

Appendix C: Heritage Assessment

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Aboriginal cultural heritage

A comprehensive survey was undertaken along the proposed track route for Aboriginal sites.

The survey was conducted according to accepted field survey methods for archaeological investigation. This included:

- Transect survey (on foot) of the entire lengths of both proposed tracks. The survey corridors included five metres either side of the main one metre wide routes. The majority of both routes are located in thick forest with limited or zero visibility. The survey was therefore mostly conducted by walking the immediate route and scanning from this to a distance of approximately five metres either side. Side trips from the main route were conducted where surface visibility increased or potential site areas were encountered. A number of side trips were conducted beyond the track corridors where potential site areas could be observed clearly from the tracks such as rock outcrops and sandstone overhangs. Full coverage transect was conducted where visibility permitted such as along existing walking tracks/unsealed vehicle trails or other exposed areas
- Field notes - Recording of landforms, surface exposure/ground disturbance, and visibility. Recording photos with archaeological accepted scales (2metre range pole and colour IFRAO scales).
- Recording of new sites – drawing of site plans and/or profiles, site dimensions, landform, condition, measurements of cultural features such as stone tools and assessment of likely impacts to sites (both recorded and new) from proposed tracks.
- Photography using a Lumix 12 megapixel digital camera. General area photos, previously recorded sites and new site photos.

The routes had previously been marked by Epacris with pink spray paint. Diversions to the proposed routes were encountered with pink flagging tape. Both the diverted areas and the original proposed track areas were surveyed.

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Archaeological Survey

The Bantry Bay/Garigal National Park archaeological Survey was conducted on 28/10/2011. Table 4 outlines the Aboriginal Heritage Information Management System (AHIMS) data that was supplied prior to the survey. Table 5 and Figure 2 outline the coverage area for the survey with a description following.

Aboriginal Heritage Information Management System (AHIMS)

AHIMS #	Site Name	Site Type	Primary Recording	Report Supplied
45-6-2046	Bantry Bay 5	Midden/Open Campsite	Guider	Nil
45-6-2048	Bantry Bay 7	Shelter with Midden	Guider	Nil
45-6-2049	Bantry Bay 1	Shelter with Midden	Guider	Nil
45-6-2051	Bantry Bay 9	Shelter with Midden	Guider	Nil
45-6-2052	Bantry Bay 10	Midden/Open Campsite	Guider	Nil
45-6-2067	Foot Cave	Shelter with Art/Midden	Guider	Nil
45-6-0011	French's Forest/Kangaroo Site	Open Site/Rock Engraving	Guider	Nil
45-6-2182	Bluff Track	Open Site/Rock Engraving	Guider	Nil
45-6-0655	Frenchs Forest/Bantry Bay Road	Open Site/Rock Engraving	Kelly	Nil
45-6-2073	Echidna Cave	Rock Engraving/Shelter with Deposit	Guider	Nil
45-6-1003	Frenchs Forest	Shelter with Deposit	ASRSYS	Nil
45-6-2940	Rock Engraving/Garigal National Park	Open Site/Rock Engraving	Guider	Nil
45-6-0662	Frenchs Forest/Bantry Bay/Wakehurst	Open Site /Rock Engraving	Unknown	Nil
45-6-0963	Frenchs Forest	Open Site/Rock Engraving	Mary Dallas/Consulting Archaeologists/Taplin	Nil
45-6-0899	Balgowlah/Bantry	Open Site/Rock Engraving	Beasley	Nil
45-6-2205	Magazine Track 1	Open Site/Midden	Guider	
45-6-0012	Frenchs Forest	Open Site/Rock Engraving	Guider	Nil
45-6-0013	Frenchs Forest/Bates Creek	Shelter with Art	Specht	Nil
45-6-2929	Twin Roos	Open Site/Rock Engraving	Guider	Nil
45-6-2798	Emu & Man/Frenchs Forest	Open Site/Rock Engraving	Power	Nil
45-6-0637	Bantry Bay/Frenchs Forest	Open Site/Rock Engraving	ASRSYS	Nil

Table 4: Sites near Bantry Bay proposed Mountain Bike Trail

Predictive Model Statement

Bantry Bay: Previous archaeological sites recorded in the catchment of Bantry Bay and Bates Creek include 14 open sites and 7 closed or shelter sites (Table 2). Eleven open sites were recorded with rock engravings or petroglyphs, three open sites had

midden evidence, four shelter sites had midden or occupation deposits, two shelter sites had pigment art evidence and one shelter site was recorded with engraved art. Based on these results it is predicted that the main site types that could potentially be encountered during the survey are open rock platform sites with petroglyphs. Under rock platforms shelter sites with deposits and/or midden refuse are also predicted to occur with the possibility of a smaller number of shelter sites with rock art.

Effective Survey Coverage

Survey Unit	Landform	Survey Unit Area (sq. m)	Visibility %	Exposure %	Effective coverage area (sq. m)	Effective coverage %
Area 1 B14	Simple Mid-Slope	16500	<10	20	330	2
Area 2 B2	Ridge & Simple Mid-Slope	20900	40	50	4180	20
Area 3 B11	Simple Mid-Slope	1650	10	20	33	2
Area 4 B5	Simple Slope & Crest	4950	20	20	198	4
Area 5 B3	Crest	1100	20	30	66	6
Area 6 B1	Upper Slope	13750	10	20	275	2
Area 7 B9	Upper Slope/Ridge	17600	10	10	176	1
Area 8 B10	Ridge	4950	10	15	74	2
Area 9 B4	Ridge	18700	20	30	1122	6
Area 10 B12	Crest	3300	10	20	66	2
Area 11 B13	Simple Slope Upper-Mid	6600	10	30	198	3

Table 5: Survey Coverage

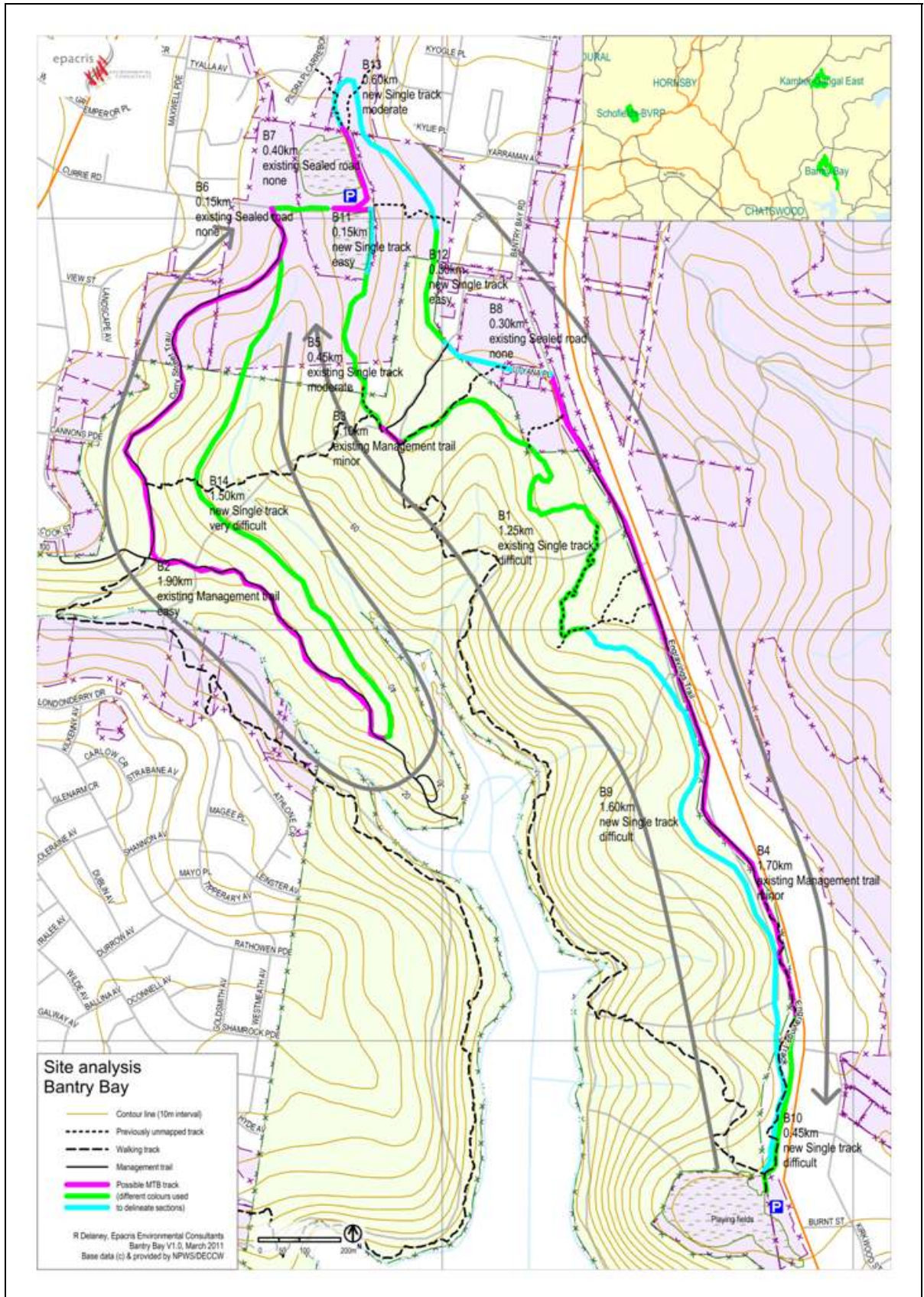


Figure 2: Bantry Bay Survey route

Area 1 B14: No Aboriginal archaeological material was located in this area. Survey starts at the end of Currie Road, heading south along Currie Street Trail for approximately 100 metres and then generally south along proposed track route. This section was hampered by thick bushland with little in the way of exposure or visibility. A narrow rock bench was followed for approximately 200 metres starting at GPS co-ordinates: (not for public exhibition) providing increased exposures and visibility. Effective survey coverage was estimated at approximately 2%.

Area 2 B2: One previously recorded site was re-located in this area. B2 follows Currie Street Management Trail north/west along a ridge line for approximately one kilometre and then roughly north for a further kilometre across a moderate hill-slope. Numerous rock exposures occur along the ridge top where previously recorded engraving sites AHIMS # 45-6-2929 and # 45-6-2798 occur. The former was not relocated. The latter was relocated, partly obscured by thick bushland approximately 6.5 metres east of the management trail. This site is not being impacted upon by the current trail.

Area 3 B11: No Aboriginal archaeological material was located in this area. Area 3 consists of a short disturbed section along the eastern edge of a playing field. Earth works and excavated fill have disturbed the area.

Area 4 B5: Site AHIMS # 45-6-2182 was relocated in this area. An existing single lane track heads south from the playing fields with increased archaeological visibility and exposure. The track turns slightly to the south/east heading up a hill-slope and crossing the large sandstone platform where the above site was located (not for public exhibition). The existing track directly crosses the engravings

Area 5 B3: No Aboriginal archaeological was located in this area. A short section of existing management track is followed. Survey coverage increased slightly due to the existing road.

Area 6 B 1: No Aboriginal archaeological was located in this area. Visibility and exposures were hampered in this section by thick bushland. Occasional small rock exposures provided minor increases in visibility however effective survey coverage was estimated at just 2%.

Area 7 B9: No Aboriginal archaeological was located in this area. As with the previous section, visibility and exposures were low due to thick bushland across the upper hill-slope. Effective survey coverage was estimated at 1% as a result.

Area 8 B10: No Aboriginal archaeological was located in this area. The proposed route follows an existing single track for 450 metres northwards along the Engravings Trail. The track exposure was approximately 1.3-1.5 metres wide. Visibility was low due to vegetation debris across the track. Either side of the track is covered in thick, dense bushland.

Area 9 B4 Engravings Trail: One previously unrecorded Aboriginal site was located in this section. The single engraving was located between the Engravings Trail and Wakehurst Parkway Road on a damaged sandstone exposure. It is possible that this site is the misplaced previously recorded site AHIMS # 45-6-0662, 'Frenchs Forest, Bantry Bay, Wakehurst Parkway'.

Area 10 B12: No Aboriginal archaeological was located in this area. Limited visibility and exposure occurred in this area. Minor disturbances were evident in places along the fringe of the urban area.

Area 11 B13: No Aboriginal archaeological was located in this area. Minor ridge-line rock exposures occur on the descent northwards. Open forest at the base of the rock exposures occurring but limited visibility. Effective survey coverage estimated at 3%.

New Sites Located during Bantry Bay Survey

Engravings Track Petroglyph

One single petroglyph was located east of the Engravings Trail and west of Wakehurst Parkway Road, positioned at GPS co-ordinates (**not for public exhibition**) The platform is approximately 17 metres long (n/s) x 8 metres wide (e/w) (Plate 11). The petroglyph is located at the south/eastern section of the platform and consists of a rectangular figure, possibly a zoomorph (marine organism), 2.10 metres long x 0.55 metres at the widest point (Plate 9). One possible grinding groove is positioned within the northern half of the petroglyph. The image is in relatively good condition and is in keeping with the style of many of the images located on the nearby large engraving platform, site # 45-6-0655 located approximately 300 metres to the north. The platform has evidence of damage from heavy machinery likely associated with the nearby road constructions. Deposited bitumen was observed within two metres north of the image (Plate 10).

Vegetation/Resource Zone

The main resource zone associated with the site consists of a mixture of dry *Eucalyptus* forest and coastal heath. Much of the bushland surrounding the platform appears to be a thick regrowth of heath dominated by *Casuarina* and *Leptospermum spp.*

Threats to Site Integrity

The platform appears bleached from exposure with associated weathering occurring. It is possible the area was obscured by vegetation after the time of petroglyph production and has only recently been exposed through the disturbances associated with adjacent road constructions. There is evidence of heavy vehicle damage (incisions and scraping) across areas of the platform. Rubble occurs at the north/eastern section and a small amount of dumped bitumen. An engraved 'X' shape is positioned on the north side of the bitumen.



Plate 9: Petroglyph & possible Grinding Groove



Plate 10: Bitumen to north of Petroglyph



Plate 11: Platform east of Engravings Trail with Petroglyph location

Previously Recorded Sites Located during Bantry Bay Survey

Previously recorded sites close to the track alignment included rock engravings at AHIMS # 45-6-2929 and # 45-6-2798 in the western half of the proposed route. In the eastern half of the proposed route rock engravings were located at AHIMS # 45-6-0011, # 45-6-2182 and # 45-6-0655 with one shelter with deposit occurring below the track at # 45-6-1003. A shelter with art is located at # 45-6-2067.

AHIMS # 45-6-2929

This site was not relocated. Numerous sandstone platforms occurred on either side of the management trail in the vicinity of the site. These were walked over and checked however visibility was hampered by direct sunlight overhead reducing effective shadow relief on the platforms. It is unlikely that this site will be impacted upon by the proposed track as the trail will follow an existing road.

AHIMS # 45-6-2798 Emu & Man Frenchs Forest

One serpent-like petroglyph and one large, partly obscured petroglyph were observed at this location. The petroglyphs are in good condition and show no signs of damage from modern use of the area. Vegetation partly obscures one of the images and is likely providing a protective measure of screening. The petroglyphs are positioned 6.5 metres east of the management trail. This trail appears to be in use already as a bike track and trail bike track as was observed during the survey. It is unlikely the proposed track would increase site visitation or cause damage to the site.

AHIMS # 45-6-0011

This site is not located near the impact corridor.

AHIMS # 45-6-2182 Bluff Track

An existing track, part of the proposed bike trail, runs directly over the top of the petroglyphs at this site. One large macropod (Plate 14), one partial and faded macropod (Plate 13) and one grinding groove were observed at the location during the survey. The existing track runs over part of the macropod (Plate 14). A highly weathered image is adjacent to the macropod. The weathering may be due to the image being older and at an advanced state of weathering, of shallower production or more weathered due to use-wear from modern walkers and bike riders. The grinding groove is positioned to the east of the track and is not being impacted upon. Scratched graffiti was observed on the platform at the time of the survey (Plate 14).

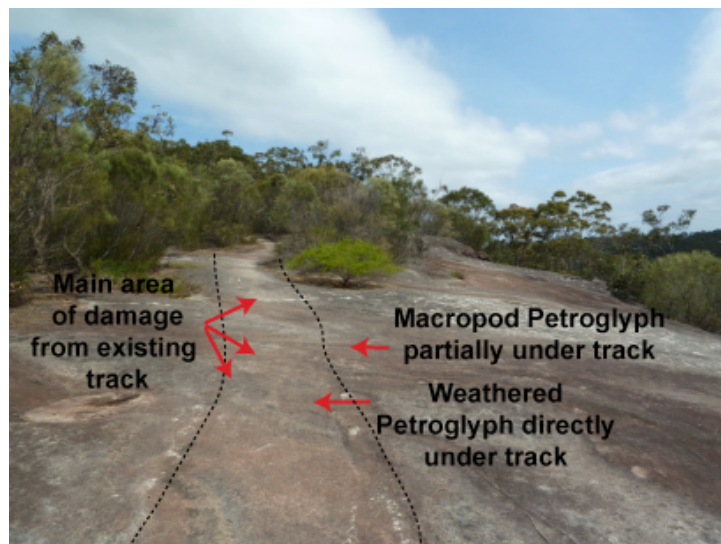


Plate 12: # 45-6-2182 Platform



Plate 13: Faded Petroglyph under track



Plate 14: Macropod Engraving under track with scratched graffiti



Plate 15: Northern edge of platform showing damage from modern use

AHIMS # 45-6-0655 Frenchs Forest Bantry Bay Road

This site consists of a large sandstone platform with numerous petroglyphs (Plate 16). Official care has gone into this site with a protective fence along the eastern part of the platform adjacent to the Engravings Trail. This trail is likely named after the platform. National Parks and Wildlife signs on the Engravings Trail side proclaim the site with no trail bikes, push-bikes and hikers allowed. Petroglyphs of humans, a variety of marine organisms (Plate 19), boomerang shaped objects, shields (Plate 18) and other geometric designs occur across the platform. The proposed bike track follows an existing track on the western edge of the platform (Plate 17). The track is separated from the petroglyphs by a screen of thick bushland, the closest petroglyph observed being at the north/western edge of the area approximately 15 metres east of the track (Plate 19). Minor graffiti has occurred on the platform and it is likely that the official signage has prevented significant damage to the site. An electricity transmission line runs above the east half of the platform and detracts somewhat from the aesthetics of the site. A row of small metal poles, approximately 60cm in height and 2-3 metres apart have been cemented into the northern edge of the main platform (running east/west). The existing track is causing wear marks across the edge of the platform which is likely to increase with construction of the proposed bike route (Plate 17).



Plate 16: North/west area of site # 45-6-0655



Plate 17: Western edge of platform with existing track-wear (pale stain)



Plate 18: Scratched Petroglyph/recent vandalism



Plate 19: Petroglyph closest to proposed track at the north/west area of platform

AHIMS # 45-6-1003

This site is located below the existing track route and will not be visible from the proposed route. It is unlikely to be impacted upon by the development.

AHIMS # 45-6-2067

This site is not located near the impact corridor. It is not visible from the proposed track.

Summary of Survey Results

Table 6 summarizes the results of the Bantry Bay archaeological survey.

Site AHIMS # or Name	Site Type	Visited during Survey	Potential Impact from Proposed Track	Track Realignment
Engravings Track	Rock Engraving	Yes	Moderate	No
Petroglyph				
45-6-2929	Rock Engravings	No	Low	No
45-6-2798	Rock Engravings	Yes	Low	No
45-6-0011	Rock Engravings	No	Low	No
45-6-2182	Rock Engravings	Yes	High	Yes
45-6-0655	Rock Engravings	Yes	High	Yes
46-6-1003	Shelter with Deposit	Yes	Low	No
45-6-2067	Shelter with Art	No	Low	No

Table 6: Summary of Bantry Bay Results

One new site was recorded and four previously recorded sites were visited during the survey. Two previously recorded sites were located directly along the track route as shown in Table 6 (# 2182 & 0655). The other two sites that were visited were visible from the track but are unlikely to be impacted upon by the development (# 2798 & 1003). The majority of the proposed route was hampered by thick vegetation cover creating a lack of exposures and low visibility. As a result, the overall estimate of effective survey coverage is considered low.

Recommendations for Track Alignment

The recommendations for track alignment relate to sites # 45-6-2182 and # 45-6-0655.

AHIMS # 45-6-2182

- It is recommended that the existing track be moved to avoid the platform and petroglyphs at site # 45-6-2182.
- An alternate route that avoids the platform is recommended for the proposed bike track.
- Consultation with Aboriginal stakeholders of the area into culturally appropriate management options for the site.

AHIMS # 45-6-0655

- It is recommended the track be moved below the western edge of the platform to avoid an increase in impacts to the site area.
- Consultation with Aboriginal stakeholders of the area into management options for the platform.

These recommendations have been carried out.

Additional Survey for Bantry bay bike track realignment

AHIMS # 45-6-2182 Bluff Track

An existing track, part of the original proposed bike trail, ran directly over the top of the petroglyphs at site AHIMS # 45-6-2182. A new track alignment has been designed to avoid the platform. The track makes use of a vegetation corridor above the platform, approximately 10 metres to the east. The new track follows the edge of a sandstone platform to the west of the main platform before descending northwards through the vegetation corridor (Plate 8). Two new petroglyphs were located along this platform, within five metres of the new route. The motifs are partially hidden under leaf litter and encroaching soil (Plates 6-7). It was decided during the site visit that the track should be realigned again to avoid the platform. This was achieved and the track now cuts completely between the two platforms along the vegetation corridor.



Plate 6: Location of new petroglyphs with track realignment



Plate 7: Petroglyph partially covered by vegetation



Plate 8: Walkers along north end of realignment. **Note:** Sandstone platform through vegetation behind walkers = location of newly discovered petroglyphs

Recommendations for Track Alignment

Significant damage has already occurred at this site. The new bike track realignment will not directly impact upon the fabric of the site, however it will be located between the platform's, effectively cutting through the site as a whole. Bike riders along the new track will likely continue to visit the platform which will see exfoliation of the platform and rock art increase. The east platform, being substantially covered in vegetation is unlikely to receive significant visitation as a result of the new track alignment. The recommendations are therefore as follows:

- There are no recommendations for the new track alignment which will avoid direct impacts to the site
- In relation to the existing trail, it is recommended that this be moved to avoid the platform and petroglyphs
- Consultation with Aboriginal stakeholders of the area into culturally appropriate management options for the site (possibility of cultural interpretation signage, education of the wider public, etc.)

AHIMS # 45-6-0655 Frenchs Forest Bantry Bay Road

A new bike route was surveyed below the western rim of the sandstone platform upon which this site is located (Plates 9-10). The new route covers a distance of approximately 200 metres (Table 2).

Survey Unit	Landform	Survey Unit Area (sq. m)	Visibility %	Exposure %	Effective coverage area (sq. m)	Effective coverage %
Area : AHIMS # 45-6-0655 New Alignment	Simple Slope – mid slope	200	<10	10	2	1

Table 2: New route below petroglyph platform survey coverage

No Aboriginal cultural heritage items were located along the proposed new bike route. The site platform is partially obscured from view along the new route due to current thick vegetation (Plate 10). Impacts to the site are likely to decrease due to the new track alignment.



Plate 9: Location of track realignment. Site platform behind walkers



Plate 10: Site platform partially obscured by vegetation cover

Recommendations for Track Alignment

The new track alignment will avoid the site platform. Therefore there are no recommendations for the proposed new bike route.

Summary

Through the process of desktop and field survey it is obvious that there is a very high density of recorded sites within the Bantry Bay assessment area. A statement of cultural significance of these individual sites and how they relate to the landscape is beyond the scope of this report however this density should be used to guide a sense of significance and underline the importance of adequate consultation with the relevant Traditional Owners and stakeholders.

Please note: As this document is designed for public exhibition purposes, all site coordinates and site location maps have been removed from this report in order to retain protection of heritage sites.