Regional Assessment of Cultural Heritage: A New Approach Based on Community and Expert Partnerships

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Cultural Resource Management: Issues for the 1990s

Australia's heritage managers have needed to take a broad view of our environment, encompassing the great diversity of the continent and its natural and cultural resources. This is particularly evident in Darwin, at the 'Top End' of the continent with its diverse heritage and close proximity to the adjoining cultures of Asia and the Pacific. The following challenges have been highlighted as issues for Northern Australia by the conference organisers:

- dealing with a large variety of cultural resources produced by diverse communities of Australia's 'Top End' including the strong living traditions of indigenous peoples;
- the need to match resources to the variety of cultural heritage places of the region, which often have very different conservation needs and requirements;
- the need to find shared principles and practical models for achieving balanced management of multiple cultural heritage;
- how much can we afford to keep (or lose), and who decides?

We would like to add two other important issues derived from our experience:

- the need for broad community participation in heritage issues to counter Western, sometimes simplistic, 'scientific' models which can be a form of cultural imperialism;
- the need to maximize the extent of conservation by finding the right management levels and processes to suit the society, for example by setting up co-operative arrangements involving all levels of government, business and interests groups.

Conserving the National Estate - a new approach

The Australian Heritage Commission (AHC) has recently developed a conservation model based on partnerships with state land management agencies and communities which addresses many of these concerns. Using a regional approach, the model enables improved identification of places of heritage significance and better regional protection of identified values. Local communities and groups, including Aboriginal organisations, participate in the process and values which the community holds about places are elicited, as well as expert views.

Regional assessment has been used so far in joint forest projects carried out with the Department of Conservation and Natural Resources (CNR) in East Gippsland and the Central Highlands of Victoria, and with the Department of Conservation and Land Management (CALM) in the southern forests of the south-west of Western Australia. This paper describes some of the key issues relating to the application of the regional assessment model, especially for the cultural environment. We have been specifically asked to address questions and concerns about regional assessment as seen from the 'Top End':

- what is regional assessment and why is the AHC taking this approach to the identification and conservation of the National Estate;
- what will be the impact of regional assessment on National Estate listings;
- what impact will regional assessment have on existing and future nominations by individuals and organisations;
- how are people selected to undertake the regional studies?

We will take up these issues in the first section of this paper. The second section of our paper will focus more closely on the joint forest projects underway in Victoria, and especially community participation in the identification and conservation of cultural heritage values within these projects.

The need for context

Since the AHC was established in the mid 1970s, nominations from individuals or organisations have provided a major source of information about the location and heritage values of potential National Estate places. However, problems with this past system of ad hoc nominations were as follows:

- divorcing places from a wider regional or thematic context makes assessment of their real cultural significance and conservation needs very difficult;
the early system, by its administrative categorisation into Aboriginal, historic and natural places, or values, tended to set up artificial and often obstructive divisions within the Australian environment, which as lived in and perceived by humans does not exhibit these clear cut distinctions;

- identification of individual significant places in an ad hoc way by the community tends to occur most often when places are under threat and because of a lack of good contextual information for planning and management decisions;

- and, as a result, AHC advice on the impacts of proposals on National Estate values and on measures to minimise such impacts was often seen as interference with planning which had already taken place:

- often, land use conflict, 'trench by trench warfare', resulted;

- the piecemeal approach was not a context for good decision making or for long-term effective conservation of heritage systems, eg. Australia's native forests, Central Business District of major cities.

As a result there was a perceived need to look at heritage significance within the broadest context.

The AHC responded by developing the regional assessment model. This model was first developed in 1990-91 for determining the National Estate values of the southern forest region of the south-west of Western Australia. The project involved the AHC and CALM. This first joint project was a hard experience, the biggest project the Commission has ever attempted and a huge learning curve!

**Regional assessment model:**

**key points**

The key points of the regional assessment model are as follows:

- a regional survey of the conservation values of a defined region (to date these have been forested regions);

- identification of all areas in the region with National Estate significance;

- analysis of the extent to which identified National Estate values in the region are protected within existing conservation reserves;

- development of management options in non-reserved areas for the protection of identified values outside the reserve system;

- agreement on a regional basis for the conservation of values and on-going research/monitoring to review data on values and to check on conservation values.

There is, of course, already a well developed methodology for the conservation of cultural places enshrined in the Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter). This sets out a logical and consistent process for the assessment of cultural significance as a basis for conservation planning and has become a national standard for Australia. It relies on the identification of the significance of places as a prerequisite for management decisions. The Burra Charter methodology hence advocates a planning process which is very similar to the regional assessment model. This is not, of course, a coincidence - it is merely good, logical planning.

**A model for achieving balance**

Regional assessment is a response to the need for balanced assessment and management of heritage places. The benefits of regional assessment are that National Estate values are considered in their diversity across the full range of natural and cultural values - including acknowledging the human history and cultural features within national parks and wilderness areas, as well as the need to manage conflicting heritage values.

The regional assessment model is helping to move the debate from 'what' is valuable to 'how much' heritage conservation is desired by communities and governments. Comprehensive identification involving all interested parties helps remove any surprise element and reduces conflict; the joint projects are built on a strongly co-operative approach, and all interested parties - including industry, recreational users, local communities, Aboriginal communities and diverse social and cultural groups, as well as government agencies - participate in the process.

An additional benefit is that the projects balance scientific studies and expert identification with community identification of significance and a wider appreciation of heritage and sense of place, across both the natural and cultural environment. The projects involve experts, through commissioned studies and participation in advisory groups, and encompass community based cultural heritage workshops - as well as drawing on existing data, supplemented by additional research studies to fill gaps (routes of human movement, key historic themes and storylines related to the forest, eg. mining, timber industry, tourism), so that outcomes are more comprehensive than previous studies.

The joint project teams are also tackling the hard theoretical issues: the AHC held a round of expert workshops on diverse issues related to identification and assessment such as aesthetics, social value, diversity, faunal habitat, living Aboriginal sites, representativeness - all difficult issues at the cutting edge of heritage identification (Blair, 1994; Clarke, 1994; Dunnett and Feary, 1994; Ramsay and Paraskevopoulos, 1994).
The joint project outcomes are the listing of National Estate values in a regional context: the interim listing of places identified in the Western Australian project occurred in December 1993. The Victorian projects are due for completion in 1994, and will result in the listing of major new areas of national estate forests - including, for the first time, cultural places which reflect the human history and use of forests. As part of the regional assessment projects, the AHC is providing ‘upfront’ conservation advice about the heritage places and values identified, and thus providing an early understanding of conservation needs which pre-empts conflict.

Community participation

The AHC’s work in Victoria has demonstrated that forests are important to people for a wide variety of reasons: from a local source of timber to providing inspiration for works of art and literature. Some values, such as timber production, can be easily quantified; others, such as biodiversity or historic significance, are able to be determined through research by specialists.

There is, however, another set of values which are much more difficult to measure and assess using established quantification techniques available within the natural sciences or the humanities. These values relate to community attachment to the cultural and natural environment, often based on long-standing patterns of use and interaction, which create a sense of local identity. A critical source of information about these less tangible values is the local community itself. These community heritage values relate to the AHC’s national estate criteria for aesthetic and social value (Criterion E: A place’s importance in exhibiting particular aesthetic characteristics valued by a community or cultural group; and Criterion G: A place’s strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons).

Although social and aesthetic values are identified and assessed in different ways from scientific or historic value, they are no less important. Demonstrations by conservation groups against logging of old growth forests are often triggered by a profound sense of loss, which relates to their social value (Johnston, 1992), as well as concerns about the more scientific values, such as destruction of species habitat. An analysis by Schapper (1993) of the reasons for listing of places on various heritage registers throughout Australia has shown that aesthetic quality was the second most common basis for listings of significant natural areas.

Community participation in the identification and conservation of heritage values is essential if forests are to be managed for their multiplicity of social and economic values. Land managers are charged with the responsibility of conserving the values of public forests on behalf of the community; their role is to firstly recognise the full range of values represented in an area, and secondly to develop management objectives which achieve a balance amongst them (Feary, in press).

The joint forest projects: East Gippsland case study

East Gippsland is remote from major urban areas, with a population of about 6000 people employed mainly in forestry and agriculture, although tourism is becoming an important industry. More than 80 per cent of the region is forested public land, renowned for its high nature conservation values and scenic beauty (Brady, 1992). The main population centres are at Orbost and Mallacoota, with the greatest population of Aboriginal people based at Lake Tyers.

As part of the AHC’s assessment of national estate values in the East Gippsland Forest Management Area (Map 1) there was extensive participation by communities across the region.

Community heritage workshops were designed to provide an avenue for community participation in the project, and to enable heritage values to be identified at the ‘grass
roots' level. AHC and CNR staff identified all locally-based groups likely to have an interest in the environment, history and heritage of the project area. Workshop locations were planned to tap major population centres at Orbost, Nowa Nowa, Mallacoota and Bonang. Local coordinators arranged the venue and invited representatives from all known local social and cultural groups, including farming and business representatives; tourist, historical and progress associations; teachers; Country Women's Associations; Aboriginal groups; local Landcare groups; recreational interest groups; industry groups; and representatives of local government. A separate program of Aboriginal consultation was also conducted and this is discussed below.

At the heritage workshops, places of importance to the community were identified, described and locations marked on 1:100 000 topographic maps. Workshops began with participants being asked to identify the major themes and events of East Gippsland's history. Small groups worked together to complete forms designed to elicit information about places regarded as important for their recreational, aesthetic, historic, scientific or social value. Participants nominated other possible contacts and a network was established back into the communities for follow-up research. The heritage workshops proved to be a major source of information on the entire range of cultural and natural values.

The workshops were followed by field survey and documentation of selected places identified by the community. The compiled documentation was then returned to the community and follow-up meetings held to receive comments and incorporate any new information. Finally, the documents listing identified places were lodged at public libraries and CNR offices within the regions. (For a fuller description of the community heritage workshops and their outcomes see Johnston and Lewis, 1993).

In East Gippsland more than 500 heritage places were identified at the four workshops, including the entire range of natural and cultural values. Over 240 new historic places were identified and documented at the workshops and in follow-up field survey work. These workshops were a major source of new information for a remote area which had not been greatly studied.

The workshops identified and documented 60 places primarily for their social value, with 19 of these being above the threshold for National Estate listing. Many of these were also above threshold for other cultural and natural values. About a quarter of these places are widely known recreational areas, such as the Lind and Alfred National Parks, the Buchan Caves Reserve and forest touring routes, such as the Snowy River Road and the former coach road to Lake Tyers House. Many people feel a special attachment to these places which they have regularly visited, often since childhood. Other places are fundamental to community identity, such as the old Noorinbee School, or the Bonang Hall and General Store, and are intensely valued as the focus of local community life in an isolated region. Places may also serve as important symbols of the region and its history, such as Lake Tyers House and the Blacksmith's Tree near Bendoc. The region contains many such places, known to a local or regional community, and often greatly valued by them.

Many of the places which came below the threshold for National Estate listing may be useful for local heritage conservation planning. All information collected has been provided to relevant local councils, as well as participants in the heritage workshops.

Forest planning for recreational use covers some aspects of social value by providing for public access. Ongoing access to traditional places is crucial to the maintenance of some types of social value. In these cases, processes for consultation with relevant communities are essential before decisions are made which destroy places or restrict access to them.

Management strategies to protect this value vary depending on the physical form of the place, or aspects of the place. Continuity of use may be the dominant value, rather than the design or material of the structure. In the case of the Bendoc Hall, its social value lies in continuity of use as a community hall, as much as preservation of the historic fabric. Similarly, for walking tracks and old trails, access and use is often necessary to maintain social value.

The Bonang General Store, East Gippsland, a focus for the local community.
Each cultural group has a right to identify places of cultural significance and this right may include the withholding of certain information, however the process of identification also implies some custodial responsibility towards those places and the right of access to any decision-making process affecting such places. The management of social value requires regular, ongoing consultation between the managers and the users of the place expressing that value. There is often a conflict between prescriptions for environmental care (such as closing off access and rehabilitating tracks) and local use. A better understanding of the range of values expressed in this form can lead to more effective consultation and local involvement in the care of the place (as in management committees for community halls or historic huts) and still meet management requirements such as limited access to tracks in non-wet periods when erosion will not be a threat. If local use ceases, the social value of that place may also cease.

**Aboriginal consultation**

Aboriginal people are a special interest group because of their special spiritual and historical connection to the land, as recognised through the *Native Title Act* 1993. Occupation of the East Gippsland region is known to have begun some 20,000 years ago, based on excavations at Cogg’s Cave (Flood, 1974) and New Guinea 11 Cave (Gell and Stuart, 1989:35), both near Buchan, and continues to the present.

Despite 200 years of dispossession and trauma, Aboriginal people retain a strong sense of attachment to the natural environment in East Gippsland, through traditional religious beliefs and knowledge of the distribution of economically important resources. Some oral traditions and history about specific post-contact sites are also known to the community. Aboriginal people have always had an interest in the management and protection of sites and places that reflect their history. However, it has only been over the last decade or so that they have been given the opportunity and the legislative basis to have an active involvement in decision making.

Aboriginal Affairs Victoria (AAV) administers the *Archaeological and Aboriginal Relics Preservation Act* (1972) which gives legal protection to all archaeological sites. Policies arising from this Act require that Aboriginal communities be consulted about management issues involving Aboriginal archaeological sites. Since the implementation of the federal *Aboriginal and Torres Strait Islander Heritage Protection Act* of 1987, Aboriginal communities have been given greater powers to protect significant places or objects.

Although AAV was not a signatory to the regional assessment partnership agreement, they were closely involved in the archaeological, anthropological and oral history research undertaken as part of the regional assessment project. As part of the data gathering phase, archaeological fieldwork was undertaken in the East Gippsland Forest Management Area to increase the previously rather meagre number of recorded sites in forests on the state site register. This work was carried out by an archaeologist, with Aboriginal people from the local communities forming part of the field crew (Hunt, 1993).

Aboriginal interest in archaeological sites is variable and often depends on whether an individual has had the opportunity to be involved in archaeological research. In general, all archaeological sites are important at one level because they provide a tangible link with the past. However, it is often sites and places associated with the recent, post-contact past which are the most significant, particularly if they relate to events that form part of living memory. Although much has been written about this period in East Gippsland (e.g. Pepper, 1985; Thompson, 1985) at the time the AHC commenced regional assessment, there was no comprehensive inventory of sites relating to the post-contact history. In addition much of the research had concentrated on Aboriginal life on missions and reserves and there was little information about fringe camps or Aboriginal employment in local industries such as the timber industry.

In recognition of these shortcomings, AAV had already commenced a state-wide study to document sites relating to post-contact history. Oral history research with selected community members was supported by data obtained from archival sources. Thus, sites derived from documentary sources were discussed with community members for corroboration and to obtain additional information. Conversely, many sites not mentioned in written records came to light through oral history research. The AHC was fortunate to be able to tap into this work, and to undertake more intensive studies in both the East Gippsland and Central Highlands project areas.

The oral history projects, which were conducted in parallel with the archaeological study, proved to be extremely important in maintaining contact with the Aboriginal communities of each region. Over a period of several months many individuals were interviewed about their personal and family histories, with particular emphasis on places associated with forest activities. Individuals were, in most cases, enthusiastic about sharing their knowledge, so that a wide range of sites emerged from the study. These were an interesting combination of archaeological sites, post-contact sites with and without physical evidence, and natural features associated with traditional storylines.

In the Central Highlands, there was widespread support for the assessment work, at the completion of which there was general endorsement of the listing of the Aboriginal places identified in the Register of the National Estate. The
situation was different in East Gippsland. There was initial support for the project when the local Aboriginal communities were first approached in early 1993. However, in November 1993, the Commission received a letter from the East Gippsland Aboriginal Heritage Council (which represents all the communities in the study area) which requested that no Aboriginal places identified in the regional assessment be nominated to the Register of the National Estate at this time. The communities were concerned about the restricted time-frames associated with the regional assessment process, and that the process might result in the loss of control by Aboriginal communities over their heritage. The time-frames established for the project were such that assessment and consideration of the level of significance could not be completed.

This situation precludes listing at present, as without the active involvement of Aboriginal communities in the assessment process, especially in relation to the verification of levels of significance, it is not possible to adequately assess the National Estate significance of Aboriginal heritage places in the region. As a consequence of the above, data collected to date on East Gippsland Aboriginal places have not been included in the study. The AHC is continuing to talk with the East Gippsland Aboriginal communities about these issues.

It is important to note, however, that the above does not imply that there are no Aboriginal places of potential National Estate significance in the region. On the contrary, the region has a rich Aboriginal heritage, some parts of which, if subject at some stage in the future to a National Estate assessment, would undoubtedly be recognised as having National Estate significance. It is therefore appropriate to consider broad conservation principles which would assist in the preservation of Aboriginal places in the region.

An essential component of the conservation of Aboriginal heritage is that Aboriginal people have the opportunity to be actively involved in the management of their heritage places. As discussed previously, this principle now has a basis in legislation. In order that forest management planning adheres to the legislative responsibilities, it is necessary to improve the process of formal liaison between the Department of Conservation and Natural Resources and Aboriginal communities. This will involve consultation with local communities about the potential impacts of timber harvesting on significant sites. Aboriginal Affairs Victoria also has a recognised role and expertise in regard to community consultation about heritage issues and should be involved in the formulation of a consultative strategy.

**Future Directions**

An important outcome of this project was the confirmation that local communities have a strong and legitimate stake in heritage identification, assessment and management. Local communities hold an immense amount of information about the nature and location of their heritage, and also about the potential threats which it faces. The community participation process developed during this project forms a viable and valuable model for other studies seeking input into heritage issues from local communities.

Methods for assessing the cultural values of forests within the joint projects are currently being developed and refined. Although regional assessment projects to date have been limited to forests, the model is potentially applicable to other themes and areas. Discussions are being held with various state governments about further joint regional assessment projects.

Some issues need further work:

- methods of assessing the values which the community holds about places (these relate to assessment criteria for social and aesthetic values);
- how to deal with living sites, Aboriginal and non-Aboriginal - for example, historic tracks and huts in parks or wilderness areas;
- potential for the active use of the cultural landscape concept, which has been applied in the joint projects in relation to historic values, but which also may be useful in relation to Aboriginal landscapes - especially those where the primary evidence consists of archaeological sites. As knowledge of Aboriginal archaeological site distributions and confidence in predictive models grows, the cultural landscape concept has the potential to articulate the most common of forests site types and artefact scatters into a more comprehensible cultural entity;
- wider application of the model, eg. to other environmental types such as rangelands, coasts, or possibly even urban landscapes. The main contribution is that it provides a formal system for assessing heritage significance in the context of, and with the advantages conferred by, regional scale databases.

Outcomes from the joint Victorian projects (Australian Heritage Commission and Department of Conservation and Natural Resources, Victoria, 1994) confirm the value of heritage experts and the community working together to identify and document the cultural heritage of a region. This has been one of the most successful aspects of the regional assessment work to date, with the potential to achieve good conservation outcomes which are supported by both scientific research and community values and feelings.

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Bibliography and Selected Reading


THE DIFFERENT SIGNIFICANCE OF HISTORIC AND PREHISTORIC SITES ASSOCIATED WITH GOLD MINING PROJECTS IN THE NORTHERN TERRITORY

Philip Hughes, Scott Mitchell and Marjorie Sullivan

Background

In assessing the impact of development projects on heritage values either prehistoric site or historic site issues normally predominate. Although the criteria for assessing their significance may be broadly similar, where 'important' sites or groups of sites of both these classes are present it is commonly very difficult to assess and 'rank' them in an integrated manner. One reason is that the social, environmental and temporal contexts in which the two different classes of sites came into being are often very different, making them difficult to compare. A related problem is that when the question 'significant to whom?' is asked, there is often little overlap between those knowledgeable about, and interested in the management of these two broad groups of sites.

These and other issues are illustrated with some of the findings of heritage investigations undertaken for the proposed Union Reefs Gold Mine, north of Pine Creek in the Northern Territory (Kinhill, 1992, 1993; presented as Appendices in the EIS 1993). At the outset of planning for the Union Reef project, impacts on both prehistoric and historic sites were identified as important issues to be addressed.

Geological History

About 1,500 million years ago geological events created resources in the Pine Creek region that have been the focus of three phases of 'mining'. These were the prehistoric quarrying of hornfels by Aborigines; labour-intensive gold mining by large numbers of Chinese and Europeans in the late 19th century; and capital-intensive, large-scale open cut and alluvial gold mining which has been undertaken by major companies since the 1960s.

The Union Reefs project area is located on Early Proterozoic metasedimentary rocks of the Burrell Creek Formation (Stuart-Smith et al., 1987:10-13). These rock units trend north-northwest in the Pine Creek shear zone and have been intensely folded and subject to low grade regional metamorphism (Figure 1). The formation consists of mainly interbedded shale, slate, phyllite and siltstone, with localized occurrences of gold-bearing quartz veins and reefs.

Two major lobes of granites of the Cullen Batholith about seven kilometres apart were intruded into the Burrell Creek formation to the northeast and southwest of Union Reefs. The metasediments in the contact zones with the granites were extensively metamorphosed by heat action to form...
hornfels. The intrusion of the granites also played a major role in the emplacement of the gold-bearing quartz veins and reefs. The more resistant units in these Burrell Creek rocks have formed a series of north-northwest trending, rugged strike ridges which rise 20 to 200 metres above the surrounding valleys. The highest ridges are formed on hornfels.

Hence throughout the Pine Creek region there is a broad correlation between the occurrence of hornfels and gold, but outcrops of hornfels suitable for quarrying by Aborigines were very much more widespread and extensive than were economic occurrences of gold.

Union Reefs Archaeology

Prehistoric Sites

Seven prehistoric sites were found, three of which were comparatively small, discrete scatters of artefacts along a creekline to the south of the project area. None of these three sites was in an area that would be impacted by the mining project.

The other four sites made up a complex located along a creekline which is likely to be dammed during the construction of the proposed mine to supply water for the project. Two of these four sites were small hornfels quarries, and the other two consisted of scatters of stone artefacts comprising mainly hornfels. One of these latter sites had associated European artefacts, including a fireplace and flaked glass. It was concluded at the time of the initial survey that further archaeological investigations would undoubtedly result in the delineation of discrete clusters of artefacts which could be defined as sites, separated by background scatters of artefacts.

In discussing the significance of prehistoric archaeological sites it is important to realise that there are many ways of considering significance: these include scientific, Aboriginal, public, historical, aesthetic and educational.

In Environmental Impact Statement (EIS) investigations the two criteria most commonly used by consultants and heritage authorities to assess the scientific significance of Aboriginal archaeological sites are research potential and representativeness (c.f. Bowdler, 1983). A review of previous investigations showed that the nature and locations of prehistoric archaeological sites in the Union Reefs study area were very similar to those observed elsewhere in the region extending from the Douglas River in the north, through Pine Creek to Mt Todd in the south (Kinhill, 1992: Section 4.5). Sites were located in areas where hornfels cropped out (quarries and associated knapping floors and artefact scatters) and along creeklines (artefact scatters). The strong indications were, as concluded by Hiscock (1991) for the Pine Creek area, that the hornfels-rich hills to the west of Union Reefs were at least an order of magnitude more rich in prehistoric archaeology that other parts of the Union Reefs study area. More than 60 hornfels quarries and more than 25 artefact scatters have been listed to date in the NT Museum site register for the Pine Creek area, and similar additional, as yet unregistered sites are known to occur (Mitchell, 1993). He has identified current research questions to which these quarry sites could provide answers:

- What manufacturing processes (or reduction sequences) were employed?
- Which stages of reduction took place at the quarries, and which stages at knapping floors in the surrounding landscape?
- When were the hornfels quarries first used, and has there been variation through time in the intensity of their use?
- To what extent were methods of artefact manufacture standardised?
- What role did hornfels play in regional exchange networks?

Hornfels quarries and associated knapping floors and artefact scatters have been found in all areas so far investigated where hornfels has been found to crop out. As demonstrated in Figure 1, the area of contact between the metasediments and the granite along the Pine Creek shear zone, which includes Union Reefs, is particularly large compared with most other parts of the Northern Territory, and outcrops of hornfels are ubiquitous throughout this area. It is highly likely therefore that prehistoric hornfels quarries are similarly ubiquitous throughout the Pine Creek area, from north of Union Reefs to as far south as Mt Todd. Mitchell (1993) has identified sites on Bonrook Station and other site complexes in the Pine Creek region as archaeologically significant, and therefore worthy of special management.

Archaeological sites along creeks have also been found in all areas in the Pine Creek region so far examined. The stone artefact assemblages in such sites have been predominantly on hornfels, and points of various kinds have been found on some sites. There are numerous similar creeks and rivers in both metasedimentary and granitic parts of the landscape and it is highly likely that sites along such water courses are ubiquitous throughout the area.

It was concluded therefore, that although the prehistoric archaeological sites located in the course of the investigation of the Union Reefs mining proposal were scientifically significant – in that they have considerable research potential – similar sites are very well represented throughout the region.
Historic Sites

Historical background

A considerable amount of research has been completed on the Union Reefs area and the following brief summary is drawn mainly from Jones (1987, 1990), McCarthy (1989:10-17) and Pearce (1982).

European activity in the area began in 1871, during construction of the Overland Telegraph Line. Telegraph poles made from pine were used in the initial construction phase. Those poles between Pine Creek and Brock's Creek were replaced with metal poles in 1888.

Gold was discovered at Union Reefs by a party of six Queensland prospectors late in 1873. Initial prospects were promising; the party found alluvial gold and washed 600 ounces in a few days. The prospectors took out a claim and established a battery in 1874. By 1875 there were 65 Europeans, but no Chinese, at the Union Reefs settlement.

Chinese miners began arriving at the Union in 1875. By 1876, 190 Europeans and 80 Chinese lived at the Union. From this time the proportion of Chinese residents increased dramatically until, by 1879, Union Reefs settlement had become a Chinese township; by mid-1880 only three Europeans remained in the area.

During 1880 mining activity slowed, but a revival took place in 1883. By 1887 all claims were owned by Chinese syndicates. During 1888 and 1889 the Palmerston to Pine Creek railway was constructed; Union Town was gazetted in an area adjacent to the railway in 1889. This became a European settlement, and contained several stores, a hotel, a wheelwright and a blacksmith's shop.

Railway contractors, C. and A. Millar, purchased all of the claims at Union Reefs in 1888. After considerable capital expenditure on a railway spur, a battery and a substantial new shaft, they sold the leases and machinery to a syndicate of Chinese merchants in 1892 for only £1000. From this date Chinese miners continued to work the reefs, mostly on a tribute basis. In 1899 the population was estimated at 400, of whom most were Chinese.

By 1903, however, mining operations at the Union were in financial difficulties. The last working battery on the field was inoperable by 1905. By 1906 the small amount of ore that continued to be mined there was sent to Pine Creek for crushing. The entire area was abandoned by 1914, and subsequent attempts to re-open mines in 1922 and 1934 were not successful.

Historical sites

Nine historical archaeological sites were recorded within the proposed project area. Three of them - the mainly or entirely Chinese sites referred to as Union Reefs Ridge Top Chinatown, Union Reefs Main Track Chinatown and the Millar's Battery site - were identified as possessing particularly high significance, especially archaeological (Kinhill, 1992). Four criteria were employed to assess the historical significance of the Union Reef sites (after Bell, 1983:18-19).

Figure 2

Chinese mining or habitation sites from the Pine Creek district.
1. Historical associations. A site may be held to be of historical significance if it was the scene of an event of great intrinsic interest, or of long-term impact on human affairs.

2. Level of interest, or the extent to which sites have claims to significance beyond the local region or even the Northern Territory.

3. Representativeness and/or distinctiveness. Good examples of commonly occurring sites may be considered to be significant if they typify the occurrence, and can be readily conserved. If sites found within a study area are not well represented elsewhere then their significance in terms of distinctiveness will be deemed to be high. This is especially the case for sites which are unique (i.e. the only one of their kind).

4. Archaeological research potential. This aspect of significance hinges on the ability of the site to shed light on questions that cannot be answered efficiently from documentary, pictorial or oral sources.

Kinhill (1992:16, 20-21) indicated clearly the considerable importance of the Union Reef Chinese sites under criterion 4 and, for Main Track Chinatown, under criteria 1 and 2. Difficulties were encountered, however, in attempting to determine the extent to which the three Chinese sites at Union Reef were distinctive, or were representative of contemporary mining/habitation sites elsewhere in the region. Fourteen other Chinese habitation/mining sites were known from the Pine Creek area (Figure 2). Research had focussed on the historical records relating to these places. Detailed archaeological research had been conducted on only one of these sites, the Pine Creek Chinatown (McCarthy, 1986).

Kinhill (1992) highlighted the good state of preservation of the Chinese sites at Union Reefs. The report also stressed the large number and range of structural features at these sites, together with their extensive, dense and diverse scatters of associated mining and domestic artefacts. These features were argued to impart to the Union Reefs sites high archaeological significance and research potential. Nonetheless, further research was required to determine whether these characteristics of the Union Reef sites were repeated at other Chinese sites in the Pine Creek region.

**Regional assessment of significance**

The following sites listed in Table 1 were inspected: Brock's Creek, Yam Creek, Twelve Mile North, Twelve Mile Settlement, Twelve Mile Chinatown, Extended Union, Pine Creek Chinatown, Eveleen Mine and Settlement, Wandi Settlement, Driffield and Horseshoe Creek (Kinhill, 1993). It was considered highly likely that all the major concentrations of Chinese archaeological remains in the Pine Creek Region were documented as part of this survey.

The data present in Kinhill (1992 and 1993) indicated that the three Chinese archaeological sites at Union Reefs, together with the Pine Creek Chinatown, were the regionally most significant on two of the four criteria - distinctiveness and archaeological research potential. In addition, Union Reefs Main Track Chinatown and Pine Creek Chinatown were considered to have high significance in terms of their historical associations and level of interest. With regard to representativeness/distinctiveness, it was concluded that it was highly unlikely that any other Chinese sites as large or as complex as these occurred in the region and hence, on this criteria, their significance was deemed to be high.

In Kinhill (1992:17) it was considered that at least four of the other mining areas with Chinese may have been broadly archaeologically comparable to the Union Reefs sites. These were: Pine Creek Chinatown and the three Chinese settlements at Twelve Mile, Brock's Creek Chinatown and Driffield. This contention was not supported by the results of the regional investigation and it was concluded that only Pine Creek Chinatown was archaeologically comparable with the Union Reefs sites (Kinhill, 1992).

**Comparisons**

Geological events about 1,500 million years ago created a context which eventually resulted in both prehistoric and historic sites of scientific/research significance occurring in close association with gold-bearing ore bodies in the Pine Creek region. The criteria upon which the significance of these two different classes of site were assessed were also similar. The similarity between the two classes does not, however, extend much beyond this.

The kinds of Aboriginal archaeological sites found at Union Reefs and other gold mining areas such as Mt Todd (Paton, 1992), although individually deemed to have considerable scientific/research significance, have been rated as having moderate to low significance in terms of representativeness. The reason for this is that although hornfels quarries and associated scatters of stone artefacts with scientific (archaeological) importance have been found at gold mining sites in the region, large numbers of similar sites are known and others can be reasonably inferred to occur widely, and away from prospective mining areas. Thus alternative representative sites could be identified for conservation management from areas not proposed, or likely to be proposed for mining activities. In no sense can sites of this type be considered as a group to be threatened by renewed, capital-intensive gold mining.

In contrast, at Union Reefs the significance of several of the historic sites was rated high on both research grounds...
and representativeness. Similar sites at other former gold mining localities have also been rated as having high significance, as evidenced by their inclusion on the National Trust of Australia (NT)'s Register of Significance and the Register of the National Estate. By definition such sites occur on or in close proximity to gold-bearing ore bodies. Many of these ore bodies are now being, or are likely to be, open-cut mined; as a consequence a high proportion of these historic mining sites are under threat.

Indeed, given the rate at which ore bodies with known associated historic mining heritage sites are being mined or explored, it is highly likely that the majority of the most significant sites in the Pine Creek region will have been destroyed by early next century.

Unlike the prehistoric sites, these historic sites are also significant - not only scientifically, but also because of their historical associations and their level of interest to a wide cross-section of the Northern Territory and Australian public. It is to be hoped that pressure from a wide range of interest groups will be exerted to ensure that these important sites are properly considered in the impact assessment and management process.

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