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Cultural Heritage Assessment Report

Aldinga Washpool Kurna Cultural Heritage

Summary of Revegetation Program Field
Survey and Consultation June 2018

By: Assoc. Prof. Neale Draper and Andrew Maland

Date: 15/07/2019

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Abbreviations

Term	Meaning
AARD	Aboriginal Affairs & Reconciliation Division, SA (former Agency name of DSD-AAR)
ACHM	Australian Cultural Heritage Management Pty. Ltd., Adelaide. (predecessor to ND&A)
AMLNRMB	Adelaide and Mt Lofty Ranges Natural Resources Management Board
DEW	Department of Environment and Water
DEWNR	Department of Environment, Water, and Natural Resources, SA. (Former Agency name of DEW)
DSD-AAR	Department of State Development, Aboriginal Affairs and Reconciliation Division, SA
GIS	Geographic Information Systems
GPS	Global Positioning System
KACHA	Kurna Aboriginal Cultural Heritage Association, predecessor to KNCHA
KHB	Kurna Heritage Board, predecessor to KNCHA
KNCHA	Kurna Nation Cultural Heritage Association Inc.
ND&A	Neale Draper & Associates Pty Ltd
NR AMLR	Natural Resources Adelaide and Mt Lofty Ranges

Executive Summary

Neale Draper & Associates Pty Ltd (ND&A) was engaged by the Adelaide and Mt Lofty Ranges Natural Resources Management Board (AMLRNRM) in June 2018 to conduct an Aboriginal cultural heritage assessment and consultation with the Kurna native-title holders (via the Kurna Nation Cultural Heritage Association, Inc., KNCHA) in relation to plans for revegetation work at the Aldinga Washpool, south of Adelaide.

The Board requested an archaeological audit of Aboriginal heritage sites in the vicinity of the Washpool and an updated anthropological survey of the area. The purpose of this study was to:

1. *Inform revegetation works planned in the near future; and*
2. *Provide Kurna with an updated, consolidated, document in relation to the cultural heritage values of the Aldinga Washpool that they can use into the future.*

In light of this, the Board was seeking a report which went beyond (but still included recommendations in light of) the legislation (SA *Aboriginal Heritage Act* 1988, 2016, the AHA) and captured other Kurna values and perspectives.

The project work included:

1. *Background research on the cultural heritage of the Aldinga Washpool and Blue Lagoon;*
2. *GIS spatial data preparation and field mapping, in relation to previously and newly recorded Aboriginal heritage sites, as well as in relation to proposed revegetation plans;*
3. *Three days of anthropological and cultural mapping consultation with Kurna representatives, one with senior Elders at the Natural Resource Centre, and two days of field survey work;*
4. *Preparation of the current report and associated GIS dataset, and any associated Aboriginal Heritage site records.*

The project was conducted by representatives from the Kurna Nation Cultural Heritage Association, Inc. (KNCHA), ND&A Heritage and GIS consultants, with assistance from staff from the NR AMLR and the City of Onkaparinga.

In June 2019, the Board requested the production of an edited, public version of the report, to further Kurna, local-community and Government Agencies consultation on the revegetation program and other land management issues. This summary report has been produced for that purpose, following consultation with KNCHA and having regard to Section 10 of the AHA, which requires that the publication of information on significant cultural heritage sites requires the approval of the Aboriginal Traditional Owners.

The entire coastal area from the cobble-fronted fore dune running between Silver Sands and Sellicks Beach (approx. 1,500m N-S), and inland to the Washpool and Blue Lagoon (about 250m E-W) was originally one extensive, traditional Kurna campsite and stone quarry-workshop. As recorded by Campbell (1988: 113), H.M Cooper from the SA Museum and others collected more than 1200 stone artefacts from this site, which also was heavily disturbed by sand mining for the Myponga pipeline in the 1950s, then by the construction of the Silver Sands Housing Development in the 1980s. Nonetheless, substantial archaeological evidence of this site complex remains along less disturbed coastal land today. The nearby Tjilbruke (Tjirbruki) spring also was disturbed by earthmoving and spoil dumping. Long term agricultural use has disturbed the Washpool and Blue lagoon, as well as the archaeological record of campsites and animal-hide processing on the inland, eastern margins, although substantial archaeological evidence still is preserved.

Updated heritage site boundaries for the Washpool area were provided in the main 2018 heritage survey report, and in updated Site Record Cards submitted to the Central Archives at DPC-AAR.

The proposed revegetation plan on the whole is a very positive step for the long-term preservation of the remaining archaeological sites and the cultural heritage values of the Aldinga Washpool area. The progressive restoration of native vegetation will have multiple benefits for cultural heritage management. The natural vegetation regime of the locality will be restored substantially, including useful traditional food plants (Banksia, pigface, etc.). Native fauna, particularly birds (including the Tjilbruke, the sacred ibis) will have improved habitat. The proposed restoration may not improve habitat for grazing animals such as kangaroos, which have probably benefited from clearance and more introduced grassland habitat. Past activities that have had a detrimental impact on the surviving archaeological record, such as agriculture, will cease. The pattern of revegetation also will provide a more stable landscape, to reduce further erosional disturbance of the remaining archaeological record in this area, which is highly significant both in scientific and cultural terms.

In general, the proposed Washpool revegetation plan will not damage, disturb, or interfere with the preservation of Aboriginal heritage sites and values around the Washpool and Blue Lagoon - in fact, this plan constitutes a most valuable site conservation and restoration program.

The Tjilbruke spring location south of the Washpool will require special remediation measures and some variation to the current revegetation plan, depending on the outcome of further consultation and engineering/hydrology study.

Revegetation work should be undertaken as much as possible by Kurna workers who also have cultural heritage monitoring training, so that any minor impacts on archaeological artefacts and features may be avoided through the minor ground disturbances entailed in this work. In particular, revegetation work around Blue Lagoon the mound site south of Loongana Road, and the coastal site (incorporating Sites 6527-1263 and -2682) should be conducted wherever possible, and in all cases be monitored by Kurna representatives, to ensure that any potential impacts are minimised.

Recommendations regarding the proposed revegetation plan are shown in Map 4-2.

The current pedestrian pathways that run through this area, particularly the mound site, should be redesigned to eliminate ongoing erosion to the site. The artificial water channels which currently drain the Washpool via an artificial outlet also need to be monitored for future stability, sustainability in relation to the revegetation regime, and potential impacts on the surrounding archaeological record.

Revegetation work on the eastern side of the Washpool, including previously cultivated land, may include shallow harrowing of the ground surface if required for removal of non-native vegetation and preparation for replanting. However, in the most archaeologically sensitive locations identified in the preceding paragraph on the seaward side of the Washpool, ground disturbance needs to be minimised as much as possible.

Herbicide use, i.e., spot spraying monitored by Kurna representatives, should be used for planting preparation within an Aboriginal heritage site, instead of broad acre spraying. It is acceptable to spray halo's (with knockdown herbicides) for planting in an Aboriginal heritage site. Broad acre spraying is acceptable for planting preparation outside of the identified Aboriginal heritage sites.

The currently grassed and tractor-mown areas bordering the Silver Sands Housing development, particularly in the vicinity of the Blue Lagoon site, currently have inappropriate vegetation cover and maintenance regime which diminishes the character of the sites and cause ongoing disturbance to the surviving archaeological record. It is highly desirable to return these locations to native vegetation as well.

Note that the four rectangular sections of land shown in Map 4-2 that border Justs Road and Button Road were not covered in the 2018 survey, due to 100% ground vegetation cover (grass) and the presence of a large flock of sheep. The proposed revegetation of this area was assessed, but the area was not subject to heritage survey under those adverse conditions. The cultural heritage status of that portion of the washpool vegetation area is unknown, and could include a significant archaeological record beneath the surface vegetation, as occurs to the west of this area.

Neither have we accessed or surveyed the agricultural plot on the NE corner of the Washpool study area (south of Norman Road and east of Nardoo Road), which was under crop at the time of the survey in June 2018.

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1 Scope of this Report

1.1 Project Brief

Neale Draper & Associates Pty Ltd (ND&A) was engaged by NR AMLR of the SA Department of Environment and Water (DEW) to conduct an Aboriginal cultural heritage assessment and consultation with the Kurna native-title holders in relation to the Aldinga Washpool, south of Adelaide.

NR AMLR requested an archaeological audit of Aboriginal heritage sites in the vicinity of the Washpool and an updated anthropological survey of the area. The purpose of this study is to:

1. *Inform revegetation works planned in the near future; and*
2. *Provide Kurna with an updated, consolidated, document in relation to the cultural heritage values of the Aldinga Washpool that they can use into the future.*

In light of this, NR AMLR was seeking a report which goes beyond (but still includes recommendations in light of) the legislation (SA Aboriginal Heritage Act 1988, 2016) and captures other Kurna values and perspectives.

The project work has included:

1. *Background research on the cultural heritage of the Aldinga Washpool and Blue Lagoon;*
2. *GIS spatial data preparation and field mapping, in relation to previously and newly recorded Aboriginal heritage sites, as well as in relation to proposed revegetation plans;*
3. *Three days of anthropological and cultural mapping consultation with Kurna representatives, one with senior Elders at the Natural Resource Centre, and two days of field survey work;*
4. *Preparation of a detailed cultural heritage survey and consultation report and associated GIS dataset, and any associated Aboriginal Heritage site records.*

In June 2019, the Board requested the production of an edited, public version of the report, to further Kurna, local-community and Government Agencies consultation on the revegetation program and other land management issues. This summary report has been produced for that purpose, following consultation with KNCHA and having regard to Section 10 of the AHA, which requires that the publication of information on significant cultural heritage sites requires the approval of the Aboriginal Traditional Owners.

2 Previous Aboriginal Heritage Research and Site Records

2.1 Previously Recorded Aboriginal Heritage Sites

There were six recorded Aboriginal heritage sites for the Aldinga Washpool area for the Aboriginal Heritage Act (1988, 2016) Central Archives. Not all of these sites are located within the actual study area, and only sites within the study area were inspected for inclusion in this report, although Kurna participants remarked that all of these sites have important cultural and archaeological connections.

Registered site 6527-1266 is the Sellicks Beach Tjilbruke (or Tjirbruki) Spring site, along the highly significant Tjilbruke Dreaming Track that has coastal and inland cultural sites stretching from Outer Harbor, Port Adelaide to the bottom end of the Fleurieu Peninsula south of Adelaide (Tindale 1987). The other recorded entries all are archaeological sites. Note that the alternative spellings Tjilbruke and Tjirbruki have been used variably in source documents referred to in this report, so that although "Tjilbruke" is used here, the alternative spelling is retained where it was used in a referenced document.

ACHM (2000) conducted a cultural heritage survey of the Washpool area with Kurna representatives in 1999, which resulted in the identification of 27 localities of Aboriginal, geological, geographical or historical interest. This information also is included in the subsequent ACHM/Kurna heritage audit for the Aldinga Washpool (ACHM 2007).

The main drawback of the current site records was that they all were recorded as single points, without reliable site boundaries on record, which limits their value for site management purposes such as assessing revegetation program benefits and potential impacts. The additional surface observations from ACHM (2000) illustrated the wider distribution of archaeological evidence, as well as the potential for that evidence to be revealed or concealed over time by natural erosion and deposition as well as human activities. Consequently, the 2018 field assessment made it a priority to inspect and re-record these sites as accurately as possible in terms of location and site boundaries).

Updated heritage site boundaries for the Washpool area were provided in the main 2018 heritage survey report, and in updated Site Record Cards submitted to the Central Archives at DPC-AAR.

2.2 Confidentiality of Aboriginal Heritage Site Information

Section 10 of the SA Aboriginal Heritage Act (1988, 2016) relates to the confidentiality of central and local archives of Aboriginal Heritage site information. Specifically:

"10. (1) The confidentiality of information entered in the central or local archives that relates to an Aboriginal site or object must be maintained unless

(a) the traditional owners of the site or object have approved disclosure of the information;" (SA AHA S.10(1)(a)).

Consequently, and more generally to protect these important Kurna heritage places, information regarding the specific locations and other potentially sensitive site information has been omitted from this public summary report. The information provided here has been approved by the Kurna Traditional Owners and native title holders (via KNCHA) for use in this report.

2.3 Previous Aboriginal Heritage Research.

2.3.1 Previous archaeological surveys

Several archaeological investigations have been completed at and around the Aldinga Washpool since the mid-1980s. These studies consist of both academic and consultant-based research. A generalised synthesis of these archaeological studies indicates that researchers have recorded an *"almost continuous occupation southwards from Snapper Point"* in the foreshore dune system (Campbell 1988: 114). Some of these sites are extremely dense with artefacts and archaeological features and very large. However, most sites in the Aldinga Washpool area have suffered greatly from coastal erosion, farming practices, housing development, and artefact collectors.

In her Master's thesis, Campbell (1988) recorded extensive campsites and a number of native wells in the Aldinga Scrub and Washpool area. One such spring is recorded south of Button Road close to the Washpool (Campbell 1988: 204, Gara 1988: 14). Tindale believed this to be the spring named in the Tjirbruki legend for Sellicks Beach (Tindale 1987). It appears very likely that the old well in the coastal dune in the southwest project area and the Tjirbruki spring are the same feature. The spring originally was a soakage, constantly requiring the removal of encroaching sand to access the fresh water. In order to maintain the water supply in a useable state, it is likely that the early colonial farmers lined the soakage with stone to provide easier access to the water. The well has recently been covered with dumped land-fill, but its position is marked by a depression with a thick clump of sedges.

Campbell (1988: 103-111) also located and recorded a number of sites within the dunes to the north and south of Norman Road. Residential development was taking place during the 1980s and much of this evidence has been lost. The large campsite located in 1979 adjacent to Norman Road in a sand dune blow-out was “one of the richest located on the coast” (Campbell 1979: 1988:103). The site covered 100 metres by 60 metres. Another site was located 300 hundred metres to the north. Containing many artefacts, ochre and remains of shells and mulloway otoliths, these campsites are spatially separated by another archaeological feature of broken and split beach cobbles. This area is an important southern quarry source of stone for making stone tools.

To the north west of the Blue Lagoon and south of Norman Road a number of hearths (cooking ovens) were uncovered and dated. Dates ranged from 640 +/- 90BP to 2,560 +/- 60BP (Campbell 1988:105). Materials observed consisted of hearth stones, charcoal, bone, crab, and artefacts of quartz and quartzite such as flakes, cores and a hammer stone. Campbell’s site AS13 to the north of the Washpool over Norman Road recorded 113 archaeological items per square metre in 1979 despite it being well known to collectors for years (Campbell 1988:107). By 1986, however, there were few artefacts remaining on the surface.

Further south, Campbell (1988: 113-119) recorded archaeological material between Norman Rd and Cactus Gully at Sellicks Beach and discusses a “very large site reported by early collectors from the 1940s onward” which covered several hundred square metres (Campbell 1985: 2). This was only 50 metres south-east of the previously mentioned ‘hearths area’ adjacent to the Blue Lagoon. This particular site was also known to artefact collector and amateur archaeologist, H. M. Cooper, who was based at the SA Museum. Cooper’s “Site 76” consisted of “an extremely large campsite showing great richness and diversity” (Campbell 1988: 113). Cooper collected over 1200 stone artefacts from this area, including a wide range of artefact types. Other collectors also visited it. This significant site was destroyed by the removal of sand for construction of the Myponga pipeline and subdivision for housing development which began in 1959.

South of Button Road the sand dunes have reduced in size and eventually merge with the southern natural outlet for the Washpool. The original landscape south of Button Road is no longer obvious due to the infilling by the landowner in the 1980s and later in the early 1990s. This is a great loss for Kurna culture and archaeological research. Campbell (1988:125) stated that the sites south of Button Road were both “extensive and endangered...and presents the most complex archaeological structures”. The area has been progressively filled by truck-loads of rubble and other land-fill. One assumes that the substantial archaeological record seen by Campbell, and the remnants observed by Gara (1988) and Draper in the late 1980s-early 1990s, together with the Tjirbruki spring, are still present underneath the fill.

Gara’s 1988 report for the proposed Sellicks Beach Marina on Aboriginal sites of the Sellicks Beach-Aldinga area traces much of Campbell’s (1988) research in the area. This archaeological survey found areas of Indigenous occupation on high ground over an area of 100 x 50 metres on the western side of the Washpool on an island within the lagoon (Gara 1988:16). The locations of Gara’s artefact scatters were relocated and verified by ACHM archaeologists and Kurna representatives in 2000.

Wood (1996) produced a desktop study for Kinhill Engineers on the Indigenous heritage in relation to the proposed wetland re-establishment, which summarised much of the previous research. Her report is valuable for understanding the historical order and extent of previous investigations at the Aldinga Washpool area.

South of the current Washpool study area and continuing to Sellicks cliffs is an extensive camping and artefact workshop area which was investigated by Draper and Knight (1998). Draper and Knight conducted an Indigenous cultural heritage assessment of Sellicks Beach, which illustrated that Indigenous land use extends south of the Washpool.

ACHM (2000) conducted the most recent investigations at the Aldinga Washpool). This heritage study relates to recent work by NR AMLR and City of Onkaparinga to implement actions identified in the Washpool Lagoon and Environs Management Plan (2007) to reinstate the Aldinga Washpool. The area investigated by the ACHM (2000) study included the proposed Aldinga Washpool redevelopment area and the adjacent foreshore dune remains, which resulted in the identification of 27 localities of Aboriginal, geological, geographical or historical interest (Maps 2-2 to 2-4).

The ACHM (2000) survey documented that modern rubbish has been dumped south of Button Road, thus creating a jumble of low mounds with broken brick and building rubble, calcrete fragments, and non-native grass and weed species. As a result, the rubbish fill covered a previously reported artefact scatter and the location of the Tjirbruki spring (ACHM 2000:10, Campbell 1988).

One of the main recommendations from the ACHM 2000 work was that Kurna and the City of Onkaparinga need to work together to develop a mutually acceptable approach to the remediation of the Washpool as a living entity.

"Earthmoving and excavation work to reinstate the Washpool is likely to disturb significant archaeological remains. The shoreline is likely to contain sub-surface shell middens and stone artefact workshop/ camp site areas. There is also the possibility that human burials may occur in the area, with Blue Lagoon being the most sensitive location, based on current information. At the same time, it seems likely that some silt removal may be necessary to create sufficient depth to re-establish a healthy wetland. This would most likely involve silt removal from Blue Lagoon as well as the Washpool bed, for mediation of high and low water flow situations. This is a matter for negotiation and reaching a mutually acceptable approach between the Kurna and the responsible Committee. We recommend that a formal working relationship be established between the two parties, via KACHA...[now KNCHA].... Ideally, carefully planned and monitored removal of recent silt should not involve any disturbance to Indigenous archaeology or burials." (ACHM 2000: 17-18)

The areas close to the Washpool have been noted to contain burial areas. On his field map for the Willunga region, Norman Tindale noted a report of a 'native burial ground' at the north-east corner of Blue Lagoon. One local resident wrote to a local environmental group:

"One thing that may be important that my uncle told me concerns the area just off Norman Road opposite Acacia Terrace between Norman Road opposite Nardoo Road. I asked my uncle why he did not plough a particular area there. He said that when he had ploughed too close to that area bones had been dug up. I think it may be an Aboriginal burial ground." (Johnson 1988: 2).

The Blue Lagoon area is in the northwest corner of the study area, and numerous Aboriginal archaeological sites have been documented within its immediate vicinity.

23.2 Previous anthropological surveys

The coastal zone from Silver Sands (adjacent Aldinga Scrub) to the cliffs just south of Sellicks Beach is a continuous area of Indigenous cultural heritage, incorporating culturally significant landscape features (e.g., Washpool, Blue Lagoon, Tjirbruki spring - Figure 2-1), the associated archaeological record, and numerous traditional Indigenous burials.

The association of the Kurna creation Ancestor Tjirbruki with this locality is summarised in Tindale's account of the Tjirbruki Dreaming Track along the Adelaide and Fleurieu Peninsula coastline (Tindale 1987). Tjirbruki was carrying the smoke-dried corpse of his nephew south along the Adelaide coastline, towards Rapid Bay. He stopped frequently to rest, and each time he cried for his nephew. At each place his tears fell to the ground a freshwater spring was created. At Port Willunga, he made a spring on the beach, which is covered by the sea at high tide, but accessible when the tide goes out. From there, Tjirbruki continued southwards.

"The old man then carried the body to [Witawali] on the beach north of Sellicks Hill. He noticed that there was a fine bay which would serve at night as a good netting place for sea salmon. His tears were still flowing and brought a spring into being there (vicinity of Section 639, Hundred of Willunga)...while there, Tjirbruki began to think of further grudges and as he was passing through the pangkara of the Witjarlung families it disturbed him that they had failed to pass on his message of forgiveness to Kulultuwi and his other nephews. Instead of continuing along the beach he turned inland and climbed over Sellicks Hill." (Tindale 1987: 8).



Figure 2-1: Kurna Elder Paul Dixon (now deceased) at the Tjirbruki spring site (AAR Site 1266) in 1999

The beach, adjacent wetlands and fresh water spring in the Washpool area is thus identified by Kurna as a sacred place. It had an abundant food and water supply for gatherings of Kurna people (Campbell 1979: Gara 1988;; Wood 1996), as well as hosting ceremonial, social, and trading visits from the Ramindjeri of Encounter Bay and the Lower Murray and Coorong people. Claypans and flats bordering the Washpool and Blue Lagoon were used in late summer for pegging out and curing possum skins and other animal hides, to be sewn into cloaks and blankets for the coming winter, including for trade with other groups (Campbell 1988: 119; Gara 1988: 6; Wood 1996: 2). Margaret Nobbs (1973: 9-10) has suggested that the hide-curing properties of the lagoon mud may be due to the inflow of magnesium and calcium-enriched water flowing in from limestone outcrops in the nearby hills (Gara 1988: 6).

Tindale recorded on his Willunga field map (S.A. Museum) that the Washpool's name is Wangkondanungko, meaning "possum place". This is consistent with the Adelaide Region vocabulary published by the Missionaries Teichelmann and Schurmann (1840: 52), who recorded "Wangko" as meaning "a small opossum". Tindale noted on the field map, under this place name: "opossum place (lagoon) a place for pegging out opossum skins to cure for cloaks". Tindale also provided the following details to Margaret Nobbs:

"...the lagoon was considerably reduced in size during the summer months and the mud on the southern edge of the lagoon was known by the Aborigines to possess qualities eminently suitable for the preparing and curing of skins ... Aborigines came from miles around in the late summer, and of course, the first-comers bagged the best sites. Animal skins, for example, possum and kangaroo, were collected, brought to the site and pegged out with little wooden pegs, fur side uppermost ... The smaller skins when softened were punctured around the edges with a small pointed stone or bone implement and then joined by fibre or hair threaded through the holes. Large skins were simply thrown over the shoulders to serve as clothing." (Nobbs 1973: 9-10, quoted in Gara 1988: 6).

About 10 km north east of the Washpool is the town of Willunga. There are numerous salt lagoons between Willunga and Glebe about the same distance again to the NNE. Of these lagoons, Tindale wrote:

"The native method of preparing skins consisted of pegging them out on the ground, fur side down, and covering them with ashes. They were afterwards laid over a stick and scraped. The moisture exuding from the skin was likened to shallow water on a flat salt lagoon. Hence in this story of the heroic age, the skins, as they fell, became salt lagoons which impeded the progress of the raging fire before which the three fugitives were escaping; the country between Kalpang and Malbindjerang is today covered in these lagoons." (Tindale 1935: 269n, Lucas 1989).

Lucas (1989) points out that although there is no currently known connection between the Washpool and Blue Lagoon with these lagoons further inland, it is almost certain that there is a similar cultural connection.

The Washpool was the site of a proposed Marina, residential housing, shops and hotel development proposal in the late 1980s. Following the preparation of the Sellicks Beach Marina-Residential Project draft environmental impact statement in 1988 (Gara 1988), a strong representation against the proposal by Kurna people led to a further, anthropological study of the Washpool area by Rod Lucas (1989). Lucas also visited the Washpool and other Tjilbruke sites with Georgina Williams.

The Washpool was also adjacent to the major Aboriginal trails that ran north-south along the coastal plain, but were also linked from Sellicks Hill south along the Fleurieu Peninsula coast, and southeast through Myponga to the Hindmarsh Tiers, then down to Encounter Bay. Other travelling and trade routes ran across the Adelaide Hills from Red Ochre Cove to Mt Compass, and then down to Goolwa and the Murray River and Coorong routes.

"Given the extensiveness of these trade routes, and the value attributed to prepared possum and kangaroo skins, it is possible to infer that the Washpool was a site of considerable economic importance. It was possibly a site the control of which had widespread implications for the economic and political structures of traditional Kurna society". (Lucas 1989).

Lucas' study was important for its focus upon contemporary Indigenous views on the cultural meaning and significance of the Washpool. He found that the extensive cluster of Indigenous sites in this locality "...act as a focus for three interrelated issues which are of profound Indigenous concern." Lucas (1989) identifies these issues as:

- Environment;
- Education; and
- Cultural revitalisation.

According to Lucas, this significant area also included Blue Lagoon and an associated burial ground beneath the northern end of the Silver Sands residential development, the Silver Sands coastal dune camp sites and spring, and Aldinga scrub. Note that the burial ground appears to have been identified on the basis of a notation on Tindale's Willunga field map and an anecdotal reference in Johnson (1988). There are no registered Aboriginal heritage burial sites or exact locations recorded for burials in this area, although the potential for burials to exist there should be recognised on the basis of these references.

Lucas' informants expressed similar views on the need to preserve and rehabilitate the Washpool in a naturally functioning wetland context, which would support native plants and wildlife, as well as retaining the essence of the cultural landscape made by the Kurna creation Ancestors. This was seen as having some interpretative and educational potential for tourism and schools –but more importantly, for the cultural survival of the younger generations of Kurna people.

ACHM undertook anthropological consultation at the Washpool (ACHM 2000; see also Figure 6 of this report). This consultation involved a large number of Kurna participants, and also included a summary of discussion held by individuals claiming Ramindjeri descent. Because this consultation involved a generally consensus view from Kurna regarding the Washpool, the results of this consultation is quoted in full below.

"Rose Dixon and Joan Lamont visited the site together on 23 June, 1999. Like sister Georgina Williams, they have opposed threats to the Washpool for many years. They were dubious about any major engineering works as a part of the wetland's rehabilitation, though they have not had any detailed information on why re-excavation of silted ponds might be necessary etc. Certainly feeding habitat for the black swans and other avifauna need to be retained. They want extant native vegetation to be disturbed as little as possible. They believe that any wetland rehabilitation and management process must recognise the great cultural heritage significance of this locality for Indigenous people, particularly the Kurna Traditional Owners. Involving Kurna fully, on the management of the rehabilitation and the future management of this area, is essential to recognise and support their traditional cultural status and responsibilities with respect to the area. This is most important to them – ongoing recognition and involvement in looking after this area and the Washpool, not just a consultation with them about a process that is otherwise external to them.

I...[Neale Draper]...returned to the Washpool with Georgina Williams on 28 June, 1999. She said that the Washpool cannot be seen separately from the bare hills behind it – they need to be revegetated – with native forest, not plantation timber – so that the sediment will stop washing down to the Washpool – otherwise the wetland and lagoon won't be able to survive. She reinforced the great cultural importance of this place as a part of Tjirbruki, and a place for camping, preparing the traditional skin cloaks, and with the adjacent beach and forests – a provider of abundant food. The Washpool needs to be a natural wetland again, but it is first and foremost an Indigenous place – a Kurna place.

I also stopped at the Washpool on 5 July, 1999, at the request of Karno Walker, as we returned from a field trip to the Hindmarsh Tiers, overlooking Victor Harbor. Karno is a Ramindjeri man – the Encounter Bay and southern Fleurieu neighbours of the Kurna. He stated that the Washpool and the area around it are very significant to him, and for his family (the spring, the fishing beach, the scrub, the old camp sites etc). He recognises the Kurna people as the Traditional Owners of the place. He wanted me to record that Ramindjeri supported the significance and the Kurna custodianship of the place, and that the Washpool area is also sacred to the Ramindjeri, who traditionally attended the gathering held there as guests and neighbours, and who also shared in the Tjirbruki Dreaming, travelling along the coastline as far south as Deep Creek. He stated that the Kurna have the final say over this place, but Ramindjeri would like to be also involved in consultations which might have a serious impact on it." (ACHM 2000: 16-17).

This anthropological consultation identified that Aboriginal people from neighbouring groups recognise that Kurna are the appropriate Aboriginal Traditional Owners for the Washpool area, and that there is great concern about ground disturbing activities at the Washpool impacting on the Aboriginal heritage values of this location. These concerns, however, could be mitigated and controlled to a large extent through the involvement of Kurna representatives in the management of the Washpool area.

3 Proposed Revegetation Program at the Washpool

3.1 T&M Ecologists (2016) Report

T&M Ecologists Pty Ltd conducted a vegetation survey and mapping project for the Aldinga Washpool (T&M Ecologists 2016) for Natural Resources Adelaide and Mount Lofty Ranges. The report noted that "The Washpool Lagoon at Aldinga Beach is one of very few remaining coastal freshwater and estuarine lagoon systems along the Adelaide metropolitan coast, and provides significant habitat, biodiversity, cultural and spiritual values." (T&M Ecologists 2016: 4)

"Vegetation was mapped into twelve distinct associations, of which nine were considered to be indigenous vegetation types. Comparison with 2008 vegetation mapping showed a decrease in overall extent of indigenous Samphire shrublands and Wilsonia herblands. Whilst drivers for the former were unclear, the latter is likely to have decreased due to current land use practices in areas on the eastern side of the Washpool lagoon. Condition mapping also indicated a decrease in condition of these Wilsonia herblands to the east of the Washpool lagoon since 2008. There was an increase in the area of coastal shrubland considered to be in good condition, likely due to weed control and revegetation programs in this vegetation type". (T&M Ecologists 2016: 4).

The vegetation association mapping from the 2016 study is shown in Map 3-1.

The assessment of the condition of the vegetation of the Washpool study area is shown in Map 3-2.

3.2 EBS Ecology (2018) Report

From the baseline information of the T&M Ecologists (2016) vegetation mapping survey, EBS Ecology (2018) prepared a detailed revegetation plan for Aldinga Washpool and Blue Lagoon. The revegetation initiative was foreshadowed in the earlier QED (2007) Washpool Lagoon and Environs Management Plan.

The EBS report provided the following general description of the revegetation strategy:

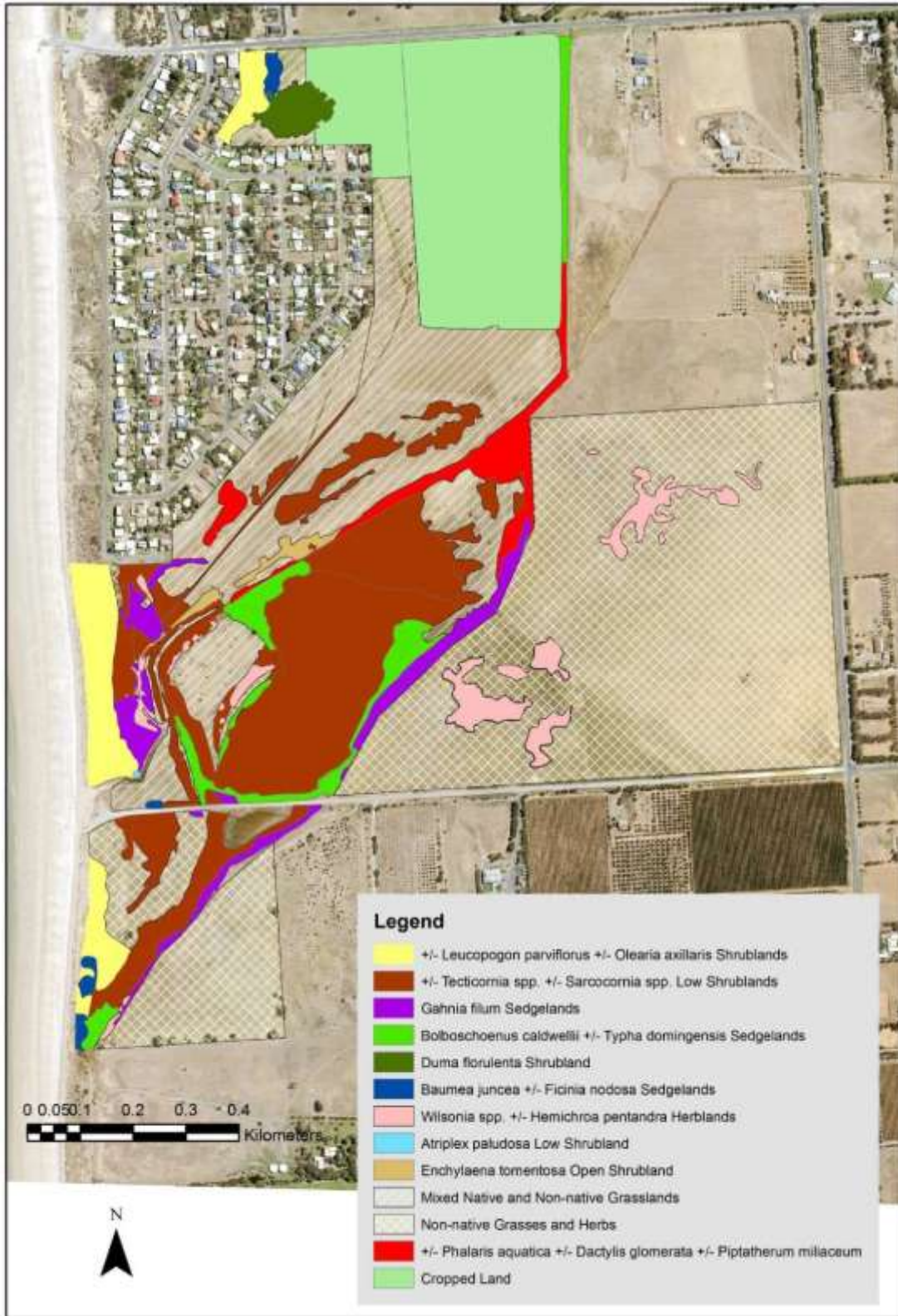
"... the existing Washpool and Blue Lagoon site has high ecological value as a seasonal wetland and associated vegetation communities which have been otherwise largely cleared or highly modified in the local area. The surrounding sections of the Washpool are low in ecological diversity being used long term for agriculture and recreation which has not maintained indigenous vegetation communities.

The revegetation plan and planting scheme is intended to recreate and integrate with remnant local vegetation communities in terms of over, mid and understorey species which are realistically achieved in terms of germination, growth and sustainability. The Southern Kaurna Place Names Project (2014) had the following extract taken from Morphet (1827).

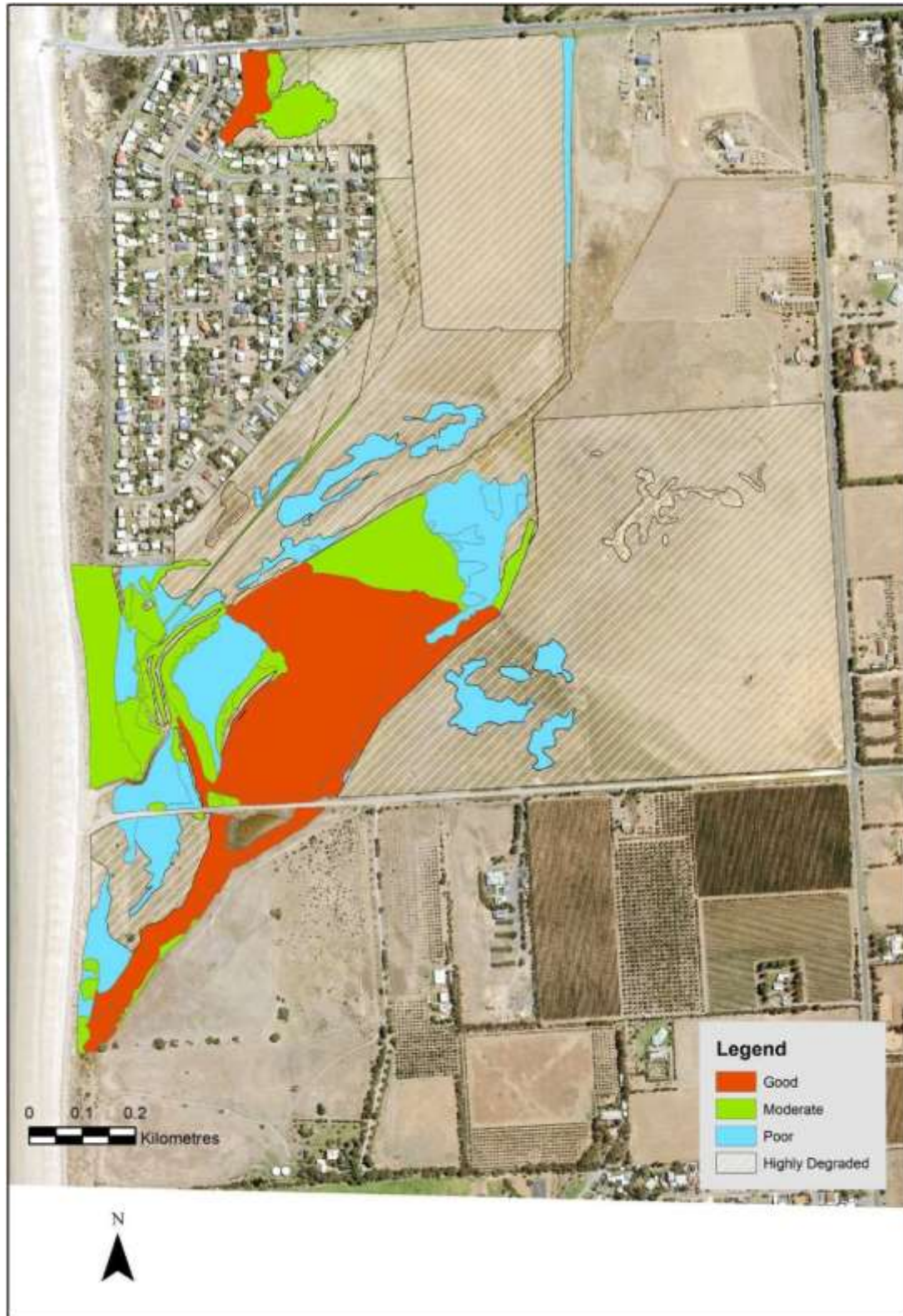
'A gentle slope, called by the natives 'Aldinghi Plains'. The upper part consists of the same sort of land as the hills – [by which he means "covered with a very nice herbage, and much more bare of trees than we have hitherto seen" further south] – and would do admirably for sheep-runs in winter. The lower part is impregnated with salt, being beneath the level of the sea at spring-tides, and this imparts a brackish taste to the rains, which collect there during the winter months, and form a small lake.

This place has a very singular and interesting aspect from the sea. The sloping grassland in front, without a single tree for three or four miles square, of a beautifully bright green in winter and spring, and a golden colour during the hotter months, – [He probably heard about this from his guide Bates] – is surrounded by finely wooded eminences, and a bold range of hills beyond.'

*Other descriptions include statements such as "English gentlemen's park", density of grasses that made passage difficult and a general lack of tree cover over than small groves. This would indicate that tall dense grass species such as *Themeda triandra* (Kangaroo Grass), *Aristida australis* (Three Awn) and potentially *Poa labillardieri* (Tussock Grass) would have been dominant components of this landscape in the areas surrounding the riparian zones. As a result the planting plan will focus on recreating that dominant cover in areas currently used for pasture and cropping with a restoration focus on areas which are currently subject to natural (altered) wetting and drying regimes." (EBS 2018: 11).*



Map 3-1: Aldinga Washpool vegetation association mapping (T&M Ecologists 2016: Figure 3.1.1).



Map 3-2: Aldinga Washpool vegetation condition assessment mapping (T&M Ecologists 2016: Figure 3.2.2).

The pattern of land ownership for the Washpool/Blue Lagoon area is complex (Map 3-3), including DEW, City of Onkaparinga, SA Water and the Department of Planning, Transport and Infrastructure.

Consequently, the EBS (2018) plan divides the study area into five precincts with differing land tenure/access and vegetation structure characteristics, for progressive implementation over a notional five year plan (Map 3-4, Table 3-1).



Map 3-3: Aldinga Washpool and Blue Lagoon land ownership (T&G Ecologists 2016: Figure 2.1).

"The site has been divided into five precincts so that targeted management can occur dependent on association with the level of costs, management, extent of revegetation required and tenure procurement. Precincts 4 and 5 are largely vacant or agricultural land and therefore are requiring extensive work in terms of planning, preparation and maintenance. Precincts 1 and 2 are less intensive in revegetation requirements but may require more work in terms of ongoing maintenance and weed control in areas that have semi intact vegetation present.

A staged planting approach is proposed with a 5 year timespan. The approach is based on improving and enhancing semi-intact areas as the first priority with weed control and supplementary planting consolidating the primary habitats present within the Washpool area." (EBS 2018: 26).

Table 3-1: Summary of precincts (Map 3-3) and proposed revegetation stages (EBS 2018: Table 8).

Precinct	Nomenclature	Stage	Area vegetation (ha)
1	Washpool Central	1	10.04
2	Washpool South	2	7.97
3	Blue Lagoon	2	1.86
4	Washpool East	Years 3 and 5 under Option 1 utilised or year 4 if	26.73
5	Norman Road	Year 4 if Option 1 utilised, Year 3 if Option 2	13.85
Total			60.45

In relation to the proposed revegetation program, the EBS (2018) report noted the importance of cultural landscape protection in its planning and implementation.

"2.2.3 Protection and enhancement of cultural landscapes

Given the high levels of degradation since the early 1900's including removal of dune remnants in the south esplanade area, protection of existing cultural values in the study area are important in considering the restoration., The study areas significant cultural sites are not unreasonably disturbed or obstructed as part of any plantings, [sic]" (EBS 2018: 6).

The main considerations for cultural landscape and cultural heritage site protection in relation to the revegetation plan are:

- (a) That plantings are appropriate to the cultural values of particular places, as perceived by the Kurna traditional owners; and
- (b) That site preparation work and replanting does not significantly impact Aboriginal heritage sites, objects, remains or values.

In relation to these considerations, the EBS (2018) report notes:

“3.2.1 Site preparation and planting

Areas where revegetation is to occur will need to be adequately prepared by controlling exotic species and unwanted competitors. Knockdown herbicide applications occurring two to three weeks before planting is scheduled to begin is recommended. This is summarised below;

- Mark strips / areas with marker stakes, applying a 5 metre width strip alternated with 5 m unsprayed areas.*
- Ensure weather conditions are appropriate for spraying. Ensure viticulture friendly herbicides are used (eg: no ester or volatile solvent based sprays)*
- The first weed spray should be undertaken in the spring prior to the planting period. The preferred herbicide is a glyphosate based herbicide such as Weedmaster Duo® (360g/L glyphosate) or Roundup Biactive® (360g/L glyphosate), diluted at a rate of 1L per 100L of water, plus a metsulfuron methyl “spike” at a rate of 10g per 100L of water. The spike is recommended to accelerate brown out and visibility of sprayed area.*
- Inspect the site to analyse the effectiveness of the initial weed spraying. If control has not been 100% effective or more weeds have germinated since, then a second spray event may be needed in the pre planting period to ensure 100% control and reduction of the seed bank. (EBS 2018: 12-13).*

As the study area undoubtedly contains sub-surface archaeological sites and possibly also burials, it is important that the capacity of associated materials such as bone, shell and charcoal for radiocarbon dating and/or stable isotope analysis (for bone and shell in relation to dietary analysis) is not compromised by chemical contamination from pesticides or fertilisers. Consequently, it is recommended that herbicide use, i.e., spot spraying monitored by Kurna representatives, should be used for planting preparation within an Aboriginal heritage site, instead of broad acre spraying. It is acceptable to spray halo’s (with knockdown herbicides) for planting in an Aboriginal heritage site. Broad acre spraying is acceptable for planting preparation outside of the identified Aboriginal heritage sites, as well as in previously identified Aboriginal heritage site areas which have been subject to agricultural ploughing and cropping (e.g., the north west corner of the study area).

4 Results of the Kurna Heritage Consultation and Site Inspection, June 2018

4.1 Kurna Consultation: General Considerations

Several important cultural considerations regarding the Washpool/Blue Lagoon area were recorded from the Kurna consultation session held at Natural Resources AMLR at Eastwood on 15 June 2018.

One of the most important considerations for all of the Kurna Elders consulted, is that the Aldinga Washpool, Blue Lagoon, Aldinga Scrub and Silver Sands down to Sellicks Beach comprises a single cultural landscape from their perspective. While they appreciate that projects like this one have prescribed boundaries and priorities, they want the stakeholders to recognise this connection of the project area as part of an integrated cultural landscape and keep it in mind.

It was recommended that the open woodland revegetation program should include useful Kurna food plants, in particular *Banksia (ornata and marginata)*, from which the nectar has been traditionally used to make a sweet drink, mixed with water. It was noted that both species are present in Aldinga Scrub. Pigface is an important plant along the coastal sandy areas, with both its blossoms and their nectar being traditional foods, as well as food for native fauna. Comments from NR AMLR noted that *Banksia* species *B. marginata* is found in the adjacent Aldinga Scrub, (the status of *B. ornata* is uncertain), and may be considered for the possible woodland plantings, although they were not flagged in the comparative/ sample communities by EBS. NR AMLR noted that these species may not be typical of the Washpool sand dune vegetation or Coast Beard-heath shrub lands here. It also was noted that *Kenendia* is proposed in the Washpool revegetation plan, which may represent an alternative or additional choice.

The Tjilbruke spring site as the southern, coastal end of the study area is a place of particular concern. The Kurna participants are aware that the site has been damaged by dumping of soil and debris. Georgina Williams was concerned that this site did not receive a commemorative cairn in the 1986 State program celebrating the Tjilbruke Trail. However, other Kurna Elders were concerned that cairns at some other sites such as Red Ochre Cove had attracted unwanted attention and vandalism, and the general consensus was that they would prefer to rehabilitate and protect the site as far as possible, without advertising its presence with a commemorative cairn, as it is directly adjacent to Sellicks Beach which has a high degree of public use. The spring site was highlighted as a priority for the subsequent site inspection, for evaluating the best way forward to protect and rehabilitate the site.

4.2 Northern Section & Blue Lagoon.

Blue Lagoon is situated at the northern end of the survey area, east of the Silver Sands residential development and south of Norman Road. The current Lagoon area is completely covered in dense lignum bushes, and this area defines the lowest and wettest part of this stranded drainage area. It is bounded on the west and southern sides by the remnant of archaeological residential mound sites that have been partly disturbed/ destroyed by the neighbouring housing development. This archaeological site has been partially recorded by Val Campbell and later Tom Gara (1989) There is a registered Aboriginal heritage site, a stone artefact scatter with bivalve shells, crab claws, oven stones and charcoal exposed on the deflated sand dune in the neighbouring residential blocks to the east, now with houses constructed on it. The site record notes:

"Site consists of scatter or stone artefacts and faunal remains in deflated sandy area west of Blue Lagoon. Stratified material is clearly visible in exposed dune profiles along the eastern side of the site."

"Site has been deflated and also disturbed by rubbish dumping. In situ material remains within the dunes along the eastern side of the site." (Gara 1989 Site Record 6527-1886 Blue Lagoon Campsite 1).

The original site extends across the fence from the residential properties into the adjacent, eastern Blue Lagoon Paddock, where the ACHM (2000) report map noted an archaeological mound, together with another mound area on the opposite, south-eastern corner of Blue Lagoon, again truncated by a housing development.

As a result of our site inspection, the City of Onkaparinga changed their maintenance of grassland in this area to using a tractor with turf tyres rather than the traditional knobby tractor tyres, as well as using a less intrusive mowing deck which cuts higher (200mm). They will also be reducing the amount of cuts throughout this boundary, mainly in spring and prior to the summer fire season.

The main reason for maintenance of a mown grass boundary is for fuel load management (keep high grass low in summer), for fire protection for the coastal residential development adjacent to Blue Lagoon and the Washpool. The City of Onkaparinga noted that there are potential access and fire management issues related to extending revegetation to this boundary, in addition to proposed stormwater management easements to prevent flooding of adjacent residential properties.

The lignum-covered Blue Lagoon location represents only the lowest point of this former wetland, which in a good rainy season in the past would extend widely across the low-lying area north and east of the mound/ sand-dune camp site bordering it on the south and west, and northwards to the sand hill camp sites on the dunes at the southern end of Aldinga Scrub (e.g., Site 6527-3684 Aldinga Scrub Campsite), on the northern side of Norman Road (Figure 4-1). The ACHM (2000) report noted isolated artefacts (cobble, fire-cracked cobble) in the northern part of the Blue Lagoon paddock.



Figure 4-1: View north from the southern mound adjacent to Blue Lagoon towards the vegetated, sand-hill camp sites in Aldinga Scrub, illustrating the former, wet-season extent of the lagoon. Note the tractor-mower impact and grass over introduced top dressing.

The extended site area mapped in the field was originally a very large archaeological camp site on sand dunes. The dark soil visible under the introduced grass cover in Figure 4-1 shows that the surface of this site also has been disturbed through the introduction of top-dressing for growing this golf-course-like lawn.

The proposed revegetation plan specifies low open shrub land on the northern and eastern margin of Blue Lagoon, with open woodland to the north and east. This is considered entirely appropriate for the area and will not cause any significant Aboriginal heritage impacts - in fact, it will reduce the impacts from the current tractor-mowing of the surrogate golf course in this area and return the environs of this archaeological site⁸⁶ more to its natural state.

The proposed revegetation program does not replace the grass surface currently covering the extended Site 1886 area on the southern side of the lagoon with native vegetation. This area also should be revegetated if possible, to restore native vegetation to the site. The same recommendation applies to the continuation of the grassed area down the eastern margin of the Silver Sands residential development, which has scattered surface artefacts observable near its northern end, and another archaeological camp site (Sellicks Beach Site 3) as well as surface artefacts (ACHM 2000) further south along this zone (Figure 4-2). However, as noted above, there are issues related to management of fire and stormwater flooding risks to the adjacent Silver Sands residential properties which may limit or prevent the implementation of this recommendation.



Figure 4-2: View south along partially tractor-mown surface, eastern side of Silver Sands residential development. The current vegetation and moving regime progressively impacts this extensive, surface artefact scatter, and should be replaced with native vegetation if possible.

The grassy strip running down the eastern side of Site 1887 and the Silver Sands residential development is bounded on the east by a north-south ditch, and then a large paddock under crop (see Figure 4-3). Successive surveys have been unable to cover this area effectively because of its long-term agricultural use, which we expect would have disturbed the sparse scatter of stone artefacts we would expect to find across it. It is behind the coastal dunes where the main archaeological camp sites are located, and as noted above, was formerly flooded in good wet seasons as part of the Blue-Lagoon and Washpool lagoons and wetlands complex.

The revegetation plan proposed for this area, including zones of sedgeland, low open shrubland, low open woodland, is considered to be appropriate for this area, and would be a welcome replacement for agricultural use.



Figure 4-3: Ditch and cropped area to the east, north east section of the revegetation area, south of Norman Road.

4.3 Eastern Washpool Area

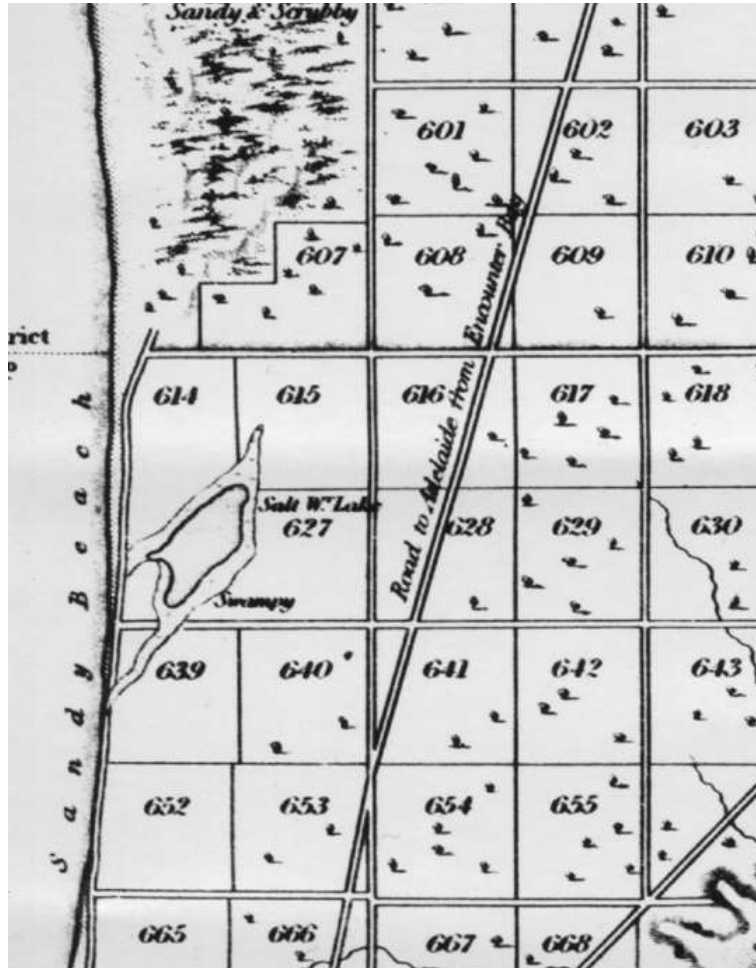
The eastern Washpool area is north of Button Road and west of Justs Road (see Map 4-2). The ACHM (2000) site survey with Kurna recorded scattered artefacts across this eastern paddock and claypan area (Figure 4-4). A site record was submitted based on the ACHM (2000) survey results, for site 6527-4905 Washpool archaeological site, across the western half of this area.



Figure 4-4: View from paddock north of Button Road, SSW across the clay pan archaeological site. The site is being recorded by the field crew on the ACHM (2000) survey with KACHA (Photo J. Knight).

These scattered stone artefacts are in Section 627, and relate to seasonal camp sites and activities such as tanning of animal hides along the eastern margins of the original Washpool area (see Map 4-1, which shows the Washpool area in 1840. Some artefacts may have been collected from this site by H.M. Cooper and others, as reported by Campbell (1988: 113) for the large campsite along the western, coastal side of the Washpool that has since been largely destroyed. The archaeological evidence in this area also has been extensively disturbed by past seasonal flooding and by agricultural activities. At the time of our June 2018 site inspection, this area had solid winter groundcover of grass and other vegetation (Figure 4-5), and was occupied by grazing sheep. We did not attempt an archaeological survey of this area under those prevailing conditions.

The proposed re-vegetation regime for this area (Map 4-2) is considered to be entirely appropriate. The revegetation program (with the addition of Banksias to the open woodland area) would enhance the cultural values of the site, and would not cause any appreciable damage to the archaeological record. In fact, the cessation of agricultural activities would improve the stability of the archaeological site.



Map 4-1: Detail from the Map by surveyor J.M. McLaren, of the country south of Adelaide, from O'Halloran Hill to Mt. Terrible. Published by John Arrowsmith in London, 1840 (State Library of South Australia). Note the two outlets to the sea shown for the Washpool. The designation as a salt water lake on this map is probably due to winter breaching of the Washpool by high tides and storms. Site 6527-4905 covers Section 627, east of the Washpool lagoon.



Figure 4-5: The eastern area of the Washpool vegetation zone is the broad grassy expanse in the background of this photograph.

4.4 Southern Washpool and Coastal Area

The southern coastal zone of sand hills and fringing wetlands of the original, seasonal Washpool lagoon has been disturbed extensively since colonisation.

As reported in ACHM (2000) and in Section 2.2.2 above, Campbell (1988: 113-119) recorded archaeological material between Norman Rd and Cactus Gully at Sellicks Beach and discusses a *“very large site reported by early collectors from the 1940s onward”* which covered several hundred square metres (Campbell 1985: 2). This was only 50 metres south-east of the previously mentioned ‘hearths area’ adjacent to the Blue Lagoon. This particular site was also known to artefact collector and amateur archaeologist, H. M. Cooper, who was based at the SA Museum. Cooper’s *“Site 76”* consisted of *“an extremely large campsite showing great richness and diversity”* (Campbell 1988: 113). Cooper collected over 1200 stone artefacts from this area, including a wide range of artefact types. Other collectors also visited it. This significant site was destroyed by the removal of sand for construction of the Myponga pipeline and subdivision for housing development which began in 1959.

A large portion of the original camp site area has been built on through the Silver Sands housing development, although a remnant strip of the site, the cobble quarry and workshop area along the shoreline dune, remains along the ocean frontage of this development and continuing to the south. The site comprises the full length of this cobble-fronted fore dune, including the remnant workshop and campsite along the inland side of the highly disturbed and reduced dune field. As this disturbed site surface is continually reworked by surf and wind, and variably protected or hidden by clumps of vegetation, archaeological exposure varies, but the site extent is that of the remaining landscape features, as described by Campbell (1985, 1988).

This site continues along the foredune area between the Washpool outlet and the Silver Sands housing development. In his Sellicks Beach Marina EIS heritage survey (Gara 1988), Tom Gara recorded numerous archaeological exposures between the seaward face of the pebble foredune and the drains cut to the Washpool outlet, from southern end of the Silver Sands housing development, southwards to Button Road. This record has the following site description:

“Scatters of stone artefacts, hearths, shellfish remains occur in blowouts and deflation hollows throughout the low coastal dunes between Silver Sands and Button Road. The majority of the artefacts are cores, hammerstones and flakes fashioned from the locally available quartzite pebbles. One large grindstone of white, shelly sandstone was collected. Several glass artefacts were noted. A number of hearths were found and ashy deposits and stone artefacts are visible in exposed profiles at several points within the dunes. Flakes and cores are common along the pebble bank and several knapping floors were noted. A sparse scatter of artefacts continues over the low-lying ground to the east. This site corresponds to Sites SS3-SS10 as recorded by Val Campbell.”

This site continues to exist. Part of the historic disturbance to the southern end of this site and the adjacent Washpool margin include the excavation of a permanent drainage channel to the beach (the current Washpool outlet), and the construction of small buildings which are survived only by broken pieces of concrete slab and a few bricks.

There has been some relatively recent native vegetation planting on the low mound in the southern washpool (Map 4-2), which also has well-used pedestrian pathways through it (Figure 4-6). These plantings are not consistent with the proposed revegetation plan, and also has caused some archaeological disturbance. All further revegetation and any other landscaping work undertaken in relation to this mound or the pedestrian footpaths in the area should be conducted by Kurna workers, who will at the same time monitor their works to insure that cultural heritage is not disturbed in the process.

The proposed revegetation plan for the southern area, as shown in Map 4-2 is considered to be appropriate by the Kurna Traditional Owners, and it will not cause any damage to Aboriginal heritage sites. In fact, restoration of native vegetation will contribute positively to the preservation and condition of the site. This applies to the remainder of the survey area, except for the Tjilbruke Spring, which requires separate consideration (Section 4.5 below).



Figure 4-6: Archaeological mound site west of the Washpool - pedestrian path and recent native plantings (view south east).

4.5 Tjilbruke (Tjirbruki) Spring

The Tjilbruke Spring (Site 6527-1266) is situated at the inland margin of the fore dune, south of the Washpool outlet. As shown on the 1949 aerial photo (Figure 4-7, taken when this was still farmland, the area was heavily disturbed even then, with numerous vehicle tracks visible. The convergence of the tracks around the spring site location may be due to the old well, now covered over with fill.

An effect of more recent dumping of fill over this site (Figure 4-8) may have been to divert the water flow from the perched aquifer running along the front dune from its former surfacing as the spring (later well) at a low point at the back of the dune. At the time of the June 2018 site inspection, there was a noticeable water flow (after rain) from the edge of this disturbed area next to a tree 50m or so further east, to the lower, water-covered southern tongue of the Washpool (Figure 4-9).



Figure 4-7: Tjibruke Spring area (just inland of the arrow) on the 1949 aerial photo, when this was still a rural area.



Figure 4-8: Tjilbruke Spring site (site 6527-1266) covered by dumped piles of fill and covered in dense winter vegetation cover - some sedges present showing presence of water near the surface.



Figure 4-9: current outflow of water from the coastal sand dune into the southern end of the Washpool, east of the Tjilbruke spring site, June 2018 site inspection.

Rehabilitation of the Tjilbruke spring site is a complex issue. To re-establish a spring at the original spring/well site would require removal of dumped fill and excavation into the back margin of the dune to the level of the perched aquifer that holds fresh water along this dune field. As in other Tjilbruke spring site such as Carrickalinga, reeds and sedges would assist in keeping sand erosion back and maintaining water quality. However, this spring may always have been only seasonal, as well as subject to occasional blockage due to sand movement and winter storms. In addition, the stored water currently appears to have an outlet into the southern Washpool from a lower point, approximately 50 m further east. The entire area around the spring site has been altered by dumping of spoil and other earthmoving to the degree that it might be very problematic to restore an operating spring site at this location.

It is recommended that consultation on site is needed involving Kurna Elders, and engineers/ hydrologists who can advise on the technical aspects of this problem. The outcome of such consultation may modify the proposed revegetation plan in the area concerned.

4.6 Summary of Recommendations for the Revegetation Plan

The entire coastal area from the cobble-fronted foredune inland to the Washpool and Blue Lagoon (about 1500m N-S and 250m E-W) was originally one gigantic, traditional Kurna campsite and stone quarry-workshop. It also hosted visiting Aboriginal people from other countries during ceremonial and social gatherings. As recorded by Campbell (1988: 113), H.M Cooper from the SA Museum and others collected more than 1200 stone artefacts from this site, which was heavily disturbed by sand mining for the Myponga pipeline in the 1950s, then by the construction of the Silver Sands Housing Development in the 1980s. Nonetheless, substantial archaeological evidence of this site complex remains along less disturbed coastal land today. The nearby Tjilbruke spring also was disturbed by earthmoving and spoil dumping. Long term agricultural use has disturbed the Washpool and Blue lagoon, as well as the archaeological record of campsites and animal-hide processing on the inland, eastern margins, although some archaeological evidence still is preserved.

The proposed revegetation plan on the whole is a very positive step for the long-term preservation of the remaining archaeological sites and the cultural heritage values of the Aldinga Washpool area. The progressive restoration of native vegetation will have multiple benefits for cultural heritage management. The natural vegetation regime of the locality will be restored substantially, including useful traditional food plants (Banksia, pigface, etc). Native fauna, particularly birds (including the Tjilbruke, the sacred ibis) and kangaroos will have improved habitat. Past activities that have a detrimental impact on the surviving archaeological record such as agriculture will cease. The pattern of revegetation also will provide a more stable landscape, to reduce further erosional disturbance of the remaining archaeological record in this area, which is highly significant both in scientific and cultural terms.

In general, the proposed Washpool revegetation plan will not damage, disturb, or interfere with the preservation of Aboriginal heritage sites and values around the Washpool and Blue Lagoon - in fact, this plan constitutes a most valuable site conservation and restoration program.

The Tjilbruke spring location south of the Washpool will require special remediation measures and some variation to the current revegetation plan, depending on the outcome of further consultation and engineering/hydrology study.

Revegetation work should be undertaken as much as possible by Kurna workers who also have cultural heritage monitoring training, so that any minor impacts on archaeological artefacts and features may be avoided through the minor ground disturbances entailed in this work. In particular, revegetation work around Blue Lagoon the mound site south of Loongana Road, and all along the coastal dune zone should be conducted wherever possible, and in all cases be monitored by Kurna representatives, to ensure that any potential impacts are minimised.

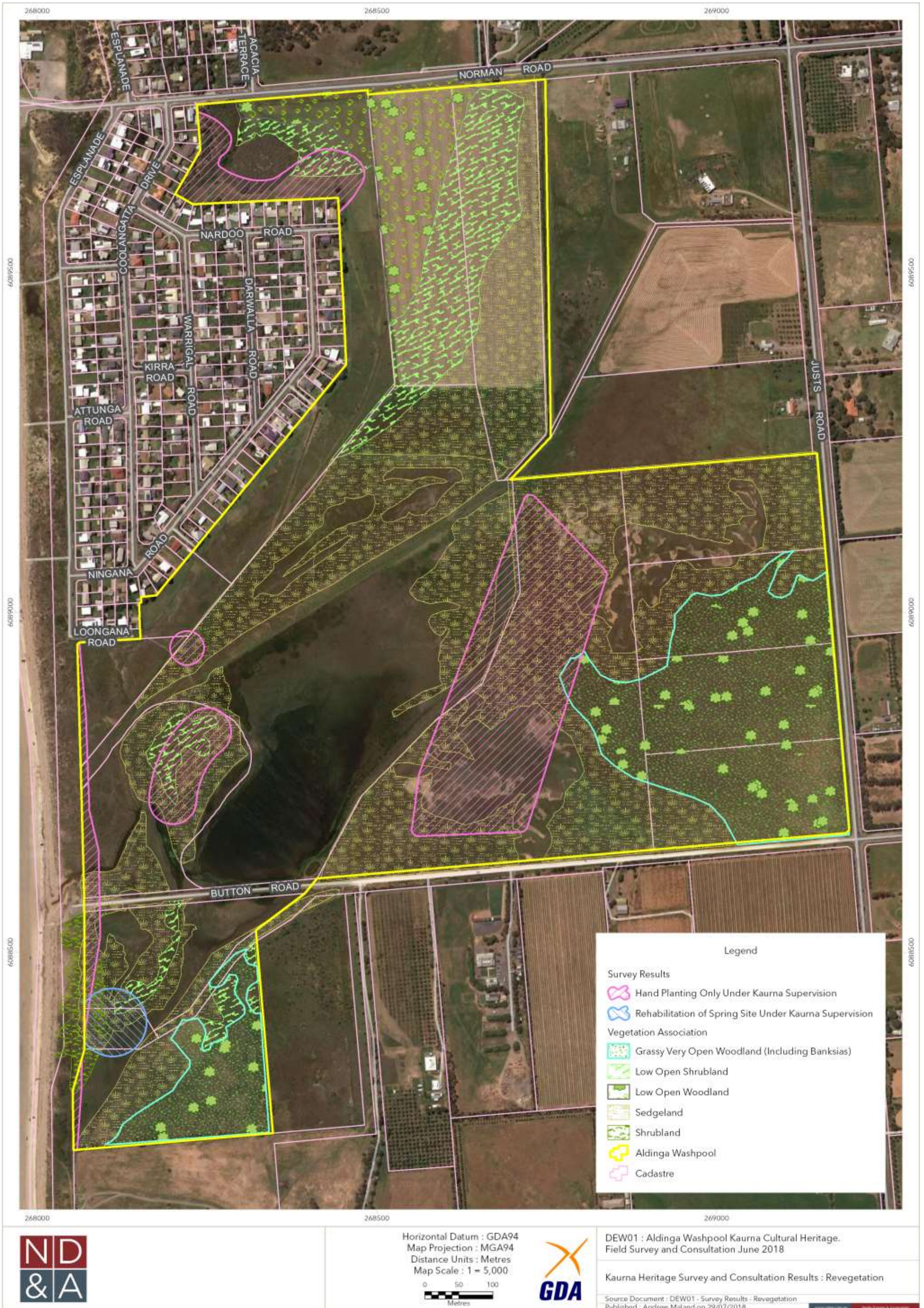
The recommendations from this report in relation to the revegetation plan are shown in Map 4-2.

The current pedestrian pathways than run through this area, particularly the mound site, should be redesigned to eliminate ongoing erosion to the site. The artificial water channels which currently drain the Washpool via an artificial outlet also need to be monitored for future stability, sustainability in relation to the revegetation regime, and potential impacts on the surrounding archaeological record.

Revegetation work on the eastern side of the Washpool, including previously cultivated land, may include shallow harrowing of the ground surface if required for removal of non-native vegetation and preparation for replanting. However, in the most archaeologically sensitive locations identified in the preceding paragraph on the seaward side of the Washpool, ground disturbance needs to be minimised as much as possible.

Herbicide use, i.e., spot spraying monitored by Kurna representatives, should be used for planting preparation within an Aboriginal heritage site, instead of broad acre spraying. It is acceptable to spray halo's (with knockdown herbicides) for planting in an Aboriginal heritage site. Broad acre spraying is acceptable for planting preparation outside of the identified Aboriginal heritage sites. Broad acre spraying also is acceptable within previously identified Aboriginal site areas that have been ploughed and cropped.

The currently grassed and tractor-mown areas bordering the Silver Sands Housing development and Blue Lagoon currently have inappropriate vegetation cover and maintenance regime (grass maintained by tractor mowing) which diminishes the character of the sites and cause ongoing disturbance to the surviving archaeological record. It is highly desirable to return these locations to native vegetation as well.



Map 4-2: Kaurna heritage survey and consultation recommendations for the proposed revegetation plan.

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