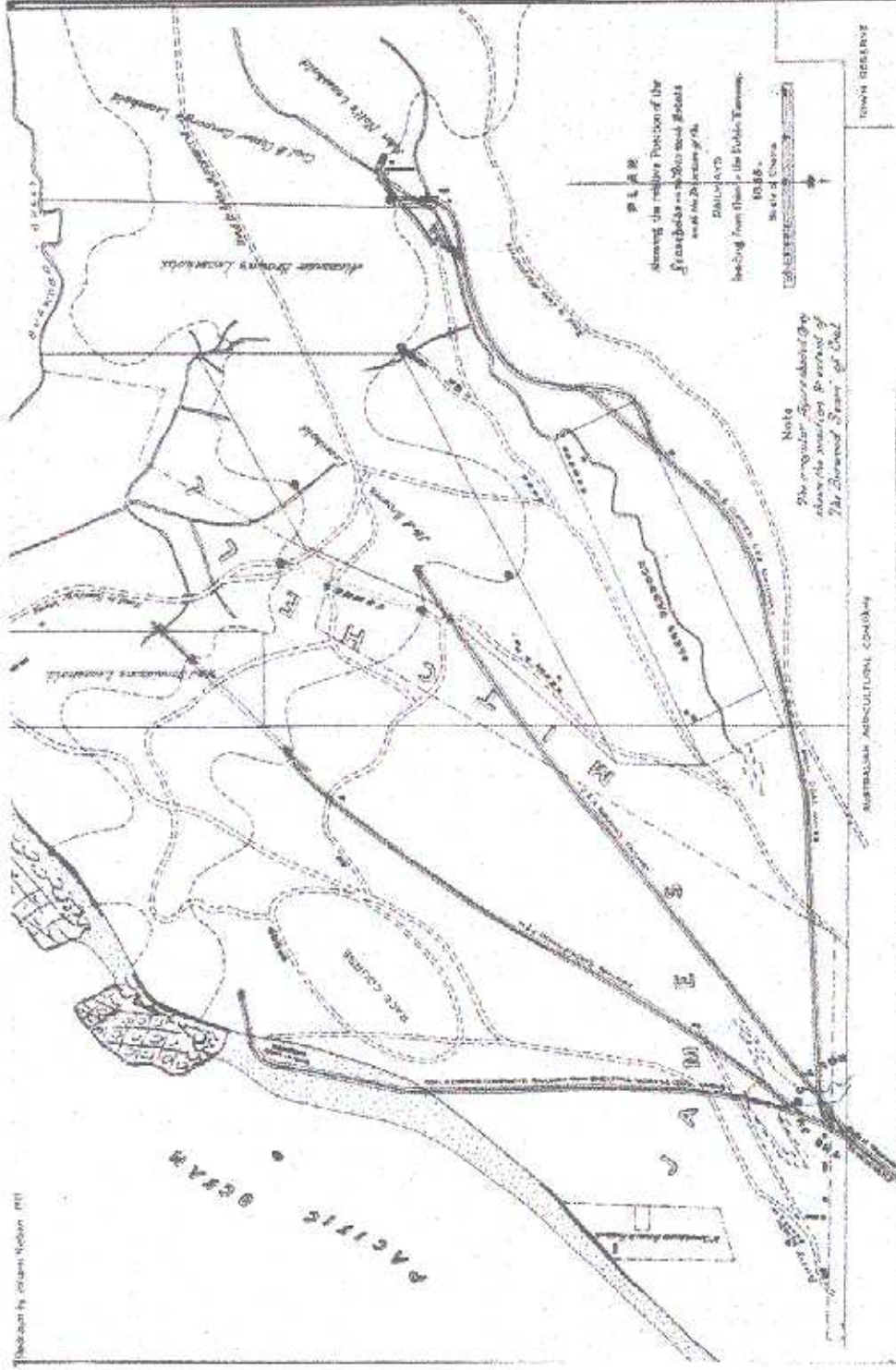


Figure 3-14: The northern part of the Burwood estate in 1855, redrawn by J. Nielsen 1971. The northern entrance of the coastal railway is shown, as are the coke ovens immediately alongside. The coal mines are shown as 'leaseholds'; most are on the ridge, but Donaldson's leasehold is below the ridge, within the present SRA. The Glebe paddock on the right is Church land, not owned by Mitchell. Reproduced from David Branagan *Geology and Coal Mining in the Hunter Valley 1791-1867*, 1972.

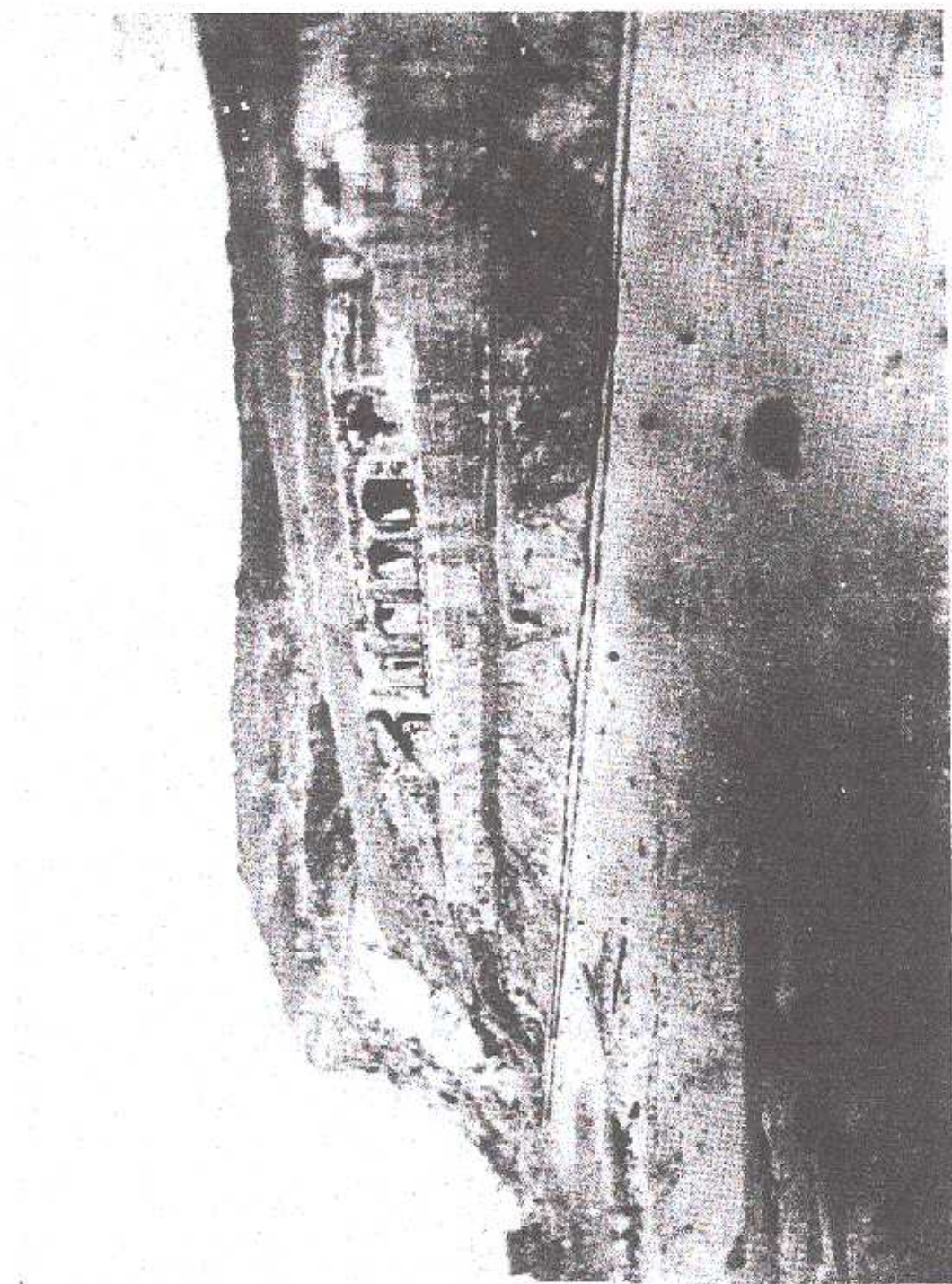


Figure 3-15: The 1850s coke ovens, at the northern entrance of the coastal railway tunnel. State Library of NSW, Papers of Dr James Mitchell. Reproduced from David Bramagan *Geology and Coal Mining in the Hunter Valley 1791-1861*, 1972.

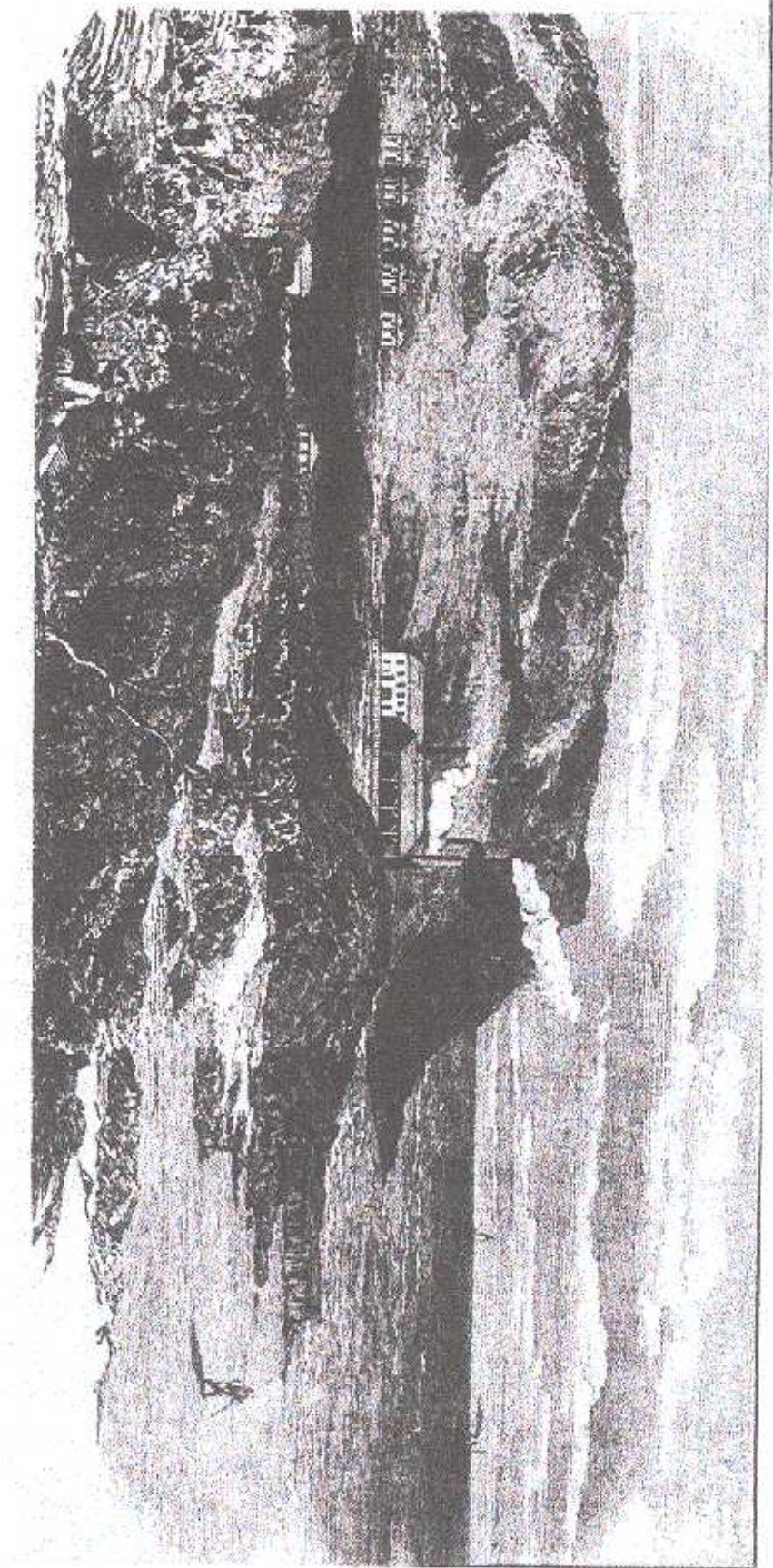


Figure 3-16: The Burywood Copper Smelter, print from the *Illustrated London News*, 11 February 1854, State Library of NSW.

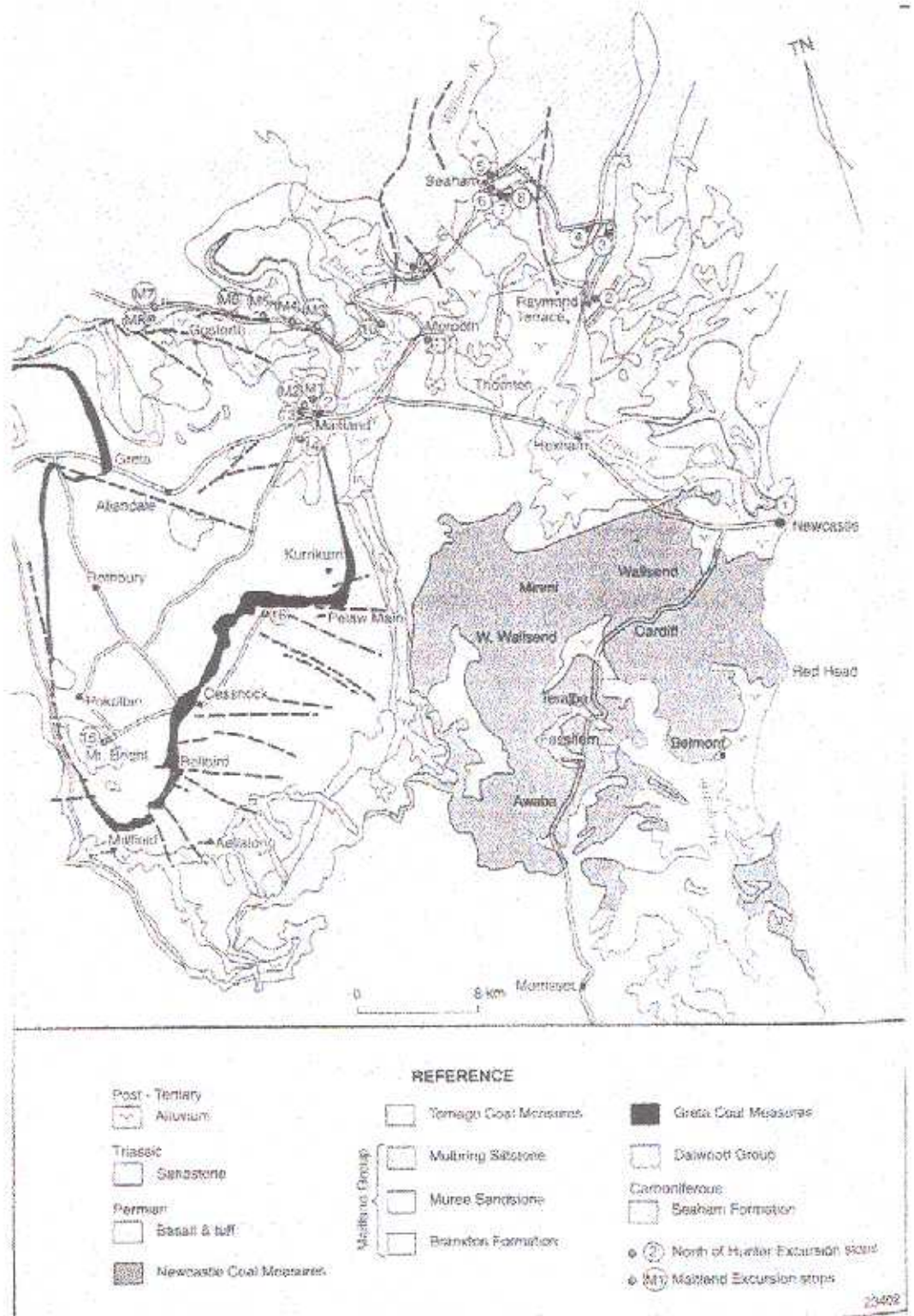


Figure 3-17: Geology of the Hunter area, showing the Newcastle Coal Measures.
 Reproduced from David Branagan and Gordon Packham *Field Geology of New South Wales*, 2000.

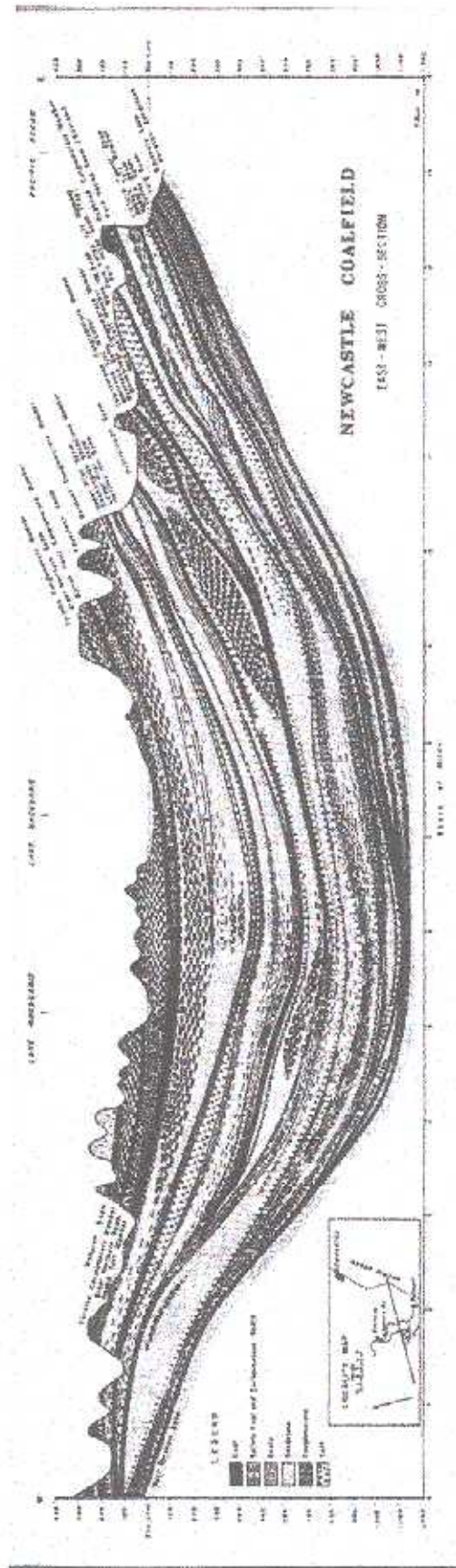


Figure 3-18.: S-N section through the Newcastle coalfield: the right hand edge shows the sequence of seams from Victoria Tunnel, at top, to Borehole, at base. Reproduced from David Branagan *Geology and Coal Mining in the Hunter Valley 1791-1861*, 1972.

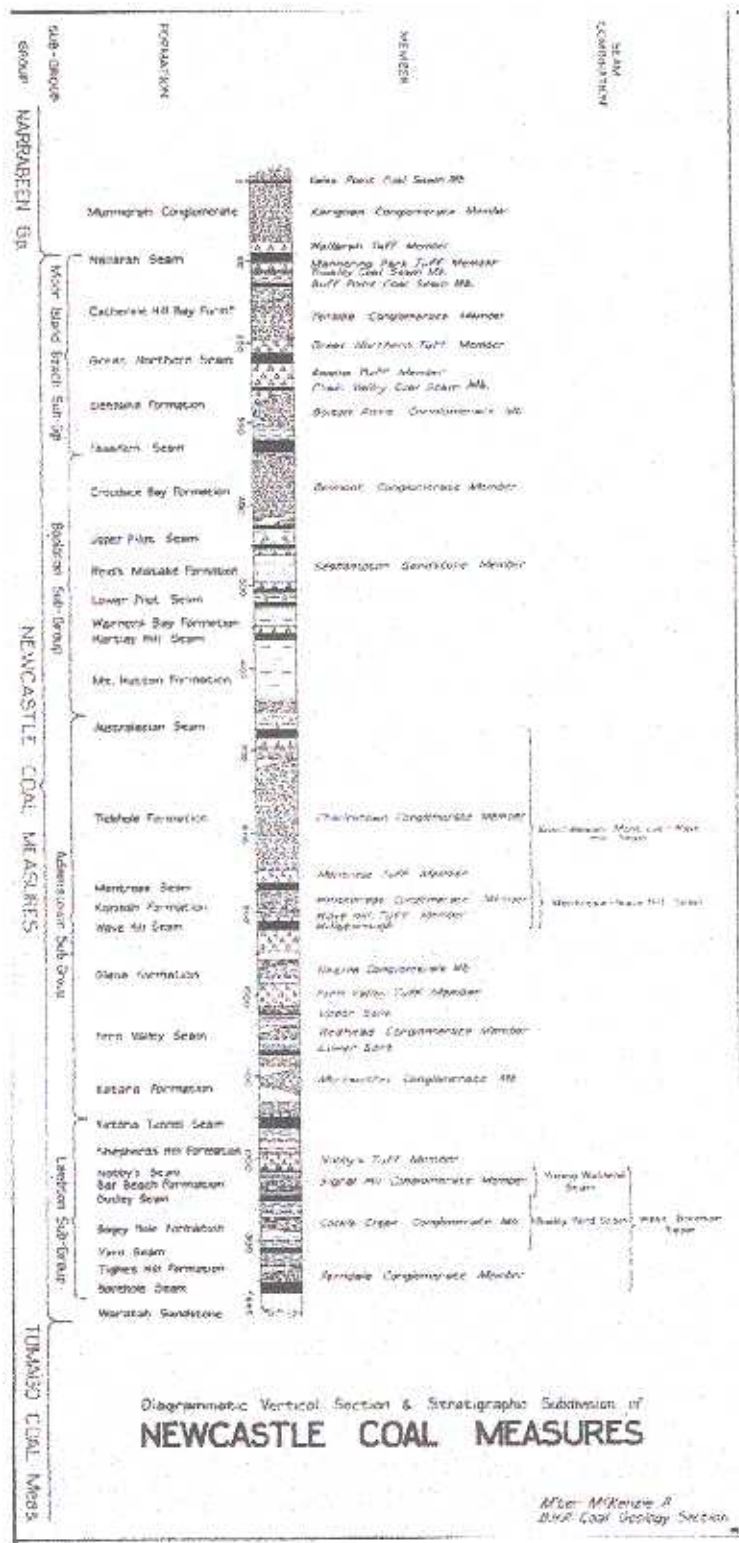


Figure 3-19: Stratigraphy of the Newcastle Coal Measures. The Victoria Tunnel Seam to Borehole Seam sequence is at the bottom of the diagram. Reproduced from David Brauagan *Geology and Coal Mining in the Hunter Valley 1791-1861*, 1972.

VERTICAL SECTION

OF STRATA IN BURWOOD GULLY

AT END OF MAIN RUN

Victoria Colliery
NEWCASTLE
Scale $\frac{1}{4}$ to a Foot.
COAL & COPPER COMPANY.

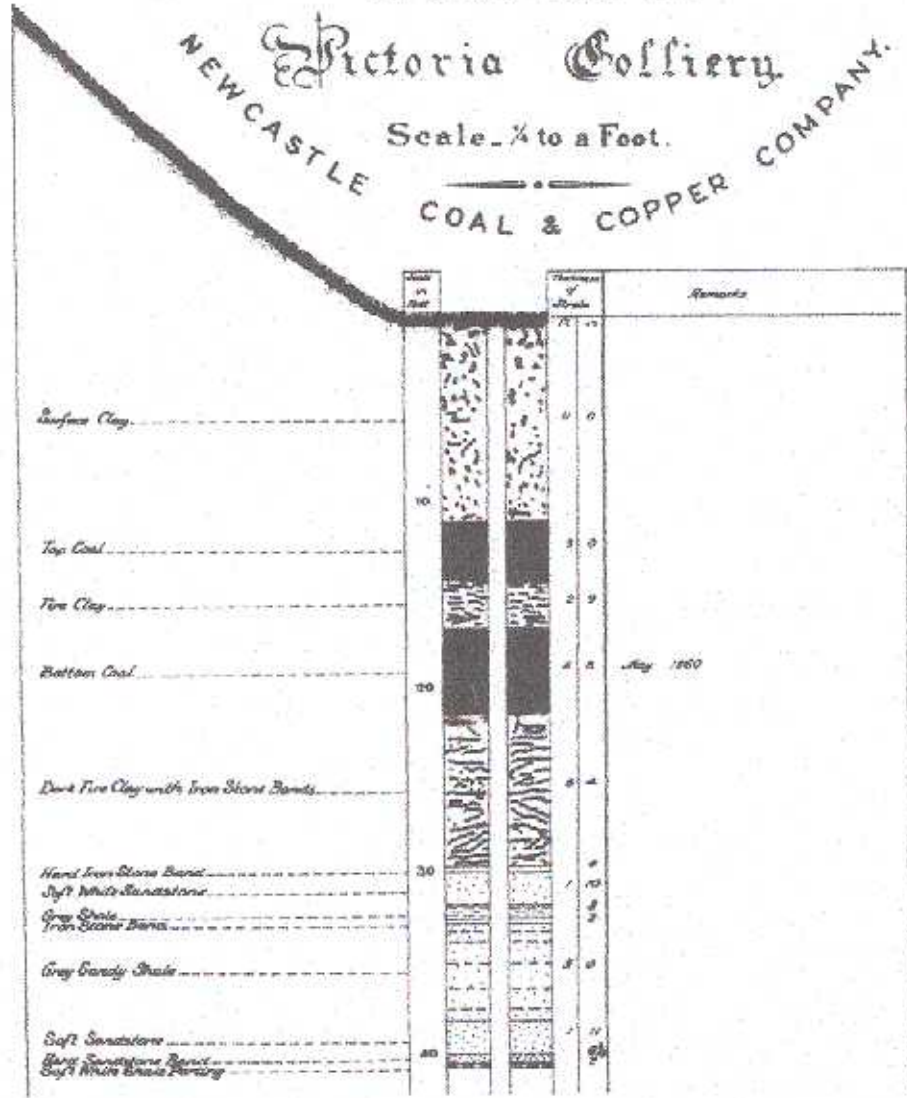


Figure 3-20: Section through one of Mitchell's mines in 1860, showing the layer of clay between two layers of coal in the Victoria Tunnel Seam. Redrawn by J. Nielsen. Reproduced from David Branagan *Geology and Coal Mining in the Hunter Valley 1791-1861*, 1972.

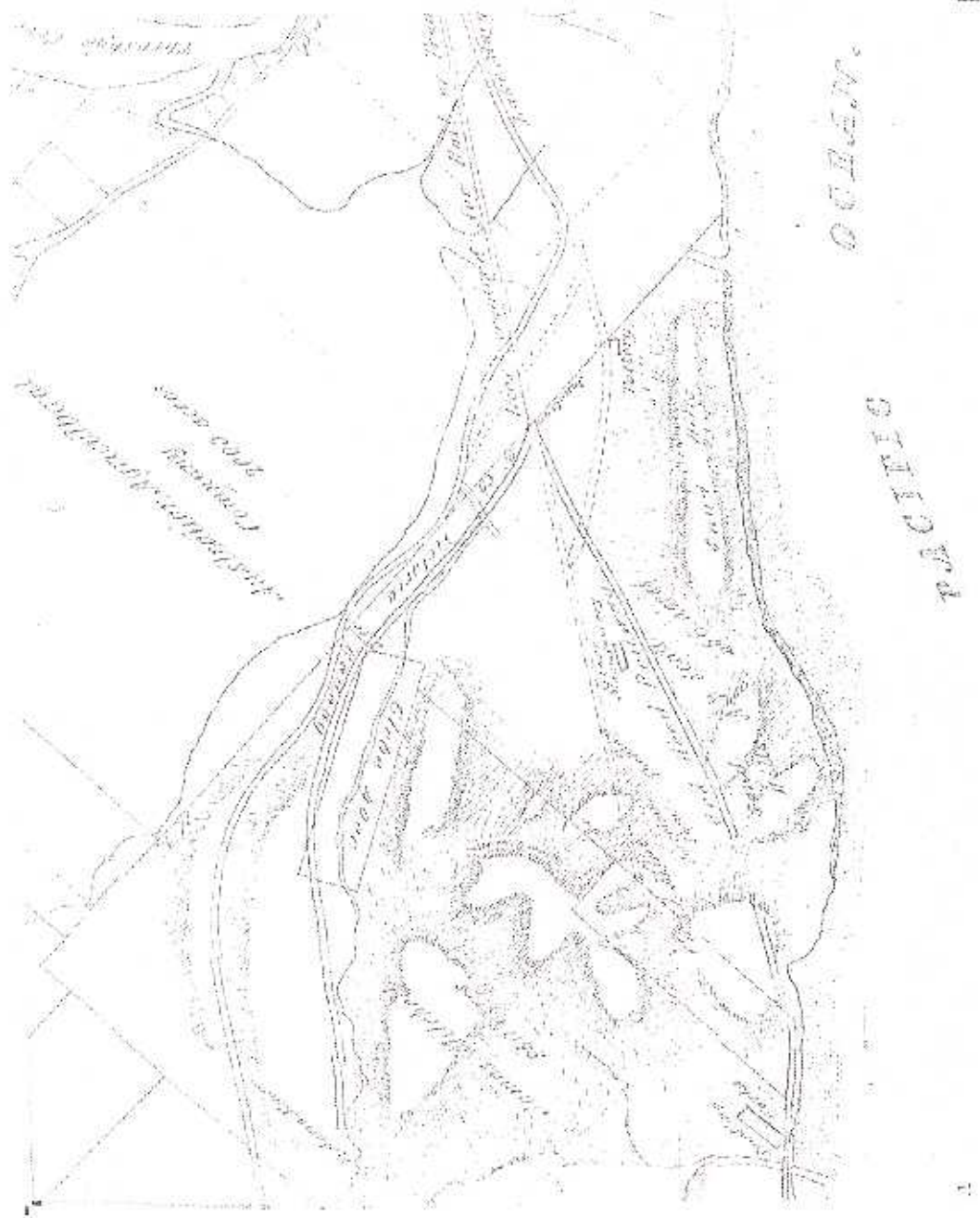


Figure 3-21.: Detail of Plan of Burwood estate, showing the 1860s Glass Manufactory, just north of The Ridge (the Merewethers' home), alongside the coastal railway. South of The Ridge is written 'Porcelain' and the word 'share' which may be the site of another of Wolfskehl's projects. Newcastle Region Library, Merewether Estate Archives.

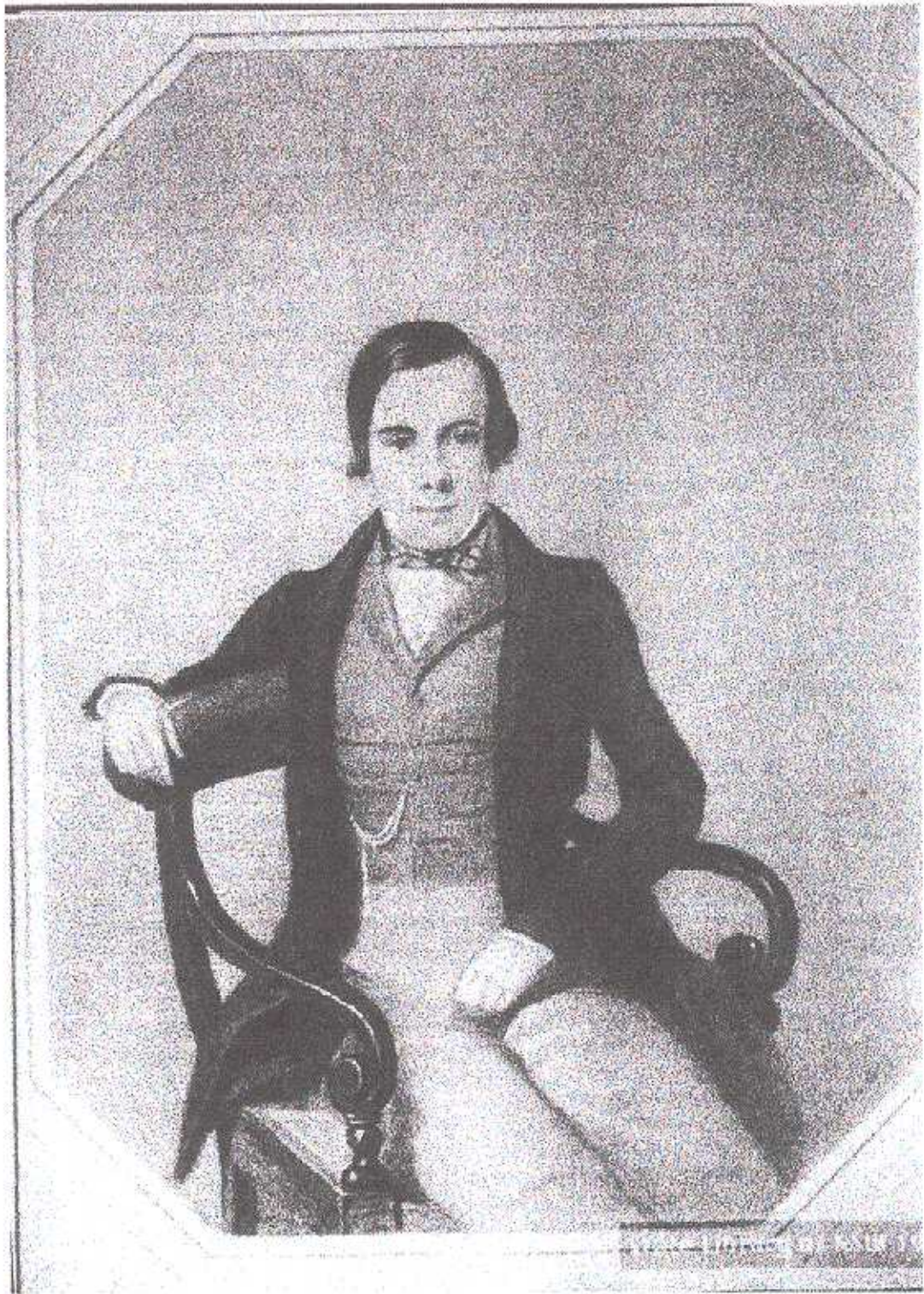


Figure 3-22: E.C. Merewether as a young man, c. 1841, watercolour by Wiliam Nicholas (c.1807-1854) 20.4x15.3 cm, State Library of NSW P2/342. Educated at Charterhouse, Westminster and Oxford he had intended to become a clergyman, hut instead emigrated to Australia in 1841, where he was soon appointed as aide-de-camp to Governor Gipps.

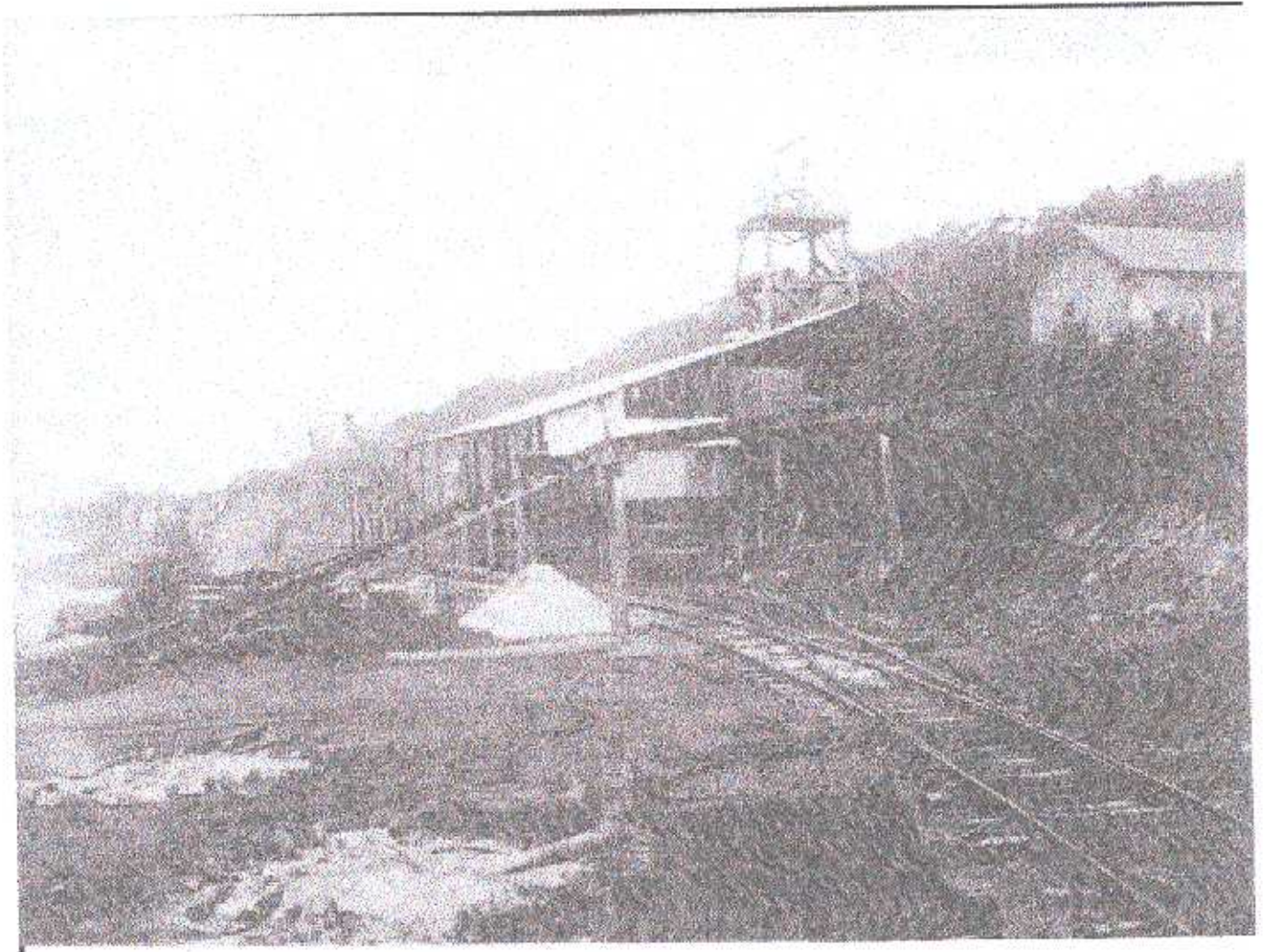


Figure 3-23: The Burwood Colliery at Glenrock in 1885. This shows the structures over No.1 shaft ('A' Pit). The shaft would be directly below the wheel of the headframe. There would be two cages, one for the men, one for the coal. The coal was loaded directly onto rail hoppers, at bottom left, and either stored in the bins to the east (Fig. 25) or sent to Newcastle. The two 20x36 ft winding engine would be housed in the shed at centre right. Photo by Ralph Snowball (1849-1925). Newcastle Region Library, Hunter Photo Bank; 0010263.

Horizontal steam winder with tandem headgear

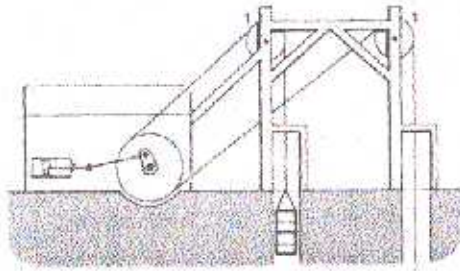


Figure 3-24: Diagram of haulage methods as probably used at the No 1 Shaft of the Burwood Colliery, showing the two cages, or 'tandem headgear', and their link to the winding engine. Reproduced from Neil Cossons 1975 *The BP Book of Industrial Archaeology*, 131.

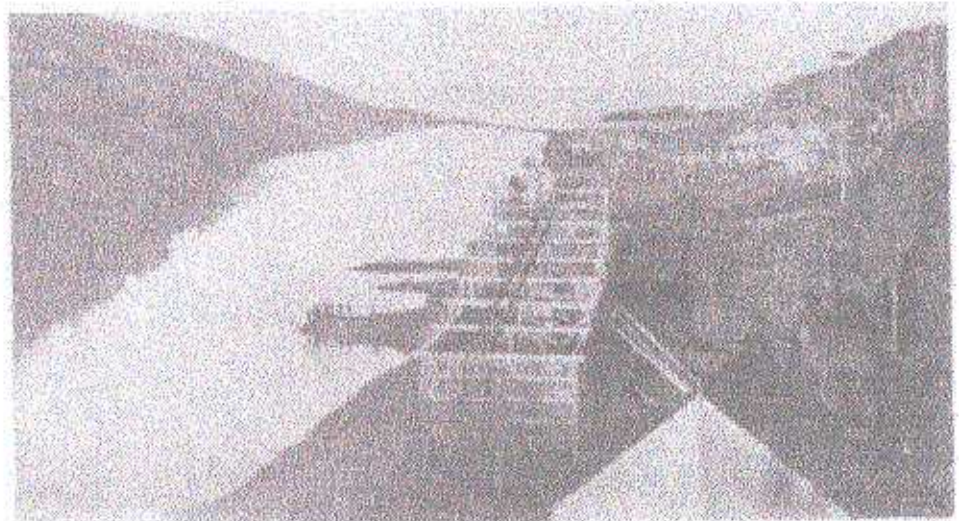


Figure 3-25: The coal storage bins at Burwood Colliery, probably photographed from the headframe shown in Fig. 23. The railway over the lagoon is visible at centre top. Photo by Ralph Snowball (1849-1925). Newcastle Region Library.

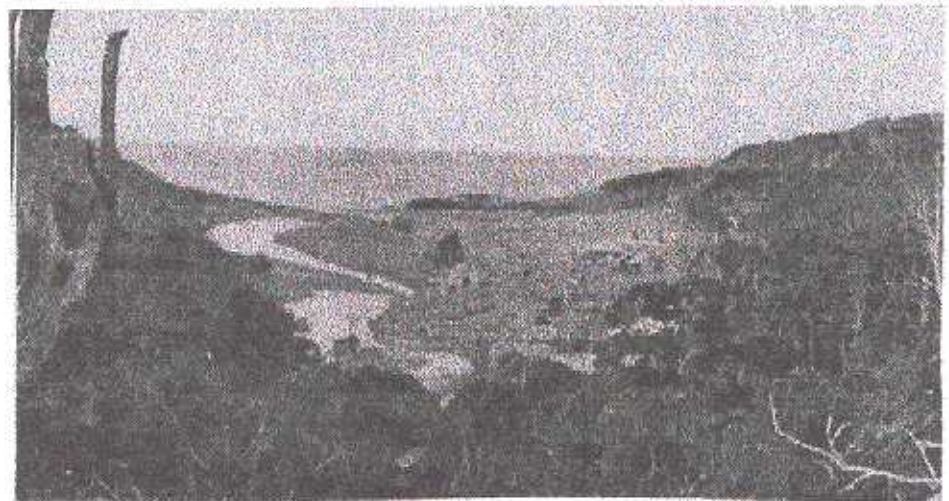


Figure 3-26: Glenrock Lagoon in 1908, from *Souvenir of Newcastle and Maitland*. The now-redundant mining structures of the Burwood Colliery are just visible in the centre, with dwelling to their right. Newcastle Region Library.

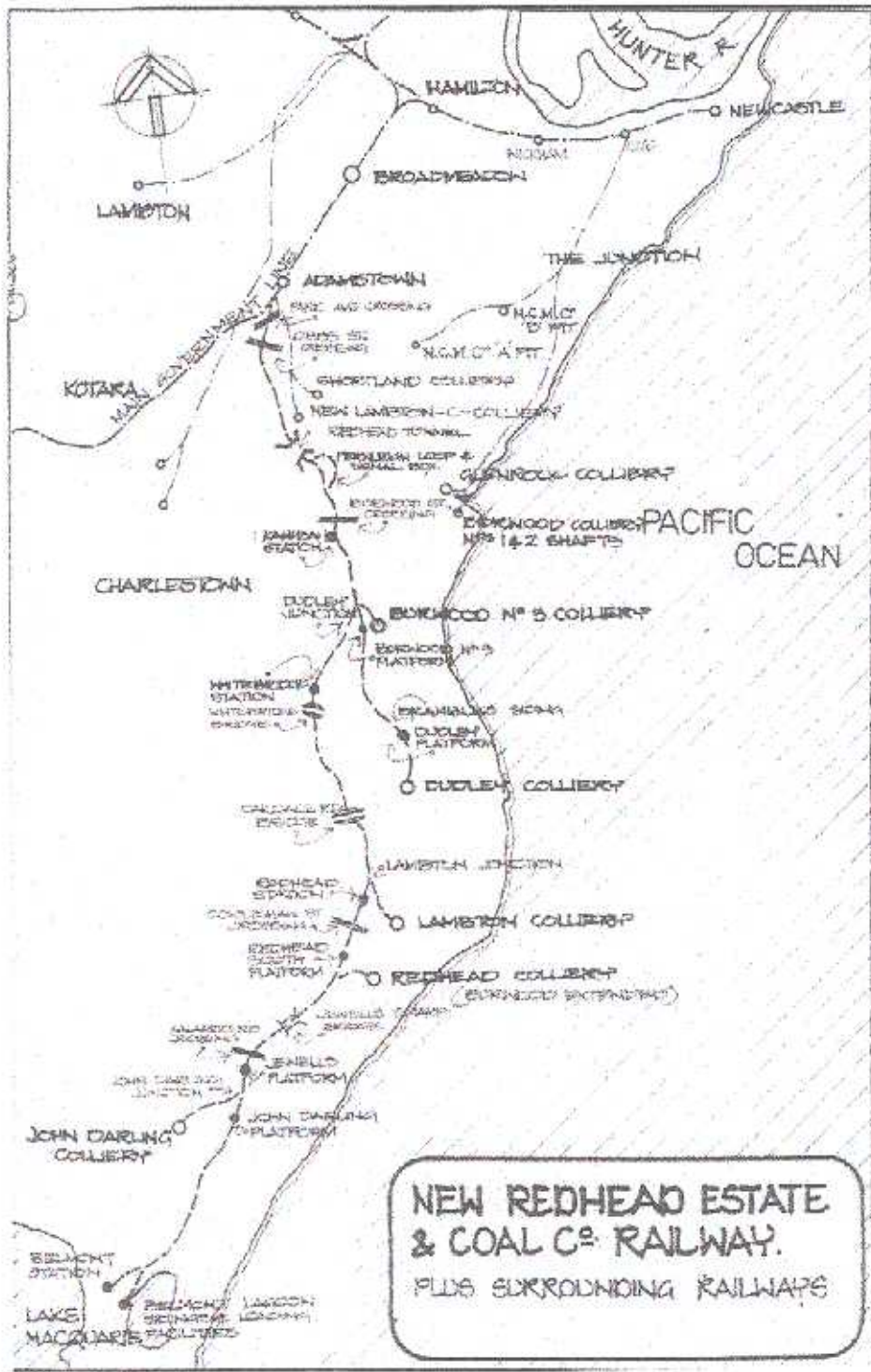


Figure 3-28: Collieries and railway lines in the twentieth century. Reproduced from Ed Tonks, *Adamstown via Fernleigh: Trains and collieries of the Belmont Line*, 1998.

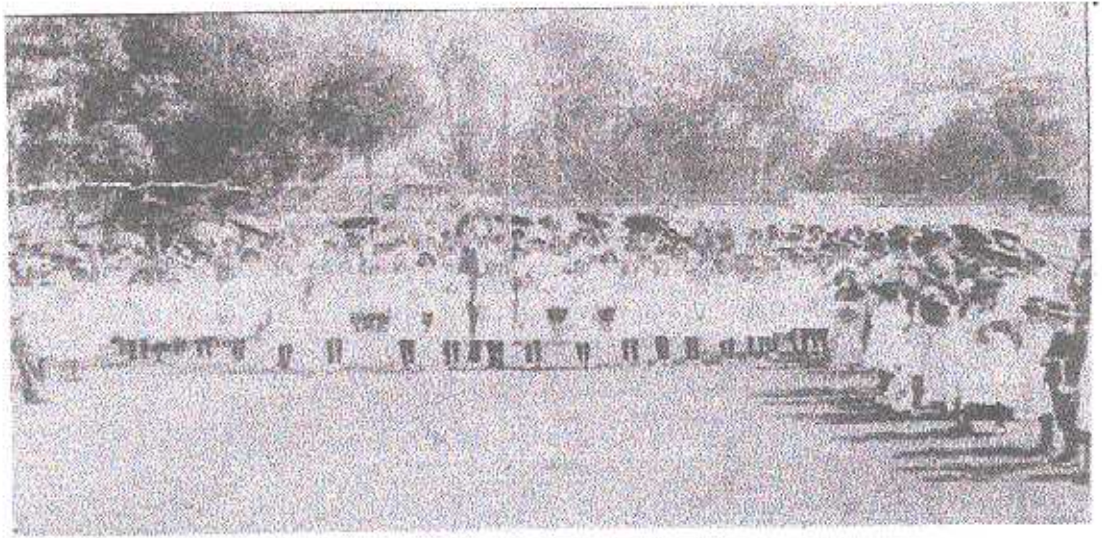


Figure 3-29: Maypole at Charlestown Public School picnic, 1897. Photo Ralph Snowball. Lake Macquarie City Library, Pickering Collection. LAK1706.



Figure 3-30: Picnic at Glenrock Lagoon, c.1900. Lake Macquarie City Library. LAK1011.



Figure 3-31: Rowing on Glenrock Lagoon, c.1900. Lake Macquarie City Library. LAK1012.



Figure 3-32: 'Beach Belles at Glenrock Lagoon' c. 1925. Reproduced from *History of Dudley*, 1987, 84.

4.0 Landscape Analysis

4.1 Introduction

The history of Glenrock leads us to approach the landscape of Glenrock with a range of questions in mind: How do landscape and history intersect? What can we read in the physical environment about the entwinement of people and place in this location? What is the evidence of bio-physical change and continuity, of archaeology and historical archaeology?

In this section of the report we move our investigations from the historic context to the land itself. We look at the land from our various expert points of view: deriving from the environmental sciences, geography and archaeology. Our fields of expertise are reflected in the categories we use to talk about the physical and material aspects of the landscape: natural heritage, pre-contact Aboriginal heritage and historic heritage.

4.2 Natural Heritage

Natural heritage is a term used to describe the ways in which our society understands the value of the environment, and its processes, for our culture, for science, for our life – support, or in terms of values we understand to be outside the realm of human perception. The latter values are sometimes termed “existence value” (ANHC 1996:3). Natural heritage values are considered here in terms of biodiversity, geodiversity, evidence for environmental change over time and landscape and scenic values.

4.2.1 Biodiversity

Flora

NPWS has recently commissioned a flora survey of Glenrock SRA and Awabakal NR. The work was undertaken by Eastcoast Flora Survey and submitted in 1998 (Bell 1998). It is an excellent piece of data collection and analysis and the statement of natural

significance with respect to flora is based almost entirely on its findings. The exception is an examination of trends in the status of species, including ROTAP listings and locally significant plants. Even here, the review of literature in Bell (1998) assisted the comparison.

At the community level, the SRA contains 12 distinct vegetation communities derived using the standard PATN clustering strategy (Figure 4.1). Only three of these occur in the neighbouring Awabakal NR. Within a 50km radius, other reserves only duplicate four or less of these communities. This is an indication of the relative richness of the flora on the coastal Permian soils and the restricted distribution of these same substrata.

Eleven of the 12 communities are poorly conserved in the local area (within 50 km). Eight of the 12 are poorly conserved regionally (within the Sydney Basin); and six of the 12 are poorly conserved nationally (Specht et al 1995).

The completeness of the survey allows a direct appreciation of flora biodiversity at the species level, and a comparison with other areas in the region. The total number of species recorded for Glenrock SRA is 349, over an area of 483 ha. This provides a floristic diversity index of 72.26 (spp/ha). This index is in the top five of the 20 conservation reserves in the Sydney Basin region. The other four reserves are all nature reserve status, i.e. reservations made and managed for the conservation of natural values. Glenrock SRA is the only multi-use area in this high category.

This index takes no account of the law of diminishing returns, where the number of different species can only be expected to keep increasing, with increases in area surveyed, up to a critical area size. Glenrock has 12 different vegetation communities providing a wide range of flora habitats over its 483 ha. It is likely to be at or near the critical area for maximum species diversity.

A third indicator of flora biodiversity is signaled by “focal” or “flagship” species. These are taxa which, because of their rarity or relationships with a range of other species,

indicate the completeness of a population in terms of its natural diversity. There are seven species which are rare or threatened and another 15 species which are considered to be regionally significant (poorly conserved within the Sydney Basin) (Bell 1998: 59-63).

Conclusion

Flora biodiversity is significant at three levels: community level, species level, and focal species level. The flora biodiversity of Glenrock Lagoon SRA is very high, and would be consistent with an area dedicated for the conservation of its natural heritage alone.

Fauna Biodiversity

The high number of habitats in the area which are represented by the vegetation communities and the many ecotones between them, indicate the potential for significant fauna diversity. The extent to which this potential is currently realised has been strongly influenced by past and present disturbances. The increasing geographical isolation of the area, as the surrounding ridgetops become urbanised, has also affected the viability of these habitats.

The fauna data is piecemeal and old. The most comprehensive survey appears in Croft (1979) and is likely to be out of date. It recorded 12 native mammal species and 31 reptiles. The same source recorded a single species of amphibia, which is likely to be a substantial underestimation given the extensive gully rainforests in the area.

The mammal species are either tree-dwelling or cryptic (or both). The lack of larger animals, especially macropods, is typical of the disturbance pressure to which the habitats are exposed.

Fauna records for Glenrock SRA on the National Parks and Wildlife Service's Wildlife Atlas database comprise only two species, the Diamond Python and Hawksbill Turtle. However, records since 1980 from the local area (a 40 km by 40 km grid cell centering

on the area, which covers a number of significant reserves¹) describe fauna populations with the potential to inhabit areas of Glenrock Lagoon SRA, and can therefore provide a context for the evaluation of the SRA's fauna diversity. In particular, the database confirms that the macropod and mammalian predator diversity in the local region is limited. Only the red necked wallaby and swamp wallaby have been recorded among the macropods and the only larger predator recorded is the spotted tail quoll. Eighteen species of bats and flying foxes have been recorded in the local area, compared with two species recorded for the SRA in 1979. One of these, the common bent wing bat, is classified as vulnerable. It is likely that many of these additional species would find suitable habitat in the SRA.

The NPWS atlas database records 30 species of reptiles in the same local region, indicating that the species diversity of Glenrock Lagoon SRA, at 31 different species, was (in 1979) a dense concentration of the local region's reptiles in a small area with a consequently high species diversity index. The reptiles recorded in the SRA include a subspecies of the Diamond Python that is classified as vulnerable.

The avian species lists are more current – kept by the Hunter Bird Observers Club. It records 133 native species. The NPWS atlas database records 208 native bird species in the same local region Glenrock Lagoon SRA therefore contains about two thirds of the diversity of the local region. This is a relatively high species diversity for the area and is contributed by the combination of marine, wetland, heath and forest habitats within the SRA. A number of “scarce” and “rare” species occur within the list (11 species). These include two significant species; the powerful owl and the noisy pitta.

Conclusion

Fauna inventories for the area are incomplete and only a piecemeal appreciation is currently available. The mammalian biodiversity is probably low. The lack of larger animals, especially macropods, is typical of the disturbance pressure to which the habitats

¹ Reserves in the grid cell include: Kooragang Is NR, Hexham Swamp NR, Awabakal NR, Blacksmiths NR, Catherine Hill Bay SRA and Munmorah SRA.

are exposed, however the absence of other common species (e.g. bats) in the existing inventories is probably the result of inadequate survey.

The reptilian biodiversity is quite high, when placed in the context of the known reptile recordings of the surrounding local region. It also reflects the predominance of favourable moist habitats in the SRA. Amphibia biodiversity is currently unknown.

There is a significant bird species diversity in the area, provided by the combination of marine, wetland, heath and forest habitats.

4.2.2 Geodiversity

The SRA contains the entire formation of the lower Newcastle coal measures. These are the formations, laid down in the Permian period, which underlie the younger Triassic sediments of the Sydney Basin. Their uplift and cross-sectional exposure by marine erosion have revealed them to spectacular effect along the beaches of the SRA (Figure 4.2).

The Newcastle coal seam comprises eight separate seams, seven of which are exposed at various locations within the reserve. The lower seams are exposed on the Merewether cliff face, a headland on the northern end of the SRA. The strata dip generally to the south. The changes in the elevation of the coal seams and their intervening Permian sediments relative to sea level along this dip are apparent on cliffs at Little Redhead Point and the Dudley headland.

The Permian sediments which separate the coal seams include fossil-bearing shales as well as conglomerates, sandstones and cherts (tuffs) indicating regional volcanic activity. At the Dudley headland, the rock platform contains fossilised tree trunks embedded in the conglomerate sediments over the Victoria coal seam. Adjacent to these fossilised remains is an infant blow-hole in the rock platform.

The geomorphology of the area is similarly diverse. In particular, the ancient coastal lagoons at Glenrock Lagoon and Murdering Gully show different stages in the aging of these features. Glenrock Lagoon was formed by the Quaternary rise in sea level and was then closed by the accumulation of marine sand deposits at its mouth. Murdering Gully exhibits the next stage of maturation where a combination of wind-blown (aeolian) sands and sedimentation reclaims the lagoon and establishes a terrestrial surface much younger than its neighbours. Recent sedimentation studies of Glenrock Lagoon show that it is headed in this same direction (Peady 1991) (Figure 4.4).

Another notable geomorphological feature is where the armouring effect of the conglomerates has protected the large rock-platform “flags” of Flaggy and Little Flaggy Creeks from weathering to produce the waterfalls and caverns which characterise these waterways (Figure 4.3).

Conclusion

The SRA has high geodiversity, demonstrating through a variety of features the continuous geological development of the Sydney Basin over the course of 300 million years to the present. By contrast, in the majority of the Sydney Basin, where Tertiary sediments are intact, only a much shorter geological history of 50-60 million years is apparent.

4.2.3 Environmental Changes

Landforms

Geomorphological processes in the SRA are ongoing – especially coastal processes. While not a receding coastline, the foreshores of the SRA will continue to be eroded by wind and waves. The softness of the sediments of the Newcastle coal measures will ensure that cliffs are periodically undercut and the cliff face will change. Ludwig Leichhardt, walking along the foreshore in 1842, noted a very recent rockfall at Dudley headland adjacent to the petrified trees. This rockfall is now a “permanent” feature of the rock platform.

Some geomorphological processes occur more frequently. Over the course of the present project as a result of high rainfall, tides and winds, the mouth of Glenrock Lagoon was breached and the lagoon almost entirely drained to the ocean. Soon after, the same forces re-established the sand bar and the lagoon refilled.

More dynamic changes in landform are occurring through erosion. Many unconsolidated and informal tracks occur running up and down slopes. These rutted areas are quickly found by runoff stormwater and become eroded drainage lines. On lands supporting wind-sheared heaths and littoral rainforests, these erosion channels open new edges of the plant communities to exposure. The disturbed vegetation recedes and fails to stabilise the edges of the erosion channel and the erosion is unchecked. The profile of the low headland between Glenrock Lagoon and Burwood Beach is changing due to these processes (Figure 4.5).

Vegetation

The notes and letters of the explorer Leichhardt visiting the area in the 1840s provide a picture of the vegetation during a time of settlement and farming in the lower Hunter, but before the era of large scale coal exploitation. Even then, he notes significant changes preceding his visits. The cabbage tree palms, once so numerous that the upper Glenrock Lagoon and lower Flaggy Creek area was called Valley of Palms, had all but disappeared. The species list in the NFFPS report of 1983 included one individual of this species, but Bell (1998) did not find it. We can therefore assume that without active management intervention *Livistonia australis* is lost to the SRA.

Leichhardt made a number of other botanical observations. He described the hills around Glenrock Lagoon as being covered with Eucalyptus, with an understorey of *Pultenea*, *Davisia*, and *Gastrolobium*². This corresponds in both floristics and location to the Permian Macquarie Shrubby Forest and Permian Macquarie Grassy Forest communities in Bell (1998). These communities, in this area, can thus be considered relatively intact.

² The latter genus is now divided among *Pultenea*, *Oxylobium*, and *Styphelia*.

Leichhardt's observations focussed upon the *Proteaceae*, *Epacridaceae* and fern families, with which he was very familiar from previous work in Port Jackson. He recorded a number of genera in the coastal heaths; *Leucopogon*, *Styphelia*, *Lissanthe* and *Monotoca*. He also noted a low form of *Isopogon aneminifolius*, the scarcity of *Epacris* (compared with Port Jackson) and the total absence of *Grevillea*. These observations are mostly borne out by the current surveys. Bell (1998) records only two species of *Epacris* (compared with 12 in Port Jackson). *Grevillea* is still not found in the area. Species of *Leucopogon* and *Monotoca* are numerous in the heath communities delineated by Bell (1998). However, *Styphelia* and *Lissanthe* are no longer found in Glenrock SRA (Bell 1998), nor were they present earlier in 1983 (NFFPS 1983), although both occur in Awabakal NR.

Another change of note is the absence in the present day SRA of *Boronia*. Leichhardt noted that *Zieria* and *Boronia* were the only representatives of the *Rutaceae* in the area. While *Zieria* persists to the present, *Boronia* is absent in the species lists of NFFPS (1983) and Bell (1998).

It can therefore be inferred that the heath communities of the SRA have undergone considerable floristic change over the last 160 years but still retain much of their original character. The species which have disappeared are all very sensitive to fire and the increased fire frequency as the area became more and more settled is a possible reason for their loss.

Leichhardt had a particular interest in ferns, and identified a number on the banks of Glenrock Lagoon and Flaggy Creek. Tracing nomenclature changes, it is possible to determine which species are retained in the present day flora and which have been lost.

Three of the six identifiable species described in his letters as occurring "in profusion" in 1842 are present today. These are: *Cyathea australis*, *Pyrrhosia ruprestris* and *Anthropteris tenella*. Two of the ferns which have disappeared (*Pyrrhosia confluens* and *Pteris tremula*) still occur elsewhere in the Sydney Basin region (Carolin and Tyndale

1994) and one, *Asplenium nidus*, is no longer found in the region. Again, these observations suggest a degree of change in the wet riverine communities, but also that the vegetation today is a genuine remnant of pre-settlement types.

Bell (1998) records 23 introduced species, which is a relatively low diversity of weed species in a total list of 372 species. However they include the six most invasive and damaging weed species of the Sydney Basin.

lantana	<i>Lantana camara</i>
bitou bush	<i>Chrysanthemoides moniliferum</i>
crofton weed	<i>Ageratina adenophora</i>
blackberry	<i>Rubus fruticosus</i>
privet	<i>Ligustrum lucidum</i>
morning glory	<i>Ipomoea purpurea</i>

These are all well established on, and emanating from, areas of disturbance. Bitou bush is noted in the Service's 1997 Plan of Management for the SRA as having penetrated well inland from its usual dune habitat (Figure 4.7).

The weed infestations from these aggressive colonisers of disturbed surfaces are frequently linked with landform changes, especially erosion. A good example is provided by the abandoned banana plantation site (Site Complex 7 see page 4 –34) on the ridge behind Little Redhead Point. This cleared and unstabilised area has been eroding for many years and also contributing high velocity runoff water to downslope areas. The vegetation on these lower slopes has been destabilised by the transport of erosion products and by a series of informal tracks up from the beach. This has provided suitable conditions for bitou bush to extend from the beach, up the slope and even onto the abandoned plantation land itself. Lantana is also established on the margins of this disturbance where shade disadvantages the bitou bush (Figure 4.6).

Lantana, blackberry, crofton weed and privet have all invaded the large disturbed areas of the SRA (quarry, gun club, Burwood Colliery site, Bailey's Orchard, etc), with crofton weed and privet in particular extending farther into natural vegetation areas along creek lines.

Garden escapes have changed the vegetation along the western boundaries of the SRA, and will continue to do so. The changed vegetation has formed a weed/native species mixed zone which can buffer the remaining vegetated area from further invasion. With time, this zone is becoming wider.

Fauna

The non-avian fauna of the SRA is significantly diminished from the original fauna. Sub-regional species lists from the NPWS Wildlife Atlas database, which sample habitat types that are still represented in the SRA, show the potential for a much richer faunal array.

Macropods were certainly present in the Glenrock Lagoon area in the past. Both Leichhardt, visiting in 1842, and Lt. William Coke, describing walking trips from Newcastle in 1827 (see Section 3.5), mention kangaroos in the area. Coke's description separates "old man kangaroos" and "wollobys"³.

Leichhardt referred to a number of snakes in the area in 1842 which are still present today. He identified the black snake, diamond python, and an extremely venomous snake with "mixed yellowish colours". This latter description suggests the tiger snake (rather than the brown snake or death adder) which is not in current species lists but was recorded at the Yuelarbah Trackhead car park by the consultant team in February 2002.

Lt. Coke noted a number of birds in the area. These included quail, king parrots, lowrie parrots, ground parrots, rainbow lorikeets, black cockatoos, regent bower birds and satin bower birds. Allowing for the generalisations in common names for birds at that time,

³ Presumably, the "old man kangaroo" was the largest kangaroo about – the forest grey, and the "wollobys" were the red-necked wallaby and the swamp wallaby.

some disappearances in the intervening time appear likely. Certainly, the black cockatoo is no longer recorded in the SRA, and perhaps the rainbow lorikeet and satin bowerbird have also been lost.

4.2.4 Landscape and Scenic Values

The NPWS Plan of Management stresses scenic values in its description of the attributes of the area and includes the need to preserve or rehabilitate the scenic value of disturbed places in its management prescriptions. The present study, while confirming the high scenic quality of some views, shows that the viewsheds are in fact quite limited in extent and that much of the SRA is generally unseen from its perimeter or major points of access.

Views from the Perimeter of the SRA (Figure 4.8)

There are four main viewpoints where views into the area are afforded:

1. Hickson Street lookout on Merewether Point (Figure 4.10)
2. Stretch of Scenic Drive, Merewether, opposite Charlotte St Reserve (Figure 4.13)
3. Bailey's Orchard Historic site on Scenic Drive, Merewether Heights (Figure 4.12)
4. Colliery Bowls Club on Burwood Road, Whitebridge (Figure 4.11).

All views from these vantage points show areas of the SRA leading to sweeping ocean vistas. It is the wide horizon experience which gives the impression of expansive views of the SRA itself. However the SRA is internally divided by three important ridgelines which compartmentalise and limit these views. These are the ridges north and south of the lagoon, and a smaller ridge between Dudley Beach and Burwood road, running parallel to Burwood Road.

Overall, less than 200 ha or 41% of the SRA is visible from all of these viewpoints combined. The most frequently seen landforms are:

- The northern side of the ridgeline south of the Waste Water Treatment Plant;
- The northern side of the ridgeline south of Glenrock Lagoon, and
- Parts of Murdering Gully/ Smelters Beach.

Neither Glenrock Lagoon nor the Flaggy Creek area are visible from perimeter viewpoints. Dudley Beach and its large hinterland are also unseen from the perimeter of the SRA. It is important to note that the disturbed “eyesores” of the quarry and old banana plantation are not viewed from outside the park. However the cleared area of the gun club is visible from two major viewpoints (#2 and #3). The Waste Water Treatment Works is also visible from viewpoint #2.

Internal Views (Figure 4.9)

There are three major viewpoints from within the SRA (i.e. in areas which are currently easily accessible):

1. Leichhardt’s Lookout at the western end of Glenrock Lagoon (Figure 4.14)
2. Banana plantation escarpment (Figure 4.14)
3. Dudley Beach car park and Dudley Beach (Figure 4.16)

An area of about 310 ha (64%) is viewed collectively from these vantage points. The most seen areas are the lower portions of Glenrock Lagoon and its surroundings, the hinterlands behind the Waste Water Treatment Works, and the vegetated slopes behind Dudley Beach. Internally, the visual experience is largely unaffected by the large disturbed areas. The quarry and gun club areas are unseen from the viewpoints outlined above. The main visual intrusion is the residential development on the ridgeline of Burwood Road, but this is outside the SRA boundaries.

Conclusions

Views into the SRA from its perimeter are limited, with many areas of the park hidden. Important views are revealed inside the park. Significantly, the seriously degraded areas of the quarry and gun club are either not seen from these major vantage point, or only seen from a distance. The Waste Water Treatment Works is rarely seen from vantage points within the SRA and is only overlooked from one perimeter viewing area at Scenic Drive, Merewether.

One of the most important views from within the SRA, in terms of the range of features it reveals, is from the down-hill end of the old banana plantation (Perimeter Viewpoint #2 and Site Complex 7). Views from this point (Figure 4.14) take in the mouth of Glenrock Lagoon and adjoining foreshores, the sweep of Murdering Gully/Smelters Beach, the Merewether headland, and rival in quality those from Leichhardt's Lookout.

4.3 Pre-and Post Contact Aboriginal Heritage

In a physical landscape context, an important form of evidence of the Aboriginal past and of Aboriginal heritage comes from archaeological analysis, strongly informed by the study of geomorphology. In the case of Glenrock, archaeological evidence relates not only to a deep past, but also to Aboriginal occupation of the area in the 19th century which has also been discussed in Section 3. Therefore conventional distinctions between pre and post-contact Aboriginal heritage and so-called historic heritage, are somewhat problematic. This re-inforces the need, which is a central aim of this study, to take a holistic approach to heritage assessment considering the relationships between communities, histories, places, environments and landscapes.

This section is based upon existing and comparative information about Glenrock's Aboriginal heritage. No comprehensive survey of the area for Aboriginal archaeological sites has been undertaken in the past, nor was it required by the brief for the present study. The following section is therefore based upon a re-assessment of past reports, recorded data and contextual archaeological information relevant to the region. It should also be noted that Aboriginal heritage is far broader than simply identifying archaeological sites. This section concentrates on the physical aspects of the landscape, while Section 3 considered the historic context, and Section 5 will consider the social and community aspects of Aboriginal heritage at Glenrock.

4.3.1 Aboriginal Archaeology

Pleistocene sites

Archaeological findings at a number of sites across the continent, possibly including Lake Mungo, indicate that people first arrived in Australia at least 40,000 years ago (Mulvaney and Kamminga 1999:138-45). According to the 'Fast Trackers' model of first settlement (Mulvaney and Kamminga 1999:132-33), widespread colonisation of the continent would have occurred rapidly after the first arrival of people on the north coast. By 35,000 years, all major environmental zones, including the southeastern forestlands, which includes the Newcastle region, were inhabited.

While it is probable that some Pleistocene-age sites still exist in the immediate area of Glenrock, none have yet been identified. At 36,000-25,000 years BP (before present), well after human arrival on the continent, a worldwide cold phase began, and lasted until 15-12,000 years BP. At the peak of this Ice Age (the last Glacial Maximum) the area of Glenrock Lagoon was about 27 kilometres inland from the coast (see Thom *et al.* 1992: 7). The landscape of this coastal hinterland was characterised by ridges and narrow valleys, which were probably vegetated predominantly with sclerophyll forest and woodland. Glenrock Lagoon did not then exist, but instead the course of Flaggy Creek either continued to the coast or joined a larger tributary of the Hunter River somewhere off the present day coast. At that time, people exploiting Flaggy Creek Valley and its immediate surrounds would have subsisted on the resources of the forests and streams. These resources may have been broadly similar to those historically documented in early colonial times for the Cumberland Plain in western Sydney (Kohen 1987, 1988, Mulvaney and Kamminga 1999: 287-89). There must have also been easy access to the broad valley of the Hunter River to the north, as well as the valleys and coastal lowlands to the east.

Much, if not most, of the archaeological remains within Glenrock SRA from this period are deeply buried in slopewash and estuarine sediments or else have not survived intact. It is possible that early archaeological sites have survived within the top metre or so of sediment on elevated flats surrounding the lagoon. The original stratigraphic disposition of artefacts within sediments at open-sites in the vegetated area will have been effected

by a range of natural processes, such as soil creep, tree-root growth, and bioturbation of the soil by invertebrates (particularly ants, worms and termites) and burrowing animals. Invertebrate bioturbation in particular is a common feature of open sites in southeastern Australia (Mitchell 1988; Kamminga *et al.* 1989:32-33).

Surviving site types from this era includes the ubiquitous lithic scatters, and possibly rockshelters with cultural sediments. Organic cultural materials tend to degrade quickly even in slightly acidic soils. However, siliceous stone artefacts are extremely durable and it is likely that many of the stone artefacts discarded in prehistoric times within Glenrock SRA still exist in its sediments. Prior to sea level standstill, the rhyolitic tuff layer seen in the ocean cliffs of Glenrock today almost certainly was covered with hillslope sediment. However, waterworn tuff pebbles from this layer to be in the bed of Flaggy Creek.

Holocene sites

Around 12,000 years BP at the beginning of the early Holocene period, moderate warming and increased rainfall changed the climate to one similar to that of today. During this period the sea level rose at a rate of up to 10-15 metres per thousand years and by 6000±250 years BP, the sea had risen to about its present level (called 'stillstand'). There is growing evidence that the sea level fluctuated about a metre or more above its modern level at stillstand or afterwards. The environmental and topographic evolution of most of Australia's present coastal fringe began essentially after this stabilisation of sea level in the mid-Holocene. Along much coastal land the pounding surf assaulted the sides of the hills and ridges at the oceanfront. Kerr (2000) has described the process in the Newcastle area:

Breaking waves pounding the drowned, sloping hillside cut a small cliff at sea level. Natural sets of vertical cracks (joints) in the rock helped the rock to break up. A wave breaking against the rock face compresses air in the cracks. Once the wave recedes, the air expands with explosive force. After many impacts the explosions burst the cracks wide open, rock is weakened and fails off, leaving a small cliff face.

Over time waves cut the small cliff back to form a notch at sea level, undercutting the rocks above. Unsupported blocks of rock then collapsed into the notch, resulting in further wearing back of the

cliff (cliff retreat). Pounding waves broke up fallen blocks, picked up some of the pieces and hurled them against the cliff causing more erosion, undercutting, collapse and cliff retreat. As the cliffs wore back they left a wave-cut rock platform.

The platform widens and the cliffs become higher as erosion eats into the original hillside. With continuing cliff retreat, rock platforms eventually become wide enough to prevent waves attacking the base of the cliff. Blocks of rock that have fallen from the cliff face also protect the foot of the cliff from the waves.

Wave-cut platforms along Newcastle Coast are made of sandstone and are eroded along horizontal and gently sloping bedding planes. Pounding waves open up joints, leading to fracturing of the rock platform and the creation of gutters where waves have removed whole joint blocks. (Kerr 2000).

Not only were ocean cliffs and rock platforms formed on the headlands, but sand spits began to grow across the entrances to many of the estuaries and bays (drowned river valleys). Swamps and lagoons formed behind these sand barriers, including those in the Glenrock and Murdering Gully.

Aboriginal inhabitants would have continued to use coastal resources during the period of sea level rise up to stillstand, but nearly all coastal sites belonging to this period are buried under estuarine or seabed sediments. Therefore, little is known about the nature of settlement and subsistence during that time. Only a few early Holocene-age shell middens in Australia have been studied, and none of these are from the Newcastle area (Mulvaney and Kamminga 1999: 274).

The coastal fringe became a greater focus for human exploitation after stillstand, and particularly within about the last 3000 years. The evidence for this is the increasing number and size of habitation sites during the last few millennia, though this may be due in part to better preservation and 'archaeological visibility' of the more recent shell midden sites. Some archaeologists have suggested that socio-economic factors are responsible for increased settlement and exploitation, while others have opted for technological advances, or a shift to exploiting marginal coastal resources in response to

increased population pressure (David and Chant 1995; Lourandos 1985, 1997; Lourandos and Ross 1994; Mulvaney and Kamminga 1999: 267-72). In some regions of Australia, such as the southeastern coast, the timing of such increases corresponds with significant landscape and ecological changes – the coastal zone in eastern Australia was maturing and, in the process, this area became richer in a range of food resources and therefore invited increased subsistence activities. At the time of contact with Europeans, Aboriginal population density was three to four times greater along coasts where marine and littoral resources were accessible and abundant, than it was a little further inland.

The nature of settlement in coastal lands (within fifty kilometres of the sea) was strongly influenced by the range and abundance of coastal and hinterland resources, the prevailing sea and weather conditions, and coastal topography. The most productive coastal ecotones included lagoons, tidal estuaries and rivers, and their associated wetlands. Base camps were often positioned around the margins of coastal wetlands on sand dunes and on elevated flats. Many campsites along the coast between southwest Victoria and southeast Queensland commonly contain stone choppers that were probably used by women in processing bracken rhizomes gathered from freshwater wetlands (Kamminga 1981; Navin and Kamminga 1999). These tools were used within the last thousand years and probably for much longer. The tool type has been found in the Newcastle area, and while no examples have been reported yet for Glenrock SRA, it can be assumed that they will be found in the area, especially in camping places around the lagoon.

Geological resources in the cultural landscape

Rhyolitic tuff occurs in the Sydney Basin as cobbles and pebbles in some watercourses, such as the Nepean and Hunter rivers, in relict gravel terraces, and occasionally as layers within surface exposures of the Permian Era bedrock. Throughout the Newcastle Coal Measures there are numerous discontinuous tuff layers ranging from one centimetre to over 25 metres in thickness (Diessel 1980:103, 1983). In total, there appears to be in excess of 100 of these layers. A thick layer of indurated rhyolitic tuff ('Nobby's tuff') about half a metre thick is exposed in the ocean cliff faces within the SRA north of lagoon entrance. At Nobby's Head (formerly an island) it is at its maximum thickness

(Ives 1995:233). Waterworn pebbles and cobbles of tuff were an important source of stone for making artefacts at sites in Western Sydney, and along the western escarpment of the Blue Mountains such as in the Capertee Valley.

These layers of rhyolitic tuff in the Sydney Basin originated as ash-fall of extremely fine glass shards, hurled from volcanoes during explosive eruptions during the Permian Era. Today the remnants of these volcanoes are located to the north and northwest of Newcastle and to the east, submerged on the continental shelf (Kuskie and Kamminga 2000). The volcanic ash settled on bodies of still water, such as the numerous lakes and marshes in the ancient landscape, and on slopes from which the ash was later transported by water to lower lying areas. Because this tephra was chemically unstable, it was altered to clays by a process of devitrification. Probably, the clay minerals recrystallised to a stable form by pressure of overlying strata. Over geological time, glass fragments crystallised to K-feldspar. Nobby's tuff in particular is highly recrystallised. Layers of this altered tephra in the Hunter Valley coal mines are reported to be chalk-like in their hardness consistency and exhibit a range of colours, including green. When exposed at ground surface by erosion the tuff reacted with the atmosphere and further change occurred. For instance, clay exposed to air dries out and hardens, at least in part by crystallisation. In its hardest, most indurated form this silicified rock exhibits conchoidal fracture, and it was such material that Aborigines selected for stone tool making. Thin section analysis has shown that artefactual rhyolitic tuff, such as that exposed at Glenrock, is 87-95% microcrystalline silica (0.005 mm sized particles are common) and up to 13% feldspar and other minerals (Kamminga 1978: 408). Commonly, the particles within a tuff layer are graded according to size because of sorting during their slow descent through air and water. Ripples indicating an aqueous depositional environment are often evident in the laminations or layers (Kamminga 1982; Fahey 1994).

Previously within the Hunter Valley, rhyolitic tuff has been commonly identified by archaeologists as 'indurated mudstone' (deriving largely from the work of Hughes 1984). Prior to this time it was usually identified as chert. In the first description this century of flake implements from lower Hunter, the ethnologist W. W. Thorpe (1928) described

rhyolitic tuff as 'grey chert', no doubt because of its fine texture and conchoidal fracture. Only a few years later, Enright (1932) identified the stone type as 'Merewether chert' in describing the artefacts he found between Port Stephens to Macquarie Harbour.

Rhyolitic tuff has been identified as an important geological resource for the Aborigines of the lower Hunter Valley (Kamminga 1978; Dean-Jones 1990:18; Kuskie and Kamminga 2000). The layer of hard, highly siliceous tuff exposed along the headland from Murdering Gully/Smelters (also known as Burwood) Beach to Glenrock Lagoon was an important and easily accessible stone-tool resource for Awabakal people. Tuff cobbles and pebbles collected from the foot of the headland were carried to camping places around the lagoon, where it was then knapped to make stone tools such as flake knives, woodworking scrapers and 'eloueras'. Eloueras are somewhat segment shaped in plan view and triangular in cross-section and some found in the lower Hunter Valley are up to 120 mm in length (in other regions they are between 30 to 40 long). Most elouera cutting edges are rounded by abrasive wear thought to result from procuring a plant food such as bracken fern rhizome (Mulvaney and Kamminga 1999: 253).

The cliff exposure along the Glenrock Lagoon is grey, as it is at Nobbys Head as well. As gravel in watercourses in the lower Hunter Valley it may be grey, yellow or orange. In porous sandy sediments, such as coastal dunes it may be bleached white.

4.3.2 The Regional Context for Aboriginal Archaeology

Numerous archaeological surveys and excavations have been undertaken within the lower Hunter Valley, primarily as consultancies for environmental impact studies but also occasionally for academic research (Kuskie and Kamminga 2000). As personal research, Len Dyall carried out site surveys along the coastal fringe in the 1960s and 1970s, as well as excavations at Birubi Point, north of Newcastle where he uncovered rare dated specimens of shellfish hooks.

Almost all directly dated sites in the Hunter Valley are of Holocene age and contain artefacts belonging the Late Phase of Australian prehistory. Otherwise, geomorphological

and artefact typology criteria assign a mid to late Holocene age (the last 5000 years) for artefact scatters that cannot be dated by chronometric methods. The only claimed Pleistocene site in the vicinity of Newcastle was excavated by Neville Baker in the Moffatt's Swamp sand body at Medowie.

Aboriginal site types recorded in the greater Newcastle area include:

- lithic scatter (open site)
- shell midden
- hatchet-head grinding grooves
- stone procurement place
- rockshelter deposit
- ceremonial/mythological sites
- scarred tree
- human burial
- contact era camp
- pathway

4.3.3 Previous archaeological surveys in Glenrock SRA

Three lithic scatters were recorded in Glenrock by Len Dyal (1971: 162) in 1965 and 1966 (Sites 38-4-32, 38-4-45 and 38-4-46). Dyal reported that at least some of these sites probably mark former middens. The surviving cultural material at site 38-4-45 comprised almost 500 stone artefacts and a small number of shells. Dyal subsequently deposited a large sample of artefacts from the site in the Australian Museum. After the 1974 cyclone Dyal discovered a layer of grey sand and shells at the foot of the Dudley cliff (site 38-4-46). This midden layer contained large tritons, oysters neritas and winkles, a supra-occipital crest of a snapper and seven stone flakes.

Dyal observed that the sewerage outfall pipe had been laid under one of the former middens and that both 38-4-45 and 38-4-46 had been severely disturbed prior to his examination (Brayshaw 1985:6, Dyal, pers. comm.). Ninety five percent of the stone artefacts Dyal observed were of rhyolitic tuff, and most of the remainder silcrete, which

is consistent with the regional pattern discernible (Kuskie and Kamminga 2000). The implements in the assemblages included bondi points and other microliths, suggesting an age of within the most recent millennia, which fits with the geomorphological context of the sites. In about 1989 a small area on the northern end of Site 38-4-45 was protected by the construction of a steel open-mesh structure at the instigation of Mr Perce Haslam who had a strong interest in local Aboriginal culture.

At various times during the 1970s Dyall returned to the area around Glenrock Lagoon and recorded other sites, including a 10-cm thick midden layer (Site 38-4-0043) which along with Site 38-4-0042 is probably in Threlkeld's "Koiy'o'g" locality (see Section 4.3.7) also mentioned by Grothen in his book *The History in and about Glenrock Lagoon* (1988: 10). Dyall (1971:155) also identified exposed seams of crumbly red ferruginous sandstone in Murdering Gully, which may have been exploited as a source of ochre.

In 1984, consultant archaeologist Mary Dallas examined the western portion of Glenrock SRA for the proposed highway bypass east of Charlestown. Dallas located a cluster of 15 axe grinding grooves⁴ on a flat sandstone shelf in the bed of Flaggy Creek (Site 38-4-0084). This site is just outside the boundary of the SRA, but other hatchet head grinding grooves have been located on Flaggy Creek by NPWS officers.

The following year consultant Helen Brayshaw (1985) carried out an archaeological survey in Murdering Gully and Burwood Beach for the proposed upgrade of the sewerage disposal facility. Brayshaw reported that ground-surface visibility was generally low away from the sand dunes except along tracks. She noted that the area she examined had been extensively disturbed during the colonial period. During her field survey she examined Dyall's sites 38-4-45 and 38-4-46. She concurred that both had been seriously disturbed, and that the surviving artefacts were unlikely to be *in-situ*. She further noted that natural fragments and vehicle-damaged pieces of tuff were scattered widely around the sites.

⁴ The more correct name for this site type is 'hatchet-head grinding grooves' (see Mulvaney and Kamminga 1999:32-33).

The archaeological survey carried out by Matthew Barber (1992) for the proposed upgrade of the Dudley-Charlestown Sewerage system is the most recent in the Glenrock SRA. Barber's survey followed exposed ground along tracks. Ground-surface visibility was variable. Barber located two stone artefact scatters – Sites 38-4-0323 and 38-4-0324. The first site comprises only two tuff artefacts spaced 20 metres apart on a vehicle track, and the second site comprised eight tuff artefacts on a track and eroding from the bank of Flaggy Creek. While the artefacts in the collections were nondescript they indicate the presence of subsurface cultural horizons of stone artefacts in this part of the SRA.

4.3.4 Aboriginal Sites recorded in Glenrock SRA

4.3.5 Antiquity of the recorded Aboriginal sites in Glenrock SRA

The coastal landscape in the Newcastle region began to stabilise after the sea level rose about its present level (called 'stillstand'). The antiquity of shell midden sites in the coastal sand dunes within Glenrock SRA must post-date the commencement of sand barrier formation and is therefore more recent than about 6000-6500 years ago (Thom 1992:162). In fact, middens on sand barriers are usually far more recent in age, and despite the effects of leaching they may contain delicately preserved fish scales and fish bones. Historical records indicate that Awabakal people camped at Red Head and at the entrance to Glenrock Lagoon in the early to mid nineteenth century. It is possible that most of the midden deposit still existing in the 1970s in the dunes at Glenrock Lagoon accumulated as recently as the last few hundred years. While Dyall (pers. comm.) reports that the midden contained numerous delicate fish bones, suggesting relatively recent deposition, there are unfortunately no chronometric dates for this or any other midden deposit in Glenrock SRA.

The hatchet-head grinding groove sites also must date to within about the last 4500 years, because ground stone hatchets first appear in the archaeological record of southeastern Australia at that time (Mulvaney and Kamminga 1999:221). The grinding grooves in

Glenrock SRA are still well defined and the sites may have been last used in recent prehistoric times, and possible early historic times as well.

The three known lithic scatters are similarly undated, but those in the coastal sand dunes must be date to less than about 6000 years BP.

4.3.6 An Aboriginal cultural landscape

The archaeological data from Glenrock must be considered in the context of the historic and community based information which is discussed in the next section. Importantly, this web of cultural information allows Glenrock to be read as an Aboriginal cultural landscape. This includes the Awabakal words for areas or features of the Glenrock Lagoon cultural landscape (set out below) which were recorded by Threlkeld in 1835 (Grothen 1988:14).

Awabakal Name	English Translation
<i>Pillapay-Kullaitaran</i>	Glenrock Lagoon.
<i>Kurraka</i>	Entrance to Glenrock Lagoon.
<i>Koiy'o'g</i>	Where the grass and the sand meet at Glenrock Lagoon (probably at Site 38-4-0033).
<i>Puntei</i>	The sand spit forming the entrance of Glenrock Lagoon (on which Site 38-4-0033 is situated).
<i>Buttaba</i>	Name of a hill on the margin of Glenrock Lagoon [hill to be identified if possible].
<i>Kona-konaba</i>	Murdering Gully.
<i>Nikkin</i>	Coal (as in the coal seam along the ocean cliff in Glenrock SRA).

The Aboriginal cultural landscape of the SRA reflects subsistence patterns of recent prehistoric times and in the early nineteenth century along the central coast of NSW and contributes to the understanding of resource exploitation in the region. Importantly, it has:

- a range of regionally representative site types (grinding grooves, shell middens, stone procurement site, rockshelters) indicating uses of different places and resources in the SRA.
- a wide range of different Aboriginal food resources and resource area (sandy and rocky platform foreshore, lagoon, forested hills and creek lines).
- an exceptional exposure of the highest grade tool-making stone in the sea cliff at Glenrock Lagoon, and in association with a coal seam used by both Aboriginal people and later by settlers and industrial enterprises. This stone is an indurated tuff (the same as that comprising Nobby's Head) and was used widely within the Hunter Valley and more generally the Sydney Basin.
- a rich historical record about the Awabakal people who inhabited the general area around Glenrock Lagoon (see Section 3), including the works of Joseph Lycett, the Skottowe Manuscript and the record of Aboriginal names recorded by Reverend Threlkeld for specific places in the SRA – for the valley, lagoon, the camping ground where the midden existed, the point on the beach where the grass ends, and Little Red Head hill which borders the camp area.

4.4 Historic Heritage

Historic heritage is the term used to describe heritage items which date from the colonial (1788-1901) and national (1901 to present) periods of Australian history. This therefore refers to the heritage of all cultural or ethnic groups that have been present in Australia during that time period, both indigenous and non-indigenous. As has been made clear in the previous section, there was a continuity of Aboriginal habitation in the Glenrock area through the pre-colonial and colonial periods and it is therefore not possible, nor

meaningful, to separate Aboriginal heritage into pre- and post- contact categories at Glenrock.

The non-indigenous historic remains of the Glenrock SRA were surveyed and recorded in great detail by Godden and Associates in 1989. The present study revisited all the major site groups described in that report. Our research was aimed at identifying and analysing complexes of sites, within a landscape context. However most of the sites identified by Godden and Associates have been mapped (Figure 4.20, 4.21) and are encompassed within our discussion of the historic heritage of Glenrock. A number of the sites in the Godden and Associates inventory were inaccurately located (mostly due to typographical errors in the eastings and northings it is believed). Of these 8 could no longer be located, while the locations of 16 other sites were corrected and mapped. A complete list of the Godden and Associates site numbers, significance ratings and locations appears at Appendix 2, while Appendix 4 contains an Inventory of the site complexes discussed below.

Of the 145 sites identified by Godden and Associates the majority were tunnels, shafts, railways and other features associated with coal mining. Most of the mining landscape is below ground and because of this Glenrock is within a designated mine subsidence zone. Also quite evident in the landscape, due to the scatter of bricks and slag so close to the beach, is the archaeological site of the Burwood copper smelter. The twentieth century uses of the area also remain visible in the landscape. These uses include:

- the Scout Camp and the Burwood Beach Wastewater Treatment Works, dating from the 1930s;
- the remains of orchards, banana plantations , market gardens and their infrastructure; and
- the Merewether Quarry sites dating from the 1950s.

The location of historic sites are shown at Figures 4.20 and 4.21 where they have been divided into site complexes on the basis of historical, geographical and typological

relationships. Additional sites from the Griffin nrm survey for this report are identified with the prefix “GR”.

Site Complex 1: Burwood Copper Smelter (Figure 4.29)

GA 48, GR 6,7,8,9, 10, 11.

The site was developed by Dr James Mitchell, a medical officer turned entrepreneur, who had already invested heavily in Stockton, north of Newcastle. In 1847 he claimed that he wished to build a smelter for ores coming from South Australia and New Zealand.

Construction started around 1851. J. Ll. Morgan newly-arrived from Britain supervised the work, which was completed by 1852. They are described in his report to the company in 1853:

A two-storied brick building, 130 feet by 32 feet, with a shingled roof, housed two offices, an assay furnace, a large storeroom and two dwellings and beneath it was a fresh water tank with the necessary pumping equipment. Nearby stood the large shed, 50 feet by 28 feet, which sheltered one calcining furnace, two melting furnaces, a refining furnace and a roasting furnace which was never completed. There was also room for two additional furnaces for which the castings were ready. Blacksmiths' and carpenters' shops were also provided as well as a manager's house, a labourer's hut and four three-roomed workmen's cottages of brick and shingle construction. Stables for six horses and a harness room completed the establishment, the whole of which was surrounded by a 10-foot high paling fence. A tunnel into a nearby coal seam provided fuel and a system of roads and tramways was planned to link the site with the port through which would pass both ores and refined coppers (Turner 1980: 37).

A new company was formed by Mitchell in 1853, the Newcastle Coal & Copper Co. to work both the Burwood estate coalmines and the smelter. Around this time he also built coke ovens to utilize small coal, and presumably to fire the smelter. They were on the northern approaches to the tram/rail tunnel and are said to have been behind the present Merewether baths. The Coal & Copper Co. took over Mitchell's personal right to run a tram/railway to the wharves. The works were written up in the *Illustrated London News* of 11 February 1854, by which time they had closed.

The smelter reopened briefly in 1866 and was leased out in 1871, to Ebenezer Vickery, and again in 1899, to Augustus Gross, but it is not clear what work, if any was carried out at those times (Bairstow 1987: 12-13).

The workers' houses are shown in the *Illustrated London News* of 11 February 1854 and were described in the company report of 1853, which also gives a list of workers by occupation (see Section 3.17 of this report).

The total site is made up of 3 components:

1. To the east are 3 discrete scatters of bricks and copper slag stretching along the edge of the sand dunes. Just west of these is small area of copper slag, without brick fragments. Substantial foundations, not now visible, were partly excavated in 1979 and the archaeologist concluded that there was more to be found (Bairstow 1987: 16-17)

2. In the centre are remains of bluestone foundations for 4 houses with a few fragments of brick and small scatters of 19th century domestic crockery.

3. To the north (approximately) of the house foundations is a levelled area, part of which is now an access track. It may represent the original tramway road.

A fourth component, the smelter-manager's house, once existed to the southwest of the smelter site, but this was totally removed by archaeological excavation in 1987, when the Sewerage Works were making a new access road (Bairstow 1987)

Site Complex 2: Burwood Colliery Remains (South of lagoon) (See Figure 4.22 -25)
GA 29 –44, 47, 83, 139, 68,

This mine was created in the 1880s to exploit the deeper coal seam (Borehole Seam) within Glenrock. It followed on an 1860s mine which had worked only the upper seam (Victoria Tunnel Seam) and re-used the coastal railway created for the 1860s mine. It

operated between 1885 and 1891, at which time the operation was enlarged and the main pit dug southwest at Whitebridge. The shaft continued to be used for ventilation. (This history is outlined in Section 3).

The remains include

Winding Engine house:

- Rectangular stone building, approx 6x6m.
- Rubble masonry, with remains of plaster on external surface of N wall.
- Walls currently c.3m high.
- Contains a pair of concrete pits, formerly used for the housing of winding devices and cables. Brick and concrete pillars at rear (S).
- Two concrete bases with metal straps in front (N) of building.
- The whole assemblage sits on a masonry platform with ruined stone walls extending E-W on either side.

The mine shaft is north of the winding engine house and is now capped with concrete.

North of the winding engine house and mine shaft is a substantial stone retaining wall running north-eastwards towards Glenrock Lagoon. This was once the base for the coal storage bins, loading devices and other items associated with the transport by rail of coal to Newcastle docks and factories.

Site Complex 3: Coastal Railway System (Figures 4.26,27)

GA , 1, 2, 9, 10, 11, 14, 15,16, 93, 95, 119. GR 3, 4.

GA 96 Coal and Tuff strata

The coastal railway was originally built from what is now Merewether Beach to Smelters Beach in order to provide transport for copper ore to the smelter, or so it was claimed in 1847 by Dr James Mitchell. He said that in creating an access tunnel he had come across deposits of coal which he was prevented from using by the 'coal monopoly' granted to the AA Company in 1828. When this monopoly was relinquished he leased out adjacent land for coal mines, retaining the railway line to service the smelter, which was built in 1852.

In 1866 Mitchell extended the railway along the coast to Glenrock Lagoon for his Burwod Coal and Copper Co. mine (Sydney Morning Herald 20 /8/1866). In 1878 his son-in-law E.C. Merewether appears to have extended this mine into the lower seam (Borehole) and re-named it Redhead. A new locomotive was built but it is not clear what modifications, if any, were made to the railway itself.

In 1884 a new mine, the Burwood colliery opened, perhaps on the same site as the earlier mines. Large capital works were constructed and the present railway platform, embankments etc beside the Colliery remains probably date to this time.

In 1891 the Glenrock Lagoon section of the coastal railway was abandoned when Burwood No. 3 Pit opened at Whitebridge. Some of its rails were removed around 1905 for the new Glenrock Colliery rail line .

Part of the Smelters/Burwood Beach section and the tunnels to Merewether Beach continued in use until the 1920s, as a number of coal mines still operated in that area, particularly the Glenrock Colliery (opened 1905). This colliery cannibalized portions of the 1866-1880s railway, south of the lagoon, to create ‘an extension running along the northern shore of the lagoon to terminate in a loop siding serving the new [mine] tunnel’.

The railway tunnels between Merewether and Smelters beaches were sealed in 1945. Sections 3.14 –16 of this report discuss this history in more detail.

Today the railway is observed as discontinuous fragments of iron railway track, extending northwards from Glenrock Lagoon to Merewether Beach. Remains exist of wooden supports for two rail bridges, one across the mouth of Glenrock lagoon (Figure 4.27) and the second at the mouth of Murdering Gully. Remains of coal wagons and wheels can be seen along Smelters Beach (Figure 4.26).

This site complex presents the greatest conservation problems for the SRA, which will be discussed in Section 8 and see Site Complex Inventory at Appendix 4.

Another important site located within this complex (Figure 4.20, GA96) is the sea cliff wall, near the entrance to Glenrock Lagoon where strata of coal and tuff can be observed (Figure 4.2). Godden and Associates suggested that this feature was symbolic of the possible first discovery of coal by the convict escapees, the Bryants, in 1791. In addition, we have suggested above that it has significance as evidence of two important natural resources, the tuff as a material important to Aboriginal people, and the coal of great economic importance to colonial settlers.

Site Complex 4: Other Colliery remains north of Flaggy Creek

GA 64, 65, 66, 67, 70, 72, 73, 74, 76, 77, 78, 84, 85, 86, 88, 90, 91, 92, 94, 95.

On the north side of Flaggy Creek there is a dense array of features related to the Burwood, Glenrock and Ebbw Vale collieries. These include the substantial foundations of a winding engine (GA 64) at the site of Leichhardt's Lookout (which may have been re-used as a flying fox for the nearby orchard in the twentieth century). These foundations currently support a picnic table (see Section 8.0). Site GA 67 is a tunnel entrance directly below these winch foundations. John Grothen informed the Godden and Associates study team that it was from here that a headframe wheel was removed by the Scouts. It remains on display in the Scout Camp today.

Another feature which is visible from the Yuelarbah Track is a cylindrical brick lined air shaft which was re-constructed in the early 1980s (GA70). This air shaft is linked by Godden to the Ebbw Vale Colliery. Remains associated with the Burwood Colliery also occur on this side of the creek, notably rail formations (GA73).

Another important feature on the Yuelarbah Track is the "Ziggy", steps cut into the stone for a miners walking track and named for Lithgow's Zig Zag Railway (GA 66). The rampant growth of lantana around the lagoon and Flaggy Creek makes field observation of features in this complex very difficult.

Site Complex 5: Murdering Gully Rail and Colliery Remains

GA 45, 52, 53, 54, 55, 56, 57, 100, 102, 103, 104, 105, 106, 108, 116, 114, 115, 117, 118, 127, 128, 129, 130, 131, 132, 134, 135.

Mining activity was intense around this part of the site in the late 19th and early 20th centuries. In the 1890s 15 mines were at work in this area (Godden and Associates 1989: 74-86). The Glenrock Colliery opened in 1905 and re-used the coastal railway. It closed in 1944 and its Ocean Tunnels were sealed in 1945 (Section 3.16 of this report). Godden and Associates recorded 27 features in this area, mostly shafts and rail remains, however few are readily discernible on the ground.

Site Complex 6: Merewether Escarpment Rail and Colliery Remains

GA 3, 4, 5, 6, 7, 8, 13, 17, 18, 136.

Remains in this area relate to coal mining activity in the late 19th and early 20th century and consist of shafts and rail features. The early coastal railway features, which are also located on the Merewether escarpment, including the tunnel through the headland to Merewether Beach, are discussed in Site Complex 3.

Site Complex 7 Banana Plantation site

GA 27 and GR 1, 19th century artefact scatter

On the basis of oral evidence, Godden and Associates identified this cleared area on Little Red Head as Mr Cobb's banana plantation from the 1950s. A road formation also leads to the site from the present Scout Camp road. Recorded by the Griffin study, associated with this site, is site GR1, an eroding deposit of 19th century artefacts, along the eastern border of the clearing. Artefacts observed include clay pipe fragments, 19th century bottle glass and transfer printed ceramics. The small, fragmentary nature of the artefacts suggests that they have been washed down slope, and/or that they have been brought to the site in a fill or topsoil deposit.

Site Complex 8: Orchard and Agricultural Remains

GA 19, 20, 21, 22, 58, 59, 125, 126

Bailey's Orchard historic site was not within the brief for this study, but forms a significant aspect of the historic resources of the SRA. This site is accessed from Scenic Drive Merewether. Remains include an array of weatherboard structures, garden, orchard and irrigation system remains.

Site Complex 9: Scout Camp

GA 28, 98,

GA 24 Beach Canteen site

The site was formerly part of the Burwood Colliery (see above). An image taken around 1900 shows four houses beside the No.1 Pit, which had been closed since 1891 (Grothen, 1988: 50, 59). These had been occupied by the winding-engine driver, the engineer, the caretaker and the under-manager. The Undermanager's house was renovated by the Scouts in the 1930s (GA43). Two other houses had been removed earlier and the third was also demolished then. The railway track had been taken up in 1905 and reused on the northern side of the lagoon (see above.).

In 1932 the site was acquired by the Scouting Association and was opened by Sir Philip Game, Chief Scout of NSW. It has been and still is an important place both in training scouts and in training scout-leaders. It was taken over by the Volunteer Defence Corps during World War II.

The Scouts have gathered together some 'relics' of the mining days, including the metal wheel from a headframe on Flaggy Creek (see above). Other colliery related items are found around the Undermanagers House.

We have also included in this complex site GA24, which was identified by Grothen as the site of a beach canteen in the early 20th century. This site therefore also relates to the use of Glenrock for leisure and recreation as a theme of its 20th century development.

Site Complex 10: Defence Remains

GA 25, 26, 124

John Grothen identified these sites for the Godden and Associates study. GA 25 is a 50x20cm trench lined with corrugated iron on Little Redhead Point. Thought to be part of a WWII machine gun nest. GA26 is adjacent to GA25 and consists of traces of a road cutting with fragments of concrete and brick.

GA124 is a cave in a 'large sandstone tor overlooking the western end of Glenrock Lagoon'. In 1989 a 'new' sign read Powder Cave and the site 'was reputed to have been used as an ammunition store in WWII'.

Site Complex 11: Burwood Beach Wastewater Treatment Works

GA 109, 110, 111

This site was not inspected for the present study. It began operation in the 1930s and maintains some plant and infrastructure from this time which was assessed by Godden as of some heritage significance.

Site Complex 12: Gun Club and Quarry Remains

GA 120, 121,122

Two quarries operated in the SRA from the 1950s to the late 1980s. Adjacent to them a Gun Club was established in the 1970s and relocated in the 1980s. The cessation of both these uses reflects policy development regarding appropriate uses of Glenrock SRA by the NPWS. Rehabilitation of these sites has been planned (POM1997).

The final site shown on Figure 4.21 is GA 123, a Fan Shaft cap in the southern part of the SRA, and therefore outside the main study area for this project. This was the only site identified in the Godden and Associates study in this part of the SRA, but it serves as a reminder of the subterranean shafts and tunnels which are present in this area.

4.5 Summary: Glenrock, A Cultural Landscape

This chapter has outlined the natural and physical cultural features of the Glenrock landscape. This landscape has a dense cultural and archaeological record which has developed in response to, as well as shaped, the natural environment.

The SRA contains the entire formation of the lower Newcastle coal measures, laid down in the Permian period. Their exposure by marine erosion along the beaches of the SRA shows a detailed geological history. The Permian sediments that separate the coal seams include fossil-bearing shales and in the Dudley headland rock platform fossilised tree trunks can be seen. This geological diversity is overlain by a rich mosaic of plant and animal habitats. The fauna of the region has been irrevocably altered by settlement but the vegetation communities reflect not only this most recent history but also the pre-contact environment.

Aboriginal people have been present in this landscape for over 10,000 years and probably since the earliest phases of the colonisation of the continent, over 40,000 years ago. They exploited the marine and geological resources of the region and used the beach as an important route of communication to the north and south. They shared their knowledge of this place with a succession of European travelers, explorers, the people of the early settlement of Newcastle, the missionary Threlkeld and others.

Geology once again shaped the 19th and 20th century history of Glenrock and the landscape is dominated by the relics, works, tunnels and shafts of coal mining. This coal mining phase brought Glenrock into the global context of empire, capitalism and the processes of industrialisation and migration. The exhaustion of the coal seams and the growth of Newcastle as an urban centre saw the industrial landscape replaced by a landscape of recreation and urban services.



Figure 4-1: Glenrock SRA has a high flora biodiversity, with 12 distinct vegetation communities including Eucalypt forest, heath, littoral rainforest, gully flora and wetlands.



Figure 4-2

Geodiversity is shown in the Permian sediments, with their coal seams and fossils (Figure 4-2), by the conglomerate flagstones along the creeks (Figure 4-3), and by the dynamic geomorphology of the lagoon (Figure 4-4)

Figure 4-3

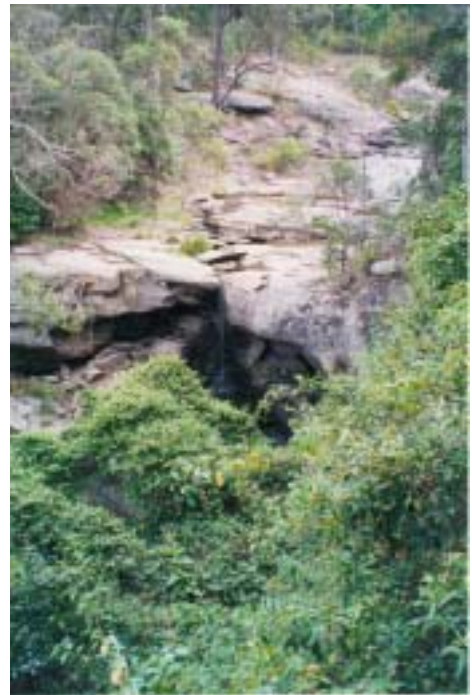


Figure 4-4





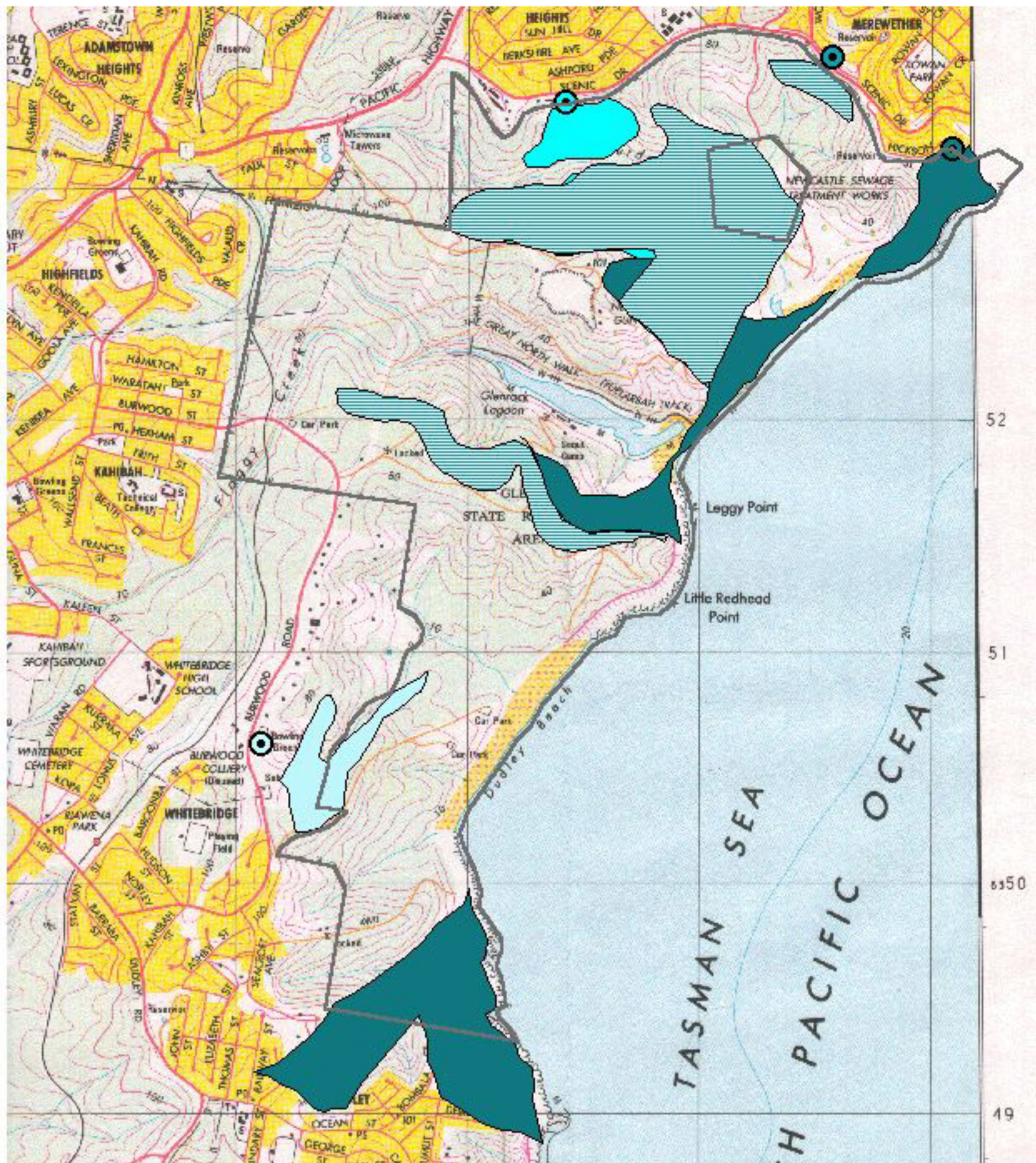
Figure 4-5: Erosion along pathways is causing major changes to SRA landforms.



Figure 4-6: Inland, lantana and crofton weed dominate the vegetation around disturbed sites.



Figure 4-7: Bitou bush is a serious problem along virtually all beachfronts and hinterlands.












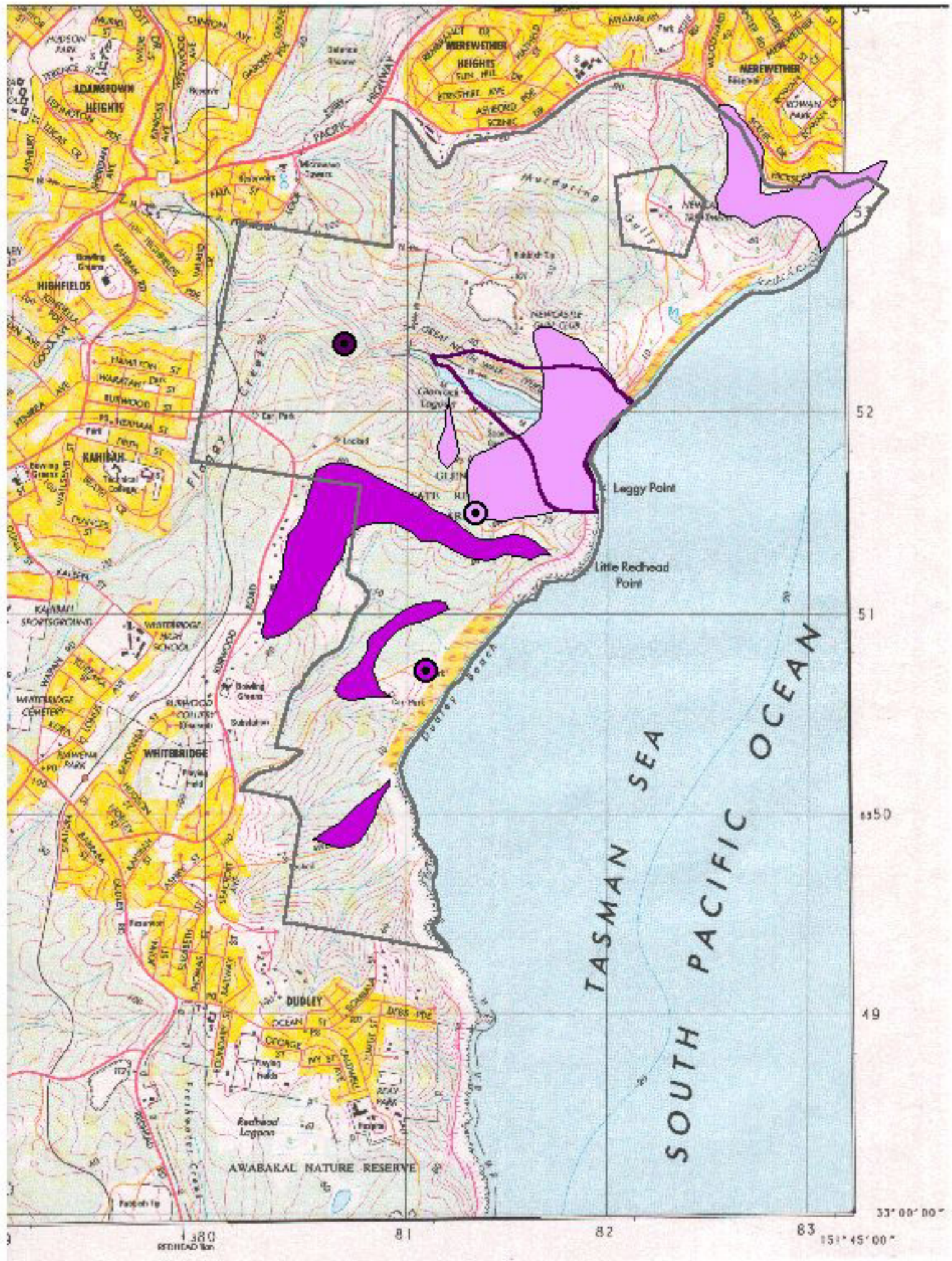
-  SRA Boundary
-  Viewpoint 1: Hickson St Lookout
-  Viewpoint 2: Scenic Drive, Merewether Heights
-  Viewpoint 3: Bailey's Orchard Buildings
-  Viewpoint 4: Colliery Bowling Club, Whitebridge
-  Viewshed from Viewpoint 2
-  Viewshed from Viewpoint 1
-  Viewshed from Viewpoint 3
-  Viewshed from Viewpoint 4



Figure 4-8: Views of the SRA from the Perimeter (External Views)










-  SRA Boundary
-  Viewpoint 1: Leichhardt Lookout
-  Viewpoint 2: Dudley Beach Carpark
-  Viewpoint 3: Old Banana Plantation
-  Viewshed from Viewpoint 1
-  Viewshed from Viewpoint 2
-  Viewshed from Viewpoint 3



Figure 4-9: Views from Within the SRA (Internal Views)

Figure 4-10: Sweeping coastal views along the SRA beachfronts are available from Perimeter Viewpoint 1 at Hickson St, Merewether Heights



Figure 4-11: Sea views, with an extensive middle ground of the SRA's Eucalypt forests are provided from the Colliery Bowling Club, Whitebridge





Figure 4-12: Views from Perimeter Viewpoint 3, Bailey's Orchard Buildings, take in areas of disturbed ground (Bailey's Landfill Site).



Figure 4-13: Views from Perimeter Viewpoint 2, Scenic Drive, include the Burwood Beach Wastewater Treatment Plant.



Figure 4-14

Major internal views of the SRA are afforded from The abandoned banana plantation (Fig.4-14), Leichhardt Lookout (Fig.4-15), and Dudley Beach car park (Fig.4-16). Only the latter shows urban encroachment.



Figure 4-15

Figure 4-16



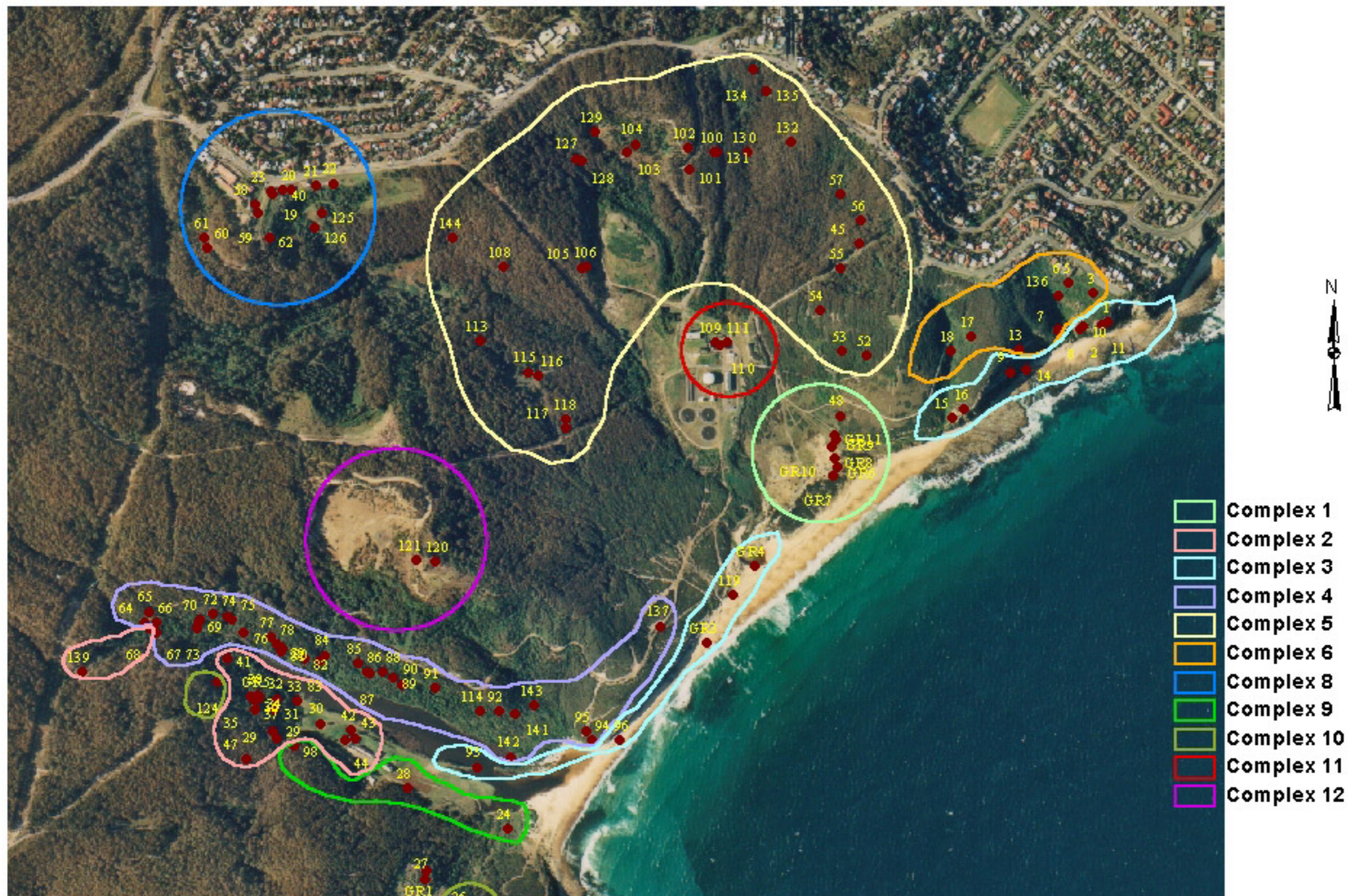


Figure 4-20: Historic Sites Complexes - Northern Section

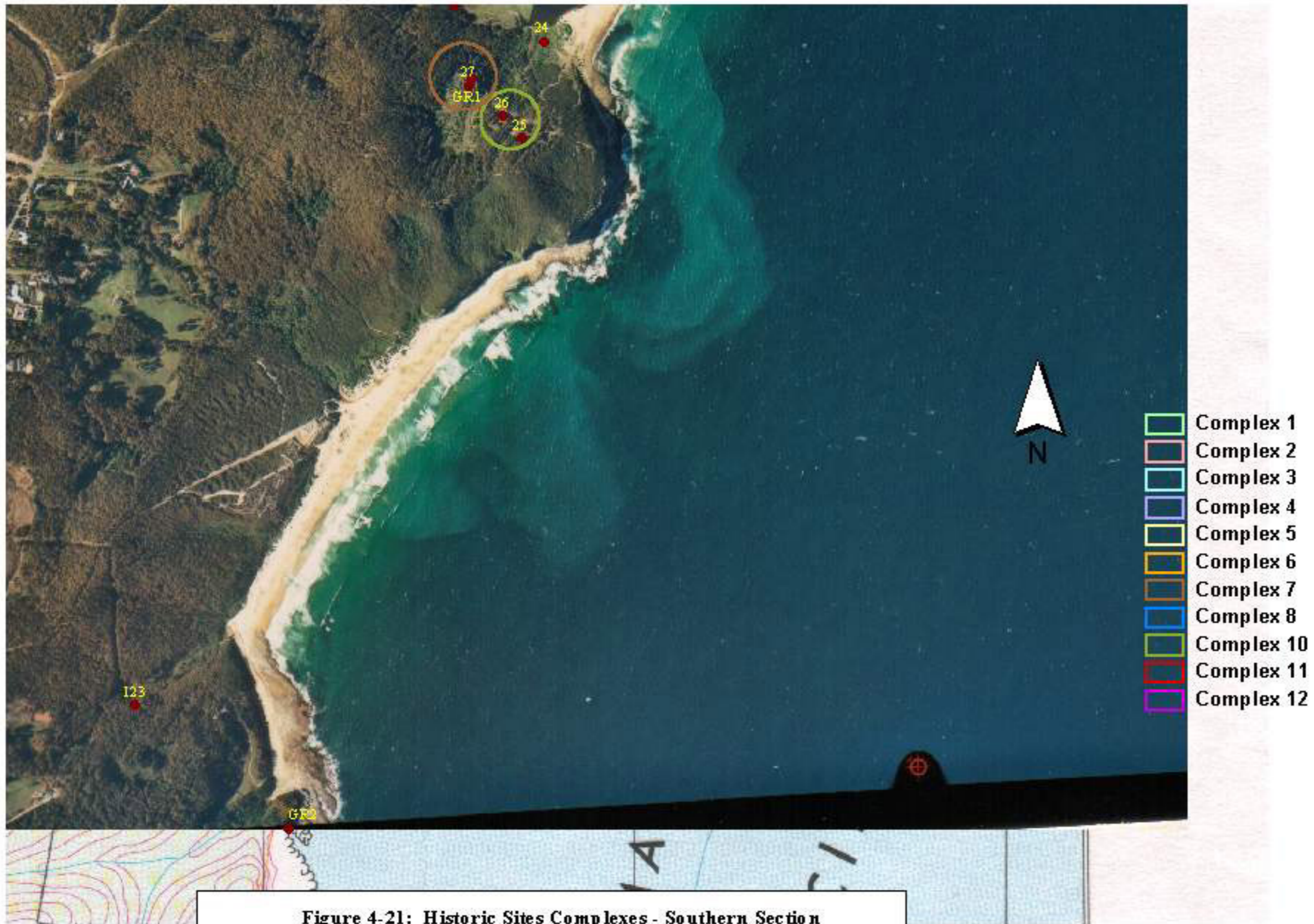


Figure 4-21: Historic Sites Complexes - Southern Section

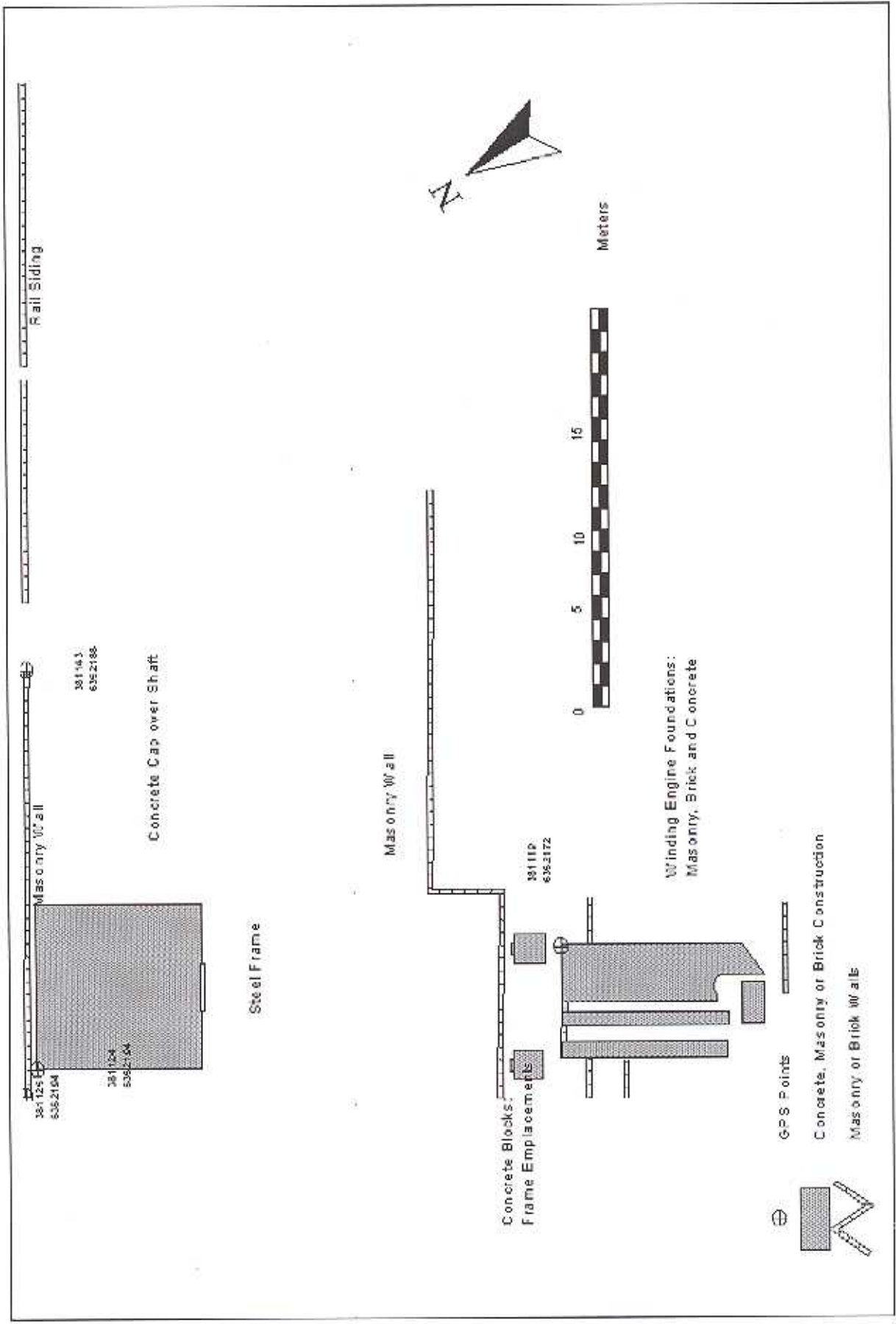


Figure 4.22: Old Burwood Colliery Site Plan, 20/02/02



Figure 4-23:
Winding engine
foundations, Old
Burwood Colliery
site.

Figure 4-24: Taking a
GPS reading for the site
plan of Old Burwood
Colliery



Figure 4-25: Head
frame emplacement, Old
Burwood Colliery site.



Figure 4-26: Bogey wheels on the rail alignment, south Smelters Beach.



Figure 4-27: Rail bridge site, at the mouth of Glenrock Lagoon.



Figure 4-28: Building remains at the smelter site.

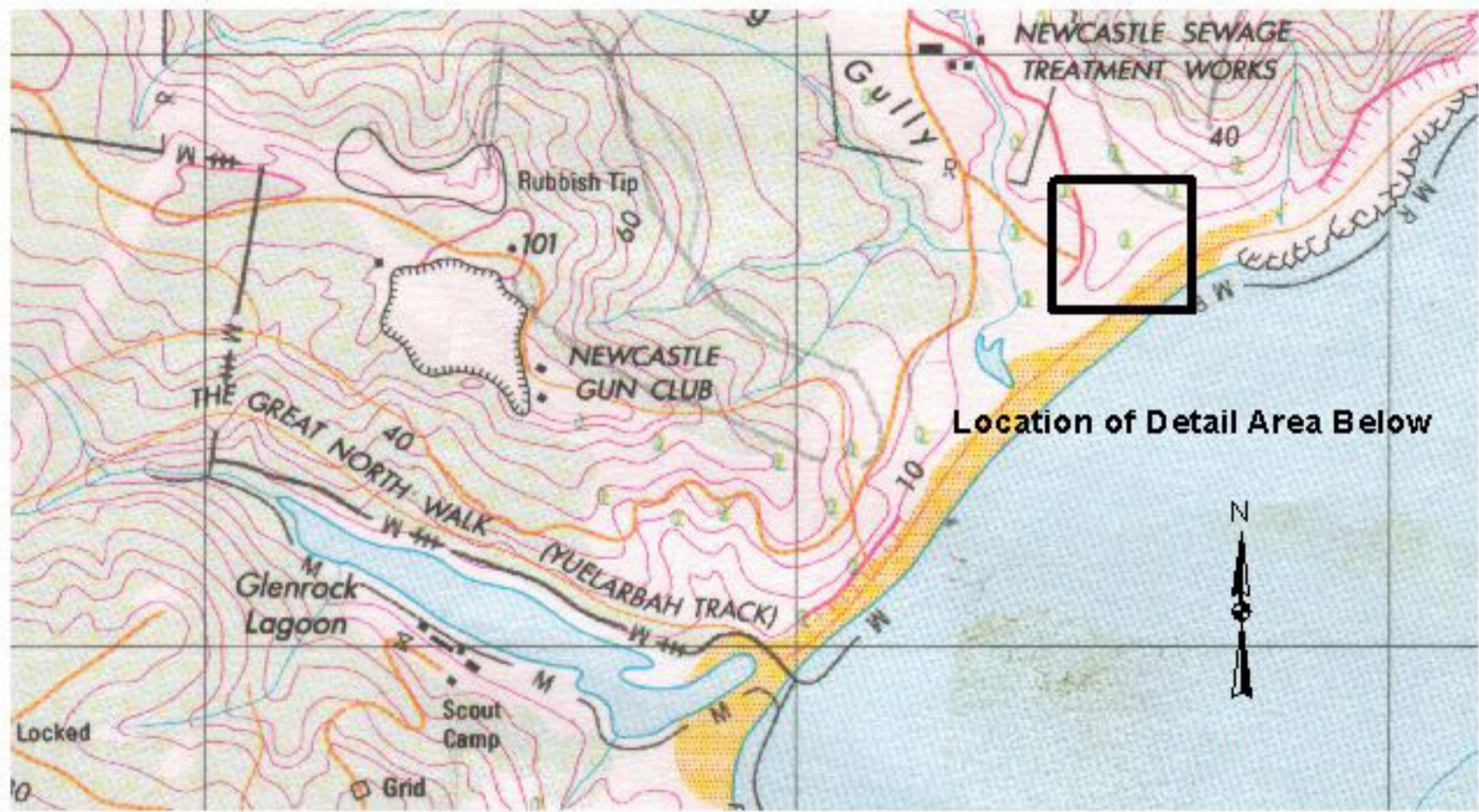


Figure 4-29: Smelter Site Remains

5.0 Contemporary Social Values

5.1 Introduction

“It is not down on any map; true places never are”¹

Heritage places are not spaces drawn on maps, but exist as meanings, memories and knowledge shared by communities. In Section 3 we presented an overview of the historical information relating to Glenrock. In Section 4 we built upon the historical context with an analysis of the landscape and the physical remnants of human action which are found there. In this Section we approach the ways in which this place, its environment, history and archaeology, is thought and cared about in the local community. Our research here is by no means comprehensive, however we endeavoured to contact and talk to a range of people with different sorts of interests in, and attachments to, this place.

In undertaking these interviews with individuals and a community focus group we were looking to accurately document the web of values within which Glenrock is involved. We use the understandings gained here to assess the significance of Glenrock and to formulate management policies that not only respect and maintain these community values, but also offer opportunities to build and develop them.

5.2 Consultation

Indigenous community consultation

A two-fold approach was taken to consultation with the Aboriginal stakeholders in the region. We worked through both

1. the Awabakal Land Council, and followed up suggested key contacts that the Land Council’s Chair Ron Gordon made, and

2. existing links with academics and former academics working in the region.

As well as putting the consultancy team in touch with individual community members Ron Gordon provided details of other Aboriginal Land Councils and organisations to follow up. A “snow-balling” method was used, with each person consulted being asked for suggestions of other Aboriginal stakeholders that we should consult with.

Richard Baker spent 7 days in the region in total following up leads in this way. Towards the end of this period two very productive joint meetings were held. On the morning of Friday Feb 22nd at Yarnteen’s office complex in Cardiff (Yarnteen is further discussed in Section 7.0), Richard Baker meet with Abbie Wright, Ken McBryde and John Heath (from the Wollotuka, School of Aboriginal Studies, University of Newcastle). Abbie Wright plays a support role through Yarnteen for a council of elders. Ken McBryde is a key figure in this council with a very long history of cultural site recording working in the region including work in the early 1980s with Percy Haslam as part of the Koe-in-ba Sites team. Detailed records of this team’s site recording work are held in the Newcastle University Library Archives as part of the Percy Haslam collection.²

On the afternoon of Friday Feb 22nd a long meeting was held with Nola Hawken, her two sons Dene and Wayne Hawken and her sister Kerrie Brauer. This family track their ancestry back to the well known Queen Margaret – Nola and Kerrie’s mother Thelma Powell who is 86 is the daughter of William Henry Williams, son of Ellen Williams who was the daughter of Queen Margaret (see Section 3.22). Dene and Wayne Hawken also attended the public meeting on 21/2/2 at Glenrock and walked the site afterwards with Richard Baker. The Hawken family is very keen to play a continuing role in the interpretation and management of Glenrock Lagoon.

¹ Herman Melville, *Moby Dick*: Chapter 12, as quoted in Stuart Murray, 1997, *Not On Any Map: Essays on Postcoloniality and Cultural Nationalism*, Exeter: University of Exeter Press, frontispiece.

² Richard Baker spent half a day examining this very large collection and was unable to locate any information directly relating to Glenrock but a more detailed examination might uncover relevant material.

Another key contact is Bill Jonas, Aboriginal and Torres Strait Islander Social Justice Commissioner. He is an Awabakal man, a former academic geographer and the former Director of the National Museum of Australia. He has a detailed knowledge of the local Aboriginal community and organisations. Another important academic source of assistance was the previously mentioned Wollotuka School of Aboriginal Studies at the University of Newcastle and in particular their Support Co-ordinator John Heath.

A comprehensive list of individuals and groups consulted is found at Appendix 1.

Non-indigenous community consultation

Gathering data on non-indigenous values associated with Glenrock proceeded in 3 main steps:

1. Contacting community organisations, or key community members, with a possible interest in Glenrock and requesting local contacts;
2. Conducting either face to face discussions with individuals or groups, or telephone discussions;
3. Conducting a focus group where both social values and management concerns were workshopped in a collaborative forum.

Indigenous and non-indigenous people were invited to the focus group. Of the 15 who attended, 2 were Awabakal people. It was particularly notable that all focus group members were very interested in both the Aboriginal and settler (European) heritage of the area and a number possessed significant knowledge of Indigenous and non-indigenous history and archaeology.

All individuals contacted and interviewed are detailed at Appendix 1.

The focus group, thanks to the support and help of local people, was a resounding success and its results are discussed below. Further issues relating to concerns and management, which were raised at the focus group, are discussed in Sections 7 and 9.

5.3 Results of Consultation

The Focus Group

The focus group meeting was held at the Glenrock Depot, between 5 and 7pm on the 21st February 2002. The meeting was facilitated jointly by Tracy Ireland and Richard Baker. Aedeon Cremin took detailed notes. Most members of the focus group (see Appendix 1 for a list) were very well informed on the history, archaeology and environment in the SRA. At the focus group, as a basis for discussion, we showed very brief draft statements of significance divided into the categories of Natural Significance, Significance of the Aboriginal Cultural Landscape, Historic Significance and Social Significance, which were based on the results of our analysis to that point.

The following statements were shown to the group. Their responses to the statements follow:

Historic Significance

- Associated with important historical figures such as Biraban, Leichhardt, Threlkeld, Mitchell and Scott.
- Associated with the first discovery of coal in Australia.
- The Burwood Copper Smelter was the first to be commenced in Australia and the first in NSW to operate.
- The remains of more than century of mining showing changing techniques, technology and infrastructure (particularly railways and tramways).
- The Undermanagers Cottage represents the communities of men, women and children which enabled the development of Newcastle's coal mining industry.
- The Newcastle home of the scouting movement.

Response

- Although most members of the group knew that the William and Mary Bryant discovery of coal in 1791 cannot be securely located at Glenrock on the basis of present evidence, they stressed that the landscape of Glenrock Lagoon and the nearby sea cliff, made it "very easy to imagine the story happening at Glenrock".

- The themes of orcharding, agriculture and defence were also singled out by the group as important aspects of historical significance. Members stressed that these most recent activities in the park formed significant local histories which were remembered by individuals in the community.
- The local struggle to protect the place was brought up as an important aspect of history.
- The importance of the sewerage works was also raised by a member who stressed the heritage value of the plant contained within the works and their important role in providing urban services for Newcastle.
- ‘Controlling the land’: the role of old mining leases in protecting Glenrock and other green spaces around Newcastle was raised. Once mines were worked out and land re-vegetated these large tracts in BHP ownership were protected from piecemeal urban development.
- ‘What’s in a name’: the complex history of name changes in this and surrounding areas was brought up as a distinctive feature of its history, and a challenge to accurate historical research!

Significance of the Glenrock Lagoon Aboriginal cultural landscape

- Long and continuing history of Aboriginal use (and the opportunities this provides for reunification of people and country)
- Excellent historical records from the early contact period of how the area was used by the Awabakal
- Survival of a wide a range of Aboriginal site types

Response

This statement was generally supported. Many concerns were raised about the protection of fragile archaeological sites, which will be addressed in later sections of this report

Significance of the Glenrock Lagoon Natural Heritage Features

- Whole watershed contained in a small (4km x2.5km) area
- High biodiversity of flora, birds and reptiles

- Geologically significant – good example of the geological processes operating in the Sydney Basin over the last 300 million years.

Response

The issue of the integrity of the SRA as a catchment was raised and the fact that suburban run off was such an issue for management.

Much enthusiasm for the geology and evidence of geomorphological processes was expressed. The suggestion that Sydney was actually a part of the “Newcastle Basin” was raised.

Social Significance

- Long and continued history of Aboriginal use.
- Memories and physical reminders of mining and other social histories.
- Recreation resources so close to a city centre. Surfing, scouting, bushwalking, horseriding (each with its own ongoing history).
- Educational resource (cultural and natural).

Response

- ‘A beautiful place’: Glenrock was so important to most members because it was a beautiful place to be treasured and nurtured. Many members of the group were involved in bush regeneration work as volunteers, one spoke of the happiness it gave him to “attack a bitou bush and find a little native plant struggling to survive underneath”.
- ‘Palpable history’: several members spoke about the feeling Glenrock gave them about the people who had been there before, a sense of both mystery and continuity.
- ‘A community for the future’: members spoke about the importance of places like Glenrock for Newcastle’s future. Most agreed that Newcastle was entering a new phase in its history where new forms of economic growth (such as tourism) will be important.
- ‘So close to the city’: Glenrock’s accessibility and closeness to the suburbs makes it even more important as an educational resource.

- ‘Local legends’: the stories associated with Glenrock, many of which were recorded by Grothen, were valued by members. Glenrock’s history was also reflected in the surrounding suburbs through place and street names.
- The archaeological research significance of Aboriginal archaeological sites and historic sites such as the smelter site.

Results of Indigenous Community Consultation

The results of Indigenous community consultation regarding contemporary values associated with Glenrock can be summarised as:

- The visible heritage (middens – axe grooves etc) – are proof of the Aboriginality of the Newcastle region. This is probably the most significant aspect of the site for most Indigenous people in the region. The existence of Aboriginal sites so close to the city centre are widely known and are of great importance to people who are striving to assert their identity.
- The well documented Aboriginal heritage (Leichhardt, Threlkeld, Haslam) – the visible heritage is backed up by a wealth of documentation that once again Indigenous people in the region are very conscious of.
- Historical use of the site for educational/cultural awareness raising (taking Aboriginal school kids there etc) – there has been a long and continued history of this and a very strong desire to continue this.
- While some individuals proudly stressed their unbroken links with the place others spoke passionately about the opportunities Glenrock SRA provides to “reconnect”, “reunify” with country .
- Green space/aesthetic/totemic landscape importance – it proved impossible to document specific totemic information about the SRA but many people spoke in general terms about the importance of “country” to them and Glenrock as a perceived relatively unaltered landscape has meaning in this context.
- Economic significance – a number of people have a strong desire to further develop cultural tourism in the area and the SRA is seen as a potential important resource for such ventures.

Further Groups Consulted

Scouts

A number of discussions were held with people involved with the Glenrock Scout Training Camp. The Camp has been in use since 1932, and as Grothen documents, has developed a history and mythology associated with the place. The Scouting movement members we met as a group, once again displayed considerable interest in and knowledge about Glenrock and of Grothen's history of the place. Several members had had a lifetime association with Glenrock and the Scout Camp.

Historical Societies

All historical societies in the region were contacted. While several had no particular interest in Glenrock, a number identified individual members with a special interest in it. Most of these individuals attended the focus group meeting. It was interesting to note that the vast majority of individuals contacted had all visited Glenrock recently and even individuals not resident in the Newcastle region knew the place well.

5.4 Conclusions: Contemporary Community Values associated with Glenrock SRA.

Two major groups of values emerged from our research in this area:

1. Values associated with this place in the context of the future well being of environment and communities; and
2. Values deriving from specialist knowledge about the multifaceted pasts represented by the place.

The two value groups are obviously interrelated and should not be seen as radically separate. However, in the context of heritage management, values are perhaps too often construed as related to the past of the communities, rather than to the choices which are being made about their future.

Group 1: Shaping a space for a community future.

- ‘A community for the future’: the importance of places like Glenrock for Newcastle’s future. Most community members agreed that Newcastle was entering a new phase in its history where new forms of economic growth (such as tourism) will be important.
- The opportunities Glenrock SRA provides for Indigenous people to “reconnect” or “reunify” with country.
- An opportunity to develop Indigenous cultural tourism in the area as an expression of cultural identity. The SRA is seen as a potential important resource for such ventures.
- ‘A beautiful place’: Glenrock is important because it is a beautiful place and an important environment to be treasured and nurtured.
- ‘So close to the city’: Glenrock’s accessibility and closeness to the suburbs makes it even more important as an educational resource.

Group 2: Learning and Sharing Special Knowledge about the Past

- The themes of orcharding, agriculture and defence are important aspects of historical significance. Members stressed that these most recent activities in the park formed significant local histories which were remembered by individuals in the community.
- The local struggle to protect the place is an important aspect of history.
- The importance of the sewerage works in providing urban services for Newcastle.
- The importance of mining history in shaping Newcastle’s urban spaces.
- The importance of Glenrock’s visible geological heritage.
- ‘Palpable history’: the feeling Glenrock gives of the people who had been there before, a sense of both mystery and continuity.
- ‘Local legends’: the stories, histories and memories associated with Glenrock.
- The visible Aboriginal heritage (middens – axe grooves etc) – are proof of the Aboriginality of the Newcastle region.
- The archaeological research significance of Aboriginal archaeological sites and historic sites such as the smelter site.
- The historical archive relating to the Awabakal at Glenrock: ie Coke, Lycett, Skottowe, Leichhardt, Threlkeld, Haslam etc.
- The unbroken links of Awabakal people with the place

6.0 Assessment of Significance

6.1 Introduction: Criteria, Approach and Methodology

Assessing heritage significance (sometimes called cultural significance) is about articulating and ordering the values that we have identified in our research to this point, in a way that is clearly understood by the community and the local and State government agencies responsible for managing the Glenrock SRA. Assessing the heritage significance of a complex cultural landscape like Glenrock, in sufficient detail to enable the NPWS to manage all of its component parts in the best way, means that this Section is long, detailed and technical. However, the Statement of Significance, at Section 6.8, expresses the results of this process in a more succinct form, while the Table of Significance at Section 6.7, looks at the significance of all the different aspects of the Glenrock cultural landscape and gives them a level of significance from Primary to Intrusive. At the request of the NSW NPWS these gradings of significance within the Glenrock cultural landscape are also expressed in terms of State, Regional and Local significance (terms defined below).

The NSW NPWS has adopted the heritage significance assessment procedures outlined in the *NSW Heritage Manual* (1996), and therefore these procedures will be followed here. In addition to the *NSW Heritage Manual* reference will also be made to the *Australian Natural Heritage Charter* (1996), *Australian Historic Themes* (2001), and the *Mining Heritage Places Assessment Manual* (2000), (all produced by the Australian Heritage Commission).

The national benchmark for the assessment of heritage significance is provided by the revised Australia ICOMOS *Burra Charter* (1999). The *Burra Charter*, which first appeared in 1978, expressed cultural significance in terms of four, equally important sorts of value or significance:

- Historical
- Aesthetic
- Scientific
- Social

The NSW Heritage Assessment Criteria embody these four values but are expressed in a more explicit way. The definitions of these criteria reflect both policy decisions about some of the debates surrounding the heritage significance assessment procedure, the history of heritage management in NSW and the way in which procedures and practices developed. Some aspects of these histories and debates are discussed in the NSW NPWS's *Social Significance: a discussion paper* (Byrne et al 2001).

6.1.2 NSW Heritage Assessment Criteria

- Criterion (a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (b) an item has strong or special association with life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).
- Criterion (d) an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;
- Criterion (e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion (g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments) (*Assessing Heritage Significance, a NSW Heritage Manual update*, 2000: 8).

The *NSW Heritage Manual* states that these criteria must be approached within a contextual understanding of both local communities and history (*Assessing Heritage Significance, a NSW Heritage Manual update*, 2000: 3-4). The NSW NPWS also defined an approach to this study of Glenrock which has implications for the assessment of heritage significance. This approach was defined as:

1. An integrated, or whole-of-landscape, approach with regard to the identification and assessment of all cultural (both historic and pre-contact Aboriginal) and natural values.
2. A cultural landscape approach to understanding the values of the place within its wider environmental, historic and social setting.
3. An emphasis on identifying (and framing policies regarding) the social/community values of the place (NPWS Brief for a CMCTP for Glenrock Lagoon Cultural Landscape: 5.0).

In view of all of these factors, this report approaches the Glenrock Cultural Landscape as a mixture of people, place, environment and history. We approach heritage significance as primarily grounded in communities and the values they place upon land, history, memories and culture. This means that heritage is an expression of identity, incorporating the notion that places can stimulate and enhance experiences of cultural identity. We also acknowledge that areas of expertise such as geology, botany, archaeology, history, geography and so on, shape some of the ways in which communities and other interest groups value places, but that community values are not reducible to these areas of expertise. Finally, it is important to add that the entwining of place and identity is not singular and well ordered, but concurrent, contested and entangled. Landscapes are not real, but are perceptions that are as varied as the interests we bring to bear on them. The

following is an attempt to understand at least some of the processes which imbue the Glenrock cultural landscape with meaning.

6.2 Historic Themes

National Theme	NSW Theme
1.Tracing the Evolution of the Australian Environment	Environment- naturally evolved
2 Peopling Australia	Aboriginal cultures and interactions with other cultures
	Convict
	Ethnic influences
	Migration
3 Developing Local, Regional and National Economies	Agriculture
	Commerce
	Communication
	Environment- cultural landscape
	Events
	Exploration
	Fishing
	Forestry
	Health
	Industry
	Mining
	Pastoralism
	Science
	Technology
	Transport
4.Building settlements, towns and cities	Towns, Suburbs, villages
	Land tenure
	Utilities
	Accommodation

5.Working	Labour
6.Educating	Education
7.Governing	Defence
	Government and Administration
	Law and Order
	Welfare
8.Developing Australia's cultural life	Domestic life
	Creative endeavour
	Leisure
	Religion
	Social Institutions
	Sport
9.Marking the Phases of life	Birth and Death
	Persons

This outline of national and State historic themes is derived from the NSW Heritage Office (www.heritage.nsw.gov.au/about/historythemes.htm). Those shaded in the above table are the themes considered relevant to the history and heritage of Glenrock as far as it has been revealed through our research. The highlighted themes are indeed numerous, reflecting the complexity of the Glenrock cultural landscape. The following briefly outlines how these themes are relevant.

1.Tracing the Evolution of the Australian Environment	Environment- naturally evolved
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The Glenrock SRA is a rich and diverse coastal landscape, with particularly high floral biodiversity which reflects aspects of both pre- and post-colonial environmental change. Most importantly the geology of this landscape, especially the coal and tuff, has shaped the way people have interacted with it.

2 Peopling Australia	Aboriginal cultures and interactions with other cultures
	Migration

Glenrock possesses a very significant archaeological and historical record pertaining to Awabakal people in the pre and post contact periods (see Sections 3 and 4). Glenrock can be closely linked to an important colonial archive documenting early cross cultural relations. This archive includes the writings of the missionary Threlkeld and the paintings of Joseph Lycett. The 1813 *Skottowe Manuscript* (including the art of Richard Browne) and the 1820s diaries of Lt. Coke (Sections 3.3-7), although less specifically dealing with Glenrock, also provide important historical material relating to the area and to the Awabakal people.

Archaeological remains in Glenrock are likely to yield evidence relating to Awabakal life and to the local environment in the late prehistoric and early contact periods.

Glenrock’s history of mining, industry and agriculture links this place to histories of migration and migrants. Prominent here are

- migrant workers in the coal mining industry,
- migrant entrepreneurs seeking their fortune in Australia,
- Aboriginal people who have moved to Newcastle for work and have subsequently sought links with places where Aboriginal history can be experienced.

3 Developing Local, Regional and National Economies	Agriculture
---	-------------

In the twentieth century some land in Glenrock was used for orchards, banana plantations and market gardens, in particular the site of Bailey’s Orchard on Scenic Drive, Merewether.

	Environment- cultural landscape
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Glenrock is a landscape of great geodiversity and this geology has shaped the history of human interaction with the landscape. Aboriginal people exploited the coal and tuff which are exposed at Glenrock through marine erosion. They also exploited the wide variety of marine and coastal habitats, which are in themselves a response to this geodiversity. White people were drawn to Glenrock to study the geology and exploit the coal, but the landscape also became known and valued for its beauty and recreational opportunities.

Australia-wide and local conservation movements, which developed from the 1960s, valued Glenrock as a cultural landscape and worked for its conservation and declaration as an SRA. A number of community groups have lobbied for Glenrock's environmental regeneration since the 1970s, and a number maintain active involvement with the SRA.

	Events
--	--------

Leichhardt's visit to Glenrock in the 1840s is a well documented historical event. The discovery of coal by William and Mary Bryant in 1791 may have occurred at Glenrock but this will probably never be known for sure.

	Exploration
--	-------------

Glenrock was the main land route between Newcastle and Lake Macquarie until Threlkeld cut an inland track in 1825.

	Fishing
--	---------

Awabakal people depended on the marine resources of this coastline in the pre and post contact periods.

	Industry
--	----------

The establishment of mining and smelting at Glenrock from the 1840s, has shaped the cultural landscape and the theme of industry dominates the 19th century history of the place.

	Mining
--	--------

Coal mining is a significant theme in the history of New South Wales as a whole. NSW has produced the majority of Australia's coal and Newcastle produced the first coal for export in 1801 (Pearson and McGowan 2000:123). The coal mining remains at Glenrock derive from the third phase of coal mining in the Newcastle region: the first being government controlled mining using convict labour; the second phase from 1831 – 1847 was the Australian Agricultural Company's monopoly. The third phase, after 1847 is the opening up of this industry to private concerns. It is likely that Mitchell's desire to exploit the coal resources of the land at Glenrock which he owned, contributed to the relinquishing of the AA Company monopoly (see Section 3.12).

As well as coal mining, Aboriginal people also exploited the geological resources of Glenrock, including coal, tuff and red ochre (see Section 4.3). In the 1950s gravel quarries were also established.

	Science
--	---------

The geology of Glenrock and the surrounding region was influential in the development of the geological sciences in Australia (see Section 3.4).

	Technology
--	------------

The physical remains of transport networks, mining and smelting at Glenrock reflect technological developments in these industries through the 19th and 20th centuries.

	Transport
--	-----------

The railway and tramway remains of Glenrock, which were begun in the 1840s, reflect the integration of transport and industrialisation, as well as the importance of links to harbours and maritime transport.

The coastal railway system at Glenrock was both unusual and early (begun in 1847 by Dr James Mitchell). This railway played an important role in Mitchell's attempts to pressure the AA Company's monopoly over coal resources. The railway was extended in 1866 to Glenrock Lagoon to service the coal mine there and continued in use through to the 1920s. The coastal tunnels were sealed in 1945.

	Land tenure
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Coal leases have shaped patterns of land tenure around Newcastle, and are largely responsible for the survival of "green spaces" such as Glenrock.

The buying up of large tracts of land in the 19th century by James Mitchell and A. W. Scott for industrial development, following dispossession of the Awabakal people from their land, has shaped this parcel of coastal land, which today survives as a "natural" or re-vegetated area.

	Utilities
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Burwood Beach Wastewater treatment works was developed in the 1930s to service the growing centre of Newcastle.

	Accommodation
--	---------------

Glenrock contains the archaeological sites of workers accommodation associated with the Burwood Colliery and the Burwood smelter sites, from the mid to late 19th century. Glenrock also contains archaeological remains of Aboriginal campsites.

5.Working	Labour
-----------	--------

The coal mining industry is linked to a transnational (Greater Britain) history of unionism and struggles to improve working conditions.

Archaeological remains also reflect Aboriginal work in terms of stone tool manufacture and resource exploitation.

7.Governing	Defence
-------------	---------

The Glenrock Scout Camp is named as a memorial to those who died in WW2. In addition the Camp was taken over by the Home Guard during the war and a number of relics are associated with that period.

	Leisure
	Social Institutions

Leisure activities such as picnicing, boating, walking and surfing have been the dominant uses of Glenrock as mining activity decreased (on the surface) through the 20th century. Scouting is a social institution with links to a broader imperial history, as well as with the development of important social/community networks in the 20th century.

	Persons
--	---------

Glenrock has substantial associations with the explorer Ludwig Leichhardt, the missionary Rev. Lancelot Threlkeld, the industrialists and land developers Dr James Mitchell and Edward Merewether, and the Awabakal man Biraban. Another significant association is with the local historian, the late John Grothen.

6.3 Comparison with other Places

There are a number of recognised heritage places in the region which today form the historic, cultural and community context for the Glenrock cultural landscape. As coal mining is such an important heritage theme for the Hunter Valley, this context merits a more detailed discussion of its own, which follows below.

As a cultural landscape with a diversity of values, the comparison of Glenrock with other places poses some difficulties. If teased apart the historic, Aboriginal and natural features of Glenrock loose their relationships, their links with communities, their entwinement with the geology, environment and human actions represented in the landscape. Cultural landscapes are difficult to compare because, as has been stated in the introduction to this section, they are perceptions which are created through the knowledge, memories, interests, cultural traditions etc, which people bring to bear on them. Hence we aim here to draw out links and contextual relationships between Glenrock, its region and places of heritage significance, rather than to rank the value of Glenrock against them.

The Regional Heritage Context

The heritage significance of the tuff and coal layers, seen in the ocean cliffs of Glenrock, has also been recognised in the ‘The Bathers’ Way’, an interpretative trail from Merewether to Newcastle Harbour.

The Convict Lumberyard (SHR 00570), also close to Newcastle Harbour, is an industrial site linked with an earlier phase of Newcastle's industrial development in which convict labour was relied upon.

The industrialisation of Glenrock directly reflects the lifting of the AA Company's monopoly on coal mining: the early AA Company site at Carrington (Tahlee Estate, SHR 00569) forms an important local context for this history.

The Ridge, in Hillcrest Road Merewether (SHR 00313), is the home of Edward Merewether and Augusta Maria Mitchell, both of whom have important links with land and industry at Glenrock.

The site of the Burwood copper smelter is unusual in the context of Newcastle's heavy industrial areas in that it has been abandoned. Other copper smelters constructed in Newcastle in the 19th century have now been subsumed by later industrial development.

The Aboriginal archaeological sites of Glenrock link with a rich regional collection of Aboriginal sites, most of which have been discovered within the context of development work. Sites at Glenrock include middens, lithic scatters including probable camp sites, hatchet-head grinding grooves, stone procurement areas and an Aboriginal pathway. Similar sites are protected in other coastal reserves, the largest of which is Myall Lakes. The Aboriginal archaeological evidence, in the context of the Glenrock cultural landscape, its historical archive and contemporary indigenous community, provides an opportunity for interpretation of indigenous cultural heritage in this region.

The Awabakal Nature Reserve, just to the south of Glenrock, is recognised for its natural values. The fact that it is made up of landforms, habitats and vegetation communities quite distinct in many ways from Glenrock SRA reinforces the diversity of natural heritage values in this coastal region. NPWS also manages a string of small coastal reserves to the north and south of Newcastle, including a number of islands. Other

National Parks in the region are located on the southern and northern fringes of the Hunter Valley, in more mountainous terrain.

The Coal Mining Context

Pearson and McGowan (2000) have suggested that the following attributes of a mining place are likely to contribute to its heritage significance:

Clear evidence in combination of the various above-ground features appropriate to the colliery's age and location. As coal mines, especially early ones, are unlikely to have all buildings surviving, such evidence might include foundations, banking for structures, rail embankments, cuttings and alignments, tunnel portals or shaft cappings etc. Evidence of recent collieries might be expected to have substantial intact structures to be regarded as good examples of their type.

Attributes or combinations of attributes of a coal mining site that are likely to make it rare, uncommon or of particular interest include:

Intact or unusually substantial examples of early coal mining technology...

The combination of intact or unusually substantial surviving features that demonstrate clearly the range of operations typical of coal mines of its era.

The significance of mining features... might be enhanced by association with specific historical events, technological innovations developed at the site, or strong or special meaning for a particular community or group. (Pearson and McGowan 2000: 137).

As argued above, the Glenrock mining remains relate to the third phase of coal exploitation in Newcastle, following government controlled operations using convict labour and the period of the AA Company's monopoly (1831 –1847). The remains of Newcastle's convict worked mines, have now disappeared beneath the city centre, as have most of the AA Company's early workings. As discussed in Section 3.23 of this report, there are some reports that convict mining was carried out in the Glenrock area. This may well have been the case although we are yet to find any physical or historical evidence to support this.

The only extant penal colliery in Australia is the Coal Mines Historic Site on the Tasman Peninsula, Tasmania, established in 1833 (RNE Database No. 011980). At this site remains of industrial activity include the main shaft, complete with footings of the

original pit head machinery, as well as a tramway formation and jetty remains. The industrial remains are accompanied by the picturesque sandstone ruins of the prisoner's barracks, chapel and officers quarters. The Coal Mines Historic Site is also within the protected estate of the Tasmanian National Parks Service and has in fact been managed for its scenic beauty since 1938 (RNE Database No. 011980).

At Lambton Colliery (RNE Database No. 019026), at nearby Redhead, only the remains of the Upcast Shaft ensemble survive. When it closed in 1991, this colliery was the only one in the Hunter still using its original shafts and pit top equipment, dating from the 1890s.

The Richmond Main Colliery (SHR 0016) at Kurri Kurri near Cessnock, also comprises a large collection of colliery and rail remains dating from 1908. This mine ceased operation in the 1960s and has been conserved through the actions of local interest groups and the Cessnock City Council. The Statement of Significance produced for this place in the 1980s, stressed its social and symbolic significance to the local community (SHI, Itemid=5045083). This was stressed over and above the integrity of the physical remains, even though a substantial array of buildings and plant does in fact survive.

The Glenrock coal mining remains include areas which were mined from the 1850s, while the coastal railway which first served them was begun in 1846 (Section 3.12). The most substantial colliery remains in Glenrock are found at the Burwood Colliery site (Section 4.4, Site Complex 2 and Figures 4.22 –25). These remains relate to the 1880s Burwood Colliery but the variety of construction techniques observed in the ruins suggest that they may incorporate remains from a previous 1860s mine. This makes the Burwood Colliery remains amongst the oldest extant colliery remains in the Hunter (pers.com. Ed Tonks and David Wells). Most coal mining remains in the Hunter today relate to the latter 19th and 20th centuries. According to David Wells, Curator at the Newcastle Regional Museum, the oldest coal mining related item in the Hunter is an AA Company house at Hamilton, dated to 1844. While the oldest surviving mining relics are likely to be those from the Lambton B Colliery, which was begun in the 1860s, although most structures

date from the 1890s. The later Burwood Colliery at Whitebridge, which took over from the Glenrock Burwood Colliery in 1888, has now completely disappeared. However, the Mine Managers residence, at 105 Burwood Road, and six staff cottages, survive and are now listed as an indicative place on the RNE (Database Number 101365). These residences and the Burwood Colliery Bowling Club, also built by the later Burwood Colliery, are the only remnants of this later mining community.

Notwithstanding the age of the coal mining remains at Glenrock it is their location within a coal mining landscape which has been preserved and protected from encroaching development, which most contributes to their significance. The array of features contained within the SRA includes not only industrial features such as shafts, adits, air shafts, rail features, engine and plant footings, major earthworks to create railway embankments and loading areas, but also mine managers and other accommodation, including the extant UnderManager's Cottage found in the Glenrock Scout Camp (Section 4.4, Site Complex 9). The remains of more than a dozen collieries in the Glenrock area also link strongly to the surrounding residential villages of Kahibah and Dudley.

Glenrock also relates to the major commercial and entrepreneurial identities of Hunter coal mining: Mitchell and his Newcastle Coal and Copper Co., J. and A. Brown who later moved to East Maitland, the Scottish Australian Mining Company and after 1932 with BHP.

New South Wales has been Australia's largest producer of coal and the Hunter region has been the State's most important mining region (Pearson and McGowan 2000:134). Newcastle, and the surrounding areas of Maitland and Cessnock, possess a significant heritage of rail and coal mining related relics and places. However, as Ashley et al (1991) have pointed out, despite the importance of the theme of mining history to the Hunter, few coal mining remains are preserved within the NPWS' estate in this region. The importance of coal to the region, and to the communities of that region, is of enormous significance to concepts of local identity and of a shared historical experience.

6.4 Analysis of Heritage Significance: Application of the Criteria

Criterion (a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);

Glenrock relates to a rich historical record about the Awabakal people, including a record of Aboriginal names recorded by Reverend Threlkeld for specific places around Glenrock Lagoon – for the valley, lagoon, the camping ground where the midden existed, the point on the beach where the grass ends, and Little Red Head hill which borders the camp area. This combination of historical evidence and archaeological sites provides detailed evidence of an Aboriginal cultural landscape of the early colonial/contact period.

Glenrock has long been associated with the first discovery of coal in Australia by the Bryants, a family of escaped convicts. Opinions differ on the likelihood that it was the coal seam at the mouth of the Glenrock Lagoon which they encountered and the exact location of the Bryant's discovery will probably never be known.

Dr James Mitchell purchased most of the land around Glenrock in 1835 and began a coastal railway to service his proposed copper smelter in 1846. In purchasing this coal rich area Mitchell obviously had a view towards a time when the AA Company could be forced to relinquish its monopoly control over NSW's coal resources. The remains of more than a century of mining at Glenrock has produced a landscape shaped by the techniques, technology and infrastructure (particularly railways and tramways) of coal mining.

The extant Undermanager's Cottage and the archaeological remains of other cottages within the Glenrock scout camp, reflect the communities of men, women and children which enabled the development of Newcastle's coal mining industry. Glenrock was a part of the distinctive social life of close mining communities and their histories of migration, union struggles for better working conditions, education and respectability.

The Burwood Copper Smelter was the first to be commenced to be built in Australia and the first in NSW to operate. It reflects the optimism and entrepreneurial flair of 1840s industrial development in Australia, followed by the subsequent waves of collapse and disillusion in the face of imperial competition and commodity price control (Bairstow 1987: 2).

Since 1932 Glenrock has been an important place for Newcastle's scouting movement. This brought generations of visitors to Glenrock for recreation and built strong social networks around the place and the scouting organisation. In the 1940s the Volunteer Defence Corps took over the Glenrock scout camp. This role is memorialised at the camp and is well remembered in the community.

Glenrock also reflects changing leisure and recreational uses of the coast throughout the twentieth century. The bathing, boating and picnicing of the early 20th century were replaced by surfing and bushwalking from the 1960s.

The 1930s Burwood wastewater treatment works contains some early features and technology and it has had an important role in providing urban services for Newcastle. Environmental problems associated with sewerage treatment also provided some of the triggers for an important community driven conservation movement which worked to protect Glenrock through the 1970s and 80s. The re-valuing and regeneration of Glenrock's environment dates from the 1930s, but its formal reservation and conservation was achieved in the 1980s, reflecting major changes in public policy concerning heritage and environment which occurred throughout Australia in that decade.

Criterion (b) an item has strong or special association with life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);

Glenrock's history features important associations with a number of historical figures.

The Awabakal man Wehpong, known as Biraban or Magill, worked with the missionary Threlkeld to translate St Luke's Gospel into the Awabakal language. He travelled frequently between Newcastle and the mission at Lake Macquarie and therefore would have followed the Aboriginal pathways along the coast through the SRA where his clanspeople would have camped and fished.

Ludwig Leichhardt visited Glenrock in 1842, studied the flora and geology there and recorded a meeting with Biraban/Magill. He later wrote " I am convinced that the geology of Australia must in general commence at Newcastle" (Branagan 1972: 61, see Section 3.4).

The Reverend Lancelot Threlkeld established a mission at Lake Macquarie in 1825, he wrote extensively about the Awabakal. He travelled regularly through Glenrock. Threlkeld's diaries provide a unique commentary on events of his time and on the Aboriginal people with whom he worked.

Dr James Mitchell purchased most of the land around Glenrock in 1835. Mitchell was a Peninsular War veteran who used his contacts and scientific background to further his industrial ambitions. Mitchell was instrumental in forcing the AA Co. to relinquish its monopoly over coal production, through his establishment of Glenrock's coastal railway and the Burwood Copper Smelter. Mitchell's son was D. S. Mitchell (1836-1907) who established the huge collection of Australiana, upon which the Mitchell Library is based, through the profits from estates amassed by his father.

Edward Christopher Merewether married Mitchell's daughter and through her inherited the Burwood Estate, part of which would later become known as "Merewether".

John Grothen published a popular local history of Glenrock in 1978. He was involved with the local scouting movement and his historical research served to cement Glenrock as an important icon of local identity

Glenrock has been a location of the Newcastle scouting movement since 1932, and these links are actively maintained today.

Criterion (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).

Glenrock's scenic coastal location features significant views from its perimeter over densely wooded gullies against the expanse of the ocean. Views from the interior of the SRA include sweeping beachscapes and dramatic headlands. The views from Liechhardt's lookout and the banana plantation site also take in the saltwater lagoon (Glenrock). The lagoon is fed by a dramatic creek and gully formation (Flaggy Creek) which includes a number of waterfalls and rock overhangs that can be viewed from the Yuelarbah Track. Geological features, including tuff, Permian coal measures and fossil wood, are revealed through coastal erosion. Glenrock's scenic beauty forms a strong component of the places's social significance, discussed below.

While not reflecting outstanding or rare technical achievements, the industrial remains at Glenrock reflect developments and changes in coalmining technology from the 1850s through to the 20th century. This includes tramways and railways, including the unusual coastal railway and its tunnels.

Criterion (d) an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;

The present community values Glenrock for a combination of historical, archaeological, geological, natural and aesthetic reasons, and for the resources and opportunities it represents which are important to community well being in the future. These include educational, spiritual, cultural and recreational resources and opportunities. It is important to note that the community values revealed through research for this CMCTP

encompass all areas of value and cannot be separated into one aspect of heritage significance.

Two groups of values can be seen to cover both Indigenous and non-indigenous attachments to Glenrock:

Group 1: Values associated with the promises and opportunities Glenrock holds for the community's future:

- The importance of the sense of history, the landscape and the natural environment of Glenrock for Newcastle's future as it moves away from its mostly industrial past.
- The opportunities Glenrock SRA provides for Indigenous people to "reconnect" or "reunify" with country.
- The importance of Glenrock as a beautiful place and as a natural place close to the city.

Group 2: Values associated with learning and sharing special knowledge about the past.

- The visible Aboriginal heritage is proof of the Aboriginal history of the Newcastle region and of the unbroken links of Awabakal people with the place
- The local legends, stories, histories and memories associated with Glenrock, such as those relating to orcharding, agriculture, defence and the local struggle to protect the place, are important to local people.

Criterion (e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);
--

The Aboriginal cultural landscape of the SRA reflects subsistence practices, in recent prehistoric times and in the early nineteenth century, along the central coast of NSW.

The Aboriginal cultural landscape has the potential to contribute to the understanding of resource exploitation in the region and to the history of cross cultural relations in the early colonial period. Importantly, it has:

- a range of regionally representative site types (grinding grooves, shell middens, stone procurement site, rockshelters) indicating uses of different places and resources in the SRA.
- a wide range of different Aboriginal food resources and resource area (sandy and rocky platform foreshore, lagoon, forested hills, and creek lines).
- an exceptional exposure of the highest grade tool-making stone in the sea cliff at Glenrock Lagoon, and in association with a coal seam used by both Aboriginal people and later by settlers and industrial enterprises. This stone is an indurated tuff (the same as that comprising Nobby's Head) and was used widely within the Hunter Valley and more generally the Sydney Basin.

Glenrock also has a range of 19th and 20th century sites which possess research potential of varying degrees. These sites include:

- Coal mining remains, including the archaeological remains of the small group houses associated with the Burwood Colliery;
- Rail and tunnel remains found throughout the northern half of the SRA;
- The site of the Burwood Copper Smelter , and its workers accommodation dating from the mid 19th century,;
- The 19th century artefact scatter found at the banana plantation site.

These remains have the potential to yield information regarding the history, technology and social life of communities involved in local and global networks of migration, trade, industrialisation and industrial workforces, responses to local environmental conditions and interaction with the landscape, imperial economics, establishment of capitalist resource production and so on.

Glenrock's natural environment, with its high levels of floral biodiversity and geodiversity, and subsequently high numbers of vegetation communities and bird and

reptile habitats, possesses significant research potential for the biological and earth sciences. In particular Glenrock's long history of human use, industrial development and proximity to urbanisation, combined with its significant "remnant" of pre-contact environment, makes it relevant to many research issues concerning environmental change in the post contact period.

Criterion (f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

The flora biodiversity of Glenrock SRA is very high, and would be consistent with an area dedicated for the conservation of its natural heritage alone. This biodiversity reflects the history of use of this area by Aboriginal and non-indigenous people. It also survives as a substantial remnant of the pre-contact environment and continues to provide for high reptile and bird habitat diversity.

There are seven plant species recorded in the SRA which are rare or threatened. One reptile(subspecies of diamond python), one mammal (common bent wing bat), and two bird species recorded in the SRA are all listed as vulnerable.

The SRA has significant geodiversity, demonstrating the continuous geological development of the Sydney Basin over the course of 300 million years to the present.

The SRA possesses an array of coal mining sites and associated infrastructure which are amongst the earliest surviving in the Hunter. The span of time, from the late 1840s to the early 20th century, covered by the mining relics of Glenrock, is therefore rare in the Hunter region and in Australia as a whole.

The Burwood Smelter site is a rare, largely intact archaeological site encompassing the smelter and associated worker's accommodation from the 1850s through to the latter 19th century. It is the only surviving 19th century smelter site in Newcastle (Bairstow 1987:2)

and the first to be commenced to be built in Australia (the South Australian copper smelters commenced production before Burwood).

Criterion (g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments)

Glenrock possesses a range of regionally representative Aboriginal archaeological site types (grinding grooves, shell middens, stone procurement site, rockshelters).

The historical and archaeological record of the early contact period at Glenrock allows Glenrock to be read as an Aboriginal cultural landscape reflecting many environmental, cultural and anthropological themes relevant to this coastal region of eastern Australia in late prehistoric and the early contact periods.

Glenrock's coal mining landscape presents a broad array of typical features associated with coal mining and transport from the 1840s through to the early 20th century.

Glenrock's combination of marine, wetland, heath and forest habitats is representative of a broad range of coastal vegetation communities and eco-systems from the lower North Coast and the Sydney Basin regions.

6.5 Previous Statements of Significance

The current statement of significance on the State Heritage Inventory is:

Glenrock is a major cultural landscape which displays an interplay between natural features and built elements, reflecting its rich history. The substantial remains of coalmining activities, including an unusual coastal railway and many mines, tunnels and other relics provide physical evidence of more than a century of coalmining activity. These features are of National, state and regional significance. The fabric of the sites is substantial and enables the history of the area to be readily understood.

The area contributes to our understanding of the control of the development of resource extraction during the colonial period and its subsequent development once the Australian Agricultural Company monopoly was relinquished.

The Godden and Associates study of 1989 (p. 123) considered only the historic remains of the Glenrock SRA. Its summary statement of significance, which is obviously the basis for that used on the State Heritage Register, is as follows.

- *The Glenrock SRA is a major cultural landscape which displays an interplay between natural features and built elements, which reflect its rich history.*
- *The SRA contains a large number of historic sites, whose fabric is substantial, allowing the history of the place to be readily understood.*
- *The Glenrock area has been used for industrial purposes, predominantly coalmining for more than a century.*
- *The Glenrock Lagoon has symbolic significance as the possible site of the first discovery of coal by Europeans in Australia.*
- *The SRA contains substantial remains of coal mining activities, including an unusual coastal railway and many mines, tunnels and other relics that provide physical evidence of more than a century of coalmining activity. These features have particular social value for the Newcastle community.*
- *The SRA includes the site of Australia's first copper smelter.*
- *The Glenrock area has been utilised to service the needs of the Newcastle community throughout the century, both through town services and through recreational activities such as scouting, which has a long established presence at Glenrock.*

6.7 Table of Significance of Component Parts

The following table looks at the different aspects of Glenrock's cultural landscape and assesses their levels of significance. However as previous statements of significance have argued the essence of Glenrock's value lies in its combination of features and in its context within the community. Unlike previous studies, this study has attempted to look at all these values, including community values, within an integrated landscape context. Glenrock has been considered important on the basis of its historic and natural environment alone, here these values are expanded, rather than overshadowed, by further

information regarding Indigenous prehistory and history, and contemporary community attachments.

Traditions of heritage management, and the requirements of the brief for this CMCTP, are reflected in the apparent emphasis on historic landscape features in the following table. While it has been possible here to group Aboriginal, natural and social value features under a single heading, the management requirements of the NPWS, meant that a break down of significance had to be prepared for historic features. This breakdown should not be interpreted as suggesting that more significance lies in these features than in other landscape elements.

Definitions

The following terms used in the table are defined in relation to their use to describe aspects of a cultural landscape:

<i>Primary Significance</i>	<i>Outstanding aspect of the cultural landscape</i>
<i>Contributory Significance</i>	<i>Contributes substantially to the values of the cultural landscape.</i>
<i>Little Significance</i>	<i>Contributes to the values of the cultural landscape.</i>
<i>No Significance</i>	<i>Does not contribute to the values of the cultural landscape.</i>
<i>Intrusive</i>	<i>Detracts from the values of the cultural landscape.</i>
<hr/>	
<i>State</i>	<i>Important in a State-wide context.</i>
<i>Regional</i>	<i>Important in a regional (Hunter Valley, Lower North Coast) context.</i>
<i>Local</i>	<i>Important in a local context (ie Newcastle and surrounding areas).</i>
<hr/>	

<i>Cultural Landscape</i>	<i>Features</i>	<i>State Themes</i>	<i>NSW Heritage Criteria</i>	<i>Grade</i>	<i>Status</i>	<i>Justification</i>
<i>The Glenrock Cultural Landscape as a whole.</i>	<i>Historic built features, Aboriginal archaeological sites, social values, natural values etc</i>	<i>Major themes include: Environment, Cultural landscape and naturally evolved, Aboriginal cultures, Mining, Industry, Persons</i>	<i>a, b, c, d, e, f, g</i>		<i>State</i>	<i>Cultural landscape with a rich combination of significant natural, cultural and social features.</i>
<i>Historic Landscape (Site Complexes Section 4.4)</i>						
<i>SC1</i>	<i>Burwood Copper Smelter</i>	<i>Industry, Accommodation Labour Persons</i>	<i>a,b,e,f,</i>	<i>Primary</i>	<i>State</i>	<i>Rare, intact archaeological site.</i>
<i>SC2</i>	<i>Burwood Colliery Remains (South)</i>	<i>Industry, Accommodation Labour Persons</i>	<i>a,b,e,f,g</i>	<i>Primary</i>	<i>State</i>	<i>Early complex of coal mining remains with an array of technological features.</i>
<i>SC3</i>	<i>Coastal Railway</i>	<i>Industry, Transport Labour Persons</i>	<i>a,b,e,f</i>	<i>Primary</i>	<i>State</i>	<i>Unusual, coastal railway although in poor condition.</i>

SC4	<i>Collieries (North Flaggy)</i>	<i>Industry, Transport Labour</i>	<i>a,e,g</i>	<i>Contributory</i>	<i>Regional</i>	<i>Array of coal mining features from 19th and 20th century.</i>
SC5	<i>Murdering Gully Collieries</i>	<i>Industry, Transport Labour</i>	<i>a,e,g</i>	<i>Contributory</i>	<i>Regional</i>	<i>Array of coal mining features from 19th and 20th century.</i>
SC6	<i>Merewether Escarpment Collieries</i>	<i>Industry, Transport Labour</i>	<i>a,e,g</i>	<i>Contributory</i>	<i>Regional</i>	<i>Array of coal mining features from 19th and 20th century.</i>
SC7	<i>Banana Plantation Site</i>	<i>Agriculture</i>	<i>e,g</i>	<i>Little</i>	<i>Local</i>	<i>1950s banana plantation + 19th century archaeological remains.</i>
SC8	<i>Orchard and Agricultural Remains</i>	<i>Agriculture Accommodation Persons</i>	<i>a,b,d,g</i>	<i>Contributory</i>	<i>Regional</i>	<i>The Baileys orchard site is the subject of a separate report.</i>
SC9	<i>Scout Camp</i>	<i>Leisure Social institutions</i>	<i>a,b,d</i>	<i>Contributory</i>	<i>State</i>	<i>Not assessed in detail for this report. Outside SRA boundary.</i>
SC10	<i>Defence Remains</i>	<i>Defence</i>	<i>a,d</i>	<i>Little</i>	<i>Local</i>	<i>Defence sites are held in high esteem by community members.</i>

<i>SC11</i>	<i>Burwood Beach Waste water treatment works</i>	<i>Utilities</i>	<i>d,e,g</i>	<i>Little</i>	<i>Regional</i>	<i>Not assessed for this report, based on Godden and Associates 1989. Outside SRA boundary</i>
<i>SC12</i>	<i>Gun Club and Quarry</i>	<i>Leisure Utilities</i>	<i>a,g</i>	<i>No significance</i>		<i>Sites are part of history of the place, do not detract from significance.</i>
<i>Aboriginal cultural landscape</i>	<i>Archaeological sites, place names, pathway</i>	<i>Aboriginal cultures and interaction with other cultures</i>	<i>a,b,d,e,f,g</i>	<i>Primary</i>	<i>State</i>	<i>This array of features should be considered as a cultural landscape rather than a group of sites.</i>
<i>Natural Landscape</i>	<i>Geological features, biodiversity, views, habitats etc</i>	<i>Environment- naturally evolved. Environment- cultural landscape</i>	<i>a,c,d,e,f,g</i>	<i>Primary</i>	<i>State</i>	<i>Glenrock exhibits high natural heritage values.</i>

<i>Community Values</i>	<i>Individual and group attachments relating to the past, present and future</i>	<i>N/A</i>	<i>d</i>	<i>Primary</i>	<i>State</i>	<i>Place is given value within a network of community and individual attachments, deriving from local people, indigenous people and special interest groups.</i>

6.8 Statement of Significance

The Glenrock Lagoon cultural landscape is of State, Regional and Local significance because of its rich combination of attributes of historical, archaeological, social and natural significance. Today Glenrock is the site of strong attachments in both the indigenous and non-indigenous communities. Awabakal people maintain links with this area and other local Aboriginal people value it as evidence of the Aboriginal history of this region. Community groups participate in caring for Glenrock through bush regeneration and other activities. The Scouting Association has had a base in Glenrock since 1932 and has developed an historical attachment with the place. Glenrock is treasured and respected as an important recreational, scientific, cultural and environmental resource for the community's future.

The landscape of Glenrock exhibits significant geodiversity, and it is this geology which has shaped human interaction with the landscape. In turn, geology largely shaped environmental responses to this long history of human use and exploitation. Geodiversity creates the array of habitats for plants and animals and a landscape of scenic contrasts, from densely vegetated gullies and waterfalls, to coastal heath, salt lagoons and immense ocean vistas.

The coal and tuff, which have been exposed here through marine erosion, have drawn both indigenous and non-indigenous people to Glenrock. The exposed tuff was a particularly important resource for tool making for Aboriginal people, while coal was a crucial resource for the industrial revolution in Australia. Glenrock was central to the struggle of ambitious entrepreneurs to wrest this precious resource away from government control and monopoly.

This history of long term human interaction with the landscape is documented in an array of archaeological sites and physical remains: shell middens, hatchet grinding, stone procurement and knapping areas, are a powerful visual record of Awabakal culture and

history in the region. A rich historical and ethnographic archive relates to these indigenous sites enabling Glenrock to be understood as an Aboriginal cultural landscape.

From the late 1840s the industrialisation of Glenrock was underway with the development of mining, rail infrastructure and an early copper smelter. The remains of this industrial activity, which persisted through the 20th century, are numerous. They include some now rare early features which possess high archaeological research potential, both in terms of the technology and its social context. Remains also exist of the agricultural and service industries which developed in response to Newcastle's growth as a coal producing centre. The exhaustion of the coal deposits saw the growth of coastal recreation at Glenrock, and from the 1960s, it was re-valued for its history, scenic beauty, geodiversity and biodiversity.



Glenrock Lagoon Cultural Landscape

Conservation Management and Cultural Tourism Plan

NSW National Parks and Wildlife Service

Volume 2 - Main Report Chapters 7-10 Conservation Policy and Appendices

Griffin nrm

In conjunction with
National Heritage Consultants

January 2003

7.0 Policy Formulation

7.1 Introduction

Having determined the cultural significance of the Glenrock cultural landscape, the next task is to investigate the best ways in which to manage, conserve and interpret this significance. In this section we discuss many of the issues which affect the future management of Glenrock. These issues include the corporate values of the NPWS and their statutory requirements, the concerns of stakeholder groups, conservation problems affecting the different kinds of heritage items within the landscape, and issues of risk and liability. Finally as a basis for recommendations in Sections 8 (Conservation Policy) and 9 (Interpretation and Cultural Tourism) concerning interpretation and cultural tourism opportunities, we review the range of existing facilities in the SRA.

7.2 Opportunities and Constraints

This section considers how the significance of Glenrock gives rise to some specific requirements in terms of its future use and management. In conservation planning these requirements are generally considered in terms of the “constraints” or “opportunities” which arise as a result of the unique character and composition of the cultural significance of the place.

Integrated values: natural, cultural and community

The fact that the significance of the Glenrock cultural landscape lies in its combination and diversity of natural and cultural attributes means that it is this complexity which must be safeguarded to ensure that Glenrock’s heritage significance is retained. This also gives rise to the need to ensure that this complexity can be understood, and that conservation, management and interpretation of Glenrock provides the tools people need to appreciate this cultural significance.

In the past NPWS has actively managed the natural heritage values of Glenrock. While cultural and community values have been recognised, these have not been a focus for active management and enhancement. The natural heritage values of Glenrock are very high and require ongoing protective strategies which are discussed in detail below. However, to enhance the understanding of Glenrock as a cultural landscape, in line with current NPWS policy, more active management strategies concerned with cultural and community values must be initiated. The brief for this CMCTP specified an investigation of the cultural tourism opportunities that might be appropriate for the significance, location and community context of Glenrock and this is discussed in detail in Section 9. Developing means of enhancing the experience of visiting Glenrock will not only create opportunities for cultural tourism, but will also help to maintain and build upon the social and community values of Glenrock, as will be discussed further below.

A range of community groups currently participate in many activities using and caring for Glenrock and this is an important aspect of its cultural significance. These relationships should be maintained and built upon in terms of participatory and consultative management processes as well as the creative development of new ways of linking the community with Glenrock.

The coal mining landscape

The number, condition and safety issues associated with the array of historic heritage items in the SRA means that active management of all these features is neither feasible nor desirable. Encouraging and enabling visitation of many of the coal mining related remains would impact negatively on natural values and would require a large commitment of resources to ensure their visibility, stability and safety. Further, stakeholders have raised concerns about a proliferation of tracks and trails through the SRA (see Section 7.5). This would impact negatively on the quiet, bush ambience that attracts many users to Glenrock. However current access and interpretation arrangements, focusing on the Yuelarbah track (discussed below at Section 7.12), allow only a very limited appreciation of the area's industrial history. The proximity to the existing Yuelarbah track of two sites of high significance provides an important opportunity to

enhance appreciation of this aspect of the cultural landscape. The sites of the Burwood Colliery (Site Complex 2, Section 4.4) and the Burwood Copper Smelter (Site Complex 1, Section 4.4) have good potential for interpretation in this regard. The scope and significance of the above ground and archaeological remains at these two locations suggest that they should be the subject of more active conservation and monitoring activities.

Coal mining, as a crucial historic theme for the Hunter Region, is under-represented in the NPWS estate (Ashley et al 1991). Current initiatives outlined in the model *Far South Coast Region Cultural Heritage Strategy 2001 –2006* (April 2001), stress a move towards “managing cultural heritage places within a historical thematic framework” and also “active management of a selected range of representative and /or unique cultural heritage places”. These management principles are appropriate for the management of complex cultural landscapes such as Glenrock. They enable certain sites or landscape features to be targeted for research, interpretation and/or development within their landscape, historic and other contexts. The significance of Glenrock’s coal mining remains, the fact that coal mining is poorly represented in NPWS’ estate while representing a very significant theme for the Hunter region, combine to produce a strong argument to enhance the conservation, interpretation and accessibility of the Burwood Colliery remains. The Burwood Smelter site, while not a coal mining place, is integrally linked to the development of coal mining by Mitchell in the Glenrock region. Its significance and accessibility also give rise to important opportunities to enhance the understanding of the Glenrock cultural landscape.

Aboriginal cultural landscape

The prehistory, history and contemporary community attachments of Aboriginal people and Glenrock, form a crucial aspect of the integrated significance of this cultural landscape. This significance gives rise to a requirement to consult and involve Aboriginal people in the management of Glenrock, to provide access and opportunities for cultural and educational experiences and to interpret the rich history of the Awabakal and cross cultural encounters in this place.

As it is not appropriate to encourage visitation to some fragile Aboriginal archaeological sites, sensitive and creative methods must be sought through which to engender understanding of these values. The rich historical and visual archive relating to Awabakal people in the early colonial period, as well as the Glenrock landscape itself, provide exciting opportunities to interpret the Glenrock Aboriginal cultural landscape.

7.3 Statutory Compliance

Management of the heritage values of the Glenrock cultural landscape is regulated within a network of State legislation. Of greatest importance in this network are the National Parks and Wildlife Act, 1974 and the Heritage Act, 1977. Also relevant are the NSW Environmental Planning and Assessment Act 1979 and the Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984.

NSW Heritage Act, 1977

Whereas the management of Aboriginal cultural heritage is regulated through the NPWS Act, non-indigenous cultural heritage is regulated through the Heritage Act, 1977. This Act contains blanket provisions protecting non-indigenous archaeological relics. To assist in the compliance with these provisions, and with the relics provisions of the NPWS Act, archaeological management guidelines have been developed for Glenrock and these are set out in Section 8 and in Appendix 5.

A further requirement of the Heritage Act arises from the inclusion of the “Glenrock early coal mining sites” on the State Heritage Register (SHR No. 00988). Inclusion on the SHR means that these sites have been previously assessed to be of State significance and that Heritage Council consent is required for works affecting listed places. NPWS policy provides for the preparation of a Conservation Management Plan for all SHR items within its estate. A major objective of this CMCTP is therefore to fulfill this requirement and to be endorsed by the NSW Heritage Council as the basis for future management of the place. This CMCTP will also allow the Heritage Council to upgrade its SHR listing to

reflect the natural, cultural and community values of Glenrock cultural landscape, as they have been identified here.

NPWS Act, 1974

Aboriginal cultural heritage, natural heritage values and the management of reserved lands are regulated through the NPWS Act. The NPW Land Management Regulations also protect non-Aboriginal cultural material, more than 25 years old, found on NPWS land.

Classification of Glenrock as an SRA under the NPWS Act 1974 has been affected by recent amendments to the Act (NPWS Amendment Bill 2001). The classification of State Recreation Area has been repealed. Glenrock cultural landscape could therefore be managed appropriately under the new Management Principles set out for either National Parks (Division 2 30E) or State Conservation Areas (30G).

The NPWS Act also requires the preparation of a Plan of Management (POM) for reserved lands. The POM for Glenrock is discussed further below.

Environmental Planning and Assessment Act, 1979

Under Part 5 of the EP&A Act, the NPWS is required to assess the environmental impact of any proposed works or developments. The definition of environment used here is:

all aspects of the surroundings of humans whether affecting any human as an individual or in his or her social groupings.

This CMCTP will form a basis of information for any future proposals requiring a Review of Environmental Factors to be determined by NPWS. As set out above, endorsement of this CMCTP by the NSW Heritage Office, or by its delegate the Director of Cultural Heritage, NPWS, will also mean that proposals in accordance with this CMCTP have the concurrence of the Heritage Council.

Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984.

This Act is designed to provide protection for Aboriginal heritage when this protection is not forthcoming at the State level. This legislation can be activated by applications made

by Aboriginal people. This CMCTP aims to both identify the range of Aboriginal heritage values associated with Glenrock and ensure that they are managed together with the Indigenous community in a strong collaborative and consultative environment.

7.4 Non-Statutory Considerations

Burra Charter, ICOMOS (latest version 1999)

The most significant non-statutory consideration for heritage management is the Australia ICOMOS Burra Charter, which since 1979, has established a benchmark for the principles, procedures and practices of heritage conservation. The preparation of this CMCTP has been in accordance with the procedures set out in the Burra Charter.

Code of Ethics of Co-Existence in Conserving Significant Places, ICOMOS, 1994

This code aimed to establish the principle that competing cultural values need not be resolved through heritage management, but should be able to co-exist. This code states that it is a conservation practitioner's responsibility to identify and acknowledge all cultural groups associated with a place. The basis of this code is well reflected in NPWS policy (discussed below) which asserts that all places are constructed as significant through an array of discourses concerning natural, cultural and community values. NPWS policy and the brief for this CMCTP therefore embody the concepts of co-existence set out in this charter.

Australian Natural Heritage Charter, World Conservation Union

Like the Burra Charter, this Charter aimed to establish a clear procedures and processes for the assessment of natural heritage values. This Charter acknowledges to an extent that natural values are culturally constructed, but also argues for "the existence value" of ecosystems. This CMCTP has based its assessment of significance and conservation policies for natural heritage on the principles of this charter.

7.5 NPWS Policy and Management

The NSW NPWS *Corporate Plan, 2000 – 2003* establishes some key directions and priorities for the Service to develop in this period. Of relevance to this document is the change in emphasis it promotes towards a “holistic approach to conservation which integrates natural, cultural and community values” (NPWS 2001: 12). This CMCTP for Glenrock assists NPWS in achieving a number of its Objectives for Conservation Planning, Conservation Management and Conservation Facilitation as set out in the Corporate Plan.

The Corporate Values and Objectives are also reflected in the *Hunter Regions Operations Plan 2000-2003*. This CMCTP contributes to the achievement of a range of objectives in the following key result areas:

Key Result Area	Corporate Objective
<i>Conservation Assessment</i>	<i>To achieve the use of rigorous and systematic policy, science and assessment as the basis for conservation planning and management in NSW</i>
<i>Conservation Planning</i>	<p><i>To improve the process for establishing conservation priorities for NSW to ensure:</i></p> <ul style="list-style-type: none"> • <i>Integration of natural, cultural and community values;</i> • <i>Consultation and transparency; and</i> • <i>Responsiveness to threats and change.</i>
<i>Conservation Management</i>	<i>Objective 1 – To work with Aboriginal communities to achieve the protection of the natural and cultural heritage through mechanisms which also deliver social and economic benefits</i>
	<i>Objective 5 – To manage NPWS built assets to achieve conservation and health and safety outcomes.</i>
	<i>Objective 7 – To contribute to the environmental, social and economic well being of local and regional communities.</i>

<i>Conservation Facilitation</i>	<i>Objective 1 – To work with the community to foster understanding and appreciation of, and commitment to cultural and natural heritage.</i>
	<i>Objective 2 – To increase community involvement in the management of natural and cultural heritage conservation in NSW.</i>
	<i>Objective 3- To enhance people’s enjoyment of the park system.</i>
	<i>Objective 4- To provide practical guidance and support for community conservation activities.</i>

NPWS has a dense policy framework that reflects the complexity of issues it faces in undertaking land management in an ethical, community focused context. The following is an outline of the policies which have guided this CMCTP and which will continue to guide the implementation of the Conservation Policies.

- *Cultural Heritage Strategic Policy*: this establishes guiding principles and policies for the consideration of cultural heritage values in all land management activities.
- *Risk Management Strategic Plan*: provides a framework to help identify priority risk areas for attention, action and review. This CMCTP raises a number of issues which require further risk assessment.
- *Cultural Heritage Community Consultation Policy*: sets out principles and protocols concerning consultation of communities. This policy guided research for this plan and will continue to guide implementation of the Conservation Policies.
- *Cultural Heritage Information Policy*: acknowledges that communities and individuals are the custodians of their cultural heritage and the owners of the information they possess about it.
- *Guide to approvals for works and activities that impact on cultural heritage places, sites, buildings, landscapes and movable heritage items on NPWS estate*. This guide presents a useful tabulation of the documentation and approvals required for work on heritage places. This CMCTP should form the basis of documentation for future works proposed for Glenrock, and the guide will assist NPWS staff in the implementation of the Conservation Strategies and Actions.

Glenrock SRA Plan of Management(POM)

NPWS has prepared and exhibited a Plan of Management for the Glenrock SRA. This CMCTP has carried out additional research which was obviously not available when the POM was prepared. Although largely complementary to the policies of the POM, several findings of this CMCTP suggest a number of different priorities and approaches. These are:

Conservation of the Coastal Railway relics: the POM states that the coal skips should be relocated. We suggest that this is undesirable for a range of reasons which are set out in full below.

Rehabilitation of the Merewether quarry site: is identified as a high priority in the POM. We suggest more minimal actions to stabilise the site and control weeds. The reasons for this are also set out in full below.

Weed management: this CMCTP endorses the weed management program outlined in the POM and developed in the Pest Species Management Plan.

The CMCTP also notes that modifications to the usual control methods are needed for weed control activities in areas where there are cultural remains (see *Vegetation Control Procedure*, Appendix 3).

Vegetation Management: this CMCTP suggests a higher priority for native species re-planting, as visual screening, than the POM – especially around the wastewater treatment works.

The CMCTP has also highlighted the floristic changes which the vegetation has undergone and has identified a number of types which have disappeared. The POM recommends consideration of the feasibility of re-establishing the cabbage tree palm. This CMCTP provides a list of other plants, once present in the area, which could be included in such a program.

This CMCTP, citing recent survey work, notes the existence within the SRA of seven rare or endangered plant species and 15 regionally significant species. The POM includes management activities aimed at the conservation of a smaller number of species in these categories and will need to be amended to cover the full list.

Fire Management: This CMCTP has noted the data on fire sensitivities of individual plant species from recent surveys. This CMCTP supports the inclusion of this data in the SRA's Fire Management Plan.

Endorsement of this CMCTP may therefore require amendment of the POM.

7.6 Stakeholder Concerns

A range of stakeholders and stakeholder groups have been consulted for this CMCTP on issues of significance and management. Glenrock SRA is closely interwoven with its community in a number of physical and perceptual ways. There are two other land managers responsible for areas contained within the greater boundary of the SRA, Hunter Water and the NSW Scouting Association. The SRA is also located between two local government areas: managed by Newcastle City Council and Lake Macquarie Council. Promotional and tourism links, and cultural and natural heritage management strategies for Glenrock SRA, require the commitment and participation of this broader land management community.

Many other groups, individuals and organisations have an interest in the management of Glenrock. The following is a summary of concerns raised by these groups. These issues will be addressed through a range of conservation policies in Section 8. It is obvious that the stakeholder community is seeking avenues for greater participation in management and an acknowledgement by NPWS of their interest in and ownership of the place.

Regional Land Managers

Glenrock is located within the metropolitan area of Newcastle and because of this it is undesirable that management decisions about the place be made in isolation from neighbouring land managers. An information-sharing forum is required so that decisions can be made in consultation and co-operation with these neighbouring stakeholders. Relevant bodies here include:

- The NSW Scouting Association;

- Hunter WaterBoard;
- Newcastle City Council; and
- Lake Macquarie Council.

It is recommended that a *Glenrock Area Managers Committee* is formed to discuss issues of mutual concern. Such a committee need meet only once or twice a year but should be supported by an email list to facilitate regular information sharing.

Indigenous Stakeholders

Consultation and Advice

Consultation with the Awabakal Local Aboriginal Land Council, and with a range of other indigenous groups and individuals, served to raise a range of concerns relevant to the future management of Glenrock. Aboriginal people expressed a desire to take a more prominent role in the management of the area and would welcome an improved consultative structure.

Many individuals were keen to play a continuing role in the interpretation and management of Glenrock Lagoon and it was thought that this was a way for National Parks to “show more respect to our elders and community”.

Interpretation and Tourism

While it was asserted that the location of Aboriginal sites should not be revealed, this was not seen as precluding the better interpretation of Aboriginal history and values associated with Glenrock. Individuals and organisations were also enthusiastic to develop Indigenous cultural tourism relating to Glenrock.

Other stakeholder concerns

Consultation and Advice

Other community members also expressed strong desires to be involved in the future management of Glenrock and the need for an improved consultative structure.

Consolidation rather than Proliferation

Local stakeholders were concerned that Glenrock should be protected, not overdeveloped by a proliferation of walking trails and other developments. They expressed the concern that “we could love it to death”. It was suggested that the creation of new tracks or attractions should be avoided, but that concentration on the main arteries of access should protect the place and that the provision of more information on these main arteries was a good way of keeping people from wandering off the formed tracks.

Public safety

Concern was expressed regarding the safety of mining and railway remains in Glenrock, and about how to make these areas safe without destroying important historic fabric.

Archaeology

Stakeholders thought that the significant archaeological remains of the Burwood smelter were neglected and should be the subject of further archaeological research.

Raising Awareness

Stakeholders suggested that NPWS’s custodianship of Glenrock is not widely appreciated. They suggested that NPWS land boundaries should be more clearly defined and promoted.

Making Links

Stakeholders agreed that a link between Glenrock and the Bather’s Way should be developed.

No Tolls!

Stakeholders were concerned that no fees should be charged to enter Glenrock.

7.7 Conservation Issues- Natural Heritage Values

Natural heritage values for the Glenrock SRA have been identified in Section 4. They include the areas of biodiversity and geodiversity. Biodiversity values have been

identified and described for the flora, and bird and reptile populations. It is important to note that the SRA has many more biophysical features than these, and that they are well covered in the POM. However, these components of the biodiversity and the geodiversity are the key features of the area's natural heritage.

The formulation of conservation policies relating to these components requires a consideration of the current threats to them. The threats have been described in Section 4 and are summarised in the table below. The management responses required to address the threats will determine the conservation policies for natural heritage.

Value		Threats
<i>Biodiversity</i>		
	<i>Flora</i>	<ul style="list-style-type: none"> • <i>Weed infestation:</i> <ul style="list-style-type: none"> i. <i>replacing coastal heath</i> ii. <i>replacing forest understorey</i> • <i>Fire causing floristic change</i> • <i>Exploitation and uses which cause impacts</i>
	<i>Birds</i>	<ul style="list-style-type: none"> • <i>Loss of habitat diversity (via threats to flora)</i>
	<i>Reptiles</i>	<ul style="list-style-type: none"> • <i>Ground habitat destruction (via threats to flora)</i>
<i>Geodiversity</i>		<ul style="list-style-type: none"> • <i>Erosion</i> • <i>Land movement</i>

Management Responses

Conservation policies formulated through this analysis will complement the general themes in the NPWS POM, while offering some modifications. In the POM, weed and erosion control are major priorities along with fire management and access control. In general, these will also be the main management responses recommended to address threats to the natural heritage.

An additional major theme in the POM is the rehabilitation of degraded areas for their landscape/scenic values. The analysis of landscape values in Section 4 has also led to some alternative management priorities than those of the POM.

Weed Management

Weed infestation and disturbance are integrally linked. In the case of long abandoned sites of industry and settlement, weeds appear to have colonised the sites initially and have limited the grow-back of native species. Current uses (especially the use of informal tracks) and illegal uses (such as rubbish dumping and recreational vehicle use) have spread weeds further into native vegetation areas.

The NPWS' policy, as set out in the POM, and developed in the Pest Species Management Plan is supported. It is noted however, that some control methods may not be consistent with the objectives of cultural heritage management. Procedures for these circumstances are provided.

Fire management

Floristic change in the SRA vegetation, along with the disappearance of a number of notable species, has been described in Section 4. In a small and isolated reserve such as Glenrock, this trend will most likely continue. Along with weed infestation, fire is a major, potential vector of floristic change. Damaging wildfires will occur in the absence of a comprehensive fire management regime; and floristic change will continue to occur if the fire management regime is not attuned to the autecology of sensitive species. Bell (1998) has provided valuable data on the fire sensitivity of significant plant species. And it is understood that this data has been used as an ecological determinant in a draft fire management plan, which will minimise floristic change.

Exploitation and Usage Impacts

Direct exploitation of the land, for mining, quarrying, agriculture, smelting (with their ancillary demands for timber) has ceased. Some non-exploitative land uses remain, in the Wastewater Treatment Works and Scout Camp. These large cleared areas impact on the natural vegetation through "edge effects" which are exacerbated by maritime exposure to salt laden winds. This is noticeable around the Wastewater Treatment Works where a windshear profile of heathland around the development has caused vegetation retreat

beyond the physical boundary of direct disturbance. The same, though to a lesser extent, is true of the Scout Camp area.

Both areas require sympathetic landscaping, establishing a buffer of vegetation which protects the native communities beyond. This should be undertaken in conjunction with the neighbouring land managers.

Geodiversity Management

The protection of the range of fossil sites in the SRA (including plant and animal fossils in the rock faces on the coastal cliffs and petrified wood at the south of Dudley Beach) from vandalism or casual destruction is a conservation issue for the SRA. Options for protection are physical barriers and/or sign-posting. A dilemma exists in such cases – where the identification of the site can lead to its disturbance. Additionally, physical barriers would seriously detract from the scenic values of the coastal cliffs and rock platforms, and the recreational enjoyment of these places. It is suggested that these features are referred to in specialist interpretive material only (see Section 9) and alert people that the legal sanctions for protected areas administered by the Service apply to these features.

Erosion and sedimentation are also significant issues for the SRA. Sedimentation studies have shown that the natural silting process of Glenrock Lagoon is occurring at an accelerated rate- probably through the increased contribution of urban runoff in the last two decades (Peady 1991). The POM prioritises erosion control in the lagoon's catchment. This would serve to slow, but not arrest, this trend. In the medium term, the lagoon may silt up entirely and require dredging and other engineering works to maintain a water recreation area. A management choice will have to be made as to the scale of intervention required, balanced against the recreational/landscape/heritage values of the lagoon.

Managing the Mix of Natural and Cultural Values

The history of the SRA has ensured that, almost without exception, the sites of cultural heritage coincide with areas of discontinuity in the natural vegetation. This is expected in

recently abandoned areas such as the gun club and quarry area. However it is also apparent in areas with long abandoned land uses such as the smelter site, and the old banana plantation site. In these areas the natural vegetation has barely established and either open ground or exotic weeds predominate. Even where the bush has more successfully reclaimed abandoned sites, such as the Burwood Colliery, dense thickets of lantana and crofton weed dominate the shrub layer.

Dunes and their immediate hinterland are subject to coastal erosion processes and weed infestation by bitou bush. This weed problem presents a cleft stick because the bitou bush, while preventing the growth of native vegetation communities, also provides significant protection against dune erosion. This issue affects the remains of the coastal railway formation, the smelter site, coastal Aboriginal sites as well as coastal archaeology in general.

Sites on the upper slopes and hillsides, such as the shafts and tunnel portals above Murdering Gully, WWII sites on the headlands, and Aboriginal sites on upper Flaggy Creek) are in better condition in terms of weed infestation, with substantially intact native vegetation providing their setting and environmental context.

Weed removal within the SRA will need to consider the role of some weeds in stabilising and protecting cultural remains. In other situations weed removal will be a prerequisite to the conservation of cultural remains. Both cases are likely to be true for remains on coastal dunes and will need to be assessed on an individual basis, through cautious and exploratory weed removal programs. Weed removal at specific sites, such as the Burwood Colliery and the Smelter, is also desirable to aid interpretation. Special techniques should be used in areas of sensitivity so that an assessment of cultural remains can be made before total weed removal. These techniques have been consolidated in a *Vegetation Control Procedure* (Appendix 3).

Managing landscape and scenic values

Major viewsheds from within the SRA and from the perimeter of the SRA have been identified in Section 4 of this study. This analysis showed that the majority of negative landscape elements, or “black spots”, within the SRA are hidden from the main viewing points. However, it also identified some scenic problem areas.

The quality of views from within the SRA is threatened by encroaching urbanisation and internal infrastructure. The erosion of the boundaries of the viewsheds by visual impacts is to a large degree inevitable because of the topography and urban location of Glenrock. There is little that can be done to address this, because the problem exists outside the SRA boundary. The quality of views into Glenrock from the perimeter are also diminished by internal “black spots” such as the Waste Water Treatment Plant.

There are three main measures available for addressing and correcting visual impacts within the context of natural area management. These are:

- Rehabilitation of the site itself (after cessation of use);
- Screening the site from view by earthworks; and
- Reducing the visual impact by vegetation planting.

The first is only possible in some areas, and is planned by the NPWS for the quarry and gun club area (see below). The second is not recommended in an area such as Glenrock, which is exposed to coastal wind and storm surge, where changes in land profiles can have significant and hard to predict effects on adjoining lands. The third, vegetation planting, is considered to be the best approach for the SRA. While vegetation planting cannot fully screen an extensive installation such as the treatment plant, well-sited and planned revegetation can appreciably reduce its visual impact by reducing its bulk and scale to the observer.

The POM includes actions for the rehabilitation of the quarry and Baileys Landfill sites, for public safety and landscape value enhancement. This study has found that these two areas do not constitute negative landscape elements. The quarry area is not overlooked

from any major vantage point and as a landform it represents a part of the history of the place. In view of this, these sites should be subject to weed control and stabilisation for safety purposes but major topographical change is not considered to be necessary nor an appropriate focus for scarce management resources.

7.8 Conservation Issues - Aboriginal Heritage

7.9 Conservation Issues - Historic Heritage

In Section 4 we considered the complex historic and industrial cultural landscape in terms of 12 Site Complexes. These complexes were classified on the basis of both geographical areas and site typological relationships. Three of these Site Complexes are outside the terms of reference for this CMCTP:

Site Complex 8: Orchard and Agricultural Remains

This complex is based on the Bailey's Orchard Historic Site. NPWS has commissioned a separate conservation plan for this site. It is nevertheless noted here that links between Bailey's and Glenrock SRA could be strengthened. In particular Bailey's could form an important access point into Glenrock from Merewether.

Site Complex 9: Scout Camp

Site Complex 11: Burwood Beach Wastewater Treatment Works

These two sites consist of land owned and managed by the NSW Scouting Association on one hand, and Hunter Water on the other. Because of the way in which management of these two areas is integrally linked with the management of Glenrock SRA as a whole, a Joint Management committee should be formed to ensure regular communication and information sharing. The Burwood Beach Wastewater Treatment Works has been identified in the Godden and Associates 1989 study as possessing plant and equipment of some heritage significance, but perhaps of greater importance for this CMCTP are the

effects of the plant on surrounding vegetation and on the very important archaeological site of the Burwood Copper Smelter.

In a similar vein, the Glenrock Scout Camp is a facility with some heritage significance in its own right. Of concern here however, is the ongoing complementary management of the Scout Camp and the SRA. The Scout Camp encompasses areas of archaeological significance related to the Burwood Colliery, as well as the important surviving UnderManagers Cottage (see Section 8.6). The Scout Camp also has an impact on surrounding native vegetation. These issues have been dealt with in a co-operative manner in the past between the Scouts and NPWS and this should be strengthened and formalised for the future.

Of the remaining historic site complexes the following have been identified for more active management recommendations including documentation, interpretation and conservation works, on the basis of their location within currently accessible areas of the SRA, ability to be interpreted and of course their heritage significance.

- Site Complex 1: Burwood Copper Smelter
- Site Complex 2: Burwood Colliery Remains (South of lagoon)
- Site Complex 3: Coastal Railway System
- Site Complex 4: Other Colliery remains north of Flaggy Creek.
- Site Complex 7: Banana Plantation site.

It is argued that the remaining complexes, although of heritage significance, should not be the focus of active management or resource allocations at this time. The exception to this is the pressing need to undertake risk assessment of mine shafts in the SRA.

More details on condition assessments of items can be found in the Inventory at Appendix 4.

Site Complex 1: Burwood Copper Smelter

(see Figure 4.29)

This important archaeological site has been subject to some disturbance and archaeological excavation in the past (Bairstow 1987). However it retains significant archaeological research potential and the surface scatters of brick and slag could be further interpreted. Following some dune stabilization work in the 1980s the area appears stable, although bitou bush infestation is a problem, and it is not clear to what degree bitou bush currently obscures further surface remains. Stabilisation, weed control and protection of this site from inadvertent excavation, are the major conservation issues for this site. Further archaeological excavation designed to interpret, conserve and analyse the site could enhance its significance and should be considered pending availability of sufficient resources to carry out this work to a high standard.

Site Complex 2: Burwood Colliery Remains (South of lagoon)

(See Figures 4.22-25)

This collection of remains appears mostly stable, although suffering from major weed infestations that obscure the site. Rampant lantana growth may also be impacting upon the future stability of remains. The Burwood Colliery site should be a focus for future interpretation and active management because of its significance, the interpretive potential of the remains and its proximity to the Yuelarbah Track and other access routes, as discussed above. This focus will require vegetation management of the site, stabilisation and ongoing maintenance of the remains, installation of interpretive devices, pathways, a track linking to the Yuelarbah Track and monitoring of visitor impact and conservation status of the place.

This site also possesses archeological research potential so any works planned should be in accordance with the *Archaeological Management Guidelines* (see Section 8.6)

Site Complex 3: Coastal Railway System

The coastal railway formation and its component parts are in a fragile and deteriorating condition. Where the rail formation extends along the beachfront it is subject to the natural processes of coastal erosion. After decades of exposure to salt spray metal

components have been subsumed by corrosion. To halt this corrosion a protective coating would be required after first removing corrosion. Inspection of metal components indicates that following such a measure, insufficient sound metal would remain for conservation.

An alternative conservation measure which was suggested in the 1990 Hughes Trueman and Ludlow study, and subsequently adopted in the POM, was the collection of the remains of the rail skips to be displayed near Glenrock Lagoon. Although adopted, these recommendations have not been acted upon and further serious deterioration of the fabric has occurred in the last ten years.

The rail embankments leading to the former bridge site across Glenrock Lagoon (see Figure 4.27, Site GA93 on Figure 4.20) appear to be the most stable and protected parts of the coastal railway, in part stabilised by bitou bush infestation. Coal skip remains could be collected and displayed in this area, but this would have the effect of destroying most of the remaining remnants along the beachfront. This is because the skips are generally buried quite deeply in sand, and rails remain where they have been protected, and stabilised to a certain degree, by the presence of the skip (see Figure 4.26). Because of these factors we recommend a conservation policy which focuses on full research and recording of the coastal railway and ongoing maintenance of the rail embankment around Glenrock Lagoon.

Site Complex 4: Other Colliery remains north of Flaggy Creek.

Many further colliery remains are found in this area of the site. Some are visible from the Yuelarbah Track, such as GA 64, the foundations of a winding engine, GA 70, a reconstructed brick lined airshaft and GA 66 the stone cutting known as the "Ziggy". Other remains in this site complex are densely overgrown by lantana, including a range of shafts. Some shafts have been capped (GA 68) but the status of others is unknown. A risk assessment of these shafts should be carried out as a matter of priority.

The winding engine foundations, (GA 64), are located at Leichhardt's lookout. They currently support a timber platform, installed by NPWS as a picnic table. This is an inappropriate use for these relics as it obscures an appreciation of their history and context in the landscape. Leichhardt's lookout is a good location for interpretive signage and the presence of these mining related relics also illustrates this important aspect of the landscape. The engine foundations are constructed from brick and concrete and are very solid. When the timber platform is removed the upper surfaces of the foundations may need to be sealed or stabilised using an appropriate mortar.

The stone cut steps of the Ziggy miners path have been partly incorporated into the Yuelarbah Track. This is an appropriate use for this landscape element but interpretation would enhance its significance. Signage or information located at Leichhardt's lookout would be more appropriate than a sign on the steps themselves.

Site GA 70, a brick lined and topped airshaft, is also located on the Yuelarbah Track. Godden and Associates noted in 1989 that the shaft had been reconstructed recently and that Portland cement had been used. This may bond with, and cause weathering of, the bricks. This should be monitored and if necessary the Portland cement could be removed and replaced with a lime mortar.

Another monumental mining feature, not far from the Yuelarbah Track, is GA 73, a stone retaining wall which buttrussed a rail formation adjacent to Flaggy Creek. This feature, if cleared of vegetation, would add to the understanding of the mining landscape which could be appreciated simply by a walk along the Yuelarbah Track.

Site Complex 7 Banana Plantation site

This site has been assessed as of 'Little significance', that is it contributes to the value of the cultural landscape. The site is seen as a clearing on the headland which has been invaded by bitou bush, which no doubt has prevented the re-establishment of native vegetation. The site also possesses some archaeological research potential, due to the presence of a scatter of 19th century material observed eroding from the slope. The site

has also been noted as one which commands important views across Glenrock Lagoon and towards Merewether (Section 4.2.4 , Figure 4.14).

To maintain and enhance the significance of this site the open landscape should be maintained: it should not be revegetated so that it disappears into the surrounding forest. This site presents significant opportunities for the development of interpretive, lookout and other visitor facilities such as disabled access and picnic tables. Conservation issues surrounding this site include erosion on the network of tracks which lead to it from the Scout Camp Road, and from it, down to the beach. Sign posting and marking of a single, established track from Leggy's Point down to the beach would assist in the management of this problem

Site Complex 12: Gun Club and Quarry Remains

Issues associated with the management of this area have been discussed in Section 7.7. No further recommendations for active management are made.

Site Complex 5: Murdering Gully Rail and Colliery Remains

Site Complex 6: Merewether Escarpment Rail and Colliery Remains

Site Complex 10: Defence Remains

Active management of these site complexes is not considered to be necessary within the 5-10 year timeframe envisaged for this CMCTP. This should of course be reviewed within the next 5 –10 years, when a re-assessment of the sites themselves should be undertaken.

An exception to this is the conduct of a risk assessment concerning disused mine shafts and tunnels. This is discussed further below at Section 7.11.

7.10 Conservation Issues – Social or Community Values

Research on the social values of Glenrock revealed that the place is integrated within a web of community attachments. Some of these attachments are active, such as the work of the Awabakal LALC, the Friends of Glenrock (FROGS) or the Leggy Point

Boardriders Club, and some of them are based on less active feelings, memories, family links or special interests in local history and legend. Research further revealed that community values incorporated aspects of historical, archaeological, geological, natural and aesthetic significance.

As has been argued above these aspects of significance have been less well interpreted and managed by NPWS in the past than natural heritage values. This is not just true of Glenrock SRA and the NPWS, but of heritage management across the board in NSW.

This CMCTP has taken some first steps towards understanding the social or community values of Glenrock. The question remains now as to how these values can be best conserved and managed? The management of social values should not only encompass respecting and maintaining community links, but also build upon and strengthen attachments where past practices have alienated communities from land and from heritage places.

A tripartite approach to the management of social values is suggested for Glenrock:

1. Enhanced interpretation of integrated values;

Creative interpretation of the integrated values of the Glenrock cultural landscape will increase the breadth of knowledge in the community about its complex natural and cultural values. This will build upon the values attributed to Glenrock as a place across the community, contribute to the experience of visiting Glenrock, and to the perception that local histories are acknowledged and valued by NPWS and the State.

2. Providing access (both actual and perceptual) for educational and cultural experiences, and creating opportunities for such experiences;

In Section 9.0 we outline a range of strategies to provide opportunities for access and involvement in Glenrock through special events, educational programs and tours planned in partnership with the Indigenous and non-Indigenous communities.

3. Community management partnerships;

As discussed above in Section 7.5, community expectations for involvement in the NPWS management of Glenrock will be met through a range of representative committees and information sharing fora.

7.11 Public liability issues and risk management

Whether visitation of sites is encouraged, facilitated, or even prohibited, there remains a public risk associated with many heritage structures and sites. The management of that risk needs to be a high priority activity, in line with NPWS *Risk Management Strategic Plan*. Major safety and liability issues arise from the presence of abandoned mine workings in the SRA, from the threat of mine subsidence, from the instability of built remains and the instability of coastal landforms in general. Not all of these issues can be adequately addressed within the scope of the present CMCTP, however the capping of open mine shafts is seen as a major priority for a risk management study to be carried out.

A risk management study of all mining remains in the SRA should be undertaken. The terms of reference for that study should include the following:

- Identification of all risks. These can be from physical features (uncapped shafts, tunnels, voids, cliff tops, unstable structures) or environmental (e.g. chemical contamination).
- An assessment of the significance of risks, including a consideration of the severity or magnitude of the risk and the likelihood of it occurring.
- Development of risk management options
- The integration of other relevant management policies (e.g *Strategy for the Conservation of Bats in Derelict Mines* (Feb 2001), fire management policies, cultural heritage policies, conservation policies.
- Development of risk management policies and recommendation of risk management activities.

The co-ordination of the rehabilitation of disused mines is carried out by the NSW Department of Mineral Resources under the NSW Governments Derelict Mined Lands Rehabilitation Program. NSW NPWS also has a *Strategy for the Conservation of Bats in Derelict Mines* (Feb 2001) which needs to be taken into account. It is currently unknown whether or not insectivorous bats rely on abandoned mine shafts for habitat at Glenrock. However it is considered prudent that works for making shafts safe assume that this is the case and that the NPWS Strategy is followed.

The capping of shafts, tunnels or adits also needs to take into consideration the conservation of fabric of heritage significance. Gratings that cover, but do not obscure or destroy, original shaft entrances are preferable. However where stability of shaft openings is an issue this may not be practical. Shafts will need to be identified and assessed individually by expert personnel.

While the majority of other cultural remains in the park appear stable, this is not the case for the Coastal Railway as has been discussed above. Metal components and the unstable coastal landforms which both support rail remains or make up part of the rail formation may pose a risk to public safety. It is therefore necessary, in conjunction with the detailed recording and research recommended for this feature, that a risk assessment also be carried out.

7.12 Review of Existing Visitor Facilities

This section reviews facilities that are currently provided by NPWS to enable visitors to use and access the various parts of the SRA. Recommendations for improvement of facilities are made in Section 9.

Access

The four main points of entry to the SRA are:

- a) The main car park on Burwood Road at the head of the Yuelarbah track;
- b) The small car park on the Scout Camp Road, before the road descends to the Scout Camp;

- c) The car park at Dudley Beach and from Bombala St to Dudley Beach;
- d) The walking track to Burwood (Smelters) Beach from the southern side of Merewether Baths

These locations provide reasonable access for local residents who are familiar with the area, but they are not obvious gateways for tourists on the Pacific Highway or for people approaching from the northern (Newcastle City) side.

There are no obvious signs on the Highway or on Scenic Drive to indicate the existence of the SRA or how it might be entered. A series of signs leading the visitor from the Highway to Burwood Road seems a priority requirement if cultural tourism is to be promoted.

The only entry on the northern side is tucked away behind Merewether Baths and the casual visitor needs some perseverance to discover it.

Access through the Hunter Water Board Road and the Gun Club Road is currently not allowed.

Parking

There is now good parking at Dudley Beach and the Yuelarbah Carpark (28 spaces) and limited parking at Leggy Point. At the Merewether entrance only street parking is available.

Paths and Tracks

The Yuelarbah track is in good condition, blends well with the landscape and seems well graded for the average walker. Scout Camp Road is also in good condition and most of the smaller paths are adequate. An area of concern is the network of small tracks between the Leggy Point car park, the entrance to the lagoon and Little Redhead/Leggy Point. These are principally used by surfers and fishermen. The number of tracks is excessive

and considerable erosion is evident in the area. Tracks on the north side of the lagoon also proliferate and are sites for erosion.

Disabled access

Currently the only form of access for people with impaired mobility is via a graded walkway which leaves the Burwood Road car park and joins a level path to Flaggy Creek. Access to the Creek and beyond is not available. No provision is currently made for hearing or sight impaired visitors.

Signage

Directional signage is generally poor or non-existent throughout the SRA although the Yuelarbah track is reasonably well marked. Signs indicating distances and times to the major attractions are required at various locations.

There is no interpretive signage in the SRA. The penultimate sign on Newcastle City Council's "Bathers Way" trail gives some excellent information about Glenrock but its location away from the SRA means it is difficult for the casual visitor to interpret without a map.

Toilets

There are no toilets within the SRA. On the northern side there are public toilets at Merewether Baths just outside the park. There are plans in place to provide toilets at the Yeularbah Carpark.

NPWS Visitor Guide

NPWS has produced a Visitor Guide (dated March 1998) for the SRA which refers briefly to the presence of coal mining relics and to the fact that there is evidence of pre-contact habitation by the Awabakal people in the SRA. It contains more detailed information on flora, fauna and geology as well as a detailed site map. This brochure has been updated during the course of this study. The brochure can be collected from a NPWS office or shop front, or from the Glenrock Depot if it is staffed.

The Great North Walk brochure package includes a section on Glenrock which includes detailed historical information.

Summary

The Glenrock SRA currently has few facilities for visitors and while this is not inappropriate, visitor enjoyment could undoubtedly be enhanced by more interpretive material, more accurate SRA brochures and more information about the location of features in the SRA and how long it takes to walk to them. Accessibility is a major issue for the SRA. Non local visitors need good information to find the SRA.

7.13 Conclusions

This section has highlighted some of the special issues arising from the significance of the Glenrock cultural landscape which will need to be responded to in the Conservation Policy.

The natural heritage values require detailed and careful management practices to protect biodiversity and geodiversity in the context of an urban residential environment and a natural environment significantly altered through a long history of human exploitation.

The Aboriginal cultural landscape requires involvement of the Indigenous community and interpretation of intangible landscape aspects, including the history of the Awabakal and of cross-cultural encounters in this place.

It has also been revealed that although coal mining is a crucial theme for the Hunter region, it is under-represented in NPWS estate, and opportunities for an appreciation of this aspect of Glenrock's landscape are currently very limited.

Relationships between communities and Glenrock need to be actively built upon through participatory and consultative management and interpretation processes, to ensure that this aspect of significance is maintained and better understood.

Some important issues of risk and liability have also been raised and these will need to be dealt with through research and actions subsequent to this CMCTP.

The complexity of this cultural landscape and its integrated values have given rise to the notion of an “active management zone”, which enables resources to be channeled into interpretation and conservation in an area focused on the existing Yuelarbah Track. While this enables visitation and interpretation of the important historic sites of the Burwood Colliery and the Burwood copper smelter, the aim is that this zone will allow for creative interpretation of all aspects of heritage significance. These concepts are expanded in Section 9 and in the Conservation Policy is set out in Section 8.

8.0 Conservation Policy

8.1 Head Policy

Vision Statement

The Glenrock cultural landscape will be valued for its integrated natural, cultural and community values which are conserved and enhanced through creative and sustainable management and interpretation, within a context of ongoing community access and involvement.

Central to this vision is the understanding that communities, knowledge and heritage values are dynamic, intertwined cultural processes, they are not static and separate entities.

Mission

The mission of this CMCTP is to provide NPWS and the community with a creative, sustainable and achievable management approach to the Glenrock cultural landscape. This management approach is based on the integrated assessment of values, community involvement and consultation, creative interpretation and the identification of active management priorities.

Strategies and Actions:

- Display of this CMCTP for community comment.
- Submission of this CMCTP for endorsement by the Heritage Council of NSW, or under delegation by the Director, Cultural Heritage, NPWS.
- Amendment of the current Glenrock POM as set out in this CMCTP.
- Adoption of this CMCTP by NSW NPWS.
- Incorporation of the Implementation Strategy (Section 10) into the Hunter Region Operations Plan.

- Publication of this CMCTP to ensure ongoing public access to its findings.

8.2 Key Features of the Management of Heritage Significance in Glenrock SRA

8.2.1 Management Principles

This CMCTP aims to achieve this vision and mission through providing conservation policies and implementation strategies for the management of heritage significance based on the following principles:

The integrated assessment of natural, historic, Aboriginal and community heritage values;

A management approach to the entire landscape which reconciles the conservation needs deriving from these inter-related natural, cultural and community values and the relative levels of those values;

A structure for ongoing community consultation, involvement and participation;

Management approaches to the cultural landscape that enhance its accessibility for cultural tourism, and for educational and cultural experiences for local stakeholders and the broader community, where this is not in conflict with conservation or community sensitivities; and

The selection of a range of landscape areas, based upon all of the above processes, as a focus for more active management and interpretation.

8.2.2 Long Term Outcomes

This CMCTP links the Glenrock cultural landscape with its community and orients management towards achieving long-term conservation and management objectives

which will enhance the appreciation of Glenrock as a complex cultural landscape and which acknowledges present interests motivating active management priorities.

8.2.3 An active management zone

An active management zone (see Figure 8.1) is identified as a focus for the development of interpretation and cultural tourism opportunities and for conservation actions.

Other areas of the SRA will be managed and monitored in line with Conservation Policies set out in this section in order to ensure retention of values. However, further access will not be provided so that these areas of Glenrock will still be enjoyed for their quiet and relative inaccessibility.

The active management zone encourages the interpretation of the integrated natural, cultural and community values of Glenrock within a landscape context.

8.2.4 An Interpretation Plan

Section 9 of this CMCTP presents a detailed *Interpretation Plan*, which provides:

- for the enhanced understanding of the integrated values of the Glenrock cultural landscape;
- opportunities for access, involvement and educational/cultural experiences for the Indigenous and non-indigenous communities;
- for the promotion of cultural tourism experiences for the broader community.

8.2.5 A Glenrock Area Management Committee

A Glenrock Area Management Committee, including representatives from The NSW Scouting Association; Hunter WaterBoard; Newcastle City Council; and Lake Macquarie Council will be convened and supported by an email list for the purposes of regular information sharing.

8.2.6 Community/stakeholder consultative bodies

Investigate joining an established Government based Indigenous Regional Advisory Committee, or establish a new stakeholder committee and endeavour to fill the two vacant indigenous positions on the NPWS Regional Advisory Committee. In addition, a Glenrock stakeholders email list will be established as a forum for regular information sharing.

8.2.7 Risk management

A risk management study, in line with the NPWS *Risk Management Strategic Plan*, should be undertaken concerning mining remains (open mine shafts), mine subsidence areas and the coastal railway system. Any resulting mine shaft capping activities should be in accordance with the NPWS *Strategy for the Conservation of Bats in Derelict Mines*.

8.2.8 Archaeological Management Guidelines

The archaeological potential (relating to the pre and post contact periods) of the Glenrock cultural landscape should be managed in accordance with the *Archaeological Management Guidelines* (Appendix 5) which are based upon the 4 Zones of Archaeological Potential which are set out at Figure 8.2.

8.3 Compliance with NPWS Corporate Values and Policy

8.3.1 NPWS Corporate Values and Objectives

This CMCTP assists the NPWS in achievement of Corporate Objectives in the Key Result areas of Conservation Assessment, Planning and Management.

This CMCTP has been prepared in accordance with, and in the spirit of, the NPWS Policy framework.

8.3.2 The classification and management of the Glenrock SRA

The classification and management of the Glenrock SRA is affected by the NPWS Act Recent Amendments. It is appropriate that the Glenrock cultural landscape be re-classified and managed as a National Park, as defined in Schedule 1 National Parks and Wildlife Amendment Bill 2001, Division 2, 30E, 30G.

8.3.3 Changes to the Glenrock POM

The following amendments are recommended for the Glenrock POM:

- Change the recommendation to relocate coal skips. These relics should remain in situ.
- The proposed rehabilitation of the Merewether quarry site should be reduced to a low priority and limited to site stabilisation and weed control, since it is not a critical landscape element.
- Require weed removal operations to conform to the *Vegetation Control Procedure (Appendix 3)* in areas with cultural remains.
- Elevate the priority for revegetation activities around the Burwood wastewater treatment plant.
- Include other lost plant species listed in this CMCTP in the proposed feasibility study for the re-establishment of the cabbage tree palm.
- Include recent data on the fire sensitivity of plant species in the Fire Management Plan for the SRA.

8.4 Conservation Policy - Natural Heritage

The natural heritage values of the Glenrock cultural landscape will be conserved and interpreted. Natural heritage values will be managed through weed control (guided by the *Vegetation Management Procedure, Appendix 3*), fire management, introduction of screening planting in indicated locations, and erosion control.

Strategies and Actions

- Continue the current general weed management program in the SRA.
- Continue the current POM program of bitou bush control on dunes, incorporating trial weed removal and erosion control techniques on dune areas with cultural remains.
- Amend the *Vegetation Control Procedure* with any methodological lessons learnt.
- Undertake general weed control programs on or in proximity to cultural sites in strict conformance with the *Vegetation Removal Procedure*

- Implement a comprehensive Fire Management Plan for the SRA which uses the species fire-sensitivity data in Bell (1998) as a criterion for the selection of the frequency of fuel reduction burns.
- Continue to exercise the Service's objector rights under the Environmental Planning and Assessment Act to oppose any Development Applications, LEPs, rezoning applications, or Council Development Control Plans which involve tree clearing on the edges of the SRA which will diminish the landscape and scenic values.
- Continue POM erosion and siltation control activities which concentrate on the catchment of Glenrock Lagoon, including Flaggy and Little Flaggy Creeks.
- Plan and implement a program, in conjunction with the Hunter Water Corporation, of strategic planting of local native trees and shrubs which will:
 - Provide a visual barrier of tree and shrub plantings to screen the treatment plant from the beach side and from the smelter site
 - Provide strategic tree and shrub plantings at or near the treatment plant boundary to diminish its visual impact on the views from Merewether Heights (Scenic Drive), employing landscaping methods to reduce its bulk and scale.
 - Arrest the deterioration of native vegetation around the western edges of the treatment plant and the southern and western edges of the scout camp
- Prepare specialist interpretive material about fossil features in coastal geology (see Section 9)
- Base long-term management of the Glenrock Lagoon on sound technical data and stakeholder consultation:
 - Commission a study, in conjunction with Newcastle City Council and Lake Macquarie Council, to model the future hydrology of the lagoon as a result of current siltation rates, as well as the hypothetical rates which are both higher and lower than current rates.
 - In the light of the findings of this study, involve stakeholder groups in a process to determine future recreational demand and expectations of the lagoon area.

8.5 Conservation Policy - Historic Heritage

The historic heritage of the Glenrock cultural landscape will be conserved and interpreted. An active management zone which encompasses key historic sites will be a focus for creative interpretation, increased visitor access and conservation works.

Strategies and Actions

- Risks associated with aspects of the historic heritage should be assessed and ameliorated.
- The historic cultural landscape should be interpreted according to the *Interpretation Plan* (Section 9.0).
- Historical archaeology should be managed according to the *Archaeological Management Guidelines*.
- The history of Glenrock (Section 3.0) should be published

8.5.1 Site Complex 1: Burwood Copper Smelter

- Ensure ongoing dune stability.
- Remove bitou bush and other weeds according to the *Vegetation Control Procedure*.
- Protect from unwarranted excavation through discussion with relevant management authorities and erection of signage.
- Ensure any excavation is in accordance with the *Archaeological Management Guidelines*.
- Negotiate a management agreement with the *Glenrock Area Managers' Committee* regarding the heritage status of this site and the implementation of this Conservation Policy.
- Interpret according to the *Interpretation Plan* (Section 9.0).
- Investigate future excavation and research possibilities with Community Advisory Committee, funding agencies and within the context of the proposed *NPWS Hunter Region Cultural Heritage Management Strategy*.

Site Complex 2: Burwood Colliery Remains (South of lagoon)

- Remove lantana and other weeds according to the *Vegetation Control Procedure*.
- Following vegetation removal, assess remains for stability and stabilise as required.
- Establish a path to, and through, the ruins, from the Yuelarbah Track, maintaining the sense of “discovery” in the bush
- Interpret according to the *Interpretation Plan* (Section 9.0).
- Ensure any excavation is in accordance with the *Archaeological Management Guidelines*.
- Investigate future excavation and research possibilities with Community Advisory Committees, funding agencies and within the context of the proposed *NPWS Hunter Region Cultural Heritage Management Strategy*.

Site Complex 3: Coastal Railway System

- Undertake comprehensive research and recording of the coastal railway system as a matter of priority.
- Undertake a risk assessment of the coastal railway system features.
- If the risk assessment recommends removal of rail items to more stable ground then this should only be done following the comprehensive research and recording process outlined above.
- If the risk assessment recommends stabilisation of rail remnants *in situ* through the importation of sand and subsequent vegetation management, then this should also be undertaken following the comprehensive research and recording process outlined above.
- Manage vegetation along the railway formation on the north and south sides of Glenrock Lagoon according to the *Vegetation Control Procedure*. The future stability of the formation is the main objective of this procedure.
- Ensure any excavation is in accordance with the *Archaeological Management Guidelines*.

Site Complex 4: Other Colliery remains north of Flaggy Creek

- Manage Vegetation around the cultural remains according to the *Vegetation Control Procedure*.
- Following vegetation removal around remains, assess remains for stability and stabilise as required.
- Remove timber platform from winding engine foundations (GA 64), assess remains for stability and stabilise as required.
- If necessary for health and safety reasons, replace the wooden structure with a metal grill which continues to allow observation of the relics, and which is free standing of the relics.
- Interpret according to the *Interpretation Plan* (Section 9.0).
- Monitor site GA 70 for weathering of bricks and replace mortar if required.

Site Complex 7 Banana Plantation site

- Maintain the open landscape of the site.
- Establish a single path between this site and the beach, signpost this path and promote its use to the community.
- Develop this site as an interpretation/visitor facility node.
- Provide pedestrian access from Scout Camp Road.
- Investigate the provision of disabled access to this site
- Interpret according to the *Interpretation Plan* (Section 9.0).
- Ensure any excavation is in accordance with the *Archaeological Management Guidelines*.

Site Complex 8: Orchard and Agricultural Remains

- The link between Bailey's Historic Site and the Glenrock cultural landscape should be strengthened and the site made more accessible.
- Strategies and Actions relating to Baileys are the subject of a separate Conservation Plan

Site Complex 9: Scout Camp and Site Complex 11: Burwood Beach Wastewater Treatment Works

- Establish the *Glenrock Area Managers' Committee* to discuss issues of joint concern.
- Negotiate management agreements with Hunter Water concerning the protection of the Burwood Smelter site and the provision of screen planting.
- Negotiate management agreements with NSW Scouting Association concerning the management of archaeological resources and the Undermanager's Cottage, as well as issues of vegetation management..

Site Complex 5: Murdering Gully Rail and Colliery Remains, Site Complex 6: Merewether Escarpment Rail and Colliery Remains and Site Complex 10: Defence Remains

- Undertake a risk assessment of open mine shafts in these areas.
- Monitor these sites and re-assess their heritage status and conservation requirements in 5 – 10 years.

8.6 Conservation Policy - Aboriginal Heritage

The Aboriginal cultural heritage of the Glenrock cultural landscape will be conserved and interpreted. Aboriginal cultural heritage will be managed through the identification, protection and conservation of archaeological sites, the interpretation of the Aboriginal cultural landscape, history and archaeology, and through ongoing partnerships with the Indigenous community (see Section 8.7)

Strategies and Actions

- The Aboriginal cultural landscape should be interpreted according to the *Interpretation Plan* (Section 9.0).
- Aboriginal archaeology should be managed according to the *Archaeological Management Guidelines* (Appendix 5).
- The history of Glenrock (Section 3.0) should be published.
- A comprehensive survey and analysis of Aboriginal archaeology should be commissioned to assist in the future conservation, management and interpretation of the Glenrock cultural landscape.

8.6.1 Aboriginal Archaeological Sites

- Sites 38-4-42 and 38-4-004 – these sites should be stabilised and protected through the introduction of sand, brush matting and the subsequent introduction of dune grasses, in consultation with Aboriginal community representatives. Following stabilisation, this site may be interpreted and visited pending consultation and approval from Aboriginal community representatives.
- Site 38-4-45 –the steel mesh structure should be removed as soon as practicable.
- Site 38-4-0324 – the green guardrail protecting this area from traffic should be retained.
- Site GR 12 – Stone Procurement Site (Quarry) –this site may be interpreted in line with Section 9. It should be monitored for the effects of coastal erosion, but should not be sign-posted.
- Site GR 13 – Hatchet Head Grinding Grooves- these site(s) should be recorded and monitored. They should not be open to public visitation.

8.7 Conservation Policy - Social Values

Social or community values are recognised as an integral aspect of the significance of the Glenrock cultural landscape. These values will be respected, maintained and built upon through enhanced interpretation of integrated values, the provision of access for educational and cultural experiences, and through the establishment of community management partnerships.

Strategies and Actions

- Interpret, according to the *Interpretation Plan* (Section 9), issues of importance to the local community: Indigenous and cross cultural history, mining history and agricultural history.
- Establish community management partnerships as per Section 8.2.5.
- Develop opportunities for community access and participation as set out in the *Interpretation Plan* Section 9.0.

8.8 Review and Implementation of CMCTP

8.8.1 Implementation

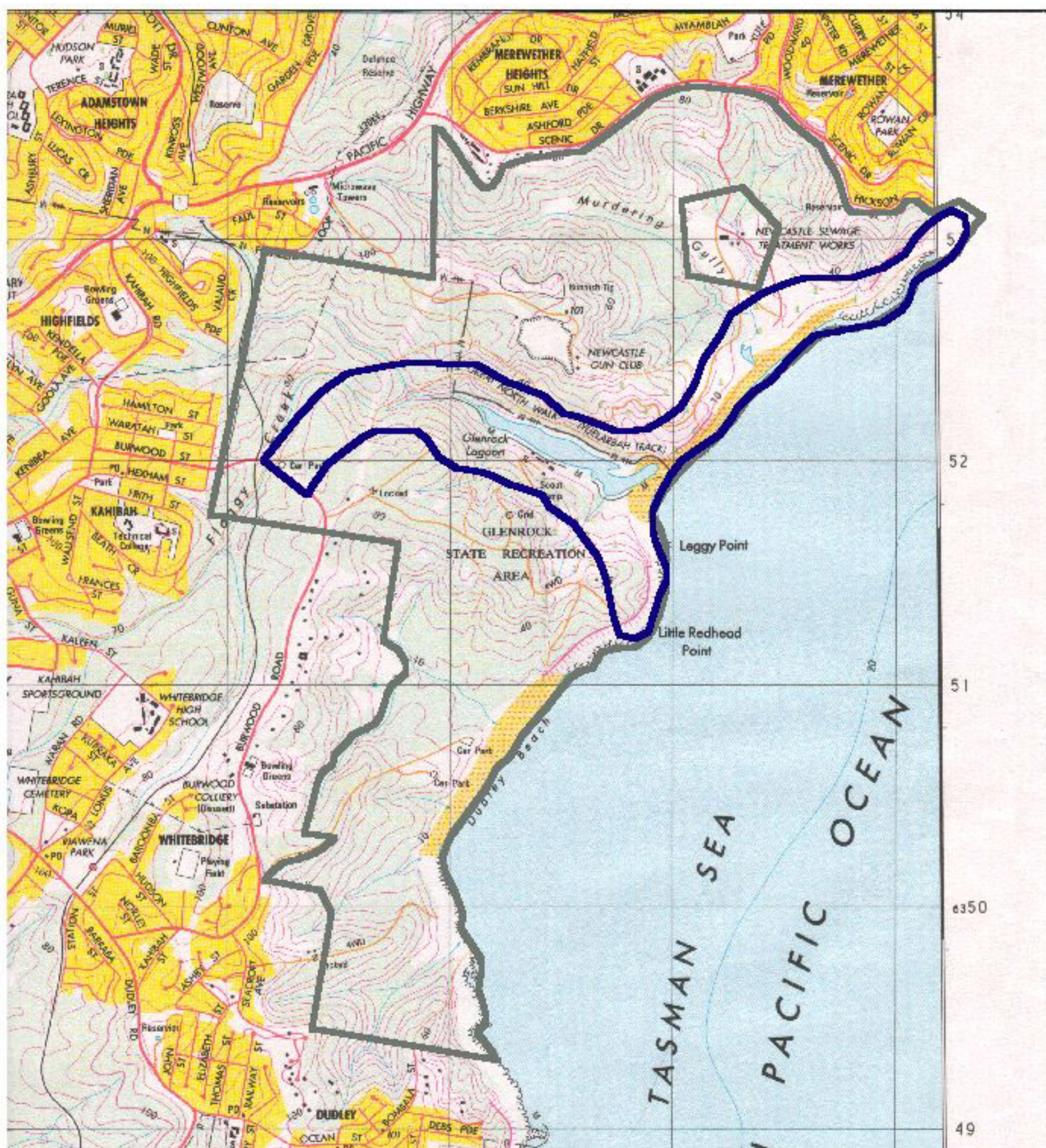
This Conservation Policy should be implemented in accordance with Section 10 *Implementation Strategies and Actions*.

8.8.2 Review

A public and professional review of the CMCTP, including the assessment of significance and the Conservation Policy, should be undertaken in 5 years time ie 2007.

8.8.3 Monitoring

Monitoring and performance indicators for the implementation of this CMCTP should be assessed in accordance with Section 10 *Implementation Strategies and Actions*.



 Active Management Zone Actmanzone.shp
 SRA Boundary Sraboundary.shp



Figure 8-1: The Active Management Zone



- Aboriginal Sites Ab sites2.shp
- Zone 1 Zones.shp
- Zone 2 Zone2.shp
- Zone 3 Zone3.shp
- Zone 4 (Remainder of Study Area) Zone4b.shp

Figure 8-2: Glenrock Lagoon Cultural Landscape Archaeological Zoning Plan

9.0 Interpretation and Cultural Tourism

9.1 Introduction

The mission of this CMCTP, as set out in Section 8, places a great deal of emphasis of the role of interpretation in the management of the cultural significance of the Glenrock cultural landscape:

The mission of this CMCTP is to provide NPWS and the community with a creative, sustainable and achievable management approach to the Glenrock cultural landscape. This management approach is based on the integrated assessment of values, community involvement and consultation, creative interpretation and the identification of active management priorities.

The need for interpretation of the integrated landscape values is the key rationale behind the majority of the active management priorities identified in this CMCTP. The active management zone outlined in Section 8 (see Figure 8.2) has been identified on the basis of interpretation needs, visitor use, safety and impact considerations, as well as the availability of existing infrastructure. As we have argued, this zone also offers opportunities for the interpretation of the integrated aspects of the cultural landscape, rather than interpretation which focuses on sites of different periods or separates out the aspects of natural significance.

This section aims to develop an *Interpretation Plan* for Glenrock on the basis of:

- an Interpretation Policy, in line with the Conservation Policy in Section 8,
- interpretive themes, drawn from the history, landscape analysis, community consultation and assessment of significance; and
- a consideration of the regional cultural tourism context of Glenrock.

Finally this section outlines a phased implementation strategy for the *Interpretation Plan* which complements the overall *Implementation Strategy* for this CMCTP in Section 10.

9.2 Interpretation Policy

The heritage values of the Glenrock cultural landscape will be interpreted through creative and innovative methods which provide:

- for the enhanced understanding of the integrated values of the Glenrock cultural landscape;
- opportunities for access, involvement and educational/cultural experiences for the Indigenous and non-indigenous communities;
- for the promotion of cultural tourism experiences for the broader community.

This policy is based upon the following Interpretation Principles:

- Interpretation should inform and stimulate visitors in ways which enhance their enjoyment of the Glenrock experience.
- The information provided should be authentic and should be based on current research. However, it should also be acknowledged that interpretation is the result of current interests and research directions. The interpretative needs of the community and the styles, media and content they will respond to, will change as society changes.
- Interpretive media at Glenrock should not detract from the visitor's personal experience of discovery of the place, nor should it intrude physically on the natural character of the area.
- Interpretation should acknowledge local and indigenous attachments and custodianship of the place. It should not alienate local and/or indigenous people who feel ownership and attachments to Glenrock, and it should make non-local visitors understand that this is a place with a current community and place in the life of that community.

9.3 Interpretive Themes

In Section 6.0 we discussed the historic themes, developed by the NSW Heritage Office, which are pertinent to the history and landscape of Glenrock. The relevant themes were very numerous, a reflection of the complexity of the cultural landscape at Glenrock and the many detailed and important histories with which it dovetails.

The purpose of developing Interpretive Themes is to analyse and synthesize this complex of historical and environmental information. The aim is to develop a small number of themes which encapsulate different aspects of the cultural landscape and express the intertwined, interdependent relationship between landscape, community and history. The following themes are derived from the historical overview (Section 3), the landscape analysis (Section 4), the community consultation (Section 5) and most importantly from the assessment of significance (Section 6).

It is intended that these themes be used to structure the interpretive information presented to visitors and to act as a creative trigger for the development of insights into the cultural landscape.

Theme 1 A complex cultural landscape:

- *Awabakal people and the environment,*
- *Non-indigenous people and the environment,*
- *Natural heritage, biodiversity, geodiversity, habitats.*
- *Changes to the environment over time caused by coastal erosion, fire, mining, urban encroachment, pollution.*
- *The environmental conservation movement of the late 20th century.*

Theme 2 "A land of plenty" - people and natural resources:

- *people and the use of plants, marine resources, stone, coal, land for agriculture, caring for the natural environment (bush re-generation).*

Theme 3 Paths, routes, travel and exploration:

- *Aboriginal paths and communication links,*
- *cross cultural encounters in the landscape*
- *Leichhardt and geological and scientific exploration,*
- *Threlkeld and Biraban, the track and the mission,*
- *colonial Newcastle and the search for coal (the Bryants).*
- *Mitchells railway from Newcastle to Glenrock.*

Theme 4 Work and Play in the Glenrock landscape:

- *Aboriginal stone and coal procurement, fishing, use of and building bark canoes*
- *Mining and Industry: Glenrock enters the colonial, global market economy, living and working at the Burwood Colliery and the Burwood copper smelter, transport, labour, technological development, building new communities.*
- *Agricultural work at Glenrock.*
- *Glenrock as a recreational resource for the mining communities in the early 20th century.*
- *Scouting, surfing, bushwalking*
- *NPWS and the community's work in caring for Glenrock*

Theme 5 Reading and understanding the landscape: tools to read the landscape.

- *Traditional knowledge, legends and stories*
- *History, archaeology, geology and the bio-physical sciences.*
- *NPWS and the community researching and studying the natural and cultural values of the landscape.*

Communication Objectives associated with the Themes

Within the overarching framework of the above themes, the following describe the communications objectives for interpretation at Glenrock.

- *Visitors should see that the Glenrock cultural landscape has changed over time.*
- *Visitors should understand the different ways people have used of the area's natural resources from the earliest Aboriginal occupation to the present day.*
- *Visitors imagination and memory traces should be stimulated by indicating the intangible heritage of Glenrock.*
- *Visitors should appreciate the Indigenous perspective of the cultural landscape of Glenrock and its importance for the present local Aboriginal community.*
- *Visitors should understand the ways the flora and fauna of the area have changed over time from natural causes and human occupation.*
- *Visitors should recognise the major species of flora and fauna to be found within the SRA today.*
- *Visitors should follow the story of European coal mining at Glenrock in terms of the miners, the mine owners and the technology employed. They should appreciate the context of the story in terms of the significance of coal mining to Newcastle, and to Australia in its broader world context.*

- *Visitors should gain an impression of the living and working conditions of miners at Glenrock in the 19th century.*
- *Visitors should be able to trace the development and decline of the railway network serving Glenrock..*
- *Visitors should learn about the story of Dr Mitchell's copper smelter and understand its significance in Australian industrial history.*
- *Visitors should gain an appreciation of the geology of the area and how this has influenced human use of the area.*
- *Visitors should understand the role of major figures in the Glenrock story including Biraban, William and Mary Bryant, Threlkeld, Mitchell and Merewether.*
- *Visitors should learn about conserving Glenrock and the role of the local community.*
- *Visitors should gain an appreciation of the various ways the area has been used for recreation, including "Bark canoes to surfboards" .*

We will go on to outline in more detail how and where this thematic interpretative information can be delivered. First however, we will consider a range of contextual issues surrounding the interpretation of Glenrock.

9.4 The Regional Cultural Tourism Context

The enhanced interpretation of Glenrock's cultural landscape will open more opportunities for a greater range of visitors. It is therefore important that these opportunities are developed within the context of regional community and tourist oriented cultural, natural and heritage attractions. It is very desirable that Glenrock SRA develops mutually advantageous links with these community and government based facilities.

The tourist attractions of the Newcastle region and the Hunter Valley are essentially focused on water, wine and the beaches. Of the 55 tourist attractions listed on the Lake Macquarie Shire web site only four might be described in any sense as cultural attractions. The appeal of the holiday areas of Lake Macquarie and Port Stephens is based around fishing, water sports and the beaches, while the Hunter region inland from Maitland has an active tourist industry built around the vineyards. The Hunter Region Tourism Profile states that only 6% of domestic overnight visitors to the region visit arts or heritage related venues. 29% however, participate in outdoor ecotourism such as visiting beaches and National Park (Tourism NSW 2001: 11).

The Maitland-Morpeth area offers a variety of historic buildings, small museums and heritage walking tours. Newcastle itself had virtually no tourist industry until the last few years. However, following the closure of the BHP steel making complex, the City Council has made strenuous efforts to both establish tourist attractions and to foster a sense of place for the community. The following passage from the Council's booklet *Turning Spaces into People Places*, seems apposite to the Glenrock project -

Our experience of community and cultural landscape makes meaning of our lives and allows us collective opportunities to celebrate the unique spirit of place

While improved interpretation, facilities and promotion of Glenrock would make it more attractive and accessible to visitors to the region, perhaps the most important visitor group is the local community, including local or regional school groups. The Manidis Roberts Visitor study (1990), which targeted mostly local users, showed that 82% of respondents agreed that more information should be supplied about historic and Aboriginal sites, while 83% agreed more information about natural attractions should be supplied.

Regional Cultural Tourism Initiatives

Tourism related initiatives in the region which form a relevant context to the promotion of Glenrock include:

- Newcastle Regional Museum

This is arguably the most significant centre for cultural tourism in the region. Its emphasis on coal mining histories, its focus on Aboriginal culture in the Hunter and its highly developed administrative and educational infrastructure, make it a very desirable partner in the development of the Glenrock SRA. The NRM hosts 18,000 visits by school children each year

- Hunter Valley Steamfest (Maitland)

This is the largest event of its kind in NSW and attracts vast numbers of visitors. It is held annually around the end of April. The sheer concentration of steam enthusiasts and others interested in technological history, which it draws to the region makes it relevant to possible linked visitation to Glenrock.

- Heritage Week

Heritage Week is promoted state-wide by the National Trust of Australia (NSW), in conjunction with hosts of local and community based organisations. It generally features special, tours, talks and events all organised around an annual theme, this years theme was “building bridges”, focusing on issues of reconciliation and heritage. A Heritage Week program is published and advertised on local media. Heritage Week should be a target time for organising community based events at Glenrock.

- Great North Walk

The Great North Walk is a 250 kilometre walking track linking Sydney with the Hunter Valley. It is maintained and promoted by the Department of Land and Water Conservation. Walkers can purchase a kit of very informative brochures covering the entire walk and the Yuelarbah Track, which extends from Glenrock SRA into the centre of Newcastle, is the final leg. The Great North Walk Brochure for the Yuelarbah Track outlines the history of Glenrock and the sites of the Burwood Colliery, The Scout Training Camp and Murdering Gully and the copper smelter site.

- Convict Lumber Yard, Newcastle

This archaeological site close to the centre of Newcastle features an interesting interpretive display. This site is evidence of an earlier industrial phase of Newcastle's development than that represented at Glenrock. This site is close to the route of the Yuelerbah Track and could form part of a linked heritage trail (discussed further below).

- Foreshore Heritage Walk

In the same precinct as the above site Newcastle Council have established an informative, sign based heritage walk explaining the history of Newcastle Harbour.

- Bathers Way

This beautifully produced coastal walk (developed by Newcastle City Council) stretches from Nobbys lighthouse to Merewether with text and graphic panels at intervals. Its final panel gives considerable information about Glenrock SRA but it is located too far from the Glenrock entrance (Yuelerbah Track) to invite visitors into the SRA.

- The Fernleigh Track and Lake Macquarie Council's proposed Coastal Walk

Two other walking and bicycling tracks around Glenrock are in the process of being developed. The Fernleigh Track is a disused portion of railway line that is being revitalised by Lake Macquarie and Newcastle City Councils. The re-use of this and other abandoned transport corridors in the region for community purposes is also promoted by a community based organisation, Tracks Foundation NSW Incorporated. The Fernleigh Track passes through a portion of Glenrock SRA. In particular it passes close to the head of the Yuelerbah Track where a link could easily be established.

Lake Macquarie Council's proposed coastal walking track is planned to pass through Glenrock as well, but utilising the Scout Camp Road and the surfer's track down from this road to Glenrock Lagoon and Smelter's Beach. As discussed in Section 7, the proliferation of tracks must be carefully managed in environmental terms. However these developments provide a good community based infrastructure through which usage of Glenrock can be promoted, enhanced and controlled.

- The Richmond Vale Railway and Mining Museum (about 4km from Kurri Kurri)

The themes of coal mining and rail transport have an obvious correlation with Glenrock and no doubt some of the enthusiasts who have developed Richmond Vale could provide valuable input to the conservation and interpretation of Glenrock.

- Walka Water Works

This is another 19th century industrial site set in an area of natural beauty in the region.

- Kooragang Wetlands and City Farm – The Wetlands Centre – Hunter Region Botanical Gardens

All of these are within a few kilometres of the city centre and present interesting aspects of the regions ecosystems. A trail linking these sites and Glenrock could tie in to the theme of natural area close to Newcastle city, reconstructed ecosystems or post-industrial landscapes and environments.

Recommendations

The regional context for the interpretation and promotion of Glenrock offers some significant opportunities. The area is richly endowed with heritage and environmentally themed walking trails and these should be presented as a strong regional feature for visitors.

Links with the NRM would not only benefit the development of school group tours but would form important professional links with an organisation that is researching and analysing regional heritage.

- Through the proposed *Glenrock Area Management Committee* (Section 8.2.5) seek joint promotion and co-ordination of the community walking trails in the region.
- Plan to offer Glenrock tours and special events during Heritage Week and the Maitland Steamfest and contact the co-ordinators of both events to investigate promotional opportunities.

- Seek to establish joint ticketing/booking (for school groups) and promotional arrangements with Newcastle Regional Museum.
- Approach the Wetlands Centre to investigate the development of links between natural areas close to Newcastle based on reconstructed ecosystems or post-industrial landscapes.

Indigenous Cultural Tourism in the Region

Indigenous cultural tourism in the area is currently quite limited. In tandem with his research into indigenous community values attached to Glenrock, Richard Baker discussed indigenous cultural tourism with a number of community members, starting with a range of contacts provided by Ron Gordon, the Director of the Awabakal LALC. All the people spoken to are listed in Appendix 1.

NPWS Discovery community education program is currently developing a bush tucker tour for schools at Glenrock (discussed further below). Other community members were also keen to become involved in interpreting the Aboriginal cultural landscape of Glenrock. Yarnteen Aboriginal and Torres Strait Islander Corporation is a key organisation with both the desire and ability to play a key role in future cultural tourism in the region. Yarnteen became an incorporated organisation in June 1991. It has a focus on creating employment, training and enterprise opportunities for indigenous people in the Newcastle area. Yamuloong Group Initiatives Ltd, is a subsidiary of Yarnteen and runs Yamuloong's Bush Food Tours. The Yamuloong centre is located in the Garden Suburb and has an impressive array of training and conference facilities. Bush tucker tours are also currently run at the centre.¹ Yamuloong staff interviewed (Sean Gordon and Daryn McKenny) expressed a strong interest in extending these existing bush tucker tours to Aboriginal run cultural tourism activities at Glenrock Lagoon.

Richard Baker also met with the Hawken/ Brauer family. This family traces their ancestry to the Awabakal woman called Queen Margaret, a well-known historical figure

¹ This tour gets mentioned in detail in the Lonely Planets "*Aboriginal Australia and the Torres Strait Islands: guide to Indigenous Australia*". 1st edition July 2001 Page 163

mentioned in Section 3.22 of this report. The Hawken family expressed a keen desire to play a continuing role in the interpretation and management of Glenrock Lagoon.

Recommendations

Establish working party on Indigenous cultural tourism at Glenrock. This should include representatives of the Awabakal LALC, Yarnteen Aboriginal and Torres Strait Islander Corporation, the Hawken family and other community members as appropriate.

9.5 Target Visitor Groups

School groups and school holiday groups

A considerable number of school visits are already made to the SRA through the Discovery for Schools Program (961 students in 200/01), while family groups are targeted for activities during the school holidays. The K6 and stages 4&5 syllabuses of the Human Society and Environment Key Learning Area have strong Aboriginal and Environmental Studies components which are exemplified at Glenrock. High School level curricula relating to environmental sciences, heritage, history, Aboriginal studies and archaeology, also provide many opportunities to link with multi-faceted visits to Glenrock. Strategies for developing these areas will be discussed below.

To develop the cultural heritage component of Discovery learning, links could be established for joint programming, ticketing/booking and promotional arrangements with the Newcastle Regional Museum (NRM) as discussed above. .

Approximately 4000 scouts visit Glenrock each year, while the Scout Camp is also heavily booked for school music camps and other residential programs. These groups also form a market for the educational tours of Glenrock and arrangements should be sought to promote Discovery tours to these groups.

Local day visitors

Most current users are drawn from this segment and local visitation will continue to make up the bulk of visitor numbers (Meyer 1991: 45). This group undertakes a wide variety of activities in the SRA including walking, picnicking, cycling, hang gliding and surfing (Manidis Roberts 1990). Their importance also outweighs their numbers as networking, between local people and visiting friends and relatives, remains an important means of promoting and caring for cultural and natural heritage. The strategies for increasing local interest and participation in the SRA focus on activities such as “Back to Burwood Days”, “Glenrock Picnic Days” and Indigenous cultural tours, which have been suggested by community members (see Section 7), and the linkage of walking trails through the Newcastle and Lake Macquarie council areas.

Intra state – inter state – overseas

Visitor numbers in these three categories are likely to be small at present. Strategies that would increase visitor numbers to the site include creative on site interpretation and links to other regional attractions as have been discussed above.

Indigenous people/groups and others interested in Indigenous culture and history

Many Aboriginal people may wish to visit the area, particularly if Indigenous cultural tours are initiated. As discussed in Section 5.0 of this report, the Aboriginal history and archaeology of the Glenrock landscape were seen to offer important opportunities to indigenous people for the maintenance of existing links with country, as well as the development of new connections, educational and cultural opportunities.

Mining history enthusiasts

Some members of this group are already knowledgeable about Glenrock. Improved access and interpretation of the industrial landscape at Glenrock would attract special interest groups.

Industrial archaeologists and historians

This is another special interest group likely to be attracted to enhanced interpretation of the Glenrock landscape.

Bush walkers

The Great North Walk links long distance walkers with the Yuelarbah Track. Glenrock also provides walks of a reasonable distance for families who could aim to finish at the beach or at the site of the Colliery or the smelter.

Fauna and flora enthusiasts

The Hunter Valley Flora and Fauna Society and several other bush re-generation groups are already very interested and active in the SRA.

Recommendation

- Promote the SRA to school groups, local residents, local indigenous groups/organisations and local interest groups.
- Seek a joint promotional arrangement with the Scout Camp administration to enable visiting scout and school groups to be offered the opportunity to participate in Glenrock tours and also to receive brochures for self guided tours.

9.6 Heritage Trails

The SRA is not seen as a major regional destination in its own right for interstate or international tourists. It could however form a significant element in one or more cultural heritage trails. This concept is not highly developed in NSW but the Queensland Heritage Trails Network has been established with some success (Curthoys and Roberts 2001). Opportunities for such trails in the local area include an historic mining and industry trail or an Indigenous cultural heritage trail. As BHP owned the Burwood Colliery from the 1930's to the 1980's a project associated with Glenrock would be an appropriate use of heritage funds established upon the closing of the Newcastle steel works. State wide heritage trails could also link early industrial sites such as Goulburn (flour milling and brewing), Lithgow (iron smelting) and Glenrock (coal mining and copper smelting)

A good model for an Indigenous cultural heritage trail is the recently published guidebook *Aboriginal Sydney* (Hinkson and Harris 2001). The stunning archive of images and accounts of the Awabakal and neighbouring groups from the colonial period (see Section 3) would provide a rich resource for a similar book for the Lake Macquarie/Newcastle/Hunter region, while the preparation of such a guide would also stimulate interest in more recent Aboriginal histories and present communities.

Recommendations

- Discuss the concept of a heritage mining and industry trail through the Lower Hunter with local Councils and the NSW Heritage Office.
- Investigate availability of funding for heritage trail development from the BHP Trust, and other heritage project funding sources.
- Discuss state-wide heritage trails with Tourism New South Wales and the NSW Heritage Office.
- Discuss the concept of a Lake Macquarie/Newcastle/Hunter Indigenous Cultural Heritage trail or guidebook with relevant LALCs and community members (NB AIATSIS funded and produced the guidebook *Aboriginal Sydney*).

9.7 Interpretive Methods and Media

Off Site Interpretation

Off site interpretive material could include books, exhibitions and other forms of information which interested individuals could pursue in more detail. The history prepared for this study (Section 3) is suitable for stand-alone publication and addresses most of the identified interpretive themes.

Providing access to interpretive material before visiting the site is also an important component of school visits. We have discussed above pursuing a joint arrangement with the NRM, where their exhibitions provide relevant background to the cultural heritage of Glenrock. An excellent addition to the Discovery for Schools program would be an education kit based around appropriate themes which dovetail with the upper primary HSIE curriculum.

A recent venture of the NRM has been to produce a CD ROM, *A History of the Greta Coal Measures (1861 – 1998)*. This form of interpretation would work very well for Glenrock. It could use text and images derived from this CMCTP as a basis. A more elaborate version could also incorporate sound, such as Awabakal voices and language, oral histories from coal miners and so on. This form of data can also be made available on the web, attracting student researchers and other interested individuals.

The NRM also has possession of the artefacts which resulted from the 1987 excavation of the Burwood Copper Smelter. This site, and its wider history, would form an interesting subject for a temporary exhibition at the NRM, looking at the global, regional and local aspects of this industrial development, the role of Mitchell, the AA Company and so on.

Glenrock brochures should reflect the results of the CMCTP, acknowledging the integrated values of the cultural landscape, and they should be regularly updated..

Recommendations

- Publish the history of Glenrock (Section 3) and make available through NPWS and Newcastle City Council outlets
 - Prepare an education kit to supply to schools in advance of visits
 - Keep the NPWS Glenrock brochure up-to-date, through regular review.
 - Negotiate with NRM the production of a web site/CD ROM on the history of Glenrock. The CD should be available for sale and should also be posted on the web.
 - Negotiate with the NRM the display of a temporary exhibition on the theme of Burwood Copper Smelter and Glenrock (the NRM holds the artefacts excavated from the Burwood Copper Smelter site by Bairstow in 1987).
-
- National Parks Discovery Walks, Talks and Tours, Discovery for Schools
- NPWS currently runs Discovery Programs for the public, during school holidays, and for school groups featuring walks, talks and tours. The school program is aimed at upper primary/lower secondary and in 2000/01 961 students attended. Glenrock is the main

NPWS property used for school education in the Hunter due to its proximity to Newcastle. A school holiday tour entitled "Glenrock's Heritage" was run in April 2002 and proved very popular, and it is currently planned to offer these in future school holidays.

Current priorities for developing the Discovery school program include focussing on the upper primary HSIE curriculum and developing a bush tucker tour for Glenrock.

It has already been noted above that the NRM has indicated that it would be prepared to develop links with interpretive programs at Glenrock. A visit to the museum's exhibitions on mining or Aboriginal culture, could be followed with an on site experience at Glenrock. Also mentioned above, were the possibilities of developing off-site interpretive material that would link with the Discovery program, including the preparation of an education kit and the development of a CD ROM in conjunction with the NRM.

The range of interpretive strategies outlined in this plan will be able to be used through the Discovery program to enhance community and schools education. In particular the continued use of local volunteer guides or story tellers is encouraged. Members of local Indigenous groups, the Scouts, ex- miners from Burwood Bowling Club, the Newcastle Flora and Fauna Protection Society, Friends of Glenrock, etc, all have much to contribute in the interpretation of Glenrock.

- Negotiate the provision of guides with local Indigenous groups, Scouts, ex-miners from Burwood Bowling Club, the Newcastle Flora and Fauna Protection Society, Friends of Glenrock etc.

Signage

Signage carrying text and images, will be a simple but important interpretive medium at Glenrock. The wealth of colonial images and historic photographs from the later nineteenth and twentieth centuries (some of which are reproduced in this report), are a

particularly valuable resource for the interpretation of the historic and contact periods, including indigenous culture in that period.

Signs should be designed to be sympathetic with their surroundings, as well as taking issues of vandalism and robustness into consideration. A consistent visual style should be adopted for all the Glenrock signs, and they should offer a hierarchy of information set out in a consistent manner.

Metal, photo engraved, lectern style signs would be appropriate at lookouts, while larger signs with maps could be used at carparks.

A Glenrock “icon” would be a good visual marker for the signs and could also be utilised on brochures, track markers and so on. A suitable theme upon which to base an icon design would be “stratigraphy”-alluding to the layers within the complex cultural landscape, and represented by the layers in the coastal cliff face: coal, fossils, tuff (alluding to Aboriginal stone tools), the coastal railway clinging to the cliff.

Signage should be located at a few major nodes rather than scattered throughout the area. Within the active management zone (Figure 8.2), the nominated locations for signage are:

Yuelerbah Track Head, Burwood Road carpark

Signs at this location should offer a map of the Yuelerbah Track indicating time/difficulty information, the location of other interpretive nodes (Leichhardt’s Lookout, Burwood Colliery, Smelter site) and other points of interest: the Lagoon, beach, the coastal railway, waterfalls etc.

The concept of Glenrock as a cultural landscape needs to be introduced at this location, explaining to visitors that this is not simply bush, but a place that holds the traces of many different historical stories. Themes 1, 2 and 3 should be used to structure the information presented in this location:

Theme 1 A complex cultural landscape

Theme 2 “A land of plenty” people and natural resources

Theme 3 Paths routes, travel and exploration

Leichardt’s Lookout

Signs here should briefly identify the items of Site Complex 4 (as set out in previous Sections 7 and 8), within the context of thematic information drawn from Themes 2 and 3, and building on the information delivered at the Yuelarbah track head. Images related to Leichhardt, Biraban and colonial natural history would be appropriate.

The view over the lagoon and to the beach should be linked with the stories of indigenous, non-indigenous and natural heritage covered by these themes

Burwood colliery

Signage at this site should include a plan identifying the remains and historic photographs of the colliery and of the coastal railway, which should also be referred to at this interpretive location.

Thematic information presented here should centre on Theme 4 – Work and Play.

Key points include:

- People (indigenous and non-indigenous) working with geological resources;
- Mining communities living, working and playing at Glenrock;
- Changes to the environment.

Burwood copper smelter.

This site should also incorporate some information on the coastal railway. The image of the smelter (Figure 3. 16) should be reproduced. Thematic information here should centre on themes 4 (Work and Play) and 5 (Reading the landscape).

Key points should include:

- Using archaeology to understand the landscape;
- Glenrock and the global, colonial economy, the role of colonial industrialist Mitchell.

Banana plantation site.

At this location themes should once again relate to the fine aspect, encompassing views towards Merewether, over the lagoon and beach.

Text and images at this site should centre on Themes 3 (Paths, routes, travel and exploration) and 5 (Reading the landscape).

Key points should include:

- Cross cultural encounters and sharing environmental knowledge, the role of Biraban (quotes from Coke's and Threlkeld's diaries would be effective here).
- Aboriginal paths and communications links.
- Threlkeld's route from Newcastle to Lake Macquarie and his mission.
- Bark canoes to surfing.
- NPWS and the community studying and caring for the landscape.

A natural link exists between the Yuelarbah Track and the Bathers Way trail developed by Newcastle City Council. This should be developed more strongly to guide visitors from one trail to the other through signage and references in any promotional material.

Recommendations

- Establish 'Glenrock' style for text and graphic signs.
- Prepare time/difficulty information for signage and brochures.
- Write, research, and install signs as set out above.
- Negotiate with Newcastle City Council the linkage of the Glenrock signs to the Bather's Way.

Sites and Structures

Structures, sites and artefacts are of course excellent interpretive media in themselves. Many historic sites are however not suitable for interpretation and visitation as has been set out in the previous sections. It is therefore proposed that interpretation and visitor guides should concentrate within the active management zone set out in Section 8.2.3.

The Burwood Colliery remains, Leichhardt's lookout, the remains of the coastal railway and the Burwood Copper Smelter site all exhibit tangible and significant remains which justify active conservation management and these requirements have been set out in Sections 7 and 8.

Special Events

Special events aimed at, and driven by, the local community are an important way to develop a sense of access, responsibility and ownership of the SRA. "Back to Burwood" and "Glenrock Picnic Days" have been suggested by community members as special events designed to bring community together and focus on the history of Glenrock. Indigenous cultural tours, as discussed above also offer potential in this regard.

Recommendations

- Negotiate with the Regional Advisory Committee and the Regional Indigenous Advisory Committee (Section 8.2.6) the organisation of annual "Back to Burwood" picnic days and other themed events targeting the local community.

9.8 Strategy for Staged Implementation of the Interpretation Plan

Interpretation Plan	Interpretation Objective	Strategies and Actions	Implementation Phase		
			Short	Med	Long
<p>Interpretation Policy <i>The heritage values of the Glenrock cultural landscape will be interpreted through creative and innovative methods which provide:</i></p> <ul style="list-style-type: none"> • <i>for the enhanced understanding of the integrated values of the Glenrock cultural landscape;</i> • <i>opportunities for access, involvement and educational/cultural experiences for the Indigenous and non-indigenous communities;</i> for the promotion of cultural tourism experiences for the broader community 		<ul style="list-style-type: none"> • Adoption of this CMCTP by NSW NPWS 	Π		
		<ul style="list-style-type: none"> • Staged implementation of the Interpretation Plan. 	Π	Π	Π
		<ul style="list-style-type: none"> • Review Interpretation Plan in 5-10 year period. 			Π
<p>Interpretive Themes Theme 1 <i>A complex cultural landscape,</i> Theme 2 <i>“A land of plenty” - people and natural resources,</i> Theme 3 <i>Paths, routes, travel and exploration</i> Theme 4 <i>Work and Play in the Glenrock landscape</i> Theme 5 <i>Reading and understanding the landscape: tools to read the landscape.</i></p>	<p><i>To illuminate the integrated values of the landscape</i> <i>To assist in structuring the information presented through interpretation.</i></p>	<ul style="list-style-type: none"> • Implement themes to aid in interpretation development. 	Π	Π	Π
		<ul style="list-style-type: none"> • Review themes in 5-10 years 			Π
<p>Regional Links</p>	<p><i>Develop links with other cultural/natural heritage destinations to enhance joint promotional and interpretative opportunities.</i></p>	<ul style="list-style-type: none"> • Through the proposed <i>Glenrock Area Management Committee</i> (Section 8.2.5) seek joint promotion and co-ordination of the community walking trails in the region. 	Π	Π	

Interpretation Plan	Interpretation Objective	Strategies and Actions	Implementation Phase		
			Short	Med	Long
		<ul style="list-style-type: none"> Plan to offer Glenrock tours and special events during Heritage Week and the Maitland Steamfest and contact the co-ordinators of both events to investigate promotional opportunities 	II	II	
		<ul style="list-style-type: none"> Seek to establish joint ticketing/booking (for school groups) and promotional arrangements with Newcastle Regional Museum. 		II	II
		<ul style="list-style-type: none"> Approach the Wetlands Centre to investigate the development of links between natural areas close to Newcastle based on reconstructed ecosystems or post-industrial landscapes. 		II	
Target Visitor Groups	<i>To know the present and potential users of Glenrock.</i>	<ul style="list-style-type: none"> Promote the SRA to school groups, local residents, local indigenous groups/organisations and local interest groups. 	II	II	II

Interpretation Plan	Interpretation Objective	Strategies and Actions	Implementation Phase		
			Short	Med	Long
		<ul style="list-style-type: none"> Seek a joint promotional arrangement with the Scout Camp administration to enable visiting scout and school groups to be offered the opportunity to participate in Glenrock tours and also to receive brochures for self guided tours. 	Π		
Indigenous Cultural Tourism	<i>Create opportunities for indigenous cultural tourism in order to enhance interpretation and to involve and generate benefits for the local indigenous community.</i>	<ul style="list-style-type: none"> Establish a working party on Indigenous cultural tourism at Glenrock. This should include representatives of the Awabakal LALC, Yarnteen Aboriginal and Torres Strait Islander Corporation, the Hawken family and other community members as appropriate. 	Π	Π	
Heritage Trails	<i>To develop regional and statewide opportunities for cultural tourism which will bring benefits to Glenrock.</i>	<ul style="list-style-type: none"> Discuss the concept of a heritage mining and industry trail through the Lower Hunter with local Councils and the NSW Heritage Office. 	Π	Π	
		<ul style="list-style-type: none"> Investigate availability of funding for heritage trail development from the BHP Trust, and other heritage project funding sources.. 	Π	Π	
		<ul style="list-style-type: none"> Discuss state-wide heritage trails with Tourism New South Wales and the NSW Heritage Office. 	Π	Π	

Interpretation Plan	Interpretation Objective	Strategies and Actions	Implementation Phase		
			Short	Med	Long
		<ul style="list-style-type: none"> Discuss the concept of a Lake Macquarie/Newcastle/Hunter Indigenous Cultural Heritage trail or guidebook with relevant LALCs and community members (NB AIATSIS funded and produced the guidebook Aboriginal Sydney.). 		Π	
Special Events	<i>To increase access to, responsibility for, and ownership of Glenrock by the local community.</i>	<ul style="list-style-type: none"> Negotiate with the Regional Advisory Committee and the Regional Indigenous Advisory Committee (Section 8.2.6) the organisation of “Back to Burwood” day and other local events. 	Π	Π	Π
Off Site Interpretation	<i>To provide access to more detailed information and research about Glenrock.</i>	<ul style="list-style-type: none"> Publish the history of Glenrock (Section 3) and make available through NPWS and Newcastle City Council outlets 	Π		
		<ul style="list-style-type: none"> Prepare an education kit to supply to schools in advance of visits 		Π	
		<ul style="list-style-type: none"> Keep the NPWS Glenrock brochure up-to-date, through regular review. 		Π	

Interpretation Plan	Interpretation Objective	Strategies and Actions	Implementation Phase		
			Short	Med	Long
		<ul style="list-style-type: none"> Negotiate with NRM the production of a web site/CD ROM on the history of Glenrock . This could be based on the history of Glenrock prepared for this report, as well as other relevant resources. The NRM has produced a CD, A History of the Greta Coal Measures (1861 – 1998), which forms a good model for this. The CD should be available for sale but would also help schools prepare students for visits to the SRA 		II	II
		<ul style="list-style-type: none"> Negotiate with the NRM the development of a temporary exhibition on the theme of Glenrock (the NRM holds the artefacts excavated from the Burwood Copper Smelter site by Bairstow in 1987). 		II	
NPWS Discovery	<i>To educate the community about the integrated natural, cultural and community values of Glenrock.</i>	<ul style="list-style-type: none"> Negotiate the provision of guides with local indigenous groups, scouts, miners, NFFPS, FROGS etc 	II	II	
Signage	<i>To interpret the integrated values in the active management zone in order to enhance visitors' experience of Glenrock.</i>	<ul style="list-style-type: none"> Design Glenrock sign style and icon. 	II	II	
		<ul style="list-style-type: none"> Yuelarbah Track Head, research, write, produce and install. 		II	II

Interpretation Plan	Interpretation Objective	Strategies and Actions	Implementation Phase		
			Short	Med	Long
		<ul style="list-style-type: none"> Leichhardt's Lookout, research, write, produce and install. 		Π	Π
		<ul style="list-style-type: none"> Bannana Plantation site, research, write, produce and install. 		Π	Π
		<ul style="list-style-type: none"> Burwood Colliery, research, write, produce and install. 		Π	Π
		<ul style="list-style-type: none"> Burwood Copper smelter, research, write, produce and install. 		Π	Π

10.0 Implementation Strategy

The following table takes the Conservation Policy (Section 8) and the Interpretation Plan (Section 9) and outlines implementation strategies, responsibilities and timeframes. Performance indicators are included to assist with internal monitoring of progress.

It should also be noted that the Interpretation Plan (Section 9) includes further details on the staging of its implementation in terms of short (1-2 years), medium (3-5 years) and long (5-10 years) term timeframes. Funding for the implementation of these plans and policies is competitive within the NPWS and other funding agency programs. In view of this, timeframes suggested here indicate the priority of actions, ie those given a 1 year time frame are considered to be urgent pending the allocation or attraction of funds for their implementation.

Abbreviations used in the Table:

RD	Regional Director, Northern
RM	Regional Manager
AM	Area Manager, Hunter Region
AHU	Aboriginal Heritage Unit
R	Ranger, Glenrock SRA
FO	Field Officers
CHD	Cultural Heritage Division, NPWS Head Office
PMO	Pest Management Officer
FMO	Fire Management Officer

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
Head policy						
<p><i>To provide NPWS and the community with a creative, sustainable and achievable management approach to the Glenrock cultural landscape. This management approach is based on the integrated assessment of values, community involvement and consultation, creative interpretation and the identification of active management priorities.</i></p>	<ul style="list-style-type: none"> Display of this CMCTP for community comment. 	AM	✓			Exhibition held
	<ul style="list-style-type: none"> Sign off on CMCTP by Regional Director, Regional Manager, Area Manager and CHD. 	RD, RM, AM, Consultant and CHD	✓			Sign off.
	<ul style="list-style-type: none"> Endorsement of this CMCTP by the Heritage Council or under delegation by the Director, Cultural Heritage, NPWS. 	CHD	✓			Heritage Council or delegated endorsement.
	<ul style="list-style-type: none"> Amendment of the current Glenrock POM as set out in this CMCTP. 	R	✓			Release of amended POM for public review. Gazettal of POM
	<ul style="list-style-type: none"> Reclassify Glenrock SRA as National Park according to the NPW Amendment Bill 2001. 	AM	✓			Gazettal of National Park.
	<ul style="list-style-type: none"> Adoption of this CMCTP by NSW NPWS. 	AM	✓			
	<ul style="list-style-type: none"> Incorporation of this Implementation Strategy into the Hunter Region Operations Plan. 	R	✓			
	<ul style="list-style-type: none"> Public access to this CMCTP to ensure ongoing public access to its findings. 	AM, CHD	✓			Public release of CMCTP

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> Staged implementation of the <i>Interpretation Plan</i> 	R		✓	✓	Implementation of Interpretation
	<ul style="list-style-type: none"> Commission a Risk Management Study of all cultural remains sites 	R	✓	✓		Risk Management Plan
	<ul style="list-style-type: none"> Convene a Glenrock Area Management Committee 	R	✓			Membership list. First meeting.
	<ul style="list-style-type: none"> Investigate joining an established Government based Indigenous Regional Advisory Committee, or establish a new stakeholder committee and endeavour to fill the two vacant indigenous positions on the NPWS Regional Advisory Committee. 	AM, R	✓			Members appointed
	<ul style="list-style-type: none"> Establish email lists for the Glenrock Area Management Committee, NPWS Regional Advisory Committee and the Regional Indigenous Advisory Committee for regular information sharing 	R	✓			List established
Natural Heritage						
<p><i>The natural heritage values of the Glenrock cultural landscape will be conserved and interpreted. Natural values will be managed through weed control, fire management, introduction of screening planting in indicated locations, and erosion control.</i></p>	<ul style="list-style-type: none"> Continue the current general weed management program in the SRA. 	R, FOs, PMO	✓	✓	✓	Progress against Pest Species Management Plan. Weed control activity plans and activity monitoring.
	<ul style="list-style-type: none"> Continue the current POM program of bitou bush control on dunes, incorporating trial weed removal and erosion control techniques on dune areas with cultural remains 	R, FOs, PMO	✓	✓		Activity plans and technical reports.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> Amend the <i>Vegetation Control Procedure</i> with any methodological lessons learnt. 	R, FOs	✓	✓		Amended Vegetation Control Procedure
	<ul style="list-style-type: none"> Implement a comprehensive Fire Management Plan for the SRA which uses the species fire-sensitivity data in Bell (1998) as a criterion for the selection of the frequency of fuel reduction burns. 	AM, R, FMO	✓	✓		Fire Management Plan implemented.
	<ul style="list-style-type: none"> Continue to exercise the Service's objector rights under the Environmental Planning and Assessment Act to oppose any Development Applications, LEPS, rezoning applications, or Council Development Control Plans which involve tree clearing on the edges of the SRA which will diminish the landscape and scenic values. 	R, AM	<i>As required</i>			Alert procedures to trigger objector actions developed and in place.
	<ul style="list-style-type: none"> Continue POM erosion and siltation control activities which concentrate on the catchment of Glenrock Lagoon, including Flaggy and Little Flaggy Creeks. 	R	✓	✓	✓	Sedimentation monitoring/trend analysis.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> • Plan and implement a program, in conjunction with Hunter Water Corporation, of strategic planting of local native trees and shrubs which will: <ul style="list-style-type: none"> – Provide a visual barrier of tree and shrub plantings to screen the treatment plant from the beach side and from the smelter site – Provide strategic tree and shrub plantings at or near the treatment plant boundary to diminish its visual impact on the views from Merewether Heights (Scenic Drive), employing landscaping methods to reduce its perceived bulk and scale. – Arrest the deterioration of native vegetation around the western edges of the treatment plant and the southern and western edges of the scout camp 	R		✓	✓	Activity plans. Computer simulations of landscape.
	<ul style="list-style-type: none"> • Prepare specialist interpretive material about fossil features in coastal geology (see Section 9) 	R		✓		Documentation

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> Base long-term management of the Glenrock Lagoon on sound technical data and stakeholder consultation: <ul style="list-style-type: none"> Commission a study, in conjunction with Newcastle City Council and Lake Macquarie Council, to model the future hydrology of the lagoon as a result of current siltation rates, as well as the hypothetical rates which are both higher and lower than current rates. In light of the findings of this study, involve stakeholder groups in a process to determine future recreational demand and expectations of the lagoon area . 	R			✓	Completed study. Stakeholder involvement in determining long term objective. Long term use and management objectives for Glenrock Lagoon.
Historic Heritage						
<i>The historic heritage of the Glenrock cultural landscape will be conserved and interpreted. An active management zone which encompasses key historic sites will be a focus for creative interpretation, increased visitor access and conservation works.</i>	<ul style="list-style-type: none"> Historical archaeology should be managed according to the <i>Archaeological Management Guidelines</i>. 	R	✓	✓	✓	Consistency of management activities with guidelines. Activity plans.
	<ul style="list-style-type: none"> The history of Glenrock (Section 3.0) should be published. 	R		✓		Public release of document.
	Site Complex 1: Burwood Copper Smelter					
	<ul style="list-style-type: none"> Ensure ongoing dune stability. 	R, FOs	✓	✓	✓	Dune heights and profiles maintained.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> Remove bitou bush and other weeds according to the <i>Vegetation Control Procedure</i>. 	R, FOs	✓	✓	✓	Activity plans. Activity monitoring.
	<ul style="list-style-type: none"> Protect from unwarranted excavation through discussion with relevant management authorities and erection of signage. 	R	✓			Protective measures in place.
	<ul style="list-style-type: none"> Negotiate a management agreement with the <i>Glenrock Area Managers' Committee</i> regarding the heritage status of this site and the implementation of this Conservation Policy. 	AM, R	✓			Agreement document.
	<ul style="list-style-type: none"> Interpret according to the <i>Interpretation Plan</i> (Section 9.0). 	R		✓	✓	Consistency of site interpretation with the <i>Interpretation Plan</i>
	<ul style="list-style-type: none"> Investigate future excavation and research possibilities with Regional Advisory Committee, funding agencies and within the context of the proposed <i>NPWS Hunter Region Cultural Heritage Management Strategy</i>. 	AM, R, CHD	✓	✓	✓	
	Site Complex 2: Burwood Colliery Remains (South of lagoon)					
	<ul style="list-style-type: none"> Remove lantana and other weeds according to the <i>Vegetation Control Procedure</i>. 	R, CHD	✓	✓	✓	Activity plan and activity monitoring.
	<ul style="list-style-type: none"> Following vegetation removal, assess remains for stability and stabilise as required. 	R, CHD	✓	✓		Stability assessment report and activity plan arising.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> Establish a path to, and through, the ruins, from the Yuelarbah Track, maintaining the sense of “discovery” in the bush 	R, CHD		✓	✓	Activity plan and activity monitoring.
	<ul style="list-style-type: none"> Interpret according to the <i>Interpretation Plan</i> (Section 9.0). 	R		✓	✓	Consistency of site interpretation with the <i>Interpretation Plan</i>
	<ul style="list-style-type: none"> Investigate future excavation and research possibilities with Regional Advisory Committees, funding agencies and within the context of the proposed <i>NPWS Hunter Region Cultural Heritage Management Strategy</i>. 	AM, R, CHD	✓	✓	✓	Report on future excavation and research opportunities.
	Site Complex 3: Coastal Railway System					
	<ul style="list-style-type: none"> Undertake comprehensive research and recording of the coastal railway system as a matter of priority. 	R	✓			Report produced.
	<ul style="list-style-type: none"> Manage vegetation along the railway formation on the north and south sides of Glenrock Lagoon according to the <i>Vegetation Control Procedure</i>. The future stability of the formation is the main objective of this procedure. 	R, FOs, PMO		<i>ongoing</i>		Stability monitoring of railway formation..
	<ul style="list-style-type: none"> Undertake a risk assessment of the coastal railway system features. 	R	✓			Risk Management Plan.
	<ul style="list-style-type: none"> If the risk assessment recommends removal of rail items to more stable ground then this should only be done following the comprehensive research and recording process outlined above. 	R		✓		Implementation of Risk Management Plan recommendations

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> If the risk assessment recommends stabilisation of rail remnants <i>in situ</i> through the importation of sand and subsequent vegetation management, then this should also be undertaken following the comprehensive research and recording process outlined above. 	R		✓		Implementation of Risk Management Plan recommendations
	<ul style="list-style-type: none"> Interpret according to the <i>Interpretation Plan</i> (Section 9.0). 	R		✓	✓	Consistency of site interpretation with the <i>Interpretation Plan</i>
	Site Complex 4: Other Colliery remains north of Flaggy Creek					
	<ul style="list-style-type: none"> Manage vegetation around cultural remains according to the <i>Vegetation Control Procedure</i> 	R, FOs, PMO	✓	✓	✓	Activity plan and activity monitoring.
	<ul style="list-style-type: none"> Following vegetation removal around remains, assess remains for stability and stabilise as required. 	R, FOs, CHD		✓		Stabilised structures.
	<ul style="list-style-type: none"> Remove timber platform from winding engine foundations (GA 64), assess remains for stability and stabilise as required. 	R, FOs		✓		Stabilised structures.
	<ul style="list-style-type: none"> If necessary for health and safety reasons, replace the wooden structure with a metal grill which continues to allow observation of the relics, and which is free standing of the relics. 	R		✓		Stabilised structures.
	<ul style="list-style-type: none"> Interpret according to the <i>Interpretation Plan</i> (Section 9). 	R		✓	✓	
	<ul style="list-style-type: none"> Monitor site GA 70 for weathering of bricks and replace mortar if required. 	R, FOs		ongoing		Stabilised structures.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	Site Complex 7 Banana Plantation site					
	<ul style="list-style-type: none"> Maintain the open landscape of the site. 	R, FOs	✓	✓	✓	Site development plan. Achievement of site development milestones against plan.
	<ul style="list-style-type: none"> Establish a single path between this site and the beach, signpost this path and promote its use to the community. 	R, FOs			✓	Site development plan. Achievement of site development milestones against plan.
	<ul style="list-style-type: none"> Develop this site as an interpretation/visitor facility node. 	AM, R			✓	Site development plan. Achievement of site development milestones against plan.
	<ul style="list-style-type: none"> Provide pedestrian access from Scout Camp Road. 	R			✓	Site development plan. Achievement of site development milestones against plan.
	<ul style="list-style-type: none"> Investigate the provision of disabled access to this site 	R			✓	Site development plan. Achievement of site development milestones against plan.
	<ul style="list-style-type: none"> Interpret according to the <i>Interpretation Plan</i> (Section 9.0). 	AM, R		✓	✓	Consistency of site interpretation with the <i>Interpretation Plan</i>
	Site Complex 9: Scout Camp					
	Site Complex 11: Burwood Beach Wastewater Treatment Works					
	<ul style="list-style-type: none"> Establish the <i>Glenrock Area Managers' Committee</i> to discuss issues of joint concern. 	R	✓			Membership list. First meeting.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
	<ul style="list-style-type: none"> Negotiate management agreements with Hunter Water concerning the protection of the Burwood Smelter site and the provision of screen planting. 	AM, R	✓			Written agreement.
	<ul style="list-style-type: none"> Negotiate management agreements with NSW Scouting Association concerning the management of archaeological resources and the Undermanager's Cottage, as well as issues of vegetation management. 	AM, R	✓			Written agreement.
	<p>Site Complex 5: Murdering Gully Rail and Colliery Remains</p> <p>Site Complex 6: Merewether Escarpment Rail and Colliery Remains</p> <p>Site Complex 10: Defence Remains</p>					
	<ul style="list-style-type: none"> Undertake a risk assessment of open mine shafts in these areas. 	R	✓	✓		Risk Management Plan
	<ul style="list-style-type: none"> Monitor these sites and re-assess their heritage status and conservation requirements in 5 – 10 years. 	R, CHD			✓	Heritage Status Report.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
Aboriginal Heritage						
<p><i>The Aboriginal cultural heritage of the Glenrock cultural landscape will be conserved and interpreted. Aboriginal cultural heritage will be managed through the protection and conservation of archaeological sites, the interpretation of Aboriginal landscape features, history and prehistory, in partnership with the Indigenous community</i></p>	<ul style="list-style-type: none"> The Aboriginal cultural landscape should be interpreted according to the <i>Interpretation Plan</i> (Section 9.0). 	AHU, R		✓	✓	Consistency of interpretation with the <i>Interpretation Plan</i>
	<ul style="list-style-type: none"> Aboriginal archaeology should be managed according to the <i>Archaeological Management Guidelines</i>. 	AM, AHU, R	ongoing			Consistency of site management with the guidelines.
	<ul style="list-style-type: none"> A comprehensive survey and analysis of Aboriginal archaeology should be commissioned to assist in the future conservation, management and interpretation of the Glenrock cultural landscape. 	R		✓		Survey and Analysis Report
	<ul style="list-style-type: none"> Site 38-4-42 & 38-4-43 – these sites should be stabilised and protected through the introduction of sand, brush matting and the subsequent introduction of dune grasses, in consultation with Aboriginal community representatives. Following stabilisation, this site may be interpreted and visited pending consultation and approval from Aboriginal community representatives. 	AHU	✓			Agreement of community representatives. Collection lodged with repository.
	<ul style="list-style-type: none"> Site 38-4-45 –the steel mesh structure should be removed as soon as practicable. 	AHU	✓			Structure removed.
	<ul style="list-style-type: none"> Site 38-4-0324 – the green guard rail protecting this area from traffic should be retained. 	R		ongoing		Structure retained.
	<ul style="list-style-type: none"> Site GR 12 – Stone Procurement Site (Quarry) –this site may be interpreted in line with Section 9. It should be monitored for the effects of coastal erosion, but should not be sign-posted. 	R		ongoing		Interpretation report. Monitoring of coastal erosion reports.
	<ul style="list-style-type: none"> Site GR 13 – Hatchet Head Grinding Grooves- these site(s) should be recorded and monitored. They should not be open to public visitation. 	R		ongoing		Records and monitoring reports.

Conservation Policy	Strategies and Actions	Responsibility	Time Frame			Performance Indicator
			Short	Med	Long	
Social Values						
<i>Social or community values are recognised as an integral aspect of the significance of the Glenrock cultural landscape. These values will be respected, maintained and built upon through enhanced interpretation of integrated values, the provision of access for educational and cultural experiences, and through the establishment of community management partnerships.</i>	<ul style="list-style-type: none"> Interpret issues of importance to the local community: Indigenous and cross cultural history, mining history and agricultural history, according to the <i>Interpretation Plan</i> (Section 9), 	R	ongoing			Consistency of interpretation with the <i>Interpretation Plan</i>
	<ul style="list-style-type: none"> Establish community management partnerships as per Section 8.2.5. 	AM, R	✓	✓		Members appointed.
	<ul style="list-style-type: none"> Develop opportunities for community access and participation as set out in the <i>Interpretation Plan</i> Section 9.0. 	AM, R	ongoing			Community feedback.

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Appendices 1 - 5

Appendix 1

A1.1 Individuals/ Organisations at Focus Group, 21st February, 2002, NPWS
Glenrock Depot

David Wells

Curator

Newcastle Museum

Ed Tonks

Historian

John Shoebridge

Mining Engineer

Boris Sokoloff

Local resident and
interested in Aboriginal culture

Sue Sokoloff

Local resident and
interested in Aboriginal culture

Dene Hawken

Awabakal

Wayne Hawken

Awabakal

Tom Jones
Baha'i Landcare Group

Gwenda Jones
Baha'i Landcare Group

Vaughan Rees
Dudley Bush
Regeneration Group

John Gambrill
Bushwalker,
Local resident

John Le Messurier
Scouts/NPWS Advisory
Retired from Newcastle Council

Maurie Spencer
Dudley Progress
Association

Mike Warren
Dudley Progress Association

Greg Giles
Friends of Glenrock

Also in attendance:
Tiffany Knott, NPWS

Tracy Ireland, Richard Baker, Aedeem Cremin and Roger Parris (Consultant team).

Interested but unable to attend Focus Group

Jim Snushall and Keith Smith

Scouts

Cynthia Hunter

Heritage Activist

Sue Saxby

Dudley School

Don Ellsmore

Wants to review draft.

Tracks Foundation

Susan Young

General invitation to Council staff issued.

Newcastle City

Council

Sarah Pearce

On maternity leave

Heritage Advisor

Newcastle Council

Peter Cockbain

Planned to attend but delayed and sent apologies.

Institute of Engineers.

A1.2 Further Meetings and Consultations

Academics

Lyndall Ryan – Historian focussing on Aboriginal issues – Head of School of Humanities, Ourimbah Campus, University of Newcastle.

Assoc. Professor Nerida Blair at the Umilliko Aboriginal Research Centre at the University of Newcastle

Fred Maher in the Gibalee Aboriginal Learning Centre at the Ourimbah campus of the University of Newcastle.

Jason De Santolo , Koori Masters Student in History at University of Newcastle.

Indigenous Consultations/ Informal Discussions, Individuals and Organisations

Ron Gordon

Director, Awabakal Land Council

Ray Kelly, Awabakal Co-op

Bill Smith and Robbie Briggs , Koopahtoo Land Council

Abie Wright, Ken McBryde and John Heath .

Nola Hawken, Kerrie Brauer, Dene and Wayne Hawken.

Collen Perry

John Heath

Ken McBryde

Sean Gordon, Yamuloong Resource Centre

Yamuloong's Bush Food Tours 49436877 (subsidiary of Yarnteen, a registered Training company)

Sean Gordon and Daryn McKenny www.aboriginalhunter.com

Non-Indigenous Community Consultations/ Informal Discussions
Professor Len Dyal

Sue and Boris Sokoloff

Dennis Rowe, University of Newcastle Archives, (Perce Haslam Collection).

Sean Day
Tourism and Economic Development Manager
Newcastle Council

Keith Smith Camp Warden, Scouts

Jim Snushall, Scouts

Scouts Newcastle Head Office

Scouts Dads Army (Thursday Working party)

Newcastle Historical Society

Newcastle Family History Society

Lake Macquarie Historical Society

John Shoebridge
Mining Engineer

Marie Netzke

RAHS

Mara Barnes

National Trust Head Office

Don Ellsemore

Tracks Foundation

Ted Stewart

Caretaker, Scout Camp

Kel Grabbem, Newcastle Historical Society

Gavin Fry, Director of the Newcastle Regional Museum

Further informal conversations (recorded by Roger Parris).

Group of four teenage surfers

Local residents. Frequent users. Surfed on Glenrock side of Little Red Head. Reached SRA by bicycle via Scout Camp Road. Equally divided as to whether more visitation was desirable. Two thought a kiosk and showers were a good idea but the others thought more development would bring more visitors and spoil the area for them. No knowledge of, or interest, in the area's history.

John and Robyn Gambrill

Long time local (Kahibah) residents. Value Glenrock for its beauty, beaches and walking tracks. Thought bicycles were a problem – no warning of approach. Parking on Burwood Road a problem on weekends. Some knowledge and interest in the Aboriginal and mining history of the area. Would welcome more interpretation but ambivalent about further development. Thought improved disabled access a good idea.

Michael Parris

Resident of Hunter Valley for over thirty years. Newcastle journalist for the last fifteen.

Self and wife frequent users of the SRA to walk dogs, ride bush bikes and surf. Doesn't want any development of the park. Values area precisely because it is undeveloped yet reasonably accessible from town for walkers/bike riders. Few areas left where you can ride bikes and walk dogs with relative freedom. Development would lead to beaches being crowded. Plenty of easily accessible beaches in Newcastle if you like crowds. Little interest in interpretation. Thought if people could buy a guide book at the Tourist Information Centre they could explore the area on their own.

Suggested existing user groups, particularly the Leggies Point board riders (an informal surf club) would be vehemently opposed to any opening up of the area.

Management staff at two motels on Pacific Highway

Had never heard of Glenrock SRA. Very vague on local geography and local attractions. Would carry leaflets etc. if available but thought most of their trade was passing through.

Tourism Officer at Tourist Information Centre in Newcastle (Civic)

Knowledgeable about Glenrock. Had maps and NPWS leaflet readily available. Slightly skeptical about feasibility of further cultural tourism facilities at Glenrock.

David Wells

Curator of Newcastle Regional Museum. Very knowledgeable about Glenrock and enthusiastic about the museum being associated with its development and interpretation.

About 18,000 school children visit the museum every year. Could envisage some form of joint ticketing arrangement with Glenrock, particularly if the mine site is developed and interpreted. David was instrumental in the production of the 'History of Greta Coal Measures' CD and might be interested in developing something similar for Glenrock if an appropriate information base was available.

At the same meeting I briefly outlined the project for **Gavin Fry, Director of the NRM**. Gavin was interested and suggested we follow the matter up with David.

Keith Smith

Keith is a Scout Commissioner and lifetime local resident. He is knowledgeable about the area and took me on an informative tour of the mine site. He was extremely friendly and helpful but was reluctant to express any views on behalf of the Scouts and suggested we work through their regional office in Hunter Street. He did suggest that an access track to the mine site could be developed from just above the Scouts' gate and skirting their eastern boundary.

A1.3: Plan for Focus Group, 21st February 2002

Glenrock Lagoon State Recreation Area

A New Conservation Management and Cultural Tourism Plan

Focus Group

Venue: NPWS Glenrock Depot

Time: 5 –7pm

Meeting Outline

1. Introduction: Why a new plan for Glenrock
2. Aim of the Meeting: to talk to community members about why the site is important and how they feel it should be managed, interpreted and promoted.
(This focus group presents only a limited opportunity to talk to you, if you have more to say please ring or email us).
3. Round Table Introductions

Focus Group Part One

Significance

Why is Glenrock important to you? (Record on whiteboard)

Outline of Statement of Significance prepared by us – add in new things learned. (Order can be reversed if views not flowing).

Focus Group Part Two

Management Issues

How should we look after all the important things about Glenrock that we have just identified?

What information should we give, or what stories should we tell about Glenrock?

Who uses, or should use, Glenrock and what should they learn from a visit here?

What do you think of these ideas?

Closure: thank yous and outline of where the process goes from here as well as further opportunities for input and review.

A1.4. Information sheet distributed in local area

Glenrock Lagoon State Recreation Area

A New Conservation Management and Cultural Tourism Plan

The NSW National Parks and Wildlife Service has commissioned a new management plan for the Glenrock SRA. This new plan will especially consider its important heritage values and how these can be protected and promoted. Glenrock is an important place for many different reasons: because of its Indigenous cultural values, its old coal mining and copper smelting sites, its environmental values and natural beauty. It is a shared cultural landscape and an important asset for Newcastle and the broader community.

Who is preparing the plan?

National Parks has employed a team from Griffin nrm, an environmental management firm based in Canberra. Griffin can be contacted on 02 62394020, and P.O. Box 3521 Manuka, ACT, 2603.

The project manager is Tracy Ireland (0262368171, Mobile: 0414267000 Email: tireland@griffin-nrm.com.au).

The other members of the team are Johan Kamminga (Aboriginal Archaeology), Aedeon Cremin (History and Archaeology), Richard Baker (Indigenous Heritage), Neil Urwin (Natural Heritage) and Roger Parris (Heritage Interpretation and Tourism).

When will the plan be ready?

Griffin nrm will give their first draft of the complete management plan to National Parks at the end of March 2002. At this stage it will be available for interested people to look at and comment on. Let us know if you want to comment on the draft plan. Griffin will review all the comments and the management plan in April and May and the plan should be formally adopted in June 2002.

Do you have an interest in or something to say about Glenrock SRA?

Griffin has been working on contacting people who have a special interest in, or important knowledge about Glenrock. We are very interested in hearing why Glenrock is important to you and how you think it should be used and enjoyed in the future. Please contact Griffin or Tracy Ireland by phone, post or email, if you have something to say (See the contact details provided above).

Appendix 2					
SITE_NO	SITE	SIGNIFICANCE	EASTING	NORTHING	CORRECTED
Sites From Glenrock SRA Historic Resources Study, 1989 (GA Study)					
1	North rail tunnel, southern portal	4	383195	6353050	
2	Timber posts, railway formation	3	383130	6353035	
3	Rail formation	2	383160	6353120	
4	"old Shaft"	3	383085	6350800	
5	Site of tunnel	2	383100	6353145	
6	Site of two tunnels (Newcastle Coal and Copper)	2	383100	6353145	
7	Old Tunnel, Happy Valley No 3 Colliery	2	383075	6353030	
8	Road formation	2	383075	6353035	
9	Northern portal of Southern Tunnel	4	382960	6352930	
10	Collapsed tunnel to Dudley seam	2	383135	6353040	
11	Brick culvert	3	383180	6353045	
13	Shaft and tunnel - Newcastle Coal and Copper	2	382980	6352985	
14	Rail formation, track and bogey wheel	3	383000	6352935	
15	Iron culvert	3	382820	6352820	
16	Southern portal, Southern Tunnel	4	382850	6352840	
17	Tunnel, Newcastle Coal and Copper	2	382865	6353015	
18	Shaft, Newcastle Coal and Copper	2	382815	6352980	
19	Wheatherboard cottage	2	381185	6353360	
20	Wheatherboard cottage	3	381230	6353370	
21	Fruit packing shed	3	381290	6353380	
22	Bailey farmhouse	4	381330	6353385	
23	Concrete water tank	2	381180	6353365	
24	Site of shop and change sheds	2	381750	6351830	
25	WW2 defence emplacement	3	381690	6351570	
26	Possible gun emplacement site	2	381640	6351630	
27	Site of Banana Plantation	2	381550	6351710	
28	Road formation	2	381509	6351930	3/02
30	Site of Burwood Colliery coal screen	2	381299	6352085	3/02
29	Tunnel, Old Burwood Colliery	4	381184	6352065	3/02
29	Tunnel, Old Burwood Colliery	4	381194	6352050	3/02
31	Burwood Colliery watertank	3	381189	6352120	3/02
32	Railway bridge structure	3	381194	6352145	3/02
33	Site of coal token hut	2	381244	6352140	3/02
34	Railway retaining wall	5	381149	6352145	3/02
35	Burwood Colliery shaft cap	5	381130	6352150	
36	Burwood Colliery winding engine foot	5	381140	6352140	
37	Telegraph pole	2	381140	6352120	
38	Boiler House - Burwood Colliery	5	381150	6352155	
40	Drift No 1 Pit - Burwood Colliery	5	381207	6353370	
41	Skips on rail formation	2	381075	6352240	
42	Ash pit	3	381374	6352070	3/02
43	Mine Manager's Residence	4	381384	6352050	3/02
44	Bricklined Well	3	381359	6352045	3/02
45	Shaft, Newcastle Coal and Copper	2	382595	6353240	
47	Furnace Shaft plug, Burwood Colliery	4	381120	6352000	
48	Burwood copper smelter	5	382550	6352825	
52	Tunnel	3	382615	6352970	
53	Tunnel and mullock heap, Newcastle Coal and Copper	3	382555	6352980	
54	Mullock heap	3	382500	6353080	
55	Tunnel	3	382550	6353180	
56	Tunnel	3	382600	6353295	

57	Tunnel and railway formation	3	382550	6353360	
58	Wheatherboard cottage	3	381140	6353335	
59	Cast iron water tank	4	381150	6353315	
60	Rail foundation	3	381025	6353230	
61	Tunnel entrance, Newcastle Coal and Copper	3	381020	6353255	
62	Site of Bailey's Orchard	3	381175	6353255	
63	Flaggy Ck Road	2	380250	6352070	
64	Winch foundations	4	380875	6352330	
65	Early road	2	380885	6352355	
66	Ziggy walking track	3	380905	6352330	
67	Tunnel entrance, Newcastle Coal and	3	380905	6352305	
68	Shaft	3	380885	6352315	
69	Tunnel	4	381005	6352330	
70	Brick lines shaft	5	381010	6352335	
71	Tunnel mouth, EBBW Vale Colliery	3	301025	6352350	
72	Shaft	3	381040	6352350	
73	Retaining wall	4	381000	6352315	
74	Tunnel mouth, EBBW Vale Colliery	3	381075	6352345	
75	Rail formation	3	381085	6352335	
76	Rail formation	4	381115	6352305	
77	Tunnel mouth	3	381180	6352295	
78	Tunnel entrance	3	381195	6352275	
79	Shaft	3	381205	6352270	
80	Shaft	3	381210	6352265	
81	Tree with electrical insulator	2	381205	6352260	
82	Tunnel mouth	3	381260	6352240	
83	Tunnel mouth	3	381295	6352235	
84	Tunnel mouth	3	381310	6352250	
85	Tunnel, Glenrock Colliery	3	381390	6352230	
86	Tunnel, Glenrock Colliery	3	381410	6352210	
87	Tunnel, Glenrock Colliery	3	381420	6352205	
88	Shaft	3	381450	6352210	
89	Tunnel mouth, Glenrock	3	381475	6352195	
90	Shaft	3	381495	6352180	
91	Collapsed shaft	3	381575	6352170	
92	Railway tracks	3	381730	6352115	
93	Rail bridge site	5	381677	6351980	3/02
94	Iron pipe	2	381955	6352045	
95	Bogey wheels	3	381940	6352065	
96	Coal seam in cliff	5	382020	6352045	
98	Scout chapel	4	381235	6352030	
100	Railway cutting	3	382250	6353460	
101	Road formation	2	382190	6353420	
102	Collapsed tunnel to Dudley seam	3	382185	6353470	
103	Tunnel, Hillside No 2	3	382040	6353460	
104	Road formation	2	382060	6353480	
105	Shaft	3	381930	6353180	
106	Tunnel, Newcastle Coal and Copper	3	381940	6353185	
108	Three shafts	3	381740	6353185	
109	Screen House	3	382254	6353002	3/02
110	Fitters shop	2	382264	6352995	3/02
111	Pumphouse	3	382282	6353001	3/02
113	Tunnel, Glen Valley Colliery	3	381685	6353005	
114	Shaft, Glen Valley Colliery	3	381685	6352115	3/02
115	Railway formation	3	381800	6352930	
116	Clearing with Flame trees	2	381825	6352920	
117	Tunnel, Glenrock Colliery	3	381890	6352795	
118	Tunnel, Glenrock Colliery	3	381890	6352815	
119	Railway remains (skips)	5	382295	6352395	

120	Gun club	2	381575	6352475
121	Quarry	2	381530	6352480
123	Capped shaft, Burwood Colliery	4	380650	6350045
124	Powder Cave	3	381050	6352185
125	Bailey Orchard	3	381303	6353315
126	Pump house	3	381285	6353280
127	Tunnel, Newcastle Coal and Copper	3	381915	6353445
128	Shaft, Newcastle Coal and Copper	3	381930	6353440
129	Tunnel, Newcastle Coal and Copper	3	381960	6353510
130	Tunnel, Glebe Valley No 2	3	382330	6353460
131	Tunnel, Hillside No 2	3	382255	6353460
132	Tunnels, Hillside	3	382430	6353485
134	Tunnel, Hillside	3	382340	6353660
135	Tunnels, Hillside	3	382370	6353610
136	Tunnel, Newcastle Coal and Copper	3	383075	6353115
137	Tunnel, Glenrock Colliery	3	382120	6352320
139	Tunnel, Old Burwood	3	380725	6352210
140	Breakthrough tunnel, Dudley Colliery	3	381200	6349245
141	Shaft, Glenrock Colliery	3	381770	6352110
142	Tunnel, Glenrock Colliery	3	381760	6352005
143	Shaft, Glenrock Colliery	3	381815	6352130
144	Shaft, Newcastle Coal and Copper	3	381620	6353255
145	Redhead Coal Co Railway	3	380055	6352880
Sites from above study not mapped due to bad co-ordinates				
39	Capped shaft, Furnace shaft, Burwood Colliery	4		
49	Shaft, Newcastle Coal and Copper	2		
50	Tunnel, Newcastle Coal and Copper	3		
51	Shaft, Newcastle Coal and Copper	3		
97	Coastal Railway	5		
107	Tunnel, Newcastle Coal and Copper	3		
133	Tunnel, Hillside No 2	3		
138	Furnace Shaft, Burwood Colliery	3		
Additional Sites from Griffin Survey, Feb-March 2002				
GR1	19th C artefact scatter		381558	6351731
GR2	Petrified trees		381063	6346713
GR3	Railway bogey		382232	6352279
GR4	Bridge supports		382343	6352465
GR5	Rail wagon axle		381153	6352150
Smelter Site				
GR6	Brick scatter		382544	6352700
GR7	Brick and slag scatter		382533	6352680
GR8	Slag dump		382537	6352723
GR9	Possible railway		382539	6353767
GR10	House site		382534	6352749
GR11	House foundation		382536	6352779
GR12	Aboriginal quarry site		382013	6352044
GR13	Hatchet head grinding grooves		380809	6352307

Appendix 3

Vegetation Control Procedure

This procedure is for vegetation control in and around heritage sites and cultural remains. It needs to apply to both weeds and native species, since both can damage physical remains or disrupt the stratigraphy of archaeological deposits in the soil.

Generally, weed growth will be more aggressive than the slower growing native species, and weed removal is a priority conservation policy for the management of the natural heritage. However it needs to be recognised that the roots of native species can also be damaging and, in more moist habitats, native lianes (vines), ferns and creepers can find purchase in the fissures of standing structures. The developmental requirements for access and interpretation of sites might also call for the removal of some native species.

Another important distinction from weed control procedures is in the methods. The objective of weed control in native bushland is the removal of all exotic plant material – a “roots and all” approach. Even approaches such as the Bradley Method (used to great advantage in many urban bushland situations), though seeking to minimise damage to adjoining vegetation, still has as its objective the complete removal of the weed species to provide a seedbed for the re-establishment of native species. This is not the case for vegetation control in heritage sites. The undesirable invasive or disfiguring effects of the vegetation should be removed but without damaging the fabric to which it adheres or the soil profile through which it grows.

To ensure that these considerations are incorporated in any vegetation removal program, the procedures consist of three parts:

- A clear statement of objectives
- A vegetation removal plan

- A protocol for activities

The **objectives** of a vegetation removal program should clearly state the desired outcomes. The outcomes should be based upon the particular conservation policy of the site and the environmental conditions of the site. The objective should be a conservation target (e.g. the protection of a midden from disruption by weed roots) rather than the completion of an activity (e.g. the removal of bitou bush).

The **plan** should describe the methods to be used. These may differ from species to species and from place to place on a site. In general, control methods will be based upon the removal of parts of the vegetation above ground, and free of structures, followed by the careful poisoning of the below ground parts (“cut and paste”). The plan should also include an appreciation of the nature of the site so that, to workers unskilled in heritage matters, the likelihood of unseen remains and archaeological deposits within a curtilage is made clear.

The **activities** should include; briefing of participants on the objective and methods, any phasing of operations which might be required, and arrangements for on-site supervision and monitoring.

The documentation of these procedures for each site need not be lengthy. One page describing the objectives, plan, and major activities will be sufficient to ensure that vegetation control is appropriate.

Appendix 4 Historic Sites Inventory

Site Complex 1 Burwood Copper Smelter

ITEM DETAILS					
Name of Item	Burwood Copper Smelter Archaeological Site				
Other Name/s Former Name/s	Newcastle Coal & Copper Co. smelter				
Item type (if known)	Archaeological site (Surface scatters)				
Item group (if known)					
Item category (if known)					
Area, Group, or Collection Name	Glenrock CMCTP Site Complex1				
Street number					
Street name					
Suburb/town	Glenrock SRA		Postcode		
Local Government Area	Newcastle City and Lake Macquarie				
Property description	State Recreation Area				
Location - Lat/long If not at a street address	Latitude		Longitude		
Location - AMG If not at a street address	Zone		Easting		Northing
Owner	NPWS				
Current use	Abandoned				
Former Use	Copper smelter, 4 houses for workers, tramway.				
Statement of significance	Rare intact archaeological remains of one of the earliest copper smelters built in Australia. Well documented and able to be interpreted. Possesses significant research potential, historical and social significance.				
Level of Significance	State <input checked="" type="checkbox"/>			Local <input type="checkbox"/>	
DESCRIPTION					
Designer	John Llewellyn Morgan for Dr James Mitchell				
Builder/ maker	Not known				
Physical Description	<p>The total site is made up of 3 components:</p> <p>To the east are 3 discrete scatters of bricks and copper slag stretching along the edge of the sand dunes. Just west of these is small area of copper slag, without brick fragments. Substantial foundations, not now visible, were partly excavated in 1979 and the archaeologist concluded that there was more to be found (Bairstow 1987, 16-17)</p>				

	<p>In the centre are remains of bluestone foundations for 4 houses with a few fragments of brick and small scatters of 19th century domestic crockery.</p> <p>To the north (approximately) of the house foundations is a levelled area, part of which is now an access track. It may represent the original tramway road.</p> <p>A fourth component, the smelter-manager's house, once existed to the southwest of the smelter site, but this was totally removed by archaeological excavation in 1987, when the Sewerage Works were making a new access road (Bairstow 1987)</p>					
Physical condition and/or Archaeological potential	<p>Site has been disturbed through works for the Sewerage Treatment Works and previous archaeological excavation. The site is also subject to coastal erosion.</p> <p>Nevertheless it retains very high potential for archaeological study.</p>					
Construction years	Start year	1851	Finish year	1852	Circa	<input type="checkbox"/>
Modifications and dates	<p>Said to have been extensively renovated in 1866. Nature of the works not known. May have been modified in 1871 and 1899, when the smelter was briefly leased out.</p>					
Further comments	<p>Integral part of New South Wales and Newcastle's industrial development. The existence of the copper smelter enhanced the reputation of Newcastle as a major industrial town. It also prevented any residential development in this area.</p>					

HISTORY

Historical notes	<p>The site was created by Dr James Mitchell, a medical officer turned entrepreneur, who had already invested heavily in Stockton, north of Newcastle. In 1847 he claimed that he wished to build a smelter for ores coming from South Australia and New Zealand.</p> <p>Construction started around 1851. J. Ll. Morgan newly-arrived from Britain supervised the work, which was completed by 1852. They are described in his report to the company in 1853: 'A two-storied brick building, 130 feet by 32 feet, with a shingled roof, housed two offices, an assay furnace, a large storeroom and two dwellings and beneath it was a fresh water tank with the necessary pumping equipment. Nearby stood the large shed, 50 feet by 28 feet, which sheltered one calcining furnace, two melting furnaces, a refining furnace and a roasting furnace which was never completed. There was also room for two additional furnaces for which the castings were ready. Blacksmiths' and carpenters' shops were also provided as well as a manager's house, a labourer's hut and four three-roomed workmen's cottages of brick and shingle construction. Stables for six horses and a harness room completed the establishment, the whole of which was surrounded by a 10-foot high paling fence. A tunnel into a nearby coal seam provided fuel and a system of roads and tramways was planned to link the site with the port through which would pass both ores and refined coppers' (J.W. Turner, <i>Manufacturing in Newcastle 1801-1900</i>, 1980, 37).</p> <p>A new company was formed by Mitchell in 1853, the Newcastle Coal & Copper Co. to work both the Burwood estate coalmines and the smelter. Around this time he also built coke ovens to utilize small coal, and presumably to fire the smelter. They were on the northern approaches to the tram/rail tunnel and are said to have been behind the present Merewether baths. The Coal & Copper Co. took over Mitchell's personal right to run a tram/railway to the wharves. The works were written up in the <i>Illustrated London News</i> of 11 February 1854, by which time they had closed.</p> <p>The smelter reopened briefly in 1866 and was leased out in 1871, to Ebenezer Vickery, and again in 1899, to Augustus Gross, but it is not clear what work, if any was carried out at those times (D. Bairstow, <i>Burwood Copper Smelter Mine Manager's House</i>, 1987 Historical Archaeology Report for NSW Department of Environment and Planning, 12-13.</p> <p>The workers' houses are shown in the <i>Illustrated London News</i> of 11 February 1854 and were described in the company report of 1853, which also gives a list of workers by occupation (see Section 3.17 of this report)</p>
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THEMES	
National historical theme (if known)	3. Developing local, regional and national economies: 3.4.3. mining
State historical theme (if known)	Mining Technology

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Important in the development of industry in NSW
Historical association significance SHR Criteria (b)	Strong association with Dr James Mitchell, a founder of industry in Newcastle. Also associated with the development of the copper industry of South Australia, major supplier of ores for the smelter.
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	Research for the Glenrock CMCTP has shown that this site is held in high esteem by the local community for its archaeological research potential and as part of the Glenrock cultural landscape.
Technical/Research significance SHR criteria (e)	Important archaeological site with the possibility of explaining at least the underground components of an 1850s smelter
Rarity SHR criteria (f)	Smelter is rare: few copper smelters were ever built in NSW and none survives from this period. The remains of the associated tramway (if present underground) would also be rare. The workers' houses, though reduced to foundations, belong to a category of industrial buildings which were once common, but of which few now survive.
Representativeness SHR criteria (g)	
Integrity	The Manager's House was excavated by D. Bairstow in 1987. The artefacts are held in the Newcastle Regional Museum., following disturbance by Hunter Water. As far as is known the subsurface remains of the smelter have not been disturbed.

HERITAGE LISTINGS

Heritage listing/s	
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INFORMATION SOURCES

Include conservation and/or management plans and other heritage studies.

Type	Author/Client	Title	Year	Repository
Historical Archaeology Report	D. Birstow/ NSW Department of Environment and Planning,	Burwood Copper Smelter Mine Manager's House	1987	Heritage Office Library (housed in NSW DPWS)
Conservation Plan	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS

Recommendations	<p>Ensure ongoing dune stability. Remove bitou bush and other weeds according to the <i>Vegetation Control Procedure</i>. Protect from unwarranted excavation through discussion with relevant management authorities and erection of signage. Ensure any excavation is in accordance with the <i>Archaeological Management Guidelines</i>. Negotiate a management agreement with the <i>Glenrock Area Managers' Committee</i> regarding the heritage status of this site and the implementation of this Conservation Policy. Interpret according to the <i>Interpretation Plan</i> (Section 9.0). Investigate future excavation and research possibilities with Community Advisory Committee, funding agencies and within the context of the proposed <i>NPWS Hunter Region Cultural Heritage Management Strategy</i>.</p>
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SOURCE OF THIS INFORMATION

To be completed if this form is part of a heritage study or report

Name of Study or report	Glenrock Lagoon Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 48 GR 6,7,8,9,10,11		
Author of Study or report	Griffin nrm		
Inspected by	Tracy Ireland and Aedeem Cremin		
NSW Heritage Manual guidelines used?		Yes X, <input type="checkbox"/>	No <input type="checkbox"/>
This form completed by	Aedeem Cremin and Tracy Ireland	Date	5/4/2002

IMAGES - 1 per page

Image caption	Bluestone house foundations and scatter of domestic crockery and bricks				
Image year	2002	Image by	A. Cremin	Image copyright holder	A. Cremin



Site Complex 2 Burwood Colliery Remains

ITEM DETAILS

Name of Item	Burwood Colliery Remains						
Other Name/s Former Name/s	Burwood Colliery Nos 1 and 2						
Item type (if known)	Built						
Item group (if known)							
Item category (if known)	Engine house; storage and loading platforms; emplacement of railway.						
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 2						
Street number							
Street name	Glenrock SRA						
Suburb/town	Newcastle					Postcode	
Local Government Area	Newcastle						
Property description	State Recreation Area						
Location - Lat/long If not at a street address	Latitude				Longitude		
Location - AMG If not at a street address	Zone		Easting		Northing		
Owner	NPWS						
Current use	Abandoned						
Former Use	Engine house for winding device used to haul miners and coal in and out of underground mine. Foundations of cool storage bins. Platform and railway tracks for carrying coal to Newcastle docks and factories.						
Statement of significance	Includes one of the last remaining 19 th -century winding engine house in the Newcastle region. Representative of a once-common type, now rare. In good structural condition and able to be interpreted.						
Level of Significance	State <input checked="" type="checkbox"/>					Local <input type="checkbox"/>	

DESCRIPTION

Designer	Burwood Colliery
Builder/ maker	Not known
Physical Description	Engine house: Rectangular stone building, approx 6x6m. Rubble, with remains of plaster on external surface of N wall. Walls currently c.3m high. No roof. Contains a pair of concrete pits, formerly used for the housing of winding devices and cables. Brick and concrete pillars at rear (S). Two concrete bases with metal straps in front (N) of building. The whole assemblage sits on a masonry platform with ruined stone walls extending E-W on either side.

	The mine shaft is north of the engine house and is now capped with concrete.					
	North of the engine house and mine shaft is a substantial stone platform running north-eastwards towards Glenrock Lagoon. This was once the base for the coal storage bins, loading devices and other items associated with the transport by rail of coal to Newcastle docks and factories.					
Physical condition and/or Archaeological potential	The remains of the colliery buildings appear to be in a stable condition although a full inspection will not be possible until the lantana and other weeds are cleared away. The construction is of brick, large concrete and stone blocks and the iron and steel components are generally massive and in fair condition.					
Construction years	Start year	1885	Finish year	1885	Circa	<input type="checkbox"/>
Modifications and dates	Probably few as site was abandoned in 1891.					
Further comments	Integral part of 1880s mining complex					

HISTORY

Historical notes	This mine was created in the 1880s to exploit the deeper coal seam (Borehole Seam) within Glenrock. It followed on an 1860s mine which had worked only the upper seam (Victoria Tunnel Seam) and re-used the coastal railway created for the 1860s mine. It operated between 1885 and 1891, at which time the operation was enlarged and the main pit dug southwest at Whitebridge. The shaft continued to be used for ventilation. References in Glenrock Lagoon CMCTP Section 3 (2002)
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THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.4.3. mining
State historical theme (if known)	Mining

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Important in the development of the coal industry in NSW
Historical association significance SHR Criteria (b)	Strong association with E.C. Merewether, a leader of industry in Newcastle. Associated in the 1890s with the Scottish-Australian Mining Company and after 1932 with BHP.
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	Burwood Colliery employed many hundreds of miners, most of whom lived within walking distance. The site therefore has value to them and to their descendants

Technical/Research significance SHR criteria (e)	This is one of the few remaining items of this type -- others having been modified or destroyed. It has potential for technical analysis and interpretation to the public to show how a 19 th -century colliery operated.
Rarity SHR criteria (f)	Now uncommon (see above)
Representativeness SHR criteria (g)	This is a typical example of an item once common around Newcastle
Integrity	As far as can be seen, the structure has high integrity.
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	<p>Establish a path to, and through, the ruins, from the Yuelarbah Track, maintaining the sense of "discovery" in the bush</p> <p>Remove lantana and other weeds according to the <i>Vegetation Control Procedure</i>.</p> <p>Interpret according to the <i>Interpretation Plan</i> (Section 9.0).</p> <p>Ensure any excavation is in accordance with the <i>Archaeological Management Guidelines</i>.</p> <p>Investigate future excavation and research possibilities with Community Advisory Committees, funding agencies and within the context of the proposed <i>NPWS Hunter Region Cultural Heritage Management Strategy</i>.</p> <p>Following vegetation removal, assess remains for stability and stabilise as required.</p>

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Lagoon Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 29-44, 47,83,139,68		
Author of Study or report	Griffin nrm		
Inspected by	Tracy Ireland, Aedeem Cremin and Roger Parris		
NSW Heritage Manual guidelines used?	Yes X, <input type="checkbox"/>		No <input type="checkbox"/>
This form completed by	Aedeem Cremin, Tracy Ireland and Roger Parris (condition and recommendations)	Date	5/4/2002

IMAGES - 1 per page

Image caption	Foundations of winding engine.				
Image year	2001	Image by	T. Ireland	Image copyright holder	T. Ireland



Site Complex 3 Coastal Railway System

ITEM DETAILS

Name of Item	Coastal Railway System						
Other Name/s Former Name/s	Newcastle Coal & Copper Railway Glenrock Railway Burwood Colliery Railway						
Item type (if known)	Built						
Item group (if known)							
Item category (if known)	Railway						
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 3						
Street number							
Street name	Glenrock SRA						
Suburb/town	Newcastle					Postcode	
Local Government Area	Newcastle						
Property description	State Recreation Area						
Location - Lat/long If not at a street address	Latitude				Longitude		
Location - AMG If not at a street address	Zone		Easting			Northing	
Owner	NPWS						
Current use	Abandoned						
Former Use	Carried coal to Newcastle. Northern section also carried copper ore from Newcastle docks to smelter.						
Statement of significance	Integral part of industry from 1840s to 1920s. Early railway feature, used by Mitchell to open up the Glenrock area to industry and challenge the AA Company coal monopoly. Dramatic coastal location. In poor condition						
Level of Significance	State <input checked="" type="checkbox"/>					Local <input type="checkbox"/>	

DESCRIPTION

Designer	Dr James Mitchell (1850s and 1860s), E.C. Merewether (1879) and Burwood Colliery (1880s)
Builder/ maker	1850s section, Alexander and William Donaldson. Later sections not known
Physical Description	Discontinuous fragments of iron railway track, extending northwards from Glenrock Lagoon to Merewether Beach. Remains of wooden supports for two rail bridges, one across the mouth of Glenrock lagoon and the second at the mouth of Murdering Gully Remains of coal wagons and wheels can be seen along Smelters Beach.

Physical condition and/or Archaeological potential	<p>The combination of decades of neglect and salt spray has left very little sound metal on the wagons on the beach. For any protective coating to be effective the rust would have to first be removed and this would leave the restorer little to work with.</p> <p>The remaining railway lines are in fair condition in some instances, for example on the lower section of the Yuellarbah track before it reaches the beach, but any conservation work would involve intrusive protective measures.</p> <p>The bridge abutments where the track crossed the lagoon are still identifiable.</p>					
Construction years	Start year	N. section 1846, parts replaced 1910s? S. section 1866, extended by 1884	Finish year	N. section 1846 S. section 1866, 1884	Circa	<input type="checkbox"/>
Modifications and date	<p>Southern section ceased to operate in 1891. Tracks south of the lagoon were removed to the north of the lagoon in 1905.</p> <p>Much of the Northern section, including the tunnel from Merewether Beach was in use until 1925, but some of it was new, as sections of the 1840s railway had been washed away.</p>					
Further comments	Integral part of 1840s-1920s industrial complex					

HISTORY

Historical notes	<p>The railway was originally built from what is now Merewether Beach to Smelters Beach in order to provide transport for copper ore to the smelter, or so it was claimed in 1847 by Dr James Mitchell. He said that in creating an access tunnel he had come across deposits of coal which he was prevented from using by the 'coal monopoly' granted to the AA Company in 1828. When this monopoly was relinquished he leased out adjacent land for coal mines, retaining the railway line to service the smelter, which was built in 1852.</p> <p>In 1866 Mitchell extended the railway along the coast to Glenrock Lagoon for his Burwod Coal and Copper Co. mine (Sydney Morning Herald 20 August 1866). In 1878 his son-in-law E.C. Merewether appears to have extended this mine into the lower seam (Borehole) and re-named it Redhead. A new locomotive was built but it is not clear what modifications, if any, were made to the railway itself.</p> <p>In 1884 a new mine, the Burwood colliery opened, perhaps on the same site as the earlier mines. Large capital works were constructed and the present railway platform, embankments etc beside the Colliery Remains (4.4.2 of this report) must date to this time.</p> <p>In 1891 the Glenrock Lagoon section of the coastal railway was abandoned when Burwood No. 3 Pit opened at Whitebridge. Some of its rails were removed around 1905 for the new Glenrock Colliery rail line (see below)</p> <p>Part of the Smelters Beach section and the tunnels to Merewether Beach continued in use until the 1920s, as a number of coal mines still operated in that area, particularly the Glenrock Colliery (opened 1905). This colliery cannibalized portion of the 1866-1880s railway, south of the lagoon, to create 'an extension running along the northern shore of the lagoon to terminate in a loop siding serving the new [mine] tunnel'.</p> <p>The railway tunnels between Merewether and Smelters beaches were sealed in 1945.</p> <p>References in Glenrock CMCTP Report Sections 3.14-3.16.</p>
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THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.4.3. mining
State historical theme (if known)	Mining

APPLICATION OF CRITERIA	
Historical association significance SHR Criteria (b)	Strong association with Dr James Mitchell, a pioneer of industry in Newcastle, and with his son-in-law E.C.Merewether, a leading industrialist in Newcastle. Associated in the 1890s with the Scottish-Australian Mining Company and from 1905-1925 with the smaller Glenrock Colliery
Aesthetic significance SHR criteria (c)	A noted landmark and a highly unusual element in a beach context.
Social significance SHR criteria (d)	The collieries employed many hundreds of miners. The railway system was known to most of them and therefore has value to their descendants, as well as to members of the wider community using the beaches and lagoon area for recreation
Technical/Research significance SHR criteria (e)	
Rarity SHR criteria (f)	
Representativeness SHR criteria (g)	Typical 19 th century industrial railway
Integrity	The remains are in poor condition but are as constructed.
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	Undertake comprehensive research and recording of the coastal railway system as a matter of priority. Manage vegetation along the railway formation on the north and south sides of Glenrock Lagoon according to the <i>Vegetation Management Procedure</i> . The future stability of the formation is the main objective of this procedure. Undertake a risk assessment of the coastal railway system features.

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SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Lagoon Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 1,2,9,10,11,14,15,16,93,95,119 GR 3,4 GA 96		
Author of Study or report	Griffin nrm		
Inspected by	Tracy Ireland, Aedeon Cremin, Roger Parris		
NSW Heritage Manual guidelines used?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
This form completed by	Aedeon Cremin, Tracy Ireland and Roger Parris (condition and recommendations)	Date 5/4/2002	

IMAGE					
Image caption	Wheels and rail tracks along Smelters Beach				
Image year	2002	Image by	T. Ireland	Image copyright holder	T. Ireland



Site Complex 4 Other Colliery Remains North of Flaggy Creek

ITEM DETAILS					
Name of Item	Colliery Remains around Flaggy Creek				
Other Name/s Former Name/s	Remains of the Burwood, Glenrock and Ebbw Vale collieries				
Item type (if known)	Built				
Item group (if known)					
Item category (if known)	Mining remains				
Area, Group, or Collection Name	Glenrock Site Complex 4				
Street number					
Street name	Glenrock SRA				
Suburb/town	Newcastle			Postcode	
Local Government Area	Newcastle				
Property description	Glenrock State Recreation Area				
Location - Lat/long If not at a street address	Latitude			Longitude	
Location - AMG If not at a street address	Zone		Easting		Northing
Owner	NPWS				
Current use	Abandoned				
Former Use	Set of engine bases, mine features, rail features, Underground mineshafts, walking track.				
Statement of significance	Remains of 19 th and 20 th century mines. Have potential for technical analysis and interpretation through signage (Regional significance)				
Level of Significance	State			Local X <input type="checkbox"/>	

DESCRIPTION	
Designer	Not known
Builder/ maker	Not known
Physical Description	<p>Leichhardt Lookout site GA 64 - 4 rectangular concrete blocks placed within a low brick surround with traces of stucco. Iron bolts project from upper surfaces of concrete blocks. Likely to be the mountings for an engine. 3 of the blocks now support a wooden picnic table.</p> <p>Godden 1989 identifies a mine shaft and airshaft immediately beneath these remains (GL/067, GL/068). These are now not visible. The metal headframe wheel now at the Glenrock Scout</p>

	<p>Camp is said to have come from this site.</p> <p>Further downstream alongside Flaggy Creek are some remains of the Ebbw Vale Colliery, identified in Godden 1989 as GL/070, a reconstructed brick shaft, c. 1.2m in diameter and two tunnel entrances (GL/071 and GL/072). The tunnel entrances are not now visible. Also a massive rail stone retaining wall (GA 73) Miners stone cut track known as the Ziggy (GA 66)</p>					
Physical condition and/or Archaeological potential	<p>Engine mountings are in good condition, though inappropriately used to support a picnic table. Potential for technological study once the mine site below is cleared of growth.</p> <p>Brick shaft is also in good condition. Archaeological Potential seems slight.</p>					
Construction years	Start year		Finish year		Circa	<input type="checkbox"/>
Modifications and dates	Not known					
Further comments						

HISTORY

Historical notes	<p>The site with the engine bases is currently named Leichhardt's Lookout. It is also alleged that the engine bases was [re-]used for a flying fox for Bailey's Orchards (from 1915). This point has not been researched but is not mentioned by Godden 1989.</p> <p>The Ebbw Vale colliery is thought to be 20th century (Godden 1989, 87) but there is little information about it.</p>
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THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.4.3. mining
State historical theme (if known)	Mining

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Part of the pre-1930s coal industry in NSW
Historical association significance SHR Criteria (b)	
Aesthetic significance SHR criteria (c)	

Social significance SHR criteria (d)	
Technical/Research significance SHR criteria (e)	
Rarity SHR criteria (f)	
Representativeness SHR criteria (g)	Example of items once common around Newcastle, but now gone along with most of the pre-1930s mines
Integrity	The engine bases seem to be as constructed. The brick shaft was reconstructed in the 1980s. The mine shaft entrances are now invisible
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	Interpret according to the <i>Interpretation Plan</i> (Section 9.0). Manage vegetation around remains, assess remains for stability and stabilise as required. Remove timber platform from winding engine foundations (GA 64), assess remains for stability and stabilise as required. Replace with metal grill if required. Monitor site GA 70 for weathering of bricks and replace mortar if required.

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Lagoon Cultural Landscape CMP	Year of study or report 2003	
Item number in study or report	GA 64,65,66,67,70,72,73,74,76,77,78,84,85,86,88,90,91,92,94,95		
Author of Study or report	Griffin nrm		
Inspected by	Tracy Ireland, Aedeem Cremin, Roger Parris		
NSW Heritage Manual guidelines used?			Yes X, <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeem Cremin, Tracy Ireland and Roger Parris (condition of engine bases)	Date	5/4/2002

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Fly wheel collected from site GA64 and displayed at the Glenrock Scout Camp.				
Image year	2001	Image by	R. Parris	Image copyright holder	R. Parris



Site Complex 5 Murdering Gully Rail and Colliery Remains

ITEM DETAILS			
Name of Item	Railway and Colliery around Murdering Gully		
Other Name/s Former Name/s			
Item type (if known)	Built		
Item group (if known)			
Item category (if known)	Mining remains		
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 5		
Street number			
Street name	Glenrock SRA		
Suburb/town	Newcastle	Postcode	
Local Government Area	Newcastle		
Property description	State Recreation Area		
Location - Lat/long If not at a street address	Latitude		Longitude
Location - AMG If not at a street address	Zone	Easting	Northing
Owner	NPWS		
Current use	Abandoned		
Former Use			
Statement of significance	Remains of narrow-gauge railway, shafts associated by Godden 1989 with the Newcastle Coal and Copper Company mines; the Glenrock Colliery 1905-1945. May have potential for technical analysis and interpretation through signage . Regional significance.		
Level of Significance	State		Local X <input type="checkbox"/>

DESCRIPTION	
Designer	Not known
Builder/ maker	Not known
Physical Description	Described in Godden 1989 as: GL/060, remains of a narrow-gauge railway leading to 'mine portal on northern side of upper reaches of Murdering Gully' and GL/061, on 'northern bank of upper reaches of Murdering Gully' with 'considerable remnant features

	including mine cable, rails, skip fragments and a telegraph pole with ceramic insulator'. An array of shafts and rail and mine features.				
Physical condition and/or Archaeological potential	Not known. 1989 photographs show these remains to be much overgrown.				
Construction years	Start year		Finish year		Circa <input type="checkbox"/>
Modifications and dates	Not known				
Further comments					

HISTORY

Historical notes	If there are indeed remnants of the Newcastle Coal and Copper Company they would have been constructed between 1847 and the 1860s. However, mining continued in this area until the late 1920s (Godden 1989, map on fig. 31) .
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THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.4.3. mining
State historical theme (if known)	Mining

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Part of the pre-1930s coal industry in NSW
Historical association significance SHR Criteria (b)	
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	
Technical/Research significance SHR criteria (e)	May have potential for technical analysis.

Rarity SHR criteria (f)	
Representativeness SHR criteria (g)	Example of items once common around Newcastle, but now gone along with the pre-1930s mines.
Integrity	Not known
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	Undertake a risk assessment of open mine shafts in these areas. Monitor these sites and re-assess their heritage status and conservation requirements in 5 – 10 years.

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Cultural Landscape CMCTP	Year of study or report 2002	
Item number in study or report	GA 45,52,53,54,55,56,57,100,102,103,104,105,106,108,116,114,115,117,118,127,128,129,130,131,132,134,135		
Author of Study or report	Griffin nrm		
Inspected by	Not sighted		
NSW Heritage Manual guidelines used?			Yes X, <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeen Cremin	Date	5/4/2002

IMAGES - 1 per page				
Image caption				
Image year		Image by		Image copyright holder

Site Complex 6 Merewether Escarpment Rail and Colliery Remains

ITEM DETAILS			
Name of Item	Merewether Escarpment Colliery Remains		
Other Name/s Former Name/s			
Item type (if known)	Built		
Item group (if known)			
Item category (if known)	Mining remains		
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 6		
Street number			
Street name	GlenrockSRA		
Suburb/town	Newcastle	Postcode	
Local Government Area	Newcastle		
Property description	State Recreation Area		
Location - Lat/long If not at a street address	Latitude		Longitude
Location - AMG If not at a street address	Zone	Easting	Northing
Owner	NPWS		
Current use	Abandoned		
Former Use	.		
Statement of significance	Of regional significance as part of the Glenrock coal mining landscape. Contains industrial sites from 1840s to 1920s.		
Level of Significance	State	Local X <input type="checkbox"/>	

DESCRIPTION	
Designer	Not known
Builder/ maker	Not known
Physical Description	Fragments of rail tracks and overgrown mine entrances identified by Godden 1989 as GL/002-011 and GL/017-018. Godden associates them with the coastal railway tunnels and with the Newcastle Coal and Copper Company.
Physical condition	1989 photographs show these much overgrown. May have potential for technical analysis.

and/or Archaeological potential						
Construction years						
Modifications and dates						
Further comments						

HISTORY

Historical notes	<p>Remnants of coal mining mostly from the late 19th century, including shafts and rail tunnels and formations. Mining continued in this area until the late 1920s (Godden 1989, map on fig. 31) .</p>
------------------	--

THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.4.3. mining
State historical theme (if known)	Mining

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Part of the pre-1930s coal industry in NSW
Historical association significance SHR Criteria (b)	
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	
Technical/Research significance SHR criteria (e)	
Rarity SHR criteria (f)	

Representativeness SHR criteria (g)	Examples of items once common around Newcastle but now gone along with the pre-1930 collieries.
Integrity	Not known.
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	<ul style="list-style-type: none"> • Undertake a risk assessment of open mine shafts in these areas. • Monitor these sites and re-assess their heritage status and conservation requirements in 5 – 10 years..

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 3,4,5,6,7,8,13,17,18,136		
Author of Study or report	Griffin nrm		
Inspected by	Not sighted in 2001-2002		
NSW Heritage Manual guidelines used?			Yes X, <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeem Cremin	Date	5/4/2002

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption					
Image year		Image by		Image copyright holder	

Site Complex 7 Banana Plantation Site

ITEM DETAILS			
Name of Item	Banana Plantation site		
Other Name/s Former Name/s			
Item type (if known)	Landscape and Built		
Item group (if known)			
Item category (if known)			
Area, Group, or Collection Name	Glenrock CMCTP Site Comple 7		
Street number			
Street name	Glenrock SRA		
Suburb/town	Newcastle	Postcode	
Local Government Area	Newcastle		
Property description	State Recreation Area		
Location - Lat/long If not at a street address	Latitude		Longitude
Location - AMG If not at a street address	Zone	Easting	Northing
Owner	NPWS		
Current use	Abandoned		
Former Use	Banana growing		
Statement of significance	Part of the agricultural history of the Glenrock cultural landscape.		
Level of Significance	State		Local X <input type="checkbox"/>

DESCRIPTION	
Designer	Mr Cobb (banana plantation)
Builder/ maker	
Physical Description	There are two sets of remains in this group. The banana plantation on the northwestern slope of Little Red Head, now visible only as a re-vegetating patch of ground. Some Fences remain. Artefact scatter of 19 th century European artefacts, small and fragmentary eroding from the slope.
Physical condition and/or Archaeological potential	Archaeological deposit is eroding and banana plantation has been invaded by bitou bush Some Research potential

Construction years	Start year		Finish year		Circa	<input type="checkbox"/>
Modifications and dates	Not known					
Further comments						

HISTORY

Historical notes	Banana plantation said to date to the 1950s. The origin of the archaeological material is not known. It could be a rubbish deposit or rubbish in topsoil..
------------------	--

THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.12.2 Developing sources of fresh local produce
State historical theme (if known)	Agriculture

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	
Historical association significance SHR Criteria (b)	
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	Past remains of agriculture are valued by some community members
Technical/Research significance SHR criteria (e)	Deposit has some archaeological potential
Rarity SHR criteria (f)	
Representativeness SHR criteria (g)	

Integrity	
HERITAGE LISTINGS	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	Develop this site as an interpretation/visitor facility node. Provide pedestrian access from Scout Camp Road. Investigate the provision of disabled access to this site Maintain the open landscape of the site. Interpret according to the <i>Interpretation Plan</i> (Section 9.0). Ensure any excavation is in accordance with the <i>Archaeological Management Guidelines</i> . Establish a single path between this site and the beach, signpost this path and promote its use to the community.

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 27, GR1		
Author of Study or report	Griffin nrm		
Inspected by	Tracy Ireland		
NSW Heritage Manual guidelines used?	Yes X, <input type="checkbox"/>		No <input type="checkbox"/>
This form completed by	Aedeen Cremin, Tracy Ireland	Date	5/4/2002

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Site of plantation cleared in the forest. Fence post remains.				
Image year	2002	Image by	Tracy Ireland	Image copyright holder	Tracy Ireland



Site Complex 8 Orchard and Agricultural Remains

ITEM DETAILS			
Name of Item	Orchard and Agricultural Remains		
Other Name/s Former Name/s			
Item type (if known)	Landscape and Built		
Item group (if known)			
Item category (if known)			
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 8		
Street number			
Street name	Glenrock SRA		
Suburb/town	Newcastle	Postcode	
Local Government Area	Newcastle		
Property description			
Location - Lat/long If not at a street address	Latitude		Longitude
Location - AMG If not at a street address	Zone	Easting	Northing
Owner	NPWS		
Current use	Abandoned		
Former Use	Orcharding		
Statement of significance	Regionally significant local industries. The Baileys orchard site is the subject of a separate report.		
Level of Significance	State		Local X <input type="checkbox"/>

DESCRIPTION	
Designer	Mr Cobb (banana plantation) Charles and Arthur Bailey (orchard)
Builder/ maker	
Physical Description	<p>There are two sets of remains in this group.</p> <ol style="list-style-type: none"> 1. The banana plantation on the northwestern slope of Little Red Head, now visible only as a re-vegetating patch of ground. Fences were noted in 1989 (Godden, GL/028) but were not visible in 2002. 2. The Bailey Brothers' orchards and packing plant on the southwestern slope of the Merewether Escarpment, now represented by some cleared ground and by buildings on Scenic drive (Godden 1989 GL/019-23)

Physical condition and/or Archaeological potential	Bailey cottage and packing shed are in adequate condition. Research potential is slight					
Construction years	Start year	Bailey's 1915	Finish year		Circa	<input type="checkbox"/>
Modifications and dates	Not known					
Further comments						

HISTORY

Historical notes	<p>History of the banana plantation is not known. Bailey's Orchards were established in 1915.</p> <p>It is alleged that the engine base at 'Leichhardt's Lookout' was part of a flying fox for the orchard, but no evidence is presented and it is not mentioned in Godden 1989, which uses material from an interview with Mrs Olive Bailey.</p>
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THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.12.2 Developing sources of fresh local produce
State historical theme (if known)	Agriculture

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Bailey's orchards were part of the development of Merewether suburb. They are said to have been one of the first portions bought in 1912, when the Merewether (formerly Burwood) estate was subdivided.
Historical association significance SHR Criteria (b)	The Baileys were locally well-known, their father, Walter Bailey, having been the first house owner in the 1890s village of Dudley, south of Glenrock.
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	
Technical/Research significance SHR criteria (e)	

Rarity SHR criteria (f)	
Representativeness SHR criteria (g)	
Integrity	
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	<ul style="list-style-type: none"> The link between Bailey's Historic Site and the Glenrock cultural landscape should be strengthened and the site made more accessible. Strategies and Actions relating to Baileys are the subject of a separate Conservation Plan

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock CMCTP Site Complex 2	Year of study or report	2002
Item number in study or report	GA 19,20,21,22,58,59,125,126		
Author of Study or report	Griffin nrm		
Inspected by	Tracy Ireland		
NSW Heritage Manual guidelines used?			Yes X, <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeen Cremin and Tracy Ireland	Date	5/4/2002

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	General view of buildings alongside Scenic Drive, Merewether.				
Image year	2002	Image by	Tracy Ireland	Image copyright holder	Tracy Ireland



Site Complex 9 Scout Camp

ITEM DETAILS			
Name of Item	Scout Camp		
Other Name/s Former Name/s			
Item type (if known)	Built		
Item group (if known)			
Item category (if known)			
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 2		
Street number			
Street name	GlenrockSRA		
Suburb/town	Newcastle	Postcode	
Local Government Area	Newcastle		
Property description			
Location - Lat/long If not at a street address	Latitude		Longitude
Location - AMG If not at a street address	Zone	Easting	Northing
Owner	Scouting Association of NSW		
Current use	Scout training camp and other educational activities		
Former Use	Originally part of the Burwood Colliery housing for skilled personnel		
Statement of significance	Includes former under-manager's house and part of the railway track from the colliery to the coast. Not assessed in detail for this report. Outside SRA boundary		
Level of Significance	State <input type="checkbox"/>		Local <input type="checkbox"/>

DESCRIPTION	
Designer	Not known
Builder/ maker	Not known
Physical Description	
Physical condition and/or Archaeological potential	

Construction years	Start year	House 1884	Finish year	1884	Circa	<input type="checkbox"/>
Modifications and dates	Under-manager's house restored by Scouts in the 1930s. Two others had been removed earlier and the third was demolished then. The railway track had been taken up in 1905 and reused on the northern side of the lagoon.					
Further comments						

HISTORY

Historical notes	<p>The site was formerly part of the Burwood Colliery (4.4.2 of this report). An image taken around 1900 shows four houses beside the No.1 Pit, which had been closed since 1891 (Grothen, <i>The History in and about Glenrock Lagoon</i>, 1988, 50, 59). These had been occupied by the winding-engine driver, the engineer, the caretaker and the under-manager.</p> <p>In 1932 the site was acquired by the Scouting Association and was opened by Sir Philip Game, Chief Scout of NSW. It has been and still is an important place both in training scouts and in training scout-leaders. It was taken over by the Volunteer Defence Corps during World War II.</p> <p>The Scouts have gathered together some 'relics' of the mining days, including the metal wheel from a headframe on Flaggy Creek (this report 4.4.4.)</p>
-------------------------	---

THEMES

National historical theme (if known)	3. Developing local, regional and national economies: 3.4.3. mining. 6. Educating; 6.1 forming associations.. for self-education. 8. Developing Australia's cultural life; 8.5 forming associations.
State historical theme (if known)	Mining Social institutions

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Important in the development of Scouting in NSW
Historical association significance SHR Criteria (b)	Strong association with international Scouting movement
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	Enables young people from all over the world to visit and learn about Glenrock. Important site of memory for all Scouts who have trained there since the 1930s.
Technical/Research significance SHR criteria (e)	
Rarity SHR criteria (f)	

Representativeness SHR criteria (g)	
Integrity	The 1880s house has been much restored.
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	<ul style="list-style-type: none"> Establish the <i>Glenrock Area Managers' Committee</i> to discuss issues of joint concern. Negotiate management agreements with NSW Scouting Association concerning the management of archaeological resources and the Undermanager's Cottage, as well as issues of vegetation management.

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Lagoon Cultural Landscape CMCTP	Year of study or report 2002	
Item number in study or report	GA 28,98 GA 24 (Beach Canteen site)		
Author of Study or report	Griffin nrm		
Inspected by	Aedeem Cremin		
NSW Heritage Manual guidelines used?			Yes X, <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeem Cremin and Tracy Ireland		Date 5/4/2002

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Image caption					
Image year		Image by		Image copyright holder	

Site Complex 10 Defence Remains

ITEM DETAILS			
Name of Item	Defence Remains		
Other Name/s Former Name/s			
Item type (if known)	Built		
Item group (if known)			
Item category (if known)			
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 10		
Street number			
Street name	Glenrock SRA		
Suburb/town	Newcastle	Postcode	
Local Government Area	Newcastle		
Property description			
Location - Lat/long If not at a street address	Latitude		Longitude
Location - AMG If not at a street address	Zone	Easting	Northing
Owner	NPWS		
Current use	Abandoned		
Former Use			
Statement of significance	Remains of World War II coastal defences. Defence sites are held in high esteem by community members Sites have potential for interpretation through signage		
Level of Significance	State		Local X

DESCRIPTION	
Designer	Not known
Builder/ maker	Not known
Physical Description	<p>Not sighted in 2001-2002.</p> <p>Three items are listed in Godden 1989:</p> <p>GL/025 is a 50x20cm trench lined with coprrugated iron on Little Redhead Point. Thought to be part of a WWII machine gun nest.</p> <p>GL/026 is adjacent to GL/ 025 and consists of traces of a road cutting with fragments of concrete and brick.</p> <p>GL /124 is a cave on the 200m contour in a 'large sandstone tor overlooking the western end of Glenrock Lagoon'. In 1989 a 'new' sign read Powder Cave and the site 'was reputed to have been</p>

	used as an ammunition store in WWII'. These sites require further historical research.					
Physical condition and/or Archaeological potential	Not known					
Construction years	Start year	1940s	Finish year		Circa	<input type="checkbox"/>
Modifications and dates	Not known					
Further comments						

HISTORY

Historical notes	<p>Specific history not known.</p> <p>There were coastal defences, manned by members of the Volunteer Defence Corps, all along the coast of NSW from 1940 to 1946. Glenrock would have been supervised from Fort Scratchley in Newcastle.</p>
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THEMES

National historical theme (if known)	7. Governing; 7.7. defending Australia; 7.7.2.preparing to face invasion.
State historical theme (if known)	Defence

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Relevant to the WWII coastal defences of NSW
Historical association significance SHR Criteria (b)	
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	
Technical/Research significance	

SHR criteria (e)	
Rarity SHR criteria (f)	
Representativeness SHR criteria (g)	
Integrity	
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	<ul style="list-style-type: none"> Undertake a risk assessment of open mine shafts in these areas. Monitor these sites and re-assess their heritage status and conservation requirements in 5 – 10 years.

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Lagoon Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 25,26,124		
Author of Study or report	Griffin nrm		
Inspected by	Not sighted		
NSW Heritage Manual guidelines used?			Yes X <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeen Cremin and Tracy Ireland		Date 5/4/2002

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Image caption					
Image year		Image by		Image copyright holder	

Site Complex 11 Burwood Beach Wastewater Treatment Works

ITEM DETAILS					
Name of Item	Waste Water Treatment Works				
Other Name/s Former Name/s					
Item type (if known)	Built				
Item group (if known)					
Item category (if known)	Sewerage Plant				
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 11				
Street number					
Street name	Glenrock SRA				
Suburb/town	Newcastle			Postcode	
Local Government Area	Newcastle				
Property description					
Location - Lat/long If not at a street address	Latitude			Longitude	
Location - AMG If not at a street address	Zone		Easting		Northing
Owner	Hunter Water Board				
Current use	Waste water treatment				
Former Use					
Statement of significance	Regionally significant. Not assessed for this report, based on Godden and Associates 1989. Outside SRA boundary				
Level of Significance	State			Local X	

DESCRIPTION	
Designer	Hunter District Board of Water Supply and Sewerage
Builder/ maker	Not known
Physical Description	Not inspected
Physical condition and/or Archaeological potential	Still in use.

Construction years	Start year	1933	Finish year	1936	Circa	X <input type="checkbox"/>
Modifications and dates	Extensive modifications in the late 1980s when a new Ocean Outfall was built.					
Further comments						

HISTORY

Historical notes	<p>The Hunter District Board of Water Supply and Sewerage had been established in 1892 to control water supply and effluent disposal throughout the Hunter Valley. By the 1920s the increasing growth of Newcastle required drastic action. Consequently the area just below Merewether and behind Smelter's Beach was acquired in 1927 to create a sewage works. It was built from 1933, opening in 1936. Some of the equipment of that time is said still to exist.</p> <p>Complaints about pollution led to extensive modifications in the late 1980s when a new Ocean Outfall was built. In the course of these latter works the manager's house at the Smelter site was removed through archaeological excavation (see this report 4.4.1).</p>
-------------------------	---

THEMES

National historical theme (if known)	4. Building settlements, towns and cities; 4.2.3. supplying urban services.
State historical theme (if known)	Utilities

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	Important in the development of Newcastle and reflects 20 th -century concerns with hygiene and sanitation.
Historical association significance SHR Criteria (b)	
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	
Technical/Research significance SHR criteria (e)	Said to contain some rare examples of 1930s technology.
Rarity SHR criteria (f)	

Representativeness SHR criteria (g)	
Integrity	As far as can be seen, the structure has high integrity.
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	<ul style="list-style-type: none"> Establish the <i>Glenrock Area Managers' Committee</i> to discuss issues of joint concern. Negotiate management agreements with Hunter Water concerning the protection of the Burwood Smelter site and the provision of screen planting.

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Lagoon Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 109,110,111		
Author of Study or report	Griffin nrm		
Inspected by	Not inspected		
NSW Heritage Manual guidelines used?			Yes X, <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeon Cremin and Tracy Ireland		Date 5/4/2002

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Image caption					
Image year		Image by		Image copyright holder	

Site Complex 12 Gun Club and Quarry Remains

ITEM DETAILS			
Name of Item	Gun Club and Quarries		
Other Name/s Former Name/s			
Item type (if known)	Built and landscape		
Item group (if known)			
Item category (if known)			
Area, Group, or Collection Name	Glenrock CMCTP Site Complex 12		
Street number			
Street name	Glenrock SRA		
Suburb/town	Newcastle	Postcode	
Local Government Area	Newcastle		
Property description			
Location - Lat/long If not at a street address	Latitude		Longitude
Location - AMG If not at a street address	Zone	Easting	Northing
Owner	Newcastle City Council		
Current use	Gun Club Gravel mining		
Former Use			
Statement of significance	No significance. Two quarries operated in the SRA from the 1950s to the late 1980s. Adjacent to them a Gun Club was established in the 1970s and relocated in the 1980s. The cessation of both these uses reflects policy development regarding appropriate uses of Glenrock SRA by the NPWS.		
Level of Significance	State		Local <input type="checkbox"/>

DESCRIPTION	
Designer	Not known
Builder/ maker	Not known
Physical Description	Not inspected. Godden 1989 lists a set of built items at the Gun Club: clubhouse, shooting areas and and 2 small buildings (GL/120) Adjacent are two open-cut gravel quarries (GL/121 and GL/122)..
Physical condition and/or Archaeological	Good. Research potential slight.

potential					
Construction years	Start year		Finish year		Circa <input type="checkbox"/>
Modifications and dates	Not known				
Further comments					

HISTORY

Historical notes	<p>Modern sites. Quarries operated since 1957. Date of Gun Club has not been established but appears to be 1970s or 1980s.</p>
------------------	--

THEMES

National historical theme (if known)	<p>Quarries: 4. Building settlements, towns and cities; 4.2.3. supplying urban services. Gun Club: 8. Developing Australia's cultural life; 8.5 forming associations.</p>
State historical theme (if known)	<p>Quarries: Utilities Gun Club: Sport</p>

APPLICATION OF CRITERIA

Historical significance SHR criteria (a)	
Historical association significance SHR Criteria (b)	
Aesthetic significance SHR criteria (c)	
Social significance SHR criteria (d)	The Gun Club has value to its members and their associates.
Technical/Research significance SHR criteria (e)	
Rarity SHR criteria (f)	
Representativeness SHR criteria (g)	

Integrity	
HERITAGE LISTINGS	
Heritage listing/s	

INFORMATION SOURCES				
Include conservation and/or management plans and other heritage studies.				
Type	Author/Client	Title	Year	Repository
Report	Don Goddden & Associates P/L, with Rosemary Broomham	Glenrock SRA Historic Resource Survey	1989	NPWS

RECOMMENDATIONS	
Recommendations	Control weeds and stabilise areas subject to erosion. Major topographical change is not considered to be necessary.

SOURCE OF THIS INFORMATION			
To be completed if this form is part of a heritage study or report			
Name of Study or report	Glenrock Lagoon Cultural Landscape CMCTP	Year of study or report	2002
Item number in study or report	GA 120,121,122		
Author of Study or report	Griffin nrm		
Inspected by	Not inspected		
NSW Heritage Manual guidelines used?			Yes X, <input type="checkbox"/> No <input type="checkbox"/>
This form completed by	Aedeen Cremin and Tracy Ireland	Date	5/4/2002

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Please supply images of each elevation, the interior and the setting.

Image caption				
Image year		Image by		Image copyright holder

Appendix 5 Archaeological Management Guidelines

Introduction

Section 8.2.8 of the Conservation Policy (Section 8) states that:

The archaeological potential (relating to pre and post contact periods) of the Glenrock cultural landscape should be managed in accordance with the *Archaeological Management Guidelines* which are based upon the 4 zones of Archaeological Potential set out at Figure 8.2.

This CMCTP has found that the Glenrock cultural landscape possesses significant archaeological research potential, some of which is rare in the context of NSW's cultural and natural history (refer to Section 6-20 – 23). A host of historic sites and a number of Indigenous archaeological sites have been identified, however a comprehensive survey of Indigenous sites in the SRA has not been undertaken and the potential for further buried remains relating to prehistoric and historic occupation, and the environmental history of the area, is high. In view of this situation, a protocol or procedure for the management of archaeological remains is developed here. This procedure should be implemented as set out in the Conservation Policy (Section 8 of this CMCTP).

Note also that permits for excavation will be required under both the Heritage Act 1977 and the National Parks and Wildlife Act, 1974, for works within Glenrock.

Archaeological Zoning Plan

Figure 8.2 sets out an archaeological zoning plan for the Glenrock cultural landscape. Four zones of archaeological potential have been identified on the basis of the management requirements of the archaeological resources likely to be contained within each zone. It is important to note that archaeological remains of high, medium or low significance may be found in each zone. Rather than significance, the zones reflect our current state of knowledge about the archaeological resources in each zone.

It is also important to note that these procedures are designed to assist planning of works or other interventions which involve excavation or disturbance of sites likely to possess buried remains of some research potential. It does not therefore encompass, or re-state, all of the conservation recommendations for culturally significant sites contained within the Conservation Policy (Section 8).

Zone 1 High Research Potential

Two areas of land are identified in this zone, encompassing Site Complex 1 The Burwood Copper Smelter (refer Section 4-29) in the north and Indigenous archaeological sites 38-4-0042 and 38-4-0043 in the south.

These areas possess high research potential, the Burwood Copper Smelter is a rare, intact historical archaeological site, while this area of coast and lagoon was a focus for prehistoric and early historic habitation by Indigenous people.

Management Procedures Zone 1.

- Protect from unwarranted excavation.
- Conserve and interpret archaeological remains in-situ.
- Research excavation should be considered in consultation with relevant community advisory bodies, and in the context of adequate resources.
- If excavation or disturbance is required in the course of conservation works, or in the provision of interpretive or site security measures, excavation should be minimal and undertaken with the supervision of an appropriately qualified archaeologist. The nominated archaeologist should have the authority to ensure excavation or disturbance does not impact upon archaeological resources.

Zone 2 Research Potential

This zone encompasses the remains of the Burwood Colliery (Site Complex 2 Section 4-31) and some associated facilities including the small group of houses adjoining the colliery (Site Complex 9 Section 4-35). As an early mining complex, this site is likely to contain information concerning the history, technology and social life of communities involved in local and global networks of migration, industrialisation and trade.

Part of the land within this zone belongs to the NSW Scouting Association (See Conservation Policy 8.2.5).

This area has been disturbed through later developments but is considered to possess research potential.

Management Procedures Zone 2.

- Minimise excavation in the course of ongoing management and maintenance.
- Conserve and interpret archaeological remains in-situ.
- Research excavation may be considered in consultation with relevant community advisory bodies, and in the context of adequate resources.
- If excavation or disturbance is required in the course of conservation works, or in the provision of interpretive or site security measures, excavation should be undertaken following the advice of an appropriately qualified archaeologist. The nominated archaeologist should have the authority to ensure excavation or disturbance does not impact adversely upon archaeological resources, and to record the excavation and analyse the results to a professional standard.

Zone 3 Some Research Potential

A scatter of 19th century artefacts was recorded in this area, which was the site of a banana plantation in the mid 20th century (Site Complex 7). This area may therefore have some archaeological research potential.

Management Procedures Zone 3.

- Minimise excavation in the course of ongoing management and maintenance.
- Research and/or test excavation should be considered in consultation with relevant community advisory bodies, and in the context of adequate resources.
- If excavation or disturbance is required in the course of conservation works, or in the provision of interpretive or site security measures, excavation should be undertaken

following the advice of an appropriately qualified archaeologist. The nominated archaeologist should have the authority to ensure excavation or disturbance does not impact adversely upon archaeological resources, and to record the excavation and analyse the results to a professional standard.

Zone 4 Unknown Research Potential

This zone encompasses the balance of the study area, including the remainder of the identified historic and indigenous sites. It also contains areas likely to contain important environmental archaeological information. This zone is largely outside *the Active Management Zone* (See Section 8.2.3 and Figure 8.1) and is therefore likely to be subject to fewer pressures for works and other impacts than the previous Zones, however maintenance and vegetation management issues will arise.

Management Procedures Zone 4.

- Minimise excavation in the course of ongoing management and maintenance.
- Conserve archaeological remains in-situ.
- If excavation or disturbance is required in the course of conservation works, or in the provision of interpretive or site security measures, excavation should be undertaken following the advice of an appropriately qualified archaeologist. The nominated archaeologist should have the authority to ensure excavation or disturbance does not impact adversely upon archaeological resources, and to record the excavation and analyse the results to a professional standard.