

Tempus Retirement Village Project
12371 Tasman Highway, Swansea

Aboriginal Heritage Assessment Report

Final Report version 2

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Executive Summary

Project Background

Tempus Village Management Pty Ltd (TVM) are proposing to construct a retirement village on the Kelvedon Estate property at 12371 Tasman Highway, Swansea. The location of the project is four kilometres south of the seaside township of Swansea, on the East Coast of Tasmania (see Figure 1). The project is known as the Tempus Retirement Village.

The Tempus site encompasses 18Ha on the NE corner of the Kelvedon Estate. However, the development footprint is confined to an area of 7.7 hectares (see Figure 2). Tempus will feature 130 Independent Living Units. There will be an array of recreational and communal facilities for residents and the local community – including 80-seat theatre, gymnasium, 20m lap pool, conservatory, olive grove, tennis courts, equestrian centre and greenhouse. Figure 3 shows the proposed development masterplan.

CHMA and Rocky Sainty have been engaged by TVM to undertake an Aboriginal heritage assessment for the Tempus Retirement Village proposal. The assessment has been primarily focused on the 7.7 hectare proposed development footprint. This report comprises the findings of the assessment.

Registered Aboriginal Sites in the Vicinity of the Study Area

As part of Stage 1 of the present assessment a search was carried out of Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the Tempus study area. The search shows that there are a total of 56 registered sites that are located within an approximate 3km radius of the study area (search results provided on the 25-9-2019 by Kate Moody from AHT). Table i provides the summary details for the 35 registered Aboriginal sites, with Figure i showing the location of these sites in relation to the study area boundaries.

Of these 56 registered Aboriginal sites, there are four sites that, based on the grid references provided on the AHR, are situated within the bounds of the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577). These sites are highlighted in red in Table i. Sites AH6573 and AH6577 are both classified as Isolated artefacts. Site AH6574 is an Artefact scatter comprising nine artefacts and AH6575 is an Artefact scatter comprising seven artefacts. Based on the available information it is assumed that the grid reference locations for these four sites are incorrect, and they are in fact located on the Piermont property, to the east of the Tempus study area.

The detailed AHR search results are presented in section 4.2 of this report.

Table i: Summary details for the 56 registered Aboriginal sites located in a 3km radius of the Tempus study area (Based on information generated from the AHR search dated 25-9-2019)

AH Number	Site Type	Locality	Grid Reference (GDA94) Easting	Grid Reference (GDA94) Northing
76	Shell Midden		589213	5330682
118	Artefact Scatter	Swansea	589113	5333882
119	Shell Midden, Artefact Scatter	Swansea	589326	5333816
122	Artefact Scatter	Swansea	589076	5333433
123	Isolated Artefact, Artefact Scatter		589313	5333582
252	Stone Quarry	Swansea	589513	5331182
11370	Shell Midden, Artefact Scatter	Swansea	588107	5329736
3460	Artefact Scatter, Shell Midden	Swansea	588141	5329020
3461	Shell Midden	Swansea	588247	5329181
3462	Shell Midden, Artefact Scatter		588313	5329282
3463	Shell Midden, Artefact Scatter	Swansea	588267	5329410
3464	Shell Midden, Artefact Scatter	Swansea	588275	5329565
3465	Shell Midden, Artefact Scatter	Swansea	588313	5329682
3466	Shell Midden, Artefact Scatter		588413	5329782
3467	Shell Midden, Isolated Artefact	Swansea	588413	5329882
3468	Shell Midden	Swansea	588513	5329882
3469	Shell Midden, Artefact Scatter	Swansea	588513	5329940
3470	Artefact Scatter, Shell Midden	Swansea	588504	5330035
3471	Shell Midden, Artefact Scatter	Swansea	588513	5330082
3472	Shell Midden, Artefact Scatter	Swansea	588513	5330182
3485	Artefact Scatter, Shell Midden	Swansea	589013	5330782
3486	Shell Midden	Swansea	588813	5330682
3487	Shell Midden	Swansea	588813	5330682
3488	Isolated Artefact, Shell Midden	Swansea	588813	5330582
3489	Shell Midden, Isolated Artefact, Artefact Scatter	Swansea	588713	5330482
3490	Shell Midden, Isolated Artefact, Artefact Scatter		588713	5330382
3491	Artefact Scatter, Shell Midden		588613	5330282
6469	Shell Midden	Swansea	589233	5331322
6470	Shell Midden	Swansea	589213	5331382
6471	Shell Midden	Swansea	589203	5331992
6472	Shell Midden	Swansea	588923	5332612
6473	Shell Midden	Swansea	588913	5332682
6474	Shell Midden	Swansea	589213	5332212
6475	Shell Midden	Swansea	589213	5332032
6476	Shell Midden	Swansea	589203	5332002
6477	Isolated Artefact	Swansea	589053	5331632
6478	Isolated Artefact	Swansea	589043	5331802
6479	Isolated Artefact	Swansea	589103	5331882
6480	Isolated Artefact	Swansea	589033	5331952
6481	Shell Midden	Swansea	589193	5332282

AH Number	Site Type	Locality	Grid Reference (GDA94) Easting	Grid Reference (GDA94) Northing
6545	Rock Marking Engraving, Shell Midden	Swansea	589133	5331282
6571	Shell Midden	Swansea	589133	5332222
6572	Isolated Artefact	Swansea	589113	5331772
6573	Isolated Artefact	Swansea	588213	5332222
6574	Artefact Scatter	Swansea	588183	5332252
6575	Artefact Scatter	Swansea	588163	5332222
6576	Artefact Scatter	Swansea	589213	5332282
6577	Isolated Artefact	Swansea	588163	5332262
7967	Shell Midden, Artefact Scatter	Swansea	589013	5333982
7968	Shell Midden, Isolated Artefact	Swansea	589055	5334387
7969	Shell Midden	Swansea	588863	5333682
7970	Isolated Artefact, Shell Midden	Swansea	589213	5333582
7971	Shell Midden, Artefact Scatter	Swansea	589071	5333441
13047	Isolated Artefact	Swansea	588952	5333428
13048	Isolated Artefact	Swansea	588915	5333399
13049	Isolated Artefact	Swansea	588873	5333405

Results of the Field Survey

The field survey assessment was conducted over a period of 1 day (27-9-2019) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). John Lewis from TVM Pty Ltd, also accompanied the team for part of the survey. The field team walked a total of 7.3km of survey transects within and in the immediate vicinity of the proposed development footprint. The average width of each transects was 10m. The transects were aligned to cover all parts of the proposed 7.7ha footprint, and immediate surrounds.

No Aboriginal heritage sites, suspected features or areas of elevated archaeological potential were identified within or in the immediate surrounds of the Tempus development footprint. Given the generally fair conditions of surface visibility across the study area, and the high level of survey coverage achieved by the field survey, these negative results are assessed as being an accurate reflection of the fact that sites are either absent within the study footprint, or that site and artefact densities are very low.

As noted previously, the AHR search results show that there are four registered Aboriginal heritage sites that, based on the grid references provided on the AHR, are situated within the bounds of the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577). However, the review of the available information for these four sites strongly indicates that they have been incorrectly plotted, and are in fact located on the Piermont property, which is to the east of the Tempus study area, on the east side of the Highway.

As part of the field survey, the field team sought to verify this. A series of survey transects were walked across a 30m radius of each of the reported site locations,

which are all clustered in the northern portion of the study area, on the upper east side slopes of the ridge. Despite an extensive search, no evidence for these sites was detected. The negative results can be reasonably assessed as providing supportive evidence for the contention that sites AH6573, AH6574, AH6575 and AH6577 have been plotted incorrectly, and are in fact located on the Piermont property, outside the bounds of the Tempus study area.

The field survey assessment confirmed that there are no rock shelter features that occur within or in the immediate vicinity of the study area. Indeed, there are no outcrops of bedrock exposed anywhere within or in the immediate vicinity of the development footprint. The field survey was also able to confirm that there were no stone resources detected within the study area that would be suitable for stone artefact manufacturing. It is assessed that there is very little potential for quarry/procurement sites to be present, given the nature of the underlying geology, which is dominated by dolerite (see section 2.2).

The detailed survey results and discussions are presented in section 7 of this report.

Management Recommendations

Recommendation 1

No Aboriginal sites were identified during the field survey of the proposed Tempus development footprint. A search of the AHR shows that there are four registered Aboriginal sites that, based on the grid references provided on the AHR, are situated within the bounds of the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577). However, the review of the available information for these four sites, together with the negative findings of the field survey, strongly indicates that they have been incorrectly plotted, and are in fact located on the Piermont property, which is to the east of the Tempus study area, on the east side of the Highway

On this basis, it is advised that the proposed development will have no impacts on known Aboriginal sites, and therefore there are no Aboriginal heritage constraints, or legal impediments to the project proceeding.

Recommendation 2

It is assessed that there is generally a low to very low potential for undetected Aboriginal heritage sites to occur within the Tempus development footprint. However, if, during the course of the proposed development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 1). A copy of the Unanticipated Discovery Plan should be kept on site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Recommendation 3

Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) for review and comment.

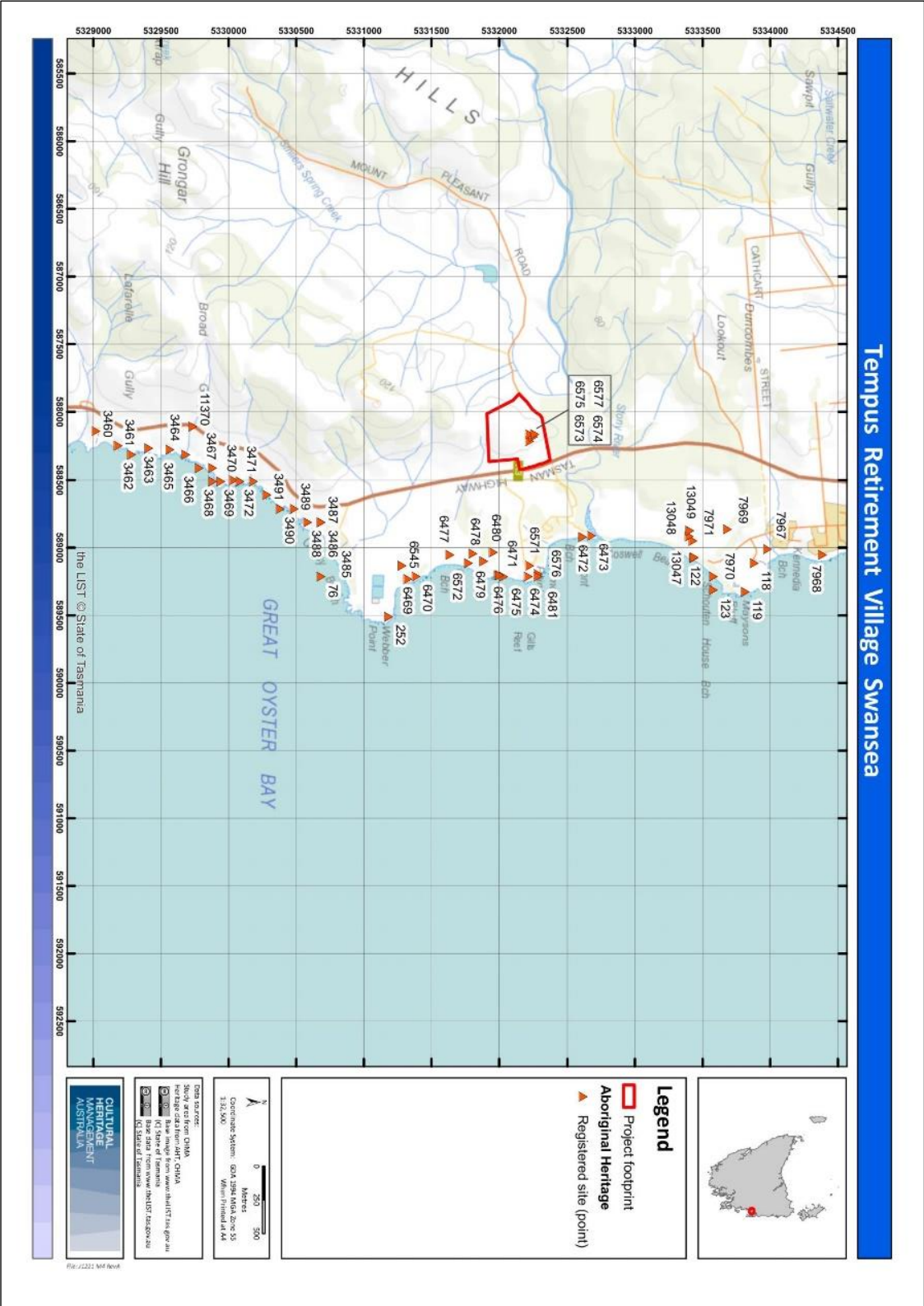


Figure i: Topographic map showing the location of the 56 registered Aboriginal sites located in a 3km radius of the Tempus study area
(Based on information generated from the AHR search dated 25-9-2019)

1.0 Project Outline

1.1 Project Background

Tempus Village Management Pty Ltd (TVM) are proposing to construct a retirement village on the Kelvedon Estate property at 12371 Tasman Highway, Swansea. The location of the project is four kilometres south of the seaside township of Swansea, on the East Coast of Tasmania (see Figure 1). The project is known as the Tempus Retirement Village.

The Tempus site encompasses 18Ha on the NE corner of the Kelvedon Estate. However, the development footprint is confined to an area of 7.7 hectares (see Figure 2). Tempus will feature 130 Independent Living Units. There will be an array of recreational and communal facilities for residents and the local community – including 80-seat theatre, gymnasium, 20m lap pool, conservatory, olive grove, tennis courts, equestrian centre and greenhouse. Figure 3 shows the proposed development masterplan.

CHMA and Rocky Sainty have been engaged by TVM to undertake an Aboriginal heritage assessment for the Tempus Retirement Village proposal. The assessment has been primarily focused on the 7.7 hectare proposed development footprint. This report comprises the findings of the assessment.

1.2 Aims of the Investigation

The principal aims of the present Aboriginal heritage assessment are as follows.

- Complete an Aboriginal Heritage Assessment for the proposed Tempus Retirement development footprint (the study area). The assessment is to be compliant with both State and Commonwealth legislative regimes, in particular the intent of the *Aboriginal Heritage Act 1975* and the associated *Aboriginal Heritage Standards and Procedures (June 2018)*.
- To determine the extent of previously identified Aboriginal heritage sites within and in the immediate vicinity of the study area.
- To locate and document Aboriginal heritage sites that may be present within the identified bounds of the study area.
- To assess the archaeological sensitivity values of the study area.
- To assess the scientific and Aboriginal cultural values of identified Aboriginal heritage sites.
- Consult with (or ensure the Aboriginal community representative consults with) Aboriginal organisation(s) and/or people(s) with an interest in the study area in order to obtain their views regarding the cultural heritage of the area.
- To develop a set of management recommendations aimed at minimising the impact of the Tempus development proposal on any identified Aboriginal heritage values.
- Prepare a report which documents the findings of the Aboriginal heritage assessment, and meets the standards and requirements of the current *Aboriginal Heritage Standards and Procedures* prepared by AHT, Department of Primary industries, Parks, Water and Environment.

1.3 Limitations of the Investigation

All archaeological investigations are subject to limitations that may affect the reliability of the results. The main constraint to the present investigation was restricted surface visibility. Surface visibility across the 7.7ha development footprint was restricted to an estimated average of 40%, with grass cover being the main impediment. The constraints in surface visibility limited the effectiveness of the survey assessment to some degree. The issue of surface visibility is further discussed in Section 6 of this report.

1.4 Project Methodology

A three stage project methodology was implemented for this assessment.

Stage 1 (Pre-Fieldwork Background Work)

Prior to field work being undertaken, the following tasks were completed by Stuart Huys (CHMA archaeologist).

Consultation with Aboriginal Heritage Tasmania (AHT)

Aboriginal Heritage Tasmania (AHT) was contacted and informed that CHMA had been engaged to undertake an Aboriginal heritage assessment for the Tempus Retirement Village project. As part of this initial contact a search request of the Aboriginal Heritage Register (AHR) was submitted to AHT in order to ascertain the presence of any previously registered sites in the vicinity of the study area (search submitted on the 18-9-2019).

The collation of relevant documentation for the project

As part of Stage 1 the following research was carried out and background information was collated for this project:

- A review of the relevant heritage registers (AHR register) and the collation of information pertaining to any registered heritage sites located within the general vicinity of the study area;
- Maps of the study area;
- Relevant reports documenting the outcomes of previous Aboriginal heritage studies in the vicinity of the study area;
- Ethno-historic literature for the region;
- References to the land use history of the study area;
- GIS Information relating to landscape units present in the study area;
- Geotechnical information for the study area, including soil and geology data.

Consultation with Rocky Sainty (Aboriginal Heritage Officer)

Rocky Sainty is the designated Aboriginal Heritage Officer for the present investigations. As part of Stage 1 works Stuart Huys (CHMA archaeologist) and Rocky Sainty were in regular contact. The main purpose of this contact was to discuss the scope of the present investigations, to ratify the proposed methodology for the investigations and to co-ordinate the timeframes for implementing field work.

Stage 2 (Field Work)

Stage 2 involved the field work component of the project. The field survey assessment was conducted over a period of 1 day (27-9-2019) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). John Lewis from TVM Pty Ltd, also accompanied the team for part of the survey.

The field team walked a total of 7.3km of survey transects within and in the immediate vicinity of the proposed development footprint. The average width of each transects was 10m. The transects were aligned to cover all parts of the proposed 7.7ha footprint, and immediate surrounds. On the day of the field survey, geotechnical test pits were to be excavated across the development footprint. There were 13 test pits in total, with each pit measuring approximately 2m x 1m and excavated to a depth of around 1.5m. The proposed location of the test pits was marked on the ground. As a priority, the field team targeted these test pit locations first. The team carried out a detailed inspection of a 10m radius around each test pit location before any soil excavation commenced. The team then inspected each pit after excavation was completed.

In an effort to offset surface visibility issues, the survey assessment targeted any areas where there were improved locales of surface visibility such as erosion scalds, geotechnical test areas or animal tracks. Section 6 provides further details as to the survey coverage achieved within the study area.

As part of the field survey, the field team attempted to relocate any Aboriginal heritage sites that were identified through the aboriginal Heritage Register (AHR) search as potentially occurring within the bounds of the study area (see sections 4.2 and 7 of this report for details).

The results of the field investigation were discussed by Rocky Sainty and Stuart Huys. This included the potential cultural and archaeological sensitivity of the study area, and possible management options.

Stage 3 (Report Preparation)

Stage three of the project involves the production of a Draft and Final Report that includes an analysis of the data obtained from the field survey, an assessment of archaeological sensitivity and management recommendations. The report has been prepared by Stuart Huys in consultation with Rocky Sainty.

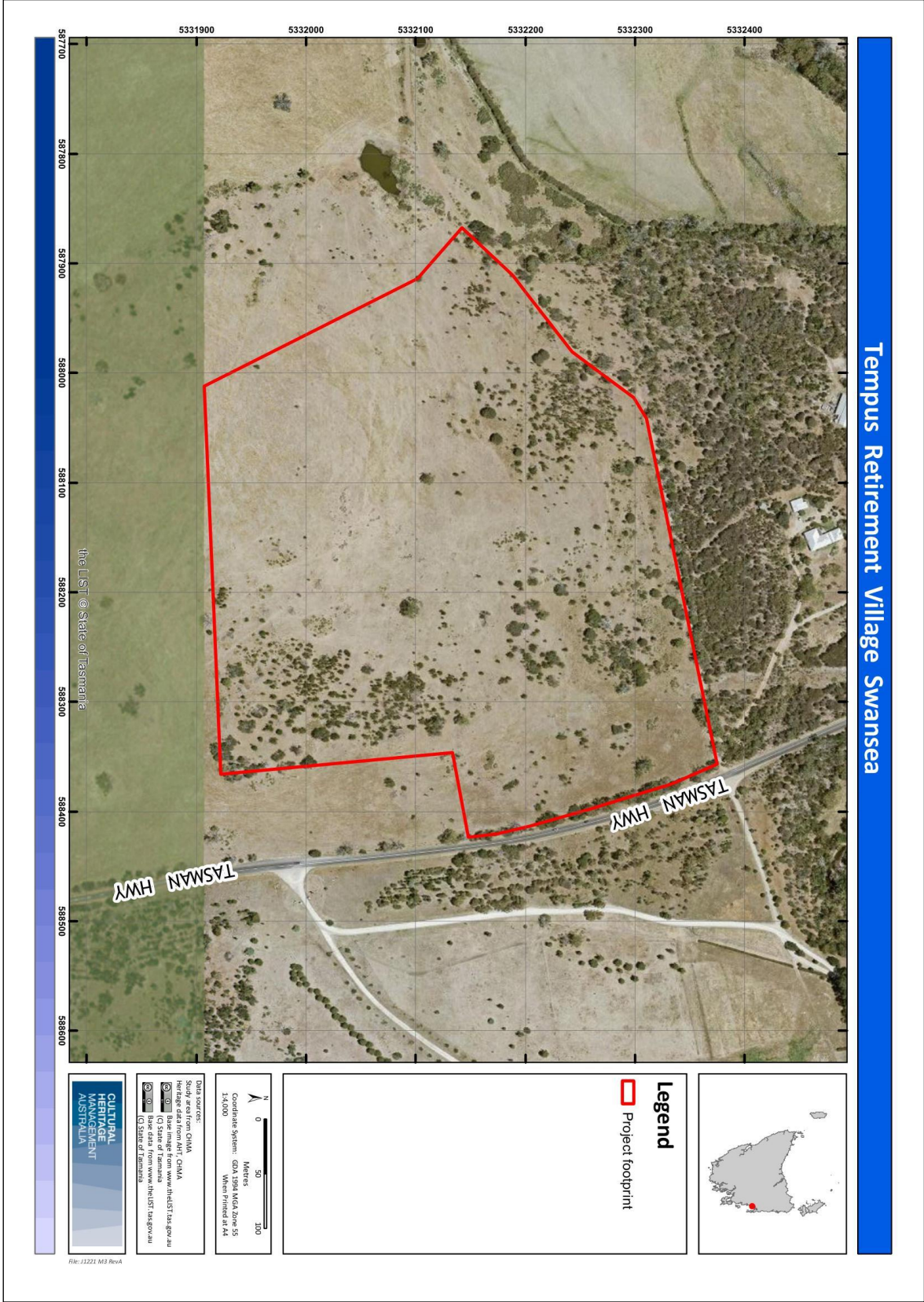
A draft copy (electronic PDF version) of the report was submitted to the proponent, for review. Any comments that were received have been incorporated into the final draft report. One electronic copy (PDF version) of the final draft report has been provided Aboriginal Heritage Tasmania (AHT) for review.



Plate 1: Rocky Sainty, the Aboriginal Heritage Officer for this project



Figure 1: Topographic map showing the general location of the proposed Tempus Retirement Village at 12371 Tasman Highway Swansea, Tasmania



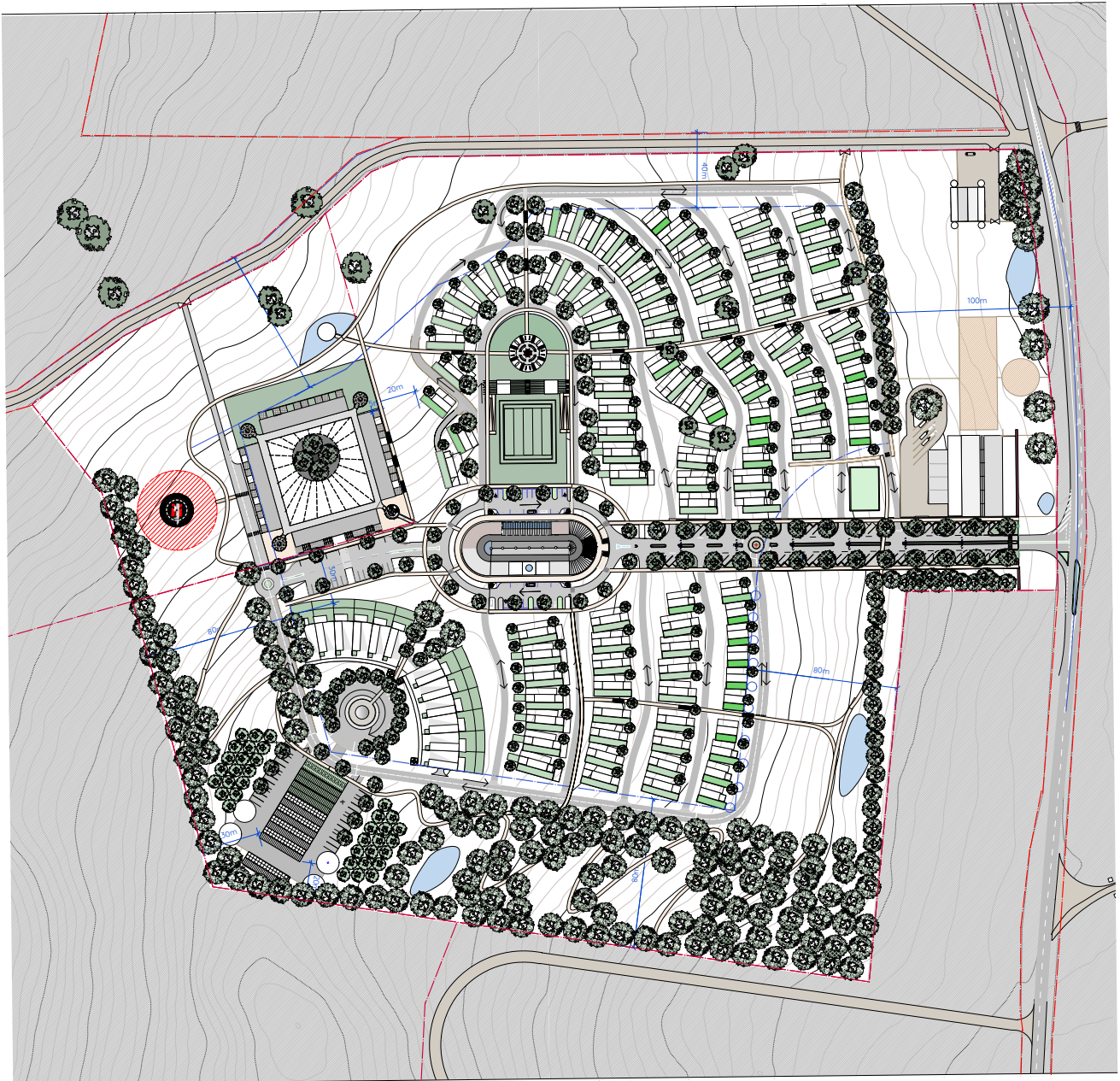


Figure 3: The design masterplan for the proposed Tempus Retirement Village

2.0 Environmental Context

2.1 Introduction

Prior to undertaking an archaeological survey of the study area, it is necessary to characterise the landscape. This includes considering environmental factors such as topography, geology, climate, vegetation and past and current landscape use. An assessment of the environmental setting helps to develop understanding of the nature of Aboriginal occupation and site patterning that might be expected to occur across the study area. In addition, it must be remembered that in Aboriginal society, the landscape extends beyond economic and technological behavior to incorporate social geography and the embodiment of Ancestral Beings.

The archaeological context is generally only able to record the most basic aspects of Aboriginal behaviour as they relate to artefact manufacture and use and other subsistence related activities undertaken across the landscape such as raw material procurement and resource exploitation. The distribution of these natural resources occurs intermittently across the landscape and as such, Aboriginal occupation and associated archaeological manifestations occur intermittently across space. However, the dependence of Aboriginal populations on specific resources means that an understanding of the environmental resources of an area accordingly provides valuable information for predicting the type and nature of archaeological sites that might be expected to occur within an area.

The primary environmental factors known to affect archaeological patterning include the presence or absence of water, both permanent and ephemeral, animal and plant resources, stone artefact resources and terrain.

Additionally, the effects of post-depositional processes of both natural and human agencies must also be taken into consideration. These processes have a dramatic effect on archaeological site visibility and conservation. Geomorphological processes such as soil deposition and erosion can result in the movement of archaeological sites as well as their burial or exposure. Heavily vegetated areas can restrict or prevent the detection of sites, while areas subject to high levels of disturbance may no longer retain artefacts or stratified deposits.

The following sections provide information regarding the landscape context of the study area including topography, geology, soils and vegetation.

2.2 Landscape Setting of the Study Area

The proposed Tempus Retirement village footprint (the study area) is located 4km south of the town of Swansea, in the East Coast Region of Tasmania (see Figure 4). This part of the east coast, around Swansea, is situated within a graben (downthrown block), which is an area of the earth's crust which has fallen relative to surrounding faults. The Oyster Bay Graben is the low lying area occupied by Moulting Lagoon and the lower Swan and Apsley Rivers, as well as Great Oyster Bay itself. The Oyster Bay Graben typically has a low relief landscape with moderate to gently dissected open valleys with subtle spatial definition, which are filled with Tertiary and

Quaternary sediments that are surrounded by low bedrock hills (FPA 2006; Jerie et al 2003).

Oyster Bay is a large sheltered bay that is bounded to the east by the Freycinet Peninsula, to the west by the stretch of coast line around Swansea, and to the north by Nine Mile Beach. To the north of Nine Mile Beach is Moulting Lagoon. Moulting Lagoon is an estuarine and marine water system, affected by freshwater inflows from the Swan river and other smaller water courses. The lagoon covers approximately 4507 ha, and discharges into Great Oyster Bay via the Great Swanport, at the eastern end of Nine Mile Beach. Both Great Oyster Bay and Moulting Lagoon are major resource zones, hosting an abundance of seasonal marine and avian species which would have been important components of the diet of the local Aboriginal population.

The study area encompasses 7.7ha, and is sited on the west side of the Tasman Highway. The Highway defines the eastern boundary of the study area, with Mt Pleasant Road delineating the northern boundary. To the south of the study area is the Gala Estate Vineyard. The study area is situated on a low relief north-south trending ridge line, which is at the northern end of the Grongar Hill complex. The spine of the ridge is typically flat to gently undulating, with gradients in the range of between 1° and 6° (see Plate 2). The width of the spine varies from between 20m to 50m. The east side slopes of the ridge are gently to moderately sloping, with gradients between 5°-15° (see Plate 3). The west side slopes of the ridge are more steeply incised with gradients up to 30°.

The underlying geology across the study area is Jurassic dolerite (tholeiitic) with locally developed granophyre. This underlying bedrock is exposed to the surface across parts of the ridge crest and side slopes (see Plate 4). The soils across the study area have not been mapped in detail however, the Swan-Aspley Catchment Plan (2013) provides a brief and general description of soil types according to bed rock geology types. It reports that stony dark brown clay-loams have developed on top of the Jurassic dolerite. Soil depth is typically very shallow to skeletal (see Plate 5).

The study area is part of the Kelvedon Estate, which has been a farming operation for over a century. As part of past farming practices, much of the native vegetation across the study area and broader surrounds has been cleared (see Plate 6). Small remnant patches of Eucalypts and scrub are present on the rockier, steeper sections of the ridge slopes (see Plate 7). From an Aboriginal cultural heritage perspective, the ramifications of this extensive vegetation clearing and pastoral activity is that any Aboriginal sites that may be present within the study area are likely to have been impacted to some extent.

There are no water courses that flow through the study area itself. The nearest named water course is Smilers Spring Creek, which drains a small valley 500m to the south of the study area. This is a semi-permanent water course that has its headwater around Grongar Hill, and flows in a north-east direction, eventually joining

with the larger Stony River, approximately 600m to the north-west of the study area. The Stony River in turn empties into Great Oyster Bay just north of Piermont Point.

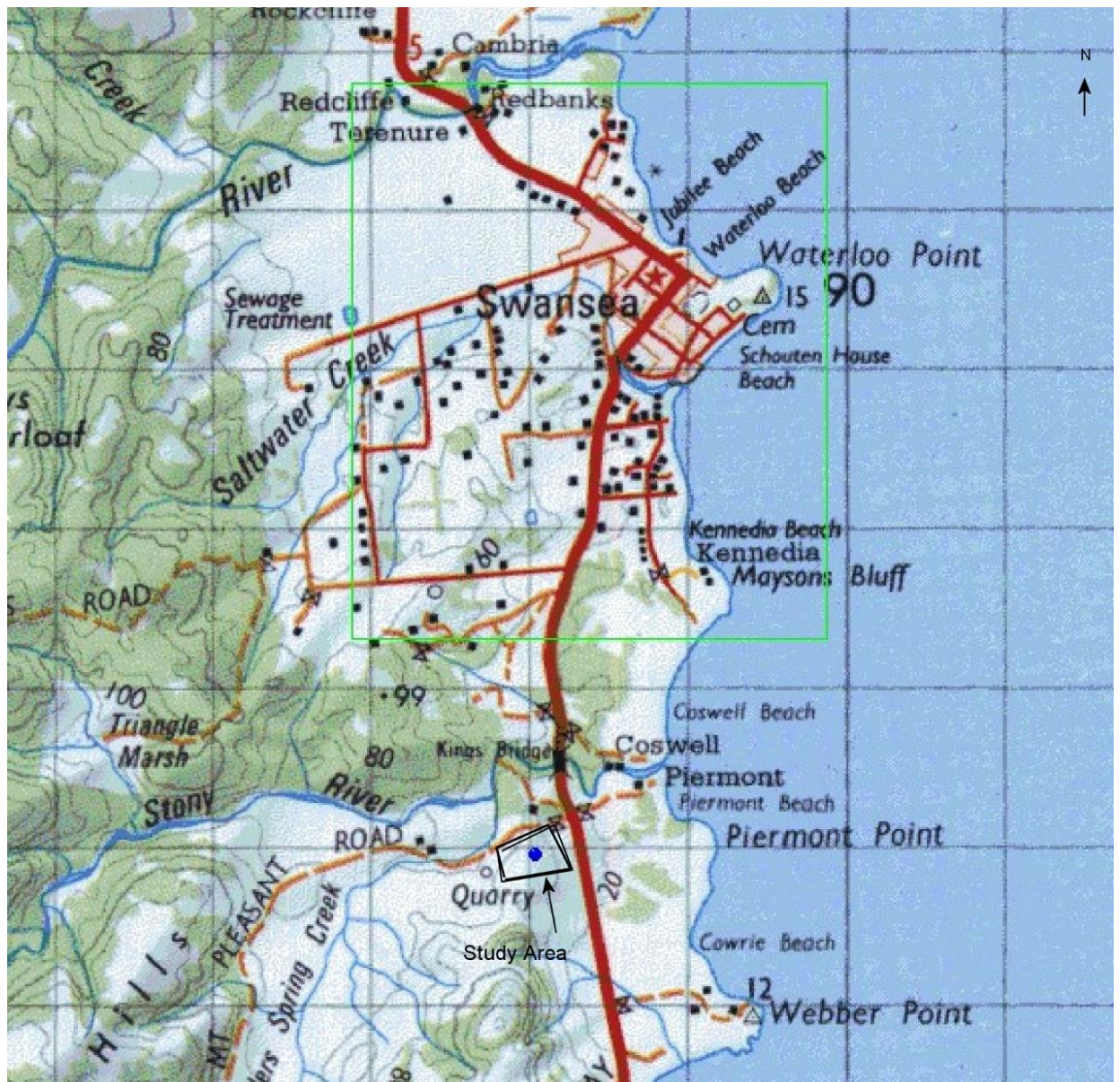


Figure 4: Topographic map showing the general landscape setting of the proposed Tempus Retirement Village



Plate 2: View south along the flat to gently undulating spine of the north-south trending ridge that runs through the study area



Plate 3: View west across the moderate east side slopes of the ridge line



Plate 4: View north-east at the bedrock dolerite exposed to the surface on the spine of the ridge in the study area



Plate 5: View south-west at the rocky ridge side slopes, in an area where there are little to no soil deposits.



Plate 6: View south-east across the ridge line showing much of the native vegetation cleared across the study area



Plate 7: View north at a remnant patch of native vegetation of the ridge side slopes

3.0 Ethno-historic Background

According to Jones (1974), the social organisation of Tasmanian Aboriginal society appears to have consisted of three social units, these being the hearth group, the clan and the nation. The hearth group was the basic family unit and would generally have consisted of a man and woman, their children, aged relatives and sometimes friends and other relatives. The size of hearth groups would generally range from between 2-8 individuals (Jones 1974: Plomley 1983). Plomley (1983:168) provides a description made by Peron of a hearth group he encountered at Port Cygnet.

There were nine individuals in this family, and clearly they represented a hearth group, because Peron visited their campsite with its single hut. The group comprised an older man and wife, a younger man and wife, and five children, one a daughter (Oure-Oure) of the older man and wife, and the other four the children of the younger man and wife.

The clan (band) appears to have been the basic social unit and was comprised of a number of hearth groups (Jones 1974). Jones (1974:324-325) suggests that the band owned a territory and that the boundaries of this territory would coincide with well-marked geographic features such as rivers and lagoons. Whilst the band often resided within its territory, it also foraged widely within the territories of other bands. Brown (1986:21) states that the band was led by a man, usually older than the others and who had a reputation as a formidable hunter and fighter. Brown also suggests that the band (as well as the hearth group) was ideally exogamous, with the wife usually moving to her husband's band and hearth group.

Each band was associated with a wider political unit, the nation. Jones (1974:328-329) describes the nation (tribe) as being:

...that agglomeration of bands which lived in contiguous regions, spoke the same language or dialect, shared the same cultural traits, usually intermarried, had a similar pattern of seasonal movement, habitually met together for economic and other reasons, the pattern of whose peaceful relations were within the agglomeration and of whose enmities and military adventures were directed outside it. Such a tribe had a territory, consisting of the sum of the land owned by its constituent bands...The borders of a territory ranged from a sharp well defined line associated with a prominent geographic feature to a broad transition zone.

According to Ryan (2012:11), the Aboriginal population of Tasmania was aligned within a broad framework of nine nations, with each nation comprising between six to fifteen clans (Ryan 2012:14). The mean population of each nation is estimated to have been between 350 and 470 people, with overall population estimates being in the order of between seven to ten thousand people prior to European occupation (Ryan 2012:14).

Ryan (2012:13) presents a map showing the approximate boundaries for the nine Tasmanian Aboriginal Nations. This map shows that the study area falls within the boundaries of land occupied by Oyster Bay Nation (see Figure 5). According to

Ryan (2012:17) the Oyster Bay nation was the largest in Tasmania, 'if not in area then certainly in population' (2012:17). The territory of the Oyster Bay nation covered approximately 8500 square kilometers, 500 of which comprised 'usable coastline' extending along the east coast from 'St Patrick's Head to the Derwent Estuary. The boundary then followed the eastern bank of the River Derwent to the mouth of the Jordan River which it followed inland to St Peters Pass in the Midlands, east past Crown Lagoon, north to the watershed of the Macquarie and Elizabeth rivers at Tooms Lake and Lake Leake and then northeast along the South Esk River back to St Patrick's head' (Ryan 2012:17).

According to Jones (1974), the nation consisted of at least 10-15 clans, which comprised several family groups each. The total number of individuals within a clan ranged between 30 and 80, and it is estimated that the total population of the Oyster Bay nation might have reached 800 people. Each clan had an allocated territory marked by prominent geographic features and covered, on average, between 300 and 500 square kilometers of land (Jones 1974). However, the clan members would often enter contiguous territories of other bands whilst searching for food (Brown 1991:14). In addition, all clans within the nation followed a similar pattern of seasonal movement (Jones 1974). Each clan had a chief; usually an older man respected for his impressive hunting and fighting skills. Women were often acquired from other bands and forced to stay in their husband's band (Brown 1991:14). All the clans within the nation spoke the same language and shared the same cultural traits (Jones 1974). However, Plomley (1966) indicates some linguistic and cultural differences between clans of the Oyster Bay Nation.

Economy and subsistence

Hiatt (1967) notes that faunal species were the main component of the Aboriginal diet on the east coast of Tasmania at the time of European contact, whereas plant species played a marginal role as a food source, when compared with the Aboriginal diet on the mainland.

Despite the rather scattered records, it is believed that a big part of the diet comprised all five macropod species, brushtail and ringtail possum, wombat, echidna, bandicoot, native cats, thylacine, platypus and possibly devil. Other species that were likely to have been consumed by the Aboriginal people included smaller terrestrial mammals, fur seals, birds (i.e. mutton bird, crow, swan, duck, native hen, emu and penguins), some amphibians, reptiles, possibly cetaceans, eels, crayfish, mussels, oysters, abalone, and some insects. Similarly, to the north east coast of Tasmania, pelican and penguin eggs, as well as scale fish were not hunted by the east coast Aborigines (Brown 1991:15).

Baudin (1974) reports on large spears being used for hunting kangaroos on Maria Island, but there is very little evidence of other traditional techniques of hunting macropods used by the Aborigines in eastern Tasmania. It is known, however, that at the time of European contact the Aboriginal people started using dogs for hunting. In addition, Robinson's records describe killing swans and ducks with stones, and pulling bandicoots out of their burrows (Plomley 1966).

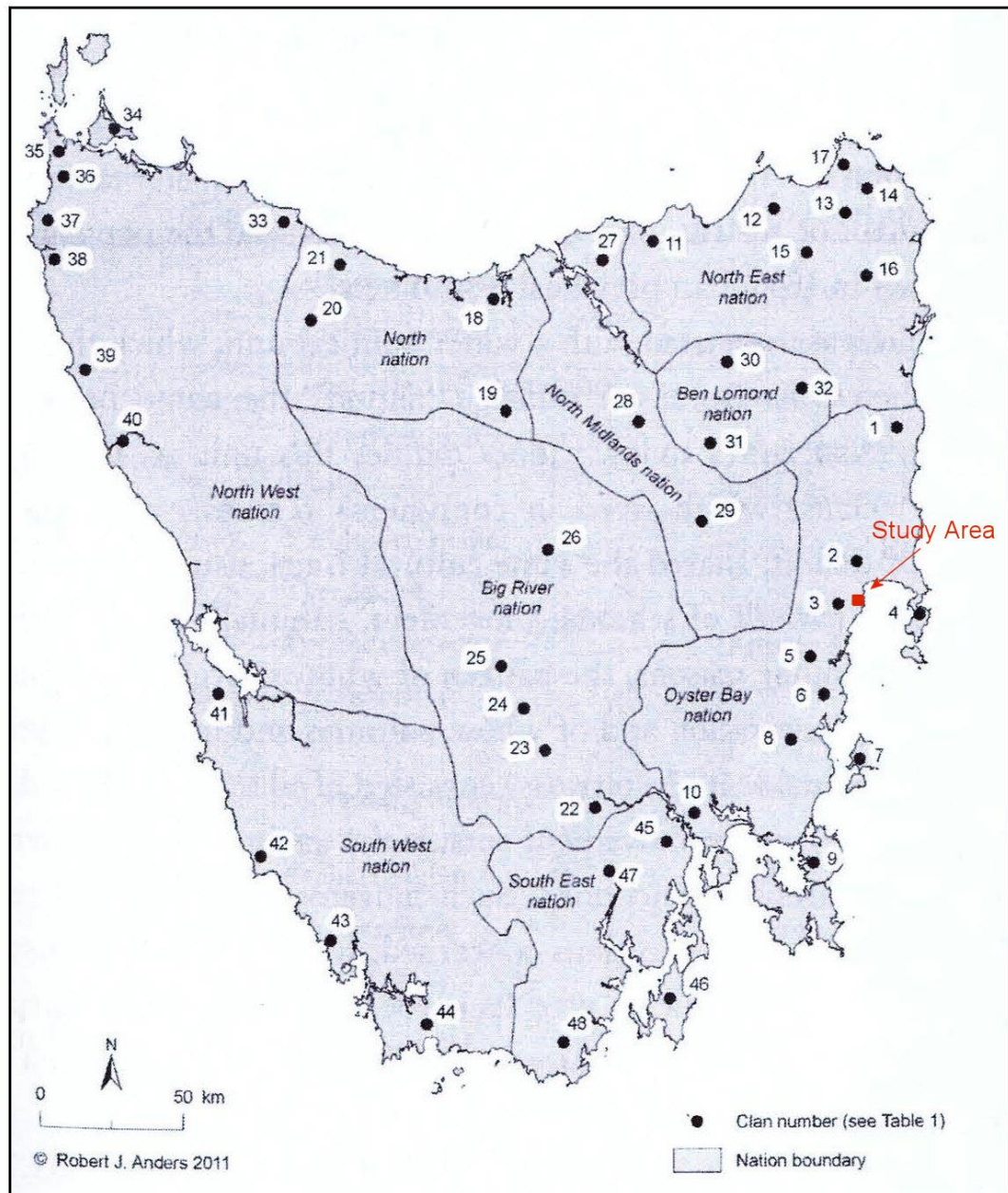


Figure 5: The Aboriginal Nations of Tasmania in relation to the proposed study area (after Ryan 2012:13)

According to Robinson, whole macropods were ‘roasted’ in an open fire (Plomley 1966). However, Kee (1990, in Brown 1991:18) refers to a process of skinning a kangaroo before cooking. It is likely that the animals were butchered after being cooked (Brown 1991:18). There is also historic evidence suggesting that the eastern Aborigines used cooking on an open fire for other faunal species, including birds and some shellfish (Baudin 1974). It is likely that other methods of capturing prey, such as climbing possum trees (Plomley 1966; Backhouse 1843, in Brown 1991:17; Roth 1899, in Brown 1991:17) or collecting crustaceans and molluscs (Labillardiere 1800, Plomley 1983), observed in other parts of Tasmania, were also used by the eastern Aborigines (Brown 1991:17).

The full range of plant species foraged by the Oyster Bay clans is not known; however, Brown (1991:17) suggests that the main plant food sources included sea weed, pig face, native currant, native cherry, kangaroo apple, native spinach, grass tree, tree fern, bulrush, water ribbon, sedge, daisy yam, native potato, orchids, bracken fern and fungi. Although many plant species were eaten raw, others (including water ribbon, bracken fern roots, and grass tree and tree fern hearts) were likely to have been roasted before eating (Brown 1991:18).

Settlement Patterns and Movement

The Oyster Bay nation is thought to have been divided into three groups according to seasonal patterns of movement, resource exploitation and maintenance of ceremonial obligations. The first group included four clans from St Patrick's Head to Schouten Island; the second comprised four clans from Little Swanport to the Tasman Peninsula; and the third consisted of two clans from Maria Island and Pitt Water, Risdon.

In winter, all three groups would gather on the coastal areas of their respective territories exploiting available shellfish, marine vegetables and small terrestrial species. In the spring and summer several clans from the Little Swanport area (the Poredareme, the Laremairemener and the Portmairemener) moved to the south and west exploiting terrestrial resources high country and river valley systems of Big River country (Ryan 2012:18). Between August and November, the Oyster Bay clans north of Little Swanport are recorded to have congregated at 'rich food-source areas like Moulting Lagoon' to exploit the seasonal abundance of bird life (Ryan 2012:18). From the end of October, they moved inland to the Ben Lomond plateau, to the border of the Northern Midlands nation or across to Campbell Town and to the Great Western Tiers. Those on the Ben Lomond plateau returned to the east coast at the end of January for sealing and mutton-birding and then on to Stockers Bottom in March to exploit kangaroos, wallabies and possums (see Figure 6).

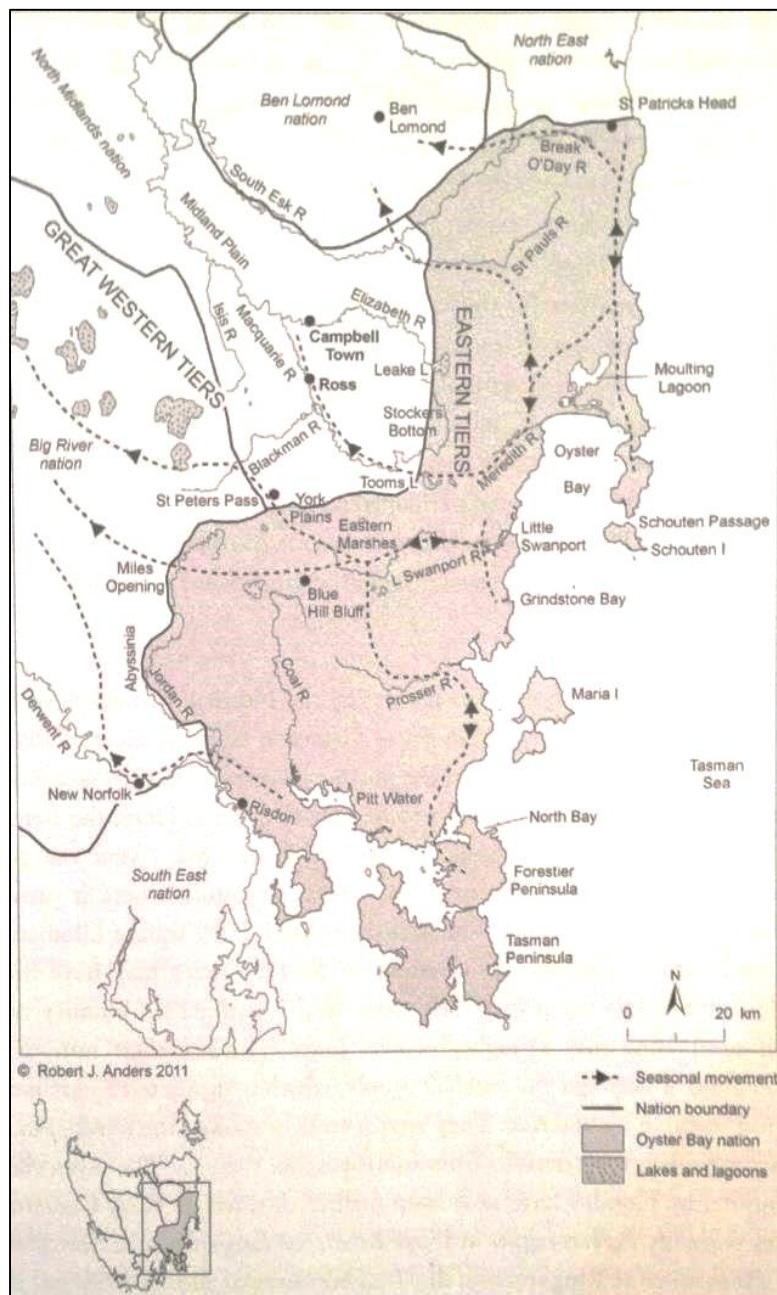
Importantly, not all of the Oyster Bay clans were recorded to have left their territory in the summer, however seasonal visits to the Ben Lomond and North Midland nations were common (Ryan 2012:20). The Midland Plain is also noted to contain important quarries for raw material procurement as well as a number of important hunting and ceremonial grounds. Several of these areas lay in the head of the Settled Districts during colonial times.

Relations between the Oyster Bay nation and other adjoining nations (the North East, Ben Lomond, North Midlands, Big River and South East nations) varied considerably (Brown 1991:21). There is recorded animosity between some bands of the Oyster Bay nation and those of the North Midlands, North East and South East nations. On the other hand, the relationships between the Oyster Bay nation and the Big River nation seemed to be relatively harmonious, with some ethno-historical records of trading beads and red ochre, as well as cultural exchange between the two groups. Moreover, it is known that members of the Big River nation foraged on the territory that belonged to the Oyster Bay nation. In addition, at one point, the two nations are believed to have joined together to fight a group from the Midlands nation (Plomley 1966).

Material Culture

There are only five accounts of Aboriginal dwellings on the east coast of Tasmania, described as windbreaks. Even though there is no record of 'huts' in that region, it is likely that they were also constructed by the Aboriginal people (Brown 1991:23). Tree hollows might have been also used for shelter and cooking (Mortimer 1791).

There is one encounter of watercraft in eastern Tasmania recorded by Baudin (1974). Plomley (1983) describes the material used to construct the craft as typha and bullrush, also identified as *Eleocharis sphacelata* (Brown and Bayley Stark 1979, in Brown 1991:24). There is no evidence of bark being used for building watercraft on the east coast of Tasmania (Brown 1991:24).



**Figure 6: Seasonal movement of the East Coast Nations
(after Ryan 2012:20)**

Spears and clubs are the two types of weapon used by the Aboriginal people for hunting (Baudin 1974) and fighting (Plomley 1966). Spears, usually made around the campfires, varied in size and consisted of a flexible rod with a point at one end (Brown 1991:24). They not only served as weapon, but also were likely to have been used to paddle watercraft (Baudin 1974). Clubs were made of a piece of *Casuarina* spp. wood, sometimes with the thinner end scored with lines for a better grip (Plomley 1966).

Other elements of the material culture found on the east coast of Tasmania include baskets made of rushes (Mortimer 1791) and water vessels made from frond of giant kelp (Roth 1899, in Brown 1991:24), both used as carrying containers. In addition, strings and ropes were utilised for carrying children (Roth 1891, in Brown 1991:25), threading shells to form necklaces (Mortimer 1791, Plomley 1983), building watercraft and climbing trees (Brown 1991:25). Despite no direct evidence, Brown (1991:25) suggests that wooden spatulas might have been used for collecting shellfish, and wooden chisels for removing tree bark.

Animal products were also extensively utilised by the eastern Aborigines. Skins constituted an item of clothing worn over the upper body mostly by women (Mortimer 1791, Baudin 1974, Plomley 1983). Animal skins and shells were also used for adornment (Mortimer 1791). Another form of decoration was spreading a mixture of animal fat and red ochre all over the face, body and hair; as well as using charcoal to blacken the body (Plomley 1966).

There are some ethno-historical records of stone being exploited by the Aboriginal people on the east coast of Tasmania. Roth (1891:18, in Brown 1991:25) observed stones with sharp edges 'similar to iron axe heads'. Stone artefacts were often used in woodworking tasks, such as sharpening spears (Plomley 1966). Occasionally, oyster shells were also utilised for that purpose (Baudin 1974). Throwing stones was a common method applied in hunting and fighting (Plomley 1966).

It is presumed that the Aboriginal people in eastern Tasmania did not make fire (Plomley 1966). Instead, during movements, they carried lighted firebrands made of dry bark in order to preserve fire (Brown 1991:25).

Art, burial, mythology and ceremony

The only evidence of paintings in eastern Tasmania refers to circular and linear designs painted on sheets of bark, used for constructing a burial structure recorded on Maria Island (Brown 1991:26). According to Plomley (1983), these designs resembled those painted by the Aboriginal people on their bodies. Another form of body decoration was scarring. Cicatrices were often symbolic (Plomley 1966) and included various designs, such as rows of short lines, longer lines, circles and arcs (Plomley 1983).

Ethno-historical records suggest that at the time of European contact religious beliefs and rituals of the eastern Aborigines were very dynamic and complex, and consequently played an important part of everyday life (Brown 1991:26). The belief system practiced in eastern Tasmania was similar in many ways to the one on the

mainland of Australia (Clark 1988), with the concept of 'Dreaming' being the core of the religious beliefs (Brown 1991:26). Some elements of nature (certain plant and animal species, as well as natural forces) were considered incarnation of ancestral beings (Brown 1991:26). Brown (1991:27) suggests that the exclusion of certain foods from the diet of the Aboriginal people was a result of religious sanctions.

Dancing constituted an important part of Aboriginal ceremonies and was performed by men and women, usually in the evenings around campfires. It was a celebration of the land, its people and the Dreaming (Brown 1991:27). Dances were sometimes exchanged between tribal groups, i.e. the 'horse dance' was learnt by members of the Oyster Bay nation from the Big River nation (Plomley 1966).

There are two records of constructed tomb structures on Maria Island. One of them indicates that a cremation process was used for disposal of the dead, followed by a burial of the ashes (Plomley 1983). Tree burial was another form of disposal of the dead and consisted of placing a dead body in a tree hollow (Brown 1991:29). It is believed that this method of burial was chosen when dealing with violent death (Brown 1986, in Brown 1991:29), and allowed the spirit to walk about and communicate with the living (Plomley 1966). Even though there is no evidence suggesting underground burials in eastern Tasmania at the time of European contact (Brown 1991:29), it is believed that it did occur in the past (Lord 1919, in Brown 1991:29; Wallace 1978, Ranson 1986).

4.0 Background Archaeology

4.1 Previous Archaeological Research in the Study Region

The current study area is located within East Region of Tasmania. This area has been subject to a number of Aboriginal archaeological studies over the past two decades. The majority of these have been in the form of survey assessments associated with proposed development activities, and have focused on discreet areas. However, there has also been some broader research based investigations undertaken in the region.

In general, only three archaeologists have attempted broad based regional investigations of eastern Tasmania: Lourandos (1968, 1970, 1977), and Brown (1991). Brown's results remain the best guide to site patterning in this area of the state, however both studies are summarised below.

Archaeological Investigations by Lourandos (1968, 1970, 1977)

Harry Lourandos undertook the earliest regional study of Eastern Tasmania between 1967 and 1968, with the dual aims of reconstructing broad settlement patterns in Eastern Tasmania and to contrast it with those observed by Jones in the northwest. Lourandos' study investigated middens, inland camps and stone quarries and included broad based survey as well as excavations at a midden and inland campsite (1968, 1970). Lourandos observed the occurrence of inland camps throughout Eastern Tasmania, from immediately behind middens along the foreshore and with high frequencies around lakes, marshes and waterways. Two types of middens were also observed: those occurring in low energy coastal margins and dominated by oyster and mussel shell, and those occurring in medium/high energy environments and dominated by warrener and abalone shell. To better characterize the nature of each type of site use, excavations were undertaken at a low energy, oyster dominated midden site at Little Swanport and at an inland site at Crown Lagoon, located 25km inland and directly to the west of Little Swanport.

Excavations at Little Swanport provided a date range of 4490+/-120BP (ANU 356) at the base, 3660 +/- 95BP (ANU 357) in the middle and 1660+/- 85BP (ANU 355) just below the surface of the deposit (Lourandos 1970:52-53). The deposit comprised estuarine shellfish, flaked stone, animal bones and charcoal, with bone tools limited to the lower layers. At the conclusion of works, Lourandos interpreted the site as a 'specialised oyster fishing dump with little other activity reflected archaeologically' (Lourandos 1968:41) and demonstrating minimal changes over time.

The cultural deposit at Crown Lagoon comprised stone tools and charcoal, with charcoal concentrated in small hearths. The stone artefacts are argued to represent flaking floors and animal bone was found throughout the deposit (Lourandos 1970). The main activities argued to be represented at Crown Lagoon are the manufacture of wooden artefacts and spears and the hunting of land animals. The site is interpreted as a representative Eastern Tasmanian inland campsite reflecting the temporary settlement of shifting hunting camps (Lourandos 1970).

Lourandos therefore concluded, on the basis of this survey, that three independent site forms are present: shell middens, open inland sites and stone quarries. Middens are seen to reflect the exploitation of marine resources and to a lesser extent the hunting of terrestrial game and use of flaked stone. Open inland sites represent temporary settlements associated with various tool-manufacturing activities and sometimes with faunal remains, while stone quarries are associated with the primary production of flaked stone. The settlement model formulated around these sites is therefore 'a subsistence strategy orientated around the seasonal exploitation of two dominant environments – an extensive coastline, and a vast hinterland of varied sclerophyll forest – and incorporating a series of temporary, limited-activity stations associated within specific micro-environments' (Brown 1991:31 of Lourandos 1977).

Brown (1991:73) summarises Lourandos' pattern of late Holocene Aboriginal settlement and subsistence as follows:

- 'economically specialized resource exploitation (limited activity);
- temporary campsites indicating a high level of nomadism and a lack of complex long term base camps;
- a dispersed pattern of activities;
- a seasonal exploitation of two dominant environments – an extensive coastline and a vast hinterland of varied sclerophyll forest (Lourandos 1977:223); and
- low population' (Brown 1991:73).

Lourandos' model provided an important interpretive framework for the majority of subsequent Eastern Tasmanian archaeological investigations.

Regional Investigations of Eastern Tasmania by Brown (1991)

The most thorough, systematic and recent regional study of eastern Tasmania was undertaken by Brown (1991). Brown's (1991) work comprised regional survey reports as part of a series of Tasmanian regional surveys instigated by the Tasmanian Parks and Wildlife Service. Brown's work was designed with the goal of investigating Aboriginal patterns of economic exploitation in Eastern Tasmania and to test Lourandos' economic model (Brown 1991:37).

Brown recognized three broad landform units:

- Offshore islands;
- Coastal and estuarine margins and plains;
- Inland hills and plains.

The most relevant land form unit to the current study area is the Coastal and estuarine margins and plains.

Coastal and estuarine margins and coastal plains (data generated from Luther Point to Pebbly Point, Cressy Beach to Little Swanport, Mariposa Beach to Piccaninny Point Freycinet Peninsula, Friendly Beaches, Farm Point/Bicheno) –

A total of 356 sites were identified within these landforms; the nature and distributions of these sites are summarised below:

- Shell middens are by far the most common site type (90%). Most common within the middens are surface shell and artefact scatters (35%), and large middens (23%) (Brown 1991:49).
- Rock shelters, artefact scatters and isolated finds are also common
- Middens are dominated by mussel, warrener, mud oyster and limpet with abalone present in some cases. Warrener/mussel dominated middens occur on medium to high-energy coastlines, while oyster/mussel dominated middens occur on coastal and estuarine margins.
- Stone artefacts are common along the coastlines of Eastern Tasmania with 85% of all coastal sites recorded to have stone artefacts present. Average scatter sizes between 1 and 50 artefacts.
- Artefact assemblages show great diversity including unretouched and retouched forms, cores, hammerstones and anvils. Both percussive and bifacial manufacturing techniques are represented
- Assemblages are dominated by cherty hornfels, however the frequency of its use decreases toward the north. Quartz is most common on the Freycinet Peninsula. Raw materials along the east coast include quartz, quartzite, cherts, petrified wood, silcrete, volcanics, chalcedony, dolerite and granite.
- Ochre nodules with evidence of grinding may also be present
- Bone remains are rarely noted at east coast sites
- Though rare, stone arrangements occur along the east coast.
- Rock-shelters are likely to have been occupied and generally contain surface evidence of prehistoric occupation
- Shorelines frequently contain stone resources suitable for knapping in the form of water washed pebbles and cobbles; many identified artefacts have been derived from these sources.

Brown's results demonstrate a slightly different subsistence model for the Eastern coast of Tasmania to that identified by Lourandos. According to Brown, the primary differences lie in the nature of the economy. Where Lourandos identified limited specialized activity within two environmental zones, Brown's results identified a more broad based and locally complex economy (1991:78).

Notable is the absence of Pleistocene and early Holocene sites in this portion of Tasmania. This may be due in part to rising sea levels at 7,000BP causing the inundation coastal sites, and to geomorphological changes in sand dunes with the re-deposition of sand sheet and dunes approximately 6,000 years ago. However, Brown (1991) believes that the systematic occupation of the area did not begin until 6,000 years ago when those populations occupying the Derwent Estuary area moved into the southern part of the region.

4.2 Registered Aboriginal Sites in the Vicinity of the Study Area

As part of Stage 1 of the present assessment a search was carried out of Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the Tempus study area.

The search shows that there are a total of 56 registered sites that are located within an approximate 3km radius of the study area (search results provided on the 25-9-2019 by Kate Moody from AHT). Table 1 provides the summary details for the 35 registered Aboriginal sites, with Figure 7 showing the location of these sites in relation to the study area boundaries.

The majority of these 56 registered sites are classified as shell middens (38 sites), with 22 of these shell midden deposits also having stone artefacts in association with the midden material. These sites are all concentrated within 200m of the western foreshores of Great Oyster Bay. Isolated artefacts (16 sites) and Artefact scatters (4 sites) are also quite prominent in the AHR search results. Of the remaining two sites, one is classified as an Aboriginal stone quarry (AH252), and the other is an Aboriginal rock engraving with an associated artefact scatter (AH6545). The stone quarry is located at Webber Point 1km to the south-east of the study area. The rock engraving site is situated just to the north-west of Webber Point, 700m south-east of the study area.

Of these 56 registered Aboriginal sites, there are four sites that, based on the grid references provided on the AHR, are situated within the bounds of the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577). These sites are highlighted in red in Table 1.

All four sites were recorded by Beasley in 1992, as part of an Aboriginal Heritage Officer training program run by the Tasmanian Aboriginal Land Council (TALC). Sites AH6573 and AH6577 are both classified as Isolated artefacts. Site AH6574 is an Artefact scatter comprising nine artefacts and AH6575 is an Artefact scatter comprising seven artefacts. There is no report associated with this field training program, and the AHR site recording forms provide the only written information available for these sites. Unfortunately, the level of detail provided in the site recording forms is very limited, and provides little in the way of descriptive information. This makes it difficult to get a sense of nature and landscape setting of the recorded sites.

It is important to note that the training program was held on the Piermont Property, which is situated on the east side of the Tasman Highway, directly east of the current study area, which is part of the Kelvedon Estate. The training program resulted in the identification of over 20 Aboriginal sites. With the exception of the four sites within the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577), all the other sites are situated within the bounds of the Piermont property (as would be expected). This raises the suspicion that the four sites within the Tempus study area may have been incorrectly plotted. A review of the site recording forms for these sites confirms that this is likely to be the case. All four sites are noted as occurring on the Piermont property, on low lying alluvial plains, within 50m of a river. One of the sites (AH6577)

has a mud map included in the AHR, which shows the location of the site being on the east side of the Highway, just to the south of the Stony River (It is noted that the north arrow in the mud map is pointed the wrong way). Based on the available information it is reasonable to assume that the grid reference locations for these four sites are incorrect, and they do in fact occur on the Piermont property, to the east of the Tempus study area.

Table 1: Summary details for the 56 registered Aboriginal sites located in a 3km radius of the Tempus study area (Based on information generated from the AHR search dated 25-9-2019)

AH Number	Site Type	Locality	Grid Reference (GDA94) Easting	Grid Reference (GDA94) Northing
76	Shell Midden		589213	5330682
118	Artefact Scatter	Swansea	589113	5333882
119	Shell Midden, Artefact Scatter	Swansea	589326	5333816
122	Artefact Scatter	Swansea	589076	5333433
123	Isolated Artefact, Artefact Scatter		589313	5333582
252	Stone Quarry	Swansea	589513	5331182
11370	Shell Midden, Artefact Scatter	Swansea	588107	5329736
3460	Artefact Scatter, Shell Midden	Swansea	588141	5329020
3461	Shell Midden	Swansea	588247	5329181
3462	Shell Midden, Artefact Scatter		588313	5329282
3463	Shell Midden, Artefact Scatter	Swansea	588267	5329410
3464	Shell Midden, Artefact Scatter	Swansea	588275	5329565
3465	Shell Midden, Artefact Scatter	Swansea	588313	5329682
3466	Shell Midden, Artefact Scatter		588413	5329782
3467	Shell Midden, Isolated Artefact	Swansea	588413	5329882
3468	Shell Midden	Swansea	588513	5329882
3469	Shell Midden, Artefact Scatter	Swansea	588513	5329940
3470	Artefact Scatter, Shell Midden	Swansea	588504	5330035
3471	Shell Midden, Artefact Scatter	Swansea	588513	5330082
3472	Shell Midden, Artefact Scatter	Swansea	588513	5330182
3485	Artefact Scatter, Shell Midden	Swansea	589013	5330782
3486	Shell Midden	Swansea	588813	5330682
3487	Shell Midden	Swansea	588813	5330682
3488	Isolated Artefact, Shell Midden	Swansea	588813	5330582
3489	Shell Midden, Isolated Artefact, Artefact Scatter	Swansea	588713	5330482
3490	Shell Midden, Isolated Artefact, Artefact Scatter		588713	5330382
3491	Artefact Scatter, Shell Midden		588613	5330282
6469	Shell Midden	Swansea	589233	5331322
6470	Shell Midden	Swansea	589213	5331382
6471	Shell Midden	Swansea	589203	5331992
6472	Shell Midden	Swansea	588923	5332612
6473	Shell Midden	Swansea	588913	5332682
6474	Shell Midden	Swansea	589213	5332212

Tempus Retirement Village, Swansea
Aboriginal Cultural Heritage Assessment CHMA 2019

AH Number	Site Type	Locality	Grid Reference (GDA94) Easting	Grid Reference (GDA94) Northing
6475	Shell Midden	Swansea	589213	5332032
6476	Shell Midden	Swansea	589203	5332002
6477	Isolated Artefact	Swansea	589053	5331632
6478	Isolated Artefact	Swansea	589043	5331802
6479	Isolated Artefact	Swansea	589103	5331882
6480	Isolated Artefact	Swansea	589033	5331952
6481	Shell Midden	Swansea	589193	5332282
6545	Rock Marking Engraving, Shell Midden	Swansea	589133	5331282
6571	Shell Midden	Swansea	589133	5332222
6572	Isolated Artefact	Swansea	589113	5331772
6573	Isolated Artefact	Swansea	588213	5332222
6574	Artefact Scatter	Swansea	588183	5332252
6575	Artefact Scatter	Swansea	588163	5332222
6576	Artefact Scatter	Swansea	589213	5332282
6577	Isolated Artefact	Swansea	588163	5332262
7967	Shell Midden, Artefact Scatter	Swansea	589013	5333982
7968	Shell Midden, Isolated Artefact	Swansea	589055	5334387
7969	Shell Midden	Swansea	588863	5333682
7970	Isolated Artefact, Shell Midden	Swansea	589213	5333582
7971	Shell Midden, Artefact Scatter	Swansea	589071	5333441
13047	Isolated Artefact	Swansea	588952	5333428
13048	Isolated Artefact	Swansea	588915	5333399
13049	Isolated Artefact	Swansea	588873	5333405

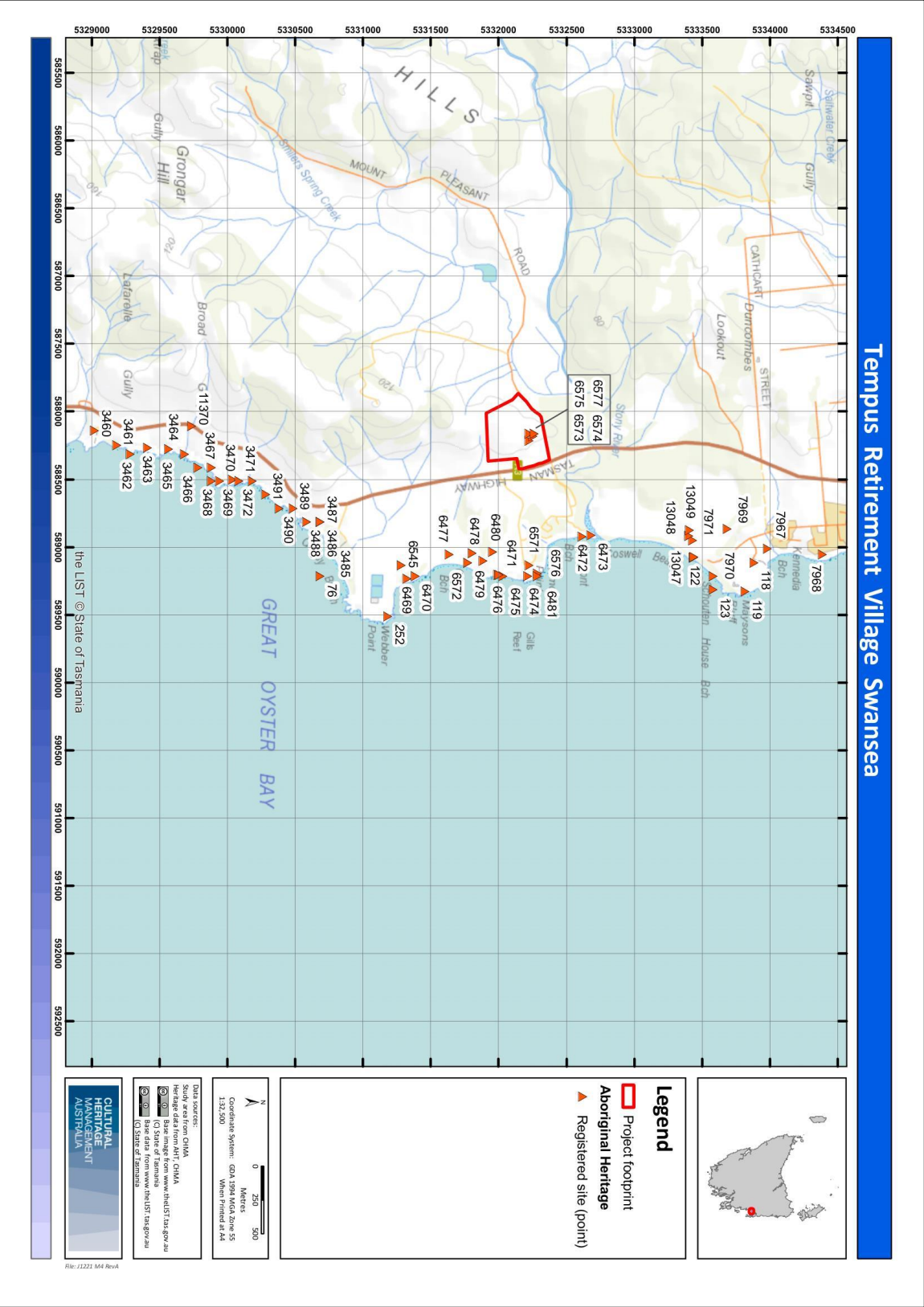


Figure 7: Topographic map showing the location of the 56 registered Aboriginal sites located in a 3km radius of the Tempus study area
(Based on information generated from the AHR search dated 25-9-2019)

5.0 Predictive Modeling

5.1 Introduction to Predictive Modeling

Predictive modeling, in an archaeological context, is a fairly straightforward concept and has been utilised by archaeologists in Australia for a number of years as a tool for undertaking research into Aboriginal heritage sites. In summary, predictive modeling involves the collation of information generated from previous archaeological research in a given region, and using this information to establish patterns of Aboriginal site distributions within the landscape of that particular region. On the basis of perceived patterns of site distribution, archaeologists can then make predictive statements regarding the potential for various Aboriginal site types to occur within certain landscape settings, and can make preliminary assessments regarding the potential archaeological sensitivity of landscape types within a given region.

5.2 Predictive Models; Strengths and Weaknesses

It should be acknowledged that most, if not all predictive models have a number of potential inherent weaknesses, which may serve to limit their value. These include, but may not be limited to the following:

- 1) The accuracy of a predictive model is directly influenced by the quality and quantity of available site data and information for a given region. The more data available and the greater the quality of that data, the more likely it is that an accurate predictive model can be developed.
- 2) Predictive modeling works very well for certain types, most particularly isolated artefacts and artefact scatters, and to a lesser extent scarred trees. For other site types it is far more difficult to accurately establish distribution patterns and therefore make predictive modeling statements. Unfortunately, these site types are generally the rarer site types (in terms of frequency of occurrence) and are therefore generally the most significant sites.
- 3) Predictive modeling (unless it is very sophisticated and detailed) will generally not take into account micro-landscape features within a given area. These micro features may include (but is certainly not limited to) slight elevations in the landscape (such as small terraces) or small soaks or drainage depressions that may have held water. These micro features have been previously demonstrated to occasionally be focal points for Aboriginal activity.
- 4) Predictive modeling to a large extent is often predicated on the presence of watercourses. However, in some instances the alignment of these watercourses has changed considerably over time. As a consequence the present alignment of a given watercourse may be substantially different to its alignment in the past. The consequence of this for predictive modeling (if these ancient water courses are not taken into account) is that predicted patterns of site distributions may be greatly skewed.

5.3 A Predictive Model of Site Type Distribution for the Study Area

The range of environmental, ethnographic and archaeological data available for the broader study region allows some predictive statements to be made regarding the likely archaeological signature of the Tempus study area.

The AHR search results show that there are four Aboriginal site types that have been recorded within a 3km radius of the study area. These are artefact scatters/isolated artefacts, shell middens, stone quarries and rock engravings. It is therefore predicted that these are the site types that may be encountered within the tempus study area. Of these four site types, it is artefact scatters/isolated artefacts that are the most likely to be present in the study area. The following provides a definition for these four site types, and a predictive statement regarding the possible patterning of distribution in the dam footprint.

Artefact Scatters and Isolated Artefacts

Site type definition:

Isolated artefacts are defined as single stone artefacts. Where isolated finds are closer than 50 linear metres to each other they should generally be recorded as an Artefact Scatter. Artefact scatters are usually identified as a scatter of stone artefacts lying on the ground surface. For the purposes of this project, artefact scatters are defined as at least 2 artefacts within 50 linear metres of each other. Artefacts spread beyond this can be best defined as isolated finds. It is recognised that this definition, while useful in most instances, should not be strictly prescriptive. On some large landscape features for example, sites may be defined more broadly. In other instances, only a single artefact may be visible, but there is a strong indication that others may be present in the nearby sediments. In such cases it is best to define the site as an Isolated Find/Potential Archaeological Deposit (PAD).

Artefact scatters can vary in size from two artefacts to several thousand, and may be representative of a range of activities, from sporadic foraging through to intensive camping activity. In rare instances, campsites which were used over a long period of time may contain stratified deposits, where several layers of occupation are buried one on top of another.

Predictive Statement for artefact scatters and isolated finds

The results of previous archaeological studies within the region have identified the following pattern of distribution.

- Site and artefact densities are comparatively high within the larger valley systems where there is an associated permanent water source (a river or rivulet). Site densities are significantly lower in the smaller valley systems.
- Site and artefact densities are highest within 200m of the watercourse, with densities tending to decrease significantly with distance away from water.
- The larger open artefact scatters (representing more intensive activity, such as regular camp areas); tend to be located on level, elevated landscape features, close to (within 100-200m) of major watercourses. The most common areas are the elevated basal slopes of hills, the level spines of spurs (around the termination point of the spur), the flat summits of low relief knolls or hills, or the elevated sand ridges that represent the banks of ancient river courses.
- There appears to be a strong correlation between the presence of elevated sand bodies and larger artefact scatters. It appears that these sand bodies may have been favoured for camping.
- Site and artefact densities on the lower lying flood plains of watercourses

tend to be comparatively lower. This may be reflective of the fact these low lying areas were less favoured as camp locations, due to such factors as rising damp and vulnerability to flooding; and

- Site and artefact densities also tend to be comparatively lower in areas away from watercourses, and on moderate to steeply sloping terrain.
- Isolated finds lack any visible archaeological patterning and tend to be randomly scattered across the landscape.
- Artefact assemblages contain a proportion of unretouched flakes and cores, as well as a number of retouched pieces and utilised flakes. Anvils and hammerstones are relatively uncommon but are widespread. Cherty hornfels is the most common raw material found, though a wide range of raw materials area available and utilised depending upon the geology of the area.

The Tempus study area is located on a ridgeline, approximately 300m-400m east of Smilers springs Creek, 400m south of the Stony River, and 1km inland from the coast of Great Oyster Bay. The pattern of site distribution noted above for the region, indicates that site and artefact densities in this type of landscape setting would most probably be in the range of low to low-moderate, with Isolated artefacts or low density artefact scatters being the most likely site type to be present. The higher site and artefact densities would be expected to occur to the north of the study area, along the margins of Stony River, particularly around the lower stretches of the river, in closer proximity to the resource rich coastal margins.

Shell Midden Sites

Definition

Middens range in thickness from thin scatters to stratified deposits of shell and sediment up to 2m thick. In addition to shell, which has accumulated as food, refuse, shell middens usually contain other food remains such as bone from fish, birds and terrestrial animals and humus from the decay of plant and animal remains. They also commonly contain charcoal and artefacts made from stone, shell and bone.

Predictive Statement

- Middens are by far the most common site type encountered along the East Coast of Tasmania. For those middens that occur around the interface between sandy beaches and rock platforms, there is likely to be a broad range of shellfish species represented, including pipis, abalone, whelks and periwinkles.
- The largest middens are found immediately adjacent to the shoreline, near to the shellfish resources, and are on elevated, generally gently sloping or level terrain.
- A few sizeable middens have been noted up to 500m inland, with smaller middens having been identified up to 1km inland. These shell middens are comprised almost entirely of shell, and rarely contain large numbers of stone artefacts or faunal remains.
- Middens may be expected to occur with a lithic component, however assemblages will be small.

The study area is located around 1km inland from the resource rich coastline of Great Oyster Bay. Given this distance from the littoral zone it is unlikely that shell midden deposits will be present within the study area. If midden deposits are present, they are likely to be sparse, representing one off 'dinner camps'.

Stone Procurement/Quarry Sites

Definition

A stone procurement site is a place where stone materials were obtained by Aboriginal people for the purpose of manufacturing stone artefacts. Quarry sites on the other hand have some evidence of the stone being actively extracted using knapping and/or digging. Stone procurement sites are often pebble beds in water courses (where there may be little or no evidence of human activity) or naturally occurring lag deposits exposed on the surface. Quarry sites are usually stone outcrops, with evidence of knapping and pits dug to expose the rock. Concentrations of hammer stones and a thick layer of knapping debris are often present.

Predictive Statement

Previous archaeological research in the region has shown that the most common source of raw materials for making stone artefacts are cherty hornfels, silcrete, chert, quartzites, quartz, and fined grained volcanics.

As detailed in section 4.2 of this report, one Aboriginal quarry site has been recorded in the general vicinity of the study area (AH252). On this basis, it is possible that stone material suitable for stone manufacturing may be present in the study area. However, the underlying geology across the study area is dolerite which is typically poorly suited for artefact manufacturing. If metamorphosed patches of stone materials occur in the study area, then these deposits may have targeted as a source for artefact manufacturing.

Rock Art or Engraving Sites

Rock art consists of paintings, drawings and/or engravings on rock surfaces. Some of the art may have had a ceremonial or ritual purpose, while other art may have been produced for more secular purposes.

A rock marking/engraving site has also been recorded within a 1km radius of the Tempus study area (AH6545). and again this indicates the potential for additional rock markings to be present in the area. Given the rarity of this site type, it is very unlikely that rock markings/engravings will be encountered within the study area.

6.0 Survey Coverage of the Study Area

Survey Coverage and Surface Visibility

Survey coverage refers to the estimated portion of a study area that has actually been visually inspected during a field survey. Surface Visibility refers to the extent to which the actual soils of the ground surface are available for inspection. There are a number of factors that can affect surface visibility, including vegetation cover, surface water and the presence introduced gravels or materials. Figure 8 provides a useful guideline for the estimation of surface visibility across a survey area.

The field team walked a total of 7.3km of survey transects within and in the immediate vicinity of the proposed 7.7ha development footprint. The average width of each transects was 10m. this equates to a survey coverage of 73 000m². The transects were aligned to cover all parts of the proposed 7.7ha footprint, and immediate surrounds. On the day of the field survey, geotechnical test pits were to be excavated across the development footprint. There were 13 test pits in total, with each pit measuring approximately 2m x 1m and excavated to a depth of around 1.5m. The proposed location of the test pits was marked on the ground. As a priority, the field team targeted these test pit locations first. The team carried out a detailed inspection of a 10m radius around each test pit location before any soil excavation commenced. The team then inspected each pit after excavation was completed. Figure 9 shows the survey transects walked by the field team across the Tempus study area.

Surface visibility across the 7.7ha development footprint was restricted to an estimated average of 40%, with grass cover being the main impediment. This is in the low-medium range (see Figure 8 for surface visibility guidelines). However, in the context of Tasmania, where vegetation cover is often quite dense, this level of surface visibility is comparatively quite good.

A series of erosion scalds, vehicle tracks and stock tracks provided locales of improved visibility (see Plates 8-11). In an effort to offset surface visibility issues, the survey assessment targeted any areas where there were improved locales of surface visibility.

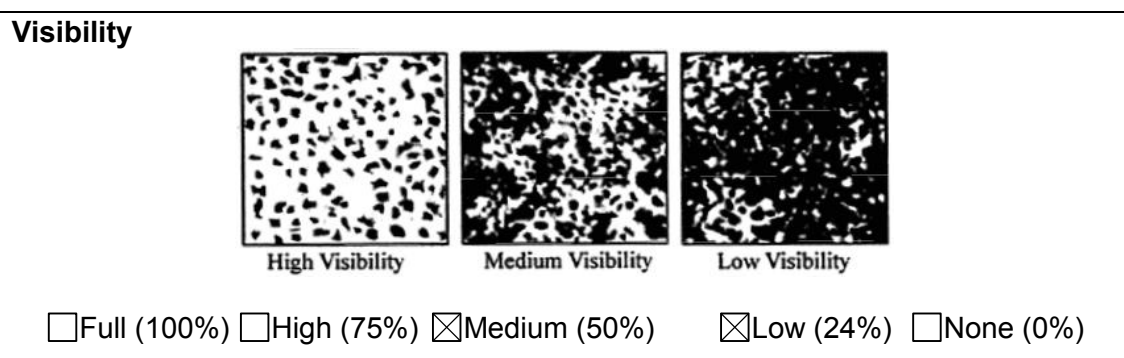


Figure 8: Guidelines for the estimation of surface visibility

Effective Coverage

Variations in both survey coverage and surface visibility have a direct bearing on the ability of a field team to detect Aboriginal heritage sites, particularly site types such as isolated artefacts and artefact scatters, which are the most likely site types to be present in the study area. The combination of survey coverage and surface visibility is referred to as effective survey coverage.

Although the field survey achieved survey coverage of 73 000m², the restricted surface visibility meant that effective survey coverage was reduced to 29 200m². This level of effective coverage is assessed as being sufficient to generate a reasonably accurate impression as to the likely extent and nature of Aboriginal sites that may be present across the study area.

Table 2 presents the estimated effective survey coverage achieved within the study area.

Table 2: Effective Survey Coverage achieved across the Tempus study area footprint

Total Area Surveyed	Estimated Surface Visibility	Effective Survey Coverage
7 300m x 10m = 73 000m ²	40%	29 200m ²



Plate 8: View south-west across the study area footprint, showing typical levels of surface visibility at around 40%, with grass cover being quite sparse



Plate 9: View south across the study area, with sparse grass cover and erosion scald, providing visibility of 40%



Plate 10: View south along an old farm track within the study area providing a transect of improved visibility



Plate 11: View north at erosion scalds and sparse ground cover providing visibility of around 70% in the central part of the study area

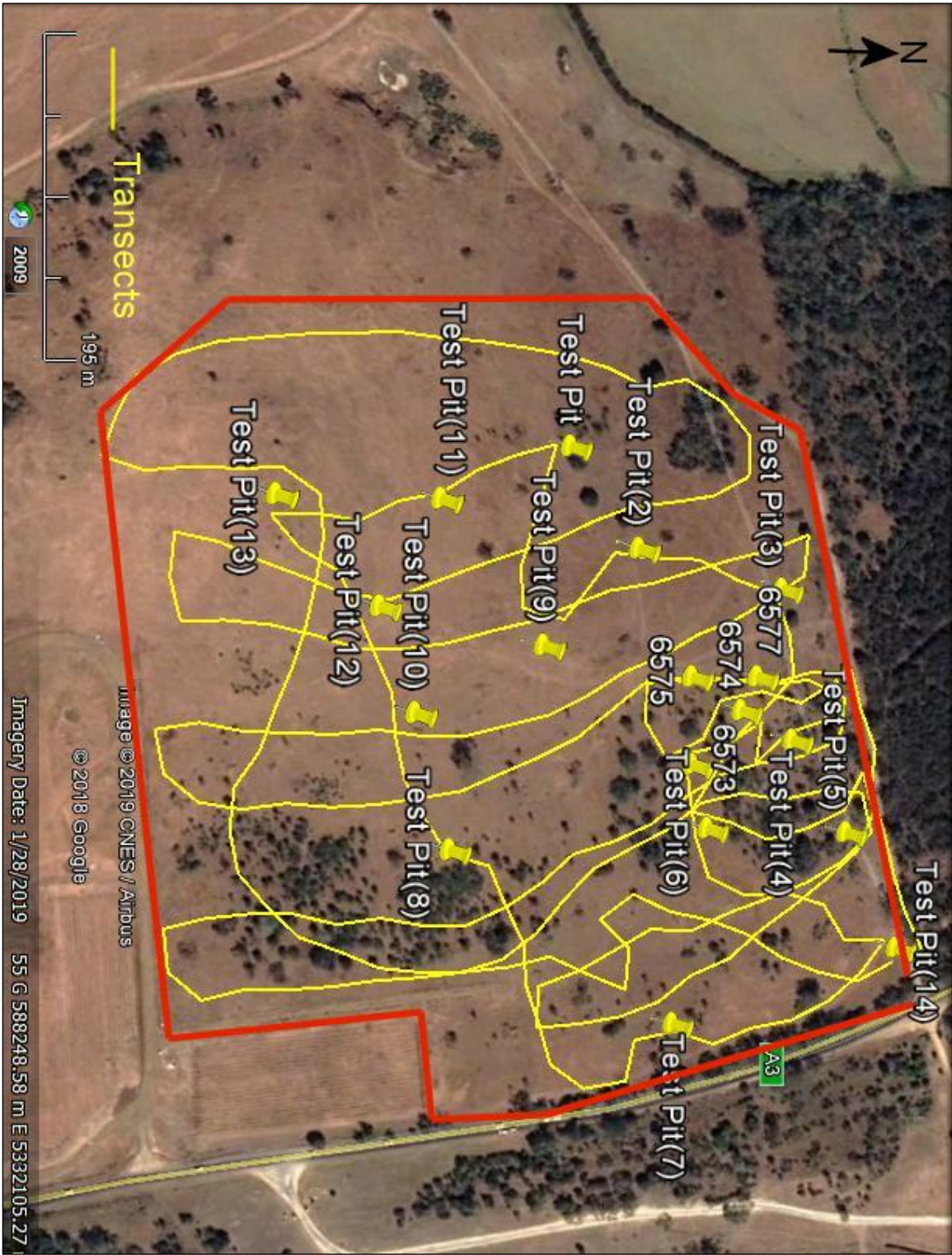


Figure 9: Survey transects walked by the field team across the tempus study area

7.0 Survey Results and Discussion

No Aboriginal heritage sites, suspected features or areas of elevated archaeological potential were identified within or in the immediate surrounds of the Tempus development footprint. Given the generally fair conditions of surface visibility across the study area, and the high level of survey coverage achieved by the field survey, these negative results are assessed as being an accurate reflection of the fact that sites are either absent within the study footprint, or that site and artefact densities are very low.

As noted in section 4.2, the AHR search results show that there are four registered Aboriginal heritage sites that, based on the grid references provided on the AHR, are situated within the bounds of the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577). However, the review of the available information for these four sites strongly indicates that they have been incorrectly plotted, and are in fact located on the Piermont property, which is to the east of the Tempus study area, on the east side of the Highway.

As part of the field survey, the field team sought to verify this. A series of survey transects were walked across a 30m radius of each of the reported site locations, which are all clustered in the northern portion of the study area, on the upper east side slopes of the ridge (see Figure 9). Despite an extensive search, no evidence for these sites was detected. Sites AH6573 and AH6577, are both classified as isolated artefacts. In reality, the chances of relocating these two sites, even if they were within the study area was very low, particularly given that they were recorded over 25 years ago. However, sites AH6574 and AH6575 are both classified as artefact scatters, comprising between nine and seven artefacts respectively. Surface visibility in the surrounds of the reported locations for each site was generally quite good (40% to 60%), and soil depth was very shallow to skeletal (see Plates 12 and 13). Given these conditions, if these sites were present in their reported locations, then it should have been possible to find evidence for this. The negative results can be reasonably assessed as providing supportive evidence for the contention that sites AH6573, AH6574, AH6575 and AH6577 have been plotted incorrectly, and are in fact located on the Piermont property, outside the bounds of the Tempus study area.

The field survey assessment confirmed that there are no rock shelter features that occur within or in the immediate vicinity of the study area. Indeed, there are no outcrops of bedrock exposed anywhere within or in the immediate vicinity of the development footprint. The field survey was also able to confirm that there were no stone resources detected within the study area that would be suitable for stone artefact manufacturing. It is assessed that there is very little potential for quarry/procurement sites to be present, given the nature of the underlying geology, which is dominated by dolerite (see section 2.2).

The explanation as to why Aboriginal activity within the study area was likely to be sporadic is most probably linked directly to resource availability. Previous archaeological research in the East Coast region has shown that highest site

densities are concentrated along the resource rich littoral zone, and within major river valley systems and major lagoon areas, where abundant food and plant resources were available on a seasonal basis. The AHR search results support this general model of site distribution, with the majority of the 56 registered Aboriginal sites located within a 3km radius of the study area being clustered within 200m of the coastal foreshores of Great Oyster Bay.

The Tempus study area is located on a ridge line associated with a series of low relief hills, between 500m to 1km inland from Great Oyster Bay, and 300m to 400m from the nearest water course (Smilers Spring Creek and the Stony River). These hills would have afforded a comparatively limited range of food, water and stone resources. As such, there would have been no great incentive for Aboriginal people to have focused their activities specifically in this area. The hills were probably visited for short durations on a seasonal basis by the local Aboriginal population, as part of hunting activities and general movement through the landscape. The visits were probably short and intermittent so that large scale cultural deposits do not accumulate. The people would carry the majority of their tool kit with them, as they needed to be highly mobile in order to make the most of the seasonal resources and trade opportunities. Artefacts discarded by such groups are likely to be those that are easily replaced. Rates of discard are expected to be low, resulting in low density archaeological sites and isolated artefacts.



Plate 12: The reported location of site AH6574, within the Tempus study area (site not relocated and assessed as being incorrectly plotted)



Plate 13: The reported location of site AH6575, within the Tempus study area (site not relocated and assessed as being incorrectly plotted)

8.0 Consultation with Aboriginal Communities and Statement of Aboriginal Significance

The designated Aboriginal Heritage Officer (AHO) for this project is Rocky Sainty. One of the primary roles of the Aboriginal Heritage Officer is to consult with Aboriginal community groups. The main purpose of this consultation process is:

- to advise Aboriginal community groups of the details of the project,
- to convey the findings of the Aboriginal heritage assessment,
- to document the Aboriginal social values attributed to Aboriginal heritage resources in the study area,
- to discuss potential management strategies for Aboriginal heritage sites, and
- to document the views and concerns expressed by the Aboriginal community representatives.

Aboriginal Heritage Tasmania (AHT) has advised that there have been some changes to the accepted approach to Aboriginal community consultation, based on recommendations made by the AHC on 28 April 2017. These changes relate to cases where the AHC consider it may be sufficient for a Consulting Archaeologist (CA) or Aboriginal Heritage Officer (AHO) to consult only with the Aboriginal Heritage Council.

The Council recommended that consultation with an Aboriginal community organisation is not required for a proposed project when:

There are less than 10 isolated artefacts that are not associated with any other nearby heritage; or

The impact of the project on Aboriginal heritage:

- is not significant; or
- will not destroy the heritage; or
- affects only part of the outer approximately 20% of a buffer around a registered site

The CA and AHO will need to demonstrate in Aboriginal heritage reports including map outputs:

- that the proposed impact on the Aboriginal heritage within the project area is not significant and why;
- that the project activity will not destroy the heritage;
- that the proposed impact to the site buffer is not adjacent to a significant component of the registered site polygon.

No Aboriginal sites were identified during the field survey of the Tempus study area. A search of the AHR shows that there are four registered Aboriginal sites that, based on the grid references provided on the AHR, are situated within the bounds of the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577). However, the review of the available information for these four sites, together with the negative findings of the field survey, strongly indicates that they have been incorrectly plotted,

and are in fact located on the Piermont property, which is to the east of the Tempus study area, on the east side of the Highway.

On the basis of the above, it is clear that the proposed Tempus development will not impact on any known Aboriginal heritage sites, and there is a low potential to impact undetected Aboriginal heritage. For this reason, the decision has been made not to distribute this report for Aboriginal community consultation. The report has been provided to AHT for review.

Rocky Sainty has provided a statement of the Aboriginal cultural values attributed to the study area as a whole. This statement is presented below.

Statement of Cultural/Social Significance by Rocky Sainty

Aboriginal heritage provides a direct link to the past, however is not limited to the physical evidence of the past. It includes both tangible and intangible aspects of culture. Physical and spiritual connection to land and all things within the landscape has been, and continues to be, an important feature of cultural expression for Aboriginal people since creation.

Physical evidence of past occupation of a specific place may include artefacts, living places (middens), rock shelters, markings in rock or on the walls of caves and/or rock shelters, burials and ceremonial places. Non-physical aspects of culture may include the knowledge (i.e. stories, song, dance, weather patterns, animal, plant and marine resources for food, medicines and technology) connected to the people and the place.

*While so much of the cultural landscape that was **lutruwita** (Tasmania) before invasion and subsequent colonization either no longer exists, or has been heavily impacted on, these values continue to be important to the Tasmanian Aboriginal community, and are relevant to the region of the project proposal.*

We did not identify any Aboriginal heritage sites during the survey of the of the Tempus study area. Although the AHR search shows that there are four registered sites located within the study area, based on my observations during the field survey, and my discussions with the archaeologist (Stuart Huys), I am also convinced that these sites have been incorrectly plotted, and are in fact located outside the study area, most probably on the Piermont property.

Based on these negative results, and the high level of existing disturbances across the study area, I am satisfied that the proposed Tempus development will have no impacts on Aboriginal heritage values.

Even if the site of the project proposal contains no evidence of Aboriginal heritage there is always the cultural resources (flora, fauna, aquaculture or any other resource values that the earth may offer) and the living landscape, which highlight the high significance to the Aboriginal cultural heritage values to the country.

The Tempus study area that we surveyed has been heavily disturbed by land clearing and past farming activity. Through these activities, the vast majority of native vegetation has been cleared, and the bush tucker resources that may once have been present has been destroyed. This has in-turn reduced the Aboriginal heritage values of this area.

9.0 Statutory Controls and Legislative Requirements

The following provides an overview of the relevant State and Federal legislation that applies for Aboriginal heritage within the state of Tasmania.

9.1 State Legislation

In Tasmania, the *Aboriginal Heritage Act 1975* (the Act) is the primary Act for the treatment of Aboriginal cultural heritage. The Act is administered by the Minister for Aboriginal Affairs, through Aboriginal Heritage Tasmania (AHT) in the Department of Primary Industries, Parks, Water and the Environment (DPIPWE). AHT is the regulating body for Aboriginal heritage in Tasmania and '[n]o fees apply for any application to AHT for advice, guidance, lodgement or permit application'.

The Act applies to 'relics' which are any object, place and/or site that is of significance to the Aboriginal people of Tasmania (as defined in section 2(3) of the Act). The Act defines what legally constitutes unacceptable impacts on relics and a process to approve impacts when there is no better option. Aboriginal relics are protected under the Act and it is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. It is illegal to sell or offer for sale a relic, or to cause or permit a relic to be taken out of Tasmania without a permit (section 2(4) qualifies and excludes 'objects made, or likely to have been made, for purposes of sale').

It should be noted that with regard to the discovery of suspected human skeletal remains, the *Coroners Act 1995* takes precedence. The *Coroners Act 1995* comes into effect initially upon the discovery of human remains, however once determined to be Aboriginal the *Aboriginal Relics Act* overrides the *Coroners Act*.

In August 2017, the Act was substantively amended and the title changed from the *Aboriginal Relics Act 1975*. As a result, the AHT *Guidelines to the Aboriginal Heritage Assessment Process* were replaced by the *Aboriginal Heritage Standards and Procedures*. The Standards and Procedures are named in the statutory *Guidelines* of the Act issued by the Minister under section 21A of the Act. Other amendments include:

- An obligation to fully review the Act within three years.
- Increases in maximum penalties for unlawful interference or damage to an Aboriginal relic. For example, maximum penalties (for deliberate acts) are 10,000 penalty units (currently \$1.57 million) for bodies corporate other than small business entities and 5,000 penalty units (currently \$785,000) for individuals or small business entities; for reckless or negligent offences, the maximum penalties are 2,000 and 1,000 penalty units respectively (currently \$314,000 and \$157,000). Lesser offences are also defined in sections 10, 12, 17 and 18.
- Prosecution timeframes have been extended from six months to two years.
- The establishment of a statutory Aboriginal Heritage Council to advise the Minister.

Section 21(1) specifies the relevant defence as follows: "It is a defence to a prosecution for an offence under section 9 or 14 if, in relation to the section of the Act which the defendant is alleged to have contravened, it is proved ... that, in so far as is practicable ... the defendant complied with the guidelines".

9.2 Commonwealth Legislation

There are also a number of Federal Legislative Acts that pertain to cultural heritage. The main Acts being; *The Australian Heritage Council Act 2003*, *The Aboriginal and Torres Strait Islander Heritage Protection Act 1987* and the *Environment Protection and Biodiversity Conservation Act 1999*

Australian Heritage Council Act 2003 (Comm)

The *Australian Heritage Council Act 2003* defines the heritage advisory boards and relevant lists, with the Act's Consequential and Transitional Provisions repealing the Australian Heritage Commission Act 1975. The Australian Heritage Council Act, like the Australian Heritage Commission Act, does not provide legislative protection regarding the conservation of heritage items in Australia, but has compiled a list of items recognised as possessing heritage significance to the Australian community. The Register of the National Estate, managed by the Australian Heritage Council, applies no legal constraints on heritage items included on this list.

The Aboriginal and Torres Strait Islander Heritage Protection Act 1987.

This Federal Act is administered by the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) with the Commonwealth having jurisdiction. The Act was passed to provide protection for the Aboriginal heritage, in circumstances where it could be demonstrated that such protection was not available at a state level. In certain instances, the Act overrides relevant state and territory provisions.

The major purpose of the Act is to preserve and protect from injury and desecration, areas and objects of significance to Aborigines and Islanders. The Act enables immediate and direct action for protection of threatened areas and objects by a declaration from the Commonwealth minister or authorised officers. The Act must be invoked by, or on behalf of an Aboriginal or Torres Strait Islander or organisation.

Any Aboriginal or Torres Strait Islander person or organization may apply to the Commonwealth Minister for a temporary or permanent 'Stop Order' for protection of threatened areas or objects of significant indigenous cultural heritage.

The Commonwealth Act 'overrides' State legislation if the Commonwealth Minister is of the opinion that the State legislation (or undertaken process) is insufficient to protect the threatened areas or objects. Thus, in the event that an application is made to the Commonwealth Minister for a Stop Order, the Commonwealth Minister will, as a matter of course, contact the relevant State Agency to ascertain what protection is being imposed by the State and/or what mitigation procedures have been proposed by the landuser/developer.

In addition to the threat of a 'Stop Order' being imposed, the Act also provides for the following:

- If the Federal Court, on application from the Commonwealth Minister, is satisfied that a person has engaged or is proposing to engage in conduct that breaches the 'Stop Order', it may grant an injunction preventing or stopping such a breach (s.26). Penalties for breach of a Court Order can be substantial and may include a term of imprisonment;
- If a person contravenes a declaration in relation to a significant Aboriginal area, penalties for an individual are a fine up to \$10,000.00 and/or 5 years gaol and for a Corporation a fine up to \$50,000.00 (s.22);
- If the contravention is in relation to a significant Aboriginal object, the penalties are \$5,000.00 and/or 2 years gaol and \$25,000.00 respectively (s.22);
- In addition, offences under s.22 are considered 'indictable' offences that also attract an individual fine of \$2,000 and/or 12 months gaol or, for a Corporation, a fine of \$10,000.00 (s.23). Section 23 also includes attempts, inciting, urging and/or being an accessory after the fact within the definition of 'indictable' offences in this regard.

The Commonwealth Act is presently under review by Parliament and it is generally accepted that any new Commonwealth Act will be even more restrictive than the current legislation.

Environment Protection and Biodiversity Conservation Act 1999 (Comm)

This Act was amended, through the Environment and Heritage Legislation Amendment Act (No1) 2003 to provide protection for cultural heritage sites, in addition to the existing aim of protecting environmental areas and sites of national significance. The Act also promotes the ecologically sustainable use of natural resources, biodiversity and the incorporation of community consultation and knowledge.

The 2003 amendments to the *Environment Protection and Biodiversity Conservation Act 1999* have resulted in the inclusion of indigenous and non-Indigenous heritage sites and areas. These heritage items are defined as:

'indigenous heritage value of a place means a heritage value of the place that is of significance to indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history;

Items identified under this legislation are given the same penalty as actions taken against environmentally sensitive sites. Specific to cultural heritage sites are §324A-324ZB.

Environment and Heritage Legislation Amendment Act (No1) 2003 (Comm)

In addition to the above amendments to the *Environment Protection and Biodiversity Conservation Act 1999* to include provisions for the protection and conservation of heritage, the Act also enables the identification and subsequent listing of items for the Commonwealth and National Heritage Lists. The Act establishes the *National Heritage List*, which enables the inclusion of all heritage, natural, Indigenous and

non-Indigenous, and the *Commonwealth Heritage List*, which enables listing of sites nationally and internationally that are significant and governed by Australia.

In addition to the *Aboriginal and Torres Strait Islander Heritage Protection Act 1987*, amendments made to the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* enables the identification and subsequent listing of indigenous heritage values on the Commonwealth and/or National Heritage Lists (ss. 341D & 324D respectively). Substantial penalties (and, in some instances, gaol sentences) can be imposed on any person who damages items on the National or Commonwealth Heritage Lists (ss. 495 & 497) or provides false or misleading information in relation to certain matters under the Act (ss.488-490). In addition, the wrongdoer may be required to make good any loss or damage suffered due to their actions or omissions (s.500).

10.0 Aboriginal Cultural Heritage Management Plan

Heritage management options and recommendations provided in this report are made on the basis of the following criteria:

- Consultation with Rocky Sainty (Aboriginal Heritage Officer);
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (The Act);
- The results of the investigation as documented in this report; and
- Background research into the extant archaeological and ethno-historic record for the study area and the surrounding region.

Recommendation 1

No Aboriginal sites were identified during the field survey of the proposed Tempus development footprint. A search of the AHR shows that there are four registered Aboriginal sites that, based on the grid references provided on the AHR, are situated within the bounds of the Tempus study area (sites AH6573, AH6574, AH6575 and AH6577). However, the review of the available information for these four sites, together with the negative findings of the field survey, strongly indicates that they have been incorrectly plotted, and are in fact located on the Piermont property, which is to the east of the Tempus study area, on the east side of the Highway

On this basis, it is advised that the proposed development will have no impacts on known Aboriginal sites, and therefore there are no Aboriginal heritage constraints, or legal impediments to the project proceeding.

Recommendation 2

It is assessed that there is generally a low to very low potential for undetected Aboriginal heritage sites to occur within the Tempus development footprint. However, if, during the course of the proposed development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 1). A copy of the Unanticipated Discovery Plan should be kept on site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Recommendation 3

Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) for review and comment.

References Cited

Australian ICOMOS. 1988. *Guidelines to the Burra Charter*.

Australian ICOMOS. 1999. *The Burra Charter*.

Backhouse, J. 1843. *A Narrative of a visit to the Australian Colonies*. Hamilton, Adams and Co., London.

Baudin, N. 1974. *The Journal of Post Captain Nicolas Baudin Commander-in Chief-of the Corvettes Geographe and Naturaliste*. Translated from French by C. Cornell. Adelaide Libraries London.

Bowdler, S. 1984. Archaeological Significance as a mutable quality. In Sullivan, S. and Bowdler, S. (eds.) *Site Surveys and Significance Assessment in Australian Archaeology*. Department of Prehistory, ANU Canberra.

Brown, S. 1986 *Aboriginal Archaeological Resources in South East Tasmania. An Overview of the Nature and Management of Aboriginal Sites*. National Parks and Wildlife Service, Tasmania. Occasional Paper No.12.

Brown, S. 1991. *Aboriginal Archaeological Sites in Eastern Tasmania: A Cultural Resource Management Statement*. Occasional Paper No.31. Department of Parks, Wildlife and Heritage, Hobart, Tasmania.

Hiatt, B. 1967. The food quest and the economy of the Tasmanian Aborigines. *Oceania* 38:99-133, 190-219.

Johnston, C 1994 'What is Social Value : a discussion paper.' *Australian Heritage Commission Technical Publications: Series Number 3*.

Jones, R. 1974 Tasmanian Tribes. Appendix in Tindale, N.B. *Aboriginal Tribes of Australia*. University of California Press.

Kee, S. 1990. *Aboriginal archaeological sites in north east Tasmania*. Occasional Paper No. 28. Department of Parks, Wildlife and Heritage. Hobart, Tasmania.

Labillardiere, J.J.H. 1800. *Voyage in search of La Perouse performed by order of the Constituent Assembly during the years 1791, 1792, 1793 and 1794*. John Stockdale, London.

LISTmap www.thelist.tas.gov.au.

Lourandos, H. 1968. Dispersal of Activities – The East Tasmanian Aboriginal Sites. *Papers and Proceedings of the Royal Society of Tasmania* 102:41-46.

Lourandos, H. 1970. *Coast and Hinterland: The Archaeological Sites of Eastern Tasmania*. Unpublished M.A. Thesis, Australian National University.

Lourandos, H. 1977. Stone tools, settlement, adaption: a Tasmanian example. In Wright, R.V.S. (ed.) *Stone Tools as Cultural Markers: Change, Evolution and Complexity*. Australian Institute of Aboriginal Studies, Canberra.

Marquis-Kyle, P and Walker, M. 1992. *The Illustrated Burra Charter*. Australian ICOMOS Inc.

Mortimer, G. 1971. *Observations and Remarks made during a Voyage etc.* Mortimer, London.

Pearson, M. and Sullivan, S. 1995. *Looking After Heritage Places*. Melbourne University Press.

Plomley, N.J.B 1966 *Friendly Mission: The Journals of Augustus Robinson 1829-1834*. Tasmanian Historical research Association, Hobart.

Plomley, N.J.B. 1983 (ed.) *The Baudin Expedition and the Tasmanian Aborigines 1802*. Blubberhead Press Hobart.

Ranson, D. 1986. Discovery of Human Skeletal Remains, Tasman Peninsula. Unpublished memo (File M5/12/2). National Parks and Wildlife Service, Tasmania.

Roth, H.L. 1899. *The Aborigines of Tasmania*. F.King and Sons, London.

Ryan, L. 2012. *Tasmanian Aborigines: A history since 1803*. Allen and Unwin: Crow's Nest.

Glossary of Terms

Aboriginal Archaeological Site

A site is defined as any evidence (archaeological features and/or artefacts) indicating past Aboriginal activity, and occurring within a context or place relating to that activity. The criteria for formally identifying a site in Australia vary between States and Territories.

Artefact

A portable object that has been humanly made or modified (see also stone artefact).

Assemblage (lithic)

A collection of complete and fragmentary stone artefacts and manuports obtained from an archaeological site, either by collecting artefacts scattered on the ground surface, or by controlled excavation.

Broken Flake

A flake with two or more breakages, but retaining its area of break initiation.

Chert

A highly siliceous rock type that is formed biogenically from the compaction and precipitation of the silica skeletons of diatoms. Normally there is a high percentage of cryptocrystalline quartz. Like chalcedony, chert was valued by Aboriginal people as a stone material for manufacturing stone tools. The rock type often breaks by conchoidal (shell like) fracture, providing flakes that have hard, durable edges.

Cobble

Water worn stones that have a diameter greater than 64mm (about the size of a tennis ball) and less than 256mm (size of a basketball).

Core

A piece of stone, often a pebble or cobble, but also quarried stone, from which flakes have been struck for the purpose of making stone tools.

Core Fragments

A piece of core, without obvious evidence of being a chunky primary flake.

Cortex

The surface of a piece of stone that has been weathered by chemical and/or physical means.

Debitage

The commonly used term referring to the stone refuse discarded from knapping. The manufacturing of a single implement may result in the generation of a large number of pieces ofdebitage in an archaeological deposit.

Flake (general definition)

A piece of stone detached from a nucleus such as a core. A complete or substantially complete flake of lithic material usually shows evidence of hard indenter initiation, or occasional bending initiation. The most common type of flake is the 'conchoidal flake'. The flake's primary fracture surface (the ventral or inside surface) exhibits features such as fracture initiation, bulb of force, and undulations and lances that indicate the direction of the fracture front.

Flake fragment

An artefact that does not have areas of fracture initiation, but which displays sufficient fracture surface attributes to allow identification as a stone artefact fragment.

Flake portion (broken flake)

The proximal portion of a flake retaining the area of flake initiation, or a distal portion of a flake that retains the flake termination point.

Flake scraper

A flake with retouch along at least one margin. The character of the retouch strongly suggests shaping or rejuvenation of a cutting edge.

Nodules

Regular or irregular cemented masses or nodules within the soil. Also referred to as concretions and buckshot gravel. Cementing agents may be iron and/or manganese oxides, calcium carbonate, gypsum etc. Normally formed in situ and commonly indicative of seasonal waterlogging or a fluctuating chemical environment in the soil such as; oxidation and reduction, or saturation and evaporation. Nodules can be redistributed by erosion. (See also 'concretion').

Pebble

By geological definition, a waterworn stone less than 64 mm in diameter (about the size of a tennis ball). Archaeologists often refer to waterworn stones larger than this as pebbles though technically they are cobbles.

Quartz

A mineral composed of crystalline silica. Quartz is a very stable mineral that does not alter chemically during weathering or metamorphism. Quartz is abundantly common and was used by Aboriginal people throughout Australia to make light-duty cutting tools. Despite the often unpredictable nature of fracture in quartz, the flakes often have sharp cutting edges.

Quartzite

A hard silica rich stone formed in sandstone that has been recrystallised by heat (metaquartzite) or strengthened by slow infilling of silica in the voids between the sand grains (Orthoquartzite).

Retouch (on stone tools)

An area of flake scars on an artefact resulting from intentional shaping, resharpening, or rejuvenation after breakage or blunting of a cutting edge. In resharpening a cutting edge the retouch is invariably found only on one side (see also 'indeterminate retouched piece', retouch flake' etc).

Scraper

A general group of stone artefacts, usually flakes but also cores, with one or more retouched edges thought to have been used in a range of different cutting and scraping activities. A flake scraper is a flake with retouch along at least one margin, but not qualifying for attribution to a more specific implement category. Flake scrapers sometimes also exhibit use-wear on the retouched or another edge.

Silcrete

A hard, fine grained siliceous stone with flaking properties similar to quartzite and chert. It is formed by the cementing and/or replacement of bedrock, weathering deposits, unconsolidated sediments, soil or other material, by a low temperature physico-chemical process. Silcrete is essentially composed of quartz grains cemented by microcrystalline silica. The clasts in silcrete are most often quartz grains but may be chert or chalcedony or some other hard mineral particle. The mechanical properties and texture of silcrete are equivalent to the range exhibited by chert at the fine-grained end of the scale and with quartzite at the coarse-grained end of the scale. Silcrete was used by Aboriginal people throughout Australia for making stone tools.

Site Integrity

The degree to which post-depositional disturbance of cultural material has occurred at a site.

Stone Artefact

A piece (or fragment) of stone showing evidence of intentional human modification.

Stone procurement site

A place where stone materials is obtained by Aboriginal people for the purpose of manufacturing stone artefacts. In Australia, stone procurement sites range on a continuum from pebble beds in water courses (where there may be little or no evidence of human activity) to extensively quarried stone outcrops, with evidence of pits and concentrations of hammerstones and a thick layer of knapping debris.

Stone tool

A piece of flaked or ground stone used in an activity, or fashioned for use as a tool. A synonym of stone tool is 'implement'. This term is often used by archaeologists to describe a flake tool fashioned by delicate flaking (retouch).

Use wear

Macroscopic and microscopic damage to the surfaces of stone tools, resulting from its use. Major use-wear forms are edge fractures, use-polish and smoothing, abrasion, and edge rounding bevelling.

Appendix 1

Unanticipated Discovery Plan

Unanticipated Discovery Plan

Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania

For the management of unanticipated discoveries of Aboriginal relics in accordance with the *Aboriginal Heritage Act 1975* and the *Coroners Act 1995*. The Unanticipated Discovery Plan is in two sections.

Discovery of Aboriginal Relics other than Skeletal Material

Step 1:

Any person who believes they have uncovered Aboriginal relics should notify all employees or contractors working in the immediate area that all earth disturbance works must cease immediately.

Step 2:

A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal relics, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal relics have been assessed by a consulting archaeologist, Aboriginal Heritage Officer or Aboriginal Heritage Tasmania staff member.

Step 3:

Contact Aboriginal Heritage Tasmania on **1300 487 045** as soon as possible and inform them of the discovery. Documentation of the find should be emailed to **aboriginal@heritage.tas.gov.au** as soon as possible. Aboriginal Heritage Tasmania will then provide further advice in accordance with the *Aboriginal Heritage Act 1975*.

Discovery of Skeletal Material

Step 1:

Call the Police immediately. Under no circumstances should the suspected skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene.

Step 2:

Any person who believes they have uncovered skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately.

Step 3:

A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal material, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and/or Coroner.

Step 4:

If it is suspected that the skeletal material is Aboriginal, Aboriginal Heritage Tasmania should be notified.

Step 5:

Should the skeletal material be determined to be Aboriginal, the Coroner will contact the Aboriginal organisation approved by the Attorney-General, as per the *Coroners Act 1995*.

Guide to Aboriginal site types

Stone Artefact Scatters

A stone artefact is any stone or rock fractured or modified by Aboriginal people to produce cutting, scraping or grinding implements. Stone artefacts are indicative of past Aboriginal living spaces, trade and movement throughout Tasmania. Aboriginal people used hornfels, chalcedony, spongelite, quartzite, chert and silcrete depending on stone quality and availability. Stone artefacts are typically recorded as being 'isolated' (single stone artefact) or as an 'artefact scatter' (multiple stone artefacts).

Shell Middens

Middens are distinct concentrations of discarded shell that have accumulated as a result of past Aboriginal camping and food processing activities. These sites are usually found near waterways and coastal areas, and range in size from large mounds to small scatters. Tasmanian Aboriginal middens commonly contain fragments of mature edible shellfish such as abalone, oyster, mussel, warrener and limpet, however they can also contain stone tools, animal bone and charcoal.

Rockshelters

An occupied rockshelter is a cave or overhang that contains evidence of past Aboriginal use and occupation, such as stone tools, middens and hearths, and in some cases, rock markings. Rockshelters are usually found in geological formations that are naturally prone to weathering, such as limestone, dolerite and sandstone.

Quarries

An Aboriginal quarry is a place where stone or ochre has been extracted from a natural source by Aboriginal people. Quarries can be recognised by evidence of human manipulation such as battering of an outcrop, stone fracturing debris or ochre pits left behind from processing the raw material. Stone and ochre quarries can vary in terms of size, quality and the frequency of use.

Rock Marking

Rock marking is the term used in Tasmania to define markings on rocks which are the result of Aboriginal practices. Rock markings come in two forms; engraving and painting. Engravings are made by removing the surface of a rock through pecking, abrading or grinding, whilst paintings are made by adding pigment or ochre to the surface of a rock.

Burials

Aboriginal burial sites are highly sensitive and may be found in a variety of places, including sand dunes, shell middens and rock shelters. Despite few records of pre-contact practices, cremation appears to have been more common than burial. Family members carried bones or ashes of recently deceased relatives. The Aboriginal community has fought long campaigns for the return of the remains of ancestral Aboriginal people.

Further information on Aboriginal Heritage is available from:

Aboriginal Heritage Tasmania
Natural and Cultural Heritage Division
Department of Primary Industries, Parks, Water and Environment
GPO Box 44 Hobart TAS 7001

Telephone: **1300 487 045**

Email: **aboriginal@heritage.tas.gov.au**

Web: **www.aboriginalheritage.tas.gov.au**

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