

Appendix D

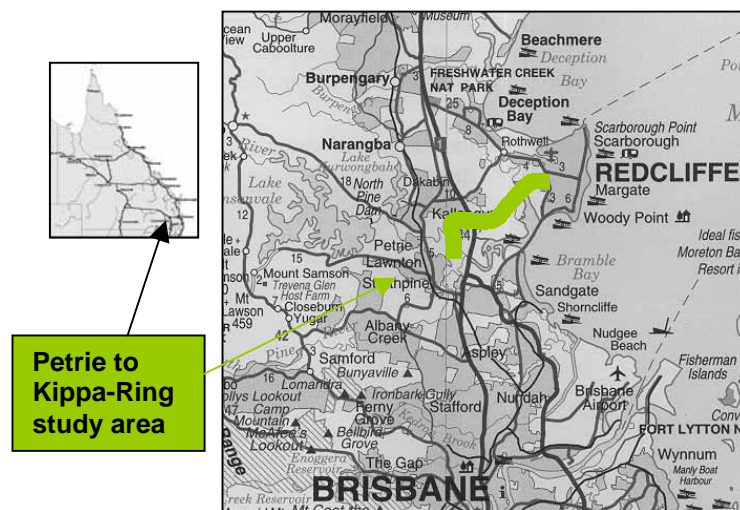
Cultural Heritage Assessment

1 INTRODUCTION

1.1 Background to the project

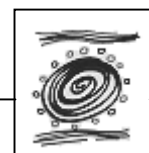
ARCHAEO Cultural Heritage Services, Ashgrove, Brisbane, undertook a cultural heritage assessment (CHA) of the proposed Petrie to Kippa-Ring rail corridor, and its vicinity, between the Pine Rivers and Redcliffe Shires (Map 1) in the northern part of the metropolitan area, some 23 kilometres north of the Brisbane CBD.

The proposed corridor would link the suburbs in Pine Rivers Shire (Kallangur, Murrumba Downs, North Lakes, Mango Hill and Griffin) with the Redcliffe Shire suburbs of Rothwell, and Kippa-Ring to the main North Coast Railway and metropolitan commuter network at Petrie.



Map 1: General locality of study area

The corridor commences east of the present Petrie Railway Station, heads north across Dohles Rocks Road, and in a north-easterly direction through Murrumba Downs, across the Bruce Highway and Freshwater Creek Road. It then swings more northerly to skirt the headwaters of Hay's Inlet, past Mango Hill and Rothwell to the proposed Railway terminus at Kroll Road, Kippa-Ring. The route is largely within a vegetated corridor that has been retained for the project since land resumptions in the early 1980s.



A number of studies have been conducted on the route since 1978.

Queensland Transport commissioned GHD to undertake the present study to review transport needs for the Mango Hill/Griffin area, with its rapidly expanding residential population, and determine the most suitable transport mode as part of a detailed impact assessment study.

GHD sub-consulted ARCHAEO Cultural Heritage Services to undertake cultural heritage aspects of the study. Jon Honey (GHD) was the contact Project Manager.

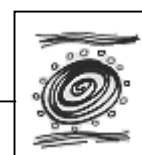
Michael Strong and Adam Brumm (ARCHAEO) undertook the Cultural Heritage Assessment (CHA) on 21-23 March 2001 and 17 April under permit SE03/EIS/01 from the Environmental Protection Agency (EPA). The permit was issued to SEQUITO co-ordinator, Tony Dalton under Section 28 of the *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*.

Field survey work was conducted through and with negotiation with the relevant Indigenous and non-Indigenous groups with interests in the study areas. These include representatives of the Undumbi people, the descendants of Menvil Wanmuran (the Delaney family); Alex Bond, the Isaacs family, and the Warner family. The Ningy Ningy Association did not take part in the assessment, and the Gubbi Gubbi Land and Cultural Association did not respond to invitations to participate.

1.2 Scope of Study

ARCHAEO Cultural Heritage Services was commissioned by GHD to conduct a Cultural Heritage Assessment (CHA) and analysis of the impact of the proposed development to:

- liaise with members of the relevant Aboriginal communities regarding places of cultural and indigenous archaeological significance within and close by the study area on which development may impact.
- survey to determine the impact of proposed development on any archaeological or historical site or place, as well as culturally significant sites, places and landscapes within the study area.



- conduct background research into historical and archaeological material in the vicinity of the study area.
- account for Indigenous and non-Indigenous archaeological and historic sites, items and places.
- assess the significance of the findings and identify potential impacts and management strategies necessary to maintain the cultural heritage.
- produce a report of the study.
- provide recommendations pertinent to protection or mitigation of the impact of development on any items and places of significance defined by this study.

This scope of study acknowledges that the archaeological record is both fragile and non-renewable, and any major disturbance of the environment through landscape-changing factors poses a threat to this valuable cultural resource.

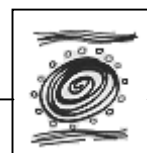
The project sought to meet all requirements of the *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*, and other relevant legislation. Cultural heritage forms an integral component of environmental impact studies (EIS) as required by the *Environmental Protection Act*.

1.3 Organisation of report

The report discusses:

- ❑ methodology of the study
- ❑ historical background and biogeographical information
- ❑ details of the proposed development and its rationale, design, impact and timetable
- ❑ details of the archaeological survey and findings
- ❑ levels of significance and likely impacts
- ❑ community consultation regarding cultural significance
- ❑ recommendations regarding cultural heritage that might be impacted upon by the development.

Copies of this report were circulated to the client, the EPA and the relevant Indigenous groups in hard copy.



2 CULTURAL HERITAGE MANAGEMENT

Cultural heritage assessment is the identification of culturally significant places, followed by recommendations for their subsequent management.

Identification of cultural heritage usually starts with consultation and research, involving searches of relevant literature and heritage registers. This desktop study is commonly followed by a field survey. This usually involves the relevant Aboriginal community or local families with traditional links to the area. Other stakeholders may include landowners, local historical societies and government agencies. A report is then produced which assesses the significance of sites, features and places and any potential impacts.

While ideally heritage is preserved, where this is not possible or practical, the impact of development can be lessened (mitigated) through strategies recommending lesser impacts. These can range from preservation of all or part of the site, to making a record prior to their destruction.

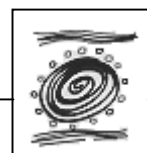
2.1 *Determining Cultural Heritage Significance*

Cultural heritage significance relates to people's perspectives of place and sense of value, within the context of history, environment, aesthetics and social organisation.

A range of standards and criteria are available to assist with determinations of cultural heritage significance.

2.1.1 **The Burra Charter**

Cultural heritage management in Australia at a national level has been guided by the Burra Charter (Marquis-Kyle and Walker 1992), adopted by Australia ICOMOS (International Council on Monuments and Sites). This charter, primarily designed for the conservation of historical heritage, defines *conservation* as 'the processes of management looking after a place so as to retain its cultural significance' (Article 1.4). The cultural heritage significance of a place or object indicates its *aesthetic, historic, scientific* or *social values* for past, present and future communities.



Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric.

Historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section.

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives *in situ*, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.

Scientific research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information.

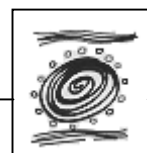
Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group.

Article 2.6 of the Guidelines notes that other categories of cultural significance may become apparent during the course of assessment of particular sites, places or precincts. A range of cultural significance values may apply. Article 5 of the Burra Charter states that:

Conservation of a place should take into consideration all aspects of its cultural significance without unwarranted emphasis on any one aspect at the expense of others (Marquis-Kyle and Walker 1992).

2.1.2 Aboriginal Site Significance

Indigenous people place a high cultural value on their archaeological sites and cultural heritage. This is partly because the archaeological record (information about the pre-European history of Australia) has been heavily impacted on by 200 years of European settlement. What remains is all the more valuable because it can never be repeated.



Indigenous archaeological assessment commonly focuses on material cultural remains, and then only on those elements of the archaeological record that have survived through time. A more helpful approach may be to appreciate the landscape from the Indigenous viewpoint. The landscape is a living existence, with a spiritual presence. Thus, people living within this landscape relate to the whole - all of the landscape - not particular parts. Within this whole, parts may have provided preferred living places; parts may have had more defined spiritual significance; parts may have provided specific resources.

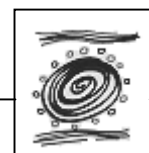
Archaeology is one tool that can provide Aboriginal people with scientific knowledge (as differing from cultural or traditional knowledge) about the past. Such insights can span thousands of years. Scientific significance changes over time according to differing research interests and as archaeological techniques improve. Thus establishing 'timely and specific research questions' (Bowdler 1984) or research potential, and representativeness of a site are crucial to assessment and site significance.

Research questions or research potential may be gauged through factors such as site integrity, structure and content. Representativeness takes into account how common a site type is (Bowdler 1984:2), requiring reference to the known archaeological record. Both research potential and representativeness should be constantly assessed variables.

2.1.3 The Archaeological Record

For Aboriginal people, cultural heritage may be divided into archaeological sites that are visibly identifiable (such as stone scatters, scarred trees, axe-grinding sites, quarries, burials, rockshelters and stone arrangements). However, archaeological material may not account for sites, places and landscapes of spiritual, ceremonial or social significance. These may include landscapes, pathways, totem places, 'good' and 'bad' places, massacre sites and Dreaming sites among other things (Godwin and Creamer 1984). Because these sites and places cannot always be defined archaeologically, they can only be identified through the knowledge of the traditional owners of the area (McNiven *et al* 1994).

Bowdler (1983) recognises two distinct groups of sites and places significant to Aboriginal people, pre-colonization and post-colonization. Current 'best practice' stresses the necessity of Aboriginal traditional owners as the people who can identify sacred



sites and decide on their significance. This is a major reason for Aboriginal community consultation.

Indigenous or Aboriginal archaeology can further be broadly separated into pre-contact and post/contact history. The latter, although often previously overlooked by archaeologists, is increasingly becoming of great importance to Aboriginal communities, attempting to prove connection to land from which their ancestors were dispossessed.

Prior to the survey, archaeologists use a checklist of possible archaeological material that might be encountered in the field. Such predictions are based on past studies, and take into consideration the levels of natural integrity that are apparent in the study area. This “check-list” is not a definitive statement on what will be found during field assessment.

In this section the most common types of archaeological and cultural sites and places of significance to Aboriginal people that may be found in southeast Queensland are described.

- **Art sites**

These sites rarely occur in southeast Queensland and are considered highly significant as ritual and ceremonial areas. Art sites can include painted designs on rock faces, pecked art in rock and carved trees.

- **Significant places**

These include visible sacred sites, ‘non visible’ sites such as ‘good food places’, ‘men’s places’ and ‘women’s places’ and also ‘dangerous places’ – where there may be a manifestation of a spirit. Mythological sites are places associated with stories or myths about mountains, rock outcrops, swamps, lagoons, creeks, waterholes and other natural places. Dreaming sites are ancestral places associated with creation stories and ancestors and are often pivotal to Aboriginal beliefs.

- **Bora and ceremonial sites**

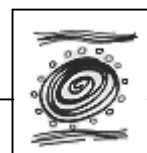
Bora rings were sacred sites, used for ceremony, initiation and ritual (Satterthwait and Heather 1987). Initiation sites commonly had two rings, a large public ring and a smaller *kippa* or initiation ring, joined by a pathway.

- **Stone arrangements**

These consist of groups of stone piles, or cairns, or lines and semi-circles. Some sites were used for ceremony, while others had a sacred and mythological role.



- **Burials**
Traditional mortuary ritual appeared to include both ground interments and tree burial. For interment, softer soils and sand were often preferred, often at the base of trees or on sandy banks of rivers and creeks.
- **Food resource areas**
Aboriginal people depended on plants for food, tools and shelter. Places that are culturally significant might include areas of high-density food species, such as fern root, yams, plum trees, birds eggs or fruit bat camps.
- **Rockshelters**
Rockshelters occur where the geology allows the formation of either wind blown overhangs or water derived caves and fissures. Sites in sandstone or limestone country are particularly common. Aboriginal people utilised rockshelters for a range of cultural activities, including campsites, burials and art sites.
- **Artefact scatters**
Stone artefact scatters, ranging in size for one or two flakes, to tens of thousands of artefacts, are the most common archaeological find. Aboriginal people made cutting and scraping stone tools from fine-grained stone including silcrete, quartzite, chert and sometimes quartz. Volcanic rocks, such as basalt and andesite, or other rocks, including greywacke and argillite, were flaked into rough blanks, then ground on sandstone slabs to form axes, useful for chopping and fighting.
- **Quarry sites or artefact reduction sites**
These sites are located near a suitable source for flaking for stone tools. Flaked rocks, heavy scattering of cores, flakes and flaked pieces and, sometimes, hammerstones, may distinguish them. There is also the opportunistic assaying of gravel beds, often found in high velocity streams and rivers.
- **Ochre quarries**
Deposits of red, yellow and white clay formed an important source of pigments for body decoration for ceremonies and the decoration of trees and art objects. Ochre was a valued element of trade, often carried for long distances from its place of origin.
- **Axe grinding grooves**
These are grooves in sandstone slabs made during the polishing and grinding of axe blanks into finished items. Usually located near rivers and creeks.



- **Earth ovens**

Earth ovens and hearth sites are often detected as stains in the earth where campfires have been lit to cook animals and plants for food. They may provide useful archaeological material for dating if organic material has been carbonised.

- **Scarred trees**

Scars are formed by the removal of bark for items including water containers, roofing and canoes. However, scarring also occurs from several other reasons, such as lightning strikes, termite damage, fire and branch loss. All these can produce scars that superficially resemble cultural scars. A detailed list of criteria has been established by the consultants (ARCHAEO) to identify essential elements and balance them against criteria such as size of a tree, age, environment, soil type, species and so on. The extraction of animals, such as possums and honey from beehives, using stone axes may also leave distinctive scarring. Trees were also scarred through bark removal and carving to create objects of ceremonial importance, and to act as markers. In places where clearing and logging have occurred, the chances of defining scarred trees are reduced. Carved trees for ceremonial markers were formerly very common and considered significant places (Bell 1986; Morwood and Fillery 1976) involved with ceremony and a sense of place.

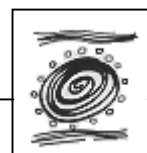
During historic times, Europeans also cut bark as roofing material for slab huts.

- **Shell middens and shell scatters**

A shell midden usually contains a high proportion of shellfish remains discarded by people in particular locations, and has vertical stratigraphy or depth (Meehan 1982). A scatter is composed of superficial scattered shell. In coastal areas marine species include Commercial Oyster *Saccostrea commercialis*, Club Whelk *Pyrazus ebeninus* and mud ark or cockle *Anadara trapezia*. Pipis or eugaries *Plebidonax deltoides* are commonly found on high-energy sand beaches. Confusion often arises over substantial deposits of beach shell or cheniers, which can erroneously be classed as a midden. Archaeologists separate natural deposits of shell on the basis of criteria including size and species of shell, the presence of other cultural material and general environment and appearance.

- **Contact sites**

This important aspect of Aboriginal archaeology and history is often overlooked. European settlement disrupted traditional

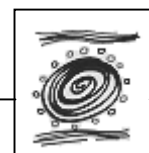


lifestyles and created new sites. These include massacre sites, graves, and other places associated with historic events. Fringe camps were located usually on the outskirts of country towns or near homesteads, often across a river, affording the occupants a little safety from Europeans after Aboriginal women. Shanty huts were constructed of corrugated iron, bark, sacking or any other material available. Gin bottles, poison bottles and other glass containers were not only used as containers, but also flaked into tools. Mission sites, reserves and workhouses also have importance for Aboriginal people. Consultation with the traditional community is an important aspect of identifying such sites.

As well as Aboriginal sites, archaeologists must be aware of non-Indigenous sites that have cultural heritage significance. Two centuries of change may be a short period of time when compared to the immense period of thousands of years that Aboriginal people have occupied Australia. Within the last 200 years, the highly organised hunter-gatherer societies have been decimated; their territories have become sheep runs or cattle stations or mines; pathways have become bullock tracks and roads and then super-highways; fences have enclosed open spaces and rivers have been dammed or flooded valleys. Australian landscapes are changing at an increasing rate and the loss of our historic heritage is considerable. These include early buildings relating to pioneer settlement, farm houses, farm complexes, mines, timber sawmills, old roads, bridges, monuments, etc (Connah 1983).

2.1.4 Legislated criteria for significance assessment

Evaluating the cultural heritage significance of historic cultural heritage sites is an important aspect of a cultural heritage assessment. Criteria for assessing the significance of heritage sites are enshrined in the Burra Charter of Australia ICOMOS and various pieces of legislation to provide for the identification of places, sites and features of cultural heritage significance. At a State level, the ***Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*** seeks to ensure protection of the Queensland Estate. The "Queensland Estate" is defined as "evidence of man's occupation of . . . Queensland which was made over thirty years ago but not produced as a facsimile, made for the sale since the commencement of the Cultural Landscapes Act or is not of historic or pre-historic significance" (s. 27). Significance is poorly defined in this act, although the Act does specify that a site can be considered significant "...for any anthropological, cultural, historic, prehistoric or 'societal reason'" (s. 27). This Act is primarily concerned with Indigenous cultural heritage. All evidence of Aboriginal or Torres Strait Islander culture is designated as Crown Property (Section 33),

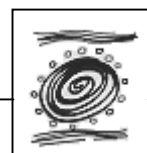


making it an offence to knowingly destroy or interfere with such places, sites or items without Ministerial approval (Division 3). Cultural heritage consultants and researchers conducting investigations of places or items of significance through assessment, research, excavations, etc., must obtain a prior permit signed by the relevant Permits Officer, Environmental Protection Agency. Aboriginal people can also invoke various Federal acts if they feel that their heritage is being destroyed wilfully without proper consultation.

At the national level, the **Australian Heritage Commission Act 1975-76** provided for the establishment of the Commission and for the identification and registration of places considered to be of national significance on the Register of the National Estate. Eight criteria were established under this Act. These have since been adapted for State-based legislation such as the *Queensland Heritage Act 1992-1995* and local planning schemes such as the Brisbane City Council's *City Plan 2000*. The **Queensland Heritage Act 1992-1995** provides for a listing of places within a Heritage Register (s.20). Significance is better defined in this piece of legislation.

Thus a non-indigenous site or place may be considered to be significant at the national, state or local level if it satisfies one or more of the following eight criteria:

- 1 the place is important in demonstrating the evolution or pattern of [Australia's/Queensland's/the local area's] history;
- 2 the place demonstrates rare, uncommon, or endangered aspects of [Australia's/Queensland's/the local area's] cultural heritage;
- 3 the place has potential to yield information that will contribute to an understanding of [Australia's/ Queensland's /the local area's] history;
- 4 the place is important in demonstrating the principal characteristics of a particular class of cultural places;
- 5 the place is important in exhibiting particular aesthetic characteristics valued by the community or a particular cultural group;
- 6 the place is important in demonstrating a high degree of creative or technical achievement at a particular period;



- 7 the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- 8 the place has a special association with the life or work of a particular person, group or organisation of importance in [Australia's/ Queensland's/the local area's] history.

The *Land and Resources Tribunal Act 1999* establishes a Land and Resources Tribunal that has exclusive jurisdiction over certain cultural heritage matters. The Tribunal has the power to issue an injunction to stop activities if they are likely to breach Section 56 of the *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*, namely the knowing destruction of an item of the Queensland Estate. Application for an injunction should come from a person or group who has "standing to make the application" through Traditional, historic or custodial interests.

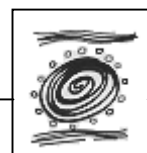
New cultural heritage legislation to replace the *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987* is being drafted at present. It is possible that the powers of the Land and Resources Tribunal will be extended in regard to cultural heritage issues in the new Act.

2.2 Scientific significance

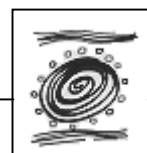
Scientific significance as defined by various federal and state legislation and 'best practice' guides relates to the research potential of a place or item to contribute information that other sites may not afford. It has the expectation that a place or object can contribute knowledge that is relevant to questions about human behaviour, history and other aspects of human interest.

Fundamental to scientific potential are three factors: site integrity, site structure and site content. A range of natural or cultural issues can affect sites. Although ironically most archaeological sites are located because of disturbance, it is accepted that sites which are least affected are most likely to contain substantial archaeological information regarding past human history.

Site structure includes factors such as stratification, dimensions and patterns of archaeological materials within the site. Stratification offers insights into detecting cultural changes through time. Site content considers the various archaeological components of a site. These can vary considerably, depending on whether the site is historic or archaeological; even sites with small variations can provide important archaeological data.



Site significance measures the site and its potential against the known archaeological record in the region. While archaeological evaluation criteria are constantly changing, as new material becomes known, an understanding of site significance offers a process whereby decisions can be made concerning management of a site, and level of protection required. Although all Indigenous sites in Queensland are technically protected by law, protocols for site management between government representatives, the Traditional Owners (in the case of Indigenous material) or historic owners, the consultants and the clients, allow for a range of management options to be negotiated.



3 COMMUNITY CONSULTATION

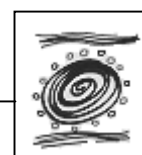
All impact assessments and the application process for permits include requirements for Indigenous community consultation. As described in detail in Section 2 above, frequently, both Aboriginal and non-Indigenous communities attach considerable cultural significance to archaeological material. In addition, Indigenous groups may have culturally significant places that require protection and management. Thus, the management of significant sites and places is an important function of a cultural heritage assessment.

It is this spread of historical, archaeological and culturally significant sites and places through a specific area that helps to give the modern community a sense of place, of identity, of difference from other communities. It is also this attachment of cultural significance to a site or place that can become the basis for public concern about the impact of a project on cultural heritage. Community consultation, combined with field studies, at an early point in the project will define those sites and places on which the community places significance so that management can avoid, as much as possible, public concerns. For these reasons, recommendations on post survey management are also an important function of a cultural heritage study.

Important aspects of Indigenous community consultation include:

- ◆ The identification of Traditional Owners/ custodians and appropriate spokespersons.
- ◆ The provision of information to sufficiently brief the community about the project and its potential impacts;
- ◆ discussion regarding cultural heritage management objectives;
- ◆ establishment of protocols for the conduct of fieldwork procedures, and confidentiality of information;
- ◆ a discussion on archaeological and cultural heritage and the views of the community.

In this study, Indigenous consultation was conducted according to protocols that have been discussed and established with the Aboriginal community. Details of the community consultation are tabled below.



3.1 Traditional Owner groups claiming association with the Study Area.

As in many Aboriginal communities which have been fragmented and removed from their traditional country, a number of groups/families claim connection through either traditional connection to the study area or had expressed interest in the area, for historical or cultural heritage reasons. The groups involved agreed in some instances to undertake separate fieldwork, and negotiations are continuing regarding the preparation of a joint cultural heritage management plan after submission of the fieldwork reports.

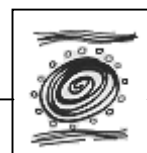
It is not the place of this report to determine the accuracy or truth of these claims, which requires an independent anthropological investigation. However, while currently politically separate groups, it is highly likely that in traditional times these clans or families moved about within the study area, and established complex marriage and kinship lines that transcended tribal boundaries.

Thus during the famous bunya festivals held in the Bunya and Blackall Mountains, and around Gympie, groups of Aboriginal people from southeast Queensland and northern New South Wales would come together in a major socio-economic and spiritual festival, with shared food resources, for the exchange of trade goods and the establishment of new kinships.

Many early authorities, writing of the Aboriginal occupants of the study area, are contradictory or ambiguous about tribal boundaries (Mathew 1910; Meston 1895; Petrie 1983 (1904)). Even when there is agreement, this is not necessarily supported by modern groups, who dispute claims of connection to various areas. The difficulty of establishing reliable connection has been exacerbated since the introduction of Native Title, which has produced a plethora of claims and counter claims over country and identity.

In discussing the sources, it is important to state that this does not necessarily reflect the opinion of the consultant. Most Aboriginal groups are currently undertaking careful research into their own history and ethnography, and this report does not pre-empt this research.

However, based on the known literary sources, it is generally accepted that two groups occupied the Pine Rivers area and the Redcliffe Peninsula within the study area. In the area around the North Pine River, The Moreton Bay region was impacted on very early in Queensland's colonial history, from 1799 with Matthew Flinders' expedition to Moreton Bay and the Pumicestone Passage.



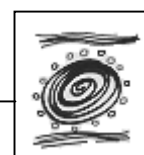
However, the ramifications of European settlement had already impacted on tribal society through diseases such as smallpox and measles that had a devastating effect on Aboriginal populations. Various estimates indicate that up to a third of the total population may have perished from such disease even before the arrival of non-indigenous invaders (Butlin 1985; Campbell 1985).

Petrie (1904:185) records a group called the North Pine clan in the area around Petrie, which he says belongs to the Turrbal group north to about Hay's Inlet. To the east, along Moreton Bay and Redcliffe was another group called Ningy-ningy (or Ninge-Ninge). This second group was a Kabi-speaking language group, which implies it was probably a clan of the larger tribal group called Undumbi (Gaiarbau, quoted by Winterbotham 1957). Gaiarbau, better known as Willie Mackenzie, was a Jinibara man who produced a map of the locations of tribes in southeast Queensland with Dr L. Winterbotham in the mid 1950s. While the map has some inaccuracies, it still represents the only map drawn by an Indigenous person of groups in the study area. This map shows that to the west of the study area was a large group called Gurumngar, who formed part of the Jinibara people and that the Undumbi stretched south to the Pine River. It may be that Gaiarbau, while undertaking his research in the 1890s, was already seeing the effect on the Brisbane tribe that Petrie calls Turrbal of widespread disruption of traditional lifestyles.

Gaiarbau states that coastal people called themselves *Bugarnuba* but he knew them as *Mwoirnewar* or "saltwater people". He noted that the Undumbi were amongst the saltwater people of Southeast Queensland. This nomenclature indicates that he was an outsider to the Undumbi people, but at the same time, Gaiarbau, who was a traditional initiated man with enormous knowledge of Aboriginal people and their customs, spoke the dialect Undumbi.

The Undumbi, according to Gaiarbau, occupied a coastal area from the Brisbane River north to Noosa and west to the territory of the Nalbo and Jinibara peoples (Winterbotham 1957). Gaiarbau was familiar with the coastal tribes, visiting their countries regularly. Gaiarbau says that groups were often linked in combinations (by this he probably means by marriage lines) and cites the Undumbi were linked with the Dulingbara and the Gubbi Gubbi. This would explain why some authors refer to the Gubbi (Kabi) extending south towards Brisbane. Gaiarbau says quite clearly that the Undumbi and neighbouring Gubbi Gubbi dialects were different.

Undanbi or Undumbi means "those who say *dan* or *dunn* for black man" (Steele, 1984) suggesting that "Undumbi was a term used by outsiders to describe a language group separate from their own"



(Nolan 1986). Gaiarbau also refers to the Ningy-ningy or Ningi ningi “tribe” at Toorbul Point, but infers that they are most likely a sub-group of the Undumbi.

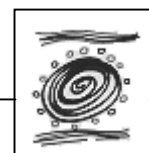
Moravian missionaries established a settlement at Zions Hill near Nundah in 1841 and set out to convert the local Aborigines. They made a number of visits to the Toorbul Point (Ningi) area (Eipper 1841; Nique and Hartenstein 1841 and others recorded by Gunson 1978). They referred to the Ningy ningy as the group around *Turrbal*, meaning ‘those who say *turr* or *dhur* for a bora ring, instead of ‘*bool*’. Steele has suggested that the *Ningi* or *Turrubul* group may have been the dominant people in the Brisbane area by the time that Petrie passed on his knowledge of the Brisbane language to William Ridley in 1855.

Tom Petrie, who grew up with Aboriginal people of the Turrbal group, said the area north of the North Pine River was the territory of the Maroochy tribe that met at a bora at North Pine. He notes that ‘*Turrabul*’ was only spoken south to the Logan River and north to the Pine River and carefully makes a distinction between the Maroochy and Brisbane or Turrbal tribes (Petrie 1904). Petrie says that the dialect at Redcliffe (Humpybong) was different again, and this could indicate that he was referring to the Ningy-ningy who occupied this area. In an account of a great fight held in north Brisbane, Petrie also mentions a Mooloolah tribe, which suggests that there were sub-groups of Undumbi living along the coast. Because of the association Petrie makes with rivers, it is possible that what he is recording are sub-groups of the Undumbi people. In addition, Petrie spoke the Undumbi dialect, and referred to the existence of the Undumbi throughout his account.

Howitt (1904) states that the Turrbal dialect was only spoken north to the Pine River, which is sympathetic to Petrie’s comment that Turrbal was only spoken to the North Pine River.

Mathew (1910) commenting on Howitt’s rather vague groupings of Southeast Queensland tribes, unequivocally states that most of the tribes listed by Howitt (1904) are not “tribes” but “communities” within tribes. Mathew suggests that “communities” consisted of a “few families occupying the same small area” and their names were usually suffixed with the word “bora” (or “bara” or “barah” as recorded by Bracewell (Langevad 1982) which probably corresponds to “folk” or “people”, or may equally refer to the Bora Council.

Arthur Meston, Chief Protector of Aborigines for South Queensland from 1896, was an acknowledged authority on languages of the Moreton Bay area (Symons 1994) and an acute observer. He made



a number of observations of Moreton Bay Aboriginal dialects and groups between the 1890s and 1920s, published in the *Brisbane Courier*. Meston noted eight different dialects for the region. Around the Toorbul area was a tribe called *Oondoo*, also recorded as *Unda* (perhaps equated with the Undumbi) known as the *Winyamburra* or 'crab-eaters' and the Ningi-ningi Aborigines (Meston 1895). Meston (1923) also comments on Pootingga (old Sam) being one of the last of the *Bo-obbera* tribe of Caboolture. Perhaps this should be seen as a family clan living in the Caboolture River area, otherwise not recorded.

From comments made by Petrie (1904), cemetery records on North Stradbroke Island, and oral family history, it is known that Pootingga was a member of the Nuggins family. Pootingga was recognised by Petrie to be associated with the Petrie area, and the Nuggins family still consider the land north of the Pine River to be their traditional country.

Certainly the Delaney family based around Dakabin, Narangba and Wamuran trace their connections back to a historical figure, Menvil Wanmaurn (also known as Jackie Delaney, Jackie, King of Stoney Creek, and Jackie Burpengary Creek (Tutt 1977:16). He worked for a European farmer, Joe Delaney, whose property extended from Upper Stoney Creek (Burpengary Creek) to Redcliffe Peninsula. When he died in 1900, he was buried near his camp under a fig tree on Burpengary Creek.

3.1.1 Groups participating in field work

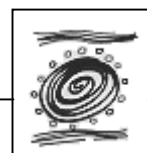
UNDUMBI

Spokesperson: Tony Dalton

Field representative: Charlie Daylight (1 day)

Tony Dalton is the spokesperson for the Dalton family who currently claim links to the Undumbi people. The Daltons derive their links back to the Caloundra, Bribie Island, Caboolture and south to the Pine River, back through Tilly Glass House, born around 1850s perhaps near Landsborough. Her sons, Tom and Richard Dalton, and Thomas Lea, born before 1900, lived at Bribie Island, Stradbroke and Caloundra.

Independent to his traditional connections, Tony Dalton is currently the co-ordinator for South East Queensland Indigenous Traditional Owners (SEQUITO), which is a representative body of a number of groups and families from the Undumbi, Kabi, Minniecon and Jinibara peoples.



Charlie Daylight spoke for some time about the quality of the survey and how it had been conducted. He said the Undumbi people were pleased that the landscape elements were put into context with the sacred landscape that formed such a crucial element of the Undumbi people's connection.

He made a number of recommendations and these have been incorporated into the overall recommendations for the project.

TURRBAL/ NINGY NINGY

Elder: Connie Isaacs

Spokesperson: Maroochy Barambah

This group claims connection to the Deception Bay area, traditionally the country of the Ningy Ningy clan.

Ade Kikuyi, spokesperson for the Turrbal, contacted GHD regarding a letter sent to him from ARCHAEO inviting him to participate in the cultural heritage assessment process. Mr Kikuyi stated he found this invitation insulting and unacceptable. He stated that Turrbal should be the group conducting the CHA, and that they did not work with or need cultural heritage consultants. He decided not to contact ARCHAEO with this decision, but left a message with Queensland Transport voice-mail.

Further, he stated that SEQUITO, the body that took out the permit, and who represent a majority of the Traditional Owner claimants, does not speak for Maroochy Barambah and that the Turrbal were looking to initiate legal proceedings against SEQUITO.

Ade Kikuyi demanded that Maroochy Barambah should be commissioned directly to undertake the assessment and asked to meet with GHD to inform them of the correct protocol for cultural heritage projects.

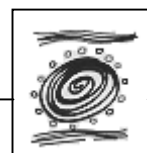
It should be noted that Maroochy Barambah's given name is Yvette Isaacs, and that another representative of this family (Neville Isaacs) was present in field assessment.

GUBBI Land Council

Elder: Penny Bond

Spokesperson: Alex Bond

Alex Bond claims to have an interest in the study area. Mr Bond was contacted by mail and through Tony Dalton, as co-ordinator for



SEQUITO. ARCHAEO was unable to contact Mr Bond until the day before the survey was due to start, due to a change in mobile telephone numbers. Corinne Lloyd (Manager, South Queensland Rep Body), phoned Michael Strong late on 20 March and asked for the walk to be postponed to accommodate Mr Bond. At that time, walkers from the other groups were already in transit and it was impossible to reschedule. Mr Bond was offered the opportunity to be conducted through the study area and shown the results of the findings. Subsequently, Michael Strong contacted both the client and Mr Bond and arranged to spend a day in the field together, to show him the results of the fieldwork and the proposed route.

Mr Bond said he was satisfied with the results of the areas he had examined subsequent to the main fieldwork component.

GUBBI GUBBI LAND AND CULTURAL ASSOCIATION

Spokesperson: Dr Eve Fesl

Field representatives:

SEQUITO attempted to contact Dr Fesl by registered mail. A response was not received. In addition, a telephone call was made, and Dr Fesl responded that she had her own consultancy company, and would not take part in field work with other people.

DESCENDANTS OF MENVIL WANMURAN

Spokesperson: Ian Delaney

Field representative: Anthony Mancktelow

This family claims links to the area through their ancestor Menvil Wanmuran, known as King of Stoney Creek (Burpengary).

Mr Mancktelow said he was extremely pleased with the protocols and processes of how the survey had been conducted and noted that it was a working illustration of how Aboriginal groups could come together to walk in country and share the experience.

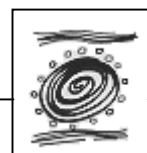
DESCENDANTS OF ISAACS FAMILY

Spokesperson: Neville Isaacs

Field representative: Neville Isaacs

This family claims links to the area through descendency from the Ningi Ningi group.

Mr Isaacs played an important role, with Mr Daylight, as the two senior men in the survey, assisting the younger men with field survey



procedures and protocols of walking in country. Neville Isaacs spoke also at some length after the survey was finished and said he was pleased with the high standards that had been set. Mr Isaacs made a number of recommendations, which were incorporated into the overall recommendations of the project. In particular, he emphasised that some sections will require monitoring because of the heavy vegetation and important cultural associations.

DESCENDANTS OF WARNER FAMILY

Spokesperson: Kevin Warner

Field representative: Mark Warner

This family claims links to the area through the Nuggins family, and recorded group from the land north of the Pine River.

Mr Warner said he had very much enjoyed the survey, and learnt a great deal about the processes involved. He felt that the sites found were important to his people and that due processes of monitoring should be included in any recommendations.

3.1.2 Induction process

An induction meeting for the Undumbi, and representatives of the Delaney, Warner and Isaacs and Undumbi families was held on 21 March 2001 in Wylies Park, near Petrie. The venue was selected as being central to the survey area with major dreaming sites in proximity. At this meeting, details of time sheets, schedules of work, walking arrangements, accommodation and fees were discussed. As well, a short discussion was held regarding safety issues while walking in the rail corridor, awareness of snakes, relationships with landowners and other matters.



4 ENVIRONMENTAL BACKGROUND

4.1 *Biogeographical information*

While the stereotypical image of archaeology involves excavation of buried treasures, in reality cultural resource management involves a much wider picture. In this modern perspective, the landscape is seen as crucial in identifying the interface between humans and the environment. This is particularly true of Aboriginal Australia, where a close relationship with their environment existed for many tens of thousands of years.

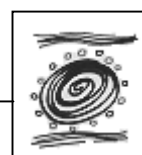
Environmental factors have an important bearing on the distribution of people — and thus archaeological sites — across the landscape. Hence a study of vegetation, geomorphology and geology is important to establish an interpretative framework for the archaeological record. As Hughes and Sullivan (1984:35) have noted:

The results of numerous investigations throughout Australia have shown that the nature and distribution of archaeological sites across the landscape are generally very strongly influenced by environmental factors such as bedrock geology, landforms and associated soils and vegetation, and climate.

These factors influenced the organic raw materials, water, raw materials for stone artefacts, suitable campsites, and landforms and rock surfaces upon which rock art could be executed. They also affected the ease with which people could travel across the land.

Natural features in the physical landscape contribute to predictive modelling for both indigenous and historical landscapes. Topography, geology, the availability of fresh water, vegetation, and faunal resources should all be taken into consideration. Many studies (eg., Gillieson 1981; Lilley 1982; Hughes and Sullivan 1984) have discussed natural parameters that appear to be associated with many sites containing indigenous material culture. These may vary from area to area and are fairly coarse-grained in their relevance, but overall can be summarised as:

- the presence of fresh water, ie., creeks, waterholes and swamps;
- sandy well drained soils;



- a preference for sites associated with stream cut terraces or ridges in proximity to water;
- a preferred vegetation habitat, eg., open eucalypt woodland;
- the proximate availability of stone material suitable for the production of stone artefacts;
- the proximate availability of preferred faunal and/or vegetative resources.

While important from an environmental perspective, it is crucial that a much wider appreciation of the cultural landscape involves knowledge of ceremonial and increase sites, sacred places, and social parameters. An understanding of the cultural landscape, its landforms, underlying geological basal structure, the resulting soil and the type of floral and faunal habitats that results, is important to constructing a predictive model for archaeology. Flora and fauna communities can have an effect on the cultural decisions people make, including lifestyle and interaction within that particular environment. This in turn influences the archaeology; what items of material cultural are left behind and what remains preserved for the present.

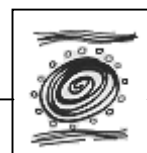
Geology is the study of the rocks and minerals that make up the earth's composition. The type of rocks present in the landscape dictate erosion patterns that radically change the landscape's topography over millennia. Geomorphology is the science of understanding and interpreting these landscapes and how human occupation has further modified these landscapes. It is crucial to recognition of Aboriginal land-use and the location of sites.

A considerable body of work has been done in the study area on its geology and geomorphology, especially relating to changes in post-glacial sea-levels within Moreton Bay. As a result, a number of authors were consulted (Jones and Searle 1979; McClure 1995; Stevens 1984; Wilmott and Stevens 1992).

4. 1.1 Topography and land systems

The study area is located on the terraces above the ancient Pine River floodplain, arcing around the headwaters of Hay's Inlet, an important wetlands north of the estuary of the Pine River, to the peninsula where Redcliffe and Kippa-Ring are located.

The topography and geomorphology of the area is influenced by the Pine River and Moreton Bay. Areas associated with Moreton Bay are flat, generally below five metres in altitude, whilst areas further inland tend to be higher, flat or gently undulating plains.



Redcliffe is located within Moreton Bay, a triangular embayment bounded to the west by the mainland, and to the east by large sandy islands. There is evidence that Moreton Bay drained and filled regularly with advances and retreats of glaciers and ice sheets in polar regions. These changes of sea levels influenced sedimentation deposition, helped create large sand banks, and led to the creation of new land.

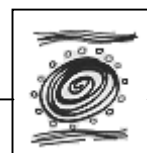
Most of the underlying geology is formed by sedimentary Landsborough Sandstone belonging to the Nambour Basin formed during the Jurassic Period approximately 215-180 million years ago. At that time the land formed a vast river plain in which fast-flowing rivers abraded hills to the west and deposited huge volumes of sediments across the Petrie-Kipper-ring area. Minor volcanic activity during the Tertiary (about 45 million years ago) created basalt flows along the Redcliffe seafront. During this period, several small basins (the Petrie Basin in the study area) formed as a result of tension in the Earth's crust and silts, clays, sand and minor sandstones became imbedded with the basalt lavas. The Landsborough Sandstone was eroded during the Tertiary to low country with a laterite soil profile, forming the rich red earths associated with Redcliffe.

Within the coastal plain, the sandstones of the Landsborough formation are close to the surface, laterised and display a soil profile developed from the weathering process. In the northern part of the study area, these soils vary in depth, with laterised sandstone often being very close to ground surface on the ridges. Soil fertility appears limited. On the central remnant plateau in the study area, residuals are deep, often red in colour, and are more fertile. These provide a base for the alluvial Quaternary sediments comprising the rest of the coastal plain in which the eastern section of the study area is situated.

While much older geological events produced the rocks and soils that form the study area, it is the last 6000 years during the Quaternary (the last 2 million years) that has had the greatest impact on the present landscape of the Redcliffe Kippa-Ring locale.

Moreton Bay has filled and emptied at least four times during its long geological history. During Holocene times (the last 10,000 years), sediments carried into Moreton Bay by the Brisbane and Pine Rivers have deposited huge quantities of alluvial sands and gravels and built up large parts of the study area.

The first high sea-level occurred prior to 340,000 years ago and the second about 340,000–318,000 yrs ago. Sea levels then fell at about 260,000 yrs ago exposing Moreton Bay to erosion. About



240,000-170,000 was a third high sea level. Sea levels then fell until about 138,000-119,000 yrs ago when they rose to be 4-6 metres higher than present seal levels. Pleistocene accretion ridges were formed during this time in the Deception Bay area (McClure 1995). Sea levels then fell from about 119,000 yrs ago until about 18,000 yrs ago, exposing the palaeo-subcoastal plain of the Pine River delta to further erosion, removing about 30 m of sediment. This formed the ridge along which much of the proposed rail corridor will run.

Glacial melt from about 18,000 yrs ago caused a rapid ocean rise in eastern Australia (Chappell 1983). This ceased about 6000-6500 yrs BC when evidence from Moreton Bay suggests the sea level was one to 1.5 metres above its present height (Hekel *et al* 1979). Since then, sea levels have remained fairly stable.

The Redcliffe Peninsula until the Quaternary was a narrow neck of underlying Landsborough Sandstones and Jurassic basalts jutting into the sub-coastal plain that would become Moreton Bay. A narrow ridge around Kippa-Ring connected it to the mainland. During the late Pleistocene and Holocene, huge deposits of eroded alluvium have been built up along the southern shores of Deception Bay, around Hay's Inlet and the delta of the Pine River. These have caused large salt mudflats, shallow freshwater lakes and tidal creeks to form, draining the low hills to the west.

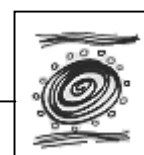
The main drainage system in the west of the study area is the Pine River, a large permanent river that snakes across the sub-coastal plain from the D'Aguilar Range.

Yebri Creek is a semi-permanent creek that flows from near Petrie into the Pine River. Hay's Creek and Saltwater Creek are smaller estuarine creeks, fringed with mangroves that flow into the large wetlands of Hay's Inlet.

Freshwater Lake is a manmade lake, but possibly based on an original smaller lagoon. Kangaroo Waterhole is a natural event, near the Bruce Highway. There are a number of freshwater marshes and wetlands that fringe the Tertiary ridge to the south of the study area, along the Pine River flood-plain.

4.1.2 Geology

The present day landscape is a result of complex geological processes. Millions of years ago, a shallow sea covered the continental shelf, extending from west of Toowoomba to roughly between Dalby and Brisbane. During subsequent folding,



compression and uplifting, a high mountain range was created running roughly parallel to the coast west of Dalby. Meta-sedimentary and metamorphic rocks belonging to the Rocksberg Greenstone and Kurwongbah Beds are thought to have been formed under high pressure in deep water sediments. Rocksberg greenstone was probably produced during the Carboniferous when igneous basalts were thrust upward and metamorphosed during subduction processes. Rocks associated with gravel deposits include heavily fractured quartzites, jaspers, and greenstones in the west and brought down by the Pine River; greenstones, greywacke and argillites in the east (Willmott and Stevens 1988).

A deposit of chalcedony, much esteemed by Aboriginal people for making stone tools, is derived from nodules at Scott's Point, near Redcliffe.

Geology has archaeological implications, influencing the availability and proximity of good stone material used by Aboriginal people to create stone tools.

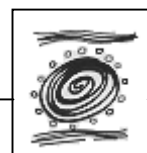
4.2 *Flora and fauna*

4.2.1 Flora

Vegetation is particularly important in cultural heritage studies. Hunter-gatherer societies were largely reliant on plant foods and vegetative resources. Low (1988) has estimated that along the coast, plant foods constituted 40% of the food. This percentage of overall diet probably increases away from the coast.

From an archaeological viewpoint, an understanding of flora habitats provides important information about the resources available to Aboriginal people. While many vegetation communities have been severely fragmented or lost, there are often indicator species in remnant roadside verges, that provides an indication of earlier biodiversity. This is particularly relevant in an urban landscape where much of the original vegetation has been destroyed.

Vegetation also provides indicators as to ground surface integrity. For example, a landscape archaeologist can identify that certain species of plants and grasses are susceptible to ploughing or disturbance and determine whether the landscape has been modified.



A knowledge of ethnobotany is thus a major advantage when looking at a hunter-gatherer or archaeological landscape. A substantial relationship exists between the various patterns of geology, elevation, soil types, impact of seawater, and fresh ground water. An important aspect of the vegetation mosaic associated with the study area was the number of ecotones. An ecotone is that area in which vegetation changes from one type to another. Ecotones are usually marked by a greater vegetative, and often faunal species count, providing Aboriginal people a wider choice of resources.

Most of the route would fit into Coldrake's (1961) definition of wallum or coastal lowlands, a series of open forest ridges and sedge and *Melaleuca* swamps. However, within the vegetation mosaic dissected by the proposed rail corridor are a number of ecosystems, which provide subtle variations on the more typical wallum open forest, and are largely resultant because of localised changes in the underlying geology.

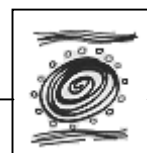
Because the length of the corridor dissects a number of ecosystems, the route is described in detail.

From Petrie rail station to Dohles Rocks Road:

The first section near Petrie railway line within the AMCOR property is low lying and subject to a high water table. This contains Swamp Box *Lophostemon suaveolens*, teatree *Melaleuca* species, Cabbage Tree Palm *Livistonia australis*, and Climbing Maidenhair *Lygodium microphyllum*. Remnant exotic pine *Pinus elliotii* and Lantana *Lantana camara* covers much of the area.

Near Yebri Creek is a small area of vine scrub, largely Paperbark Teatree *Melaleuca quinquenervis*, Forest Red Gum *Eucalyptus tereticornis* and Hickory Wattle *Acacia aulacocarpa*, but also including a number of rainforest species, such as Foambark *Jagara pseudorhus*, Silkpod *Parsonia largiflorens*, Macaranga *Macaranga tanarius*, Cheesetree *Glochidon fernandi*, Cabbage Tree Palm *Livistonia australis*, Red Ash or Soap Tree *Alphitonia excelsa* and Climbing Maidenhair *Lygodium microphyllum*.

Along the ridge between Yebri Creek and Dohles Rocks Road, there are trial plots containing different species of potential timber trees, including Flooded Gum *Eucalyptus grandis*, Sydney Blue Gum *Eucalyptus salignus*, Stringybark spe and Blackbutt *Eucalyptus pilularis*. Among these are a few remnant Crows-ash *Flindersia australis* and Deciduous Fig *Ficus virens*, suggesting that there may have been a littoral rainforest habitat along the ridge overlooking the Pine River floodplain.



Above the ridge, the general vegetation mosaic is termed wallum. Typical of the wallum ridges are open eucalypt forest, dominated by Scribbly Gum *Eucalyptus racemosa*, Pink Bloodwood *Corymbia intermedia*, Brown (Yellow) Bloodwood *Corymbia trachyphloia*, Forest Sheoak *Allocasuarina torulosa*, Black She-Oak *Allocasuarina littoralis* and various wattles, including *Acacia crassa* and Brisbane Golden Wattle *Acacia fimbriata*. Understorey species include Kangaroo Grass *Themeda triandra*, Blady Grass *Imperata cylindrica*, grass trees Xanthoraceae spe. and various herbs and vines, including Tape Vine *Stephania japonica*, ground orchids, Murdannia *Murdannia graminea*, Wombat Berry *Eustrephus* and Blue Tongue *Melastoma affine*. Ferns form a major understorey component, particularly after bushfires; on the ridges, they tend to be False Bracken *Culcita dubia* and Common Bracken *Pteridium esculentum*. Between the wallum ridges are teatree swamps, dominated by Paperbark teatree *Melaleuca quinquenervis*, Swamp Oak *Casuarina glauca*, sedges, Swamp Grasstrees *Xanthoraccea fulva* and once extensive fern swamps containing the highly regarded Bungwall Fern *Blechnum indicum* (see Section 4.3) and Climbing Maidenhair *Lygodium microphyllum*.

There is an extensive Bungwall Fern swamp near School Road.

Between Dohles Rocks Road to the Bruce Highway:

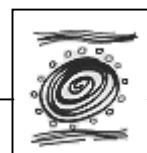
A series of low wallum ridges, separated by swampy gullies. Much of the vegetation in these areas has been severely modified with exotic grass and weeds. There is a small area of open wallum forest between Dohles Rock Road and Goodfellows Road. Around Kangaroo Waterhole, on the Tertiary sedimentary clays is a heavy infestation of exotic grass, Camphor Laurel *Cinnamomum camphora* and Lantana.

Bruce Highway to Kinsella Road

While largely cleared and extensively modified by introduced weeds and garden plants, there is an area of open forest between Freshwater Creek Road and the Bruce Highway. While this has been logged, it still contains open eucalypt forest, with Grey Ironbark *Eucalyptus crebra*, Forest Red Gum *Eucalyptus tereticornis*, Pink Bloodwood *Corymbia intermedia*, Brown Bloodwood *Corymbia trachyphloia*, Forest Sheoak *Allocasuarina torulosa*, Black She-Oak *Allocasuarina littoralis* and various wattles. There is an area of exotic pine above Freshwater Lake.

Kinsella Road to Saltwater Creek.

A large cleared area that was formerly open forest, with Brush Box *Lophostemon conferta* and Ironbark on the ridges as the dominant species. The main soil types are humic gleys and peaty podzols. This gives way rapidly to *Melaleuca* wetlands along drainage



channels associated with Hays Inlet. These creeks form small but possibly permanent waterholes, with abundant waterplants, including waterlily *Nymphaea* spe., Water Ribbons *Triglochin procerum* (a food species), Freshwater Reed *Phragmites australis*, Edible Spike rush *Eleocharis dulcis* (both used as food), and Grey Sedge *Lepironia articulata*, extensively used as a breathing tube by Aboriginal people while hunting ducks.

Saltwater Creek to Gynther Road

This section contains extensive areas of saltmarsh and tidal creeks and mudflats. The dominant species are Forest Red Gum *Eucalyptus tereticornis*, Paperbark Teatree *Melaleuca quinquenervia* and Swamp Oak *Casuarina glauca*, with an understorey of Freshwater Reed *Phragmites australis*, Samphire *Salicornia quinquenervia* and Saltwater (Marine) Couch *Sporobolus virginicus*. Along the drainage channels and tidal creeks are fringing mangroves, predominantly Grey Mangrove *Avicennia marina*, River Mangrove *Aegiceras corniculatum*, Milky Mangrove *Excoercaria agallocha* and Yellow Mangrove *Ceriops tagal*. Exotic vegetation includes lantana, Groundsel *Baccharis halimifolia*, Camphor Laurel *Cinnamomum camphora* and Pepper Tree *Schinus* spe. Soils range from peaty gleys to saline muds.

Gynther Road to Elizabeth Avenue

This traverses open eucalypt forest and melaleuca swamp. Between Gynther Road and Bremner Road is a narrow band of open forest above the tidal Saltwater Creek with its localised mangrove ecosystem. Between Bremner Road and Chelsea Road is an area of Forest Red Gum and Ironbark with an understorey of Kangaroo Grass and False Bracken. The soil is largely humic gleys. Along Trafalgar Drive are two huge Deciduous Figs *Ficus virens*. Much of the remaining area is low-lying and waterlogged, containing Swamp Box *Lophostemon suaveolens* and *Melaleuca* forest.

4.2.2 Fauna

Commentators (e.g. see Dwyer *et al.* 1979:82) have consistently reported on mammalian fauna in wallum as displaying low total species richness, very low habitat diversity and low abundance. While this statement probably applies to the eastern section, depauperate land fauna would have been substantially compensated for by the richness of marine and avian life in the western section, and the higher land faunal population that could be predicted.



Marine life is particularly abundant, with Hays Inlet being recognised as an especially rich fishing and fish-breeding habitat by the declaration of a Fish Habitat Reserve. The extensive intertidal flats of both the inlet and the Pine River support a rich shellfish population including oysters *Saccostrea commercialis*, cockles *Anadara trapezia*, mudwhelks *Pyrazus ebeninus*, ribbed ceriths *Phinoclavis vertigus* and hairy mussels *Trichonya hirsuta*. Fish included mullet, Mangrove Jack, Bream and Gar. Mud Crab was prolific in the mangrove creeks.

In the eucalypt woodland of the western section, populations of macropods, especially Grey Kangaroo *Macropus giganteus* and Swamp Wallaby *Wallabia bicolor*, would once have been abundant. Koala *Phascolartos cinereus*, Common Ringtail Possum *Pseudocheirus peregrinus* and Brushtail Possum *Trichosurus vulpecula* were all common in the study area.

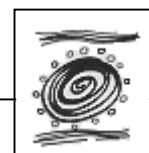
Birds would have included quail, ducks, swans, parrots, cockatoos and pigeons.

4.3 **The Cultural Landscape**

Aboriginal people consciously aimed to manage their impact on the environment. This connection to their environment paralleled their spiritual life; indeed, was matrixed to it. Aboriginal perceptions of the landscape were different from those of European settlers and pastoralists. Every aspect of the land – its weather, seasonal cycles, geology, plants and animals – was understood and its resources carefully managed and utilised. Unlike European perceptions which regularly assess the Australian landscape in terms of resources, Aboriginal people saw the whole landscape as sacred, an extension of the Dreaming (Cowan 1989).

The landscape was mapped intricately in terms of superhuman involvement. In this spiritual world, creeks, rock outcrops, waterholes, mountains and other natural features of the landscape had significance and could be places of power or the location of stories and myths. Aboriginal people themselves were a part of the landscape with the plants and animals and physical features of the landscape of equal importance (Strong 2000).

An analogy might be to consider if a white person was told that a particular tree was significant, it would diminish in importance the other trees surrounding it. But Aboriginal people saw the whole landscape as significant. Thus to an Aboriginal person, while one tree might have particular significance because of some story or



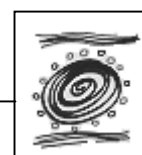
connection to it, the whole landscape increased in importance because of it.

The Petrie-Kippa-Ring area contains numerous elements of an important cultural landscape. These different elements include dreaming sites, increase sites, food resources, bora rings, pathways, camp sites, artefact scatters, scarred trees and shell middens. While each of these singularly is significant, when combined in a holistic landscape in which all are interlinked, they add a sense of the traditional world that was Aboriginal Australia, where the sacred meshed almost completely with the secular.

A bora ring, known as *Nindur-ngineddo* ('leech-sitting down') was positioned in Petrie, at the junction of Dayboro Road and Anzac Avenue. A pathway led due north along Reid Street, over Murrumba Hill, to the kippa ring near a small creek that flowed into Yebri Creek. Both are destroyed (Steele 1984). The ring was used by groups from Logan, Amity Point, Moreton Island and Bribie Island, as well as the local 'North Pine' group (Petrie 1904).

An inlet of the Pine River near the railway bridge in Mathieson Park, was known as *Mandin* ('fishing net'). Oxley reported a wall of green bushes used as a weir in 1823 near this area. The bushes served to trap mullet and whiting. The Moravian missionaries Nique and Rode also recorded a fishing site known as *Givermandum* or *Kipper-mandum*, which Steele (1984) suggests may be the same site. Tom Petrie, who lived at Murrumba Homestead, reported that the bora ring, the fishing hole and a rain increase site a little to the west of Mathieson Park all belonged to a rain-maker called Dalaipi (Petrie 1904). According to Petrie, Dalaipi would dive under the water with his axe to sever the *taggan* (rainbow serpent) so the rainbow could rise into the sky. The missionaries Eipper and Wagner reported a ceremony near the North Pine River involving the rainbow serpent during an eclipse of the moon in 1841 (Steele 1984, based on articles in *The Colonial Observer*, 1841). However it may be that Steele has assumed that mention of a serpent is to be identified with a rainbow serpent; this motif is generally considered to be from northern Australia.

Significant shell middens are located on the post-glacial terrace above the Pine River near the end of Bray Park (Ann Wallin and Associates 1995). These are indicative of the abundant food resources associated with the Pine River and long-term usage of these resources by Aboriginal people in the area. Midden sites are also reported from near the mouth of Saltwater Creek (Alfredson 1995), along the mudflats near Deception Bay (destroyed in 1989), and along the sea front of Redcliffe Peninsula near Clontarf and Humpybong.



A burial tree was also reported by Petrie (1904) on Yebri Creek. Bones of important individuals were be collected and placed inside the hollow tree. However, burials are also known from the Broadbeach and Toorbul areas in sand banks.

Flinders, visiting Moreton Bay in 1799, stole a fishing net 24 metres long from a hut at Clontarf Point, and noted several fish traps on the rocky reefs nearby (Steele 1972). It is possible that these might also relate to swamp oak posts left on the mudflats to attract the toredo borer known as 'cobra'. Petrie (1904) claims these were 'managed' and encouraged by the introductions of piles of wood on the edges of creeks and rivers.

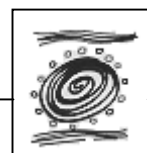
Hays Inlet was called *Tugulba*, a word meaning 'fish poison'. This may relate to the use of plants like Soap Bush and Water Piper, both of which are found in the area, for poisoning fish. Hays Inlet retained a long continuity with the traditional people; Fairhall (1989) includes photos of a fringe camp that was located at Hays Inlet, and anecdotal information suggests that this was near Kippa-Ring at the end of Chelsea Gardens Road.

Welsby (1967) says that Redcliffe was called *Kauin kauin*, meaning 'blood', perhaps a reference to its rich red soil. White clay for ceremony was obtained from Scott's Point (Petrie 1904).

Kippa-Ring derives its name from a small ring used as part of the 'kippa' initiation ceremony, located near Klinger Street and Anzac Avenue destroyed in 1950. The larger ring was identified after a major search (Ann Wallin and Associates 1996). In a recent court case, an area of land owned by the Catholic Church where the larger ring is believed to have been in Klinger Street, was purchased and set aside for Aboriginal people.

Another cultural site (also destroyed) located at Lipscombe Road in the Mango Hill area, was associated with evil spirits (Ann Wallin and Associates 1995). Several lithic artefacts are recorded from the area to north of Anzac Avenue near Kippa-Ring where Newport Waters is located. Kangaroo Waterholes were also considered to have cultural significance (Rollo Petrie – grandson of Thomas Petrie, pers. comm. 1996).

To Aboriginal people living in a traditional way of life prior to its destruction after thousands of years of coexistence, the land was the spiritual world in which human beings operated in harmony with plants and animals. While this also included hunting and food collection, and a highly sophisticated fire management regime, it appears that at times certain plants and animals were not collected



in order to allow the species to maintain its population and propagate. Certain societal legal (taboos) restrictions were placed on breeding females to prevent them being hunted.

While much of the laws governing hunting in the Redcliffe-Petrie area has been lost with the destruction of traditional lifestyles, it seems that at times particular areas were set aside as off-limits. Tribes in southeast Queensland refer to this as *mimburi* and they may be considered the first 'national parks' at a time when the idea of conservation had never been considered by the white invaders of the bushlands (Gaiarbau (in) Winterbotham, 1957; Langevad 1982).

At times, food resources may have centred around riverine resources, and turtles, fish (such as mullet), mussels and other shellfish may have been important, while at other times in the year, foods including bungwall fern, lillypillys, yams, cycads and macropods (Low 1988) may have had greater importance. Freshwater swamps are rich in food resources. Fish, eels, yabbies, turtles, snakes, frogs, ducks, geese, swans, gallinules, herons and pelicans would have formed part of the many species of animal foods taken by Aboriginal people, together with animals such as kangaroos and wallabies coming to drink.

Prior to European settlement, the major vegetative species used as food was Bungwall Fern *Blechnum indicum*, variously termed *dingowa*, *bungwa*, *bungwhaul* or *tong-wun* (Bancroft 1894; Eipper 1838; Oxley in Steele 1972; Petrie 1904; Richter 1994; Welsby 1967). This coarse fishbone fern contains a thick fibrous rhizome that contains excellent sources of carbohydrates. The fern is found in freshwater swamps, especially *Melaleuca* swamps, along the eastern coast of Australia from Arnhem Land to northern New South Wales. The root was collected by women and then either pounded and roasted, or roasted and pounded, using a specialised stone tool commonly referred to as a bungwall pounder (Kammainga 1981; Richter 1994), to extract the starchy pulp. Early explorers talk of locating Aboriginal camps by the sound of women pounding bungwall on slabs. Another important starch food was *imboon*, the root of a reed related to the Bulrush *Typha* species. Both were staple foods of coastal Aboriginal people in the Moreton Bay region and would have been very common in the freshwater creeks and lagoons.

In summing up, the Petrie Kippa-Ring area offered a rich landscape of food resources, with a variety of ecological habitats. The combination of abundant and varied marine and avian species provided a rich resource base. Some species, like shellfish – oysters, mud whelks and cockles - were consistently available. Other species, e.g., schools of mullet that migrated up the Pine



River and various creeks to the junction of salt and fresh water, were seasonal. Hays Inlet would have been a major food source supplying mullet, whiting, bream, mud crab, prawns and the edible teredo worm to be collected from its shallow mangrove swamps.

4.3.1 Current land use in the study area

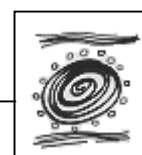
European settlement had a major impact on traditional lifestyles. Because of its proximity to Brisbane, the study area was impacted on early in Queensland's history. The Petrie family settled at Murrumba Homestead at Petrie and helped cut a road (the Old Northern Road) north through the Sunshine Coast for use by timbercutters and goldseekers travelling north to Maryborough and Gympie.

Small rural holdings, each with a slab hut, eventually gave way to small cropping, orchards, dairying and livestock. With the spread of urban settlement from Brisbane, hobby farms and small settlements have replaced many of the larger dairy farms in the district. In the 1960s, a paper mill (AMCOR) was established at Petrie, and exotic pine plantations replaced large tracts of native forest.

From the early 1990s, urban spread from Brisbane to Pine Rivers Shire has resulted in the proliferation of 'dormitory' suburbs at Mango Hill, Murrumba Downs and Kippa-Ring. However, the early resumption of land for the proposed rail corridor has meant that this has remained virtually clear of radical landuse, apart from pine lots, grazing and some limited agriculture. Its proximity to housing has resulted in its use as a disposal area for garbage, including numerous burnt-out cars, building materials and glass bottles. Topsoil was removed for Brisbane gardens in the area around Bray's Road, and gravel from a section of the transport corridor between Gynther and Bremner Roads.

Between Kinsella Road and Saltwater Creek is a large development ostensibly relating to a turf farm, but possibly part of redevelopment of the Mango Hill Golf Course. This site, which is currently being investigated by EPA for environmental breaches, has resulted in drainage of freshwater wetlands, construction of dams and dumping of landfill on the corridor.

Anecdotal evidence collected during an earlier study (Ann Wallin and Associates 1995) records that there were a number of shallow freshwater lagoons in the flood-plain of the Pine River near Brays Road. These were breached by manmade drains dug by farmers in the 1960s, resulting in saline intrusion.



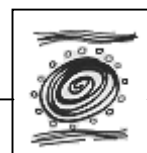
4.4 Conclusion

Assessment of the bio-geography of the area has resulted in the following conclusions:

The landscape surrounding the transport corridor forms a part of an extensive and significant cultural landscape that utilised resources derived from the Pine River, Hay's Inlet, and Deception Bay. These known cultural places include camp sites, burial trees, artefact scatters, bora rings, increase sites, bad spirit places, and mythological Dreaming sites.

Much of the significance of the study area relates directly or indirectly to the Pine River, snaking its way across a broad flood plain. The profound importance of large tidal rivers formed an important element in traditional Aboriginal landscapes. Associated with this resource element were sacred sites – increase sites, Dreaming sites and special places – that amplified and complemented the natural landscape. The association of the rainbow serpent story with rivers, as evidenced through the story of Dalaipi the rainmaker (Petrie 1904) is paralleled throughout northern Aboriginal Australia. However, a note of caution has been sounded earlier about whether Steele is correct in his identification of the *taggan* as a rainbow serpent motif.

The proximity of the transport corridor to this major natural feature of the landscape by association has relevance to the archaeological and cultural landscape. Thus the general Petrie-Kallangur-Mango Hill and Kippa-Ring area can be demonstrated to be of high cultural significance to local Traditional Owners.



5 HISTORICAL CONTEXT

5.1 *Previous research in study area*

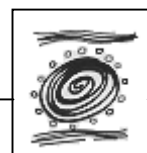
Largely resulting from its proximity to early settlement, a considerable body of academic work has been undertaken in southeastern Queensland, which provides a context for the Petrie and Kippa-Ring area. The University of Queensland has had a long history of research in the Moreton Bay region, through its Moreton Regional Archaeological Program (MRAP), discussed below. However, while consultancies have undertaken fieldwork in the Petrie/Redcliffe area, there has been a scarcity of rigorous archaeological studies of individual sites that might provide scientific structure to the numerous historical, ethnographical and anecdotal publications. Because of the focus of academic investigation has been archaeologically related, there is a need to begin combining this with broader cultural landscape studies (Strong 2000). There is a reasonably sound foundation for this wider approach through the invaluable information of traditional Aboriginal life passed on by Gaiarbau (Willie McKenzie) to university researchers. Winterbotham (1950, 1957, 1982) recorded an extensive body of information related to him by this Jinibara elder, which is extensively quoted in cultural heritage studies.

5.1.1 Academic research

Hall (2000) gives a useful summary of current research results.

The MRAP study undertaken by the University of Queensland (Hall 1980; 1982; 1987; 1990; Hall and Hiscock 1988; Hall and Robins 1984; Hall, Walters and Nolan 1987; Hiscock 1988) produced a major body of research that established prehistoric occupation in the Moreton Bay region. Studies at Sandstone Point, Browns Road, Moreton Island, Bribe Island, Platypus Rockshelter, Brisbane Airport and by Neal and Stock (1986) at Wallen Wallen Creek, Stradbroke Island, produced dates that span 20,000 years of Pleistocene and Holocene occupation of coastal and sub-coastal Moreton Bay. As a result, there is an extensive literature about sites that are peripheral to the study area.

Winterbotham (1957) interviewed the Jinibara elder, Gaiarbau or Willie Mackenzie in the 1950s. His manuscript provides detailed



information about the wider study area. Gaiarbau's knowledge of boundaries, tribes and traditional knowledge make this an important reference.

Lilley (1978; 1984), examined environmental issues in identifying a range of parameters for the location of site features that is still useful today. These indicators include the presence of fresh water, ie., creeks, waterholes and swamps; sandy well drained soils; a preference for sites associated with stream cut terraces or ridges in proximity to water; a preferred vegetation habitat, eg., open eucalypt woodland; the proximate availability of stone material suitable for the production of stone artefacts and the proximate availability of preferred faunal and/or vegetative resources.

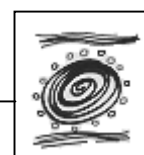
Whalley (1987) concentrated on an Aboriginal social history of Moreton Bay, trying to establish boundaries for the numerous groups/tribes mentioned in earlier ethnographical and historical sources. Steele (1984) made a detailed study of literature sources of Aboriginal sites and places that provides a useful entry point to the ethnographic literature.

More recently, Richter (1994) has done extensive studies on bungwall fern, its use and associated lithic tools. He provides a useful list of historical sources and terminology for bungwall fern.

5.1.2 Consultancies

Several consultancies have been undertaken in the Petrie and Kippa-Ring area.

Hill (1980) undertook the first study of the proposed transport corridor in 1980. He had an advantage in that much of the route was still undeveloped, or under farming that allowed a reasonable ground visibility. Only one site was located, but this is of national significance. This was a macropod incisor tooth necklace, in association with 3 stone artefacts (Fig: 2). Material cultural finds like this are extremely rare; only one other such necklace, from near Samford, has been reported (Robins, pers. comm.). It was found in *Melaleuca quinquenervia* (Hill wrongly identifies it as *leucodendron*) open forest near Wattle Street (now called Bremner Street), about 1.5 kms from the destroyed Kippa-Ring kippa ring site in Anzac Avenue. The ground was inundated at the time and the necklace was partially covered with vegetation detritus. The finds were handed to the then Department of Aboriginal and Islander Advancement and are now in the Queensland Museum. Steele (1984: 166) shows a photo of the necklace held by Aboriginal



Ranger Glen Miller, which was reproduced in the *Courier Mail* (1980).

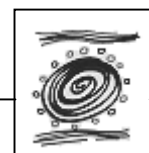
The necklace and associated lithics were examined by archaeologists Michael Strong and Adam Brumm as part of the research for this current study. The eleven (11) macropod incisors are from Eastern Grey Kangaroo *Macropus giganteus*, consisting of two pairs of two teeth, a central pattern of three teeth, then two pairs of two teeth. Hill was concerned that there should have been 12 teeth, but overlooked that the three central teeth form a distinctive arrangement. It appears that the pairs of teeth come from the same animals, while one of the central teeth are obviously from another animal. The pairs are separated by an extra twist of fine fibrous cord that supported the teeth. The cord is looped around the shank of each tooth and fastened with a blob of dark coloured resin, almost certainly *Xanthorrhoea* (grass tree) species (Brumm pers comm. 2001). The resin is flattened on both sides. The three flakes found in association with the necklace were also studied. There is a thin section white or pale yellow chert cortical flake, a small chip probably cortical chert and a chalcedony amorphous core. The chert flake is potentially interesting as its morphology resembles a style of artefact reduction that creates a 'gull-wing' section, much used for tula manufacture on the Barkly Tableland.

McNiven (1986) undertook a cultural heritage assessment of a proposed housing development at Dohles Rocks, about 1.2 kms south of the study area. Ten sites (all stone artefacts scatters or isolates) were located in disturbed contexts on a steep hill overlooking the Pine River. His summary is tabled below:

Table 1: Summary of lithic finds at Dohles Rocks site (McNiven 1986)

Material	Flakes	Flaked pieces	Cores	Total
silcrete	5	3	1	9
milky quartz	2	1	0	3
chert	4	0	0	4
jasper	0	1	0	1
quartzite	1	0	0	1
agate	1	0	2	3
TOTAL	13	5	3	21

Alfredson (1991) reported locating 6 mud whelk *Pyrazus ebinenus* shells near a stand of Moreton Bay Ash (Carbeen) *Corymbia tessellaris* in a proposed housing estate development for Newport Waters, near Kippa-Ring.



Crosby (1992) undertook a survey of Mango Hill. One indigenous site was located and several historical structures recorded. The Aboriginal site consisted of an isolate on a bank above a dam, possibly referring to Freshwater Lake. Kinsella House (since removed) possibly dated from the early part of the 20th century. Crosby recorded the Halpine Estate which included the manager's cottage, picker's quarters and cookhouse complex associated with pineapple farming in the 1940s. A hardwood survey peg cut out with a broadaxe, dating from the 1874 survey by Thomas Petrie, was located at the boundary of Sub 1 and Sub 2, Portion 506, fronting Anzac Avenue. Present whereabouts are unknown.

Wallin (1994) undertook an assessment 1994 of a proposed housing development in the Kippa-Ring area, between Kinsellas Road and Anzac Avenue. The area was formerly pine plantation. One indigenous site was located near Saltwater (Hays) Creek and three historical sites were recorded. The Aboriginal site was an artefact scatter in association with a possible scarred tree. A piece of red ochre was also located within the site. Finds are tabled below:

Table 2: Summary of lithic finds at Kinsellas Road site (Wallin 1994)

Material	Flakes	Flaked pieces	Cores	Total
silcrete	2	0	1	3
chert	2	1	1	6
quartzite	4	1	0	5
TOTAL	8	2	2	14

The historical sites included those houses and sheds at 1878 Anzac Avenue, and a house at 13 Kinsellas Road West recorded by Crosby. Wallin also identified the significant memorial avenue of Mango trees planted along Anzac Avenue, which she recognised as being of local and state significance (Ewart 1992; Lewis 1992; Pine Rivers Shire Council 1988)

A second study, a DCP planning assessment, was made of the Mango Hill/Griffin area (Ann Wallin and Associates 1995) for the area bounded by the Bruce Highway, Boundary Road, the Pine Rivers Shire boundary and by the Pine River. Wallin examined the effect of pine plantations on the archaeological record and concludes that whereas on Bribie Island, Hall (1991) indicated that damage to ground integrity was minimal, at Mango Hill, high mounding had resulted in ruts over a metre deep largely destroying the archaeological record. However, a number of new sites were



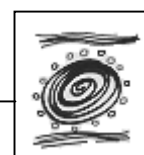
located in the Pine River area. These included a small midden at Shelly Beach, and three highly significant middens at Bray's Farm. These middens had been safe-guarded by the Bray family for many years, and have retained high levels of scientific integrity. They are located on the post-glacial terrace of the Pine River, off Brays Road, about 0.8 km south of the study area. Freshwater lagoons were once associated with the middens. The middens were composed of Rock Oyster *Crassostrea commercialis*, Cockle or Mud Ark *Anadara trapezia*, and Mud Whelk *Pyrazus ebeninus*. One midden is large, approximately 1 metre high, and 25 metres across. Wallin (1995) rated these sites as having major archaeological significance. A historical split rail fence built by Tom Petrie was recorded at the end of Elizabeth Street, Brays Road.

Alfredson (1994) in a 1994 study located a reputed ceremonial site or special place at Lipscombe Road. Here, bulldozers had exposed a circle of dark earth staining, which was subsequently removed. The site was interpreted by traditional owners through oral traditions, and certain unusual happenings at the site, as being a malevolent spirit site.

Alfredson (1995) surveyed the Nathan Road Wetlands Reserve, Kippa-Ring, for the Redcliffe City Council. The study area comprises 61 ha on the southern shores of Deception Bay, south of Redcliffe Aerodrome. The land consists of a series of remnant beach ridges and swales. The study noted midden sites listed by Steele (1984) to the west of the study area (and about 1 km from the present study area) that had been destroyed in 1989. An angular quartz cobble, possibly a manuport, was located on Lot 323 at the northern angle of the boundary of the Wetlands. A possible scarred ironbark was located near Chelsea Road.

Alfredson (1995a) also undertook a study of the proposed Hay's Inlet Environmental Park, which encompassed an approximate 6.7 ha on the northern shore of Hays Inlet, west of Hays Creek, and a much larger segment of approximately 118 ha on the eastern shore of Hays Inlet, between Saltwater Creek and Hercules Road. A third smaller area was surveyed behind the Redcliffe Golf Course. No sites were recorded.

Strong and Wallin (Ann Wallin and Associates 1995a) conducted a survey of the site of Murrumba Homestead, the former Petrie house, at Our Lady of the Way Church School, Murrumba Hill, Petrie. The study reconstructed the original location of the building, demolished by the Catholic Church in the 1960s, and located glass and ceramics from the house. The original vegetation was also mapped and details confirmed with Rollo Petrie, grandson of Tom Petrie, just before his death. Across Anzac Avenue is Yebri House,



the home of Tom Petrie; a rafter has his initials branded into the wood.

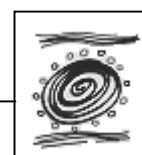
Ann Wallin and Associates (now ARCHAEO Cultural Heritage Services, undertook a study on the proposed second stage of Newport Waters (1995c) off Boardman Road. This involved a program of augering in addition to the field survey and demonstrated that the frontal beach ridge contained both chenier and midden material. The shell material was predominantly cockle with some whelk. As part of this study, Michael Strong undertook an investigation using a combination of archaeology, ethnology and ethnohistory (Charlton 1981) to establish the approximate location of the Kippa-Ring bora ground (Satterthwait and Heather 1987). Using detailed notes from Winterbotham (1948), old correspondence from the Redcliffe Historical Society (Fairhall 1994), Steele (1984) and a 1942 aerial photograph which shows the ring clearly, a map was superimposed on the aerial photograph and the location of the ring established. Surveyors from Redcliffe City Council assisted with the survey and agreed with the results of the aerial photograph, locating the ring in the southwest corner of RP139809. Mr Allan Mickle, a slaughterman in the yards that were located in the 1940s adjacent to the ring, recalled the exact location and was able to identify its position on the aerial photograph. This matched the same location previously arrived at.

Another survey was conducted (Ann Wallin and Associates 1997) of a small area north of Morris Road and east of Tranquillity Drive for a proposed residential development. While the study located one site consisting of disturbed shell and a silcrete flake, it also documented anecdotal information on a large shell midden in Hercules Street, and finds of stone axes and a wooden spear lodged in a tree stump on a farm belonging to the Winter's family in the region of Newport Waters.

Of particular relevance to this study is the Environmental Impact Study undertaken on the Petrie to Kippa-Ring Public transport corridor (GHD 2000), which examines history of the route, transport requirements, population dynamics, constraints and design.

5.1.3 Historical studies

Numerous studies have been undertaken about the study area. Steele (1972, 1974) in his study of European exploration of Moreton Bay and convict life in Brisbane Town, provides several useful accounts of the study area. Eipper (1841), Gunson (1978) and Grope (1981) discuss the explorations of the Moravian missionaries from Zion's Hill at Nundah to Redcliffe and Toorbul Point. Petrie



(1904) provides historical eyewitness accounts of Aboriginal lifestyles and the impact of European settlement. A more recent biography (Dornan and Cryle 1992) traces the history of the famous Petrie family, although the family is at odds with some of the interpretations of this book.

A study (Pearce 1993) of the three castaways, Pamphlett, Parsons and Finnegan also includes valuable ethnographic details about Aboriginal life through European eyes from early contact times.

Langevad (1979) discusses early settlement, the Simpson letters and historical accounts of the area.

Stewart (1970) undertook a detailed history of the Pine Rivers Shire.

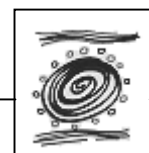
The Redcliffe Historical Society has produced a number of historical publications (Fairhall 1989, 1994), and Slaughter (1959) that chronicle the colourful history of Queensland's oldest settlement. Likewise, the Pine Rivers Shire Council's publication *Tracks through Time* (Armstrong 1982) is an invaluable record of historical sites and buildings. Tutt (1974, 1975) also provides additional historical information about the area between the Pine River and Sunshine Coast.

5.2 Historical Background

5.2.1 Introduction

The following is not intended to be a full history of the Petrie to Kippa-Ring Study Area. The contextual history provided in the following section provides a background for the identification and assessment of cultural heritage material in the Study Area.

In terms of historical human occupation, the corridor under review can be broadly considered as stretching from the Petrie (formerly known as North Pine) area on the Pine River to the north-western elements of the Redcliffe peninsula (now developed as the suburb of Kippa-Ring). Between these extremities, which have both experienced a comparatively high concentration of human occupation over time, the central area (comprising the low swampy ground of Hays Inlet, Yebri Creek and other waterways associated with the North Pine River) has been less touched by non-indigenous human settlement. Consequently, in terms of non-indigenous cultural heritage, the areas of Petrie, Mango Hill and



Kippa-Ring can be regarded as the most likely to possess sites and features of heritage value.

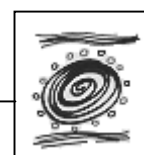
5.2.2 Initial exploration and encounters

Local features such as Moreton Bay, Cape Moreton, and the Glass House Mountains were observed and named in May 1770 by Captain James Cook as he travelled along the eastern coast of Australia. It was not until 1799, however, that Matthew Flinders in the *Norfolk* entered Moreton Bay to explore its environs. Flinders named Point Skirmish (named after a skirmish with local Aborigines), Pumice Stone River and 'Red Cliffe' Point (now Woody Point, South Point and Pumicestone Channel). He identified the South Passage from the bay to the ocean and named the land to the north of it Moreton Island. Flinders landed at Woody Point in August 1799 and examined the foreshore where he found an Aboriginal camp. From a nearby fishing spot he took a fishing net and left an axe in exchange (Fairhall 1986: 6).

Later European explorers included John Oxley, who was commissioned in 1823 to survey Port Curtis, Moreton Bay and Port Bowen with a view to forming a convict settlement. Oxley's report recommended that the Redcliffe peninsula was better adapted for a military post and stores depot than as the site of a principal settlement. Consequently, Governor Brisbane instructed that a settlement be established at Moreton Bay.

During his journey, Oxley had travelled up the North Pine River as far as Yebri Creek, seeking to ascertain whether the source of the stream could be traced to the nearby mountains. "Where we left off," he noted, the water was brackish, and there were a great many fine cypresses. Ascending a small hill on right, of good soil, saw the stream had a weir across a little further up. Much good timber of the eucalyptus species, with she-oak and dogwood. The natives were very numerous on the shores of this inlet...several waded off to the boat, to whom we gave biscuit, which they ate." (cited in Armstrong 1976: 34). This point of landing is now marked by the 'John Oxley Reserve'.

The site was identified as possessing heritage significance by the 1976 National Estate study for Pine Rivers Shire (Armstrong 1976). A site nearby was identified by Armstrong in a map annotation as 'Cunningham's Campsite, 1824', but no further supporting information regarding this site was provided in that study. Armstrong did not list this area as a defined site for the National Estate study. Research for the present assessment indicated that Cunningham accompanied Oxley on several excursions from the Redcliffe settlement in late 1824, and may well have camped in the



Yebri Creek area. However, research in the principal historical source for Cunningham's early journeys (Steele 1972) provided no further information. On this basis, the status of the site has not been fully established by the present assessment.

While in the district in 1823, Oxley also encountered three castaways, Finnegan, Parsons and Pamphlett, who had been living with local indigenous communities around the Brisbane and Pine Rivers for several months. According to the castaways' account, they had experienced considerable hospitality there:

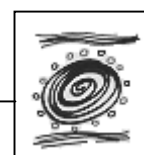
'When the natives approached, they seemed at once struck by our miserable condition;...some who had their nets with them instantly set to work to procure more [fish] for us; and one or two fetched as much *dingowa* [fern root] as they could carry. The next night they took us to their huts, where they entertained us in the same hospitable manner as the blacks, with whom we had before lived, had done.'" (cited in Pine Rivers Shire Council 1988: 44).

5.2.3 Early settlement: the Redcliffe Penal Settlement

As a result of Oxley's assessment, non-indigenous settlement commenced in the area of modern Brisbane in late 1824. Under the Commandant, Lieutenant Henry Miller of the 40th Regiment, an advance party of 14 soldiers and about 30 convicts left Sydney on the *Amity* on 1 September. Oxley commanded the vessel, selected a site for the convict settlement, and charted local watercourses and features around the peninsula, Moreton Bay and the Brisbane River.

The site chosen by Oxley was located near permanent good water, with good soil, plentiful timber and grass for stock. The first buildings were humpies, effectively slab huts with bark roofs, as well as a more substantial Commissariat Store and commandant's cottage. Following discovery of a deposit of quality clay, a kiln was erected on the bank of the creek for brickmaking (Rea 1972: 3; Slaughter 1959: 4; Steele 1975: 17). Timber for the new settlement was cut at Yebri Creek in the vicinity of the present study area, although it is also likely that the wooded ridges behind Redcliffe provided suitable timber for the construction of houses.

It was at Yebri Creek, however, that the first violent clashes between Europeans and the local indigenous inhabitants occurred. In 1824, at a site close to the later Petrie homestead at Murrumba, local Aborigines took a steel axe from a convict gang cutting timber from a large bloodwood limb. Shots were fired, resulting in one Aboriginal death, while two convicts were speared in retaliation.



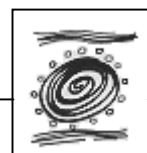
(Evans 1992:14). According to the Petrie memoirs, (1983:188-189) Tom Petrie was later shown a large branch at the site of the original incident, replete with axe notches and saw marks. The remarkable size of the immovable limb was reported to have impressed even William Pettigrew, the experienced timber merchant.

The violence associated with the Yebri Creek incident and similar clashes was a major factor mitigating against the survival of the Redcliffe settlement. Additionally, the verification of the South Passage meant that ships could travel to the mouth of the Brisbane River without approaching Redcliffe. This diversion later resulted in the erection of a new jetty and stores depot at Dunwich (Steele 1972: 177). Moreover, after travelling up the Brisbane River, Oxley remained convinced that it provided more suitable sites, an opinion shared by Miller who found Redcliffe 'unhealthy' and the Aborigines hostile. It was therefore decided to move the settlement up the Brisbane River. Approval was granted in November 1824, and the re-location to the site of modern Brisbane occurred in April-May 1825 (Rea 1972: 3; Fairhall 1985: 4).

After the Redcliffe settlement was abandoned, local Aborigines named the place 'umpie bon' or 'oompie bong', reputed to mean deserted or dead humpies or dwelling places. The name 'Humptybong' was subsequently applied firstly to the creek near the original settlement, and then to the whole of what is now known as the Redcliffe peninsula (Jones 1988: 2; Rea 1972: 4; Fairhall 1985: 4; Slaughter 1959: 4).

5.2.4 Pastoral and agricultural settlement

Although marginal to the events surrounding the Redcliffe penal station, the area of modern Petrie and Mango Hill emerged as a centre of pastoral and agricultural settlement from the 1840s. With the withdrawal of the penal settlement from 1839 and the development of pastoral industry on the Darling Downs, Brisbane was opened for free settlement in 1842. Around 1843, Captain Francis Griffin took up an extensive block of land known as 'Whiteside' on the north bank of the North Pine, from the headwaters of the river in the D'Aguilar Range to Moreton Bay, and including most of the country between the Pine and Caboolture Rivers. After 1845, with new limitations on the size of pastoral 'runs', the vast property was cut into two, the new portion known as 'Redbanks' and bordered by Sideling Creek. With other members of his family, Griffin grazed sheep, cattle and horses on the two properties while cultivating crops such as barley, maize and potatoes.



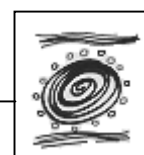
The Rev. J.D. Lang, the champion of free settlement to the Moreton bay district at this time, described 'Whiteside' as possessing the "same primitive character as those of squatters generally, consisting of rough slabs fixed in sleepers below and in a grooved wall plate above and roofed with large sheets of bark supported by rough saplings, as rafters." (cited in Armstrong 1976: 7). The Griffins' historic presence is perpetuated today in the locality name adjacent to the Study Area.

Thomas Petrie was another major landowner in the area. Around 1858, he acquired land from the 'Redbanks' portion of the Griffins' lease as the latter family's interest in the area declined. Ten sections of land between Sideling Creek and Humpybong were transferred to Thomas Petrie, although a formal alteration to title deeds did not occur (Slaughter 1959: 7). It is also recorded in the Petrie memoirs that Dalaipa, an elder of the North Pine Tribe, had indicated his approval of this transaction and Tom's landowning ambitions in the area.

After Queensland's separation from New South Wales in 1859, Petrie repurchased the land in 1861. The 592 acre holding made Petrie the first freehold landholder north of the North Pine River (Pine Rivers Shire Council 1988:76). Nearby, James Campbell (Petrie's father-in-law) owned a piece of land located directly to the east of the *Murrumba* homestead. This was first purchased in 1863 and appears to have been re-issued under the provisions of the corrected titles to the *Land Act* of 1882.

The first building erected by the Petries on the North Pine River was a temporary slab hut at the house site later known as 'Yebri'. This site was evidently chosen for the easy access to both fresh water in Yebri Creek, and the nearby fork to Dayboro Road. The main homestead *Murrumba* was commenced in 1864, situated on the eastern aspect of Petrie Hill with a vista across the Pine River to Moreton Bay.

Murrumba consisted of two separate buildings linked by steps, the second section having been built later, probably in 1894. The first building stood on four stumps, with a pyramid shingled roof replaced by iron sheets in 1918. It contained a bedroom, drawing room and library, dining room and hall; and a large stone fireplace. Floors and walls were lined with wide tongue-and-groove pine boards to a ceiling height of twelve feet. Other bedrooms were located along a separate wing to the north. Other features included a detached bakehouse (now marked by a memorial cairn), bathroom, a brick lined well, and rubbish dump located to the east of the modern railway line near the Paper Mill. The house and surrounding land was sold by the remaining Petrie family in 1954 to



the Catholic Church. Murrumba was subsequently demolished, and a church 'Our Lady of the Way' and primary school erected.

The 'Murrumba' homestead served as a coaching stop on the route to the Gympie gold field established after 1867 (Tranter 1990:32), and coach horses were kept in the station's stables. Later, in 1870, Thomas Petrie established a hostelry as business grew on the highway; this was built opposite the present Court House in the Petrie township. The cottage known as 'Yebri' was erected in 1897 within the Murrumba property, and served as a home for the manager of the station's dairy herd.

5.2.5 Closer settlement

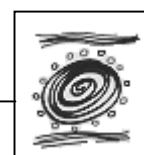
The first official sale of land at the Redcliffe Agricultural Reserve was made in 1862 at North Pine (Petrie), Clontarf, Woody Point, Scarborough and Deception Bay, and permanent free settlement began on the peninsula soon after. All Petrie's land was included in the proclamation as Crown land, which disregarded the less exotic 'Humpybong' and used the name 'Redcliffe'. Nevertheless, the residents continued to use the old name for some time. The government initially intended Redcliffe to be only an agricultural reserve and the first permanent settlement took place soon after the initial sales. However, although sales continued until April 1863, many of the 520 portions were not sold. The next survey in the district encompassed the Woody Point area, and was completed by surveyor Martin Lavelle in March 1864 (Slaughter 1959: 7,11).

Other subdivisions occurred throughout the North Pine and Mango Hill areas. The Kinsella brothers (after whom Kinsellas Road is named) for example, purchased land at Mango Hill that was later known as 'Glendalaugh'. Their property was later used to breed and train horses for the Police Department.

5.2.6 Frontier conflict and the local indigenous community

Relations between the North Pine indigenous communities and the various 'European' settlers are detailed in Stewart (1970:21-32) and the local history prepared for the Bicentenary celebrations (Pine Rivers Shire Council 1988:44-46). Several Aboriginal attacks upon shepherds and other pastoral workers at Whiteside occurred from the mid-1840s, which are likely to have resulted in reprisal raids that went largely undocumented.

On the other hand, evidence points to the existence of a strong relationship between the Petrie family and Aborigines of the North



Pine communities. According to one family story (Petrie 1983:197-200), Thomas Petrie followed the wishes of an Aboriginal man who preferred to be buried beside his sister in a Traditional manner. Such behaviour illustrates Petrie's sympathy with indigenous culture, and was highly unusual among Europeans of his time.

According to the Petrie memoirs, Dalaipi had been greatly pleased when Petrie told of his desire to own some land around the North Pine River. Dalaipi indicated that there was plenty good "tar" (ground) at "Mandin" (fishing net – the North Pine River railway bridge crossing), and is reported to have said: "You take my son, 'Dal-ngang', with you, he will show you over my country for he can ride, and any you pick on I will give you...".

However, the presence at Sandgate during the 1870s of the notorious Native Mounted Police under Lieutenant Frederick Wheeler undoubtedly had an intimidating effect on the Aborigines around Redcliffe (Jones 1988: 31-32). As elsewhere in Queensland, Aboriginal communities in the area were eventually decimated by disease, displacement, drug abuse and sexual and labour exploitation.

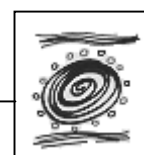
In later years, the Petrie-Redcliffe areas remained a favoured place of occupation for the surviving indigenous community. At Redcliffe in particular, the relative isolation and sparse European population until the 1880s ensured that Aborigines continued to live in the area much longer than occurred in many parts of Brisbane town. Local identity Mr Parry-Okeden remembered 20 or 30 Aborigines camped halfway between Woody Point and Clontarf in the 1880s and 1890s. This community lived by fishing and oystering and doing odd jobs.

7

Peter Bray also recalled that his grandfather allowed Aborigines to camp on the family farm at Bray's Road. The camps were seasonal, depending on the fishing and shellfish available.

5.2.7 Urban Development at Petrie and the Redcliffe peninsula

After its foundation as a coach stop to the Gympie diggings, the development of the North Pine township was greatly stimulated by later transport developments. A low level bridge over the North Pine River from 1877 relocated traffic from the Old Northern Road corridor to the area adjacent to Sweeney's reserve. The opening of the Court House nearby in 1878 confirmed North Pine's local status; by this time a number of houses, shops, churches and schools provided a hub for local settlement. A post office had existed in the township since 1872. The construction of a railway



through the district in 1888 confirmed the area as a local social centre hub and consolidated this pattern of local development. Following the death of Tom Petrie in 1910, a memorial was erected and the name 'North Pine' was altered to 'Petrie' in 1911.

Close to the coast, and removed from the important rail connection, the Redcliffe peninsula developed differently to Petrie. Before any extensive settlement occurred at the Redcliffe Agricultural Reserve, Sir James Garrick and Thomas Petrie had become interested in the area as a seaside resort (Jones 1988: 37; Rea 1972: 4). Within ten years land speculators had begun buying agricultural portions from original owners, but building activity remained slow. In 1881 there were only five houses along the seafront from Scarborough to Woody Point. A dozen people on the beach caused comment, although camping began in the 1880s (Rea 1972: 4).

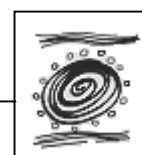
Despite the emergence of leisure as a focus for development on the peninsula, scattered farms formed the most part of permanent settlement in the 1880s and 1890s. These generally grew maize, flax and tobacco, with timber being exported to Port Jackson (Jones 1988: 26). By this time the trend had begun for subdivided agricultural portions to be termed 'estates', and it was increasingly profitable to sell small building allotments (Slaughter 1959: 10,15). As settlement quickened, a number of noted local landmarks appeared. To accommodate visitors, in 1907 the Great Western Hotel was built at Woody Point but due to fire had to be replaced in 1909 by the Palace Hotel. An advertising brochure of the period described it as:

This magnificent palatial edifice...is constructed of wood and contains 22 lofty and spacious apartments, 15 of which are bedrooms and nearly all of which open to the balcony through French lights. An exquisite revelation is a balconette over the front entrance on the level with the top ceiling access to which is gained by a staircase from the top floor, when lovely views of Moreton Bay and Bramble Bay may be obtained (cited in Jones 1988: 15).

Smaller, less expensive hotels included Hooks Belvedere Hotel at Woody Point. By the 1930s the area was booming as a seaside destination.

5.2.8 Transport, communications and infrastructure

A number of local roads had their origins early in the period of non-indigenous settlement. From his regular visits to the seaside, Thomas Petrie marked a tree line for a bush track to Redcliffe via the Lagoons (Kinsella's Lagoon). When the bridge was erected

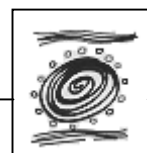


over Hay's Inlet, Petrie also marked a track from the bridge. The track developed into the Brisbane Road or Anzac Avenue as it is today. Formal road developments on the Redcliffe peninsula can be dated to the early 1880s, when the Caboolture Divisional Board invited tenders for the clearing of the coastline road from the new jetty north to Reef Point, Scarborough and which is now Oxley Avenue (Slaughter 1959: 10,15).

Anzac Avenue in particular has high levels of heritage significance (Ewart 1992). After Armistice in 1918, the idea of a suitable memorial to the fallen of World War I was a recurring theme for the people of Southeast Queensland. In 1921, T. J. Rothwell, president of the Royal Automobile Club of Queensland, proposed the concept of a memorial drive, marked by an avenue of trees that would run from Kedron in Brisbane to Petrie, and then to Redcliffe via the upgraded main road. Fund-raising continued from 1921 to 1926, and Sir Matthew Nathan, then governor of Queensland, performed the first planting at Petrie on 4 March 1925. The site was chosen to commemorate the association of the pioneer Thomas Petrie with the area, and his widow donated the palms that were used for the tree planting service. Rothwell's services to the community, especially in regard to this memorial avenue, are commemorated by an obelisk on Anzac Avenue in Rothwell Park unveiled in April 1933.

Mango trees were not among the species chosen for use in this memorial scheme, and consequently the 600 metres of mango trees along Anzac Avenue between the Bruce Highway and Kinsellas' Road is untypical of the area. In 1989, as part of road improvement works, the Pine Shire Council confirmed its policy to maintain the original concept of Anzac Avenue as a tree-lined memorial avenue. Present planning and future tree planting requirements were acknowledged in a design study commissioned by the council.

Closely aligned to the history of transport development is the provision of local postal services. In the penal settlement days mail was obtained by ship and infrequently. However, with the advent of free settlement from 1842 inland mail services soon followed. Settlers at Humpybong, for example, received their mail from Sandgate which had a once a week service from Brisbane through German Station (Nundah) by coach from 1864. However, it was found more suitable to carry mail through North Pine, once the receiving office was firmly established and operations began in January 1876 by a weekly horseback service. This was increased to twice weekly in December 1881. A coach service provided tri-weekly mail to Redcliffe from Brisbane while contractors McCallum and O'Shea operated a similar run to North Pine in 1882. After



1883, mail was handled at Woody Point from where a small boat carried the mail across Moreton Bay to Brisbane three times a week; the service connected with Sandgate on horseback. Daily mail appeared with the steamer *Redcliffe* from August 1883, but it was not until January 1917 that a truly modern service began operations. Mail was carried to and from Woody Point by motor boat, and then to Redcliffe by car. The construction of the Hornibrook Highway in 1935 and the co-ordination of rail services to Sandgate and road services to the Peninsula through Petrie further improved mail services.

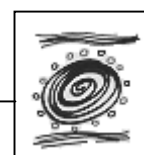
As would be expected, Redcliffe initially relied heavily on the sea for transportation: numerous ferry boats plied at different times between Brisbane, Woody Point and Redcliffe. Small ferries from Sandgate to Woody Point operated as well, bringing people to holiday on the peninsula. Larger vessels such as the *Koopa* and *Doomba* provided a service (Fairhall 1985: 5). During the boom of the 1880s jetties also had to be built to enable boats to land at low tides. The first jetty of any significance was constructed at Woody Point in 1881 because it was closest to Sandgate and it then appeared logical to make this the commercial centre of the district. In 1921 this all-timber structure was replaced by a new jetty, officially opened on 4 March 1922.

Redcliffe, however, was not linked to Brisbane by rail throughout this period despite promises that had been made since 1885. Therefore, transportation has depended heavily initially on the coastal steamers, and more latterly upon the developing road links. The latter developed dramatically during the Depression era, when M.R. Hornibrook was granted a franchise to construct and operate a toll bridge and highway from Sandgate to Redcliffe in 1931. The opening of the Hornibrook Highway across Hay's Inlet in October 1935 gave Redcliffe a direct link with Brisbane and greatly helped stimulate the development of Redcliffe city.

5.2.9 Primary production

Throughout the history of the Petrie to Kippa-Ring study area, agriculture, fishing and other forms of primary production have been a key feature of local economic and social development.

One major agricultural centre was the Halpine Estate, now the Halpine housing development, to the south of Anzac Avenue. This area was the source of pineapples for the manufacture of Mynor's Fruit Drinks. Farming techniques used were considerably advanced for the period; Halpine Estate is recorded as being the first plantation in Australia to use the American farming practice of



contour ploughing. Harvesting was aided by the use of a fifty foot long boom and conveyor belt to load fruit into a truck.

Historically, major industries at the Redcliffe peninsula have included farming and commercial fishing. Woody Point was looked upon as the best fishing ground for small-scale commercial fisherman and amateur anglers. It provided opportunities to net snapper, squire, sweetlip, rock cod and bream from reefs; from the shore fishing could secure hauls of whiting, mullet, garfish, flathead, yellow tail, sole and sand crabs. The back country of Woody Point was also known for its farming and fruitgrowing with orchards of pineapples, bananas, papaws, mangoes and passionfruit (Hornibrook 1935: 45).

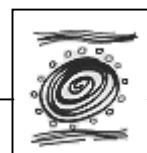
5.2.10 Local Government

Local government in the Petrie and Redcliffe areas can be dated to the establishment of the Caboolture Divisional Board in November 1879. Within a short space of time agitation began from surrounding areas to have their own boards. Pine Shire was the first independent council created in January 1888. Petitions in 1882 and 1885 seeking the creation for a divisional board in what is now Redcliffe were finally successful in April 1888. A section of the 1885 petition stated that the interests of the district were not identical with those of the rest of the Caboolture division, the settlers there being engaged chiefly in agriculture and grazing; while Humpybong was a largely a resort for visitors from the capital and other inland towns of the colony (Tutt 1979: 211). In 1921, an alteration to local boundaries brought the Petrie township within the Pine (later Pine Rivers) Shire for the first time.

5.2.11 Urban Development and modern industries, 1920s-present

Historically the study area, outside the urban centres such as Redcliffe and the Petrie township, has been relatively sparsely inhabited since the onset of non-indigenous settlement. In recent years, however, intensive housing estate development has transformed the local landscape in areas such as Petrie, Griffin and Kippa-Ring. Population levels have dramatically expanded in these 'commuter' suburbs as a consequence.

Other ongoing economic and commercial activities in the area include a number of extractive industries. Sand mining has occurred at several places within the study area, including near the Pine River mouth, while a substantial area near the headwaters of Freshwater Creek has had topsoil removed for urban gardening.



Timber plantations for the manufacture of paper and other pulp-derived products has emerged as another distinctive feature in the local landscape. APM commenced purchasing land near Petrie in 1947 following experimental plantings that had commenced as early as 1924. Construction of the Petrie mill between 1948 and 1957 “caused a massive surge of population in Petrie and stimulated the economy of the area” (Pine Rivers Shire Council 1988: 125).

Social transformation was accompanied by massive environmental changes under the land acquisition programme known as the “Chandler” policy that was launched in the mid-1960s and aimed at ensuring future completely independent supplies of raw materials for paper manufacture (Hindmarsh *et al.* 1991:7). Land was purchased or granted with long-term rights to wood from public lands that were generally unused or abandoned farmland, rundown dairy farms or Wallum country. The forests were managed for pulp forests, and grown for maximum quantity rather than quality.

5.3 Registered sites

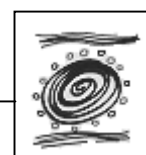
5.3.1 Indigenous sites

A search was conducted of known sites in files held at EPA. In addition, as a result of fieldwork previously undertaken by ARCHAEO, a number of archaeological sites, currently unregistered, are known.

An artefact scatter is located at the Pine River (Hall and Smith: no details). A scarred tree is registered at Strathpine (Davis 1992). Three shell middens are registered near Bray’s Road (Wallin 1995). An artefact scatter and scarred tree is registered from near Lipscombe Road (Wallin 1994).

However, it appears that neither the Petrie bora ring nor the Kippa-Ring bora ring are currently shown on the EPA Sites register maps, and nor are the fishing hole on the Pine River and the rain increase site. The findspot of the remarkable macropod incisor necklace (Hill 1982) at Kippa-Ring likewise does not appear to be registered.

All these sites, except the necklace site, are outside the study area, but within its vicinity.



5.3.2 Historical sites

Sites on the Queensland Heritage Register

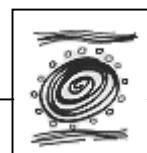
- ◆ North Pine Presbyterian Church, Dayboro Road, Kurwongbah (Site ID: 600767)
- ◆ Former Pine Rivers Shire Hall, 222 Gympie Road (600768)
- ◆ Strathpine Honour Board, 1347 Anzac Ave, Kallangur (600766)
- ◆ Hornibrook Highway bridge, Bramble Bay and Hay's inlet (601246)

Sites on the Register of the National Estate

- ◆ French's Homestead, Dayboro Road, Petrie (File No.: 4/01/076/0035)
- ◆ Hydes Homestead Complex, Whiteside (4/01/076/0019)
- ◆ Lorne Villa, 3 Connors Street, Petrie (4/01/076/0040)
- ◆ Murrumba Homestead site, Armstrong Street Petrie (4/01/076/0028)
- ◆ North Pine Presbyterian Church [removed from Register or Interim List] (4/01/076/0002)
- ◆ North Pine School of Arts, Dayboro Road, cnr. Anzac Avenue (4/01/076/0032)
- ◆ Petrie State School (original wing) (4/01/076/0029)
- ◆ Pine River Wetlands (4/01/076/0051)
- ◆ Slab Barn, Sweeney's Reserve (4/01/076/0021)
- ◆ Yebri Homestead, Anzac Avenue (4/01/076/0036)

Sites identified by the National Estate Study (Armstrong 1976)

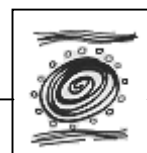
- ◆ House and surrounds of Jack Hyde's selection: Old Dayboro Road, Petrie, portions 5 and 28, Par. Whiteside.
- ◆ Slab shed/Hay barn, (Portion 5, Par. Whiteside).
- ◆ O'Loane's Cottage ('Lorne Villa'), 3 Connor Street, Petrie.
- ◆ Yebri Cottage, Redcliffe Road, Petrie: Portion 23, Par. Redcliffe
- ◆ Former French's residence, Dayboro Road Petrie (S.I. P.38 Par. Redcliffe)
- ◆ North Pine School of Arts, Lots 1-3 on RP 362, Par. Redcliffe
- ◆ Original wing, Petrie State School, Young Street Petrie.
- ◆ Sweeney's Reserve, North Pine River
- ◆ Slab barn, Sweeney's Reserve, North Pine River
- ◆ Oxley's Landing Place, Yebri Creek (Portion 24, Par. Redcliffe)



- ◆ Cunningham's camp, Yebri Creek
- ◆ Murrumba Homestead site (portion 23, Par. Redcliffe)

All but one of these historical sites (Cunningham's Camp) are outside the study area.

In addition, Rollo Petrie informed the consultants that the rubbish dumps belonging to Murrumba are located near Yebri Creek. These would represent an important archaeological deposit if located.



6 PROJECT OUTLINE

6.1 *Nature of the Proposed Development*

The Petrie to Kippa-Ring Transport study area covers the northern suburbs of Pine Rivers Shire, including Petrie, Kallangur, Murrumba Downs, North Lakes, Mango Hill and Griffin; the western suburbs of Redcliffe City, including Kippa-Ring and Rothwell, and will affect Deception Bay in Caboolture Shire.

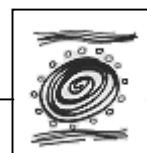
Queensland Transport has commissioned the study to evaluate the overall need for the Petrie to Kippa-Ring public transport corridor. The study was given priority because of substantial population growth of the Pine Rivers, Caboolture and Redcliffe shires. The role of the corridor was to provide a medium speed high frequency public transport service supported by feeder bus services to achieve improved connections between the corridor and the Greater Brisbane Area. Of the various options assessed, heavy rail is seen to provide the most efficient level of public transport and is the most environmentally effective.

6.2 *Design Features*

If the preferred heavy rail option is chosen, then approximately 12 kms of rail embankments/ cuttings and bridges will require construction. The route traverses several low-lying areas: between Petrie and Yebri Creek; between Dohles Rocks Road and Goodfellows Road; between the Bruce Highway and Freshwater Creek Road; between Kinsellas East Road and Bremner Road, and between Hercules Road and Elizabeth Avenue. The route will require either embankments or bridges over Yebri Creek, Black Duck Creek, Freshwater Creek, Hay's Creek and Saltwater Creek.

6.3 *Potential Impacts*

The earthworks associated with construction of an all-weather railway will be major. Areas of potential impact are Yebri Creek, Cunningham's Camp, Freshwater Lake, Hay's Inlet and a scarred tree reported from near Chelsea Road. Yebri Creek has

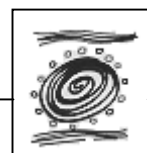


associations with Allan Cunningham but more importantly with Tom Petrie. Petrie recorded several details about burial trees and campsites in the area around Yebri Creek, and also noted it was a pathway or crossing point. It was the site of the first recorded conflict between Aborigines from the area with white soldiers from Redcliffe settlement. Rollo Petrie noted that rubbish dumps from Murrumba Homestead were located in the area.

The most important heritage site is the findspot of the macropod necklace discussed in Section 5.1.2. While Hill (1980) is thought to have retrieved all cultural material associated with this exceptionally remarkable find, any earthworks in the vicinity would need to be cognisant of other potential material, including burials, in the area.

6.4 *Timetable*

The study is an evaluation only and no date for construction has been determined.



7 SURVEY METHODOLOGY

7.1 *Sampling methodology*

Sampling was based on standard systems (Dunnell and Dancey 1983; Gaffney & Tingle 1984; Plog, Plog and Wait 1978; Robins 1998; Schofield 1991; Sullivan and Bowdler 1984). Sampling strategies can be either purposive or probabilistic. Those generally employed for archaeological fieldwork involve either transects chosen at random to avoid prejudice, or transects of various intensities within chosen parameters, such as a field or road. Within this sampling strategy, site determination can involve a further range of options; such as recording all artefactual material (perhaps the best scenario, but frequently unrealistic), or recording sites based on a predetermined density, e.g. 5 artefacts per square metre.

As noted by Dunnell and Dancey (1983:271): “distinguishing a site and setting its boundaries is an archaeological decision, not an observation”. This *a priori* decision by the archaeologist is perhaps the most important factor in the characterisation of site patterning across the landscape, outweighing even such obvious physical variables such as ground surface visibility and disturbance.

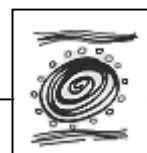
7.2 *Sampling strategy for the Petrie to Kippa-Ring transport corridor*

An intensive sampling strategy was feasible within the study area to achieve maximum coverage of the study area.

As the study area was located within a narrow pre-defined corridor, as much of the impact area as possible was surveyed. Particular attention was paid to Yebri Creek, the area around Kangaroo Waterholes, Freshwater Lake, Hay’s Creek, Hay’s Inlet, the site of the macropod necklace find, and Chelsea Gardens Road.

However, in practice, some areas were so overgrown or flooded that survey was not a practical option.

Areas that were difficult to survey were:



- ◆ An area of dense vegetation, predominantly Lantana, around Yebri Creek on the northern bank;
- ◆ an inundated area between the Bruce Highway and a housing development west of Freshwater Creek Road;
- ◆ a section west of the Mango Hill Golf Course and a small drainage creek that was flooded;
- ◆ and thick vegetation near Bremner Road.

It is estimated that approximately 65% of the study area was intensively surveyed.

7.3 Methodology

Field walking occupied the best part of three days. A fourth day was undertaken with Alex Bond Work commenced early in the morning, and continued until late afternoon.

The entire study area was visually surveyed on foot apart from a very short section at Hay's Creek which was inundated after flood rain. Two archaeologists and four field consultants undertook the survey. Two of these had already undertaken field surveys and were familiar with the procedures, and one (Charlie Daylight) had had extensive experience as a Ranger with the Department of Aboriginal and Islanders Affairs.

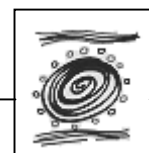
The team walked along the route, several metres apart. Particular attention was paid to any places, such as tracks, ploughed land and erosion areas, where visibility was higher. In addition, all mature sized trees suitable for scarring, were assessed.

7.4 Sub-surface testing

No sub-surface testing was conducted.

7.5 Constraints

Maximum assistance was provided by the client and Queensland Transport to allow full access to the study area. In addition, AMCOR allowed access to the route via Anzac Avenue. Mango Hill Golf Course allowed access to an area below the course, which otherwise would have been out of reach due to localised flooding.



The proximity to urban development at Murrumba Downs, North Lakes, Mango Hill and Rothwell posed some minor constraints in terms of access and property. While the corridor is already government land, several landowners had taken advantage of its unused development to use the corridor as agistment for horses or cattle, and had put up signs forbidding entry. Constraints to the fieldwork included localised flooding after heavy rain, thick vegetation and heavy grass cover, particularly in watercourses and behind urban lots resulting in poor visibility, snakes (Red-bellied Black, Common Brown and a possible Rough-scaled Snake) and difficulty of access without crossing private property.

7.5.1 Estimated ground integrity

Crucial to an understanding of the local archaeological record is the matter of ground integrity. Whereas Aboriginal occupation of the land had minimal short-term impact, such as orchestrated burning of chosen areas and the keeping open of track ways through the bush, non-Indigenous impact was immediate and changed the face of Australia in the long-term. Activities, such as vegetation clearance, ploughing, farming and grazing, timber cutting, mining, and the building of farms, houses, towns and roads contributed to the destruction of a fragile archaeological record.

Thus one of the key elements in an understanding of the archaeological record is the integrity of the landscape. Where this has been distorted or heavily modified by, for example, timber cutting, road works or mining, the possibility of archaeological material remaining is significantly reduced. Material still in existence may also be highly disturbed, and its scientific value lessened by loss of context.

Archaeological material that has lost scientific integrity may still retain a high level of significance to Traditional Owners of the area. Such archaeological material still represents events and places associated with their ancestors' way of life, and this will be taken into consideration in any recommendations for management of such material.

For these reasons, a statement will be made on the levels of integrity in the study area.

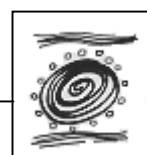
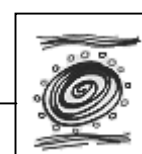
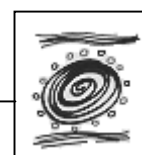


Table 3: Estimated ground integrity

AREA	LEVEL OF INTEGRITY	COMMENTS
Petrie railway to Yebri Creek 0-440 m	Poor-medium	The area around Petrie railway station and AMCOR has been modified through construction of the rail line, a farm dam at approximately 40 metres, timber lots and logging tracks. At approximately 380 metres there is an area of reasonable integrity bordering south bank of Yebri Creek, where low vine scrub/ littoral rainforest exists.
Yebri Creek to Dohles Rocks Road 440-1960 m	Poor to medium Small area of high	Above Yebri Creek, (between 440-800 m) the corridor traverses vine scrub with high integrity, before following flood-plain terrace through timber lots of exotic pine and eucalypts. This still has reasonable integrity, between mounding for timber planting. Old cultivation area with medium integrity for approximately 170 metres. Integrity improves in AMCOR land near School Road passing through and bordering extensive bungwall swamp for approximately 360 metres. Reasonable integrity between School Road and Dohles Rock Road crossing.
Dohles Rocks Road to Goodfellows Road 1960-2800 m	Poor to high	Route crosses watercourse and drain for approximately 360 metres. Small area of perhaps 240 metres in middle of section where open forest has survived, and has never been cleared, with high integrity. Thick fern cover between this section and road for about 240 metres, with medium integrity.
Goodfellows Road to Bray's Road 2800-3930 m	Poor to medium	Route follows corridor between agistment area used for horses, retaining medium integrity for 220 metres, crosses drainage channel, which is virtually a swamp for 280 metres, then across park with medium integrity for 540 metres. Short section from park down steep slope with riparian open forest, rock outcrops to drainage channel has high integrity for about 60 metres. Short stretch across old cultivation and road reserve for approximately 100 metres.
Bray's Road to Bruce Highway 3930-4370 m	Poor to medium	Route crosses open park for approximately 280 metres, with medium integrity. Farm dam and drain has been modified and has low integrity. Area around Kangaroo Waterhole has been ploughed and cleared but possible sub-surface integrity for about 160 metres. Bruce Highway severely disturbed with major earthworks, cuttings and fill for approximately 50 metres.



Bruce Highway to Freshwater Creek Road 4420-5150 m	Medium to high	Corridor traverses small section of low lying farmland beside dam and flooded creek for 280 metres with low to medium integrity. Slope with open woodland and stony outcrops which has never been ploughed for 450 metres with high integrity.
Freshwater Creek Road to Kinsellas Road East 5150-6390 m	Poor to medium Small area of high	Area above Freshwater Lake appears to have been scraped and filled over 520 m. Next 680 metres consists of former pine plantation with exotic pine and small fenced farm lots, with poor to medium integrity. Small section about 40 metres long with original open woodland and high integrity.
Kinsellas Road West to Mango Hill Golf Course 6390-7280 m	Medium to high	Area consists of pulled open forest and melaleuca woodland with high groundwater for approximately 690 metres to flooded creek. Low lying swamp which has been partially drained and ploughed for 200 metres with medium integrity between creek and golf course.
Mango Hill Golf Course to Saltwater Creek 7280-8200 m	Poor to high	Approximately 260 metres of low lying swamp with medium integrity to golf course. Below golf course, the former swamp has been cleared, ploughed and partially land filled. About 180 metres has retained high integrity where a low ridge in the swamp is too peaty for ploughing. Between the golf course and Saltwater Creek is low-lying flood plain, swamp and saltmarsh with high integrity extending for approximately 480 metres.
Saltwater Creek to Gynther Road 8200-9120 m	Medium to high	Between Saltwater Creek and horse farm is low lying mangrove and saltmarsh swamp for approximately 160 metres with high integrity. The horse farm extends approximately 400 metres and has been cleared and possibly lightly ploughed but retains 75% integrity, and predictively would have an archaeological sub-surface potential. A power line easement through the swamp has modified a narrow band perhaps 10 metres wide. Between the easement and Gynther Road for approximately 360 metres is largely swamp and saltmarsh.
Gynther Road to Bremner Road 9120-9930 m	Poor to medium	From Gynther Road for approximately 540 metres the route follows a ridge above Saltwater Creek where old soil and gravel extraction has taken place, removing about 1 metre of topsoil, leaving large trees on small islands of soil and resulting in poor integrity, even though open forest still exists. Section of 320 metres between old cultivation and low lying swamp with narrow ridge beside Saltwater Creek. Varies considerably between medium to high integrity.



Bremner Road to Chelsea Road 9930-10800 m	Medium to high	Low lying section approximately 400 metres long between Bremner Road, largely Melaleuca woodland with medium to high integrity. Drainage ditch at approximately 10330 metres has been cut through woodland off Nottingham Street to drain development and several dirt tracks giving access to creek. Section 420 metres long between ditch and Chelsea Street has high integrity with open eucalypt woodland that has been logged but possibly never cleared and certainly not ploughed.
Chelsea Road to Hercules Road 10800-11620 m	Medium to high	First section for about 420 metres traverses ridge below park which has been largely cleared and logged apart from two large figs, but probably still retains high ground integrity. Drainage ditch at approximately 11220 metres to drain Trafalgar Drive has been cut through at end of park and largely destroyed integrity. Section approximately 400 metres long through low-lying swamp to Hercules Road with medium integrity.
Hercules Road to Elizabeth Avenue 11620-12150 m	Poor to medium	Crosses drainage ditches and former open forest cleared for park for approximately 480 metres. Poor to medium integrity.

7.5.2 Estimated ground surface visibility (GSV)

The major constraint was the level of ground surface visibility (GSV), which measures the level of exposure of the ground surface. This is commonly inhibited by vegetation, such as grass and crops, or concrete, gravels and bitumen. Levels are determined using a percentage scale where 0% represents zero visibility and 100% represents maximum visibility, such as bare ground.

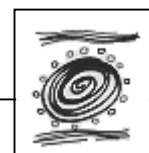
Throughout the study area the GSV was generally poor, between 0-20%. Heavy exotic grass and exotic vegetation covered 75% of area. Thus every effort was made to locate erosion areas and tracks where a degree of visibility was possible.

Due to exotic pasture grasses and native vegetation along much of the road verge, there were difficulties in obtaining a good indication through GSV of whether there was archaeological material present along much of the route.

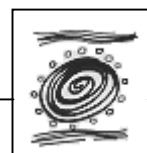


Table 4: Estimated ground surface visibility (GSV)

AREA	CONSTRAINTS	GSV %
Petrie railway to Yebri Creek 0-440 m	Grass cover, open forest with lantana infestation, exotic pine with heavy needle detritus	0-10%. No areas of erosion or high visibility.
Yebri Creek to Dohles Rocks Road 440-1960 m	Exotic pine plantations plots; grass cover, bungwall fern swamp with thick undergrowth; inundated water table. Small section near School Road to Dohles Rocks Road with good GSV of 50-75%.	0-75%
Dohles Rocks Road to Goodfellows Road 1960-2800 m	Heavy exotic grass (Para grass) and weed infestation; section with improved GSV of 50% through open forest section; heavy fern (bracken) undergrowth with minimal GSV.	0-50%
Goodfellows Road to Bray's Road 2800-3930 m	Heavy grass and weed cover; rank vegetation waist-high; swamp reeds and grasses; improved GSV through park of 50% with some exposed areas. Poor GSV down slope; thick grass cover across former cultivation.	0-15 except park where 25-50%
Bray's Road to Bruce Highway 3930-4420 m	Open grass with 10-25% GSV; heavy grass cover over remainder with waist high weed infestation.	10-25% in park; 0-5% over remainder
Bruce Highway to Freshwater Creek Road 4420-5150 m	Heavy grass and weed cover; thick leaf detritus from low open forest; some areas of relatively clear stone outcrops and shallow soils.	Short section of farm headland with 0-25% GSV. Section of swamp and creek 0%; Bushland 0-25%.
Freshwater Creek Road to Kinsellas Road East 5150-6390 m	Light grass cover; giving way to exotic pine with heavy weed infestation and needle detritus. Open grass areas with occasional scrapes and dirt tracks.	0-25%
Kinsellas Road West to Mango Hill Golf Course 6390-7280 m	First section with open ground covers and low scrubby regrowth; heavy grass cover; inundated water table.	10-25% in regrowth area; 0% in remainder.



Mango Hill Golf Course to Saltwater Creek 7280-8200 m	Area of swamp heavy grass and sedge cover; ploughed land with high GSV; mangrove and saltmarsh forming ground cover with occasional bare areas.	0% in grassed areas; 75% or higher in ploughed areas; 0-25% in saltmarsh/ mangroves section
Saltwater Creek to Gynther Road 8200-9120 m	Saltmarsh/ mangrove with thick ground cover; light grass cover over horse farm; inundated water table, claypans and samphire over remainder	0-25% in saltmarsh area; 15-30% in horse farm; between 0-45% in remainder; improved GSV in claypans.
Gynther Road to Bremner Road 9120-9930 m	Open ground cover where soil has been extracted; thicker grass and heavy weed infestation (Groundsel) over old cultivation.	10-45% in soil extraction areas; 0% over old cultivation.
Bremner Road to Chelsea Road 9930-10800 m	Heavy ground cover; thick grass, sedges, saltmarsh, bracken fern, groundsel, and leaf detritus. Occasional dirt track with higher GSV	0-10% 25-50% on dirt tracks.
Chelsea Road to Hercules Road 10800-11620 m	Light grass cover through park; but thick grass cover from then on.	0-15%
Hercules Road to Elizabeth Avenue 11620-12150 m	Light grass cover	0-25%



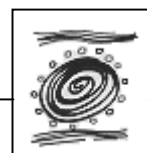
8 SURVEY RESULTS

8.1 *Indigenous cultural heritage*

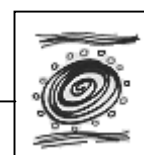
Three new Aboriginal sites (PKR 1, 2 and 3) were located. In addition, the site of the macropod necklace (Hill 1980) was revisited and included as PKR 4.

8.1.1 Site details

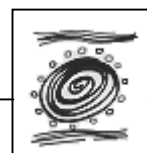
SITE PKR 1	Artefact scatter
LOCATION	Between School Road and Dohles Rock Road
VEGETATION ZONE	Open eucalypt forest above Bungwall fern swamp growing along drainage channel.
SITE DESCRIPTION	Eroded area on edge of track.
ARTEFACTS	1 grey fine-grained silcrete inner flake; 1 reddish cortical flake; 1 chert debitage; 1 chalcedony debitage; 2 silcrete cores; 2 silcrete debitage
SITE SIZE	Material scattered over area of approximately 3 x 60 m
MAXIMUM DENSITY	1 per sq metre
VISIBILITY	75%
PREVIOUS IMPACTS	Land clearing, track construction.
COMMENTS	Location near Bungwall Fern swamp might indicate this was a small scatter that related food collection processes. Site possibly extends further south.



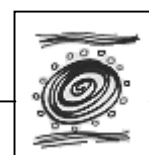
SITE PKR 2	Artefact scatter/ shell midden
LOCATION	Mango Hill Golf Course, Mango Hill.
VEGETATION ZONE	Freshwater Melaleuca and Swamp Oak <i>Casuarina glauca</i> swamp associated with Freshwater Reed <i>Phragmites australis</i> , and possibly Bungwall Fern <i>Blechnum indicum</i> .
SITE DESCRIPTION	Low peaty ridge, perhaps 10 cms above surrounding area, possibly island in centre of swamp. A second area, with isolated Mud Whelk, Cockle and Oyster was located approximately 50 metres west of the site on a similar ridge.
ARTEFACTS	Light scatter of Club Whelk <i>Pyrazus ebeninus</i> and isolated Mud Ark or Cockle <i>Anadara trapezia</i> and Oyster <i>Saccostrea commercialis</i> , with small areas of density; 1 jasper core; 1 petrified wood retouched flake; 1 fine-grained silcrete blade flake; 1 possible basalt pounder; 1 reddish silcrete flake; 2 silcrete debitage; 1 fine-grained translucent chalcedony micro core.
SITE SIZE	Material scattered over area of approximately 100 x 80 metres. 2 nd area approximately 20 x 30 metres.
MAXIMUM DENSITY	Artefacts: 1 per sq metre; Shell 1-5 per sq metre with areas of density up to 25-50 sq metre.
VISIBILITY	75-90%
PREVIOUS IMPACTS	The ridges have been cleared and ploughed. However, due to the peaty compacted soil, the damage has not been deep.
COMMENTS	The EPA Contaminated Soils Section are currently investigating the landowner because of breaches to wetlands and release of acid sulphate soils



SITE PKR 3	Isolate (chopper)
LOCATION	Near Chelsea Road
VEGETATION ZONE	Melaleuca and Swamp Oak <i>Casuarina glauca</i> swamp associated with Samphire and marine couch.
SITE DESCRIPTION	Surface find on mud flat at edge of inundation area and swamp oak open woodland, beside trailbike track.
ARTEFACTS	Large basalt or indurated sandstone chopper. Made on a cleaved nodule with striking platform on butt end, cortex on one face and cleaved and trimmed face opposite. Roughly triangular in section. Use wear polish along narrow chord. 122 mm .
SITE SIZE	1 sq metre
MAXIMUM DENSITY	NA
VISIBILITY	100%
PREVIOUS IMPACTS	Trail bikes
COMMENTS	The site was located during a transect to locate how far the corridor was from important resources in mangrove and mudflats of Hay's Inlet.



SITE PKR 4	Findspot of macropod tooth necklace (Hill 1980)
LOCATION	Kippa-Ring area
VEGETATION ZONE	Freshwater Melaleuca and Swamp Oak <i>Casuarina glauca</i> swamp associated with Freshwater Reed <i>Phragmites australis</i> .
SITE DESCRIPTION	Hill (1980) reports that the artefact was protruding from peaty soils in a Melaleuca swamp.
ARTEFACTS	Necklace and 3 lithics
SITE SIZE	1 sq metre
MAXIMUM DENSITY	
VISIBILITY	0-25%.
PREVIOUS IMPACTS	None
COMMENTS	The site has been included because of its proximity to the corridor and the influence such an important find has on any archaeological understanding of the project and potential earthworks in the area.



8.2 Discussion of Indigenous cultural heritage finds

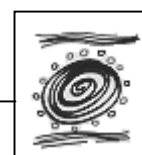
While a number of sites are known from the study area from other surveys or ethnographical evidence, comparatively few sites have been recorded in detail from the Redcliffe/Petrie area. Even the nationally important find of the macropod necklace was collected with no more than a few lines about the circumstances of this unique find.

Thus every artefact find represents another piece of the jigsaw, another part of the missing cultural landscape of pre-contact Australia. In this respect, Site PKR 1, an artefact scatter, has the potential to offer further information. While in other circumstances, it would possibly be regarded as only of low to medium significance, because of the loss of cultural material from the study area through development and land use practices, even fragmented scatters like this should be regarded as important finds.

The significance of the macropod necklace is highly relevant to this project. It was found in swampy conditions that prevail along a large percentage of the proposed route. That an object composed of resins and fibre survived since it was discarded or lost, possibly more than a hundred years ago, is in itself remarkable. The reason for this survival is perhaps due to the peaty nature of the bungwall swamps, with a high PH quotient, similar to other organic finds in peat bogs in Denmark and the British Isles. However, by inference it means that other sites may be still located in similar conditions and that the need for constant monitoring in the vicinity of the findspot is important.

Likewise, the shell midden and artefact scatter (Site PKR 2) located at the Mango Hill Golf Course is also very interesting. The landscape of this site prior to development can be interpreted fairly broadly. It is a low island composed of peaty soil in the centre of a waterlogged swamp oak and Melaleuca swamp. A ridge runs parallel to the swamp formed on Tertiary volcanic basalts. The swamp forms part of the headwaters of the Hay's Inlet wetlands, a nationally important RAMSAR site and wetlands habitat.

In pre-clearing times, a narrow creek with permanent pools would have flowed past the site. Although a large quantity of fill has been dumped along the northern margin of the island and this has complicated reconstruction of the original dimensions and shape of the site. Archaeological material found scattered across the site included both lithics and shell material. Club Whelk *Pyrazus ebeninus*, Mud ark or Cockle *Anadara trapezia* and Commercial Oyster *Saccostrea commercialis* could have been collected from



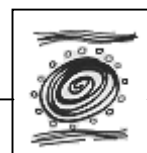
closer to Clontarf or even from Deception Bay to the north. However, the chalcedony core, of exceptionally fine quality and virtually clear in colour, almost certainly came from the chalcedony sources at Scott's Point approximately 6 kilometres to the east on the Redcliffe Peninsula. Why the site was chosen when a suitable sandy ridge was located only 100 metres to the north is uncertain. A chalcedony flake was located near a group of ironbarks on the ridge, but although GSV was quite reasonable, and an extensive search was made, only two potential stone debitage flakes were located.

The single stone artefact (Site PKR 3) is also a valuable find, given the paucity of artefacts in context from the larger study area. It demonstrates that nodules were cleaved and trimmed for use as axe blanks, but either deliberately or conveniently used earlier as cleavers; the sharp chord left after cleaving shows clear evidence of secondary use on vegetable materials.

In summary, the cultural landscape of the Petrie Kippa-Ring study area comprises a wealth of environmental, cultural, historical and archaeological sites. These include the animal and vegetable resources available from the swamps and nearby Hay's Inlet, the lithic resources available from Scott's Point and the Pine River, the recorded cultural sites at Petrie and Kippa-Ring, and the huge middens at Bray's Farm and the destroyed middens along Deception Bay at Newport Waters.

8.3 Historical cultural heritage

One site of historical significance was identified during the assessment. The registered site of Cunningham's Camp (PKRH 1) occurs within the broader study area, although the exact location is not specific.

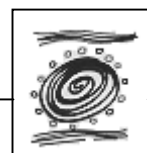


SITE PKRH 1	Site of Cunningham's Camp
LOCATION	Yebri Creek
VEGETATION ZONE	Thick riparian scrub along creek bordered by open forest regrowth and old pine lots.
SITE DESCRIPTION	Junction of two side creeks within study area.
ARTEFACTS	None located
SITE SIZE	
MAXIMUM DENSITY	
VISIBILITY	0-15 %
PREVIOUS IMPACTS	The general area has been cleared and planted with exotic pine
COMMENTS	It is unlikely that artefactual material would be located in the area and the site should be regarded as being of historical association



In addition, Yebri Creek has important historical connotations because of its immediate proximity to *Murrumba Homestead* and the site of one of the first conflicts between Aborigines and soldiers felling timber for the Redcliffe settlement.

As noted above, Yebri Creek is the site of historical deposits made by the Petrie family from Murrumba.



9 SITE EVALUATION

9.1 *Overall significance of survey area*

The majority of the study area is located in rail reserve, which has preserved for some years a majority of the route without major modifications.

The cultural landscape of the Pine River Kippa-Ring area and Hay's Inlet itself, are of major significance to the Aboriginal people. The bora grounds, dreaming sites, increase sites, macropod necklace and artefact scatters all testify to Aboriginal significance for this area.

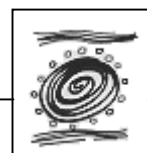
The finds of lithic scatters, shell middens and the macropod necklace within the proposed corridor demonstrates that the area was used by Aboriginal people in the past.

Because of the cultural importance of the macropod necklace, and the number of sites adjacent to the study area demonstrates that that the immediate landscape is considered highly important to the Aboriginal people, the Pine River Kippa-Ring study area and its environs is considered to have medium to high significance.

9.2 *Scientific significance of Indigenous Cultural Heritage Values*

Scientific significance, as defined by various federal and state legislation, is the potential of a place or item to contribute important information for archaeological science. A place or object is considered scientifically significant if it can contribute knowledge that is relevant to questions about human history and behaviour.

Scientific significance of Aboriginal heritage sites is determined by an archaeologist. Ideally, scientific significance is evaluated in terms of a detailed research design focussed on some aspect of past Aboriginal lifeways. If a site can be demonstrated to contain information important for addressing issues in the research design, a defensible evaluation of scientific significance can be made. In cases where a road corridor is being surveyed, which in itself



amounts to a random sample, a broader research strategy is required.

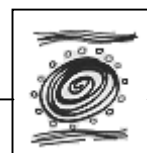
Since it is impossible to anticipate all research questions, it is also difficult to identify and conserve suites of sites that may be capable of addressing all future research problems. In order to avoid the problem of using specific research designs to evaluate sites, the concept of “representativeness” was advocated in Australia as an additional consideration for evaluating scientific significance (Bowdler 1981:128, 1984:2; Pearson and Sullivan 1995:152). According to this concept, an adequate data set for all present and future research designs can be conserved by identifying and preserving a representative sample of the complete range of site types in an area.

Despite its intuitive appeal, the “representativeness” concept has been seriously questioned (Smith 1996; Pearson and Sullivan 1995:152). Grouping these unique entities into samples for conservation will inevitably be conducted in relation to the research concerns of the archaeologist defining the samples. As a result, the evaluations based on “representativeness” suffer from the identical weakness as evaluations based solely on the questions in a detailed research design.

From a scientific perspective, the sites recorded in the Petrie to Kippa-Ring transport corridor survey provides information for Aboriginal people. The material used for stone tools, their natural distribution across the regional landscape, and the way these stones were used in the project area provides useful information in an area where little work has been conducted. In particular, the spatial relationship of non-archaeological sites (i.e., dreaming sites, increase sites, etc) with archaeological sites (i.e. shell middens and artefact scatters) help us understand the traditional cultural landscape.

9.2.1 Site Disturbance, Assemblage Size, and Scientific Values

It is often argued in cultural resource management studies in Queensland that sites lacking integrity—sites disturbed by cultivation or mineral exploration, for example — are no longer significant for scientific research. Similarly, isolated artefacts and diffuse scatters containing few artefacts — the “background scatter”—are also argued to be insignificant for heritage values. Hence, disturbance and assemblage size are often used as proxy measures of scientific significance (Moore 1999).



When the “proxy” approach to scientific significance is adopted, site disturbance is directly correlated with research potential: disturbed sites do not contain significant data sets, and undisturbed sites do contain significant data sets (see also Smith 1996:72). However certain research questions might be addressed through analysis of artefacts derived from both “disturbed” *and* “undisturbed” settings.

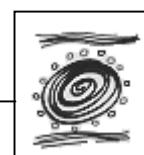
For instance, reconstruction of the Aboriginal landscape views the location of all sites as a whole, regardless of an artefact’s location on the landscape or the circumstances of its discovery. Thus, even comparatively few finds from highly disturbed settings — such as the artefact scatter/ shell midden in Site PKR 2 — can provide important information from the scientific perspective. For example, the chalcedony core located at the Mango Hill Golf Course can be attributed with some probability to the chalcedony sources located at Scott’s Point more than 6 kms away. Thus each find, however small, contributes to the pattern of lithic distribution within the landscape. The changing values placed by Aboriginal people on their cultural heritage now demand that even single artefacts from disturbed sites can provide scientific value that is important to their cultural perceptions of significance.

Artefact numbers and/or artefact density are also correlated with research potential in many Queensland cultural resource management reports. According to this argument, isolates and diffuse scatters do not, by their very nature, contain significant data sets, and dense scatters with many artefacts do contain significant data sets (Moore 1999b).

In summary, although the integrity of most of the sites within the study area – even those located in dense montane scrubs - has been disturbed to various degrees due to natural erosion, grazing-induced erosion, road building activity, timber cutting or agriculture, they nevertheless contain important information regarding Aboriginal occupation of the area and the region generally.

However, because cultural heritage studies currently ask for archaeologists to provide some indication of scientific significance, sites considered to have particular significance beyond the role of mapping the landscape are listed.

Table 5 lists the four Indigenous sites within the Study Area. Those sites noted as having high significance would require further work to be undertaken should they be impacted upon during fieldwork. As such, these sites are delineated as the critical known resources in terms of scientific values. However, it must be emphasized that both sites discovered during the survey have offered various amounts of scientific information, and that further undiscovered



sites in the project area may offer presently unknown variations in the quality and nature of the archaeological data.

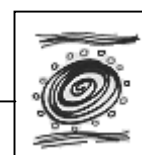
Table 5: Indigenous sites with high scientific values

Site No	Site type	Level of scientific significance	Reasons
PKR 1	Artefact scatter	Medium	While context is lost and integrity is poor, the artefacts offer indication of Aboriginal tool use within bungwall fern swamp habitats.
PKR 2	Artefact scatter/ shell midden	High	Although the context has been disturbed, the site still offers potential for further analysis and artefact collection. Its location in a swamp landscape also offers potential information about resource use.
PKR 3	Isolate	Medium	Although a single find the artefact provides important information about lithic reduction techniques and potential for use of natural resources along the mudflats and mangrove swamps.
PKR 4	Find spot of macropod necklace	High	This find is extremely significant. Further fieldwork might establish links to this site and others within the study area.

9.2.2 Indigenous Social Significance of Sites

The social significance of an Aboriginal heritage site can only be evaluated by the Aboriginal community. The Aboriginal community taking part in the study provided these social significance evaluations to the archaeologist.

The Aboriginal representatives taking part in the project were satisfied that ample recording had occurred to document the location of the site finds. However, they expressed concern over future clearing of areas where artefactual material might be present although missed in the survey due to poor ground surface visibility.



Because so many sites have been lost within the Redcliffe-Petrie area without adequate recording, any site located as part of the project is significant to their communities for cultural reasons. The social, cultural, and spiritual connection to the site is particularly strong due to the knowledge that this is where Aboriginal people made tools. As a result, the Aboriginal representatives consider each site a significant heritage place.

The Aboriginal cultural field researchers agreed that the artefact scatter/shell midden (Site PKR 2) was culturally significant and represented important information, even though severely disturbed. But they still emphasised that to them it had high significance because of the lack of archaeological recording in the area, and asked for further study.

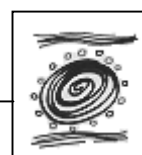
They also stressed that the area where the macropod tooth necklace was located (Site PKR 4) was highly culturally significant and raised the possibility of burials within the area or a linkage with the nearby Kippa-Ring bora ring, now destroyed.

The Yebri Creek area has cultural significance because of the known burial tree recorded by Petrie (1904) and its proximity to the Petrie bora rings at Murrumba Hill. It was also the site of the first conflict between the 'Duke of York's' clan and soldiers from the first white settlement in Queensland at Redcliffe.

Several areas were noted by the field researchers as having potential for sub-surface archaeology. These include:

- ◆ Yebri Creek area
- ◆ the environs of Site PKR 1
- ◆ part of a horse agistment area between Dohles Rocks Road and Goodfellows Road
- ◆ a section of open forest near Goodfellows Road;
- ◆ the park and open forest section southwest of Bray's Road
- ◆ the environs around Kangaroo Waterholes
- ◆ section from Freshwater Creek to Freshwater Lake Road
- ◆ a small area of woodland bordering Kinsella Road East
- ◆ a section of hillside east of Kinsella Road east
- ◆ Mango Hill Golf Course
- ◆ A horse farm near McKillop Road east of Hay's Creek
- ◆ The environs around Chelsea Road and Site PKR 4.

In addition, the environs of Saltwater Creek are considered to have cultural significance because of the considerable food resources and landscape values it offers.



9.3 Historical Heritage Values

Evaluating the cultural heritage significance of historic cultural heritage sites is an important aspect of a cultural heritage assessment. Criteria for assessing the significance of historic sites are enshrined in the Burra Charter of Australia ICOMOS and various pieces of legislation.

One heritage site was identified within the study area (PKRH 1). In addition, the Yebri Creek area is considered to have potential cultural significance from a historical viewpoint, because of its historical associations with *Murrumba Homestead* and the Petrie family.

9.4 Heritage values and proposed impacts

9.4.1 Impacts to Aboriginal heritage values

Based on the proposed route surveyed, the transport corridor will only impact directly on Site PKR 1.

It will be approximately 50-80 metres from Site PKR 2. In addition, it is likely that other sub-surface archaeological material would be located above this site within the corridor.

The corridor is located approximately 200 metres from Site PKR 3. This site will not be impacted on in any way.

The corridor is located about 150 metres from Site PKR 4. Again, the environs may be considered potentially to contain additional archaeological material.

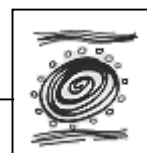


Table 6: Potential Impacts on Aboriginal heritage areas

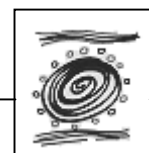
SITE NO	DESCRIPTION	AREA	IMPACT
PKR 1	Artefact scatter	Dohles Rocks Road	Direct. Within proposed Transport Corridor
PKR 2	Artefact scatter/ shell midden	Mango Hill Golf Course	Indirect. Within 100 metres of proposed Transport Corridor
PKR 3	Isolate	Mudflats near Chelsea Road	Unaffected. 200 metres south of proposed corridor
PKR 4	Findspot of macropod necklace	Near Chelsea Road.	Indirect. 50 metres of proposed Transport Corridor

9.4.2 Impacts to Historical Heritage Values

The historical site of Cunningham's campsite will be possibly impacted on as the site location appears to be within 10-20 metres of the proposed route.

Table7: Potential Impacts on Historical heritage areas

SITE NO	DESCRIPTION	AREA	IMPACT
PKRH 1	Cunningham's camp	Yebri Creek	Direct. Within proposed Transport Corridor



10 RECOMMENDATIONS

10.1 *Managing Aboriginal Cultural Heritage Values*

Long-term, large-scale development projects should be guided by an overarching theme to unify what might otherwise be management that is piecemeal in approach. Piecemeal management runs the risk of making inappropriate decisions due to a failure to recognise the particular importance of a site or area within the larger perspective. Also, piecemeal management results in site impacts without corresponding benefits to the Aboriginal or scientific communities to offset these impacts.

10.2 *Indigenous response to the project*

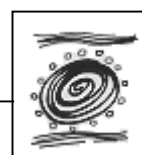
Field representatives who participated in the study, have been authorised to speak for their people.

Charlie Daylight (Undumbi), Anthony Mancktelow (descendant of Menvil Wanmuran), Mark Warner (Warner/Nuggins family) and Neville Isaacs (Isaacs family) agreed that the finds did not represent an impediment to the project. Alex Bond undertook to include his comments in his report.

However, due to the poor state of visibility, and the known importance of the area, they proposed a recommendation for monitoring during initial earthworks. They also expressed concern about the impacts to the site PKR 2 on the Mango Hill Golf Course, which, while not impacted on by the project directly, is subject to disturbance from the owner.

10.3 *Historical heritage concerns to the project*

The historical site of Cunningham's camp will be impacted on by the project. The preferred option would be that a deviation is included to avoid the area. However, if engineering does not permit this then monitoring by an archaeologist would be recommended.



10.4 Recommendation 1

It is recommended that a program of monitoring be undertaken during initial earthworks in the following areas:

- ◆ Yebri Creek area
- ◆ the environs of Site PKR 1
- ◆ part of a horse agistment area between Dohles Rocks Road and Goodfellows Road
- ◆ a section of open forest near Goodfellows Road;
- ◆ the park and open forest section southwest of Bray's Road
- ◆ the environs around Kangaroo Waterholes
- ◆ section from Freshwater Creek to Freshwater Lake Road
- ◆ a small area of woodland bordering Kinsella Road East
- ◆ a section of hillside east of Kinsella Road east
- ◆ Mango Hill Golf Course
- ◆ A horse farm near McKillop Road east of Hay's Creek
- ◆ The environs around Chelsea Road and Site PKR 4.

Monitoring by representatives of Traditionally associated families is necessary because of the possibility that further archaeological material may exist sub-surface, or may be currently obscured by heavy vegetation.

10.5 Recommendation 2

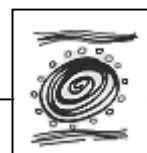
Should archaeological material be uncovered during excavation, then work should cease until a proper archaeological examination of the material has been undertaken.

10.6 Recommendation 3

The area around Site PKR 2 requires further archaeological study and possible artefact collection and recording. This will require a Permit to Excavate and Collect from the Environmental Protection Agency.

10.7 Recommendation 4

The area around Site PKR 4 requires archaeological monitoring by an archaeologist and cultural heritage Indigenous field workers.



This is because the macropod necklace represents an important find and may indicate either further cultural material being present or potential burials.

10.8 Recommendation 5

The area below Ridley Park requires archaeological monitoring by an archaeologist and cultural heritage Indigenous field workers. This is because the area is suitable to contain either cultural material being present or potential burials.

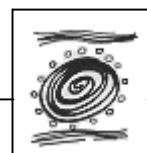
10.9 Recommendation 6

The area of Yebri Creek in proximity requires monitoring by an archaeologist during earthworks. This is because it is the site of Cunningham's Camp and also has potential for rubbish dumps associated with the important historical homestead at Murrumba.

10.10 Cultural Heritage Management Plan (CHMP) for Aboriginal Values

Due to an unknown time line for commencement of the project, a generic CHMP is presented here. Before earth-moving operations are about to commence, representatives of the relevant Traditional Owners, Queensland Rail and consultants, should finalise details of a suitable CHMP that incorporates the following:

- Consultation with the Aboriginal people with traditional claims to the study area is essential to establish protocols for the management of any Aboriginal heritage values prior to construction, should the project be approved.
- These protocols should be formalised in a cultural heritage management plan (CHMP), which should include issues such as payment and conditions for monitors, re-vegetation, protocols covering the re-location of cultural items (if required), and discovery of further archaeological heritage during any development of the site, especially for burials.
- In addition, the recommendations above should be incorporated into the CHMP.



11 BIBLIOGRAPHY

Alfredson, G.

- 1991 'Report on an Archaeological Inspection of a Proposed Residential Development at Deception Bay'. Unpublished report for Redcliffe Seaside Estates Pty Ltd. Chapel Hill, Alfredson Consulting Pty Ltd.
- 1994 'A Cultural Heritage Assessment of the Dbird estate, Narangba'. Unpublished report. Chapel Hill, Alfredson Consulting Pty Ltd.
- 1995 'A Cultural Heritage Assessment of Hays Inlet Environmental Park, Redcliffe City'. Unpublished report for Chenoweth and Associates. Chapel Hill, Alfredson Consulting Pty Ltd.

Ann Wallin and Associates

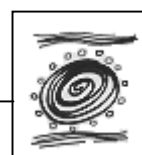
- 1995 'An Assessment of Historical Cultural Heritage Values of Part of the Murrumba Homestead Site, Petrie, SE Queensland'. Unpublished report for Gutteridge, Haskins and Davey Pty Ltd. The Gap, Ann Wallin and Associates.
- 1995a 'A Cultural Heritage Assessment of the Mango Hill DCP area, Pine Rivers Shire. Unpublished report for EDAW Pty Ltd. The Gap, Ann Wallin and Associates.
- 1995b 'A Cultural Heritage Analysis of a proposed sub-division, Deception Bay, Rothwell, Southeast Queensland'. Unpublished report for Wilson, Deller and Wolter. The Gap, Ann Wallin and Associates.
- 1995c 'A Cultural Heritage Assessment of the balance of the Newport Waters Estate, Redcliffe, Southeast Queensland'. Unpublished report for Sinclair Knight Mertz Pty Ltd. The Gap, Ann Wallin and Associates.
- 1998 'Cultural Heritage Analysis of the Proposed Allgas Gatton to Gympie Gas Pipeline'. Unpublished report for Allgas Energy Ltd. The Gap, Ann Wallin and Associates.

Armstrong, J. B. (ed.)

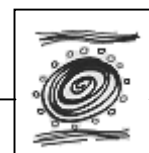
- 1982 *The National Estate of The Pine Rivers Shire: Historical Sites and Buildings*. North Brisbane College of Advanced Education.

Bancroft, T. L.

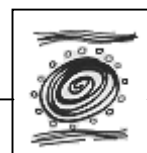
- 1894 'Note on bungwall (*Blechnum serrulatum* Rich.), an Aboriginal food'. *Proceedings of the Linnean Society of New South Wales* 19:25-26.



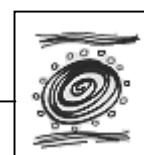
- Bell, D.
1986 'Aboriginal Sites in their Environmental Setting'. (in) A. Ross *Planning for Aboriginal Site Management: A Handbook for Local Government Planners*. NSW National Parks and Wildlife Service.
- Bowdler, S. (ed.)
1982 *Coastal Archaeology in Eastern Australia*. Canberra, Dept of Prehistory, Australian National University.
- 1983 'Aboriginal Sites on Crown Timber Lands of New South Wales'. Unpublished report to the Forestry Commission of New South Wales.
- 1984 'Archaeological Significance as a Mutable Quality.' (In) S. Sullivan and S. Bowdler, (eds), *Site Surveys and Significance Assessment in Australian Archaeology*. Canberra: Department of Prehistory, Research School of Pacific Studies, Australian National University.
- Clontarf Jubilee Committee
1963 *Golden Jubilee Clontarf State School 1913-1963* Clontarf, Redcliffe, Clontarf Jubilee Committee.
- Coaldrake, J. E.
1961 *The Ecosystems of the Coastal Lowlands ('Wallum') of Southeastern Queensland*. Canberra, CSIRO Bulletin 283.
- Colliver, F. S. and F. P. Woolston
1979 'The first people'. (in) Tutt (ed.) *From spear and musket 1879-1979*. Caboolture: Caboolture Shire Council.
- Connah, G.
1983 *Australian Field Archaeology: a guide to techniques*. Canberra, Australian Institute of Aboriginal Studies.
- Cowan, J.
1991 *Sacred Places in Australia*. East Roseville (NSW). Simon and Schuster.
- Crosby, E.
1992 'Mango Hill Archaeological Survey (47/EIS/92). Unpublished report for Dept of Environment and Heritage. Turnix Consulting Pty.
- Dornan, D. and D. Cryle
1992 *The Petrie Family*. St Lucia, University of Queensland Press.
- Dunnell, R., and W. S. Dancey
1983 'The Siteless Survey: A Regional Scale Data Collection Strategy.' *Advances in Archaeological Method and Theory*. 6: 267-287.



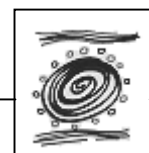
- Eipper, C.
1841 'Observations made on a journey to the Natives at Toorbul, August 2, 1841'. *The Colonial Observer* 1 (2): 10.
- 1842 'Observations made on a journey to the larger Bunya Country'. Mss A2240, University of Sydney, Mitchell Library.
- Ewart, M.
1992 *The Story of Anzac Memorial Avenue*. Strathpine, Pine Rivers Shire Council.
- Evans, R.
1992 'The Mogwi take Mi-an-jin: Race relations and the Moreton Bay Penal Settlement 1824-42'. (in) Fisher (ed.) *Brisbane: The Aboriginal Presence 1824-1860*. Brisbane, Brisbane History Group. Paper 11: 7-30.
- Fairhill, P.
1989a *Souvenir of Humpybong 1908: Woody Point, Redcliffe, Scarborough* Redcliffe, Redcliffe Historical Society.
- 1989b 'Ningi Ningi: Our First Inhabitants'. Redcliffe, Redcliffe Historical Society.
- 1994 *Redcliffe 1824: Queensland's Beginnings*. Redcliffe, Redcliffe Historical Society.
- Fisher, R. (ed.)
1992 *Brisbane: The Aboriginal Presence 1824-1860*. Brisbane, Brisbane History Group. Paper 11: 7-30.
- Francis, A.
1936 *Then and Now: The Story of a Queenslander* London, Chapman and Hall Ltd.
- Fraser, D.
1964 *Redcliffe's Origin: A Story of the First White Settlement in Queensland* Brisbane, D.W. Fraser.
- Gaffney, V. and Z. Stancic.
1991 *GIS approaches to Regional Analysis: A case study of the island of Hvar*. Ljubljana. Znanstveni institut Filozofske fakultete.



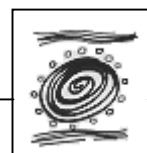
- Gaffney, V. and M. Tingle
1984 'The Tyranny of the site. Method and theory in field survey'. *Scottish Archaeological Review* 3.2: 134-40.
- GHD
2000 'Petrie to Kippa-Ring Public Transport Corridor Study: Mango Hill/Griffin Corridor Options Assessment Report'. Report for Queensland Transport'. Brisbane, GHD Pty Ltd.
- Gillison, D.S. and H.J. Hall
1982 'Bevelling Bungwall bashers: a use-wear study from southeast Queensland'. *Australian Archaeology* 14: 43-61.
- Godwin, L. and H. Creamer
1984 'Ethnography and Archaeology on the North Coast of New South Wales.' *Queensland Archaeological Research* 1:103-16.
- Grant, E. M. and G. R. Seymour
1990 'Environmental Impact Study of a proposed development – Deception Bay'. Unpublished report for Redcliffe Seaside Estates Pty Ltd. Chapel Hill, Alfredson Consulting Pty Ltd
- Grope, L. B.
1981 'How Beauteous are their feet'. *Yearbook of the Lutheran Church of Australia*. pp 22-62. Adelaide, Lutheran Publishing House.
- Gunson, N.
1978 'A missionary expedition from Zion Hill (Nundah) to Toorbul, Moreton Bay District, in 1842-43: the journal of the reverend K. W. E. Schmidt'. (in) *Aboriginal History* 2: 114-21.
- Hall, J.
1982 'Sitting on the Crop of Bay: an Historical and Archaeological Sketch of Aboriginal Settlement and Subsistence in Moreton Bay, southeast Queensland'. (in) Bowdler (ed.) *Coastal Archaeology in Eastern Australia*. Canberra, Dept of Prehistory, Australian National University.
- Hall, J. and P. Hiscock
1988 'Platypus Rockshelter (KB A70), S E Queensland: Chronological Changes in Site Use'. *Queensland Archaeological Research* 5: 42-62.
- Haselgrove, C., M. Millett and I. Smith.
1985. *Archaeology from the Ploughsoil. Studies in the Collection and Interpretation of Field Survey data*. Dept. of Archaeology and Prehistory, University of Sheffield.



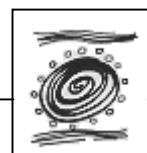
- Hekel, H., W.T. Ward, Jones, M. and D.E. Searle
1979 'Geological Development of Northern Moreton Bay'. (in) *Northern Moreton Bay Symposium*. Brisbane, Royal Society of Queensland.
- Hill, I
1980 'An Archaeological Report on a Proposed Rail Link – Petrie to Kippa-Ring'. Unpublished report for Cameron McNamara Partners.
- Hindmarsh, R. A., A.L. Brown, G. T. McDonald and E.C. Stock
Nd 'Where have all the Plantations Gone...?: Forest Land Conversion in SE Queensland'. Nathan, School of Australian Environmental Studies, Griffith University.
- Hornibrook, M.
1935 *The New Gateway to Redcliffe and the Great North Coast: Official Souvenir of the Opening of the Hornibrook Highway*. Brisbane, M.R. Hornibrook Pty Ltd.
- Hughes, P.J. and M.E. Sullivan
1984 'Environmental Approaches to Assessing Significance.' (In) S. Sullivan and S. Bowdler, eds., *Site Surveys and significance Assessment in Australian Archaeology*. Canberra: Department of Prehistory, Australian National University.
- Jones, M.
1988 *First Settlement and Seaside City* Sydney, Allen & Unwin.
- Kamminga, J.
1978 'Journey into the microcosms: a functional analysis of certain classes of prehistoric stone tools'. Unpublished Ph.D thesis. University of Sydney.
1981 'The beveled pounder: an Aboriginal stone tool type from southeast Queensland'. *Proceedings of the Royal Society of Queensland* 92: 31-35.
- Langevad, G.
1979 'The Simpson Letterbook'. *Cultural and Historical Records of Queensland 1*. Brisbane, Archaeology Branch.
- Lewis, J
1992 *Murrumba Downs 1823-1991: who Lived and Laboured Here*. Brisbane, Boolarong Press.
- Lilley, I.
1982 'A Finger on the Pulse: Analysis of Site Location Patterns in Subcoastal Southeast Queensland.' Unpublished MA Thesis, Department of Anthropology, University of Queensland.
- Low, T.
1988 *Wild Foods Plants of Australia*. Pymble, Angus and Robertson.



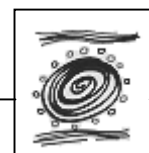
- Marquis-Kyle, P. and M. Walker
1992 *The Illustrated Burra Charter*. Sydney: Australian ICOMOS Inc.
- Mathew, J.
1910 *Two representative tribes of Queensland with an inquiry concerning the origin of the Australian race*. London, T. Fisher Unwin.
- Meehan, B.
1982 *Shell Bed to Shell Midden*. Canberra, Australian Institute of Aboriginal Studies.
- Meston, A.
1895 'Report on the Aborigines of Queensland'. Brisbane, Government Printer.
- McClure, S.T.
1995 'The Late Quaternary Sedimentology, Coastal Evolution and Sequence Stratigraphy of the Godwin Beach-Sandstone Point Area, Southeast Queensland'. Unpub. B.A. (Honours) thesis. Queensland University of Technology. Brisbane.
- McNiven, I.
1986 'A Preliminary Archaeological Survey of a Proposed Housing Development near Doyles Rocks on the North Bank of the North Pine River'. Unpublished report for Winders, Barlow and Morrison.
- 1992 'Bevel-edged tools from coastal southeast Queensland'. *Antiquity* 66: 701-709.
- McNiven, I., J. Davies and L. Lamb (eds.)
1994 'Archaeological Survey of the Blackdown Tableland, central Queensland: Sites, Significance and Management Recommendations'. Unpublished report to Queensland Department of the Environment and Heritage.
- Morwood, M and B. S. Fillery
1976 'Carved trees in Queensland'. *Occasional Papers In Anthropology* 6:97-107.
- Neal, R and E. Stock
1986 'Pleistocene Occupation in the southeast Queensland Coastal Region.' *Nature*. 323: 618-721.
- Pearce, C
1993 *Through the Eyes of Thomas Pamphlett*. Brisbane, Boolarong Press.
- Pearson, M. and S. Sullivan
1995 *Looking after Heritage Places*. Melbourne: Melbourne University Press.



- Petrie, C.C.
1983 (1904) *Tom Petrie's Reminiscences of Early Queensland*. Sydney: Angus and Robertson, Queensland Classics Edition (1st ed. 1904).
- Plog, S., F. Plog and W. Wait
1978 'Decision making in Modern Surveys' (in) Schiffer, M. *Advances in Archaeological Method and Theory 1*. New York Academic Press.
- Pine Rivers Shire Council
1988 *Tracks and Times: A History of the Pine Rivers District*. Pine Rivers, Pine Rivers Shire Council.
- Queensland Government Tourist Bureau
1933 *Brisbane and Bay Resorts* Brisbane, Queensland Government Tourist Bureau.
- Rea, M.
1972 *An Australian Post Office History: Redcliffe* Brisbane, Australian Post Office Relations Section.
- Redcliffe Sesquicentenary Committee
1949 *Redcliffe Sesquicentenary 1799-1949: The First White Settlement in Queensland* Brisbane, Queensland Publications.
- Richter, J
1994 'A Pound of Bungwall and other Measures'. Unpublished B.A. (Hons) thesis. St Lucia, University of Queensland.
- Robins, R.
1998 'Nonsite Archaeology in Southwest Queensland.' *Memoirs of the Queensland Museum. Cultural Heritage Series* Vol. 1:1: 23-56.
- Roth, W.E.
1904 *Annual Report of the Chief Protector of Aboriginals*. Brisbane: Government Printer.
- Satterthwait, L., H. J. Hall and K. Gillen
1996 'Aboriginal Anthropology and Archaeological Essay' (in) *South East Queensland 2001 Region Cultural Heritage Places Study* Vol. 6. University of Queensland, Archaeological Services Unit.
- Satterthwait, L. and A. Heather
1987 'Determinants of Earth Circle Site Location in the Moreton Region, Southeast Queensland'. *Queensland Archaeological Research* 4:5-53.
- Schiffer, M.
1972 *Advances in Archaeological Method and Theory 1*. New York Academic Press.



- Schofield, A. J.
1991 *Interpreting Artefact Scatters. Contributions to Ploughzone Archaeology.* Oxbow Monograph 4.
- Slaughter, L. E.
1959 *Redcliffe's 160 Years.* Redcliffe, Redcliffe Town Council.
- Smith, L.
1996 'Significance Concepts in Australian Management Archaeology.'
Tempus 5:67-78.
- Steele, J.G.
1972 *The Explorers of the Moreton Bay district 1770-1830.* St Lucia, University of Queensland Press.
- 1972b 'Redcliffe in 1824' *Queensland Heritage* 2/6: 20-25.
- 1975 *Brisbane Town in Convict days 1824-1842.* St Lucia, University of Queensland Press.
- 1984 *Aboriginal Pathways in Southeast Queensland and the Richmond River.* St Lucia, University of Queensland Press.
- Stevens, N. C.
1984 *Queensland Field Geology Guide.* Geological Society of Queensland.
- Stewart, N.C.
1970 'A History of the Pine Rivers Shire.' Unpublished B.A. (Hons.) thesis. Dept. Of History. St Lucia, University of Queensland.
- Strong, M. K.
1980 'Interim report for the Brown's Road campsite'. Unpublished mss. Caboolture, Abbey Museum of Art and Archaeology.
- 2000 'The Sacred Jigsaw: Redefining Prehistoric and Cultural Landscapes'. Unpublished M.A. thesis, University of Leicester, Leicester.
- Sullivan, S. and S. Bowdler, (eds)
1984 *Site Surveys and Significance : Assessment in Australian Archaeology.* Canberra: Department of Prehistory, Research School of Pacific Studies, Australian National University.
- Thiel, F.
1920? *Redcliffe, Scarborough & Woody-Point Illustrated* Brisbane, F.W. Thiel.
- Tindale, N.
1974 *Aboriginal Tribes of Australia*, vols. 1 and 2. Canberra: Australian National University.



- Tranter, D.
1990 *Cobb and Co.: Coaching in Queensland* Brisbane, Queensland Museum.
- Tutt, S.
1973 *Caboolture Country: Stories of the Area Controlled by the Caboolture Divisional Board* Caboolture: Caboolture Historical Society.
- 1974 *Pioneer Days: Stories and Photographs of European Settlement Between the Pine and the Noosa Rivers, Queensland* Caboolture: Caboolture Historical Society.
- 1977 *By Many Campfires: Stories and Photographs of European Settlement between the Pine and the Noosa Rivers, Southeastern Queensland.* Caboolture, Caboolture Historical Society.
- 1979 *From spear and musket 1879-1979.* Caboolture: Caboolture Shire Council.
- Watson, F. J.
1946 *Vocabularies of four representative tribes of southeastern Queensland.* Royal Geographical Society (QLD).
- Welsby, T. (Ed. A.K. Thomson)
1967 *Collected Works.* 2 Vols. Brisbane, Jacaranda Press.
- Whalley, P.
1987 'An Introduction to Aboriginal Social History, Moreton bay, Southeast Queensland, 1799-1880'. Unpublished B.A. (Hons.) thesis. Dept of Anthropology, University of Queensland.
- Wilmott, W.F. and N.C. Stevens
1992 *Rocks and Landscapes of Brisbane and Environs.* Brisbane, Geological Society of Australia (Queensland).
- Winterbotham, L. P.
1955 'Vocabularies in Dalla, Badtala, Wakka Wakka and Dungi Dau'. AIAS manuscript No 25.
- 1957 'The Jinibara Tribe of southeast Queensland'. Fryer Library manuscript, University of Queensland.
- 1982 'Some Original Views around Kilcoy: Book 1 – the Aboriginal Perspective'. Compiled by G. Langevad (in) *Queensland Ethnohistory Transcripts 1 (1)*.

9973
Petrie-KippaRing
corridor
CHA
MS. AB. GG

